sky130_fd_sc_hs_tt_1.44v_25C.ccs Library

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

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

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

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

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

SKY130_FD_SC_HS__XNOR2x
SKY130_FD_SC_HS__XNOR3x
SKY130_FD_SC_HS__XOR2x
SKY130_FD_SC_HS__XOR3x

SKY130_FD_SC_HS__A2111OIx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a2111oi_1	11.18880
sky130_fd_sc_hs__a2111oi_2	19.18080
sky130_fd_sc_hs__a2111oi_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	C1	D1	Y
sky130_fd_sc_hs__a2111oi_1	0.00269	0.00258	0.00270	0.00283	0.00282	0.17199
sky130_fd_sc_hs__a2111oi_2	0.00511	0.00492	0.00413	0.00415	0.00415	0.31701
sky130_fd_sc_hs__a2111oi_4	0.01014	0.00985	0.00808	0.00794	0.00812	0.59186

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2111oi_1	0.00000	0.00674	0.02443
sky130_fd_sc_hs__a2111oi_2	0.00000	0.01230	0.04886
sky130_fd_sc_hs__a2111oi_4	0.00000	0.02459	0.09773

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)	0.34718	1.63233	11.00920
	A2->Y (FR)	0.41081	1.72014	11.20910
	B1->Y (FR)	0.38367	1.67620	11.49410
	C1->Y (FR)	0.33442	1.63634	11.77710
	D1->Y (FR)	0.25802	1.52448	11.36310
sky130_fd_sc_hs__a2111oi_2	A1->Y (FR)	0.31608	1.41566	10.97290
	A2->Y (FR)	0.39429	1.50378	11.12400
	B1->Y (FR)	0.35219	1.45242	11.39300
	C1->Y (FR)	0.29937	1.41036	11.74420
	D1->Y (FR)	0.19036	1.27042	11.29910
sky130_fd_sc_hs__a2111oi_4	A1->Y (FR)	0.29888	1.22393	10.77080
	A2->Y (FR)	0.38200	1.32177	10.99440
	B1->Y (FR)	0.34127	1.27503	11.31090
	C1->Y (FR)	0.28227	1.22673	11.66340
	D1->Y (FR)	0.17671	1.09384	11.26260

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111oi_1	A1->Y (RF)	0.03955	0.42822	3.33034
	A2->Y (RF)	0.04401	0.40688	3.14237
	B1->Y (RF)	0.02999	0.35445	2.80495
	C1->Y (RF)	0.03038	0.34723	2.78749
	D1->Y (RF)	0.02728	0.33464	2.76748
sky130_fd_sc_hs__a2111oi_2	A1->Y (RF)	0.03390	0.39493	3.38449
	A2->Y (RF)	0.04095	0.37429	3.16167
	B1->Y (RF)	0.04134	0.44245	3.94745
	C1->Y (RF)	0.04065	0.42865	3.91672
	D1->Y (RF)	0.03249	0.40749	3.88526
sky130_fd_sc_hs__a2111oi_4	A1->Y (RF)	0.03413	0.36631	3.43847
	A2->Y (RF)	0.04044	0.33441	3.06845
	B1->Y (RF)	0.03655	0.38582	3.76541
	C1->Y (RF)	0.03637	0.36992	3.73504
	D1->Y (RF)	0.02906	0.35141	3.75463

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111oi_1	A1	0.00042	0.00027	0.00029
	A1	0.00577	0.00562	0.00567
	A2	0.00071	0.00060	0.00063
	A2	0.00675	0.00666	0.00669
	B1	0.00081	0.00067	0.00074
	B1	0.00606	0.00592	0.00598
	C1	0.00080	0.00065	0.00081
	C1	0.00546	0.00532	0.00548
	D1	0.00074	0.00066	0.00144
	D1	0.00488	0.00479	0.00549
sky130_fd_sc_hs__a2111oi_2	A1	0.00026	0.00001	0.00007
	A1	0.01033	0.01010	0.01018
	A2	0.00130	0.00107	0.00111
	A2	0.01271	0.01245	0.01253
	B1	0.00193	0.00177	0.00182
	B1	0.01103	0.01089	0.01091
	C1	0.00200	0.00184	0.00199
	C1	0.00977	0.00962	0.00975
	D1	0.00192	0.00183	0.00280
	D1	0.00843	0.00834	0.00930

sky130_fd_sc_hs__a2111oi_4	**A1**	-0.00009	-0.00060	-0.00042
	A1	0.02013	0.01968	0.01989
	A2	0.00181	0.00134	0.00149
	A2	0.02471	0.02428	0.02443
	B1	0.00318	0.00288	0.00302
	B1	0.02136	0.02106	0.02118
	C1	0.00323	0.00295	0.00331
	C1	0.01876	0.01848	0.01881
	D1	0.00305	0.00294	0.00494
	D1	0.01604	0.01594	0.01791

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**A1**	0.00747	0.00732	0.00748
	A1	0.00230	0.00213	0.00234
	A2	0.00819	0.00804	0.00808
	A2	0.00229	0.00213	0.00221
	B1	0.00652	0.00641	0.00666
	B1	0.00129	0.00116	0.00144
	C1	0.00536	0.00530	0.00558
	C1	0.00067	0.00058	0.00088
	D1	0.00417	0.00421	0.00450
	D1	-0.00000	0.00000	0.00030

sky130_fd_sc_hs__a2111oi_2	**A1**	0.01391	0.01354	0.01388
	A1	0.00425	0.00388	0.00429
	A2	0.01528	0.01496	0.01501
	A2	0.00420	0.00386	0.00401
	B1	0.01133	0.01111	0.01135
	B1	0.00227	0.00200	0.00232
	C1	0.00884	0.00868	0.00901
	C1	0.00103	0.00080	0.00115
	D1	0.00580	0.00587	0.00628
	D1	-0.00081	-0.00080	-0.00040
sky130_fd_sc_hs__a2111oi_4	**A1**	0.02720	0.02646	0.02723
	A1	0.00782	0.00705	0.00796
	A2	0.03001	0.02935	0.02954
	A2	0.00775	0.00706	0.00745
	B1	0.02222	0.02167	0.02229
	B1	0.00411	0.00348	0.00420
	C1	0.01718	0.01680	0.01760
	C1	0.00162	0.00109	0.00193
	D1	0.01150	0.01162	0.01255
	D1	-0.00168	-0.00169	-0.00075

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)**	0.00102	0.00101	0.00101
	(A2 * B1 * D1 * !Y)	-0.00119	-0.00124	-0.00123
	(A2 * B1 * C1 * !D1 * !Y)	0.00102	0.00101	0.00101
	(A2 * B1 * C1 * !D1 * !Y)	-0.00119	-0.00124	-0.00123
	(A2 * B1 * !C1 * !D1 * !Y)	0.00102	0.00101	0.00101
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00119	-0.00124	-0.00123
	(A2 * !B1 * C1 * D1 * !Y)	0.00101	0.00102	0.00101
	(A2 * !B1 * C1 * D1 * !Y)	-0.00112	-0.00120	-0.00119
	(A2 * !B1 * C1 * !D1 * !Y)	0.00101	0.00102	0.00101
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00112	-0.00120	-0.00119
	(A2 * !B1 * !C1 * D1 * !Y)	0.00100	0.00102	0.00101
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00110	-0.00117	-0.00117
	(!A2 * B1 * D1 * !Y)	0.00095	0.00096	0.00095
	(!A2 * B1 * D1 * !Y)	-0.00126	-0.00127	-0.00127
	(!A2 * B1 * C1 * !D1 * !Y)	0.00095	0.00096	0.00095
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00126	-0.00127	-0.00127
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00095	0.00096	0.00095
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00127	-0.00127	-0.00127
	(!A2 * !B1 * C1 * D1 * !Y)	0.00095	0.00096	0.00096
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00126	-0.00127	-0.00127
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00095	0.00096	0.00095
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00127	-0.00127	-0.00127
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00095	0.00096	0.00095
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00127	-0.00127	-0.00127
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00036	0.00036	0.00035
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00146	-0.00146	-0.00148

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	0.00202	0.00202	0.00201
	(A2 * B1 * D1 * !Y)	-0.00239	-0.00246	-0.00246
	(A2 * B1 * C1 * !D1 * !Y)	0.00202	0.00202	0.00201
	(A2 * B1 * C1 * !D1 * !Y)	-0.00239	-0.00247	-0.00246
	(A2 * B1 * !C1 * !D1 * !Y)	0.00201	0.00202	0.00201
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00236	-0.00248	-0.00246
	(A2 * !B1 * C1 * D1 * !Y)	0.00201	0.00201	0.00201
	(A2 * !B1 * C1 * D1 * !Y)	-0.00222	-0.00237	-0.00236
	(A2 * !B1 * C1 * !D1 * !Y)	0.00201	0.00201	0.00201
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00222	-0.00238	-0.00236
	(A2 * !B1 * !C1 * D1 * !Y)	0.00201	0.00204	0.00201
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00219	-0.00234	-0.00232
	(!A2 * B1 * D1 * !Y)	0.00190	0.00190	0.00191
	(!A2 * B1 * D1 * !Y)	-0.00252	-0.00252	-0.00253
	(!A2 * B1 * C1 * !D1 * !Y)	0.00190	0.00193	0.00191
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00252	-0.00255	-0.00253
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00191	0.00193	0.00191
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00254	-0.00254	-0.00253
	(!A2 * !B1 * C1 * D1 * !Y)	0.00190	0.00193	0.00191
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00252	-0.00254	-0.00253
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00191	0.00193	0.00191
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00254	-0.00254	-0.00253
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00191	0.00193	0.00191
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00254	-0.00254	-0.00253
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00074	0.00075	0.00070
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00288	-0.00290	-0.00296

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	0.00403	0.00406	0.00404
	(A2 * B1 * D1 * !Y)	-0.00474	-0.00495	-0.00493
	(A2 * B1 * C1 * !D1 * !Y)	0.00403	0.00406	0.00404
	(A2 * B1 * C1 * !D1 * !Y)	-0.00474	-0.00495	-0.00493
	(A2 * B1 * !C1 * !D1 * !Y)	0.00403	0.00406	0.00404
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00472	-0.00496	-0.00493
	(A2 * !B1 * C1 * D1 * !Y)	0.00403	0.00403	0.00404
	(A2 * !B1 * C1 * D1 * !Y)	-0.00447	-0.00477	-0.00474
	(A2 * !B1 * C1 * !D1 * !Y)	0.00404	0.00403	0.00404
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00447	-0.00478	-0.00474
	(A2 * !B1 * !C1 * D1 * !Y)	0.00406	0.00409	0.00405
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00440	-0.00470	-0.00466
	(!A2 * B1 * D1 * !Y)	0.00381	0.00385	0.00383
	(!A2 * B1 * D1 * !Y)	-0.00507	-0.00509	-0.00507
	(!A2 * B1 * C1 * !D1 * !Y)	0.00381	0.00385	0.00383
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00507	-0.00510	-0.00507
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00381	0.00384	0.00383
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00505	-0.00509	-0.00507
	(!A2 * !B1 * C1 * D1 * !Y)	0.00382	0.00386	0.00383
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00507	-0.00510	-0.00507
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00380	0.00383	0.00383
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00505	-0.00508	-0.00507
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00381	0.00386	0.00382
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00506	-0.00510	-0.00507
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00142	0.00143	0.00135
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00583	-0.00588	-0.00599

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)**	-0.00101	-0.00101	-0.00101
	(A2 * B1 * D1 * !Y)	0.00124	0.00124	0.00123
	(A2 * B1 * C1 * !D1 * !Y)	-0.00101	-0.00101	-0.00101
	(A2 * B1 * C1 * !D1 * !Y)	0.00124	0.00125	0.00123
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00101	-0.00101	-0.00101
	(A2 * B1 * !C1 * !D1 * !Y)	0.00124	0.00125	0.00123
	(A2 * !B1 * C1 * D1 * !Y)	-0.00101	-0.00101	-0.00101
	(A2 * !B1 * C1 * D1 * !Y)	0.00120	0.00120	0.00119
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00100	-0.00101	-0.00101
	(A2 * !B1 * C1 * !D1 * !Y)	0.00118	0.00120	0.00119
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00100	-0.00101	-0.00101
	(A2 * !B1 * !C1 * D1 * !Y)	0.00116	0.00117	0.00117
	(!A2 * B1 * D1 * !Y)	-0.00093	-0.00096	-0.00095
	(!A2 * B1 * D1 * !Y)	0.00127	0.00128	0.00127
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00092	-0.00096	-0.00095
	(!A2 * B1 * C1 * !D1 * !Y)	0.00127	0.00129	0.00127
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00092	-0.00096	-0.00095
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00127	0.00129	0.00127
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00093	-0.00096	-0.00096
	(!A2 * !B1 * C1 * D1 * !Y)	0.00127	0.00129	0.00127
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00092	-0.00096	-0.00095
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00127	0.00129	0.00127
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00092	-0.00096	-0.00095
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00128	0.00129	0.00127
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00034	-0.00034	-0.00034
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00148	0.00149	0.00148

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	-0.00201	-0.00201	-0.00201
	(A2 * B1 * D1 * !Y)	0.00246	0.00246	0.00246
	(A2 * B1 * C1 * !D1 * !Y)	-0.00201	-0.00201	-0.00201
	(A2 * B1 * C1 * !D1 * !Y)	0.00246	0.00247	0.00246
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00201	-0.00201	-0.00201
	(A2 * B1 * !C1 * !D1 * !Y)	0.00246	0.00248	0.00246
	(A2 * !B1 * C1 * D1 * !Y)	-0.00201	-0.00201	-0.00201
	(A2 * !B1 * C1 * D1 * !Y)	0.00236	0.00237	0.00236
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00201	-0.00201	-0.00201
	(A2 * !B1 * C1 * !D1 * !Y)	0.00236	0.00238	0.00236
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00201	-0.00202	-0.00201
	(A2 * !B1 * !C1 * D1 * !Y)	0.00232	0.00234	0.00232
	(!A2 * B1 * D1 * !Y)	-0.00182	-0.00190	-0.00191
	(!A2 * B1 * D1 * !Y)	0.00253	0.00257	0.00254
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00182	-0.00193	-0.00191
	(!A2 * B1 * C1 * !D1 * !Y)	0.00252	0.00257	0.00254
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00182	-0.00193	-0.00191
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00254	0.00254	0.00254
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00182	-0.00193	-0.00191
	(!A2 * !B1 * C1 * D1 * !Y)	0.00253	0.00256	0.00254
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00182	-0.00193	-0.00191
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00254	0.00254	0.00254
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00182	-0.00193	-0.00191
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00254	0.00254	0.00254
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00068	-0.00068	-0.00068
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00298	0.00298	0.00297

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	-0.00403	-0.00404	-0.00403
	(A2 * B1 * D1 * !Y)	0.00494	0.00495	0.00493
	(A2 * B1 * C1 * !D1 * !Y)	-0.00402	-0.00404	-0.00403
	(A2 * B1 * C1 * !D1 * !Y)	0.00491	0.00495	0.00493
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00403	-0.00405	-0.00403
	(A2 * B1 * !C1 * !D1 * !Y)	0.00491	0.00497	0.00493
	(A2 * !B1 * C1 * D1 * !Y)	-0.00403	-0.00403	-0.00403
	(A2 * !B1 * C1 * D1 * !Y)	0.00474	0.00477	0.00474
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00403	-0.00403	-0.00403
	(A2 * !B1 * C1 * !D1 * !Y)	0.00474	0.00478	0.00474
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00404	-0.00406	-0.00404
	(A2 * !B1 * !C1 * D1 * !Y)	0.00465	0.00470	0.00466
	(!A2 * B1 * D1 * !Y)	-0.00365	-0.00385	-0.00383
	(!A2 * B1 * D1 * !Y)	0.00507	0.00515	0.00509
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00365	-0.00385	-0.00383
	(!A2 * B1 * C1 * !D1 * !Y)	0.00507	0.00515	0.00509
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00366	-0.00384	-0.00383
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00510	0.00511	0.00509
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00365	-0.00386	-0.00383
	(!A2 * !B1 * C1 * D1 * !Y)	0.00507	0.00514	0.00509
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00365	-0.00383	-0.00383
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00510	0.00510	0.00509
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00365	-0.00386	-0.00382
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00510	0.00511	0.00509
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00132	-0.00132	-0.00131
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00602	0.00603	0.00600

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)**	0.00107	0.00107	0.00107
	(A1 * B1 * D1 * !Y)	-0.00119	-0.00125	-0.00124
	(A1 * B1 * C1 * !D1 * !Y)	0.00107	0.00107	0.00107
	(A1 * B1 * C1 * !D1 * !Y)	-0.00119	-0.00125	-0.00124
	(A1 * B1 * !C1 * !D1 * !Y)	0.00107	0.00107	0.00107
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00119	-0.00125	-0.00124
	(A1 * !B1 * C1 * D1 * !Y)	0.00107	0.00108	0.00107
	(A1 * !B1 * C1 * D1 * !Y)	-0.00113	-0.00120	-0.00120
	(A1 * !B1 * C1 * !D1 * !Y)	0.00107	0.00108	0.00107
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00113	-0.00120	-0.00120
	(A1 * !B1 * !C1 * D1 * !Y)	0.00107	0.00108	0.00107
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00111	-0.00117	-0.00117
	(!A1 * B1 * !Y)	0.00101	0.00102	0.00101
	(!A1 * B1 * !Y)	-0.00127	-0.00128	-0.00128
	(!A1 * !B1 * C1 * !Y)	0.00101	0.00102	0.00101
	(!A1 * !B1 * C1 * !Y)	-0.00127	-0.00128	-0.00128
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00101	0.00102	0.00101
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00127	-0.00128	-0.00128
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00101	0.00102	0.00101
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00127	-0.00128	-0.00128

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00202	0.00203	0.00202
	(A1 * B1 * D1 * !Y)	-0.00237	-0.00246	-0.00246
	(A1 * B1 * C1 * !D1 * !Y)	0.00202	0.00203	0.00202
	(A1 * B1 * C1 * !D1 * !Y)	-0.00237	-0.00246	-0.00246
	(A1 * B1 * !C1 * !D1 * !Y)	0.00202	0.00204	0.00202
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00235	-0.00245	-0.00246
	(A1 * !B1 * C1 * D1 * !Y)	0.00202	0.00202	0.00202
	(A1 * !B1 * C1 * D1 * !Y)	-0.00223	-0.00237	-0.00236
	(A1 * !B1 * C1 * !D1 * !Y)	0.00203	0.00202	0.00202
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00223	-0.00237	-0.00236
	(A1 * !B1 * !C1 * D1 * !Y)	0.00203	0.00205	0.00203
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00219	-0.00233	-0.00232
	(!A1 * B1 * !Y)	0.00192	0.00194	0.00192
	(!A1 * B1 * !Y)	-0.00252	-0.00253	-0.00252
	(!A1 * !B1 * C1 * !Y)	0.00192	0.00194	0.00192
	(!A1 * !B1 * C1 * !Y)	-0.00252	-0.00253	-0.00252
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00192	0.00194	0.00192
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00252	-0.00253	-0.00252
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00192	0.00193	0.00192
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00252	-0.00253	-0.00252

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00407	0.00409	0.00407
	(A1 * B1 * D1 * !Y)	-0.00474	-0.00493	-0.00492
	(A1 * B1 * C1 * !D1 * !Y)	0.00407	0.00409	0.00407
	(A1 * B1 * C1 * !D1 * !Y)	-0.00474	-0.00492	-0.00492
	(A1 * B1 * !C1 * !D1 * !Y)	0.00407	0.00409	0.00407
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00472	-0.00491	-0.00492
	(A1 * !B1 * C1 * D1 * !Y)	0.00409	0.00406	0.00407
	(A1 * !B1 * C1 * D1 * !Y)	-0.00449	-0.00477	-0.00474
	(A1 * !B1 * C1 * !D1 * !Y)	0.00409	0.00406	0.00407
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00449	-0.00477	-0.00474
	(A1 * !B1 * !C1 * D1 * !Y)	0.00410	0.00412	0.00407
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00442	-0.00466	-0.00465
	(!A1 * B1 * !Y)	0.00381	0.00386	0.00383
	(!A1 * B1 * !Y)	-0.00505	-0.00509	-0.00507
	(!A1 * !B1 * C1 * !Y)	0.00384	0.00388	0.00385
	(!A1 * !B1 * C1 * !Y)	-0.00505	-0.00509	-0.00507
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00382	0.00383	0.00383
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00505	-0.00506	-0.00506
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00383	0.00388	0.00384
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00506	-0.00509	-0.00506

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)**	-0.00107	-0.00107	-0.00107
	(A1 * B1 * D1 * !Y)	0.00124	0.00125	0.00124
	(A1 * B1 * C1 * !D1 * !Y)	-0.00107	-0.00107	-0.00107
	(A1 * B1 * C1 * !D1 * !Y)	0.00124	0.00125	0.00124
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00107	-0.00107	-0.00107
	(A1 * B1 * !C1 * !D1 * !Y)	0.00124	0.00125	0.00124
	(A1 * !B1 * C1 * D1 * !Y)	-0.00107	-0.00107	-0.00107
	(A1 * !B1 * C1 * D1 * !Y)	0.00120	0.00120	0.00120
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00107	-0.00107	-0.00107
	(A1 * !B1 * C1 * !D1 * !Y)	0.00120	0.00120	0.00120
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00107	-0.00106	-0.00106
	(A1 * !B1 * !C1 * D1 * !Y)	0.00118	0.00117	0.00117
	(!A1 * B1 * !Y)	-0.00098	-0.00102	-0.00101
	(!A1 * B1 * !Y)	0.00127	0.00129	0.00128
	(!A1 * !B1 * C1 * !Y)	-0.00098	-0.00102	-0.00101
	(!A1 * !B1 * C1 * !Y)	0.00127	0.00129	0.00128
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00098	-0.00102	-0.00101
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00127	0.00129	0.00128
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00096	-0.00102	-0.00101
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00130	0.00129	0.00128

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00202	-0.00202	-0.00202
	(A1 * B1 * D1 * !Y)	0.00245	0.00246	0.00246
	(A1 * B1 * C1 * !D1 * !Y)	-0.00202	-0.00202	-0.00202
	(A1 * B1 * C1 * !D1 * !Y)	0.00245	0.00246	0.00246
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00202	-0.00202	-0.00202
	(A1 * B1 * !C1 * !D1 * !Y)	0.00245	0.00245	0.00246
	(A1 * !B1 * C1 * D1 * !Y)	-0.00202	-0.00202	-0.00202
	(A1 * !B1 * C1 * D1 * !Y)	0.00235	0.00237	0.00236
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00202	-0.00202	-0.00202
	(A1 * !B1 * C1 * !D1 * !Y)	0.00235	0.00237	0.00236
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00202	-0.00203	-0.00202
	(A1 * !B1 * !C1 * D1 * !Y)	0.00231	0.00233	0.00232
	(!A1 * B1 * !Y)	-0.00186	-0.00193	-0.00192
	(!A1 * B1 * !Y)	0.00253	0.00254	0.00253
	(!A1 * !B1 * C1 * !Y)	-0.00186	-0.00193	-0.00192
	(!A1 * !B1 * C1 * !Y)	0.00253	0.00254	0.00253
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00186	-0.00193	-0.00192
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00253	0.00254	0.00253
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00182	-0.00193	-0.00192
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00258	0.00255	0.00253

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00407	-0.00406	-0.00406
	(A1 * B1 * D1 * !Y)	0.00494	0.00493	0.00492
	(A1 * B1 * C1 * !D1 * !Y)	-0.00407	-0.00406	-0.00406
	(A1 * B1 * C1 * !D1 * !Y)	0.00493	0.00492	0.00492
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00407	-0.00405	-0.00406
	(A1 * B1 * !C1 * !D1 * !Y)	0.00493	0.00491	0.00492
	(A1 * !B1 * C1 * D1 * !Y)	-0.00406	-0.00406	-0.00406
	(A1 * !B1 * C1 * D1 * !Y)	0.00474	0.00477	0.00474
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00406	-0.00406	-0.00406
	(A1 * !B1 * C1 * !D1 * !Y)	0.00473	0.00477	0.00474
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00406	-0.00407	-0.00406
	(A1 * !B1 * !C1 * D1 * !Y)	0.00465	0.00466	0.00465
	(!A1 * B1 * !Y)	-0.00372	-0.00386	-0.00383
	(!A1 * B1 * !Y)	0.00509	0.00510	0.00508
	(!A1 * !B1 * C1 * !Y)	-0.00372	-0.00386	-0.00385
	(!A1 * !B1 * C1 * !Y)	0.00509	0.00511	0.00508
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00372	-0.00383	-0.00383
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00509	0.00511	0.00508
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00362	-0.00385	-0.00384
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00522	0.00514	0.00508

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)**	0.00106	0.00105	0.00105
	(A1 * A2 * C1 * D1 * !Y)	-0.00092	-0.00093	-0.00092
	(A1 * A2 * C1 * !D1 * !Y)	0.00106	0.00106	0.00105
	(A1 * A2 * C1 * !D1 * !Y)	-0.00090	-0.00090	-0.00090
	(A1 * A2 * !C1 * D1 * !Y)	0.00105	0.00106	0.00105
	(A1 * A2 * !C1 * D1 * !Y)	-0.00085	-0.00086	-0.00086
	(A1 * A2 * !C1 * !D1 * !Y)	0.00104	0.00105	0.00104
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00072	-0.00073	-0.00073
	(A1 * !A2 * C1 * D1 * !Y)	0.00105	0.00105	0.00104
	(A1 * !A2 * C1 * D1 * !Y)	-0.00119	-0.00122	-0.00122
	(A1 * !A2 * C1 * !D1 * !Y)	0.00106	0.00105	0.00104
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00117	-0.00122	-0.00122
	(A1 * !A2 * !C1 * D1 * !Y)	0.00105	0.00105	0.00104
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00107	-0.00116	-0.00116
	(!A1 * C1 * D1 * !Y)	0.00105	0.00105	0.00104
	(!A1 * C1 * D1 * !Y)	-0.00119	-0.00123	-0.00122
	(!A1 * C1 * !D1 * !Y)	0.00106	0.00105	0.00104
	(!A1 * C1 * !D1 * !Y)	-0.00117	-0.00122	-0.00122
	(!A1 * !C1 * D1 * !Y)	0.00105	0.00105	0.00104
	(!A1 * !C1 * D1 * !Y)	-0.00108	-0.00116	-0.00116

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	0.00119	0.00120	0.00119
	(A1 * A2 * C1 * D1 * !Y)	-0.00183	-0.00184	-0.00182
	(A1 * A2 * C1 * !D1 * !Y)	0.00119	0.00120	0.00119
	(A1 * A2 * C1 * !D1 * !Y)	-0.00178	-0.00178	-0.00177
	(A1 * A2 * !C1 * D1 * !Y)	0.00120	0.00122	0.00120
	(A1 * A2 * !C1 * D1 * !Y)	-0.00172	-0.00173	-0.00172
	(A1 * A2 * !C1 * !D1 * !Y)	0.00119	0.00119	0.00119
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00145	-0.00146	-0.00145
	(A1 * !A2 * C1 * D1 * !Y)	0.00119	0.00120	0.00119
	(A1 * !A2 * C1 * D1 * !Y)	-0.00235	-0.00245	-0.00243
	(A1 * !A2 * C1 * !D1 * !Y)	0.00120	0.00120	0.00119
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00232	-0.00245	-0.00244
	(A1 * !A2 * !C1 * D1 * !Y)	0.00121	0.00120	0.00119
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00217	-0.00232	-0.00231
	(!A1 * C1 * D1 * !Y)	0.00119	0.00120	0.00119
	(!A1 * C1 * D1 * !Y)	-0.00235	-0.00245	-0.00243
	(!A1 * C1 * !D1 * !Y)	0.00120	0.00120	0.00119
	(!A1 * C1 * !D1 * !Y)	-0.00233	-0.00245	-0.00244
	(!A1 * !C1 * D1 * !Y)	0.00121	0.00120	0.00119
	(!A1 * !C1 * D1 * !Y)	-0.00217	-0.00232	-0.00232

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	0.00232	0.00229	0.00228
	(A1 * A2 * C1 * D1 * !Y)	-0.00371	-0.00374	-0.00372
	(A1 * A2 * C1 * !D1 * !Y)	0.00232	0.00229	0.00229
	(A1 * A2 * C1 * !D1 * !Y)	-0.00361	-0.00364	-0.00362
	(A1 * A2 * !C1 * D1 * !Y)	0.00230	0.00234	0.00231
	(A1 * A2 * !C1 * D1 * !Y)	-0.00348	-0.00350	-0.00349
	(A1 * A2 * !C1 * !D1 * !Y)	0.00228	0.00228	0.00228
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00301	-0.00301	-0.00301
	(A1 * !A2 * C1 * D1 * !Y)	0.00228	0.00230	0.00228
	(A1 * !A2 * C1 * D1 * !Y)	-0.00483	-0.00503	-0.00501
	(A1 * !A2 * C1 * !D1 * !Y)	0.00232	0.00230	0.00228
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00474	-0.00501	-0.00501
	(A1 * !A2 * !C1 * D1 * !Y)	0.00234	0.00231	0.00228
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00443	-0.00475	-0.00473
	(!A1 * C1 * D1 * !Y)	0.00228	0.00230	0.00228
	(!A1 * C1 * D1 * !Y)	-0.00484	-0.00503	-0.00501
	(!A1 * C1 * !D1 * !Y)	0.00232	0.00230	0.00228
	(!A1 * C1 * !D1 * !Y)	-0.00475	-0.00504	-0.00501
	(!A1 * !C1 * D1 * !Y)	0.00234	0.00231	0.00228
	(!A1 * !C1 * D1 * !Y)	-0.00444	-0.00476	-0.00474

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)**	-0.00105	-0.00105	-0.00105
	(A1 * A2 * C1 * D1 * !Y)	0.00092	0.00093	0.00092
	(A1 * A2 * C1 * !D1 * !Y)	-0.00105	-0.00105	-0.00105
	(A1 * A2 * C1 * !D1 * !Y)	0.00090	0.00090	0.00090
	(A1 * A2 * !C1 * D1 * !Y)	-0.00104	-0.00105	-0.00105
	(A1 * A2 * !C1 * D1 * !Y)	0.00085	0.00086	0.00086
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00096	-0.00096	-0.00098
	(A1 * A2 * !C1 * !D1 * !Y)	0.00080	0.00080	0.00079
	(A1 * !A2 * C1 * D1 * !Y)	-0.00104	-0.00104	-0.00104
	(A1 * !A2 * C1 * D1 * !Y)	0.00122	0.00122	0.00122
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00104	-0.00104	-0.00104
	(A1 * !A2 * C1 * !D1 * !Y)	0.00122	0.00122	0.00122
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00104	-0.00104	-0.00104
	(A1 * !A2 * !C1 * D1 * !Y)	0.00116	0.00116	0.00116
	(!A1 * C1 * D1 * !Y)	-0.00104	-0.00104	-0.00104
	(!A1 * C1 * D1 * !Y)	0.00122	0.00123	0.00122
	(!A1 * C1 * !D1 * !Y)	-0.00104	-0.00104	-0.00104
	(!A1 * C1 * !D1 * !Y)	0.00122	0.00122	0.00122
	(!A1 * !C1 * D1 * !Y)	-0.00103	-0.00104	-0.00104
	(!A1 * !C1 * D1 * !Y)	0.00115	0.00116	0.00116

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	-0.00119	-0.00119	-0.00119
	(A1 * A2 * C1 * D1 * !Y)	0.00183	0.00184	0.00182
	(A1 * A2 * C1 * !D1 * !Y)	-0.00119	-0.00119	-0.00119
	(A1 * A2 * C1 * !D1 * !Y)	0.00178	0.00178	0.00177
	(A1 * A2 * !C1 * D1 * !Y)	-0.00119	-0.00120	-0.00120
	(A1 * A2 * !C1 * D1 * !Y)	0.00172	0.00173	0.00172
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00103	-0.00104	-0.00103
	(A1 * A2 * !C1 * !D1 * !Y)	0.00161	0.00162	0.00160
	(A1 * !A2 * C1 * D1 * !Y)	-0.00118	-0.00119	-0.00118
	(A1 * !A2 * C1 * D1 * !Y)	0.00243	0.00245	0.00243
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00118	-0.00119	-0.00118
	(A1 * !A2 * C1 * !D1 * !Y)	0.00242	0.00245	0.00244
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00119	-0.00119	-0.00119
	(A1 * !A2 * !C1 * D1 * !Y)	0.00230	0.00232	0.00231
	(!A1 * C1 * D1 * !Y)	-0.00118	-0.00119	-0.00118
	(!A1 * C1 * D1 * !Y)	0.00242	0.00245	0.00243
	(!A1 * C1 * !D1 * !Y)	-0.00118	-0.00119	-0.00118
	(!A1 * C1 * !D1 * !Y)	0.00243	0.00245	0.00244
	(!A1 * !C1 * D1 * !Y)	-0.00119	-0.00119	-0.00119
	(!A1 * !C1 * D1 * !Y)	0.00231	0.00232	0.00232

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	-0.00227	-0.00228	-0.00228
	(A1 * A2 * C1 * D1 * !Y)	0.00371	0.00374	0.00372
	(A1 * A2 * C1 * !D1 * !Y)	-0.00227	-0.00228	-0.00228
	(A1 * A2 * C1 * !D1 * !Y)	0.00361	0.00364	0.00362
	(A1 * A2 * !C1 * D1 * !Y)	-0.00229	-0.00230	-0.00230
	(A1 * A2 * !C1 * D1 * !Y)	0.00348	0.00350	0.00349
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00198	-0.00200	-0.00200
	(A1 * A2 * !C1 * !D1 * !Y)	0.00324	0.00325	0.00326
	(A1 * !A2 * C1 * D1 * !Y)	-0.00227	-0.00228	-0.00227
	(A1 * !A2 * C1 * D1 * !Y)	0.00501	0.00503	0.00501
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00228	-0.00227	-0.00227
	(A1 * !A2 * C1 * !D1 * !Y)	0.00504	0.00501	0.00501
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00229	-0.00229	-0.00228
	(A1 * !A2 * !C1 * D1 * !Y)	0.00474	0.00475	0.00473
	(!A1 * C1 * D1 * !Y)	-0.00228	-0.00228	-0.00227
	(!A1 * C1 * D1 * !Y)	0.00504	0.00503	0.00501
	(!A1 * C1 * !D1 * !Y)	-0.00228	-0.00228	-0.00227
	(!A1 * C1 * !D1 * !Y)	0.00504	0.00504	0.00501
	(!A1 * !C1 * D1 * !Y)	-0.00229	-0.00229	-0.00228
	(!A1 * !C1 * D1 * !Y)	0.00475	0.00476	0.00474

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)**	0.00114	0.00113	0.00111
	(A1 * B1 * D1 * !Y)	-0.00080	-0.00080	-0.00080
	(A1 * B1 * !D1 * !Y)	0.00110	0.00110	0.00110
	(A1 * B1 * !D1 * !Y)	-0.00069	-0.00069	-0.00069
	(A1 * A2 * !B1 * D1 * !Y)	0.00119	0.00113	0.00110
	(A1 * A2 * !B1 * D1 * !Y)	-0.00083	-0.00086	-0.00085
	(A1 * A2 * !B1 * !D1 * !Y)	0.00110	0.00111	0.00110
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00068	-0.00069	-0.00069
	(A1 * !A2 * !B1 * D1 * !Y)	0.00128	0.00111	0.00109
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00100	-0.00118	-0.00118
	(!A1 * B1 * D1 * !Y)	0.00116	0.00116	0.00112
	(!A1 * B1 * D1 * !Y)	-0.00080	-0.00081	-0.00080
	(!A1 * B1 * !D1 * !Y)	0.00110	0.00110	0.00110
	(!A1 * B1 * !D1 * !Y)	-0.00069	-0.00069	-0.00069
	(!A1 * !B1 * D1 * !Y)	0.00128	0.00111	0.00109
	(!A1 * !B1 * D1 * !Y)	-0.00100	-0.00118	-0.00118

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00116	0.00118	0.00116
	(A1 * B1 * D1 * !Y)	-0.00169	-0.00170	-0.00169
	(A1 * B1 * !D1 * !Y)	0.00113	0.00114	0.00113
	(A1 * B1 * !D1 * !Y)	-0.00149	-0.00150	-0.00150
	(A1 * A2 * !B1 * D1 * !Y)	0.00124	0.00117	0.00114
	(A1 * A2 * !B1 * D1 * !Y)	-0.00180	-0.00181	-0.00180
	(A1 * A2 * !B1 * !D1 * !Y)	0.00114	0.00114	0.00113
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00148	-0.00149	-0.00149
	(A1 * !A2 * !B1 * D1 * !Y)	0.00144	0.00114	0.00113
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00216	-0.00252	-0.00251
	(!A1 * B1 * D1 * !Y)	0.00120	0.00122	0.00117
	(!A1 * B1 * D1 * !Y)	-0.00170	-0.00171	-0.00171
	(!A1 * B1 * !D1 * !Y)	0.00113	0.00114	0.00113
	(!A1 * B1 * !D1 * !Y)	-0.00149	-0.00150	-0.00150
	(!A1 * !B1 * D1 * !Y)	0.00144	0.00114	0.00113
	(!A1 * !B1 * D1 * !Y)	-0.00216	-0.00252	-0.00251

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00231	0.00231	0.00225
	(A1 * B1 * D1 * !Y)	-0.00332	-0.00335	-0.00334
	(A1 * B1 * !D1 * !Y)	0.00220	0.00221	0.00220
	(A1 * B1 * !D1 * !Y)	-0.00291	-0.00293	-0.00294
	(A1 * A2 * !B1 * D1 * !Y)	0.00252	0.00229	0.00221
	(A1 * A2 * !B1 * D1 * !Y)	-0.00350	-0.00355	-0.00351
	(A1 * A2 * !B1 * !D1 * !Y)	0.00223	0.00223	0.00220
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00290	-0.00291	-0.00292
	(A1 * !A2 * !B1 * D1 * !Y)	0.00295	0.00223	0.00218
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00408	-0.00491	-0.00492
	(!A1 * B1 * D1 * !Y)	0.00240	0.00240	0.00228
	(!A1 * B1 * D1 * !Y)	-0.00335	-0.00338	-0.00336
	(!A1 * B1 * !D1 * !Y)	0.00222	0.00222	0.00220
	(!A1 * B1 * !D1 * !Y)	-0.00293	-0.00293	-0.00294
	(!A1 * !B1 * D1 * !Y)	0.00295	0.00223	0.00218
	(!A1 * !B1 * D1 * !Y)	-0.00408	-0.00491	-0.00492

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)**	-0.00109	-0.00110	-0.00110
	(A1 * B1 * D1 * !Y)	0.00080	0.00080	0.00080
	(A1 * B1 * !D1 * !Y)	-0.00109	-0.00108	-0.00108
	(A1 * B1 * !D1 * !Y)	0.00072	0.00071	0.00072
	(A1 * A2 * !B1 * D1 * !Y)	-0.00110	-0.00110	-0.00110
	(A1 * A2 * !B1 * D1 * !Y)	0.00085	0.00086	0.00085
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00098	-0.00099	-0.00108
	(A1 * A2 * !B1 * !D1 * !Y)	0.00078	0.00077	0.00071
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00109	-0.00109	-0.00108
	(A1 * !A2 * !B1 * D1 * !Y)	0.00119	0.00119	0.00118
	(!A1 * B1 * D1 * !Y)	-0.00109	-0.00110	-0.00110
	(!A1 * B1 * D1 * !Y)	0.00080	0.00081	0.00080
	(!A1 * B1 * !D1 * !Y)	-0.00109	-0.00108	-0.00108
	(!A1 * B1 * !D1 * !Y)	0.00072	0.00071	0.00072
	(!A1 * !B1 * D1 * !Y)	-0.00109	-0.00109	-0.00108
	(!A1 * !B1 * D1 * !Y)	0.00118	0.00119	0.00118

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00114	-0.00114	-0.00114
	(A1 * B1 * D1 * !Y)	0.00169	0.00170	0.00169
	(A1 * B1 * !D1 * !Y)	-0.00111	-0.00111	-0.00111
	(A1 * B1 * !D1 * !Y)	0.00152	0.00152	0.00153
	(A1 * A2 * !B1 * D1 * !Y)	-0.00114	-0.00114	-0.00114
	(A1 * A2 * !B1 * D1 * !Y)	0.00180	0.00181	0.00180
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00093	-0.00094	-0.00106
	(A1 * A2 * !B1 * !D1 * !Y)	0.00164	0.00163	0.00155
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00113	-0.00113	-0.00112
	(A1 * !A2 * !B1 * D1 * !Y)	0.00251	0.00252	0.00251
	(!A1 * B1 * D1 * !Y)	-0.00114	-0.00114	-0.00114
	(!A1 * B1 * D1 * !Y)	0.00170	0.00171	0.00171
	(!A1 * B1 * !D1 * !Y)	-0.00111	-0.00110	-0.00109
	(!A1 * B1 * !D1 * !Y)	0.00154	0.00153	0.00155
	(!A1 * !B1 * D1 * !Y)	-0.00113	-0.00113	-0.00112
	(!A1 * !B1 * D1 * !Y)	0.00251	0.00252	0.00251

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00220	-0.00222	-0.00221
	(A1 * B1 * D1 * !Y)	0.00332	0.00335	0.00334
	(A1 * B1 * !D1 * !Y)	-0.00215	-0.00214	-0.00212
	(A1 * B1 * !D1 * !Y)	0.00302	0.00301	0.00303
	(A1 * A2 * !B1 * D1 * !Y)	-0.00220	-0.00222	-0.00221
	(A1 * A2 * !B1 * D1 * !Y)	0.00350	0.00355	0.00351
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00187	-0.00188	-0.00209
	(A1 * A2 * !B1 * !D1 * !Y)	0.00317	0.00313	0.00302
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00218	-0.00218	-0.00216
	(A1 * !A2 * !B1 * D1 * !Y)	0.00492	0.00492	0.00492
	(!A1 * B1 * D1 * !Y)	-0.00221	-0.00222	-0.00221
	(!A1 * B1 * D1 * !Y)	0.00335	0.00338	0.00336
	(!A1 * B1 * !D1 * !Y)	-0.00214	-0.00213	-0.00211
	(!A1 * B1 * !D1 * !Y)	0.00304	0.00302	0.00305
	(!A1 * !B1 * D1 * !Y)	-0.00218	-0.00218	-0.00216
	(!A1 * !B1 * D1 * !Y)	0.00493	0.00492	0.00492

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	0.00122	0.00122	0.00122
	(A1 * C1 * !Y)	-0.00064	-0.00064	-0.00064
	(A1 * B1 * !C1 * !Y)	0.00122	0.00122	0.00122
	(A1 * B1 * !C1 * !Y)	-0.00063	-0.00064	-0.00063
	(A1 * A2 * !B1 * !C1 * !Y)	0.00122	0.00123	0.00122
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00063	-0.00064	-0.00063
	(!A1 * C1 * !Y)	0.00122	0.00122	0.00122
	(!A1 * C1 * !Y)	-0.00064	-0.00064	-0.00064
	(!A1 * B1 * !C1 * !Y)	0.00122	0.00122	0.00122
	(!A1 * B1 * !C1 * !Y)	-0.00063	-0.00064	-0.00063

sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	0.00139	0.00139	0.00139
	(A1 * C1 * !Y)	-0.00129	-0.00129	-0.00129
	(A1 * B1 * !C1 * !Y)	0.00139	0.00139	0.00139
	(A1 * B1 * !C1 * !Y)	-0.00129	-0.00129	-0.00129
	(A1 * A2 * !B1 * !C1 * !Y)	0.00139	0.00140	0.00139
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00129	-0.00129	-0.00129
	(!A1 * C1 * !Y)	0.00139	0.00139	0.00139
	(!A1 * C1 * !Y)	-0.00130	-0.00129	-0.00129
	(!A1 * B1 * !C1 * !Y)	0.00139	0.00139	0.00139
	(!A1 * B1 * !C1 * !Y)	-0.00129	-0.00129	-0.00129
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	0.00276	0.00276	0.00276
	(A1 * C1 * !Y)	-0.00255	-0.00254	-0.00254
	(A1 * B1 * !C1 * !Y)	0.00278	0.00276	0.00276
	(A1 * B1 * !C1 * !Y)	-0.00256	-0.00253	-0.00253
	(A1 * A2 * !B1 * !C1 * !Y)	0.00276	0.00277	0.00276
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00254	-0.00255	-0.00253
	(!A1 * C1 * !Y)	0.00277	0.00276	0.00276
	(!A1 * C1 * !Y)	-0.00255	-0.00254	-0.00254
	(!A1 * B1 * !C1 * !Y)	0.00276	0.00277	0.00276
	(!A1 * B1 * !C1 * !Y)	-0.00254	-0.00254	-0.00253

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

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

sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	-0.00118	-0.00118	-0.00122
	(A1 * C1 * !Y)	0.00068	0.00068	0.00065
	(A1 * B1 * !C1 * !Y)	-0.00111	-0.00111	-0.00120
	(A1 * B1 * !C1 * !Y)	0.00072	0.00072	0.00065
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00095	-0.00095	-0.00116
	(A1 * A2 * !B1 * !C1 * !Y)	0.00083	0.00083	0.00069
	(!A1 * C1 * !Y)	-0.00118	-0.00118	-0.00122
	(!A1 * C1 * !Y)	0.00068	0.00068	0.00065
	(!A1 * B1 * !C1 * !Y)	-0.00111	-0.00111	-0.00120
	(!A1 * B1 * !C1 * !Y)	0.00072	0.00072	0.00065
sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	-0.00125	-0.00125	-0.00138
	(A1 * C1 * !Y)	0.00144	0.00143	0.00133
	(A1 * B1 * !C1 * !Y)	-0.00110	-0.00110	-0.00134
	(A1 * B1 * !C1 * !Y)	0.00151	0.00150	0.00133
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00079	-0.00080	-0.00125
	(A1 * A2 * !B1 * !C1 * !Y)	0.00172	0.00170	0.00140
	(!A1 * C1 * !Y)	-0.00125	-0.00125	-0.00138
	(!A1 * C1 * !Y)	0.00144	0.00143	0.00133
	(!A1 * B1 * !C1 * !Y)	-0.00109	-0.00110	-0.00134
	(!A1 * B1 * !C1 * !Y)	0.00150	0.00150	0.00133
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	-0.00250	-0.00252	-0.00273
	(A1 * C1 * !Y)	0.00278	0.00277	0.00260
	(A1 * B1 * !C1 * !Y)	-0.00219	-0.00220	-0.00266
	(A1 * B1 * !C1 * !Y)	0.00297	0.00294	0.00263
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00161	-0.00164	-0.00249
	(A1 * A2 * !B1 * !C1 * !Y)	0.00334	0.00331	0.00274
	(!A1 * C1 * !Y)	-0.00251	-0.00252	-0.00273
	(!A1 * C1 * !Y)	0.00279	0.00277	0.00261
	(!A1 * B1 * !C1 * !Y)	-0.00219	-0.00221	-0.00266
	(!A1 * B1 * !C1 * !Y)	0.00297	0.00295	0.00263

SKY130_FD_SC_HS__A2111Ox

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a2111o_1	14.38560
sky130_fd_sc_hs__a2111o_2	15.98400
sky130_fd_sc_hs__a2111o_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	C1	D1	X
sky130_fd_sc_hs__a2111o_1	0.00247	0.00259	0.00248	0.00253	0.00249	0.77808
sky130_fd_sc_hs__a2111o_2	0.00275	0.00285	0.00269	0.00278	0.00291	1.49685
sky130_fd_sc_hs__a2111o_4	0.00465	0.00455	0.00477	0.00478	0.00472	2.88339

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2111o_1	0.00000	0.01998	0.06470
sky130_fd_sc_hs__a2111o_2	0.00000	0.01896	0.06572
sky130_fd_sc_hs__a2111o_4	0.00000	0.05217	0.14272

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)	0.11668	0.83594	7.24096
	A2->X (RR)	0.12196	0.83854	7.36853
	B1->X (RR)	0.09250	0.78674	7.13505
	C1->X (RR)	0.09023	0.77289	7.07452
	D1->X (RR)	0.08400	0.75221	7.03620
sky130_fd_sc_hs__a2111o_2	A1->X (RR)	0.11890	0.74501	7.30440
	A2->X (RR)	0.12403	0.73947	7.39612
	B1->X (RR)	0.09040	0.68868	7.18058
	C1->X (RR)	0.08739	0.67394	7.11378
	D1->X (RR)	0.08289	0.65831	7.06861
sky130_fd_sc_hs__a2111o_4	A1->X (RR)	0.12745	0.67553	7.36729
	A2->X (RR)	0.13436	0.67433	7.48986
	B1->X (RR)	0.08946	0.60190	7.22735
	C1->X (RR)	0.08727	0.58990	7.16707
	D1->X (RR)	0.08093	0.57011	7.11558

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111o_1	A1->X (FF)	0.48084	1.09345	5.28467
	A2->X (FF)	0.52745	1.15069	5.42713
	B1->X (FF)	0.49095	1.09943	5.45172
	C1->X (FF)	0.44566	1.06372	5.48080
	D1->X (FF)	0.37544	0.96883	5.12227
sky130_fd_sc_hs__a2111o_2	A1->X (FF)	0.57866	1.19430	5.68518
	A2->X (FF)	0.62091	1.24911	5.81198
	B1->X (FF)	0.58566	1.19609	5.85977
	C1->X (FF)	0.53539	1.15523	5.91824
	D1->X (FF)	0.46629	1.06079	5.59208
sky130_fd_sc_hs__a2111o_4	A1->X (FF)	0.60289	1.17616	5.66879
	A2->X (FF)	0.68162	1.26932	5.83180
	B1->X (FF)	0.65078	1.22443	5.91147
	C1->X (FF)	0.59922	1.18243	6.01376
	D1->X (FF)	0.48875	1.04307	5.61609

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111o_1	A1	0.00909	0.00908	0.01061
	A1	0.00427	0.00426	0.00580
	A2	0.00960	0.00959	0.01047
	A2	0.00426	0.00425	0.00517
	B1	0.00807	0.00805	0.00975
	B1	0.00335	0.00333	0.00513
	C1	0.00701	0.00700	0.00881
	C1	0.00281	0.00278	0.00465
	D1	0.00590	0.00584	0.00865
	D1	0.00219	0.00229	0.00510
sky130_fd_sc_hs__a2111o_2	A1	0.01150	0.01166	0.01306
	A1	0.00614	0.00630	0.00781
	A2	0.01222	0.01239	0.01319
	A2	0.00617	0.00635	0.00722
	B1	0.01038	0.01056	0.01202
	B1	0.00512	0.00530	0.00689
	C1	0.00912	0.00928	0.01085
	C1	0.00438	0.00454	0.00621
	D1	0.00804	0.00815	0.01036
	D1	0.00378	0.00389	0.00618

sky130_fd_sc_hs__a2111o_4	**A1**	0.02150	0.02185	0.02499
	A1	0.01214	0.01249	0.01578
	A2	0.02280	0.02324	0.02503
	A2	0.01212	0.01256	0.01445
	B1	0.01990	0.02029	0.02361
	B1	0.01030	0.01071	0.01432
	C1	0.01762	0.01800	0.02146
	C1	0.00915	0.00953	0.01325
	D1	0.01471	0.01505	0.02020
	D1	0.00742	0.00776	0.01305

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**A1**	0.00271	0.00266	0.00348
	A1	0.00765	0.00771	0.00813
	A2	0.00313	0.00317	0.00385
	A2	0.00855	0.00861	0.00896
	B1	0.00305	0.00310	0.00424
	B1	0.00776	0.00783	0.00860
	C1	0.00304	0.00302	0.00469
	C1	0.00721	0.00729	0.00846
	D1	0.00276	0.00303	0.00630
	D1	0.00675	0.00696	0.00976

sky130_fd_sc_hs__a2111o_2	**A1**	0.00466	0.00480	0.00602
	A1	0.01018	0.01034	0.01069
	A2	0.00500	0.00515	0.00560
	A2	0.01115	0.01131	0.01162
	B1	0.00501	0.00516	0.00588
	B1	0.01029	0.01045	0.01108
	C1	0.00500	0.00513	0.00706
	C1	0.00970	0.00988	0.01094
	D1	0.00492	0.00486	0.00850
	D1	0.00914	0.00939	0.01185
sky130_fd_sc_hs__a2111o_4	**A1**	0.00890	0.00916	0.01158
	A1	0.01856	0.01885	0.01977
	A2	0.00970	0.01005	0.01243
	A2	0.02057	0.02092	0.02178
	B1	0.00861	0.00901	0.01266
	B1	0.01938	0.01957	0.02095
	C1	0.00974	0.00998	0.01264
	C1	0.01816	0.01843	0.02058
	D1	0.00972	0.00967	0.01654
	D1	0.01691	0.01734	0.02291

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)**	0.00104	0.00105	0.00104
	(A2 * B1 * D1 * X)	-0.00107	-0.00112	-0.00111
	(A2 * B1 * C1 * !D1 * X)	0.00104	0.00105	0.00104
	(A2 * B1 * C1 * !D1 * X)	-0.00107	-0.00112	-0.00111
	(A2 * B1 * !C1 * !D1 * X)	0.00104	0.00105	0.00104
	(A2 * B1 * !C1 * !D1 * X)	-0.00107	-0.00112	-0.00111
	(A2 * !B1 * C1 * D1 * X)	0.00104	0.00105	0.00104
	(A2 * !B1 * C1 * D1 * X)	-0.00101	-0.00108	-0.00107
	(A2 * !B1 * C1 * !D1 * X)	0.00104	0.00105	0.00104
	(A2 * !B1 * C1 * !D1 * X)	-0.00101	-0.00108	-0.00107
	(A2 * !B1 * !C1 * D1 * X)	0.00104	0.00105	0.00104
	(A2 * !B1 * !C1 * D1 * X)	-0.00099	-0.00106	-0.00106
	(!A2 * B1 * D1 * X)	0.00099	0.00100	0.00099
	(!A2 * B1 * D1 * X)	-0.00114	-0.00114	-0.00114
	(!A2 * B1 * C1 * !D1 * X)	0.00099	0.00100	0.00099
	(!A2 * B1 * C1 * !D1 * X)	-0.00114	-0.00114	-0.00114
	(!A2 * B1 * !C1 * !D1 * X)	0.00099	0.00100	0.00099
	(!A2 * B1 * !C1 * !D1 * X)	-0.00114	-0.00114	-0.00114
	(!A2 * !B1 * C1 * D1 * X)	0.00099	0.00100	0.00099
	(!A2 * !B1 * C1 * D1 * X)	-0.00114	-0.00114	-0.00114
	(!A2 * !B1 * C1 * !D1 * X)	0.00099	0.00100	0.00099
	(!A2 * !B1 * C1 * !D1 * X)	-0.00114	-0.00115	-0.00114
	(!A2 * !B1 * !C1 * D1 * X)	0.00099	0.00100	0.00099
	(!A2 * !B1 * !C1 * D1 * X)	-0.00114	-0.00115	-0.00114
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00045	0.00045	0.00044
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00132	-0.00133	-0.00135

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	0.00107	0.00106	0.00106
	(A2 * B1 * D1 * X)	-0.00121	-0.00126	-0.00125
	(A2 * B1 * C1 * !D1 * X)	0.00107	0.00106	0.00106
	(A2 * B1 * C1 * !D1 * X)	-0.00121	-0.00126	-0.00125
	(A2 * B1 * !C1 * !D1 * X)	0.00107	0.00106	0.00106
	(A2 * B1 * !C1 * !D1 * X)	-0.00121	-0.00126	-0.00125
	(A2 * !B1 * C1 * D1 * X)	0.00106	0.00107	0.00106
	(A2 * !B1 * C1 * D1 * X)	-0.00114	-0.00122	-0.00121
	(A2 * !B1 * C1 * !D1 * X)	0.00106	0.00107	0.00106
	(A2 * !B1 * C1 * !D1 * X)	-0.00114	-0.00122	-0.00121
	(A2 * !B1 * !C1 * D1 * X)	0.00106	0.00107	0.00106
	(A2 * !B1 * !C1 * D1 * X)	-0.00112	-0.00119	-0.00119
	(!A2 * B1 * D1 * X)	0.00100	0.00101	0.00100
	(!A2 * B1 * D1 * X)	-0.00128	-0.00129	-0.00129
	(!A2 * B1 * C1 * !D1 * X)	0.00100	0.00101	0.00100
	(!A2 * B1 * C1 * !D1 * X)	-0.00128	-0.00129	-0.00129
	(!A2 * B1 * !C1 * !D1 * X)	0.00100	0.00101	0.00100
	(!A2 * B1 * !C1 * !D1 * X)	-0.00128	-0.00129	-0.00129
	(!A2 * !B1 * C1 * D1 * X)	0.00100	0.00101	0.00100
	(!A2 * !B1 * C1 * D1 * X)	-0.00129	-0.00130	-0.00129
	(!A2 * !B1 * C1 * !D1 * X)	0.00100	0.00101	0.00100
	(!A2 * !B1 * C1 * !D1 * X)	-0.00128	-0.00129	-0.00129
	(!A2 * !B1 * !C1 * D1 * X)	0.00100	0.00101	0.00100
	(!A2 * !B1 * !C1 * D1 * X)	-0.00128	-0.00129	-0.00129
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00038	0.00039	0.00037
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00149	-0.00150	-0.00152

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	0.00178	0.00178	0.00177
	(A2 * B1 * D1 * X)	-0.00219	-0.00227	-0.00226
	(A2 * B1 * C1 * !D1 * X)	0.00178	0.00178	0.00177
	(A2 * B1 * C1 * !D1 * X)	-0.00219	-0.00227	-0.00226
	(A2 * B1 * !C1 * !D1 * X)	0.00178	0.00178	0.00177
	(A2 * B1 * !C1 * !D1 * X)	-0.00217	-0.00225	-0.00226
	(A2 * !B1 * C1 * D1 * X)	0.00177	0.00179	0.00177
	(A2 * !B1 * C1 * D1 * X)	-0.00204	-0.00218	-0.00217
	(A2 * !B1 * C1 * !D1 * X)	0.00177	0.00179	0.00177
	(A2 * !B1 * C1 * !D1 * X)	-0.00204	-0.00218	-0.00217
	(A2 * !B1 * !C1 * D1 * X)	0.00177	0.00180	0.00177
	(A2 * !B1 * !C1 * D1 * X)	-0.00201	-0.00215	-0.00214
	(!A2 * B1 * D1 * X)	0.00168	0.00170	0.00168
	(!A2 * B1 * D1 * X)	-0.00232	-0.00234	-0.00232
	(!A2 * B1 * C1 * !D1 * X)	0.00168	0.00170	0.00168
	(!A2 * B1 * C1 * !D1 * X)	-0.00232	-0.00234	-0.00232
	(!A2 * B1 * !C1 * !D1 * X)	0.00168	0.00169	0.00168
	(!A2 * B1 * !C1 * !D1 * X)	-0.00232	-0.00234	-0.00232
	(!A2 * !B1 * C1 * D1 * X)	0.00168	0.00170	0.00168
	(!A2 * !B1 * C1 * D1 * X)	-0.00232	-0.00234	-0.00232
	(!A2 * !B1 * C1 * !D1 * X)	0.00168	0.00170	0.00168
	(!A2 * !B1 * C1 * !D1 * X)	-0.00232	-0.00234	-0.00232
	(!A2 * !B1 * !C1 * D1 * X)	0.00168	0.00170	0.00168
	(!A2 * !B1 * !C1 * D1 * X)	-0.00232	-0.00234	-0.00232
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00067	0.00067	0.00063
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00265	-0.00266	-0.00272

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)**	-0.00104	-0.00105	-0.00104
	(A2 * B1 * D1 * X)	0.00111	0.00112	0.00111
	(A2 * B1 * C1 * !D1 * X)	-0.00104	-0.00105	-0.00104
	(A2 * B1 * C1 * !D1 * X)	0.00111	0.00112	0.00111
	(A2 * B1 * !C1 * !D1 * X)	-0.00104	-0.00105	-0.00104
	(A2 * B1 * !C1 * !D1 * X)	0.00111	0.00112	0.00111
	(A2 * !B1 * C1 * D1 * X)	-0.00104	-0.00104	-0.00104
	(A2 * !B1 * C1 * D1 * X)	0.00107	0.00108	0.00107
	(A2 * !B1 * C1 * !D1 * X)	-0.00104	-0.00104	-0.00104
	(A2 * !B1 * C1 * !D1 * X)	0.00107	0.00108	0.00107
	(A2 * !B1 * !C1 * D1 * X)	-0.00104	-0.00104	-0.00104
	(A2 * !B1 * !C1 * D1 * X)	0.00105	0.00106	0.00106
	(!A2 * B1 * D1 * X)	-0.00097	-0.00100	-0.00099
	(!A2 * B1 * D1 * X)	0.00114	0.00115	0.00114
	(!A2 * B1 * C1 * !D1 * X)	-0.00097	-0.00100	-0.00099
	(!A2 * B1 * C1 * !D1 * X)	0.00114	0.00115	0.00114
	(!A2 * B1 * !C1 * !D1 * X)	-0.00097	-0.00100	-0.00099
	(!A2 * B1 * !C1 * !D1 * X)	0.00114	0.00116	0.00114
	(!A2 * !B1 * C1 * D1 * X)	-0.00097	-0.00099	-0.00099
	(!A2 * !B1 * C1 * D1 * X)	0.00114	0.00114	0.00114
	(!A2 * !B1 * C1 * !D1 * X)	-0.00097	-0.00100	-0.00099
	(!A2 * !B1 * C1 * !D1 * X)	0.00114	0.00116	0.00114
	(!A2 * !B1 * !C1 * D1 * X)	-0.00097	-0.00100	-0.00099
	(!A2 * !B1 * !C1 * D1 * X)	0.00114	0.00116	0.00114
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00044	-0.00044	-0.00043
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00136	0.00136	0.00135

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	-0.00106	-0.00106	-0.00106
	(A2 * B1 * D1 * X)	0.00126	0.00127	0.00125
	(A2 * B1 * C1 * !D1 * X)	-0.00106	-0.00106	-0.00106
	(A2 * B1 * C1 * !D1 * X)	0.00126	0.00127	0.00125
	(A2 * B1 * !C1 * !D1 * X)	-0.00106	-0.00106	-0.00106
	(A2 * B1 * !C1 * !D1 * X)	0.00126	0.00127	0.00125
	(A2 * !B1 * C1 * D1 * X)	-0.00106	-0.00106	-0.00106
	(A2 * !B1 * C1 * D1 * X)	0.00122	0.00122	0.00121
	(A2 * !B1 * C1 * !D1 * X)	-0.00106	-0.00106	-0.00106
	(A2 * !B1 * C1 * !D1 * X)	0.00122	0.00122	0.00121
	(A2 * !B1 * !C1 * D1 * X)	-0.00106	-0.00106	-0.00106
	(A2 * !B1 * !C1 * D1 * X)	0.00120	0.00119	0.00119
	(!A2 * B1 * D1 * X)	-0.00098	-0.00101	-0.00100
	(!A2 * B1 * D1 * X)	0.00129	0.00130	0.00129
	(!A2 * B1 * C1 * !D1 * X)	-0.00098	-0.00101	-0.00100
	(!A2 * B1 * C1 * !D1 * X)	0.00129	0.00130	0.00129
	(!A2 * B1 * !C1 * !D1 * X)	-0.00098	-0.00101	-0.00100
	(!A2 * B1 * !C1 * !D1 * X)	0.00130	0.00129	0.00129
	(!A2 * !B1 * C1 * D1 * X)	-0.00098	-0.00101	-0.00100
	(!A2 * !B1 * C1 * D1 * X)	0.00129	0.00130	0.00129
	(!A2 * !B1 * C1 * !D1 * X)	-0.00098	-0.00101	-0.00100
	(!A2 * !B1 * C1 * !D1 * X)	0.00130	0.00129	0.00129
	(!A2 * !B1 * !C1 * D1 * X)	-0.00098	-0.00101	-0.00100
	(!A2 * !B1 * !C1 * D1 * X)	0.00130	0.00129	0.00129
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00036	-0.00036	-0.00036
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00152	0.00153	0.00152

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	-0.00177	-0.00178	-0.00177
	(A2 * B1 * D1 * X)	0.00226	0.00228	0.00226
	(A2 * B1 * C1 * !D1 * X)	-0.00176	-0.00178	-0.00177
	(A2 * B1 * C1 * !D1 * X)	0.00225	0.00228	0.00226
	(A2 * B1 * !C1 * !D1 * X)	-0.00176	-0.00176	-0.00177
	(A2 * B1 * !C1 * !D1 * X)	0.00225	0.00225	0.00226
	(A2 * !B1 * C1 * D1 * X)	-0.00177	-0.00177	-0.00177
	(A2 * !B1 * C1 * D1 * X)	0.00217	0.00218	0.00217
	(A2 * !B1 * C1 * !D1 * X)	-0.00176	-0.00177	-0.00177
	(A2 * !B1 * C1 * !D1 * X)	0.00216	0.00218	0.00217
	(A2 * !B1 * !C1 * D1 * X)	-0.00177	-0.00178	-0.00177
	(A2 * !B1 * !C1 * D1 * X)	0.00213	0.00215	0.00214
	(!A2 * B1 * D1 * X)	-0.00162	-0.00170	-0.00168
	(!A2 * B1 * D1 * X)	0.00232	0.00234	0.00233
	(!A2 * B1 * C1 * !D1 * X)	-0.00161	-0.00169	-0.00168
	(!A2 * B1 * C1 * !D1 * X)	0.00232	0.00234	0.00233
	(!A2 * B1 * !C1 * !D1 * X)	-0.00161	-0.00169	-0.00168
	(!A2 * B1 * !C1 * !D1 * X)	0.00232	0.00235	0.00233
	(!A2 * !B1 * C1 * D1 * X)	-0.00161	-0.00169	-0.00168
	(!A2 * !B1 * C1 * D1 * X)	0.00232	0.00234	0.00233
	(!A2 * !B1 * C1 * !D1 * X)	-0.00161	-0.00170	-0.00168
	(!A2 * !B1 * C1 * !D1 * X)	0.00232	0.00236	0.00233
	(!A2 * !B1 * !C1 * D1 * X)	-0.00161	-0.00170	-0.00168
	(!A2 * !B1 * !C1 * D1 * X)	0.00232	0.00236	0.00233
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00061	-0.00061	-0.00061
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00274	0.00273	0.00273

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)**	0.00095	0.00095	0.00095
	(A1 * B1 * D1 * X)	-0.00111	-0.00116	-0.00116
	(A1 * B1 * C1 * !D1 * X)	0.00095	0.00095	0.00095
	(A1 * B1 * C1 * !D1 * X)	-0.00111	-0.00116	-0.00116
	(A1 * B1 * !C1 * !D1 * X)	0.00095	0.00095	0.00095
	(A1 * B1 * !C1 * !D1 * X)	-0.00111	-0.00116	-0.00116
	(A1 * !B1 * C1 * D1 * X)	0.00095	0.00096	0.00095
	(A1 * !B1 * C1 * D1 * X)	-0.00105	-0.00112	-0.00111
	(A1 * !B1 * C1 * !D1 * X)	0.00095	0.00096	0.00095
	(A1 * !B1 * C1 * !D1 * X)	-0.00105	-0.00112	-0.00111
	(A1 * !B1 * !C1 * D1 * X)	0.00095	0.00096	0.00095
	(A1 * !B1 * !C1 * D1 * X)	-0.00103	-0.00109	-0.00109
	(!A1 * B1 * X)	0.00090	0.00090	0.00090
	(!A1 * B1 * X)	-0.00119	-0.00119	-0.00119
	(!A1 * !B1 * C1 * X)	0.00090	0.00090	0.00090
	(!A1 * !B1 * C1 * X)	-0.00119	-0.00119	-0.00119
	(!A1 * !B1 * !C1 * D1 * X)	0.00090	0.00090	0.00090
	(!A1 * !B1 * !C1 * D1 * X)	-0.00119	-0.00119	-0.00119
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00078	0.00080	0.00079
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00130	-0.00131	-0.00130

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00107	0.00107	0.00107
	(A1 * B1 * D1 * X)	-0.00121	-0.00126	-0.00126
	(A1 * B1 * C1 * !D1 * X)	0.00107	0.00107	0.00107
	(A1 * B1 * C1 * !D1 * X)	-0.00121	-0.00126	-0.00126
	(A1 * B1 * !C1 * !D1 * X)	0.00107	0.00107	0.00107
	(A1 * B1 * !C1 * !D1 * X)	-0.00121	-0.00126	-0.00126
	(A1 * !B1 * C1 * D1 * X)	0.00107	0.00108	0.00107
	(A1 * !B1 * C1 * D1 * X)	-0.00114	-0.00122	-0.00121
	(A1 * !B1 * C1 * !D1 * X)	0.00107	0.00108	0.00107
	(A1 * !B1 * C1 * !D1 * X)	-0.00114	-0.00122	-0.00121
	(A1 * !B1 * !C1 * D1 * X)	0.00107	0.00108	0.00107
	(A1 * !B1 * !C1 * D1 * X)	-0.00112	-0.00119	-0.00119
	(!A1 * B1 * X)	0.00101	0.00102	0.00101
	(!A1 * B1 * X)	-0.00129	-0.00130	-0.00129
	(!A1 * !B1 * C1 * X)	0.00101	0.00102	0.00101
	(!A1 * !B1 * C1 * X)	-0.00129	-0.00130	-0.00129
	(!A1 * !B1 * !C1 * D1 * X)	0.00101	0.00102	0.00101
	(!A1 * !B1 * !C1 * D1 * X)	-0.00129	-0.00130	-0.00129
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00094	0.00095	0.00094
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00137	-0.00138	-0.00137

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00182	0.00183	0.00182
	(A1 * B1 * D1 * X)	-0.00219	-0.00227	-0.00228
	(A1 * B1 * C1 * !D1 * X)	0.00182	0.00183	0.00182
	(A1 * B1 * C1 * !D1 * X)	-0.00219	-0.00227	-0.00228
	(A1 * B1 * !C1 * !D1 * X)	0.00182	0.00183	0.00182
	(A1 * B1 * !C1 * !D1 * X)	-0.00217	-0.00229	-0.00228
	(A1 * !B1 * C1 * D1 * X)	0.00182	0.00182	0.00182
	(A1 * !B1 * C1 * D1 * X)	-0.00206	-0.00220	-0.00219
	(A1 * !B1 * C1 * !D1 * X)	0.00182	0.00182	0.00182
	(A1 * !B1 * C1 * !D1 * X)	-0.00206	-0.00220	-0.00219
	(A1 * !B1 * !C1 * D1 * X)	0.00183	0.00185	0.00182
	(A1 * !B1 * !C1 * D1 * X)	-0.00203	-0.00216	-0.00215
	(!A1 * B1 * X)	0.00172	0.00174	0.00172
	(!A1 * B1 * X)	-0.00234	-0.00235	-0.00234
	(!A1 * !B1 * C1 * X)	0.00172	0.00174	0.00172
	(!A1 * !B1 * C1 * X)	-0.00234	-0.00235	-0.00234
	(!A1 * !B1 * !C1 * D1 * X)	0.00172	0.00172	0.00172
	(!A1 * !B1 * !C1 * D1 * X)	-0.00234	-0.00234	-0.00234
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00172	0.00173	0.00172
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00234	-0.00235	-0.00234

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)**	-0.00095	-0.00095	-0.00095
	(A1 * B1 * D1 * X)	0.00117	0.00116	0.00116
	(A1 * B1 * C1 * !D1 * X)	-0.00095	-0.00095	-0.00095
	(A1 * B1 * C1 * !D1 * X)	0.00116	0.00116	0.00116
	(A1 * B1 * !C1 * !D1 * X)	-0.00095	-0.00095	-0.00095
	(A1 * B1 * !C1 * !D1 * X)	0.00117	0.00116	0.00116
	(A1 * !B1 * C1 * D1 * X)	-0.00095	-0.00095	-0.00095
	(A1 * !B1 * C1 * D1 * X)	0.00112	0.00112	0.00111
	(A1 * !B1 * C1 * !D1 * X)	-0.00095	-0.00095	-0.00095
	(A1 * !B1 * C1 * !D1 * X)	0.00112	0.00112	0.00111
	(A1 * !B1 * !C1 * D1 * X)	-0.00095	-0.00094	-0.00095
	(A1 * !B1 * !C1 * D1 * X)	0.00110	0.00109	0.00109
	(!A1 * B1 * X)	-0.00088	-0.00090	-0.00090
	(!A1 * B1 * X)	0.00119	0.00120	0.00119
	(!A1 * !B1 * C1 * X)	-0.00088	-0.00090	-0.00090
	(!A1 * !B1 * C1 * X)	0.00119	0.00120	0.00119
	(!A1 * !B1 * !C1 * D1 * X)	-0.00088	-0.00090	-0.00090
	(!A1 * !B1 * !C1 * D1 * X)	0.00119	0.00120	0.00119
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00073	-0.00078	-0.00079
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00134	0.00131	0.00131

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00107	-0.00107	-0.00107
	(A1 * B1 * D1 * X)	0.00126	0.00126	0.00126
	(A1 * B1 * C1 * !D1 * X)	-0.00107	-0.00107	-0.00107
	(A1 * B1 * C1 * !D1 * X)	0.00126	0.00126	0.00126
	(A1 * B1 * !C1 * !D1 * X)	-0.00107	-0.00107	-0.00107
	(A1 * B1 * !C1 * !D1 * X)	0.00126	0.00126	0.00126
	(A1 * !B1 * C1 * D1 * X)	-0.00107	-0.00107	-0.00107
	(A1 * !B1 * C1 * D1 * X)	0.00121	0.00122	0.00121
	(A1 * !B1 * C1 * !D1 * X)	-0.00107	-0.00107	-0.00107
	(A1 * !B1 * C1 * !D1 * X)	0.00121	0.00122	0.00121
	(A1 * !B1 * !C1 * D1 * X)	-0.00107	-0.00106	-0.00107
	(A1 * !B1 * !C1 * D1 * X)	0.00119	0.00119	0.00119
	(!A1 * B1 * X)	-0.00099	-0.00102	-0.00101
	(!A1 * B1 * X)	0.00130	0.00131	0.00130
	(!A1 * !B1 * C1 * X)	-0.00099	-0.00102	-0.00101
	(!A1 * !B1 * C1 * X)	0.00130	0.00131	0.00130
	(!A1 * !B1 * !C1 * D1 * X)	-0.00099	-0.00102	-0.00101
	(!A1 * !B1 * !C1 * D1 * X)	0.00130	0.00131	0.00130
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00088	-0.00094	-0.00094
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00142	0.00140	0.00138

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00181	-0.00181	-0.00182
	(A1 * B1 * D1 * X)	0.00227	0.00227	0.00228
	(A1 * B1 * C1 * !D1 * X)	-0.00182	-0.00181	-0.00182
	(A1 * B1 * C1 * !D1 * X)	0.00228	0.00227	0.00228
	(A1 * B1 * !C1 * !D1 * X)	-0.00181	-0.00183	-0.00182
	(A1 * B1 * !C1 * !D1 * X)	0.00227	0.00231	0.00228
	(A1 * !B1 * C1 * D1 * X)	-0.00181	-0.00182	-0.00182
	(A1 * !B1 * C1 * D1 * X)	0.00218	0.00220	0.00219
	(A1 * !B1 * C1 * !D1 * X)	-0.00181	-0.00182	-0.00182
	(A1 * !B1 * C1 * !D1 * X)	0.00218	0.00220	0.00219
	(A1 * !B1 * !C1 * D1 * X)	-0.00181	-0.00182	-0.00182
	(A1 * !B1 * !C1 * D1 * X)	0.00214	0.00216	0.00215
	(!A1 * B1 * X)	-0.00167	-0.00173	-0.00172
	(!A1 * B1 * X)	0.00234	0.00236	0.00235
	(!A1 * !B1 * C1 * X)	-0.00167	-0.00173	-0.00172
	(!A1 * !B1 * C1 * X)	0.00234	0.00236	0.00235
	(!A1 * !B1 * !C1 * D1 * X)	-0.00166	-0.00172	-0.00172
	(!A1 * !B1 * !C1 * D1 * X)	0.00234	0.00236	0.00235
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00162	-0.00173	-0.00172
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00240	0.00237	0.00235

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)**	0.00097	0.00098	0.00097
	(A1 * A2 * C1 * D1 * X)	-0.00083	-0.00082	-0.00082
	(A1 * A2 * C1 * !D1 * X)	0.00098	0.00098	0.00097
	(A1 * A2 * C1 * !D1 * X)	-0.00081	-0.00081	-0.00081
	(A1 * A2 * !C1 * D1 * X)	0.00098	0.00098	0.00097
	(A1 * A2 * !C1 * D1 * X)	-0.00077	-0.00078	-0.00077
	(A1 * A2 * !C1 * !D1 * X)	0.00097	0.00097	0.00097
	(A1 * A2 * !C1 * !D1 * X)	-0.00066	-0.00066	-0.00066
	(A1 * !A2 * C1 * D1 * X)	0.00097	0.00098	0.00097
	(A1 * !A2 * C1 * D1 * X)	-0.00107	-0.00110	-0.00109
	(A1 * !A2 * C1 * !D1 * X)	0.00100	0.00098	0.00097
	(A1 * !A2 * C1 * !D1 * X)	-0.00103	-0.00110	-0.00109
	(A1 * !A2 * !C1 * D1 * X)	0.00099	0.00098	0.00097
	(A1 * !A2 * !C1 * D1 * X)	-0.00096	-0.00104	-0.00104
	(!A1 * C1 * D1 * X)	0.00097	0.00098	0.00097
	(!A1 * C1 * D1 * X)	-0.00107	-0.00110	-0.00109
	(!A1 * C1 * !D1 * X)	0.00100	0.00098	0.00097
	(!A1 * C1 * !D1 * X)	-0.00102	-0.00110	-0.00109
	(!A1 * !C1 * D1 * X)	0.00100	0.00098	0.00097
	(!A1 * !C1 * D1 * X)	-0.00096	-0.00104	-0.00104

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	0.00104	0.00103	0.00103
	(A1 * A2 * C1 * D1 * X)	-0.00092	-0.00092	-0.00092
	(A1 * A2 * C1 * !D1 * X)	0.00104	0.00103	0.00103
	(A1 * A2 * C1 * !D1 * X)	-0.00089	-0.00090	-0.00089
	(A1 * A2 * !C1 * D1 * X)	0.00103	0.00104	0.00103
	(A1 * A2 * !C1 * D1 * X)	-0.00085	-0.00086	-0.00085
	(A1 * A2 * !C1 * !D1 * X)	0.00104	0.00103	0.00103
	(A1 * A2 * !C1 * !D1 * X)	-0.00074	-0.00073	-0.00073
	(A1 * !A2 * C1 * D1 * X)	0.00104	0.00104	0.00103
	(A1 * !A2 * C1 * D1 * X)	-0.00119	-0.00123	-0.00122
	(A1 * !A2 * C1 * !D1 * X)	0.00105	0.00104	0.00103
	(A1 * !A2 * C1 * !D1 * X)	-0.00117	-0.00122	-0.00122
	(A1 * !A2 * !C1 * D1 * X)	0.00104	0.00104	0.00103
	(A1 * !A2 * !C1 * D1 * X)	-0.00108	-0.00116	-0.00116
	(!A1 * C1 * D1 * X)	0.00104	0.00104	0.00103
	(!A1 * C1 * D1 * X)	-0.00119	-0.00122	-0.00122
	(!A1 * C1 * !D1 * X)	0.00105	0.00104	0.00103
	(!A1 * C1 * !D1 * X)	-0.00117	-0.00122	-0.00122
	(!A1 * !C1 * D1 * X)	0.00104	0.00104	0.00103
	(!A1 * !C1 * D1 * X)	-0.00107	-0.00116	-0.00116

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	0.00192	0.00191	0.00190
	(A1 * A2 * C1 * D1 * X)	-0.00169	-0.00171	-0.00169
	(A1 * A2 * C1 * !D1 * X)	0.00193	0.00191	0.00190
	(A1 * A2 * C1 * !D1 * X)	-0.00165	-0.00166	-0.00166
	(A1 * A2 * !C1 * D1 * X)	0.00190	0.00193	0.00191
	(A1 * A2 * !C1 * D1 * X)	-0.00161	-0.00162	-0.00161
	(A1 * A2 * !C1 * !D1 * X)	0.00190	0.00190	0.00190
	(A1 * A2 * !C1 * !D1 * X)	-0.00137	-0.00137	-0.00137
	(A1 * !A2 * C1 * D1 * X)	0.00190	0.00192	0.00190
	(A1 * !A2 * C1 * D1 * X)	-0.00217	-0.00226	-0.00224
	(A1 * !A2 * C1 * !D1 * X)	0.00192	0.00192	0.00190
	(A1 * !A2 * C1 * !D1 * X)	-0.00213	-0.00225	-0.00225
	(A1 * !A2 * !C1 * D1 * X)	0.00193	0.00192	0.00190
	(A1 * !A2 * !C1 * D1 * X)	-0.00199	-0.00216	-0.00214
	(!A1 * C1 * D1 * X)	0.00190	0.00192	0.00190
	(!A1 * C1 * D1 * X)	-0.00217	-0.00225	-0.00224
	(!A1 * C1 * !D1 * X)	0.00192	0.00192	0.00190
	(!A1 * C1 * !D1 * X)	-0.00213	-0.00225	-0.00225
	(!A1 * !C1 * D1 * X)	0.00193	0.00192	0.00190
	(!A1 * !C1 * D1 * X)	-0.00199	-0.00217	-0.00214

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)**	-0.00097	-0.00097	-0.00097
	(A1 * A2 * C1 * D1 * X)	0.00083	0.00082	0.00082
	(A1 * A2 * C1 * !D1 * X)	-0.00097	-0.00097	-0.00097
	(A1 * A2 * C1 * !D1 * X)	0.00081	0.00081	0.00081
	(A1 * A2 * !C1 * D1 * X)	-0.00097	-0.00097	-0.00097
	(A1 * A2 * !C1 * D1 * X)	0.00077	0.00078	0.00077
	(A1 * A2 * !C1 * !D1 * X)	-0.00090	-0.00090	-0.00091
	(A1 * A2 * !C1 * !D1 * X)	0.00073	0.00073	0.00071
	(A1 * !A2 * C1 * D1 * X)	-0.00097	-0.00097	-0.00096
	(A1 * !A2 * C1 * D1 * X)	0.00109	0.00110	0.00109
	(A1 * !A2 * C1 * !D1 * X)	-0.00097	-0.00097	-0.00096
	(A1 * !A2 * C1 * !D1 * X)	0.00109	0.00110	0.00109
	(A1 * !A2 * !C1 * D1 * X)	-0.00096	-0.00097	-0.00096
	(A1 * !A2 * !C1 * D1 * X)	0.00103	0.00104	0.00104
	(!A1 * C1 * D1 * X)	-0.00097	-0.00097	-0.00097
	(!A1 * C1 * D1 * X)	0.00109	0.00110	0.00109
	(!A1 * C1 * !D1 * X)	-0.00096	-0.00097	-0.00096
	(!A1 * C1 * !D1 * X)	0.00109	0.00110	0.00109
	(!A1 * !C1 * D1 * X)	-0.00096	-0.00097	-0.00096
	(!A1 * !C1 * D1 * X)	0.00103	0.00104	0.00104

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	-0.00103	-0.00103	-0.00103
	(A1 * A2 * C1 * D1 * X)	0.00092	0.00092	0.00092
	(A1 * A2 * C1 * !D1 * X)	-0.00103	-0.00103	-0.00103
	(A1 * A2 * C1 * !D1 * X)	0.00089	0.00090	0.00089
	(A1 * A2 * !C1 * D1 * X)	-0.00102	-0.00103	-0.00103
	(A1 * A2 * !C1 * D1 * X)	0.00085	0.00086	0.00085
	(A1 * A2 * !C1 * !D1 * X)	-0.00094	-0.00095	-0.00096
	(A1 * A2 * !C1 * !D1 * X)	0.00080	0.00080	0.00079
	(A1 * !A2 * C1 * D1 * X)	-0.00103	-0.00103	-0.00103
	(A1 * !A2 * C1 * D1 * X)	0.00122	0.00123	0.00122
	(A1 * !A2 * C1 * !D1 * X)	-0.00103	-0.00103	-0.00103
	(A1 * !A2 * C1 * !D1 * X)	0.00122	0.00122	0.00122
	(A1 * !A2 * !C1 * D1 * X)	-0.00103	-0.00103	-0.00102
	(A1 * !A2 * !C1 * D1 * X)	0.00116	0.00116	0.00116
	(!A1 * C1 * D1 * X)	-0.00103	-0.00103	-0.00103
	(!A1 * C1 * D1 * X)	0.00122	0.00122	0.00122
	(!A1 * C1 * !D1 * X)	-0.00103	-0.00103	-0.00103
	(!A1 * C1 * !D1 * X)	0.00122	0.00122	0.00122
	(!A1 * !C1 * D1 * X)	-0.00103	-0.00103	-0.00102
	(!A1 * !C1 * D1 * X)	0.00116	0.00116	0.00116

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	-0.00189	-0.00190	-0.00190
	(A1 * A2 * C1 * D1 * X)	0.00169	0.00171	0.00169
	(A1 * A2 * C1 * !D1 * X)	-0.00189	-0.00190	-0.00190
	(A1 * A2 * C1 * !D1 * X)	0.00165	0.00166	0.00166
	(A1 * A2 * !C1 * D1 * X)	-0.00190	-0.00191	-0.00190
	(A1 * A2 * !C1 * D1 * X)	0.00161	0.00162	0.00161
	(A1 * A2 * !C1 * !D1 * X)	-0.00175	-0.00176	-0.00175
	(A1 * A2 * !C1 * !D1 * X)	0.00152	0.00152	0.00151
	(A1 * !A2 * C1 * D1 * X)	-0.00188	-0.00190	-0.00189
	(A1 * !A2 * C1 * D1 * X)	0.00223	0.00226	0.00224
	(A1 * !A2 * C1 * !D1 * X)	-0.00189	-0.00190	-0.00189
	(A1 * !A2 * C1 * !D1 * X)	0.00223	0.00225	0.00225
	(A1 * !A2 * !C1 * D1 * X)	-0.00189	-0.00191	-0.00189
	(A1 * !A2 * !C1 * D1 * X)	0.00213	0.00216	0.00214
	(!A1 * C1 * D1 * X)	-0.00188	-0.00190	-0.00189
	(!A1 * C1 * D1 * X)	0.00222	0.00225	0.00224
	(!A1 * C1 * !D1 * X)	-0.00189	-0.00190	-0.00189
	(!A1 * C1 * !D1 * X)	0.00223	0.00225	0.00225
	(!A1 * !C1 * D1 * X)	-0.00189	-0.00191	-0.00189
	(!A1 * !C1 * D1 * X)	0.00213	0.00217	0.00214

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)**	0.00103	0.00104	0.00099
	(A1 * B1 * D1 * X)	-0.00073	-0.00074	-0.00073
	(A1 * B1 * !D1 * X)	0.00098	0.00098	0.00097
	(A1 * B1 * !D1 * X)	-0.00065	-0.00065	-0.00065
	(A1 * A2 * !B1 * D1 * X)	0.00108	0.00101	0.00098
	(A1 * A2 * !B1 * D1 * X)	-0.00076	-0.00079	-0.00079
	(A1 * A2 * !B1 * !D1 * X)	0.00099	0.00099	0.00098
	(A1 * A2 * !B1 * !D1 * X)	-0.00064	-0.00064	-0.00064
	(A1 * !A2 * !B1 * D1 * X)	0.00116	0.00099	0.00097
	(A1 * !A2 * !B1 * D1 * X)	-0.00089	-0.00107	-0.00109
	(!A1 * B1 * D1 * X)	0.00105	0.00106	0.00100
	(!A1 * B1 * D1 * X)	-0.00074	-0.00075	-0.00074
	(!A1 * B1 * !D1 * X)	0.00098	0.00098	0.00097
	(!A1 * B1 * !D1 * X)	-0.00064	-0.00065	-0.00065
	(!A1 * !B1 * D1 * X)	0.00116	0.00099	0.00097
	(!A1 * !B1 * D1 * X)	-0.00089	-0.00107	-0.00109

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00106	0.00106	0.00103
	(A1 * B1 * D1 * X)	-0.00086	-0.00087	-0.00086
	(A1 * B1 * !D1 * X)	0.00103	0.00103	0.00102
	(A1 * B1 * !D1 * X)	-0.00076	-0.00076	-0.00076
	(A1 * A2 * !B1 * D1 * X)	0.00111	0.00105	0.00102
	(A1 * A2 * !B1 * D1 * X)	-0.00089	-0.00092	-0.00091
	(A1 * A2 * !B1 * !D1 * X)	0.00104	0.00103	0.00102
	(A1 * A2 * !B1 * !D1 * X)	-0.00076	-0.00075	-0.00075
	(A1 * !A2 * !B1 * D1 * X)	0.00121	0.00103	0.00102
	(A1 * !A2 * !B1 * D1 * X)	-0.00108	-0.00126	-0.00126
	(!A1 * B1 * D1 * X)	0.00109	0.00108	0.00104
	(!A1 * B1 * D1 * X)	-0.00088	-0.00088	-0.00088
	(!A1 * B1 * !D1 * X)	0.00103	0.00103	0.00102
	(!A1 * B1 * !D1 * X)	-0.00077	-0.00077	-0.00077
	(!A1 * !B1 * D1 * X)	0.00121	0.00103	0.00102
	(!A1 * !B1 * D1 * X)	-0.00108	-0.00126	-0.00126

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00191	0.00193	0.00189
	(A1 * B1 * D1 * X)	-0.00159	-0.00159	-0.00159
	(A1 * B1 * !D1 * X)	0.00185	0.00186	0.00185
	(A1 * B1 * !D1 * X)	-0.00140	-0.00141	-0.00141
	(A1 * A2 * !B1 * D1 * X)	0.00197	0.00191	0.00186
	(A1 * A2 * !B1 * D1 * X)	-0.00168	-0.00170	-0.00169
	(A1 * A2 * !B1 * !D1 * X)	0.00186	0.00187	0.00186
	(A1 * A2 * !B1 * !D1 * X)	-0.00140	-0.00140	-0.00140
	(A1 * !A2 * !B1 * D1 * X)	0.00218	0.00187	0.00185
	(A1 * !A2 * !B1 * D1 * X)	-0.00194	-0.00231	-0.00232
	(!A1 * B1 * D1 * X)	0.00195	0.00197	0.00191
	(!A1 * B1 * D1 * X)	-0.00160	-0.00161	-0.00161
	(!A1 * B1 * !D1 * X)	0.00185	0.00186	0.00186
	(!A1 * B1 * !D1 * X)	-0.00140	-0.00141	-0.00141
	(!A1 * !B1 * D1 * X)	0.00218	0.00186	0.00185
	(!A1 * !B1 * D1 * X)	-0.00194	-0.00230	-0.00232

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)**	-0.00097	-0.00098	-0.00097
	(A1 * B1 * D1 * X)	0.00073	0.00074	0.00073
	(A1 * B1 * !D1 * X)	-0.00097	-0.00097	-0.00096
	(A1 * B1 * !D1 * X)	0.00066	0.00066	0.00067
	(A1 * A2 * !B1 * D1 * X)	-0.00097	-0.00097	-0.00097
	(A1 * A2 * !B1 * D1 * X)	0.00079	0.00079	0.00079
	(A1 * A2 * !B1 * !D1 * X)	-0.00088	-0.00089	-0.00096
	(A1 * A2 * !B1 * !D1 * X)	0.00072	0.00072	0.00066
	(A1 * !A2 * !B1 * D1 * X)	-0.00097	-0.00097	-0.00096
	(A1 * !A2 * !B1 * D1 * X)	0.00108	0.00109	0.00109
	(!A1 * B1 * D1 * X)	-0.00097	-0.00098	-0.00097
	(!A1 * B1 * D1 * X)	0.00074	0.00075	0.00074
	(!A1 * B1 * !D1 * X)	-0.00096	-0.00097	-0.00096
	(!A1 * B1 * !D1 * X)	0.00066	0.00067	0.00067
	(!A1 * !B1 * D1 * X)	-0.00097	-0.00097	-0.00096
	(!A1 * !B1 * D1 * X)	0.00108	0.00109	0.00109

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00102	-0.00102	-0.00102
	(A1 * B1 * D1 * X)	0.00086	0.00087	0.00086
	(A1 * B1 * !D1 * X)	-0.00101	-0.00101	-0.00100
	(A1 * B1 * !D1 * X)	0.00078	0.00078	0.00078
	(A1 * A2 * !B1 * D1 * X)	-0.00101	-0.00102	-0.00102
	(A1 * A2 * !B1 * D1 * X)	0.00090	0.00092	0.00091
	(A1 * A2 * !B1 * !D1 * X)	-0.00090	-0.00091	-0.00100
	(A1 * A2 * !B1 * !D1 * X)	0.00084	0.00083	0.00077
	(A1 * !A2 * !B1 * D1 * X)	-0.00102	-0.00102	-0.00101
	(A1 * !A2 * !B1 * D1 * X)	0.00126	0.00127	0.00126
	(!A1 * B1 * D1 * X)	-0.00102	-0.00102	-0.00102
	(!A1 * B1 * D1 * X)	0.00088	0.00088	0.00088
	(!A1 * B1 * !D1 * X)	-0.00101	-0.00101	-0.00100
	(!A1 * B1 * !D1 * X)	0.00079	0.00079	0.00079
	(!A1 * !B1 * D1 * X)	-0.00102	-0.00102	-0.00101
	(!A1 * !B1 * D1 * X)	0.00126	0.00127	0.00126

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00185	-0.00186	-0.00186
	(A1 * B1 * D1 * X)	0.00159	0.00159	0.00159
	(A1 * B1 * !D1 * X)	-0.00184	-0.00184	-0.00182
	(A1 * B1 * !D1 * X)	0.00144	0.00143	0.00145
	(A1 * A2 * !B1 * D1 * X)	-0.00185	-0.00186	-0.00186
	(A1 * A2 * !B1 * D1 * X)	0.00168	0.00170	0.00169
	(A1 * A2 * !B1 * !D1 * X)	-0.00168	-0.00169	-0.00179
	(A1 * A2 * !B1 * !D1 * X)	0.00153	0.00152	0.00146
	(A1 * !A2 * !B1 * D1 * X)	-0.00185	-0.00185	-0.00183
	(A1 * !A2 * !B1 * D1 * X)	0.00232	0.00232	0.00232
	(!A1 * B1 * D1 * X)	-0.00185	-0.00186	-0.00186
	(!A1 * B1 * D1 * X)	0.00160	0.00161	0.00161
	(!A1 * B1 * !D1 * X)	-0.00183	-0.00183	-0.00181
	(!A1 * B1 * !D1 * X)	0.00145	0.00144	0.00146
	(!A1 * !B1 * D1 * X)	-0.00185	-0.00185	-0.00183
	(!A1 * !B1 * D1 * X)	0.00232	0.00232	0.00232

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	0.00105	0.00105	0.00105
	(A1 * C1 * X)	-0.00061	-0.00061	-0.00060
	(A1 * B1 * !C1 * X)	0.00105	0.00105	0.00105
	(A1 * B1 * !C1 * X)	-0.00061	-0.00060	-0.00060
	(A1 * A2 * !B1 * !C1 * X)	0.00104	0.00105	0.00105
	(A1 * A2 * !B1 * !C1 * X)	-0.00060	-0.00061	-0.00060
	(!A1 * C1 * X)	0.00105	0.00105	0.00105
	(!A1 * C1 * X)	-0.00061	-0.00061	-0.00060
	(!A1 * B1 * !C1 * X)	0.00105	0.00105	0.00105
	(!A1 * B1 * !C1 * X)	-0.00061	-0.00060	-0.00060

sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	0.00125	0.00126	0.00126
	(A1 * C1 * X)	-0.00065	-0.00065	-0.00065
	(A1 * B1 * !C1 * X)	0.00126	0.00126	0.00126
	(A1 * B1 * !C1 * X)	-0.00066	-0.00065	-0.00065
	(A1 * A2 * !B1 * !C1 * X)	0.00125	0.00126	0.00126
	(A1 * A2 * !B1 * !C1 * X)	-0.00065	-0.00065	-0.00065
	(!A1 * C1 * X)	0.00125	0.00126	0.00126
	(!A1 * C1 * X)	-0.00065	-0.00065	-0.00065
	(!A1 * B1 * !C1 * X)	0.00126	0.00126	0.00126
	(!A1 * B1 * !C1 * X)	-0.00066	-0.00065	-0.00065
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	0.00203	0.00204	0.00204
	(A1 * C1 * X)	-0.00123	-0.00123	-0.00123
	(A1 * B1 * !C1 * X)	0.00203	0.00204	0.00204
	(A1 * B1 * !C1 * X)	-0.00123	-0.00123	-0.00123
	(A1 * A2 * !B1 * !C1 * X)	0.00203	0.00204	0.00204
	(A1 * A2 * !B1 * !C1 * X)	-0.00122	-0.00123	-0.00123
	(!A1 * C1 * X)	0.00203	0.00204	0.00204
	(!A1 * C1 * X)	-0.00123	-0.00123	-0.00123
	(!A1 * B1 * !C1 * X)	0.00203	0.00204	0.00204
	(!A1 * B1 * !C1 * X)	-0.00123	-0.00123	-0.00123

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

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

sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	-0.00101	-0.00100	-0.00104
	(A1 * C1 * X)	0.00065	0.00064	0.00062
	(A1 * B1 * !C1 * X)	-0.00095	-0.00095	-0.00103
	(A1 * B1 * !C1 * X)	0.00067	0.00067	0.00062
	(A1 * A2 * !B1 * !C1 * X)	-0.00081	-0.00081	-0.00099
	(A1 * A2 * !B1 * !C1 * X)	0.00077	0.00077	0.00065
	(!A1 * C1 * X)	-0.00101	-0.00100	-0.00104
	(!A1 * C1 * X)	0.00065	0.00064	0.00062
	(!A1 * B1 * !C1 * X)	-0.00095	-0.00095	-0.00103
	(!A1 * B1 * !C1 * X)	0.00068	0.00067	0.00062
sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	-0.00121	-0.00121	-0.00125
	(A1 * C1 * X)	0.00070	0.00069	0.00067
	(A1 * B1 * !C1 * X)	-0.00114	-0.00114	-0.00124
	(A1 * B1 * !C1 * X)	0.00074	0.00073	0.00067
	(A1 * A2 * !B1 * !C1 * X)	-0.00098	-0.00098	-0.00119
	(A1 * A2 * !B1 * !C1 * X)	0.00085	0.00084	0.00070
	(!A1 * C1 * X)	-0.00121	-0.00121	-0.00125
	(!A1 * C1 * X)	0.00070	0.00069	0.00067
	(!A1 * B1 * !C1 * X)	-0.00114	-0.00114	-0.00124
	(!A1 * B1 * !C1 * X)	0.00074	0.00073	0.00067
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	-0.00189	-0.00190	-0.00202
	(A1 * C1 * X)	0.00137	0.00136	0.00127
	(A1 * B1 * !C1 * X)	-0.00176	-0.00177	-0.00199
	(A1 * B1 * !C1 * X)	0.00143	0.00142	0.00127
	(A1 * A2 * !B1 * !C1 * X)	-0.00148	-0.00149	-0.00190
	(A1 * A2 * !B1 * !C1 * X)	0.00162	0.00161	0.00133
	(!A1 * C1 * X)	-0.00189	-0.00190	-0.00202
	(!A1 * C1 * X)	0.00137	0.00136	0.00127
	(!A1 * B1 * !C1 * X)	-0.00176	-0.00177	-0.00199
	(!A1 * B1 * !C1 * X)	0.00143	0.00143	0.00127

SKY130_FD_SC_HS__A211OIx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a211oi_1	9.59040
sky130_fd_sc_hs__a211oi_2	15.98400
sky130_fd_sc_hs__a211oi_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	C1	Y
sky130_fd_sc_hs__a211oi_1	0.00274	0.00258	0.00273	0.00279	0.23313
sky130_fd_sc_hs__a211oi_2	0.00500	0.00522	0.00420	0.00399	0.43779
sky130_fd_sc_hs__a211oi_4	0.01007	0.01003	0.00799	0.00813	0.81238

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a211oi_1	0.00000	0.01034	0.02443
sky130_fd_sc_hs__a211oi_2	0.00000	0.01909	0.04886
sky130_fd_sc_hs__a211oi_4	0.00000	0.03818	0.09773

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)	0.22356	1.40981	11.20510
	A2->Y (FR)	0.26672	1.47632	11.40280
	B1->Y (FR)	0.23826	1.45241	11.80700
	C1->Y (FR)	0.18791	1.37217	11.50880
sky130_fd_sc_hs__a211oi_2	A1->Y (FR)	0.19546	1.21169	11.19990
	A2->Y (FR)	0.25218	1.26898	11.24440
	B1->Y (FR)	0.21769	1.24837	11.70540
	C1->Y (FR)	0.14565	1.14747	11.36720
sky130_fd_sc_hs__a211oi_4	A1->Y (FR)	0.18643	1.05117	11.02110
	A2->Y (FR)	0.24701	1.12512	11.23890
	B1->Y (FR)	0.20693	1.09718	11.72030
	C1->Y (FR)	0.13961	1.00593	11.42910

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211oi_1	A1->Y (RF)	0.03832	0.45099	3.90663
	A2->Y (RF)	0.04240	0.42982	3.66655
	B1->Y (RF)	0.02869	0.37133	3.27996
	C1->Y (RF)	0.02567	0.36121	3.27223
sky130_fd_sc_hs__a211oi_2	A1->Y (RF)	0.03352	0.41520	4.01910
	A2->Y (RF)	0.04136	0.39770	3.74769
	B1->Y (RF)	0.03964	0.45793	4.61942
	C1->Y (RF)	0.03002	0.43258	4.51970
sky130_fd_sc_hs__a211oi_4	A1->Y (RF)	0.03327	0.38257	4.07535
	A2->Y (RF)	0.03974	0.35047	3.61931
	B1->Y (RF)	0.03808	0.41694	4.62792
	C1->Y (RF)	0.02931	0.39394	4.59576

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.00037	0.00023	0.00028
	A1	0.00488	0.00476	0.00480
	A2	0.00064	0.00054	0.00060
	A2	0.00580	0.00571	0.00570
	B1	0.00069	0.00056	0.00070
	B1	0.00511	0.00499	0.00512
	C1	0.00057	0.00051	0.00122
	C1	0.00448	0.00443	0.00512
sky130_fd_sc_hs__a211oi_2	A1	-0.00002	-0.00023	-0.00010
	A1	0.00860	0.00840	0.00853
	A2	0.00114	0.00088	0.00099
	A2	0.01121	0.01096	0.01106
	B1	0.00179	0.00162	0.00175
	B1	0.00941	0.00925	0.00936
	C1	0.00169	0.00164	0.00247
	C1	0.00797	0.00794	0.00812
sky130_fd_sc_hs__a211oi_4	A1	-0.00035	-0.00077	-0.00047
	A1	0.01680	0.01639	0.01671
	A2	0.00153	0.00108	0.00133
	A2	0.02149	0.02106	0.02130
	B1	0.00299	0.00268	0.00299
	B1	0.01796	0.01766	0.01793
	C1	0.00287	0.00275	0.00447
	C1	0.01527	0.01515	0.01580

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.00599	0.00584	0.00605
	A1	0.00160	0.00145	0.00165
	A2	0.00666	0.00654	0.00662
	A2	0.00158	0.00144	0.00154
	B1	0.00499	0.00492	0.00517
	B1	0.00054	0.00044	0.00071
	C1	0.00381	0.00384	0.00410
	C1	-0.00013	-0.00017	0.00012
sky130_fd_sc_hs__a211oi_2	A1	0.01111	0.01084	0.01129
	A1	0.00273	0.00245	0.00289
	A2	0.01265	0.01233	0.01255
	A2	0.00271	0.00240	0.00260
	B1	0.00880	0.00858	0.00904
	B1	0.00112	0.00084	0.00115
	C1	0.00562	0.00565	0.00617
	C1	-0.00077	-0.00082	-0.00043
sky130_fd_sc_hs__a211oi_4	A1	0.02195	0.02124	0.02222
	A1	0.00534	0.00465	0.00560
	A2	0.02493	0.02432	0.02484
	A2	0.00531	0.00464	0.00512
	B1	0.01666	0.01616	0.01718
	B1	0.00158	0.00101	0.00172
	C1	0.01076	0.01080	0.01190
	C1	-0.00186	-0.00197	-0.00111

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)**	0.00102	0.00102	0.00101
	(A2 * B1 * C1 * !Y)	-0.00119	-0.00124	-0.00123
	(A2 * B1 * !C1 * !Y)	0.00102	0.00102	0.00101
	(A2 * B1 * !C1 * !Y)	-0.00119	-0.00124	-0.00123
	(A2 * !B1 * C1 * !Y)	0.00102	0.00103	0.00101
	(A2 * !B1 * C1 * !Y)	-0.00111	-0.00120	-0.00119
	(!A2 * B1 * C1 * !Y)	0.00095	0.00096	0.00095
	(!A2 * B1 * C1 * !Y)	-0.00126	-0.00127	-0.00126
	(!A2 * B1 * !C1 * !Y)	0.00095	0.00096	0.00095
	(!A2 * B1 * !C1 * !Y)	-0.00126	-0.00126	-0.00126
	(!A2 * !B1 * C1 * !Y)	0.00095	0.00096	0.00095
	(!A2 * !B1 * C1 * !Y)	-0.00126	-0.00127	-0.00126
	(!A2 * !B1 * !C1 * Y)	0.00034	0.00034	0.00033
	(!A2 * !B1 * !C1 * Y)	-0.00147	-0.00147	-0.00149
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	0.00207	0.00208	0.00207
	(A2 * B1 * C1 * !Y)	-0.00233	-0.00244	-0.00242
	(A2 * B1 * !C1 * !Y)	0.00208	0.00208	0.00207
	(A2 * B1 * !C1 * !Y)	-0.00233	-0.00242	-0.00242
	(A2 * !B1 * C1 * !Y)	0.00208	0.00210	0.00207
	(A2 * !B1 * C1 * !Y)	-0.00221	-0.00236	-0.00234
	(!A2 * B1 * C1 * !Y)	0.00196	0.00199	0.00197
	(!A2 * B1 * C1 * !Y)	-0.00248	-0.00250	-0.00249
	(!A2 * B1 * !C1 * !Y)	0.00197	0.00198	0.00197
	(!A2 * B1 * !C1 * !Y)	-0.00249	-0.00250	-0.00249
	(!A2 * !B1 * C1 * !Y)	0.00196	0.00198	0.00197
	(!A2 * !B1 * C1 * !Y)	-0.00248	-0.00249	-0.00249
	(!A2 * !B1 * !C1 * Y)	0.00081	0.00082	0.00077
	(!A2 * !B1 * !C1 * Y)	-0.00283	-0.00285	-0.00291

sky130_fd_sc_hs__a211oi_4	**(A2 * B1 * C1 * !Y)**	0.00401	0.00404	0.00402
	(A2 * B1 * C1 * !Y)	-0.00473	-0.00494	-0.00492
	(A2 * B1 * !C1 * !Y)	0.00402	0.00404	0.00402
	(A2 * B1 * !C1 * !Y)	-0.00470	-0.00495	-0.00492
	(A2 * !B1 * C1 * !Y)	0.00405	0.00401	0.00402
	(A2 * !B1 * C1 * !Y)	-0.00446	-0.00476	-0.00474
	(!A2 * B1 * C1 * !Y)	0.00379	0.00383	0.00380
	(!A2 * B1 * C1 * !Y)	-0.00504	-0.00508	-0.00506
	(!A2 * B1 * !C1 * !Y)	0.00378	0.00382	0.00380
	(!A2 * B1 * !C1 * !Y)	-0.00504	-0.00508	-0.00506
	(!A2 * !B1 * C1 * !Y)	0.00378	0.00383	0.00380
	(!A2 * !B1 * C1 * !Y)	-0.00504	-0.00509	-0.00506
	(!A2 * !B1 * !C1 * Y)	0.00141	0.00142	0.00134
	(!A2 * !B1 * !C1 * Y)	-0.00581	-0.00587	-0.00597

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)**	-0.00101	-0.00102	-0.00101
	(A2 * B1 * C1 * !Y)	0.00124	0.00124	0.00123
	(A2 * B1 * !C1 * !Y)	-0.00101	-0.00102	-0.00101
	(A2 * B1 * !C1 * !Y)	0.00124	0.00124	0.00123
	(A2 * !B1 * C1 * !Y)	-0.00101	-0.00101	-0.00101
	(A2 * !B1 * C1 * !Y)	0.00118	0.00120	0.00119
	(!A2 * B1 * C1 * !Y)	-0.00093	-0.00096	-0.00095
	(!A2 * B1 * C1 * !Y)	0.00127	0.00127	0.00127
	(!A2 * B1 * !C1 * !Y)	-0.00092	-0.00096	-0.00095
	(!A2 * B1 * !C1 * !Y)	0.00126	0.00126	0.00127
	(!A2 * !B1 * C1 * !Y)	-0.00093	-0.00096	-0.00095
	(!A2 * !B1 * C1 * !Y)	0.00127	0.00128	0.00127
	(!A2 * !B1 * !C1 * Y)	-0.00032	-0.00032	-0.00032
	(!A2 * !B1 * !C1 * Y)	0.00149	0.00150	0.00149
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	-0.00207	-0.00207	-0.00207
	(A2 * B1 * C1 * !Y)	0.00243	0.00244	0.00242
	(A2 * B1 * !C1 * !Y)	-0.00207	-0.00207	-0.00207
	(A2 * B1 * !C1 * !Y)	0.00243	0.00242	0.00242
	(A2 * !B1 * C1 * !Y)	-0.00207	-0.00208	-0.00207
	(A2 * !B1 * C1 * !Y)	0.00234	0.00236	0.00234
	(!A2 * B1 * C1 * !Y)	-0.00188	-0.00199	-0.00197
	(!A2 * B1 * C1 * !Y)	0.00249	0.00252	0.00249
	(!A2 * B1 * !C1 * !Y)	-0.00188	-0.00198	-0.00197
	(!A2 * B1 * !C1 * !Y)	0.00250	0.00250	0.00249
	(!A2 * !B1 * C1 * !Y)	-0.00188	-0.00198	-0.00197
	(!A2 * !B1 * C1 * !Y)	0.00250	0.00249	0.00249
	(!A2 * !B1 * !C1 * Y)	-0.00075	-0.00075	-0.00074
	(!A2 * !B1 * !C1 * Y)	0.00292	0.00293	0.00292

sky130_fd_sc_hs__a211oi_4	**(A2 * B1 * C1 * !Y)**	-0.00400	-0.00402	-0.00401
	(A2 * B1 * C1 * !Y)	0.00489	0.00494	0.00492
	(A2 * B1 * !C1 * !Y)	-0.00400	-0.00403	-0.00401
	(A2 * B1 * !C1 * !Y)	0.00490	0.00496	0.00492
	(A2 * !B1 * C1 * !Y)	-0.00401	-0.00401	-0.00401
	(A2 * !B1 * C1 * !Y)	0.00473	0.00476	0.00474
	(!A2 * B1 * C1 * !Y)	-0.00362	-0.00383	-0.00380
	(!A2 * B1 * C1 * !Y)	0.00504	0.00514	0.00508
	(!A2 * B1 * !C1 * !Y)	-0.00363	-0.00382	-0.00380
	(!A2 * B1 * !C1 * !Y)	0.00509	0.00511	0.00508
	(!A2 * !B1 * C1 * !Y)	-0.00362	-0.00383	-0.00380
	(!A2 * !B1 * C1 * !Y)	0.00509	0.00510	0.00508
	(!A2 * !B1 * !C1 * Y)	-0.00131	-0.00131	-0.00130
	(!A2 * !B1 * !C1 * Y)	0.00600	0.00600	0.00598

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)**	0.00103	0.00103	0.00103
	(A1 * B1 * C1 * !Y)	-0.00120	-0.00125	-0.00124
	(A1 * B1 * !C1 * !Y)	0.00102	0.00103	0.00103
	(A1 * B1 * !C1 * !Y)	-0.00119	-0.00125	-0.00124
	(A1 * !B1 * C1 * !Y)	0.00103	0.00104	0.00103
	(A1 * !B1 * C1 * !Y)	-0.00112	-0.00120	-0.00120
	(!A1 * B1 * !Y)	0.00096	0.00098	0.00097
	(!A1 * B1 * !Y)	-0.00127	-0.00128	-0.00128
	(!A1 * !B1 * C1 * !Y)	0.00096	0.00098	0.00097
	(!A1 * !B1 * C1 * !Y)	-0.00127	-0.00128	-0.00127
	(!A1 * !B1 * !C1 * Y)	0.00097	0.00098	0.00097
	(!A1 * !B1 * !C1 * Y)	-0.00127	-0.00128	-0.00127

sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	0.00213	0.00213	0.00212
	(A1 * B1 * C1 * !Y)	-0.00241	-0.00251	-0.00250
	(A1 * B1 * !C1 * !Y)	0.00213	0.00213	0.00212
	(A1 * B1 * !C1 * !Y)	-0.00240	-0.00251	-0.00250
	(A1 * !B1 * C1 * !Y)	0.00215	0.00215	0.00212
	(A1 * !B1 * C1 * !Y)	-0.00228	-0.00243	-0.00241
	(!A1 * B1 * !Y)	0.00202	0.00203	0.00202
	(!A1 * B1 * !Y)	-0.00258	-0.00258	-0.00258
	(!A1 * !B1 * C1 * !Y)	0.00203	0.00204	0.00202
	(!A1 * !B1 * C1 * !Y)	-0.00258	-0.00259	-0.00258
	(!A1 * !B1 * !C1 * Y)	0.00186	0.00187	0.00186
	(!A1 * !B1 * !C1 * Y)	-0.00275	-0.00275	-0.00274
sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	0.00413	0.00416	0.00413
	(A1 * B1 * C1 * !Y)	-0.00478	-0.00497	-0.00497
	(A1 * B1 * !C1 * !Y)	0.00414	0.00416	0.00413
	(A1 * B1 * !C1 * !Y)	-0.00476	-0.00496	-0.00497
	(A1 * !B1 * C1 * !Y)	0.00419	0.00414	0.00413
	(A1 * !B1 * C1 * !Y)	-0.00452	-0.00482	-0.00479
	(!A1 * B1 * !Y)	0.00386	0.00389	0.00388
	(!A1 * B1 * !Y)	-0.00511	-0.00513	-0.00512
	(!A1 * !B1 * C1 * !Y)	0.00388	0.00393	0.00389
	(!A1 * !B1 * C1 * !Y)	-0.00511	-0.00515	-0.00512
	(!A1 * !B1 * !C1 * Y)	0.00388	0.00394	0.00389
	(!A1 * !B1 * !C1 * Y)	-0.00511	-0.00515	-0.00511

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)**	-0.00103	-0.00103	-0.00102
	(A1 * B1 * C1 * !Y)	0.00125	0.00125	0.00124
	(A1 * B1 * !C1 * !Y)	-0.00102	-0.00103	-0.00102
	(A1 * B1 * !C1 * !Y)	0.00125	0.00125	0.00124
	(A1 * !B1 * C1 * !Y)	-0.00102	-0.00102	-0.00102
	(A1 * !B1 * C1 * !Y)	0.00120	0.00120	0.00120
	(!A1 * B1 * !Y)	-0.00094	-0.00097	-0.00097
	(!A1 * B1 * !Y)	0.00128	0.00129	0.00128
	(!A1 * !B1 * C1 * !Y)	-0.00094	-0.00097	-0.00097
	(!A1 * !B1 * C1 * !Y)	0.00128	0.00129	0.00128
	(!A1 * !B1 * !C1 * Y)	-0.00092	-0.00097	-0.00097
	(!A1 * !B1 * !C1 * Y)	0.00132	0.00129	0.00128
sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	-0.00212	-0.00212	-0.00212
	(A1 * B1 * C1 * !Y)	0.00251	0.00251	0.00250
	(A1 * B1 * !C1 * !Y)	-0.00212	-0.00212	-0.00212
	(A1 * B1 * !C1 * !Y)	0.00251	0.00251	0.00250
	(A1 * !B1 * C1 * !Y)	-0.00212	-0.00213	-0.00212
	(A1 * !B1 * C1 * !Y)	0.00241	0.00243	0.00241
	(!A1 * B1 * !Y)	-0.00196	-0.00203	-0.00202
	(!A1 * B1 * !Y)	0.00258	0.00260	0.00258
	(!A1 * !B1 * C1 * !Y)	-0.00196	-0.00204	-0.00202
	(!A1 * !B1 * C1 * !Y)	0.00258	0.00260	0.00259
	(!A1 * !B1 * !C1 * Y)	-0.00176	-0.00187	-0.00186
	(!A1 * !B1 * !C1 * Y)	0.00278	0.00278	0.00275

sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	-0.00413	-0.00412	-0.00412
	(A1 * B1 * C1 * !Y)	0.00498	0.00497	0.00497
	(A1 * B1 * !C1 * !Y)	-0.00413	-0.00412	-0.00412
	(A1 * B1 * !C1 * !Y)	0.00498	0.00496	0.00497
	(A1 * !B1 * C1 * !Y)	-0.00412	-0.00414	-0.00412
	(A1 * !B1 * C1 * !Y)	0.00477	0.00482	0.00479
	(!A1 * B1 * !Y)	-0.00377	-0.00389	-0.00388
	(!A1 * B1 * !Y)	0.00515	0.00516	0.00513
	(!A1 * !B1 * C1 * !Y)	-0.00377	-0.00391	-0.00389
	(!A1 * !B1 * C1 * !Y)	0.00515	0.00516	0.00513
	(!A1 * !B1 * !C1 * Y)	-0.00366	-0.00390	-0.00389
	(!A1 * !B1 * !C1 * Y)	0.00528	0.00520	0.00513

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)	0.00116	0.00112	0.00109
	(A1 * A2 * C1 * !Y)	-0.00088	-0.00088	-0.00088
	(A1 * A2 * !C1 * !Y)	0.00107	0.00108	0.00107
	(A1 * A2 * !C1 * !Y)	-0.00071	-0.00072	-0.00072
	(A1 * !A2 * C1 * !Y)	0.00124	0.00109	0.00107
	(A1 * !A2 * C1 * !Y)	-0.00105	-0.00122	-0.00122
	(!A1 * C1 * !Y)	0.00124	0.00109	0.00107
	(!A1 * C1 * !Y)	-0.00105	-0.00122	-0.00122
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	0.00138	0.00135	0.00130
	(A1 * A2 * C1 * !Y)	-0.00170	-0.00171	-0.00170
	(A1 * A2 * !C1 * !Y)	0.00127	0.00127	0.00126
	(A1 * A2 * !C1 * !Y)	-0.00142	-0.00141	-0.00141
	(A1 * !A2 * C1 * !Y)	0.00153	0.00127	0.00125
	(A1 * !A2 * C1 * !Y)	-0.00206	-0.00240	-0.00240
	(!A1 * C1 * !Y)	0.00154	0.00127	0.00125
	(!A1 * C1 * !Y)	-0.00206	-0.00240	-0.00240
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	0.00251	0.00244	0.00232
	(A1 * A2 * C1 * !Y)	-0.00351	-0.00354	-0.00352
	(A1 * A2 * !C1 * !Y)	0.00227	0.00228	0.00226
	(A1 * A2 * !C1 * !Y)	-0.00293	-0.00294	-0.00295
	(A1 * !A2 * C1 * !Y)	0.00293	0.00229	0.00225
	(A1 * !A2 * C1 * !Y)	-0.00426	-0.00494	-0.00497
	(!A1 * C1 * !Y)	0.00291	0.00229	0.00225
	(!A1 * C1 * !Y)	-0.00428	-0.00495	-0.00497

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)	-0.00107	-0.00107	-0.00107
	(A1 * A2 * C1 * !Y)	0.00088	0.00088	0.00088
	(A1 * A2 * !C1 * !Y)	-0.00103	-0.00103	-0.00105
	(A1 * A2 * !C1 * !Y)	0.00077	0.00076	0.00075
	(A1 * !A2 * C1 * !Y)	-0.00107	-0.00107	-0.00106
	(A1 * !A2 * C1 * !Y)	0.00122	0.00122	0.00122
	(!A1 * C1 * !Y)	-0.00107	-0.00107	-0.00106
	(!A1 * C1 * !Y)	0.00122	0.00122	0.00122
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	-0.00127	-0.00128	-0.00127
	(A1 * A2 * C1 * !Y)	0.00170	0.00171	0.00170
	(A1 * A2 * !C1 * !Y)	-0.00119	-0.00119	-0.00119
	(A1 * A2 * !C1 * !Y)	0.00149	0.00148	0.00149
	(A1 * !A2 * C1 * !Y)	-0.00125	-0.00125	-0.00125
	(A1 * !A2 * C1 * !Y)	0.00240	0.00240	0.00240
	(!A1 * C1 * !Y)	-0.00124	-0.00125	-0.00125
	(!A1 * C1 * !Y)	0.00238	0.00240	0.00240
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	-0.00226	-0.00228	-0.00227
	(A1 * A2 * C1 * !Y)	0.00351	0.00354	0.00352
	(A1 * A2 * !C1 * !Y)	-0.00212	-0.00212	-0.00214
	(A1 * A2 * !C1 * !Y)	0.00311	0.00308	0.00309
	(A1 * !A2 * C1 * !Y)	-0.00225	-0.00224	-0.00223
	(A1 * !A2 * C1 * !Y)	0.00498	0.00494	0.00497
	(!A1 * C1 * !Y)	-0.00224	-0.00224	-0.00223
	(!A1 * C1 * !Y)	0.00494	0.00495	0.00497

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	0.00127	0.00127	0.00127
	(A1 * B1 * !Y)	-0.00064	-0.00064	-0.00063
	(A1 * A2 * !B1 * !Y)	0.00126	0.00128	0.00127
	(A1 * A2 * !B1 * !Y)	-0.00063	-0.00064	-0.00063
	(!A1 * B1 * !Y)	0.00127	0.00127	0.00127
	(!A1 * B1 * !Y)	-0.00064	-0.00064	-0.00064
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	0.00134	0.00135	0.00134
	(A1 * B1 * !Y)	-0.00130	-0.00130	-0.00130
	(A1 * A2 * !B1 * !Y)	0.00136	0.00135	0.00134
	(A1 * A2 * !B1 * !Y)	-0.00132	-0.00130	-0.00129
	(!A1 * B1 * !Y)	0.00134	0.00135	0.00134
	(!A1 * B1 * !Y)	-0.00130	-0.00130	-0.00130
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	0.00272	0.00271	0.00272
	(A1 * B1 * !Y)	-0.00262	-0.00261	-0.00261
	(A1 * A2 * !B1 * !Y)	0.00271	0.00273	0.00272
	(A1 * A2 * !B1 * !Y)	-0.00261	-0.00262	-0.00260
	(!A1 * B1 * !Y)	0.00272	0.00273	0.00272
	(!A1 * B1 * !Y)	-0.00262	-0.00262	-0.00261

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	-0.00122	-0.00122	-0.00126
	(A1 * B1 * !Y)	0.00068	0.00068	0.00065
	(A1 * A2 * !B1 * !Y)	-0.00110	-0.00110	-0.00124
	(A1 * A2 * !B1 * !Y)	0.00077	0.00076	0.00066
	(!A1 * B1 * !Y)	-0.00122	-0.00122	-0.00126
	(!A1 * B1 * !Y)	0.00068	0.00068	0.00065
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	-0.00119	-0.00120	-0.00133
	(A1 * B1 * !Y)	0.00144	0.00143	0.00134
	(A1 * A2 * !B1 * !Y)	-0.00098	-0.00098	-0.00128
	(A1 * A2 * !B1 * !Y)	0.00157	0.00156	0.00135
	(!A1 * B1 * !Y)	-0.00119	-0.00120	-0.00133
	(!A1 * B1 * !Y)	0.00145	0.00144	0.00134
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	-0.00245	-0.00245	-0.00269
	(A1 * B1 * !Y)	0.00287	0.00284	0.00268
	(A1 * A2 * !B1 * !Y)	-0.00198	-0.00200	-0.00258
	(A1 * A2 * !B1 * !Y)	0.00313	0.00312	0.00272
	(!A1 * B1 * !Y)	-0.00244	-0.00247	-0.00269
	(!A1 * B1 * !Y)	0.00285	0.00286	0.00268

SKY130_FD_SC_HS__A211Ox

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a211o_1	12.78720
sky130_fd_sc_hs__a211o_2	12.78720
sky130_fd_sc_hs__a211o_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	C1	X
sky130_fd_sc_hs__a211o_1	0.00253	0.00238	0.00257	0.00255	0.78040
sky130_fd_sc_hs__a211o_2	0.00277	0.00275	0.00273	0.00264	1.49697
sky130_fd_sc_hs__a211o_4	0.00470	0.00480	0.00510	0.00462	2.89694

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a211o_1	0.00000	0.02991	0.06470
sky130_fd_sc_hs__a211o_2	0.00000	0.03723	0.06891
sky130_fd_sc_hs__a211o_4	0.00000	0.07582	0.13782

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)	0.10920	0.80544	7.12474
	A2->X (RR)	0.11358	0.80930	7.25453
	B1->X (RR)	0.08786	0.76317	7.04425
	C1->X (RR)	0.08319	0.74365	7.01447
sky130_fd_sc_hs__a211o_2	A1->X (RR)	0.10923	0.71222	7.17750
	A2->X (RR)	0.11417	0.70876	7.26930
	B1->X (RR)	0.08529	0.66687	7.08841
	C1->X (RR)	0.08121	0.65227	7.05492
sky130_fd_sc_hs__a211o_4	A1->X (RR)	0.11267	0.63166	7.19979
	A2->X (RR)	0.11844	0.63398	7.31613
	B1->X (RR)	0.08229	0.57322	7.08247
	C1->X (RR)	0.08119	0.56513	7.06512

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211o_1	A1->X (FF)	0.31973	0.90244	4.98907
	A2->X (FF)	0.36728	0.95984	5.17041
	B1->X (FF)	0.33366	0.92610	5.20359
	C1->X (FF)	0.28505	0.85856	4.86272
sky130_fd_sc_hs__a211o_2	A1->X (FF)	0.41892	1.00309	5.39921
	A2->X (FF)	0.47809	1.07288	5.55618
	B1->X (FF)	0.44546	1.04506	5.66129
	C1->X (FF)	0.39337	0.97015	5.32449
sky130_fd_sc_hs__a211o_4	A1->X (FF)	0.38548	0.92440	5.26305
	A2->X (FF)	0.41723	0.96652	5.39044
	B1->X (FF)	0.39121	0.94444	5.46359
	C1->X (FF)	0.33455	0.86510	5.11717

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.00787	0.00776	0.00940
	A1	0.00384	0.00373	0.00542
	A2	0.00843	0.00833	0.00928
	A2	0.00383	0.00372	0.00469
	B1	0.00701	0.00697	0.00893
	B1	0.00291	0.00287	0.00493
	C1	0.00594	0.00587	0.00894
	C1	0.00235	0.00228	0.00556
sky130_fd_sc_hs__a211o_2	A1	0.00975	0.00978	0.01127
	A1	0.00535	0.00538	0.00699
	A2	0.01050	0.01054	0.01141
	A2	0.00534	0.00539	0.00638
	B1	0.00901	0.00915	0.01090
	B1	0.00450	0.00466	0.00649
	C1	0.00791	0.00803	0.01070
	C1	0.00390	0.00401	0.00686
sky130_fd_sc_hs__a211o_4	A1	0.01808	0.01841	0.02198
	A1	0.01014	0.01050	0.01428
	A2	0.01955	0.01999	0.02221
	A2	0.01017	0.01063	0.01303
	B1	0.01643	0.01661	0.02043
	B1	0.00837	0.00856	0.01252
	C1	0.01373	0.01405	0.01994
	C1	0.00698	0.00732	0.01334

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.00262	0.00261	0.00347
	A1	0.00673	0.00676	0.00744
	A2	0.00288	0.00298	0.00359
	A2	0.00751	0.00762	0.00822
	B1	0.00272	0.00279	0.00445
	B1	0.00677	0.00685	0.00813
	C1	0.00268	0.00282	0.00630
	C1	0.00623	0.00642	0.00954
sky130_fd_sc_hs__a211o_2	A1	0.00419	0.00416	0.00601
	A1	0.00866	0.00885	0.00959
	A2	0.00444	0.00460	0.00578
	A2	0.00960	0.00984	0.01052
	B1	0.00449	0.00450	0.00672
	B1	0.00895	0.00916	0.01041
	C1	0.00445	0.00470	0.00845
	C1	0.00841	0.00876	0.01179
sky130_fd_sc_hs__a211o_4	A1	0.00791	0.00759	0.01043
	A1	0.01600	0.01653	0.01802
	A2	0.00812	0.00857	0.01046
	A2	0.01756	0.01817	0.01954
	B1	0.00777	0.00813	0.01265
	B1	0.01648	0.01694	0.01940
	C1	0.00852	0.00908	0.01606
	C1	0.01515	0.01585	0.02201

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)**	0.00091	0.00090	0.00090
	(A2 * B1 * C1 * X)	-0.00111	-0.00115	-0.00115
	(A2 * B1 * !C1 * X)	0.00091	0.00090	0.00090
	(A2 * B1 * !C1 * X)	-0.00110	-0.00115	-0.00115
	(A2 * !B1 * C1 * X)	0.00091	0.00091	0.00090
	(A2 * !B1 * C1 * X)	-0.00103	-0.00111	-0.00111
	(!A2 * B1 * C1 * X)	0.00085	0.00085	0.00085
	(!A2 * B1 * C1 * X)	-0.00118	-0.00119	-0.00118
	(!A2 * B1 * !C1 * X)	0.00085	0.00085	0.00085
	(!A2 * B1 * !C1 * X)	-0.00119	-0.00119	-0.00118
	(!A2 * !B1 * C1 * X)	0.00085	0.00085	0.00085
	(!A2 * !B1 * C1 * X)	-0.00119	-0.00119	-0.00118
	(!A2 * !B1 * !C1 * !X)	0.00029	0.00029	0.00027
	(!A2 * !B1 * !C1 * !X)	-0.00141	-0.00141	-0.00143
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	0.00111	0.00110	0.00110
	(A2 * B1 * C1 * X)	-0.00106	-0.00110	-0.00110
	(A2 * B1 * !C1 * X)	0.00111	0.00110	0.00110
	(A2 * B1 * !C1 * X)	-0.00106	-0.00110	-0.00110
	(A2 * !B1 * C1 * X)	0.00111	0.00111	0.00110
	(A2 * !B1 * C1 * X)	-0.00099	-0.00107	-0.00106
	(!A2 * B1 * C1 * X)	0.00103	0.00104	0.00103
	(!A2 * B1 * C1 * X)	-0.00112	-0.00113	-0.00113
	(!A2 * B1 * !C1 * X)	0.00103	0.00104	0.00103
	(!A2 * B1 * !C1 * X)	-0.00112	-0.00113	-0.00113
	(!A2 * !B1 * C1 * X)	0.00103	0.00104	0.00104
	(!A2 * !B1 * C1 * X)	-0.00112	-0.00113	-0.00113
	(!A2 * !B1 * !C1 * !X)	0.00034	0.00035	0.00034
	(!A2 * !B1 * !C1 * !X)	-0.00139	-0.00141	-0.00142

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	0.00177	0.00176	0.00175
	(A2 * B1 * C1 * X)	-0.00221	-0.00229	-0.00228
	(A2 * B1 * !C1 * X)	0.00177	0.00176	0.00175
	(A2 * B1 * !C1 * X)	-0.00220	-0.00229	-0.00228
	(A2 * !B1 * C1 * X)	0.00177	0.00177	0.00175
	(A2 * !B1 * C1 * X)	-0.00206	-0.00222	-0.00221
	(!A2 * B1 * C1 * X)	0.00164	0.00165	0.00165
	(!A2 * B1 * C1 * X)	-0.00235	-0.00236	-0.00235
	(!A2 * B1 * !C1 * X)	0.00164	0.00166	0.00165
	(!A2 * B1 * !C1 * X)	-0.00235	-0.00236	-0.00235
	(!A2 * !B1 * C1 * X)	0.00165	0.00166	0.00165
	(!A2 * !B1 * C1 * X)	-0.00235	-0.00236	-0.00235
	(!A2 * !B1 * !C1 * !X)	0.00057	0.00057	0.00055
	(!A2 * !B1 * !C1 * !X)	-0.00273	-0.00274	-0.00278

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)**	-0.00090	-0.00090	-0.00090
	(A2 * B1 * C1 * X)	0.00115	0.00115	0.00115
	(A2 * B1 * !C1 * X)	-0.00090	-0.00090	-0.00090
	(A2 * B1 * !C1 * X)	0.00115	0.00115	0.00115
	(A2 * !B1 * C1 * X)	-0.00090	-0.00090	-0.00089
	(A2 * !B1 * C1 * X)	0.00111	0.00111	0.00111
	(!A2 * B1 * C1 * X)	-0.00082	-0.00085	-0.00085
	(!A2 * B1 * C1 * X)	0.00118	0.00119	0.00119
	(!A2 * B1 * !C1 * X)	-0.00083	-0.00085	-0.00085
	(!A2 * B1 * !C1 * X)	0.00119	0.00120	0.00119
	(!A2 * !B1 * C1 * X)	-0.00083	-0.00085	-0.00085
	(!A2 * !B1 * C1 * X)	0.00119	0.00120	0.00119
	(!A2 * !B1 * !C1 * !X)	-0.00026	-0.00027	-0.00026
	(!A2 * !B1 * !C1 * !X)	0.00143	0.00144	0.00143
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	-0.00110	-0.00110	-0.00110
	(A2 * B1 * C1 * X)	0.00110	0.00111	0.00110
	(A2 * B1 * !C1 * X)	-0.00110	-0.00110	-0.00110
	(A2 * B1 * !C1 * X)	0.00110	0.00112	0.00110
	(A2 * !B1 * C1 * X)	-0.00110	-0.00110	-0.00109
	(A2 * !B1 * C1 * X)	0.00107	0.00107	0.00106
	(!A2 * B1 * C1 * X)	-0.00101	-0.00104	-0.00103
	(!A2 * B1 * C1 * X)	0.00113	0.00114	0.00113
	(!A2 * B1 * !C1 * X)	-0.00101	-0.00104	-0.00103
	(!A2 * B1 * !C1 * X)	0.00113	0.00114	0.00113
	(!A2 * !B1 * C1 * X)	-0.00101	-0.00104	-0.00104
	(!A2 * !B1 * C1 * X)	0.00113	0.00113	0.00113
	(!A2 * !B1 * !C1 * !X)	-0.00033	-0.00033	-0.00033
	(!A2 * !B1 * !C1 * !X)	0.00142	0.00143	0.00143

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	-0.00175	-0.00176	-0.00175
	(A2 * B1 * C1 * X)	0.00229	0.00232	0.00228
	(A2 * B1 * !C1 * X)	-0.00175	-0.00176	-0.00175
	(A2 * B1 * !C1 * X)	0.00229	0.00232	0.00228
	(A2 * !B1 * C1 * X)	-0.00174	-0.00175	-0.00174
	(A2 * !B1 * C1 * X)	0.00219	0.00222	0.00221
	(!A2 * B1 * C1 * X)	-0.00160	-0.00165	-0.00165
	(!A2 * B1 * C1 * X)	0.00235	0.00237	0.00236
	(!A2 * B1 * !C1 * X)	-0.00159	-0.00166	-0.00165
	(!A2 * B1 * !C1 * X)	0.00235	0.00238	0.00236
	(!A2 * !B1 * C1 * X)	-0.00159	-0.00166	-0.00165
	(!A2 * !B1 * C1 * X)	0.00235	0.00238	0.00236
	(!A2 * !B1 * !C1 * !X)	-0.00053	-0.00053	-0.00053
	(!A2 * !B1 * !C1 * !X)	0.00280	0.00280	0.00279

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)**	0.00093	0.00092	0.00092
	(A1 * B1 * C1 * X)	-0.00110	-0.00114	-0.00113
	(A1 * B1 * !C1 * X)	0.00092	0.00092	0.00092
	(A1 * B1 * !C1 * X)	-0.00108	-0.00114	-0.00113
	(A1 * !B1 * C1 * X)	0.00093	0.00093	0.00092
	(A1 * !B1 * C1 * X)	-0.00102	-0.00110	-0.00110
	(!A1 * B1 * X)	0.00087	0.00087	0.00087
	(!A1 * B1 * X)	-0.00117	-0.00117	-0.00117
	(!A1 * !B1 * C1 * X)	0.00087	0.00087	0.00087
	(!A1 * !B1 * C1 * X)	-0.00117	-0.00117	-0.00117
	(!A1 * !B1 * !C1 * !X)	0.00078	0.00080	0.00079
	(!A1 * !B1 * !C1 * !X)	-0.00125	-0.00126	-0.00125

sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	0.00119	0.00118	0.00118
	(A1 * B1 * C1 * X)	-0.00106	-0.00111	-0.00111
	(A1 * B1 * !C1 * X)	0.00119	0.00118	0.00118
	(A1 * B1 * !C1 * X)	-0.00106	-0.00111	-0.00111
	(A1 * !B1 * C1 * X)	0.00119	0.00119	0.00118
	(A1 * !B1 * C1 * X)	-0.00100	-0.00107	-0.00107
	(!A1 * B1 * X)	0.00112	0.00113	0.00112
	(!A1 * B1 * X)	-0.00113	-0.00114	-0.00113
	(!A1 * !B1 * C1 * X)	0.00111	0.00112	0.00111
	(!A1 * !B1 * C1 * X)	-0.00113	-0.00114	-0.00113
	(!A1 * !B1 * !C1 * !X)	0.00094	0.00096	0.00095
	(!A1 * !B1 * !C1 * !X)	-0.00130	-0.00131	-0.00130
sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	0.00212	0.00212	0.00211
	(A1 * B1 * C1 * X)	-0.00212	-0.00222	-0.00221
	(A1 * B1 * !C1 * X)	0.00212	0.00212	0.00211
	(A1 * B1 * !C1 * X)	-0.00212	-0.00222	-0.00221
	(A1 * !B1 * C1 * X)	0.00213	0.00212	0.00211
	(A1 * !B1 * C1 * X)	-0.00201	-0.00214	-0.00214
	(!A1 * B1 * X)	0.00200	0.00203	0.00201
	(!A1 * B1 * X)	-0.00226	-0.00228	-0.00227
	(!A1 * !B1 * C1 * X)	0.00200	0.00203	0.00201
	(!A1 * !B1 * C1 * X)	-0.00226	-0.00228	-0.00227
	(!A1 * !B1 * !C1 * !X)	0.00196	0.00199	0.00197
	(!A1 * !B1 * !C1 * !X)	-0.00230	-0.00232	-0.00231

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)**	-0.00092	-0.00092	-0.00092
	(A1 * B1 * C1 * X)	0.00114	0.00115	0.00113
	(A1 * B1 * !C1 * X)	-0.00092	-0.00092	-0.00092
	(A1 * B1 * !C1 * X)	0.00114	0.00115	0.00113
	(A1 * !B1 * C1 * X)	-0.00091	-0.00092	-0.00091
	(A1 * !B1 * C1 * X)	0.00110	0.00110	0.00110
	(!A1 * B1 * X)	-0.00085	-0.00087	-0.00087
	(!A1 * B1 * X)	0.00117	0.00118	0.00117
	(!A1 * !B1 * C1 * X)	-0.00085	-0.00087	-0.00087
	(!A1 * !B1 * C1 * X)	0.00117	0.00118	0.00117
	(!A1 * !B1 * !C1 * !X)	-0.00074	-0.00079	-0.00079
	(!A1 * !B1 * !C1 * !X)	0.00128	0.00127	0.00126
sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	-0.00118	-0.00118	-0.00118
	(A1 * B1 * C1 * X)	0.00111	0.00112	0.00111
	(A1 * B1 * !C1 * X)	-0.00118	-0.00118	-0.00118
	(A1 * B1 * !C1 * X)	0.00111	0.00111	0.00111
	(A1 * !B1 * C1 * X)	-0.00118	-0.00118	-0.00117
	(A1 * !B1 * C1 * X)	0.00108	0.00107	0.00107
	(!A1 * B1 * X)	-0.00109	-0.00112	-0.00112
	(!A1 * B1 * X)	0.00113	0.00115	0.00114
	(!A1 * !B1 * C1 * X)	-0.00109	-0.00112	-0.00111
	(!A1 * !B1 * C1 * X)	0.00114	0.00115	0.00114
	(!A1 * !B1 * !C1 * !X)	-0.00090	-0.00095	-0.00095
	(!A1 * !B1 * !C1 * !X)	0.00135	0.00133	0.00131

sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	-0.00210	-0.00211	-0.00211
	(A1 * B1 * C1 * X)	0.00220	0.00222	0.00221
	(A1 * B1 * !C1 * X)	-0.00210	-0.00211	-0.00211
	(A1 * B1 * !C1 * X)	0.00220	0.00222	0.00221
	(A1 * !B1 * C1 * X)	-0.00210	-0.00210	-0.00210
	(A1 * !B1 * C1 * X)	0.00213	0.00214	0.00214
	(!A1 * B1 * X)	-0.00197	-0.00203	-0.00201
	(!A1 * B1 * X)	0.00227	0.00230	0.00228
	(!A1 * !B1 * C1 * X)	-0.00197	-0.00203	-0.00201
	(!A1 * !B1 * C1 * X)	0.00227	0.00230	0.00228
	(!A1 * !B1 * !C1 * !X)	-0.00188	-0.00199	-0.00197
	(!A1 * !B1 * !C1 * !X)	0.00238	0.00235	0.00232

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)	0.00117	0.00114	0.00109
	(A1 * A2 * C1 * X)	-0.00080	-0.00081	-0.00080
	(A1 * A2 * !C1 * X)	0.00108	0.00108	0.00107
	(A1 * A2 * !C1 * X)	-0.00065	-0.00065	-0.00065
	(A1 * !A2 * C1 * X)	0.00124	0.00109	0.00107
	(A1 * !A2 * C1 * X)	-0.00092	-0.00109	-0.00110
	(!A1 * C1 * X)	0.00124	0.00109	0.00107
	(!A1 * C1 * X)	-0.00092	-0.00109	-0.00110
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	0.00121	0.00118	0.00114
	(A1 * A2 * C1 * X)	-0.00080	-0.00080	-0.00080
	(A1 * A2 * !C1 * X)	0.00112	0.00112	0.00111
	(A1 * A2 * !C1 * X)	-0.00066	-0.00065	-0.00065
	(A1 * !A2 * C1 * X)	0.00127	0.00112	0.00110
	(A1 * !A2 * C1 * X)	-0.00091	-0.00109	-0.00110
	(!A1 * C1 * X)	0.00127	0.00112	0.00110
	(!A1 * C1 * X)	-0.00092	-0.00109	-0.00110
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	0.00216	0.00208	0.00201
	(A1 * A2 * C1 * X)	-0.00167	-0.00168	-0.00167
	(A1 * A2 * !C1 * X)	0.00197	0.00198	0.00197
	(A1 * A2 * !C1 * X)	-0.00137	-0.00138	-0.00139
	(A1 * !A2 * C1 * X)	0.00228	0.00199	0.00196
	(A1 * !A2 * C1 * X)	-0.00192	-0.00227	-0.00229
	(!A1 * C1 * X)	0.00229	0.00199	0.00196
	(!A1 * C1 * X)	-0.00191	-0.00227	-0.00229

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)	-0.00108	-0.00108	-0.00107
	(A1 * A2 * C1 * X)	0.00080	0.00081	0.00080
	(A1 * A2 * !C1 * X)	-0.00103	-0.00104	-0.00105
	(A1 * A2 * !C1 * X)	0.00070	0.00070	0.00068
	(A1 * !A2 * C1 * X)	-0.00106	-0.00107	-0.00106
	(A1 * !A2 * C1 * X)	0.00109	0.00110	0.00110
	(!A1 * C1 * X)	-0.00106	-0.00107	-0.00106
	(!A1 * C1 * X)	0.00109	0.00110	0.00110
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	-0.00112	-0.00112	-0.00112
	(A1 * A2 * C1 * X)	0.00080	0.00080	0.00080
	(A1 * A2 * !C1 * X)	-0.00108	-0.00108	-0.00109
	(A1 * A2 * !C1 * X)	0.00070	0.00069	0.00068
	(A1 * !A2 * C1 * X)	-0.00110	-0.00110	-0.00109
	(A1 * !A2 * C1 * X)	0.00110	0.00110	0.00110
	(!A1 * C1 * X)	-0.00110	-0.00110	-0.00109
	(!A1 * C1 * X)	0.00110	0.00110	0.00110
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	-0.00197	-0.00197	-0.00197
	(A1 * A2 * C1 * X)	0.00167	0.00168	0.00167
	(A1 * A2 * !C1 * X)	-0.00190	-0.00190	-0.00192
	(A1 * A2 * !C1 * X)	0.00147	0.00146	0.00144
	(A1 * !A2 * C1 * X)	-0.00194	-0.00195	-0.00194
	(A1 * !A2 * C1 * X)	0.00227	0.00229	0.00229
	(!A1 * C1 * X)	-0.00194	-0.00194	-0.00193
	(!A1 * C1 * X)	0.00227	0.00228	0.00229

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	0.00118	0.00118	0.00117
	(A1 * B1 * X)	-0.00060	-0.00060	-0.00060
	(A1 * A2 * !B1 * X)	0.00118	0.00118	0.00117
	(A1 * A2 * !B1 * X)	-0.00060	-0.00060	-0.00060
	(!A1 * B1 * X)	0.00118	0.00118	0.00117
	(!A1 * B1 * X)	-0.00060	-0.00060	-0.00060
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	0.00117	0.00118	0.00118
	(A1 * B1 * X)	-0.00062	-0.00062	-0.00062
	(A1 * A2 * !B1 * X)	0.00118	0.00118	0.00118
	(A1 * A2 * !B1 * X)	-0.00062	-0.00062	-0.00062
	(!A1 * B1 * X)	0.00117	0.00118	0.00118
	(!A1 * B1 * X)	-0.00062	-0.00062	-0.00062
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	0.00190	0.00191	0.00191
	(A1 * B1 * X)	-0.00120	-0.00121	-0.00120
	(A1 * A2 * !B1 * X)	0.00190	0.00191	0.00191
	(A1 * A2 * !B1 * X)	-0.00119	-0.00120	-0.00120
	(!A1 * B1 * X)	0.00190	0.00191	0.00191
	(!A1 * B1 * X)	-0.00121	-0.00121	-0.00121

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	-0.00113	-0.00114	-0.00117
	(A1 * B1 * X)	0.00063	0.00064	0.00061
	(A1 * A2 * !B1 * X)	-0.00101	-0.00102	-0.00114
	(A1 * A2 * !B1 * X)	0.00071	0.00072	0.00063
	(!A1 * B1 * X)	-0.00113	-0.00114	-0.00117
	(!A1 * B1 * X)	0.00064	0.00064	0.00061
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	-0.00114	-0.00114	-0.00117
	(A1 * B1 * X)	0.00066	0.00066	0.00063
	(A1 * A2 * !B1 * X)	-0.00103	-0.00103	-0.00115
	(A1 * A2 * !B1 * X)	0.00074	0.00073	0.00065
	(!A1 * B1 * X)	-0.00114	-0.00114	-0.00117
	(!A1 * B1 * X)	0.00066	0.00066	0.00063
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	-0.00180	-0.00181	-0.00189
	(A1 * B1 * X)	0.00130	0.00130	0.00123
	(A1 * A2 * !B1 * X)	-0.00159	-0.00160	-0.00185
	(A1 * A2 * !B1 * X)	0.00144	0.00144	0.00125
	(!A1 * B1 * X)	-0.00180	-0.00181	-0.00189
	(!A1 * B1 * X)	0.00131	0.00131	0.00124

SKY130_FD_SC_HS__A21BOIx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a21boi_1	11.18880
sky130_fd_sc_hs__a21boi_2	14.38560
sky130_fd_sc_hs__a21boi_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1_N	Y
sky130_fd_sc_hs__a21boi_1	0.00268	0.00259	0.00249	0.35844
sky130_fd_sc_hs__a21boi_2	0.00509	0.00490	0.00244	0.69152
sky130_fd_sc_hs__a21boi_4	0.01008	0.00999	0.00358	1.26814

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21boi_1	0.00000	0.07579	0.14134
sky130_fd_sc_hs__a21boi_2	0.00000	0.06230	0.10343
sky130_fd_sc_hs__a21boi_4	0.00000	0.18047	0.32563

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)	0.11956	1.19982	11.57560
	A2->Y (FR)	0.14913	1.25604	11.83450
	B1_N->Y (RR)	0.14605	0.99929	7.42440
sky130_fd_sc_hs__a21boi_2	A1->Y (FR)	0.10775	1.04537	11.70400
	A2->Y (FR)	0.13896	1.07575	11.70750
	B1_N->Y (RR)	0.13505	0.83450	7.29165
sky130_fd_sc_hs__a21boi_4	A1->Y (FR)	0.10732	0.91503	11.55970
	A2->Y (FR)	0.13760	0.93461	11.41290
	B1_N->Y (RR)	0.11749	0.74374	7.63090

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21boi_1	A1->Y (RF)	0.03529	0.49919	4.92952
	A2->Y (RF)	0.03950	0.47069	4.58026
	B1_N->Y (FF)	0.10004	0.52854	2.85117
sky130_fd_sc_hs__a21boi_2	A1->Y (RF)	0.03259	0.45421	5.13783
	A2->Y (RF)	0.03894	0.43244	4.73661
	B1_N->Y (FF)	0.11201	0.56630	3.20965
sky130_fd_sc_hs__a21boi_4	A1->Y (RF)	0.03357	0.41467	5.18531
	A2->Y (RF)	0.03974	0.37801	4.58420
	B1_N->Y (FF)	0.11587	0.53566	2.95232

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.00064	0.00055	0.00064
	A1	0.00343	0.00334	0.00342
	A2	0.00103	0.00094	0.00103
	A2	0.00443	0.00436	0.00445
	B1_N	0.00536	0.00520	0.00905
	B1_N	0.00360	0.00343	0.00728
sky130_fd_sc_hs__a21boi_2	A1	0.00136	0.00121	0.00142
	A1	0.00675	0.00663	0.00684
	A2	0.00251	0.00232	0.00250
	A2	0.00916	0.00899	0.00914
	B1_N	0.00806	0.00793	0.01143
	B1_N	0.00726	0.00713	0.01065
sky130_fd_sc_hs__a21boi_4	A1	0.00278	0.00247	0.00296
	A1	0.01378	0.01333	0.01395
	A2	0.00463	0.00422	0.00465
	A2	0.01819	0.01744	0.01822
	B1_N	0.01403	0.01394	0.01996
	B1_N	0.01391	0.01381	0.01984

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.00375	0.00368	0.00393
	A1	0.00100	0.00089	0.00108
	A2	0.00441	0.00433	0.00445
	A2	0.00100	0.00088	0.00099
	B1_N	0.00303	0.00324	0.00751
	B1_N	0.00475	0.00496	0.00923
sky130_fd_sc_hs__a21boi_2	A1	0.00676	0.00649	0.00715
	A1	0.00143	0.00117	0.00156
	A2	0.00810	0.00785	0.00824
	A2	0.00141	0.00116	0.00138
	B1_N	0.00563	0.00602	0.00979
	B1_N	0.00633	0.00666	0.01048
sky130_fd_sc_hs__a21boi_4	A1	0.01323	0.01270	0.01441
	A1	0.00244	0.00186	0.00275
	A2	0.01611	0.01557	0.01604
	A2	0.00250	0.00189	0.00247
	B1_N	0.01143	0.01219	0.01965
	B1_N	0.01124	0.01192	0.01940

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)	0.00111	0.00105	0.00104
	(A2 * !B1_N * !Y)	-0.00121	-0.00129	-0.00129
	(!A2 * B1_N * Y)	0.00043	0.00043	0.00042
	(!A2 * B1_N * Y)	-0.00146	-0.00147	-0.00149
	(!A2 * !B1_N * !Y)	0.00098	0.00099	0.00098
	(!A2 * !B1_N * !Y)	-0.00131	-0.00132	-0.00131
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	0.00217	0.00207	0.00205
	(A2 * !B1_N * !Y)	-0.00231	-0.00249	-0.00249
	(!A2 * B1_N * Y)	0.00078	0.00078	0.00074
	(!A2 * B1_N * Y)	-0.00291	-0.00292	-0.00297
	(!A2 * !B1_N * !Y)	0.00195	0.00196	0.00195
	(!A2 * !B1_N * !Y)	-0.00253	-0.00254	-0.00253
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	0.00433	0.00408	0.00404
	(A2 * !B1_N * !Y)	-0.00461	-0.00502	-0.00502
	(!A2 * B1_N * Y)	0.00144	0.00146	0.00138
	(!A2 * B1_N * Y)	-0.00585	-0.00591	-0.00599
	(!A2 * !B1_N * !Y)	0.00382	0.00385	0.00383
	(!A2 * !B1_N * !Y)	-0.00509	-0.00512	-0.00510

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)	-0.00104	-0.00104	-0.00104
	(A2 * !B1_N * !Y)	0.00129	0.00130	0.00129
	(!A2 * B1_N * Y)	-0.00040	-0.00041	-0.00040
	(!A2 * B1_N * Y)	0.00149	0.00150	0.00149
	(!A2 * !B1_N * !Y)	-0.00095	-0.00099	-0.00098
	(!A2 * !B1_N * !Y)	0.00131	0.00133	0.00131
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	-0.00205	-0.00205	-0.00205
	(A2 * !B1_N * !Y)	0.00249	0.00249	0.00249
	(!A2 * B1_N * Y)	-0.00072	-0.00072	-0.00071
	(!A2 * B1_N * Y)	0.00299	0.00300	0.00298
	(!A2 * !B1_N * !Y)	-0.00186	-0.00196	-0.00195
	(!A2 * !B1_N * !Y)	0.00253	0.00257	0.00254
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	-0.00403	-0.00403	-0.00402
	(A2 * !B1_N * !Y)	0.00503	0.00503	0.00502
	(!A2 * B1_N * Y)	-0.00134	-0.00134	-0.00133
	(!A2 * B1_N * Y)	0.00602	0.00605	0.00601
	(!A2 * !B1_N * !Y)	-0.00366	-0.00385	-0.00383
	(!A2 * !B1_N * !Y)	0.00509	0.00517	0.00511

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)	0.00116	0.00109	0.00108
	(A1 * !B1_N * !Y)	-0.00115	-0.00124	-0.00124
	(!A1 * B1_N * Y)	0.00102	0.00103	0.00103
	(!A1 * B1_N * Y)	-0.00127	-0.00127	-0.00127
	(!A1 * !B1_N * !Y)	0.00103	0.00104	0.00103
	(!A1 * !B1_N * !Y)	-0.00126	-0.00127	-0.00126
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	0.00214	0.00203	0.00202
	(A1 * !B1_N * !Y)	-0.00231	-0.00248	-0.00248
	(!A1 * B1_N * Y)	0.00191	0.00192	0.00191
	(!A1 * B1_N * Y)	-0.00252	-0.00253	-0.00252
	(!A1 * !B1_N * !Y)	0.00191	0.00192	0.00191
	(!A1 * !B1_N * !Y)	-0.00253	-0.00254	-0.00252
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	0.00440	0.00412	0.00408
	(A1 * !B1_N * !Y)	-0.00458	-0.00497	-0.00499
	(!A1 * B1_N * Y)	0.00367	0.00366	0.00369
	(!A1 * B1_N * Y)	-0.00524	-0.00524	-0.00526
	(!A1 * !B1_N * !Y)	0.00385	0.00392	0.00387
	(!A1 * !B1_N * !Y)	-0.00505	-0.00510	-0.00507

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)	-0.00109	-0.00109	-0.00108
	(A1 * !B1_N * !Y)	0.00125	0.00125	0.00124
	(!A1 * B1_N * Y)	-0.00097	-0.00103	-0.00103
	(!A1 * B1_N * Y)	0.00130	0.00129	0.00128
	(!A1 * !B1_N * !Y)	-0.00100	-0.00104	-0.00103
	(!A1 * !B1_N * !Y)	0.00126	0.00128	0.00127
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	-0.00201	-0.00203	-0.00201
	(A1 * !B1_N * !Y)	0.00247	0.00252	0.00248
	(!A1 * B1_N * Y)	-0.00181	-0.00192	-0.00191
	(!A1 * B1_N * Y)	0.00258	0.00256	0.00253
	(!A1 * !B1_N * !Y)	-0.00185	-0.00192	-0.00191
	(!A1 * !B1_N * !Y)	0.00254	0.00255	0.00253
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	-0.00408	-0.00406	-0.00406
	(A1 * !B1_N * !Y)	0.00501	0.00497	0.00499
	(!A1 * B1_N * Y)	-0.00350	-0.00366	-0.00369
	(!A1 * B1_N * Y)	0.00539	0.00534	0.00528
	(!A1 * !B1_N * !Y)	-0.00377	-0.00390	-0.00387
	(!A1 * !B1_N * !Y)	0.00510	0.00512	0.00509

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)	0.00330	0.00313	0.00693
	(A1 * A2 * !Y)	0.00063	0.00044	0.00426
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00392	0.00374	0.00713
	(A1 * A2 * !Y)	0.00130	0.00110	0.00452
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.00606	0.00574	0.01148
	(A1 * A2 * !Y)	0.00219	0.00185	0.00762

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)	0.00067	0.00089	0.00529
	(A1 * A2 * !Y)	0.00334	0.00356	0.00796
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00196	0.00208	0.00602
	(A1 * A2 * !Y)	0.00454	0.00468	0.00861
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.00416	0.00432	0.01192
	(A1 * A2 * !Y)	0.00798	0.00814	0.01574

SKY130_FD_SC_HS__A21BOx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a21bo_1	12.78720
sky130_fd_sc_hs__a21bo_2	12.78720
sky130_fd_sc_hs__a21bo_4	20.77920

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1_N	X
sky130_fd_sc_hs__a21bo_1	0.00250	0.00239	0.00210	0.70963
sky130_fd_sc_hs__a21bo_2	0.00267	0.00250	0.00220	1.36216
sky130_fd_sc_hs__a21bo_4	0.00460	0.00488	0.00255	2.58182

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a21bo_1	0.00000	0.10520	0.17093
sky130_fd_sc_hs__a21bo_2	0.00000	0.11616	0.17716
sky130_fd_sc_hs__a21bo_4	0.00000	0.14472	0.18071

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)	0.10734	0.80182	6.98312
	A2->X (RR)	0.11130	0.80943	7.11284
	B1_N->X (FR)	0.16490	0.98813	8.42786
sky130_fd_sc_hs__a21bo_2	A1->X (RR)	0.10251	0.69625	7.02072
	A2->X (RR)	0.10688	0.69696	7.11811
	B1_N->X (FR)	0.17111	0.88630	8.41577
sky130_fd_sc_hs__a21bo_4	A1->X (RR)	0.10521	0.61522	7.04078
	A2->X (RR)	0.11204	0.62214	7.16294
	B1_N->X (FR)	0.19432	0.86226	8.78743

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21bo_1	A1->X (FF)	0.19914	0.75891	4.65201
	A2->X (FF)	0.22708	0.79821	4.79175
	B1_N->X (RF)	0.22453	0.55010	2.43439
sky130_fd_sc_hs__a21bo_2	A1->X (FF)	0.25484	0.80888	4.87991
	A2->X (FF)	0.29071	0.85604	5.03410
	B1_N->X (RF)	0.29714	0.61658	2.47961
sky130_fd_sc_hs__a21bo_4	A1->X (FF)	0.24051	0.75698	4.79584
	A2->X (FF)	0.26513	0.79191	4.93559
	B1_N->X (RF)	0.26675	0.56231	2.42883

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.00589	0.00587	0.00789
	A1	0.00323	0.00322	0.00525
	A2	0.00650	0.00655	0.00783
	A2	0.00325	0.00329	0.00460
	B1_N	0.00543	0.00575	0.01008
	B1_N	0.00677	0.00708	0.01203
sky130_fd_sc_hs__a21bo_2	A1	0.00765	0.00780	0.00967
	A1	0.00489	0.00504	0.00691
	A2	0.00823	0.00846	0.00965
	A2	0.00487	0.00509	0.00637
	B1_N	0.00749	0.00785	0.01207
	B1_N	0.00886	0.00921	0.01478
sky130_fd_sc_hs__a21bo_4	A1	0.01405	0.01438	0.01849
	A1	0.00925	0.00960	0.01381
	A2	0.01567	0.01608	0.01866
	A2	0.00926	0.00969	0.01241
	B1_N	0.01326	0.01377	0.01794
	B1_N	0.01425	0.01475	0.01910

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.00313	0.00315	0.00472
	A1	0.00582	0.00583	0.00713
	A2	0.00323	0.00334	0.00479
	A2	0.00648	0.00658	0.00772
	B1_N	0.00708	0.00704	0.01051
	B1_N	0.00572	0.00564	0.00911
sky130_fd_sc_hs__a21bo_2	A1	0.00450	0.00470	0.00627
	A1	0.00729	0.00753	0.00878
	A2	0.00487	0.00509	0.00637
	A2	0.00822	0.00857	0.00969
	B1_N	0.00922	0.00929	0.01282
	B1_N	0.00781	0.00787	0.01133
sky130_fd_sc_hs__a21bo_4	A1	0.00892	0.00947	0.01255
	A1	0.01376	0.01431	0.01681
	A2	0.00909	0.00978	0.01263
	A2	0.01544	0.01612	0.01840
	B1_N	0.01540	0.01604	0.01950
	B1_N	0.01433	0.01485	0.01822

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)	0.00100	0.00091	0.00090
	(A2 * !B1_N * X)	-0.00112	-0.00122	-0.00123
	(!A2 * B1_N * !X)	0.00036	0.00036	0.00034
	(!A2 * B1_N * !X)	-0.00139	-0.00140	-0.00141
	(!A2 * !B1_N * X)	0.00084	0.00085	0.00085
	(!A2 * !B1_N * X)	-0.00124	-0.00125	-0.00125
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	0.00116	0.00107	0.00106
	(A2 * !B1_N * X)	-0.00110	-0.00120	-0.00120
	(!A2 * B1_N * !X)	0.00045	0.00045	0.00043
	(!A2 * B1_N * !X)	-0.00138	-0.00139	-0.00141
	(!A2 * !B1_N * X)	0.00101	0.00101	0.00101
	(!A2 * !B1_N * X)	-0.00122	-0.00123	-0.00122
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	0.00188	0.00173	0.00171
	(A2 * !B1_N * X)	-0.00210	-0.00228	-0.00229
	(!A2 * B1_N * !X)	0.00057	0.00058	0.00055
	(!A2 * B1_N * !X)	-0.00266	-0.00269	-0.00273
	(!A2 * !B1_N * X)	0.00160	0.00162	0.00161
	(!A2 * !B1_N * X)	-0.00232	-0.00234	-0.00233

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)	-0.00090	-0.00090	-0.00089
	(A2 * !B1_N * X)	0.00124	0.00123	0.00123
	(!A2 * B1_N * !X)	-0.00033	-0.00034	-0.00033
	(!A2 * B1_N * !X)	0.00141	0.00142	0.00142
	(!A2 * !B1_N * X)	-0.00082	-0.00085	-0.00085
	(!A2 * !B1_N * X)	0.00124	0.00125	0.00125
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	-0.00107	-0.00106	-0.00106
	(A2 * !B1_N * X)	0.00121	0.00120	0.00120
	(!A2 * B1_N * !X)	-0.00042	-0.00042	-0.00042
	(!A2 * B1_N * !X)	0.00141	0.00142	0.00141
	(!A2 * !B1_N * X)	-0.00098	-0.00101	-0.00101
	(!A2 * !B1_N * X)	0.00123	0.00123	0.00122
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	-0.00171	-0.00172	-0.00170
	(A2 * !B1_N * X)	0.00229	0.00232	0.00229
	(!A2 * B1_N * !X)	-0.00053	-0.00053	-0.00052
	(!A2 * B1_N * !X)	0.00275	0.00275	0.00274
	(!A2 * !B1_N * X)	-0.00154	-0.00162	-0.00161
	(!A2 * !B1_N * X)	0.00232	0.00236	0.00233

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)	0.00112	0.00106	0.00105
	(A1 * !B1_N * X)	-0.00103	-0.00112	-0.00113
	(!A1 * B1_N * !X)	0.00100	0.00101	0.00100
	(!A1 * B1_N * !X)	-0.00114	-0.00114	-0.00114
	(!A1 * !B1_N * X)	0.00099	0.00100	0.00100
	(!A1 * !B1_N * X)	-0.00114	-0.00114	-0.00114
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	0.00113	0.00105	0.00104
	(A1 * !B1_N * X)	-0.00105	-0.00116	-0.00117
	(!A1 * B1_N * !X)	0.00098	0.00099	0.00098
	(!A1 * B1_N * !X)	-0.00118	-0.00119	-0.00119
	(!A1 * !B1_N * X)	0.00098	0.00099	0.00098
	(!A1 * !B1_N * X)	-0.00119	-0.00119	-0.00119
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	0.00225	0.00213	0.00212
	(A1 * !B1_N * X)	-0.00210	-0.00227	-0.00228
	(!A1 * B1_N * !X)	0.00201	0.00202	0.00201
	(!A1 * B1_N * !X)	-0.00230	-0.00231	-0.00230
	(!A1 * !B1_N * X)	0.00200	0.00203	0.00201
	(!A1 * !B1_N * X)	-0.00230	-0.00232	-0.00231

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)	-0.00104	-0.00105	-0.00104
	(A1 * !B1_N * X)	0.00112	0.00113	0.00113
	(!A1 * B1_N * !X)	-0.00095	-0.00100	-0.00100
	(!A1 * B1_N * !X)	0.00118	0.00116	0.00115
	(!A1 * !B1_N * X)	-0.00098	-0.00100	-0.00100
	(!A1 * !B1_N * X)	0.00115	0.00115	0.00115
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	-0.00104	-0.00104	-0.00103
	(A1 * !B1_N * X)	0.00118	0.00117	0.00117
	(!A1 * B1_N * !X)	-0.00094	-0.00099	-0.00098
	(!A1 * B1_N * !X)	0.00123	0.00121	0.00119
	(!A1 * !B1_N * X)	-0.00096	-0.00099	-0.00098
	(!A1 * !B1_N * X)	0.00120	0.00120	0.00119
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	-0.00211	-0.00212	-0.00211
	(A1 * !B1_N * X)	0.00226	0.00228	0.00228
	(!A1 * B1_N * !X)	-0.00191	-0.00202	-0.00201
	(!A1 * B1_N * !X)	0.00238	0.00234	0.00231
	(!A1 * !B1_N * X)	-0.00196	-0.00203	-0.00201
	(!A1 * !B1_N * X)	0.00231	0.00234	0.00232

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)	0.00275	0.00262	0.00650
	(A1 * A2 * X)	0.00048	0.00034	0.00424
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00311	0.00294	0.00667
	(A1 * A2 * X)	0.00074	0.00056	0.00431
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00419	0.00403	0.00741
	(A1 * A2 * X)	0.00146	0.00128	0.00468

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)	0.00083	0.00105	0.00548
	(A1 * A2 * X)	0.00308	0.00331	0.00773
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00099	0.00120	0.00556
	(A1 * A2 * X)	0.00336	0.00357	0.00792
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00159	0.00163	0.00562
	(A1 * A2 * X)	0.00430	0.00434	0.00833

SKY130_FD_SC_HS__A21OIx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a21oi_1	6.39360
sky130_fd_sc_hs__a21oi_2	12.78720
sky130_fd_sc_hs__a21oi_4	20.77920

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1	Y
sky130_fd_sc_hs__a21oi_1	0.00278	0.00259	0.00272	0.34973
sky130_fd_sc_hs__a21oi_2	0.00504	0.00523	0.00404	0.63140
sky130_fd_sc_hs__a21oi_4	0.01027	0.00996	0.00796	1.21592

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21oi_1	0.00000	0.01462	0.02443
sky130_fd_sc_hs__a21oi_2	0.00000	0.02767	0.04886
sky130_fd_sc_hs__a21oi_4	0.00000	0.05534	0.09773

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)	0.11972	1.19075	11.41290
	A2->Y (FR)	0.14675	1.24324	11.65910
	B1->Y (FR)	0.11499	1.19384	11.59520
sky130_fd_sc_hs__a21oi_2	A1->Y (FR)	0.11143	1.06515	11.66060
	A2->Y (FR)	0.14739	1.08843	11.53100
	B1->Y (FR)	0.06360	1.00133	11.54940
sky130_fd_sc_hs__a21oi_4	A1->Y (FR)	0.10352	0.91661	11.50040
	A2->Y (FR)	0.13417	0.93569	11.34690
	B1->Y (FR)	0.05790	0.86053	11.42880

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21oi_1	A1->Y (RF)	0.03552	0.49230	4.85656
	A2->Y (RF)	0.03902	0.46725	4.52330
	B1->Y (RF)	0.02295	0.39589	4.00510
sky130_fd_sc_hs__a21oi_2	A1->Y (RF)	0.03266	0.44611	4.93249
	A2->Y (RF)	0.04055	0.42502	4.53317
	B1->Y (RF)	0.02760	0.47490	5.45609
sky130_fd_sc_hs__a21oi_4	A1->Y (RF)	0.03229	0.40858	5.06878
	A2->Y (RF)	0.03807	0.37199	4.47188
	B1->Y (RF)	0.02781	0.43611	5.67447

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	-0.00012	-0.00021	-0.00013
	A1	0.00357	0.00347	0.00357
	A2	0.00015	0.00007	0.00016
	A2	0.00447	0.00439	0.00447
	B1	0.00011	0.00009	0.00066
	B1	0.00374	0.00372	0.00429
sky130_fd_sc_hs__a21oi_2	A1	-0.00032	-0.00047	-0.00026
	A1	0.00655	0.00643	0.00661
	A2	0.00067	0.00045	0.00066
	A2	0.00910	0.00888	0.00907
	B1	0.00126	0.00119	0.00192
	B1	0.00732	0.00725	0.00796
sky130_fd_sc_hs__a21oi_4	A1	-0.00116	-0.00146	-0.00093
	A1	0.01295	0.01254	0.01319
	A2	0.00088	0.00048	0.00095
	A2	0.01770	0.01696	0.01775
	B1	0.00221	0.00216	0.00348
	B1	0.01412	0.01410	0.01535

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	0.00456	0.00444	0.00479
	A1	0.00094	0.00081	0.00100
	A2	0.00523	0.00513	0.00527
	A2	0.00094	0.00082	0.00093
	B1	0.00353	0.00356	0.00380
	B1	-0.00016	-0.00016	0.00005
sky130_fd_sc_hs__a21oi_2	A1	0.00818	0.00793	0.00831
	A1	0.00140	0.00114	0.00157
	A2	0.00989	0.00961	0.01000
	A2	0.00143	0.00116	0.00139
	B1	0.00532	0.00535	0.00573
	B1	-0.00105	-0.00111	-0.00075
sky130_fd_sc_hs__a21oi_4	A1	0.01640	0.01577	0.01675
	A1	0.00251	0.00188	0.00280
	A2	0.01922	0.01869	0.01971
	A2	0.00242	0.00183	0.00239
	B1	0.01034	0.01028	0.01108
	B1	-0.00185	-0.00199	-0.00121

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	0.00113	0.00106	0.00106
	(A2 * B1 * !Y)	-0.00113	-0.00123	-0.00123
	(!A2 * B1 * !Y)	0.00099	0.00100	0.00100
	(!A2 * B1 * !Y)	-0.00126	-0.00127	-0.00126
	(!A2 * !B1 * Y)	0.00035	0.00035	0.00034
	(!A2 * !B1 * Y)	-0.00150	-0.00151	-0.00152
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	0.00224	0.00212	0.00210
	(A2 * B1 * !Y)	-0.00219	-0.00242	-0.00241
	(!A2 * B1 * !Y)	0.00195	0.00197	0.00196
	(!A2 * B1 * !Y)	-0.00248	-0.00249	-0.00248
	(!A2 * !B1 * Y)	0.00076	0.00076	0.00071
	(!A2 * !B1 * Y)	-0.00285	-0.00287	-0.00292
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	0.00454	0.00426	0.00423
	(A2 * B1 * !Y)	-0.00436	-0.00481	-0.00480
	(!A2 * B1 * !Y)	0.00401	0.00403	0.00401
	(!A2 * B1 * !Y)	-0.00494	-0.00494	-0.00493
	(!A2 * !B1 * Y)	0.00142	0.00141	0.00134
	(!A2 * !B1 * Y)	-0.00590	-0.00589	-0.00603

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	-0.00106	-0.00106	-0.00106
	(A2 * B1 * !Y)	0.00123	0.00123	0.00123
	(!A2 * B1 * !Y)	-0.00097	-0.00100	-0.00100
	(!A2 * B1 * !Y)	0.00126	0.00128	0.00127
	(!A2 * !B1 * Y)	-0.00033	-0.00033	-0.00033
	(!A2 * !B1 * Y)	0.00152	0.00154	0.00153
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	-0.00210	-0.00211	-0.00210
	(A2 * B1 * !Y)	0.00241	0.00242	0.00241
	(!A2 * B1 * !Y)	-0.00184	-0.00197	-0.00196
	(!A2 * B1 * !Y)	0.00250	0.00249	0.00248
	(!A2 * !B1 * Y)	-0.00069	-0.00069	-0.00069
	(!A2 * !B1 * Y)	0.00294	0.00295	0.00293
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	-0.00424	-0.00425	-0.00423
	(A2 * B1 * !Y)	0.00481	0.00483	0.00480
	(!A2 * B1 * !Y)	-0.00383	-0.00403	-0.00401
	(!A2 * B1 * !Y)	0.00495	0.00498	0.00494
	(!A2 * !B1 * Y)	-0.00131	-0.00131	-0.00130
	(!A2 * !B1 * Y)	0.00606	0.00609	0.00605

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	0.00113	0.00107	0.00106
	(A1 * B1 * !Y)	-0.00112	-0.00123	-0.00123
	(!A1 * B1 * !Y)	0.00100	0.00101	0.00100
	(!A1 * B1 * !Y)	-0.00126	-0.00127	-0.00126
	(!A1 * !B1 * Y)	0.00100	0.00101	0.00100
	(!A1 * !B1 * Y)	-0.00126	-0.00126	-0.00126
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	0.00233	0.00219	0.00218
	(A1 * B1 * !Y)	-0.00220	-0.00241	-0.00241
	(!A1 * B1 * !Y)	0.00203	0.00205	0.00203
	(!A1 * B1 * !Y)	-0.00249	-0.00250	-0.00249
	(!A1 * !B1 * Y)	0.00194	0.00195	0.00194
	(!A1 * !B1 * Y)	-0.00258	-0.00258	-0.00257
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	0.00446	0.00417	0.00412
	(A1 * B1 * !Y)	-0.00449	-0.00495	-0.00494
	(!A1 * B1 * !Y)	0.00387	0.00391	0.00388
	(!A1 * B1 * !Y)	-0.00507	-0.00510	-0.00508
	(!A1 * !B1 * Y)	0.00384	0.00386	0.00385
	(!A1 * !B1 * Y)	-0.00510	-0.00512	-0.00511

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	-0.00106	-0.00107	-0.00106
	(A1 * B1 * !Y)	0.00123	0.00123	0.00123
	(!A1 * B1 * !Y)	-0.00098	-0.00101	-0.00100
	(!A1 * B1 * !Y)	0.00126	0.00128	0.00127
	(!A1 * !B1 * Y)	-0.00095	-0.00101	-0.00100
	(!A1 * !B1 * Y)	0.00130	0.00129	0.00127
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	-0.00217	-0.00217	-0.00217
	(A1 * B1 * !Y)	0.00240	0.00241	0.00241
	(!A1 * B1 * !Y)	-0.00194	-0.00205	-0.00203
	(!A1 * B1 * !Y)	0.00250	0.00251	0.00249
	(!A1 * !B1 * Y)	-0.00182	-0.00195	-0.00194
	(!A1 * !B1 * Y)	0.00263	0.00261	0.00257
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	-0.00413	-0.00413	-0.00411
	(A1 * B1 * !Y)	0.00495	0.00496	0.00494
	(!A1 * B1 * !Y)	-0.00376	-0.00390	-0.00388
	(!A1 * B1 * !Y)	0.00510	0.00514	0.00509
	(!A1 * !B1 * Y)	-0.00363	-0.00386	-0.00385
	(!A1 * !B1 * Y)	0.00526	0.00518	0.00512

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	0.00124	0.00124	0.00124
	(A1 * A2 * !Y)	-0.00064	-0.00065	-0.00064
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	0.00138	0.00139	0.00138
	(A1 * A2 * !Y)	-0.00132	-0.00134	-0.00133
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	0.00267	0.00268	0.00267
	(A1 * A2 * !Y)	-0.00257	-0.00257	-0.00256

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	-0.00115	-0.00115	-0.00123
	(A1 * A2 * !Y)	0.00073	0.00073	0.00067
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	-0.00118	-0.00120	-0.00136
	(A1 * A2 * !Y)	0.00150	0.00151	0.00137
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	-0.00228	-0.00231	-0.00263
	(A1 * A2 * !Y)	0.00288	0.00288	0.00265

SKY130_FD_SC_HS__A21Ox

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a21o_1	11.18880
sky130_fd_sc_hs__a21o_2	11.18880
sky130_fd_sc_hs__a21o_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1	X
sky130_fd_sc_hs__a21o_1	0.00233	0.00238	0.00239	0.77202
sky130_fd_sc_hs__a21o_2	0.00261	0.00249	0.00265	1.51710
sky130_fd_sc_hs__a21o_4	0.00471	0.00447	0.00481	2.89667

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21o_1	0.00000	0.04404	0.06470
sky130_fd_sc_hs__a21o_2	0.00000	0.05500	0.06891
sky130_fd_sc_hs__a21o_4	0.00000	0.11166	0.13782

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)	0.10147	0.77384	6.92715
	A2->X (RR)	0.10670	0.78400	7.06532
	B1->X (RR)	0.07674	0.72339	6.89958
sky130_fd_sc_hs__a21o_2	A1->X (RR)	0.09948	0.67950	7.05965
	A2->X (RR)	0.10396	0.68028	7.15735
	B1->X (RR)	0.07338	0.62861	6.99694
sky130_fd_sc_hs__a21o_4	A1->X (RR)	0.11210	0.61934	7.15084
	A2->X (RR)	0.11851	0.62412	7.26714
	B1->X (RR)	0.07636	0.55401	7.06961

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21o_1	A1->X (FF)	0.18950	0.75481	4.81059
	A2->X (FF)	0.22128	0.79870	4.95314
	B1->X (FF)	0.18857	0.74189	4.62684
sky130_fd_sc_hs__a21o_2	A1->X (FF)	0.23955	0.79776	5.02463
	A2->X (FF)	0.27485	0.84274	5.17295
	B1->X (FF)	0.24431	0.79574	4.87215
sky130_fd_sc_hs__a21o_4	A1->X (FF)	0.24214	0.77070	5.08668
	A2->X (FF)	0.27746	0.81527	5.24488
	B1->X (FF)	0.24220	0.76306	4.93458

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.00637	0.00635	0.00838
	A1	0.00324	0.00322	0.00528
	A2	0.00714	0.00715	0.00842
	A2	0.00324	0.00325	0.00456
	B1	0.00535	0.00521	0.00848
	B1	0.00220	0.00207	0.00640
sky130_fd_sc_hs__a21o_2	A1	0.00834	0.00851	0.01038
	A1	0.00492	0.00509	0.00703
	A2	0.00906	0.00929	0.01047
	A2	0.00491	0.00515	0.00641
	B1	0.00745	0.00746	0.01042
	B1	0.00392	0.00395	0.00714
sky130_fd_sc_hs__a21o_4	A1	0.01584	0.01613	0.02022
	A1	0.00930	0.00961	0.01384
	A2	0.01702	0.01746	0.01994
	A2	0.00928	0.00975	0.01243
	B1	0.01378	0.01393	0.02014
	B1	0.00715	0.00739	0.01405

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.00233	0.00237	0.00375
	A1	0.00550	0.00554	0.00686
	A2	0.00240	0.00250	0.00375
	A2	0.00629	0.00641	0.00756
	B1	0.00259	0.00277	0.00624
	B1	0.00568	0.00586	0.00916
sky130_fd_sc_hs__a21o_2	A1	0.00376	0.00403	0.00532
	A1	0.00724	0.00750	0.00873
	A2	0.00403	0.00438	0.00554
	A2	0.00817	0.00852	0.00965
	B1	0.00368	0.00406	0.00837
	B1	0.00753	0.00798	0.01129
sky130_fd_sc_hs__a21o_4	A1	0.00758	0.00813	0.01242
	A1	0.01422	0.01480	0.01729
	A2	0.00848	0.00881	0.01233
	A2	0.01621	0.01685	0.01909
	B1	0.00839	0.00924	0.01677
	B1	0.01488	0.01573	0.02232

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	0.00094	0.00085	0.00085
	(A2 * B1 * X)	-0.00102	-0.00113	-0.00113
	(!A2 * B1 * X)	0.00080	0.00080	0.00080
	(!A2 * B1 * X)	-0.00116	-0.00117	-0.00116
	(!A2 * !B1 * !X)	0.00031	0.00031	0.00030
	(!A2 * !B1 * !X)	-0.00131	-0.00131	-0.00133
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	0.00110	0.00102	0.00101
	(A2 * B1 * X)	-0.00103	-0.00114	-0.00114
	(!A2 * B1 * X)	0.00095	0.00096	0.00095
	(!A2 * B1 * X)	-0.00118	-0.00118	-0.00118
	(!A2 * !B1 * !X)	0.00038	0.00038	0.00036
	(!A2 * !B1 * !X)	-0.00135	-0.00136	-0.00138
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	0.00200	0.00184	0.00183
	(A2 * B1 * X)	-0.00204	-0.00224	-0.00226
	(!A2 * B1 * X)	0.00174	0.00175	0.00174
	(!A2 * B1 * X)	-0.00231	-0.00233	-0.00232
	(!A2 * !B1 * !X)	0.00068	0.00068	0.00064
	(!A2 * !B1 * !X)	-0.00270	-0.00271	-0.00276

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	-0.00085	-0.00085	-0.00084
	(A2 * B1 * X)	0.00114	0.00115	0.00113
	(!A2 * B1 * X)	-0.00078	-0.00080	-0.00080
	(!A2 * B1 * X)	0.00117	0.00117	0.00116
	(!A2 * !B1 * !X)	-0.00029	-0.00029	-0.00029
	(!A2 * !B1 * !X)	0.00133	0.00134	0.00133
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	-0.00101	-0.00101	-0.00101
	(A2 * B1 * X)	0.00115	0.00114	0.00114
	(!A2 * B1 * X)	-0.00093	-0.00096	-0.00095
	(!A2 * B1 * X)	0.00119	0.00119	0.00118
	(!A2 * !B1 * !X)	-0.00035	-0.00035	-0.00035
	(!A2 * !B1 * !X)	0.00138	0.00139	0.00138
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	-0.00182	-0.00182	-0.00182
	(A2 * B1 * X)	0.00225	0.00224	0.00226
	(!A2 * B1 * X)	-0.00166	-0.00175	-0.00174
	(!A2 * B1 * X)	0.00231	0.00235	0.00233
	(!A2 * !B1 * !X)	-0.00062	-0.00062	-0.00061
	(!A2 * !B1 * !X)	0.00278	0.00278	0.00277

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	0.00115	0.00108	0.00107
	(A1 * B1 * X)	-0.00101	-0.00111	-0.00112
	(!A1 * B1 * X)	0.00102	0.00103	0.00102
	(!A1 * B1 * X)	-0.00114	-0.00115	-0.00114
	(!A1 * !B1 * !X)	0.00103	0.00103	0.00102
	(!A1 * !B1 * !X)	-0.00114	-0.00115	-0.00114
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	0.00115	0.00107	0.00107
	(A1 * B1 * X)	-0.00103	-0.00114	-0.00114
	(!A1 * B1 * X)	0.00102	0.00102	0.00101
	(!A1 * B1 * X)	-0.00117	-0.00118	-0.00117
	(!A1 * !B1 * !X)	0.00101	0.00102	0.00101
	(!A1 * !B1 * !X)	-0.00117	-0.00118	-0.00117
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	0.00195	0.00181	0.00179
	(A1 * B1 * X)	-0.00204	-0.00225	-0.00226
	(!A1 * B1 * X)	0.00170	0.00172	0.00170
	(!A1 * B1 * X)	-0.00231	-0.00233	-0.00231
	(!A1 * !B1 * !X)	0.00170	0.00171	0.00169
	(!A1 * !B1 * !X)	-0.00232	-0.00233	-0.00231

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	-0.00106	-0.00107	-0.00106
	(A1 * B1 * X)	0.00111	0.00112	0.00112
	(!A1 * B1 * X)	-0.00100	-0.00103	-0.00102
	(!A1 * B1 * X)	0.00115	0.00116	0.00115
	(!A1 * !B1 * !X)	-0.00098	-0.00103	-0.00102
	(!A1 * !B1 * !X)	0.00117	0.00116	0.00114
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	-0.00107	-0.00107	-0.00106
	(A1 * B1 * X)	0.00114	0.00114	0.00114
	(!A1 * B1 * X)	-0.00098	-0.00102	-0.00101
	(!A1 * B1 * X)	0.00117	0.00119	0.00118
	(!A1 * !B1 * !X)	-0.00096	-0.00102	-0.00101
	(!A1 * !B1 * !X)	0.00120	0.00119	0.00118
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	-0.00178	-0.00180	-0.00178
	(A1 * B1 * X)	0.00224	0.00229	0.00226
	(!A1 * B1 * X)	-0.00164	-0.00171	-0.00170
	(!A1 * B1 * X)	0.00232	0.00234	0.00232
	(!A1 * !B1 * !X)	-0.00160	-0.00170	-0.00169
	(!A1 * !B1 * !X)	0.00238	0.00235	0.00232

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	0.00102	0.00102	0.00102
	(A1 * A2 * X)	-0.00061	-0.00061	-0.00061
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	0.00121	0.00121	0.00121
	(A1 * A2 * X)	-0.00060	-0.00061	-0.00061
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	0.00211	0.00212	0.00212
	(A1 * A2 * X)	-0.00126	-0.00126	-0.00126

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	-0.00093	-0.00093	-0.00101
	(A1 * A2 * X)	0.00070	0.00069	0.00063
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	-0.00111	-0.00112	-0.00120
	(A1 * A2 * X)	0.00069	0.00069	0.00063
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	-0.00192	-0.00193	-0.00209
	(A1 * A2 * X)	0.00143	0.00143	0.00130

SKY130_FD_SC_HS__A221OIx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a221oi_1	12.78720
sky130_fd_sc_hs__a221oi_2	19.18080
sky130_fd_sc_hs__a221oi_4	35.16480

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	B2	C1	Y
sky130_fd_sc_hs__a221oi_1	0.00267	0.00261	0.00273	0.00280	0.00282	0.22358
sky130_fd_sc_hs__a221oi_2	0.00568	0.00508	0.00558	0.00504	0.00517	0.38812
sky130_fd_sc_hs__a221oi_4	0.01042	0.01029	0.01033	0.00997	0.01023	0.70182

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a221oi_1	0.00000	0.01378	0.02443
sky130_fd_sc_hs__a221oi_2	0.00000	0.02757	0.04886
sky130_fd_sc_hs__a221oi_4	0.00000	0.05513	0.09773

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)	0.32561	1.54076	11.32990
	A2->Y (FR)	0.36529	1.58799	11.39320
	B1->Y (FR)	0.28262	1.49168	11.67060
	B2->Y (FR)	0.32712	1.54767	11.78660
	C1->Y (FR)	0.24874	1.43930	11.50300
sky130_fd_sc_hs__a221oi_2	A1->Y (FR)	0.29440	1.29548	10.74420
	A2->Y (FR)	0.36882	1.40776	11.19960
	B1->Y (FR)	0.26917	1.28634	11.35680
	B2->Y (FR)	0.32466	1.36532	11.59710
	C1->Y (FR)	0.23587	1.24927	11.35590
sky130_fd_sc_hs__a221oi_4	A1->Y (FR)	0.31925	1.19767	10.86110
	A2->Y (FR)	0.38210	1.27417	11.03950
	B1->Y (FR)	0.26882	1.14025	11.20590
	B2->Y (FR)	0.33530	1.22977	11.49420
	C1->Y (FR)	0.24673	1.12642	11.34870

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221oi_1	A1->Y (RF)	0.04108	0.46221	3.84568
	A2->Y (RF)	0.04524	0.43799	3.60957
	B1->Y (RF)	0.04295	0.44883	3.86832
	B2->Y (RF)	0.04813	0.43073	3.64081
	C1->Y (RF)	0.02743	0.36109	3.20915
sky130_fd_sc_hs__a221oi_2	A1->Y (RF)	0.03615	0.40823	3.69848
	A2->Y (RF)	0.04291	0.39517	3.51161
	B1->Y (RF)	0.03736	0.38978	3.66242
	B2->Y (RF)	0.04315	0.37717	3.47944
	C1->Y (RF)	0.02449	0.31270	3.07091
sky130_fd_sc_hs__a221oi_4	A1->Y (RF)	0.03770	0.38651	3.77194
	A2->Y (RF)	0.04387	0.35198	3.35614
	B1->Y (RF)	0.04133	0.36767	3.76017
	B2->Y (RF)	0.04721	0.33764	3.34062
	C1->Y (RF)	0.02244	0.26462	2.90429

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221oi_1	A1	0.00128	0.00111	0.00112
	A1	0.00663	0.00647	0.00647
	A2	0.00147	0.00137	0.00139
	A2	0.00755	0.00744	0.00743
	B1	0.00128	0.00110	0.00120
	B1	0.00582	0.00564	0.00572
	B2	0.00155	0.00143	0.00152
	B2	0.00678	0.00666	0.00673
	C1	0.00151	0.00141	0.00211
	C1	0.00609	0.00599	0.00667
sky130_fd_sc_hs__a221oi_2	A1	0.00152	0.00117	0.00124
	A1	0.01248	0.01214	0.01224
	A2	0.00250	0.00222	0.00228
	A2	0.01444	0.01418	0.01422
	B1	0.00176	0.00140	0.00163
	B1	0.01095	0.01059	0.01079
	B2	0.00250	0.00222	0.00245
	B2	0.01273	0.01246	0.01265
	C1	0.00242	0.00217	0.00371
	C1	0.01136	0.01099	0.01232

sky130_fd_sc_hs__a221oi_4	**A1**	0.00283	0.00206	0.00225
	A1	0.02458	0.02387	0.02407
	A2	0.00433	0.00381	0.00396
	A2	0.02879	0.02821	0.02839
	B1	0.00266	0.00195	0.00246
	B1	0.02124	0.02046	0.02094
	B2	0.00429	0.00380	0.00427
	B2	0.02554	0.02503	0.02546
	C1	0.00417	0.00391	0.00695
	C1	0.02204	0.02180	0.02421

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221oi_1	**A1**	0.00760	0.00748	0.00760
	A1	0.00260	0.00246	0.00261
	A2	0.00834	0.00821	0.00821
	A2	0.00258	0.00243	0.00249
	B1	0.00555	0.00547	0.00568
	B1	0.00103	0.00091	0.00114
	B2	0.00627	0.00619	0.00629
	B2	0.00101	0.00088	0.00101
	C1	0.00448	0.00452	0.00477
	C1	-0.00019	-0.00025	0.00006

sky130_fd_sc_hs__a221oi_2	**A1**	0.01430	0.01396	0.01432
	A1	0.00397	0.00364	0.00405
	A2	0.01548	0.01517	0.01526
	A2	0.00412	0.00379	0.00394
	B1	0.01057	0.01036	0.01088
	B1	0.00139	0.00110	0.00164
	B2	0.01182	0.01164	0.01189
	B2	0.00149	0.00124	0.00154
	C1	0.00829	0.00835	0.00898
	C1	-0.00087	-0.00087	-0.00025
sky130_fd_sc_hs__a221oi_4	**A1**	0.02859	0.02782	0.02871
	A1	0.00842	0.00764	0.00852
	A2	0.03136	0.03063	0.03093
	A2	0.00837	0.00762	0.00799
	B1	0.02127	0.02073	0.02185
	B1	0.00278	0.00216	0.00337
	B2	0.02415	0.02372	0.02435
	B2	0.00279	0.00222	0.00292
	C1	0.01716	0.01727	0.01861
	C1	-0.00116	-0.00131	0.00012

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)**	0.00100	0.00101	0.00100
	(A2 * B1 * B2 * C1 * !Y)	-0.00118	-0.00123	-0.00122
	(A2 * B1 * B2 * !C1 * !Y)	0.00101	0.00101	0.00100
	(A2 * B1 * B2 * !C1 * !Y)	-0.00117	-0.00123	-0.00122
	(A2 * B1 * !B2 * C1 * !Y)	0.00101	0.00101	0.00100
	(A2 * B1 * !B2 * C1 * !Y)	-0.00113	-0.00118	-0.00118
	(A2 * !B1 * C1 * !Y)	0.00101	0.00101	0.00100
	(A2 * !B1 * C1 * !Y)	-0.00112	-0.00118	-0.00118
	(!A2 * B1 * B2 * C1 * !Y)	0.00094	0.00095	0.00094
	(!A2 * B1 * B2 * C1 * !Y)	-0.00125	-0.00126	-0.00125
	(!A2 * B1 * B2 * !C1 * !Y)	0.00094	0.00094	0.00094
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00125	-0.00126	-0.00125
	(!A2 * B1 * !B2 * C1 * !Y)	0.00094	0.00095	0.00094
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00125	-0.00126	-0.00125
	(!A2 * B1 * !B2 * !C1 * Y)	0.00035	0.00035	0.00034
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00144	-0.00144	-0.00146
	(!A2 * !B1 * C1 * !Y)	0.00094	0.00095	0.00094
	(!A2 * !B1 * C1 * !Y)	-0.00125	-0.00126	-0.00125
	(!A2 * !B1 * !C1 * Y)	0.00035	0.00035	0.00034
	(!A2 * !B1 * !C1 * Y)	-0.00144	-0.00144	-0.00146

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	0.00214	0.00214	0.00213
	(A2 * B1 * B2 * C1 * !Y)	-0.00248	-0.00259	-0.00257
	(A2 * B1 * B2 * !C1 * !Y)	0.00213	0.00214	0.00213
	(A2 * B1 * B2 * !C1 * !Y)	-0.00246	-0.00259	-0.00257
	(A2 * B1 * !B2 * C1 * !Y)	0.00214	0.00216	0.00213
	(A2 * B1 * !B2 * C1 * !Y)	-0.00236	-0.00251	-0.00249
	(A2 * !B1 * C1 * !Y)	0.00214	0.00216	0.00213
	(A2 * !B1 * C1 * !Y)	-0.00236	-0.00251	-0.00249
	(!A2 * B1 * B2 * C1 * !Y)	0.00203	0.00206	0.00204
	(!A2 * B1 * B2 * C1 * !Y)	-0.00266	-0.00268	-0.00266
	(!A2 * B1 * B2 * !C1 * !Y)	0.00203	0.00206	0.00204
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00265	-0.00268	-0.00266
	(!A2 * B1 * !B2 * C1 * !Y)	0.00203	0.00206	0.00204
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00266	-0.00268	-0.00266
	(!A2 * B1 * !B2 * !C1 * Y)	0.00079	0.00080	0.00075
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00311	-0.00313	-0.00319
	(!A2 * !B1 * C1 * !Y)	0.00203	0.00206	0.00204
	(!A2 * !B1 * C1 * !Y)	-0.00265	-0.00268	-0.00266
	(!A2 * !B1 * !C1 * Y)	0.00079	0.00080	0.00075
	(!A2 * !B1 * !C1 * Y)	-0.00311	-0.00313	-0.00319

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	0.00411	0.00413	0.00411
	(A2 * B1 * B2 * C1 * !Y)	-0.00477	-0.00499	-0.00495
	(A2 * B1 * B2 * !C1 * !Y)	0.00411	0.00414	0.00411
	(A2 * B1 * B2 * !C1 * !Y)	-0.00470	-0.00497	-0.00494
	(A2 * B1 * !B2 * C1 * !Y)	0.00412	0.00412	0.00411
	(A2 * B1 * !B2 * C1 * !Y)	-0.00448	-0.00480	-0.00476
	(A2 * !B1 * C1 * !Y)	0.00412	0.00412	0.00411
	(A2 * !B1 * C1 * !Y)	-0.00448	-0.00480	-0.00476
	(!A2 * B1 * B2 * C1 * !Y)	0.00388	0.00393	0.00389
	(!A2 * B1 * B2 * C1 * !Y)	-0.00507	-0.00511	-0.00508
	(!A2 * B1 * B2 * !C1 * !Y)	0.00390	0.00392	0.00390
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00508	-0.00508	-0.00507
	(!A2 * B1 * !B2 * C1 * !Y)	0.00389	0.00393	0.00390
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00512	-0.00515	-0.00513
	(!A2 * B1 * !B2 * !C1 * Y)	0.00143	0.00143	0.00135
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00600	-0.00603	-0.00613
	(!A2 * !B1 * C1 * !Y)	0.00389	0.00393	0.00390
	(!A2 * !B1 * C1 * !Y)	-0.00512	-0.00515	-0.00513
	(!A2 * !B1 * !C1 * Y)	0.00143	0.00144	0.00136
	(!A2 * !B1 * !C1 * Y)	-0.00598	-0.00603	-0.00612

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)**	-0.00100	-0.00100	-0.00100
	(A2 * B1 * B2 * C1 * !Y)	0.00123	0.00123	0.00122
	(A2 * B1 * B2 * !C1 * !Y)	-0.00100	-0.00100	-0.00100
	(A2 * B1 * B2 * !C1 * !Y)	0.00122	0.00123	0.00122
	(A2 * B1 * !B2 * C1 * !Y)	-0.00100	-0.00100	-0.00100
	(A2 * B1 * !B2 * C1 * !Y)	0.00119	0.00118	0.00118
	(A2 * !B1 * C1 * !Y)	-0.00100	-0.00100	-0.00100
	(A2 * !B1 * C1 * !Y)	0.00117	0.00118	0.00118
	(!A2 * B1 * B2 * C1 * !Y)	-0.00092	-0.00095	-0.00094
	(!A2 * B1 * B2 * C1 * !Y)	0.00126	0.00126	0.00126
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00092	-0.00094	-0.00094
	(!A2 * B1 * B2 * !C1 * !Y)	0.00126	0.00127	0.00126
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00092	-0.00095	-0.00094
	(!A2 * B1 * !B2 * C1 * !Y)	0.00126	0.00126	0.00126
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00033	-0.00033	-0.00033
	(!A2 * B1 * !B2 * !C1 * Y)	0.00146	0.00147	0.00146
	(!A2 * !B1 * C1 * !Y)	-0.00092	-0.00095	-0.00094
	(!A2 * !B1 * C1 * !Y)	0.00126	0.00127	0.00126
	(!A2 * !B1 * !C1 * Y)	-0.00033	-0.00033	-0.00033
	(!A2 * !B1 * !C1 * Y)	0.00146	0.00147	0.00146

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	-0.00212	-0.00214	-0.00213
	(A2 * B1 * B2 * C1 * !Y)	0.00257	0.00262	0.00257
	(A2 * B1 * B2 * !C1 * !Y)	-0.00212	-0.00214	-0.00213
	(A2 * B1 * B2 * !C1 * !Y)	0.00256	0.00260	0.00257
	(A2 * B1 * !B2 * C1 * !Y)	-0.00213	-0.00214	-0.00213
	(A2 * B1 * !B2 * C1 * !Y)	0.00248	0.00251	0.00249
	(A2 * !B1 * C1 * !Y)	-0.00213	-0.00214	-0.00213
	(A2 * !B1 * C1 * !Y)	0.00249	0.00251	0.00249
	(!A2 * B1 * B2 * C1 * !Y)	-0.00196	-0.00206	-0.00204
	(!A2 * B1 * B2 * C1 * !Y)	0.00266	0.00269	0.00267
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00197	-0.00206	-0.00204
	(!A2 * B1 * B2 * !C1 * !Y)	0.00268	0.00270	0.00267
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00197	-0.00206	-0.00204
	(!A2 * B1 * !B2 * C1 * !Y)	0.00268	0.00270	0.00267
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00074	-0.00073	-0.00073
	(!A2 * B1 * !B2 * !C1 * Y)	0.00321	0.00320	0.00319
	(!A2 * !B1 * C1 * !Y)	-0.00197	-0.00206	-0.00204
	(!A2 * !B1 * C1 * !Y)	0.00268	0.00270	0.00267
	(!A2 * !B1 * !C1 * Y)	-0.00074	-0.00073	-0.00073
	(!A2 * !B1 * !C1 * Y)	0.00320	0.00320	0.00319

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	-0.00410	-0.00412	-0.00410
	(A2 * B1 * B2 * C1 * !Y)	0.00494	0.00500	0.00495
	(A2 * B1 * B2 * !C1 * !Y)	-0.00409	-0.00412	-0.00410
	(A2 * B1 * B2 * !C1 * !Y)	0.00492	0.00498	0.00494
	(A2 * B1 * !B2 * C1 * !Y)	-0.00409	-0.00412	-0.00410
	(A2 * B1 * !B2 * C1 * !Y)	0.00474	0.00480	0.00476
	(A2 * !B1 * C1 * !Y)	-0.00410	-0.00412	-0.00410
	(A2 * !B1 * C1 * !Y)	0.00475	0.00480	0.00476
	(!A2 * B1 * B2 * C1 * !Y)	-0.00374	-0.00393	-0.00389
	(!A2 * B1 * B2 * C1 * !Y)	0.00507	0.00515	0.00509
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00375	-0.00392	-0.00390
	(!A2 * B1 * B2 * !C1 * !Y)	0.00510	0.00510	0.00508
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00375	-0.00393	-0.00390
	(!A2 * B1 * !B2 * C1 * !Y)	0.00516	0.00520	0.00514
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00132	-0.00131	-0.00131
	(!A2 * B1 * !B2 * !C1 * Y)	0.00616	0.00615	0.00614
	(!A2 * !B1 * C1 * !Y)	-0.00375	-0.00393	-0.00390
	(!A2 * !B1 * C1 * !Y)	0.00516	0.00520	0.00514
	(!A2 * !B1 * !C1 * Y)	-0.00133	-0.00132	-0.00131
	(!A2 * !B1 * !C1 * Y)	0.00616	0.00616	0.00614

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)**	0.00107	0.00108	0.00107
	(A1 * B1 * B2 * C1 * !Y)	-0.00120	-0.00125	-0.00124
	(A1 * B1 * B2 * !C1 * !Y)	0.00107	0.00108	0.00107
	(A1 * B1 * B2 * !C1 * !Y)	-0.00119	-0.00125	-0.00124
	(A1 * B1 * !B2 * C1 * !Y)	0.00107	0.00108	0.00107
	(A1 * B1 * !B2 * C1 * !Y)	-0.00114	-0.00120	-0.00120
	(A1 * !B1 * C1 * !Y)	0.00107	0.00108	0.00107
	(A1 * !B1 * C1 * !Y)	-0.00114	-0.00120	-0.00120
	(!A1 * B1 * B2 * !Y)	0.00100	0.00101	0.00101
	(!A1 * B1 * B2 * !Y)	-0.00127	-0.00128	-0.00128
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00101	0.00102	0.00101
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00128	-0.00129	-0.00128
	(!A1 * B1 * !B2 * !C1 * Y)	0.00101	0.00103	0.00101
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00127	-0.00128	-0.00127
	(!A1 * !B1 * !C1 * Y)	0.00101	0.00102	0.00101
	(!A1 * !B1 * !C1 * Y)	-0.00127	-0.00128	-0.00127

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00202	0.00203	0.00203
	(A1 * B1 * B2 * C1 * !Y)	-0.00228	-0.00240	-0.00239
	(A1 * B1 * B2 * !C1 * !Y)	0.00203	0.00203	0.00203
	(A1 * B1 * B2 * !C1 * !Y)	-0.00227	-0.00240	-0.00239
	(A1 * B1 * !B2 * C1 * !Y)	0.00205	0.00203	0.00203
	(A1 * B1 * !B2 * C1 * !Y)	-0.00219	-0.00232	-0.00231
	(A1 * !B1 * C1 * !Y)	0.00205	0.00203	0.00203
	(A1 * !B1 * C1 * !Y)	-0.00219	-0.00232	-0.00231
	(!A1 * B1 * B2 * !Y)	0.00194	0.00195	0.00194
	(!A1 * B1 * B2 * !Y)	-0.00246	-0.00247	-0.00246
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00194	0.00195	0.00194
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00246	-0.00247	-0.00246
	(!A1 * B1 * !B2 * !C1 * Y)	0.00184	0.00185	0.00184
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00256	-0.00256	-0.00256
	(!A1 * !B1 * !C1 * Y)	0.00184	0.00185	0.00184
	(!A1 * !B1 * !C1 * Y)	-0.00256	-0.00256	-0.00256

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	0.00418	0.00417	0.00415
	(A1 * B1 * B2 * C1 * !Y)	-0.00482	-0.00501	-0.00497
	(A1 * B1 * B2 * !C1 * !Y)	0.00415	0.00417	0.00416
	(A1 * B1 * B2 * !C1 * !Y)	-0.00471	-0.00498	-0.00496
	(A1 * B1 * !B2 * C1 * !Y)	0.00416	0.00417	0.00415
	(A1 * B1 * !B2 * C1 * !Y)	-0.00450	-0.00481	-0.00479
	(A1 * !B1 * C1 * !Y)	0.00416	0.00417	0.00415
	(A1 * !B1 * C1 * !Y)	-0.00450	-0.00481	-0.00479
	(!A1 * B1 * B2 * !Y)	0.00393	0.00397	0.00395
	(!A1 * B1 * B2 * !Y)	-0.00509	-0.00512	-0.00510
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00396	0.00398	0.00395
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00517	-0.00518	-0.00516
	(!A1 * B1 * !B2 * !C1 * Y)	0.00369	0.00371	0.00369
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00543	-0.00544	-0.00542
	(!A1 * !B1 * !C1 * Y)	0.00370	0.00372	0.00369
	(!A1 * !B1 * !C1 * Y)	-0.00543	-0.00544	-0.00542

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)**	-0.00107	-0.00107	-0.00107
	(A1 * B1 * B2 * C1 * !Y)	0.00124	0.00125	0.00124
	(A1 * B1 * B2 * !C1 * !Y)	-0.00107	-0.00107	-0.00107
	(A1 * B1 * B2 * !C1 * !Y)	0.00124	0.00125	0.00124
	(A1 * B1 * !B2 * C1 * !Y)	-0.00107	-0.00107	-0.00107
	(A1 * B1 * !B2 * C1 * !Y)	0.00120	0.00120	0.00120
	(A1 * !B1 * C1 * !Y)	-0.00107	-0.00107	-0.00107
	(A1 * !B1 * C1 * !Y)	0.00120	0.00120	0.00120
	(!A1 * B1 * B2 * !Y)	-0.00098	-0.00101	-0.00101
	(!A1 * B1 * B2 * !Y)	0.00128	0.00129	0.00128
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00098	-0.00102	-0.00101
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00128	0.00129	0.00128
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00096	-0.00102	-0.00101
	(!A1 * B1 * !B2 * !C1 * Y)	0.00131	0.00130	0.00128
	(!A1 * !B1 * !C1 * Y)	-0.00096	-0.00102	-0.00101
	(!A1 * !B1 * !C1 * Y)	0.00131	0.00129	0.00128

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00202	-0.00203	-0.00202
	(A1 * B1 * B2 * C1 * !Y)	0.00238	0.00241	0.00239
	(A1 * B1 * B2 * !C1 * !Y)	-0.00203	-0.00203	-0.00202
	(A1 * B1 * B2 * !C1 * !Y)	0.00239	0.00240	0.00239
	(A1 * B1 * !B2 * C1 * !Y)	-0.00202	-0.00203	-0.00202
	(A1 * B1 * !B2 * C1 * !Y)	0.00230	0.00232	0.00231
	(A1 * !B1 * C1 * !Y)	-0.00202	-0.00203	-0.00202
	(A1 * !B1 * C1 * !Y)	0.00230	0.00232	0.00231
	(!A1 * B1 * B2 * !Y)	-0.00188	-0.00195	-0.00194
	(!A1 * B1 * B2 * !Y)	0.00247	0.00248	0.00247
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00188	-0.00195	-0.00194
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00247	0.00248	0.00247
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00175	-0.00185	-0.00184
	(!A1 * B1 * !B2 * !C1 * Y)	0.00261	0.00259	0.00256
	(!A1 * !B1 * !C1 * Y)	-0.00175	-0.00185	-0.00184
	(!A1 * !B1 * !C1 * Y)	0.00261	0.00259	0.00256

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	-0.00414	-0.00417	-0.00415
	(A1 * B1 * B2 * C1 * !Y)	0.00495	0.00502	0.00497
	(A1 * B1 * B2 * !C1 * !Y)	-0.00414	-0.00417	-0.00415
	(A1 * B1 * B2 * !C1 * !Y)	0.00493	0.00500	0.00496
	(A1 * B1 * !B2 * C1 * !Y)	-0.00414	-0.00415	-0.00414
	(A1 * B1 * !B2 * C1 * !Y)	0.00479	0.00481	0.00479
	(A1 * !B1 * C1 * !Y)	-0.00414	-0.00415	-0.00414
	(A1 * !B1 * C1 * !Y)	0.00479	0.00481	0.00479
	(!A1 * B1 * B2 * !Y)	-0.00384	-0.00397	-0.00395
	(!A1 * B1 * B2 * !Y)	0.00512	0.00515	0.00511
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00384	-0.00397	-0.00395
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00519	0.00520	0.00518
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00350	-0.00370	-0.00369
	(!A1 * B1 * !B2 * !C1 * Y)	0.00555	0.00549	0.00543
	(!A1 * !B1 * !C1 * Y)	-0.00350	-0.00371	-0.00369
	(!A1 * !B1 * !C1 * Y)	0.00555	0.00549	0.00543

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)**	0.00104	0.00104	0.00103
	(A1 * A2 * B2 * C1 * !Y)	-0.00093	-0.00093	-0.00093
	(A1 * A2 * B2 * !C1 * !Y)	0.00103	0.00103	0.00103
	(A1 * A2 * B2 * !C1 * !Y)	-0.00074	-0.00074	-0.00074
	(A1 * A2 * !B2 * C1 * !Y)	0.00097	0.00097	0.00097
	(A1 * A2 * !B2 * C1 * !Y)	-0.00088	-0.00088	-0.00088
	(A1 * A2 * !B2 * !C1 * !Y)	0.00097	0.00096	0.00097
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00074	-0.00074	-0.00074
	(A1 * !A2 * B2 * C1 * !Y)	0.00109	0.00104	0.00103
	(A1 * !A2 * B2 * C1 * !Y)	-0.00113	-0.00123	-0.00123
	(A1 * !A2 * !B2 * C1 * !Y)	0.00096	0.00097	0.00096
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00126	-0.00126	-0.00126
	(A1 * !A2 * !B2 * !C1 * Y)	0.00034	0.00035	0.00033
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00147	-0.00148	-0.00149
	(!A1 * B2 * C1 * !Y)	0.00110	0.00104	0.00103
	(!A1 * B2 * C1 * !Y)	-0.00114	-0.00123	-0.00123
	(!A1 * !B2 * C1 * !Y)	0.00096	0.00097	0.00096
	(!A1 * !B2 * C1 * !Y)	-0.00126	-0.00126	-0.00126
	(!A1 * !B2 * !C1 * Y)	0.00034	0.00035	0.00033
	(!A1 * !B2 * !C1 * Y)	-0.00147	-0.00148	-0.00149

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	0.00213	0.00213	0.00210
	(A1 * A2 * B2 * C1 * !Y)	-0.00188	-0.00190	-0.00188
	(A1 * A2 * B2 * !C1 * !Y)	0.00208	0.00208	0.00208
	(A1 * A2 * B2 * !C1 * !Y)	-0.00154	-0.00154	-0.00154
	(A1 * A2 * !B2 * C1 * !Y)	0.00198	0.00201	0.00198
	(A1 * A2 * !B2 * C1 * !Y)	-0.00177	-0.00179	-0.00177
	(A1 * A2 * !B2 * !C1 * !Y)	0.00197	0.00199	0.00197
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00153	-0.00155	-0.00154
	(A1 * !A2 * B2 * C1 * !Y)	0.00227	0.00210	0.00207
	(A1 * !A2 * B2 * C1 * !Y)	-0.00233	-0.00255	-0.00255
	(A1 * !A2 * !B2 * C1 * !Y)	0.00196	0.00197	0.00196
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00262	-0.00263	-0.00262
	(A1 * !A2 * !B2 * !C1 * Y)	0.00071	0.00071	0.00068
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00307	-0.00307	-0.00313
	(!A1 * B2 * C1 * !Y)	0.00225	0.00210	0.00207
	(!A1 * B2 * C1 * !Y)	-0.00230	-0.00255	-0.00255
	(!A1 * !B2 * C1 * !Y)	0.00196	0.00197	0.00196
	(!A1 * !B2 * C1 * !Y)	-0.00262	-0.00262	-0.00262
	(!A1 * !B2 * !C1 * Y)	0.00071	0.00071	0.00068
	(!A1 * !B2 * !C1 * Y)	-0.00307	-0.00307	-0.00313

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	0.00422	0.00418	0.00412
	(A1 * A2 * B2 * C1 * !Y)	-0.00361	-0.00361	-0.00359
	(A1 * A2 * B2 * !C1 * !Y)	0.00413	0.00411	0.00409
	(A1 * A2 * B2 * !C1 * !Y)	-0.00293	-0.00291	-0.00292
	(A1 * A2 * !B2 * C1 * !Y)	0.00387	0.00390	0.00387
	(A1 * A2 * !B2 * C1 * !Y)	-0.00341	-0.00343	-0.00339
	(A1 * A2 * !B2 * !C1 * !Y)	0.00387	0.00391	0.00388
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00288	-0.00292	-0.00291
	(A1 * !A2 * B2 * C1 * !Y)	0.00453	0.00414	0.00408
	(A1 * !A2 * B2 * C1 * !Y)	-0.00425	-0.00489	-0.00487
	(A1 * !A2 * !B2 * C1 * !Y)	0.00384	0.00388	0.00386
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00507	-0.00508	-0.00508
	(A1 * !A2 * !B2 * !C1 * Y)	0.00142	0.00140	0.00134
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00591	-0.00590	-0.00604
	(!A1 * B2 * C1 * !Y)	0.00453	0.00413	0.00408
	(!A1 * B2 * C1 * !Y)	-0.00428	-0.00489	-0.00487
	(!A1 * !B2 * C1 * !Y)	0.00386	0.00388	0.00386
	(!A1 * !B2 * C1 * !Y)	-0.00510	-0.00510	-0.00508
	(!A1 * !B2 * !C1 * Y)	0.00142	0.00141	0.00134
	(!A1 * !B2 * !C1 * Y)	-0.00591	-0.00590	-0.00604

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)**	-0.00103	-0.00103	-0.00103
	(A1 * A2 * B2 * C1 * !Y)	0.00093	0.00093	0.00093
	(A1 * A2 * B2 * !C1 * !Y)	-0.00095	-0.00096	-0.00098
	(A1 * A2 * B2 * !C1 * !Y)	0.00082	0.00081	0.00079
	(A1 * A2 * !B2 * C1 * !Y)	-0.00095	-0.00097	-0.00097
	(A1 * A2 * !B2 * C1 * !Y)	0.00088	0.00088	0.00088
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00094	-0.00096	-0.00097
	(A1 * A2 * !B2 * !C1 * !Y)	0.00074	0.00075	0.00074
	(A1 * !A2 * B2 * C1 * !Y)	-0.00103	-0.00102	-0.00102
	(A1 * !A2 * B2 * C1 * !Y)	0.00123	0.00123	0.00123
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00094	-0.00097	-0.00096
	(A1 * !A2 * !B2 * C1 * !Y)	0.00127	0.00128	0.00126
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00032	-0.00033	-0.00032
	(A1 * !A2 * !B2 * !C1 * Y)	0.00149	0.00150	0.00150
	(!A1 * B2 * C1 * !Y)	-0.00103	-0.00103	-0.00102
	(!A1 * B2 * C1 * !Y)	0.00124	0.00123	0.00123
	(!A1 * !B2 * C1 * !Y)	-0.00094	-0.00097	-0.00096
	(!A1 * !B2 * C1 * !Y)	0.00126	0.00128	0.00126
	(!A1 * !B2 * !C1 * Y)	-0.00032	-0.00033	-0.00032
	(!A1 * !B2 * !C1 * Y)	0.00149	0.00150	0.00150

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	-0.00208	-0.00209	-0.00208
	(A1 * A2 * B2 * C1 * !Y)	0.00188	0.00190	0.00188
	(A1 * A2 * B2 * !C1 * !Y)	-0.00197	-0.00199	-0.00199
	(A1 * A2 * B2 * !C1 * !Y)	0.00162	0.00163	0.00163
	(A1 * A2 * !B2 * C1 * !Y)	-0.00191	-0.00199	-0.00198
	(A1 * A2 * !B2 * C1 * !Y)	0.00177	0.00179	0.00177
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00190	-0.00199	-0.00197
	(A1 * A2 * !B2 * !C1 * !Y)	0.00154	0.00155	0.00154
	(A1 * !A2 * B2 * C1 * !Y)	-0.00206	-0.00207	-0.00207
	(A1 * !A2 * B2 * C1 * !Y)	0.00253	0.00255	0.00255
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00190	-0.00197	-0.00196
	(A1 * !A2 * !B2 * C1 * !Y)	0.00263	0.00265	0.00262
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00066	-0.00066	-0.00066
	(A1 * !A2 * !B2 * !C1 * Y)	0.00314	0.00314	0.00313
	(!A1 * B2 * C1 * !Y)	-0.00207	-0.00207	-0.00207
	(!A1 * B2 * C1 * !Y)	0.00254	0.00255	0.00255
	(!A1 * !B2 * C1 * !Y)	-0.00190	-0.00197	-0.00196
	(!A1 * !B2 * C1 * !Y)	0.00263	0.00265	0.00262
	(!A1 * !B2 * !C1 * Y)	-0.00066	-0.00066	-0.00066
	(!A1 * !B2 * !C1 * Y)	0.00314	0.00314	0.00313

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	-0.00410	-0.00411	-0.00409
	(A1 * A2 * B2 * C1 * !Y)	0.00361	0.00361	0.00359
	(A1 * A2 * B2 * !C1 * !Y)	-0.00393	-0.00396	-0.00394
	(A1 * A2 * B2 * !C1 * !Y)	0.00313	0.00315	0.00308
	(A1 * A2 * !B2 * C1 * !Y)	-0.00372	-0.00390	-0.00387
	(A1 * A2 * !B2 * C1 * !Y)	0.00341	0.00343	0.00339
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00371	-0.00391	-0.00388
	(A1 * A2 * !B2 * !C1 * !Y)	0.00292	0.00292	0.00291
	(A1 * !A2 * B2 * C1 * !Y)	-0.00406	-0.00408	-0.00406
	(A1 * !A2 * B2 * C1 * !Y)	0.00484	0.00489	0.00487
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00370	-0.00388	-0.00386
	(A1 * !A2 * !B2 * C1 * !Y)	0.00511	0.00508	0.00509
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00131	-0.00130	-0.00129
	(A1 * !A2 * !B2 * !C1 * Y)	0.00607	0.00606	0.00605
	(!A1 * B2 * C1 * !Y)	-0.00406	-0.00409	-0.00406
	(!A1 * B2 * C1 * !Y)	0.00485	0.00489	0.00487
	(!A1 * !B2 * C1 * !Y)	-0.00369	-0.00388	-0.00386
	(!A1 * !B2 * C1 * !Y)	0.00510	0.00510	0.00509
	(!A1 * !B2 * !C1 * Y)	-0.00131	-0.00131	-0.00130
	(!A1 * !B2 * !C1 * Y)	0.00607	0.00606	0.00605

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)**	0.00108	0.00107	0.00107
	(A1 * A2 * B1 * C1 * !Y)	-0.00096	-0.00097	-0.00096
	(A1 * A2 * B1 * !C1 * !Y)	0.00106	0.00106	0.00106
	(A1 * A2 * B1 * !C1 * !Y)	-0.00077	-0.00077	-0.00077
	(A1 * A2 * !B1 * C1 * !Y)	0.00101	0.00102	0.00100
	(A1 * A2 * !B1 * C1 * !Y)	-0.00090	-0.00091	-0.00091
	(A1 * A2 * !B1 * !C1 * !Y)	0.00100	0.00102	0.00100
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00077	-0.00077	-0.00077
	(A1 * !A2 * B1 * C1 * !Y)	0.00114	0.00107	0.00106
	(A1 * !A2 * B1 * C1 * !Y)	-0.00117	-0.00126	-0.00127
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00100	0.00101	0.00100
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00130	-0.00130	-0.00130
	(A1 * !A2 * !B1 * !C1 * Y)	0.00092	0.00094	0.00093
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00137	-0.00138	-0.00137
	(!A1 * B1 * C1 * !Y)	0.00114	0.00107	0.00106
	(!A1 * B1 * C1 * !Y)	-0.00117	-0.00126	-0.00127
	(!A1 * !B1 * !C1 * Y)	0.00092	0.00094	0.00093
	(!A1 * !B1 * !C1 * Y)	-0.00137	-0.00138	-0.00137

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00204	0.00206	0.00203
	(A1 * A2 * B1 * C1 * !Y)	-0.00176	-0.00178	-0.00177
	(A1 * A2 * B1 * !C1 * !Y)	0.00202	0.00202	0.00202
	(A1 * A2 * B1 * !C1 * !Y)	-0.00142	-0.00141	-0.00141
	(A1 * A2 * !B1 * C1 * !Y)	0.00191	0.00195	0.00192
	(A1 * A2 * !B1 * C1 * !Y)	-0.00167	-0.00168	-0.00166
	(A1 * A2 * !B1 * !C1 * !Y)	0.00192	0.00195	0.00191
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00141	-0.00142	-0.00141
	(A1 * !A2 * B1 * C1 * !Y)	0.00218	0.00204	0.00201
	(A1 * !A2 * B1 * C1 * !Y)	-0.00219	-0.00239	-0.00239
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00190	0.00192	0.00191
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00244	-0.00246	-0.00245
	(A1 * !A2 * !B1 * !C1 * Y)	0.00183	0.00185	0.00184
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00251	-0.00253	-0.00252
	(!A1 * B1 * C1 * !Y)	0.00218	0.00204	0.00201
	(!A1 * B1 * C1 * !Y)	-0.00219	-0.00240	-0.00239
	(!A1 * !B1 * !C1 * Y)	0.00183	0.00186	0.00184
	(!A1 * !B1 * !C1 * Y)	-0.00251	-0.00253	-0.00252

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.00426	0.00421	0.00413
	(A1 * A2 * B1 * C1 * !Y)	-0.00360	-0.00362	-0.00359
	(A1 * A2 * B1 * !C1 * !Y)	0.00414	0.00414	0.00410
	(A1 * A2 * B1 * !C1 * !Y)	-0.00293	-0.00292	-0.00292
	(A1 * A2 * !B1 * C1 * !Y)	0.00387	0.00396	0.00388
	(A1 * A2 * !B1 * C1 * !Y)	-0.00341	-0.00341	-0.00339
	(A1 * A2 * !B1 * !C1 * !Y)	0.00388	0.00394	0.00386
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00291	-0.00292	-0.00291
	(A1 * !A2 * B1 * C1 * !Y)	0.00457	0.00415	0.00409
	(A1 * !A2 * B1 * C1 * !Y)	-0.00428	-0.00488	-0.00487
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00382	0.00387	0.00384
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00506	-0.00510	-0.00508
	(A1 * !A2 * !B1 * !C1 * Y)	0.00384	0.00389	0.00385
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00507	-0.00510	-0.00507
	(!A1 * B1 * C1 * !Y)	0.00457	0.00415	0.00409
	(!A1 * B1 * C1 * !Y)	-0.00429	-0.00488	-0.00487
	(!A1 * !B1 * !C1 * Y)	0.00384	0.00389	0.00385
	(!A1 * !B1 * !C1 * Y)	-0.00507	-0.00510	-0.00507

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)**	-0.00106	-0.00106	-0.00106
	(A1 * A2 * B1 * C1 * !Y)	0.00096	0.00097	0.00096
	(A1 * A2 * B1 * !C1 * !Y)	-0.00099	-0.00100	-0.00101
	(A1 * A2 * B1 * !C1 * !Y)	0.00084	0.00083	0.00082
	(A1 * A2 * !B1 * C1 * !Y)	-0.00098	-0.00101	-0.00100
	(A1 * A2 * !B1 * C1 * !Y)	0.00090	0.00091	0.00091
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00098	-0.00101	-0.00100
	(A1 * A2 * !B1 * !C1 * !Y)	0.00077	0.00077	0.00077
	(A1 * !A2 * B1 * C1 * !Y)	-0.00106	-0.00106	-0.00106
	(A1 * !A2 * B1 * C1 * !Y)	0.00127	0.00126	0.00127
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00097	-0.00100	-0.00100
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00130	0.00130	0.00130
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00087	-0.00093	-0.00093
	(A1 * !A2 * !B1 * !C1 * Y)	0.00142	0.00138	0.00138
	(!A1 * B1 * C1 * !Y)	-0.00106	-0.00106	-0.00106
	(!A1 * B1 * C1 * !Y)	0.00127	0.00126	0.00127
	(!A1 * !B1 * !C1 * Y)	-0.00087	-0.00093	-0.00093
	(!A1 * !B1 * !C1 * Y)	0.00142	0.00138	0.00138

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00202	-0.00203	-0.00202
	(A1 * A2 * B1 * C1 * !Y)	0.00176	0.00178	0.00177
	(A1 * A2 * B1 * !C1 * !Y)	-0.00189	-0.00190	-0.00192
	(A1 * A2 * B1 * !C1 * !Y)	0.00151	0.00152	0.00151
	(A1 * A2 * !B1 * C1 * !Y)	-0.00186	-0.00193	-0.00192
	(A1 * A2 * !B1 * C1 * !Y)	0.00167	0.00168	0.00166
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00186	-0.00192	-0.00191
	(A1 * A2 * !B1 * !C1 * !Y)	0.00141	0.00142	0.00141
	(A1 * !A2 * B1 * C1 * !Y)	-0.00201	-0.00202	-0.00201
	(A1 * !A2 * B1 * C1 * !Y)	0.00237	0.00239	0.00239
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00185	-0.00192	-0.00191
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00245	0.00247	0.00245
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00173	-0.00184	-0.00184
	(A1 * !A2 * !B1 * !C1 * Y)	0.00259	0.00254	0.00252
	(!A1 * B1 * C1 * !Y)	-0.00201	-0.00202	-0.00201
	(!A1 * B1 * C1 * !Y)	0.00238	0.00240	0.00239
	(!A1 * !B1 * !C1 * Y)	-0.00173	-0.00184	-0.00184
	(!A1 * !B1 * !C1 * Y)	0.00259	0.00254	0.00252

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00410	-0.00412	-0.00410
	(A1 * A2 * B1 * C1 * !Y)	0.00360	0.00362	0.00359
	(A1 * A2 * B1 * !C1 * !Y)	-0.00394	-0.00396	-0.00395
	(A1 * A2 * B1 * !C1 * !Y)	0.00314	0.00314	0.00308
	(A1 * A2 * !B1 * C1 * !Y)	-0.00375	-0.00389	-0.00388
	(A1 * A2 * !B1 * C1 * !Y)	0.00341	0.00341	0.00339
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00375	-0.00389	-0.00386
	(A1 * A2 * !B1 * !C1 * !Y)	0.00292	0.00292	0.00291
	(A1 * !A2 * B1 * C1 * !Y)	-0.00407	-0.00409	-0.00407
	(A1 * !A2 * B1 * C1 * !Y)	0.00485	0.00488	0.00487
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00373	-0.00387	-0.00384
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00510	0.00511	0.00509
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00363	-0.00386	-0.00385
	(A1 * !A2 * !B1 * !C1 * Y)	0.00523	0.00513	0.00509
	(!A1 * B1 * C1 * !Y)	-0.00407	-0.00409	-0.00407
	(!A1 * B1 * C1 * !Y)	0.00485	0.00488	0.00487
	(!A1 * !B1 * !C1 * Y)	-0.00363	-0.00387	-0.00385
	(!A1 * !B1 * !C1 * Y)	0.00523	0.00513	0.00509

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)	0.00123	0.00123	0.00123
	(A1 * B1 * B2 * !Y)	-0.00070	-0.00070	-0.00070
	(A1 * A2 * B1 * !B2 * !Y)	0.00123	0.00124	0.00123
	(A1 * A2 * B1 * !B2 * !Y)	-0.00070	-0.00070	-0.00070
	(A1 * A2 * !B1 * !Y)	0.00123	0.00124	0.00123
	(A1 * A2 * !B1 * !Y)	-0.00070	-0.00070	-0.00070
	(!A1 * B1 * B2 * !Y)	0.00125	0.00124	0.00123
	(!A1 * B1 * B2 * !Y)	-0.00072	-0.00071	-0.00070
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	0.00231	0.00231	0.00231
	(A1 * B1 * B2 * !Y)	-0.00129	-0.00129	-0.00129
	(A1 * A2 * B1 * !B2 * !Y)	0.00230	0.00232	0.00231
	(A1 * A2 * B1 * !B2 * !Y)	-0.00128	-0.00129	-0.00129
	(A1 * A2 * !B1 * !Y)	0.00231	0.00232	0.00231
	(A1 * A2 * !B1 * !Y)	-0.00129	-0.00129	-0.00129
	(!A1 * B1 * B2 * !Y)	0.00231	0.00232	0.00231
	(!A1 * B1 * B2 * !Y)	-0.00129	-0.00130	-0.00129
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	0.00455	0.00457	0.00456
	(A1 * B1 * B2 * !Y)	-0.00258	-0.00259	-0.00259
	(A1 * A2 * B1 * !B2 * !Y)	0.00455	0.00458	0.00456
	(A1 * A2 * B1 * !B2 * !Y)	-0.00258	-0.00259	-0.00258
	(A1 * A2 * !B1 * !Y)	0.00455	0.00458	0.00456
	(A1 * A2 * !B1 * !Y)	-0.00258	-0.00259	-0.00258
	(!A1 * B1 * B2 * !Y)	0.00457	0.00459	0.00456
	(!A1 * B1 * B2 * !Y)	-0.00261	-0.00261	-0.00259

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)	-0.00113	-0.00113	-0.00122
	(A1 * B1 * B2 * !Y)	0.00080	0.00079	0.00073
	(A1 * A2 * B1 * !B2 * !Y)	-0.00097	-0.00097	-0.00118
	(A1 * A2 * B1 * !B2 * !Y)	0.00091	0.00090	0.00075
	(A1 * A2 * !B1 * !Y)	-0.00097	-0.00097	-0.00118
	(A1 * A2 * !B1 * !Y)	0.00091	0.00090	0.00075
	(!A1 * B1 * B2 * !Y)	-0.00113	-0.00113	-0.00122
	(!A1 * B1 * B2 * !Y)	0.00080	0.00080	0.00073
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	-0.00211	-0.00212	-0.00228
	(A1 * B1 * B2 * !Y)	0.00147	0.00147	0.00133
	(A1 * A2 * B1 * !B2 * !Y)	-0.00183	-0.00185	-0.00222
	(A1 * A2 * B1 * !B2 * !Y)	0.00163	0.00163	0.00137
	(A1 * A2 * !B1 * !Y)	-0.00183	-0.00185	-0.00222
	(A1 * A2 * !B1 * !Y)	0.00164	0.00163	0.00137
	(!A1 * B1 * B2 * !Y)	-0.00210	-0.00212	-0.00228
	(!A1 * B1 * B2 * !Y)	0.00147	0.00147	0.00134
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	-0.00418	-0.00422	-0.00451
	(A1 * B1 * B2 * !Y)	0.00286	0.00287	0.00266
	(A1 * A2 * B1 * !B2 * !Y)	-0.00364	-0.00367	-0.00439
	(A1 * A2 * B1 * !B2 * !Y)	0.00326	0.00325	0.00276
	(A1 * A2 * !B1 * !Y)	-0.00364	-0.00369	-0.00439
	(A1 * A2 * !B1 * !Y)	0.00326	0.00326	0.00276
	(!A1 * B1 * B2 * !Y)	-0.00419	-0.00421	-0.00451
	(!A1 * B1 * B2 * !Y)	0.00288	0.00287	0.00267

SKY130_FD_SC_HS__A221Ox

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a221o_1	14.38560
sky130_fd_sc_hs__a221o_2	14.38560
sky130_fd_sc_hs__a221o_4	31.96800

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	B2	C1	X
sky130_fd_sc_hs__a221o_1	0.00252	0.00260	0.00250	0.00249	0.00247	0.77872
sky130_fd_sc_hs__a221o_2	0.00263	0.00270	0.00271	0.00271	0.00262	1.49325
sky130_fd_sc_hs__a221o_4	0.00464	0.00462	0.00479	0.00488	0.00474	2.47611

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a221o_1	0.00000	0.03934	0.06470
sky130_fd_sc_hs__a221o_2	0.00000	0.04839	0.06891
sky130_fd_sc_hs__a221o_4	0.00000	0.09849	0.13782

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)	0.12041	0.83540	7.22199
	A2->X (RR)	0.12555	0.83367	7.32600
	B1->X (RR)	0.11592	0.81282	7.11759
	B2->X (RR)	0.12091	0.81410	7.22180
	C1->X (RR)	0.08745	0.75817	7.04170
sky130_fd_sc_hs__a221o_2	A1->X (RR)	0.12401	0.74824	7.32227
	A2->X (RR)	0.12942	0.74211	7.39881
	B1->X (RR)	0.12038	0.73308	7.24215
	B2->X (RR)	0.12523	0.72726	7.31526
	C1->X (RR)	0.08830	0.67455	7.14262
sky130_fd_sc_hs__a221o_4	A1->X (RR)	0.14601	0.71656	7.26599
	A2->X (RR)	0.15285	0.69309	7.30025
	B1->X (RR)	0.13824	0.68721	7.13221
	B2->X (RR)	0.14601	0.67184	7.18729
	C1->X (RR)	0.08845	0.59442	6.97322

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221o_1	A1->X (FF)	0.40428	1.00175	5.24086
	A2->X (FF)	0.44375	1.04770	5.36148
	B1->X (FF)	0.37281	0.96969	5.24651
	B2->X (FF)	0.40622	1.01441	5.39380
	C1->X (FF)	0.32619	0.91179	5.00237
sky130_fd_sc_hs__a221o_2	A1->X (FF)	0.51390	1.11781	5.69665
	A2->X (FF)	0.55669	1.16881	5.80894
	B1->X (FF)	0.49300	1.09790	5.77744
	B2->X (FF)	0.52223	1.14022	5.91837
	C1->X (FF)	0.44327	1.03215	5.54308
sky130_fd_sc_hs__a221o_4	A1->X (FF)	0.51107	1.05418	5.26708
	A2->X (FF)	0.56234	1.11789	5.42232
	B1->X (FF)	0.48415	1.03505	5.38439
	B2->X (FF)	0.52780	1.09082	5.54598
	C1->X (FF)	0.43319	0.96624	5.15643

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221o_1	A1	0.00914	0.00904	0.01060
	A1	0.00447	0.00440	0.00595
	A2	0.00994	0.00981	0.01060
	A2	0.00449	0.00437	0.00526
	B1	0.00751	0.00747	0.00917
	B1	0.00326	0.00324	0.00507
	B2	0.00814	0.00810	0.00914
	B2	0.00332	0.00329	0.00446
	C1	0.00656	0.00651	0.00913
	C1	0.00225	0.00218	0.00532
sky130_fd_sc_hs__a221o_2	A1	0.01123	0.01128	0.01262
	A1	0.00618	0.00617	0.00764
	A2	0.01199	0.01199	0.01268
	A2	0.00620	0.00620	0.00691
	B1	0.00970	0.00987	0.01148
	B1	0.00499	0.00517	0.00696
	B2	0.01040	0.01060	0.01158
	B2	0.00508	0.00529	0.00645
	C1	0.00875	0.00892	0.01122
	C1	0.00402	0.00418	0.00695

sky130_fd_sc_hs__a221o_4	**A1**	0.02199	0.02219	0.02531
	A1	0.01297	0.01321	0.01646
	A2	0.02323	0.02355	0.02519
	A2	0.01299	0.01330	0.01514
	B1	0.01864	0.01897	0.02241
	B1	0.01039	0.01076	0.01430
	B2	0.02010	0.02054	0.02258
	B2	0.01038	0.01083	0.01322
	C1	0.01610	0.01639	0.02122
	C1	0.00783	0.00812	0.01742

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221o_1	**A1**	0.00307	0.00311	0.00356
	A1	0.00807	0.00811	0.00855
	A2	0.00323	0.00313	0.00358
	A2	0.00886	0.00882	0.00919
	B1	0.00308	0.00302	0.00416
	B1	0.00731	0.00725	0.00824
	B2	0.00330	0.00324	0.00466
	B2	0.00806	0.00806	0.00895
	C1	0.00253	0.00271	0.00642
	C1	0.00736	0.00749	0.01039

sky130_fd_sc_hs__a221o_2	**A1**	0.00521	0.00532	0.00600
	A1	0.01056	0.01072	0.01121
	A2	0.00541	0.00549	0.00682
	A2	0.01146	0.01156	0.01199
	B1	0.00519	0.00513	0.00684
	B1	0.00987	0.00991	0.01089
	B2	0.00548	0.00552	0.00715
	B2	0.01073	0.01080	0.01173
	C1	0.00539	0.00553	0.00881
	C1	0.01003	0.01030	0.01315
sky130_fd_sc_hs__a221o_4	**A1**	0.00938	0.00967	0.01126
	A1	0.01901	0.01940	0.02045
	A2	0.01018	0.01047	0.01212
	A2	0.02091	0.02125	0.02211
	B1	0.00948	0.00953	0.01209
	B1	0.01769	0.01790	0.01968
	B2	0.00907	0.00947	0.01313
	B2	0.01945	0.01979	0.02145
	C1	0.01038	0.01084	0.01634
	C1	0.01832	0.01877	0.02422

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)**	0.00091	0.00092	0.00091
	(A2 * B1 * B2 * C1 * X)	-0.00111	-0.00117	-0.00115
	(A2 * B1 * B2 * !C1 * X)	0.00091	0.00092	0.00091
	(A2 * B1 * B2 * !C1 * X)	-0.00111	-0.00117	-0.00115
	(A2 * B1 * !B2 * C1 * X)	0.00092	0.00092	0.00091
	(A2 * B1 * !B2 * C1 * X)	-0.00106	-0.00112	-0.00112
	(A2 * !B1 * C1 * X)	0.00092	0.00092	0.00091
	(A2 * !B1 * C1 * X)	-0.00106	-0.00112	-0.00112
	(!A2 * B1 * B2 * C1 * X)	0.00085	0.00086	0.00086
	(!A2 * B1 * B2 * C1 * X)	-0.00119	-0.00120	-0.00119
	(!A2 * B1 * B2 * !C1 * X)	0.00085	0.00086	0.00086
	(!A2 * B1 * B2 * !C1 * X)	-0.00119	-0.00120	-0.00119
	(!A2 * B1 * !B2 * C1 * X)	0.00085	0.00086	0.00086
	(!A2 * B1 * !B2 * C1 * X)	-0.00119	-0.00120	-0.00119
	(!A2 * B1 * !B2 * !C1 * !X)	0.00032	0.00032	0.00031
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00138	-0.00138	-0.00140
	(!A2 * !B1 * C1 * X)	0.00085	0.00086	0.00086
	(!A2 * !B1 * C1 * X)	-0.00119	-0.00119	-0.00119
	(!A2 * !B1 * !C1 * !X)	0.00032	0.00032	0.00031
	(!A2 * !B1 * !C1 * !X)	-0.00138	-0.00138	-0.00140

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	0.00104	0.00104	0.00103
	(A2 * B1 * B2 * C1 * X)	-0.00110	-0.00116	-0.00114
	(A2 * B1 * B2 * !C1 * X)	0.00104	0.00104	0.00103
	(A2 * B1 * B2 * !C1 * X)	-0.00110	-0.00116	-0.00114
	(A2 * B1 * !B2 * C1 * X)	0.00104	0.00104	0.00103
	(A2 * B1 * !B2 * C1 * X)	-0.00105	-0.00111	-0.00111
	(A2 * !B1 * C1 * X)	0.00104	0.00104	0.00103
	(A2 * !B1 * C1 * X)	-0.00105	-0.00111	-0.00111
	(!A2 * B1 * B2 * C1 * X)	0.00097	0.00098	0.00097
	(!A2 * B1 * B2 * C1 * X)	-0.00118	-0.00119	-0.00118
	(!A2 * B1 * B2 * !C1 * X)	0.00096	0.00096	0.00097
	(!A2 * B1 * B2 * !C1 * X)	-0.00118	-0.00118	-0.00118
	(!A2 * B1 * !B2 * C1 * X)	0.00097	0.00098	0.00097
	(!A2 * B1 * !B2 * C1 * X)	-0.00118	-0.00118	-0.00118
	(!A2 * B1 * !B2 * !C1 * !X)	0.00035	0.00035	0.00034
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00139	-0.00139	-0.00141
	(!A2 * !B1 * C1 * X)	0.00097	0.00097	0.00097
	(!A2 * !B1 * C1 * X)	-0.00118	-0.00118	-0.00118
	(!A2 * !B1 * !C1 * !X)	0.00035	0.00035	0.00034
	(!A2 * !B1 * !C1 * !X)	-0.00139	-0.00139	-0.00141

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	0.00206	0.00204	0.00203
	(A2 * B1 * B2 * C1 * X)	-0.00216	-0.00224	-0.00224
	(A2 * B1 * B2 * !C1 * X)	0.00205	0.00204	0.00203
	(A2 * B1 * B2 * !C1 * X)	-0.00216	-0.00223	-0.00224
	(A2 * B1 * !B2 * C1 * X)	0.00203	0.00204	0.00203
	(A2 * B1 * !B2 * C1 * X)	-0.00208	-0.00221	-0.00218
	(A2 * !B1 * C1 * X)	0.00203	0.00204	0.00203
	(A2 * !B1 * C1 * X)	-0.00208	-0.00221	-0.00218
	(!A2 * B1 * B2 * C1 * X)	0.00191	0.00192	0.00191
	(!A2 * B1 * B2 * C1 * X)	-0.00231	-0.00232	-0.00232
	(!A2 * B1 * B2 * !C1 * X)	0.00190	0.00192	0.00191
	(!A2 * B1 * B2 * !C1 * X)	-0.00231	-0.00233	-0.00232
	(!A2 * B1 * !B2 * C1 * X)	0.00191	0.00192	0.00191
	(!A2 * B1 * !B2 * C1 * X)	-0.00231	-0.00232	-0.00231
	(!A2 * B1 * !B2 * !C1 * !X)	0.00097	0.00098	0.00093
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00255	-0.00258	-0.00263
	(!A2 * !B1 * C1 * X)	0.00191	0.00192	0.00191
	(!A2 * !B1 * C1 * X)	-0.00231	-0.00232	-0.00231
	(!A2 * !B1 * !C1 * !X)	0.00097	0.00098	0.00093
	(!A2 * !B1 * !C1 * !X)	-0.00255	-0.00258	-0.00263

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)**	-0.00091	-0.00091	-0.00090
	(A2 * B1 * B2 * C1 * X)	0.00116	0.00117	0.00115
	(A2 * B1 * B2 * !C1 * X)	-0.00091	-0.00091	-0.00090
	(A2 * B1 * B2 * !C1 * X)	0.00116	0.00117	0.00115
	(A2 * B1 * !B2 * C1 * X)	-0.00091	-0.00091	-0.00090
	(A2 * B1 * !B2 * C1 * X)	0.00113	0.00112	0.00112
	(A2 * !B1 * C1 * X)	-0.00091	-0.00091	-0.00090
	(A2 * !B1 * C1 * X)	0.00113	0.00112	0.00112
	(!A2 * B1 * B2 * C1 * X)	-0.00084	-0.00086	-0.00086
	(!A2 * B1 * B2 * C1 * X)	0.00120	0.00120	0.00119
	(!A2 * B1 * B2 * !C1 * X)	-0.00084	-0.00086	-0.00086
	(!A2 * B1 * B2 * !C1 * X)	0.00120	0.00121	0.00119
	(!A2 * B1 * !B2 * C1 * X)	-0.00084	-0.00086	-0.00086
	(!A2 * B1 * !B2 * C1 * X)	0.00120	0.00121	0.00119
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00030	-0.00030	-0.00030
	(!A2 * B1 * !B2 * !C1 * !X)	0.00140	0.00141	0.00140
	(!A2 * !B1 * C1 * X)	-0.00084	-0.00086	-0.00086
	(!A2 * !B1 * C1 * X)	0.00120	0.00119	0.00119
	(!A2 * !B1 * !C1 * !X)	-0.00030	-0.00030	-0.00030
	(!A2 * !B1 * !C1 * !X)	0.00140	0.00141	0.00140

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	-0.00103	-0.00104	-0.00103
	(A2 * B1 * B2 * C1 * X)	0.00115	0.00116	0.00114
	(A2 * B1 * B2 * !C1 * X)	-0.00103	-0.00104	-0.00103
	(A2 * B1 * B2 * !C1 * X)	0.00115	0.00116	0.00114
	(A2 * B1 * !B2 * C1 * X)	-0.00103	-0.00103	-0.00103
	(A2 * B1 * !B2 * C1 * X)	0.00112	0.00111	0.00111
	(A2 * !B1 * C1 * X)	-0.00103	-0.00103	-0.00103
	(A2 * !B1 * C1 * X)	0.00112	0.00111	0.00111
	(!A2 * B1 * B2 * C1 * X)	-0.00095	-0.00098	-0.00097
	(!A2 * B1 * B2 * C1 * X)	0.00119	0.00119	0.00118
	(!A2 * B1 * B2 * !C1 * X)	-0.00095	-0.00096	-0.00097
	(!A2 * B1 * B2 * !C1 * X)	0.00119	0.00120	0.00118
	(!A2 * B1 * !B2 * C1 * X)	-0.00095	-0.00097	-0.00097
	(!A2 * B1 * !B2 * C1 * X)	0.00119	0.00118	0.00119
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00033	-0.00033	-0.00033
	(!A2 * B1 * !B2 * !C1 * !X)	0.00141	0.00142	0.00142
	(!A2 * !B1 * C1 * X)	-0.00095	-0.00097	-0.00097
	(!A2 * !B1 * C1 * X)	0.00119	0.00118	0.00119
	(!A2 * !B1 * !C1 * !X)	-0.00033	-0.00033	-0.00033
	(!A2 * !B1 * !C1 * !X)	0.00141	0.00142	0.00142

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	-0.00204	-0.00203	-0.00203
	(A2 * B1 * B2 * C1 * X)	0.00224	0.00224	0.00224
	(A2 * B1 * B2 * !C1 * X)	-0.00204	-0.00203	-0.00203
	(A2 * B1 * B2 * !C1 * X)	0.00224	0.00223	0.00224
	(A2 * B1 * !B2 * C1 * X)	-0.00203	-0.00204	-0.00202
	(A2 * B1 * !B2 * C1 * X)	0.00219	0.00221	0.00218
	(A2 * !B1 * C1 * X)	-0.00203	-0.00204	-0.00202
	(A2 * !B1 * C1 * X)	0.00219	0.00221	0.00218
	(!A2 * B1 * B2 * C1 * X)	-0.00185	-0.00192	-0.00191
	(!A2 * B1 * B2 * C1 * X)	0.00233	0.00234	0.00232
	(!A2 * B1 * B2 * !C1 * X)	-0.00183	-0.00192	-0.00191
	(!A2 * B1 * B2 * !C1 * X)	0.00232	0.00233	0.00232
	(!A2 * B1 * !B2 * C1 * X)	-0.00184	-0.00192	-0.00191
	(!A2 * B1 * !B2 * C1 * X)	0.00233	0.00235	0.00232
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00092	-0.00092	-0.00091
	(!A2 * B1 * !B2 * !C1 * !X)	0.00264	0.00266	0.00264
	(!A2 * !B1 * C1 * X)	-0.00184	-0.00192	-0.00191
	(!A2 * !B1 * C1 * X)	0.00233	0.00235	0.00232
	(!A2 * !B1 * !C1 * !X)	-0.00092	-0.00092	-0.00091
	(!A2 * !B1 * !C1 * !X)	0.00264	0.00266	0.00264

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)**	0.00105	0.00107	0.00105
	(A1 * B1 * B2 * C1 * X)	-0.00106	-0.00113	-0.00112
	(A1 * B1 * B2 * !C1 * X)	0.00105	0.00107	0.00105
	(A1 * B1 * B2 * !C1 * X)	-0.00106	-0.00113	-0.00112
	(A1 * B1 * !B2 * C1 * X)	0.00106	0.00107	0.00106
	(A1 * B1 * !B2 * C1 * X)	-0.00102	-0.00108	-0.00108
	(A1 * !B1 * C1 * X)	0.00106	0.00107	0.00106
	(A1 * !B1 * C1 * X)	-0.00102	-0.00108	-0.00108
	(!A1 * B1 * B2 * X)	0.00100	0.00101	0.00100
	(!A1 * B1 * B2 * X)	-0.00115	-0.00116	-0.00115
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00100	0.00101	0.00100
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00115	-0.00116	-0.00115
	(!A1 * B1 * !B2 * !C1 * !X)	0.00084	0.00086	0.00085
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00131	-0.00132	-0.00131
	(!A1 * !B1 * !C1 * !X)	0.00085	0.00086	0.00085
	(!A1 * !B1 * !C1 * !X)	-0.00131	-0.00132	-0.00131

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	0.00115	0.00117	0.00115
	(A1 * B1 * B2 * C1 * X)	-0.00106	-0.00112	-0.00111
	(A1 * B1 * B2 * !C1 * X)	0.00116	0.00117	0.00115
	(A1 * B1 * B2 * !C1 * X)	-0.00106	-0.00112	-0.00111
	(A1 * B1 * !B2 * C1 * X)	0.00116	0.00117	0.00115
	(A1 * B1 * !B2 * C1 * X)	-0.00102	-0.00108	-0.00108
	(A1 * !B1 * C1 * X)	0.00116	0.00117	0.00115
	(A1 * !B1 * C1 * X)	-0.00102	-0.00108	-0.00108
	(!A1 * B1 * B2 * X)	0.00109	0.00110	0.00109
	(!A1 * B1 * B2 * X)	-0.00114	-0.00114	-0.00114
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00109	0.00110	0.00109
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00114	-0.00115	-0.00114
	(!A1 * B1 * !B2 * !C1 * !X)	0.00094	0.00095	0.00094
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00129	-0.00130	-0.00129
	(!A1 * !B1 * !C1 * !X)	0.00094	0.00095	0.00094
	(!A1 * !B1 * !C1 * !X)	-0.00129	-0.00130	-0.00129

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	0.00202	0.00202	0.00200
	(A1 * B1 * B2 * C1 * X)	-0.00213	-0.00222	-0.00222
	(A1 * B1 * B2 * !C1 * X)	0.00202	0.00202	0.00200
	(A1 * B1 * B2 * !C1 * X)	-0.00212	-0.00222	-0.00222
	(A1 * B1 * !B2 * C1 * X)	0.00201	0.00201	0.00200
	(A1 * B1 * !B2 * C1 * X)	-0.00206	-0.00219	-0.00216
	(A1 * !B1 * C1 * X)	0.00201	0.00201	0.00200
	(A1 * !B1 * C1 * X)	-0.00206	-0.00219	-0.00216
	(!A1 * B1 * B2 * X)	0.00189	0.00189	0.00189
	(!A1 * B1 * B2 * X)	-0.00230	-0.00230	-0.00230
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00189	0.00190	0.00189
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00230	-0.00230	-0.00230
	(!A1 * B1 * !B2 * !C1 * !X)	0.00184	0.00185	0.00184
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00235	-0.00235	-0.00235
	(!A1 * !B1 * !C1 * !X)	0.00184	0.00184	0.00184
	(!A1 * !B1 * !C1 * !X)	-0.00235	-0.00235	-0.00235

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)**	-0.00105	-0.00106	-0.00105
	(A1 * B1 * B2 * C1 * X)	0.00112	0.00113	0.00112
	(A1 * B1 * B2 * !C1 * X)	-0.00105	-0.00106	-0.00105
	(A1 * B1 * B2 * !C1 * X)	0.00112	0.00113	0.00112
	(A1 * B1 * !B2 * C1 * X)	-0.00106	-0.00105	-0.00105
	(A1 * B1 * !B2 * C1 * X)	0.00109	0.00108	0.00108
	(A1 * !B1 * C1 * X)	-0.00106	-0.00105	-0.00105
	(A1 * !B1 * C1 * X)	0.00109	0.00108	0.00108
	(!A1 * B1 * B2 * X)	-0.00098	-0.00101	-0.00100
	(!A1 * B1 * B2 * X)	0.00115	0.00116	0.00115
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00098	-0.00101	-0.00100
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00115	0.00116	0.00116
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00080	-0.00085	-0.00085
	(!A1 * B1 * !B2 * !C1 * !X)	0.00134	0.00133	0.00131
	(!A1 * !B1 * !C1 * !X)	-0.00080	-0.00085	-0.00085
	(!A1 * !B1 * !C1 * !X)	0.00134	0.00133	0.00131

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00115	-0.00116	-0.00115
	(A1 * B1 * B2 * C1 * X)	0.00111	0.00112	0.00111
	(A1 * B1 * B2 * !C1 * X)	-0.00115	-0.00116	-0.00115
	(A1 * B1 * B2 * !C1 * X)	0.00111	0.00112	0.00111
	(A1 * B1 * !B2 * C1 * X)	-0.00115	-0.00115	-0.00115
	(A1 * B1 * !B2 * C1 * X)	0.00108	0.00108	0.00108
	(A1 * !B1 * C1 * X)	-0.00115	-0.00115	-0.00115
	(A1 * !B1 * C1 * X)	0.00108	0.00108	0.00108
	(!A1 * B1 * B2 * X)	-0.00107	-0.00110	-0.00109
	(!A1 * B1 * B2 * X)	0.00115	0.00114	0.00114
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00107	-0.00110	-0.00109
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00114	0.00117	0.00115
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00089	-0.00095	-0.00094
	(!A1 * B1 * !B2 * !C1 * !X)	0.00133	0.00132	0.00130
	(!A1 * !B1 * !C1 * !X)	-0.00089	-0.00095	-0.00094
	(!A1 * !B1 * !C1 * !X)	0.00133	0.00132	0.00130

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	-0.00201	-0.00201	-0.00200
	(A1 * B1 * B2 * C1 * X)	0.00222	0.00222	0.00222
	(A1 * B1 * B2 * !C1 * X)	-0.00201	-0.00201	-0.00200
	(A1 * B1 * B2 * !C1 * X)	0.00222	0.00222	0.00222
	(A1 * B1 * !B2 * C1 * X)	-0.00199	-0.00201	-0.00200
	(A1 * B1 * !B2 * C1 * X)	0.00215	0.00219	0.00216
	(A1 * !B1 * C1 * X)	-0.00199	-0.00201	-0.00200
	(A1 * !B1 * C1 * X)	0.00215	0.00219	0.00216
	(!A1 * B1 * B2 * X)	-0.00184	-0.00189	-0.00189
	(!A1 * B1 * B2 * X)	0.00231	0.00233	0.00230
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00184	-0.00190	-0.00189
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00231	0.00233	0.00230
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00175	-0.00185	-0.00184
	(!A1 * B1 * !B2 * !C1 * !X)	0.00239	0.00238	0.00236
	(!A1 * !B1 * !C1 * !X)	-0.00175	-0.00184	-0.00184
	(!A1 * !B1 * !C1 * !X)	0.00239	0.00238	0.00236

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)**	0.00094	0.00094	0.00093
	(A1 * A2 * B2 * C1 * X)	-0.00086	-0.00086	-0.00086
	(A1 * A2 * B2 * !C1 * X)	0.00091	0.00092	0.00091
	(A1 * A2 * B2 * !C1 * X)	-0.00070	-0.00071	-0.00071
	(A1 * A2 * !B2 * C1 * X)	0.00087	0.00087	0.00087
	(A1 * A2 * !B2 * C1 * X)	-0.00082	-0.00082	-0.00081
	(A1 * A2 * !B2 * !C1 * X)	0.00086	0.00088	0.00086
	(A1 * A2 * !B2 * !C1 * X)	-0.00071	-0.00071	-0.00070
	(A1 * !A2 * B2 * C1 * X)	0.00100	0.00092	0.00091
	(A1 * !A2 * B2 * C1 * X)	-0.00104	-0.00116	-0.00115
	(A1 * !A2 * !B2 * C1 * X)	0.00085	0.00087	0.00086
	(A1 * !A2 * !B2 * C1 * X)	-0.00118	-0.00119	-0.00118
	(A1 * !A2 * !B2 * !C1 * !X)	0.00030	0.00030	0.00029
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00138	-0.00139	-0.00141
	(!A1 * B2 * C1 * X)	0.00100	0.00092	0.00091
	(!A1 * B2 * C1 * X)	-0.00104	-0.00115	-0.00115
	(!A1 * !B2 * C1 * X)	0.00086	0.00087	0.00086
	(!A1 * !B2 * C1 * X)	-0.00118	-0.00119	-0.00118
	(!A1 * !B2 * !C1 * !X)	0.00030	0.00030	0.00029
	(!A1 * !B2 * !C1 * !X)	-0.00138	-0.00139	-0.00141

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	0.00113	0.00113	0.00112
	(A1 * A2 * B2 * C1 * X)	-0.00087	-0.00088	-0.00088
	(A1 * A2 * B2 * !C1 * X)	0.00110	0.00110	0.00110
	(A1 * A2 * B2 * !C1 * X)	-0.00072	-0.00072	-0.00072
	(A1 * A2 * !B2 * C1 * X)	0.00105	0.00106	0.00105
	(A1 * A2 * !B2 * C1 * X)	-0.00083	-0.00083	-0.00082
	(A1 * A2 * !B2 * !C1 * X)	0.00104	0.00106	0.00104
	(A1 * A2 * !B2 * !C1 * X)	-0.00072	-0.00073	-0.00072
	(A1 * !A2 * B2 * C1 * X)	0.00119	0.00111	0.00110
	(A1 * !A2 * B2 * C1 * X)	-0.00105	-0.00116	-0.00117
	(A1 * !A2 * !B2 * C1 * X)	0.00103	0.00104	0.00103
	(A1 * !A2 * !B2 * C1 * X)	-0.00119	-0.00120	-0.00119
	(A1 * !A2 * !B2 * !C1 * !X)	0.00036	0.00036	0.00035
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00145	-0.00147	-0.00148
	(!A1 * B2 * C1 * X)	0.00119	0.00111	0.00110
	(!A1 * B2 * C1 * X)	-0.00105	-0.00116	-0.00117
	(!A1 * !B2 * C1 * X)	0.00103	0.00104	0.00103
	(!A1 * !B2 * C1 * X)	-0.00119	-0.00120	-0.00119
	(!A1 * !B2 * !C1 * !X)	0.00036	0.00036	0.00035
	(!A1 * !B2 * !C1 * !X)	-0.00145	-0.00147	-0.00148

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	0.00200	0.00201	0.00198
	(A1 * A2 * B2 * C1 * X)	-0.00180	-0.00180	-0.00179
	(A1 * A2 * B2 * !C1 * X)	0.00195	0.00196	0.00196
	(A1 * A2 * B2 * !C1 * X)	-0.00143	-0.00144	-0.00145
	(A1 * A2 * !B2 * C1 * X)	0.00188	0.00190	0.00189
	(A1 * A2 * !B2 * C1 * X)	-0.00168	-0.00169	-0.00168
	(A1 * A2 * !B2 * !C1 * X)	0.00187	0.00189	0.00187
	(A1 * A2 * !B2 * !C1 * X)	-0.00145	-0.00146	-0.00144
	(A1 * !A2 * B2 * C1 * X)	0.00212	0.00197	0.00195
	(A1 * !A2 * B2 * C1 * X)	-0.00208	-0.00232	-0.00232
	(A1 * !A2 * !B2 * C1 * X)	0.00186	0.00187	0.00186
	(A1 * !A2 * !B2 * C1 * X)	-0.00237	-0.00238	-0.00237
	(A1 * !A2 * !B2 * !C1 * !X)	0.00077	0.00078	0.00073
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00276	-0.00279	-0.00284
	(!A1 * B2 * C1 * X)	0.00213	0.00197	0.00195
	(!A1 * B2 * C1 * X)	-0.00208	-0.00232	-0.00232
	(!A1 * !B2 * C1 * X)	0.00186	0.00187	0.00186
	(!A1 * !B2 * C1 * X)	-0.00237	-0.00238	-0.00237
	(!A1 * !B2 * !C1 * !X)	0.00077	0.00078	0.00073
	(!A1 * !B2 * !C1 * !X)	-0.00276	-0.00279	-0.00284

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)**	-0.00092	-0.00092	-0.00092
	(A1 * A2 * B2 * C1 * X)	0.00086	0.00086	0.00086
	(A1 * A2 * B2 * !C1 * X)	-0.00086	-0.00086	-0.00087
	(A1 * A2 * B2 * !C1 * X)	0.00076	0.00075	0.00075
	(A1 * A2 * !B2 * C1 * X)	-0.00085	-0.00087	-0.00087
	(A1 * A2 * !B2 * C1 * X)	0.00082	0.00082	0.00081
	(A1 * A2 * !B2 * !C1 * X)	-0.00084	-0.00087	-0.00086
	(A1 * A2 * !B2 * !C1 * X)	0.00071	0.00071	0.00070
	(A1 * !A2 * B2 * C1 * X)	-0.00091	-0.00092	-0.00091
	(A1 * !A2 * B2 * C1 * X)	0.00116	0.00117	0.00115
	(A1 * !A2 * !B2 * C1 * X)	-0.00084	-0.00087	-0.00086
	(A1 * !A2 * !B2 * C1 * X)	0.00119	0.00119	0.00118
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00028	-0.00028	-0.00028
	(A1 * !A2 * !B2 * !C1 * !X)	0.00140	0.00141	0.00141
	(!A1 * B2 * C1 * X)	-0.00091	-0.00091	-0.00091
	(!A1 * B2 * C1 * X)	0.00116	0.00115	0.00115
	(!A1 * !B2 * C1 * X)	-0.00084	-0.00087	-0.00086
	(!A1 * !B2 * C1 * X)	0.00119	0.00119	0.00118
	(!A1 * !B2 * !C1 * !X)	-0.00028	-0.00028	-0.00028
	(!A1 * !B2 * !C1 * !X)	0.00140	0.00141	0.00141

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	-0.00110	-0.00111	-0.00111
	(A1 * A2 * B2 * C1 * X)	0.00087	0.00088	0.00088
	(A1 * A2 * B2 * !C1 * X)	-0.00105	-0.00105	-0.00106
	(A1 * A2 * B2 * !C1 * X)	0.00077	0.00076	0.00076
	(A1 * A2 * !B2 * C1 * X)	-0.00102	-0.00105	-0.00105
	(A1 * A2 * !B2 * C1 * X)	0.00083	0.00083	0.00082
	(A1 * A2 * !B2 * !C1 * X)	-0.00102	-0.00105	-0.00104
	(A1 * A2 * !B2 * !C1 * X)	0.00072	0.00073	0.00072
	(A1 * !A2 * B2 * C1 * X)	-0.00110	-0.00109	-0.00109
	(A1 * !A2 * B2 * C1 * X)	0.00117	0.00116	0.00117
	(A1 * !A2 * !B2 * C1 * X)	-0.00101	-0.00104	-0.00103
	(A1 * !A2 * !B2 * C1 * X)	0.00120	0.00121	0.00120
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00034	-0.00034	-0.00034
	(A1 * !A2 * !B2 * !C1 * !X)	0.00148	0.00149	0.00148
	(!A1 * B2 * C1 * X)	-0.00110	-0.00109	-0.00109
	(!A1 * B2 * C1 * X)	0.00117	0.00116	0.00117
	(!A1 * !B2 * C1 * X)	-0.00101	-0.00104	-0.00103
	(!A1 * !B2 * C1 * X)	0.00120	0.00120	0.00120
	(!A1 * !B2 * !C1 * !X)	-0.00034	-0.00034	-0.00034
	(!A1 * !B2 * !C1 * !X)	0.00148	0.00149	0.00148

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	-0.00197	-0.00197	-0.00197
	(A1 * A2 * B2 * C1 * X)	0.00180	0.00180	0.00179
	(A1 * A2 * B2 * !C1 * X)	-0.00186	-0.00187	-0.00187
	(A1 * A2 * B2 * !C1 * X)	0.00153	0.00154	0.00154
	(A1 * A2 * !B2 * C1 * X)	-0.00181	-0.00189	-0.00189
	(A1 * A2 * !B2 * C1 * X)	0.00168	0.00169	0.00168
	(A1 * A2 * !B2 * !C1 * X)	-0.00180	-0.00189	-0.00187
	(A1 * A2 * !B2 * !C1 * X)	0.00146	0.00146	0.00145
	(A1 * !A2 * B2 * C1 * X)	-0.00193	-0.00194	-0.00193
	(A1 * !A2 * B2 * C1 * X)	0.00231	0.00232	0.00232
	(A1 * !A2 * !B2 * C1 * X)	-0.00178	-0.00187	-0.00186
	(A1 * !A2 * !B2 * C1 * X)	0.00237	0.00240	0.00237
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00072	-0.00071	-0.00071
	(A1 * !A2 * !B2 * !C1 * !X)	0.00286	0.00285	0.00284
	(!A1 * B2 * C1 * X)	-0.00193	-0.00194	-0.00193
	(!A1 * B2 * C1 * X)	0.00231	0.00232	0.00232
	(!A1 * !B2 * C1 * X)	-0.00178	-0.00187	-0.00186
	(!A1 * !B2 * C1 * X)	0.00237	0.00240	0.00237
	(!A1 * !B2 * !C1 * !X)	-0.00072	-0.00071	-0.00071
	(!A1 * !B2 * !C1 * !X)	0.00286	0.00285	0.00284

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)**	0.00097	0.00097	0.00096
	(A1 * A2 * B1 * C1 * X)	-0.00085	-0.00085	-0.00085
	(A1 * A2 * B1 * !C1 * X)	0.00095	0.00095	0.00095
	(A1 * A2 * B1 * !C1 * X)	-0.00069	-0.00069	-0.00069
	(A1 * A2 * !B1 * C1 * X)	0.00090	0.00091	0.00090
	(A1 * A2 * !B1 * C1 * X)	-0.00079	-0.00080	-0.00079
	(A1 * A2 * !B1 * !C1 * X)	0.00090	0.00090	0.00090
	(A1 * A2 * !B1 * !C1 * X)	-0.00069	-0.00068	-0.00069
	(A1 * !A2 * B1 * C1 * X)	0.00104	0.00096	0.00094
	(A1 * !A2 * B1 * C1 * X)	-0.00100	-0.00113	-0.00113
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00089	0.00090	0.00089
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00116	-0.00116	-0.00115
	(A1 * !A2 * !B1 * !C1 * !X)	0.00080	0.00081	0.00080
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00125	-0.00125	-0.00124
	(!A1 * B1 * C1 * X)	0.00104	0.00096	0.00094
	(!A1 * B1 * C1 * X)	-0.00100	-0.00113	-0.00113
	(!A1 * !B1 * !C1 * !X)	0.00080	0.00081	0.00080
	(!A1 * !B1 * !C1 * !X)	-0.00125	-0.00125	-0.00124

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	0.00116	0.00115	0.00114
	(A1 * A2 * B1 * C1 * X)	-0.00081	-0.00082	-0.00081
	(A1 * A2 * B1 * !C1 * X)	0.00113	0.00113	0.00113
	(A1 * A2 * B1 * !C1 * X)	-0.00065	-0.00065	-0.00065
	(A1 * A2 * !B1 * C1 * X)	0.00108	0.00110	0.00108
	(A1 * A2 * !B1 * C1 * X)	-0.00076	-0.00078	-0.00076
	(A1 * A2 * !B1 * !C1 * X)	0.00107	0.00107	0.00107
	(A1 * A2 * !B1 * !C1 * X)	-0.00065	-0.00065	-0.00065
	(A1 * !A2 * B1 * C1 * X)	0.00122	0.00114	0.00113
	(A1 * !A2 * B1 * C1 * X)	-0.00097	-0.00109	-0.00109
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00106	0.00108	0.00107
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00111	-0.00112	-0.00111
	(A1 * !A2 * !B1 * !C1 * !X)	0.00092	0.00093	0.00093
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00125	-0.00126	-0.00125
	(!A1 * B1 * C1 * X)	0.00122	0.00114	0.00113
	(!A1 * B1 * C1 * X)	-0.00097	-0.00109	-0.00109
	(!A1 * !B1 * !C1 * !X)	0.00092	0.00093	0.00093
	(!A1 * !B1 * !C1 * !X)	-0.00125	-0.00126	-0.00125

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	0.00222	0.00225	0.00220
	(A1 * A2 * B1 * C1 * X)	-0.00171	-0.00173	-0.00172
	(A1 * A2 * B1 * !C1 * X)	0.00218	0.00221	0.00217
	(A1 * A2 * B1 * !C1 * X)	-0.00137	-0.00139	-0.00137
	(A1 * A2 * !B1 * C1 * X)	0.00210	0.00211	0.00210
	(A1 * A2 * !B1 * C1 * X)	-0.00160	-0.00161	-0.00161
	(A1 * A2 * !B1 * !C1 * X)	0.00208	0.00210	0.00208
	(A1 * A2 * !B1 * !C1 * X)	-0.00136	-0.00137	-0.00137
	(A1 * !A2 * B1 * C1 * X)	0.00232	0.00217	0.00216
	(A1 * !A2 * B1 * C1 * X)	-0.00202	-0.00225	-0.00225
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00206	0.00209	0.00207
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00228	-0.00230	-0.00229
	(A1 * !A2 * !B1 * !C1 * !X)	0.00201	0.00203	0.00202
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00234	-0.00236	-0.00235
	(!A1 * B1 * C1 * X)	0.00232	0.00217	0.00216
	(!A1 * B1 * C1 * X)	-0.00202	-0.00225	-0.00225
	(!A1 * !B1 * !C1 * !X)	0.00201	0.00203	0.00202
	(!A1 * !B1 * !C1 * !X)	-0.00234	-0.00236	-0.00235

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)**	-0.00095	-0.00095	-0.00095
	(A1 * A2 * B1 * C1 * X)	0.00085	0.00085	0.00085
	(A1 * A2 * B1 * !C1 * X)	-0.00090	-0.00090	-0.00090
	(A1 * A2 * B1 * !C1 * X)	0.00073	0.00073	0.00073
	(A1 * A2 * !B1 * C1 * X)	-0.00088	-0.00091	-0.00090
	(A1 * A2 * !B1 * C1 * X)	0.00079	0.00080	0.00079
	(A1 * A2 * !B1 * !C1 * X)	-0.00088	-0.00090	-0.00090
	(A1 * A2 * !B1 * !C1 * X)	0.00069	0.00069	0.00069
	(A1 * !A2 * B1 * C1 * X)	-0.00094	-0.00095	-0.00094
	(A1 * !A2 * B1 * C1 * X)	0.00113	0.00114	0.00113
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00087	-0.00089	-0.00089
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00116	0.00116	0.00116
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00075	-0.00080	-0.00080
	(A1 * !A2 * !B1 * !C1 * !X)	0.00128	0.00126	0.00125
	(!A1 * B1 * C1 * X)	-0.00094	-0.00095	-0.00094
	(!A1 * B1 * C1 * X)	0.00113	0.00114	0.00113
	(!A1 * !B1 * !C1 * !X)	-0.00075	-0.00080	-0.00080
	(!A1 * !B1 * !C1 * !X)	0.00128	0.00126	0.00125

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00113	-0.00114	-0.00114
	(A1 * A2 * B1 * C1 * X)	0.00081	0.00082	0.00081
	(A1 * A2 * B1 * !C1 * X)	-0.00108	-0.00108	-0.00109
	(A1 * A2 * B1 * !C1 * X)	0.00070	0.00070	0.00070
	(A1 * A2 * !B1 * C1 * X)	-0.00105	-0.00109	-0.00108
	(A1 * A2 * !B1 * C1 * X)	0.00076	0.00078	0.00076
	(A1 * A2 * !B1 * !C1 * X)	-0.00105	-0.00107	-0.00107
	(A1 * A2 * !B1 * !C1 * X)	0.00065	0.00066	0.00065
	(A1 * !A2 * B1 * C1 * X)	-0.00113	-0.00113	-0.00112
	(A1 * !A2 * B1 * C1 * X)	0.00109	0.00110	0.00109
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00104	-0.00107	-0.00107
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00111	0.00112	0.00112
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00087	-0.00093	-0.00093
	(A1 * !A2 * !B1 * !C1 * !X)	0.00129	0.00128	0.00126
	(!A1 * B1 * C1 * X)	-0.00113	-0.00113	-0.00112
	(!A1 * B1 * C1 * X)	0.00109	0.00110	0.00109
	(!A1 * !B1 * !C1 * !X)	-0.00087	-0.00093	-0.00093
	(!A1 * !B1 * !C1 * !X)	0.00129	0.00128	0.00126

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00218	-0.00220	-0.00218
	(A1 * A2 * B1 * C1 * X)	0.00171	0.00173	0.00172
	(A1 * A2 * B1 * !C1 * X)	-0.00206	-0.00208	-0.00208
	(A1 * A2 * B1 * !C1 * X)	0.00147	0.00148	0.00147
	(A1 * A2 * !B1 * C1 * X)	-0.00205	-0.00211	-0.00210
	(A1 * A2 * !B1 * C1 * X)	0.00160	0.00161	0.00161
	(A1 * A2 * !B1 * !C1 * X)	-0.00203	-0.00210	-0.00208
	(A1 * A2 * !B1 * !C1 * X)	0.00137	0.00137	0.00137
	(A1 * !A2 * B1 * C1 * X)	-0.00214	-0.00217	-0.00214
	(A1 * !A2 * B1 * C1 * X)	0.00223	0.00227	0.00225
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00202	-0.00209	-0.00207
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00229	0.00230	0.00230
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00193	-0.00202	-0.00202
	(A1 * !A2 * !B1 * !C1 * !X)	0.00239	0.00236	0.00236
	(!A1 * B1 * C1 * X)	-0.00214	-0.00217	-0.00214
	(!A1 * B1 * C1 * X)	0.00223	0.00227	0.00225
	(!A1 * !B1 * !C1 * !X)	-0.00193	-0.00202	-0.00202
	(!A1 * !B1 * !C1 * !X)	0.00239	0.00236	0.00236

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)	0.00115	0.00115	0.00115
	(A1 * B1 * B2 * X)	-0.00060	-0.00060	-0.00060
	(A1 * A2 * B1 * !B2 * X)	0.00115	0.00116	0.00115
	(A1 * A2 * B1 * !B2 * X)	-0.00060	-0.00060	-0.00060
	(A1 * A2 * !B1 * X)	0.00115	0.00116	0.00115
	(A1 * A2 * !B1 * X)	-0.00060	-0.00060	-0.00060
	(!A1 * B1 * B2 * X)	0.00115	0.00116	0.00115
	(!A1 * B1 * B2 * X)	-0.00061	-0.00061	-0.00060
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	0.00121	0.00121	0.00121
	(A1 * B1 * B2 * X)	-0.00061	-0.00060	-0.00060
	(A1 * A2 * B1 * !B2 * X)	0.00120	0.00121	0.00121
	(A1 * A2 * B1 * !B2 * X)	-0.00060	-0.00060	-0.00060
	(A1 * A2 * !B1 * X)	0.00120	0.00121	0.00121
	(A1 * A2 * !B1 * X)	-0.00060	-0.00060	-0.00060
	(!A1 * B1 * B2 * X)	0.00120	0.00121	0.00121
	(!A1 * B1 * B2 * X)	-0.00060	-0.00061	-0.00060
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	0.00203	0.00204	0.00204
	(A1 * B1 * B2 * X)	-0.00128	-0.00128	-0.00128
	(A1 * A2 * B1 * !B2 * X)	0.00204	0.00205	0.00204
	(A1 * A2 * B1 * !B2 * X)	-0.00128	-0.00128	-0.00127
	(A1 * A2 * !B1 * X)	0.00204	0.00205	0.00204
	(A1 * A2 * !B1 * X)	-0.00128	-0.00128	-0.00127
	(!A1 * B1 * B2 * X)	0.00203	0.00204	0.00203
	(!A1 * B1 * B2 * X)	-0.00130	-0.00130	-0.00130

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)	-0.00106	-0.00106	-0.00114
	(A1 * B1 * B2 * X)	0.00069	0.00069	0.00062
	(A1 * A2 * B1 * !B2 * X)	-0.00094	-0.00094	-0.00111
	(A1 * A2 * B1 * !B2 * X)	0.00077	0.00077	0.00064
	(A1 * A2 * !B1 * X)	-0.00093	-0.00094	-0.00111
	(A1 * A2 * !B1 * X)	0.00076	0.00077	0.00064
	(!A1 * B1 * B2 * X)	-0.00105	-0.00106	-0.00114
	(!A1 * B1 * B2 * X)	0.00069	0.00069	0.00063
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	-0.00111	-0.00111	-0.00119
	(A1 * B1 * B2 * X)	0.00069	0.00068	0.00062
	(A1 * A2 * B1 * !B2 * X)	-0.00099	-0.00099	-0.00116
	(A1 * A2 * B1 * !B2 * X)	0.00076	0.00076	0.00064
	(A1 * A2 * !B1 * X)	-0.00099	-0.00099	-0.00116
	(A1 * A2 * !B1 * X)	0.00077	0.00076	0.00064
	(!A1 * B1 * B2 * X)	-0.00111	-0.00111	-0.00119
	(!A1 * B1 * B2 * X)	0.00069	0.00069	0.00063
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	-0.00183	-0.00184	-0.00201
	(A1 * B1 * B2 * X)	0.00147	0.00146	0.00133
	(A1 * A2 * B1 * !B2 * X)	-0.00156	-0.00158	-0.00195
	(A1 * A2 * B1 * !B2 * X)	0.00165	0.00164	0.00136
	(A1 * A2 * !B1 * X)	-0.00156	-0.00158	-0.00195
	(A1 * A2 * !B1 * X)	0.00165	0.00164	0.00136
	(!A1 * B1 * B2 * X)	-0.00182	-0.00183	-0.00200
	(!A1 * B1 * B2 * X)	0.00150	0.00149	0.00134

SKY130_FD_SC_HS__A222OIx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a222oi_1	14.38560
sky130_fd_sc_hs__a222oi_2	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)						Max Cap(pf)
	A1	A2	B1	B2	C1	C2	Y
sky130_fd_sc_hs__a222oi_1	0.00255	0.00239	0.00249	0.00251	0.00252	0.00261	0.20056
sky130_fd_sc_hs__a222oi_2	0.00512	0.00450	0.00506	0.00462	0.00458	0.00520	0.36670

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222oi_1	0.00000	0.03468	0.12097
sky130_fd_sc_hs__a222oi_2	0.00000	0.06935	0.24193

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)	0.39775	1.62573	11.19760
	A2->Y (FR)	0.43483	1.67009	11.26770
	B1->Y (FR)	0.35362	1.57378	11.53440
	B2->Y (FR)	0.39704	1.62707	11.63680
	C1->Y (FR)	0.26866	1.45987	11.22770
	C2->Y (FR)	0.30926	1.50296	11.27160
sky130_fd_sc_hs__a222oi_2	A1->Y (FR)	0.37943	1.41481	11.03490
	A2->Y (FR)	0.42893	1.48032	11.20260
	B1->Y (FR)	0.33252	1.35215	11.28000
	B2->Y (FR)	0.39091	1.44763	11.67660
	C1->Y (FR)	0.24398	1.26819	11.26140
	C2->Y (FR)	0.29831	1.31952	11.30800

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222oi_1	A1->Y (RF)	0.05845	0.49072	3.86657
	A2->Y (RF)	0.06286	0.47078	3.68159
	B1->Y (RF)	0.05418	0.46689	3.80722
	B2->Y (RF)	0.05917	0.44996	3.62246
	C1->Y (RF)	0.04149	0.44214	3.77346
	C2->Y (RF)	0.04612	0.42692	3.59002
sky130_fd_sc_hs__a222oi_2	A1->Y (RF)	0.05500	0.44509	3.81482
	A2->Y (RF)	0.05996	0.43005	3.65787
	B1->Y (RF)	0.05213	0.42478	3.78711
	B2->Y (RF)	0.05765	0.41290	3.64079
	C1->Y (RF)	0.03475	0.37849	3.62512
	C2->Y (RF)	0.04097	0.37065	3.47039

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.00137	0.00121	0.00123
	A1	0.00707	0.00690	0.00692
	A2	0.00156	0.00146	0.00150
	A2	0.00782	0.00771	0.00774
	B1	0.00140	0.00123	0.00133
	B1	0.00627	0.00610	0.00620
	B2	0.00161	0.00149	0.00159
	B2	0.00710	0.00699	0.00707
	C1	0.00132	0.00121	0.00200
	C1	0.00559	0.00548	0.00626
	C2	0.00157	0.00150	0.00231
	C2	0.00642	0.00636	0.00715
sky130_fd_sc_hs__a222oi_2	A1	0.00221	0.00187	0.00195
	A1	0.01359	0.01326	0.01332
	A2	0.00286	0.00262	0.00271
	A2	0.01503	0.01480	0.01486
	B1	0.00228	0.00192	0.00217
	B1	0.01212	0.01176	0.01198
	B2	0.00284	0.00258	0.00283
	B2	0.01354	0.01330	0.01351
	C1	0.00213	0.00198	0.00364
	C1	0.01031	0.01016	0.01180
	C2	0.00269	0.00255	0.00416
	C2	0.01233	0.01217	0.01379

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.00875	0.00867	0.00880
	A1	0.00346	0.00335	0.00354
	A2	0.00933	0.00922	0.00925
	A2	0.00344	0.00332	0.00339
	B1	0.00673	0.00669	0.00693
	B1	0.00197	0.00191	0.00216
	B2	0.00738	0.00731	0.00742
	B2	0.00198	0.00188	0.00200
	C1	0.00489	0.00494	0.00519
	C1	0.00055	0.00050	0.00082
	C2	0.00552	0.00549	0.00568
	C2	0.00054	0.00048	0.00066
sky130_fd_sc_hs__a222oi_2	A1	0.01645	0.01621	0.01659
	A1	0.00588	0.00561	0.00606
	A2	0.01734	0.01711	0.01725
	A2	0.00590	0.00564	0.00585
	B1	0.01278	0.01262	0.01320
	B1	0.00319	0.00298	0.00358
	B2	0.01391	0.01376	0.01401
	B2	0.00339	0.00317	0.00347
	C1	0.00884	0.00889	0.00955
	C1	0.00050	0.00049	0.00113
	C2	0.01037	0.01030	0.01074
	C2	0.00046	0.00030	0.00073

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)**	0.00091	0.00091	0.00090
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00110	-0.00115	-0.00114
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00091	0.00091	0.00090
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00110	-0.00115	-0.00114
	(A2 * B1 * B2 * !C1 * !Y)	0.00091	0.00091	0.00090
	(A2 * B1 * B2 * !C1 * !Y)	-0.00110	-0.00115	-0.00114
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00092	0.00091	0.00090
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00106	-0.00112	-0.00111
	(A2 * !B1 * C1 * C2 * !Y)	0.00092	0.00091	0.00090
	(A2 * !B1 * C1 * C2 * !Y)	-0.00106	-0.00111	-0.00111
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00084	0.00085	0.00085
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00118	-0.00119	-0.00119
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00084	0.00085	0.00085
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00118	-0.00119	-0.00119
	(!A2 * B1 * B2 * !C1 * !Y)	0.00084	0.00084	0.00085
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00118	-0.00118	-0.00119
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00084	0.00085	0.00085
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00118	-0.00119	-0.00118
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00034	0.00033	0.00032
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00136	-0.00136	-0.00137
	(!A2 * B1 * !B2 * !C1 * Y)	0.00034	0.00033	0.00032
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00136	-0.00136	-0.00137
	(!A2 * !B1 * C1 * C2 * !Y)	0.00084	0.00085	0.00085
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00118	-0.00119	-0.00118
	(!A2 * !B1 * C1 * !C2 * Y)	0.00034	0.00033	0.00032
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00136	-0.00136	-0.00137
	(!A2 * !B1 * !C1 * Y)	0.00034	0.00033	0.00032
	(!A2 * !B1 * !C1 * Y)	-0.00136	-0.00136	-0.00137

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	0.00187	0.00186	0.00186
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00224	-0.00233	-0.00232
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00188	0.00186	0.00186
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00222	-0.00233	-0.00232
	(A2 * B1 * B2 * !C1 * !Y)	0.00188	0.00186	0.00186
	(A2 * B1 * B2 * !C1 * !Y)	-0.00222	-0.00233	-0.00232
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00189	0.00189	0.00186
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00212	-0.00226	-0.00225
	(A2 * !B1 * C1 * C2 * !Y)	0.00189	0.00189	0.00186
	(A2 * !B1 * C1 * C2 * !Y)	-0.00212	-0.00227	-0.00225
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00177	0.00179	0.00177
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00241	-0.00242	-0.00241
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00177	0.00178	0.00177
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00241	-0.00242	-0.00241
	(!A2 * B1 * B2 * !C1 * !Y)	0.00177	0.00179	0.00177
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00241	-0.00242	-0.00241
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00176	0.00179	0.00177
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00239	-0.00242	-0.00240
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00065	0.00066	0.00063
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00281	-0.00285	-0.00288
	(!A2 * B1 * !B2 * !C1 * Y)	0.00065	0.00066	0.00063
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00281	-0.00285	-0.00288
	(!A2 * !B1 * C1 * C2 * !Y)	0.00176	0.00177	0.00177
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00239	-0.00240	-0.00240
	(!A2 * !B1 * C1 * !C2 * Y)	0.00066	0.00066	0.00063
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00284	-0.00285	-0.00288
	(!A2 * !B1 * !C1 * Y)	0.00066	0.00066	0.00063
	(!A2 * !B1 * !C1 * Y)	-0.00284	-0.00285	-0.00288

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)	-0.00090	-0.00090	-0.00090
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00115	0.00115	0.00114
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00090	-0.00090	-0.00090
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00115	0.00115	0.00114
	(A2 * B1 * B2 * !C1 * !Y)	-0.00090	-0.00090	-0.00090
	(A2 * B1 * B2 * !C1 * !Y)	0.00115	0.00115	0.00114
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00090	-0.00090	-0.00090
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00111	0.00112	0.00111
	(A2 * !B1 * C1 * C2 * !Y)	-0.00090	-0.00090	-0.00090
	(A2 * !B1 * C1 * C2 * !Y)	0.00112	0.00111	0.00111
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00083	-0.00085	-0.00085
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00119	0.00119	0.00119
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00083	-0.00085	-0.00085
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00119	0.00120	0.00119
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00083	-0.00084	-0.00085
	(!A2 * B1 * B2 * !C1 * !Y)	0.00119	0.00120	0.00119
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00083	-0.00085	-0.00085
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00119	0.00121	0.00119
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00031	-0.00032	-0.00031
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00137	0.00138	0.00137
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00031	-0.00032	-0.00031
	(!A2 * B1 * !B2 * !C1 * Y)	0.00137	0.00138	0.00137
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00083	-0.00085	-0.00085
	(!A2 * !B1 * C1 * C2 * !Y)	0.00119	0.00121	0.00119
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00031	-0.00032	-0.00031
	(!A2 * !B1 * C1 * !C2 * Y)	0.00137	0.00138	0.00137
	(!A2 * !B1 * !C1 * Y)	-0.00031	-0.00032	-0.00031
	(!A2 * !B1 * !C1 * Y)	0.00137	0.00138	0.00137

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	-0.00186	-0.00186	-0.00186
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00231	0.00234	0.00232
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00186	-0.00186	-0.00186
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00232	0.00234	0.00232
	(A2 * B1 * B2 * !C1 * !Y)	-0.00186	-0.00186	-0.00186
	(A2 * B1 * B2 * !C1 * !Y)	0.00232	0.00234	0.00232
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00186	-0.00186	-0.00185
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00227	0.00226	0.00225
	(A2 * !B1 * C1 * C2 * !Y)	-0.00185	-0.00186	-0.00185
	(A2 * !B1 * C1 * C2 * !Y)	0.00224	0.00227	0.00225
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00172	-0.00178	-0.00177
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00242	0.00242	0.00241
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00172	-0.00178	-0.00177
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00242	0.00244	0.00241
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00171	-0.00179	-0.00177
	(!A2 * B1 * B2 * !C1 * !Y)	0.00242	0.00244	0.00241
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00171	-0.00179	-0.00177
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00242	0.00244	0.00241
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00062	-0.00062	-0.00061
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00290	0.00290	0.00289
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00062	-0.00062	-0.00061
	(!A2 * B1 * !B2 * !C1 * Y)	0.00290	0.00290	0.00289
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00171	-0.00177	-0.00177
	(!A2 * !B1 * C1 * C2 * !Y)	0.00242	0.00244	0.00241
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00062	-0.00062	-0.00061
	(!A2 * !B1 * C1 * !C2 * Y)	0.00290	0.00289	0.00289
	(!A2 * !B1 * !C1 * Y)	-0.00062	-0.00062	-0.00061
	(!A2 * !B1 * !C1 * Y)	0.00290	0.00289	0.00289

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)	0.00094	0.00095	0.00093
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00110	-0.00115	-0.00114
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00094	0.00095	0.00093
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00109	-0.00115	-0.00114
	(A1 * B1 * B2 * !C1 * !Y)	0.00094	0.00095	0.00093
	(A1 * B1 * B2 * !C1 * !Y)	-0.00109	-0.00115	-0.00114
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00095	0.00095	0.00093
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00105	-0.00111	-0.00111
	(A1 * !B1 * C1 * C2 * !Y)	0.00095	0.00095	0.00093
	(A1 * !B1 * C1 * C2 * !Y)	-0.00105	-0.00111	-0.00111
	(!A1 * B1 * B2 * !Y)	0.00088	0.00089	0.00088
	(!A1 * B1 * B2 * !Y)	-0.00118	-0.00119	-0.00118
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00088	0.00089	0.00088
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00118	-0.00119	-0.00118
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00088	0.00090	0.00089
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00118	-0.00119	-0.00118
	(!A1 * B1 * !B2 * !C1 * Y)	0.00088	0.00090	0.00089
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00118	-0.00119	-0.00118
	(!A1 * !B1 * C1 * !C2 * Y)	0.00088	0.00090	0.00089
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00118	-0.00119	-0.00118
	(!A1 * !B1 * !C1 * Y)	0.00088	0.00090	0.00089
	(!A1 * !B1 * !C1 * Y)	-0.00118	-0.00119	-0.00118

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	0.00175	0.00177	0.00175
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00207	-0.00218	-0.00216
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00175	0.00177	0.00175
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00206	-0.00218	-0.00216
	(A1 * B1 * B2 * !C1 * !Y)	0.00175	0.00177	0.00175
	(A1 * B1 * B2 * !C1 * !Y)	-0.00206	-0.00218	-0.00216
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00177	0.00177	0.00175
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00199	-0.00211	-0.00210
	(A1 * !B1 * C1 * C2 * !Y)	0.00177	0.00177	0.00175
	(A1 * !B1 * C1 * C2 * !Y)	-0.00198	-0.00211	-0.00210
	(!A1 * B1 * B2 * !Y)	0.00165	0.00168	0.00166
	(!A1 * B1 * B2 * !Y)	-0.00222	-0.00224	-0.00223
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00165	0.00167	0.00166
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00222	-0.00223	-0.00222
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00159	0.00161	0.00160
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00228	-0.00230	-0.00228
	(!A1 * B1 * !B2 * !C1 * Y)	0.00159	0.00161	0.00160
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00228	-0.00230	-0.00228
	(!A1 * !B1 * C1 * !C2 * Y)	0.00159	0.00161	0.00160
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00228	-0.00230	-0.00228
	(!A1 * !B1 * !C1 * Y)	0.00159	0.00161	0.00160
	(!A1 * !B1 * !C1 * Y)	-0.00228	-0.00230	-0.00228

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)**	-0.00093	-0.00094	-0.00093
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00115	0.00115	0.00114
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00093	-0.00094	-0.00093
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00115	0.00115	0.00114
	(A1 * B1 * B2 * !C1 * !Y)	-0.00093	-0.00094	-0.00093
	(A1 * B1 * B2 * !C1 * !Y)	0.00115	0.00115	0.00114
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00093	-0.00093	-0.00093
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00111	0.00111	0.00111
	(A1 * !B1 * C1 * C2 * !Y)	-0.00093	-0.00093	-0.00093
	(A1 * !B1 * C1 * C2 * !Y)	0.00111	0.00111	0.00111
	(!A1 * B1 * B2 * !Y)	-0.00086	-0.00089	-0.00088
	(!A1 * B1 * B2 * !Y)	0.00118	0.00119	0.00119
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00086	-0.00089	-0.00088
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00118	0.00120	0.00119
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00083	-0.00089	-0.00089
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00122	0.00120	0.00119
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00083	-0.00089	-0.00089
	(!A1 * B1 * !B2 * !C1 * Y)	0.00122	0.00120	0.00119
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00083	-0.00089	-0.00089
	(!A1 * !B1 * C1 * !C2 * Y)	0.00121	0.00120	0.00119
	(!A1 * !B1 * !C1 * Y)	-0.00083	-0.00089	-0.00089
	(!A1 * !B1 * !C1 * Y)	0.00121	0.00120	0.00119

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	-0.00174	-0.00175	-0.00175
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00215	0.00218	0.00216
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00174	-0.00175	-0.00175
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00215	0.00218	0.00216
	(A1 * B1 * B2 * !C1 * !Y)	-0.00174	-0.00175	-0.00175
	(A1 * B1 * B2 * !C1 * !Y)	0.00215	0.00218	0.00216
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00174	-0.00175	-0.00174
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00209	0.00211	0.00210
	(A1 * !B1 * C1 * C2 * !Y)	-0.00174	-0.00175	-0.00174
	(A1 * !B1 * C1 * C2 * !Y)	0.00209	0.00211	0.00210
	(!A1 * B1 * B2 * !Y)	-0.00161	-0.00167	-0.00166
	(!A1 * B1 * B2 * !Y)	0.00223	0.00225	0.00223
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00161	-0.00166	-0.00166
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00224	0.00225	0.00223
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00150	-0.00160	-0.00160
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00236	0.00232	0.00229
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00150	-0.00160	-0.00160
	(!A1 * B1 * !B2 * !C1 * Y)	0.00236	0.00232	0.00229
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00150	-0.00160	-0.00160
	(!A1 * !B1 * C1 * !C2 * Y)	0.00236	0.00232	0.00229
	(!A1 * !B1 * !C1 * Y)	-0.00150	-0.00160	-0.00160
	(!A1 * !B1 * !C1 * Y)	0.00236	0.00232	0.00229

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)**	0.00091	0.00091	0.00091
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00085	-0.00085	-0.00085
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00091	0.00090	0.00090
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00071	-0.00069	-0.00069
	(A1 * A2 * B2 * !C1 * !Y)	0.00089	0.00090	0.00090
	(A1 * A2 * B2 * !C1 * !Y)	-0.00069	-0.00069	-0.00069
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00085	0.00087	0.00086
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00081	-0.00081	-0.00081
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00085	0.00086	0.00085
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00069	-0.00070	-0.00069
	(A1 * A2 * !B2 * !C1 * !Y)	0.00085	0.00086	0.00085
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00069	-0.00070	-0.00069
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00099	0.00090	0.00089
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00101	-0.00113	-0.00113
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00084	0.00085	0.00084
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00116	-0.00117	-0.00116
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00031	0.00031	0.00030
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00134	-0.00135	-0.00136
	(A1 * !A2 * !B2 * !C1 * Y)	0.00031	0.00031	0.00030
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00134	-0.00135	-0.00136
	(!A1 * B2 * C1 * C2 * !Y)	0.00098	0.00090	0.00089
	(!A1 * B2 * C1 * C2 * !Y)	-0.00101	-0.00113	-0.00113
	(!A1 * !B2 * C1 * C2 * !Y)	0.00084	0.00085	0.00084
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00116	-0.00117	-0.00116
	(!A1 * !B2 * C1 * !C2 * Y)	0.00031	0.00031	0.00030
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00133	-0.00135	-0.00136
	(!A1 * !B2 * !C1 * Y)	0.00031	0.00031	0.00030
	(!A1 * !B2 * !C1 * Y)	-0.00133	-0.00135	-0.00136

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	0.00188	0.00189	0.00188
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00172	-0.00173	-0.00172
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00187	0.00187	0.00186
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00145	-0.00144	-0.00144
	(A1 * A2 * B2 * !C1 * !Y)	0.00186	0.00187	0.00186
	(A1 * A2 * B2 * !C1 * !Y)	-0.00145	-0.00144	-0.00144
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00178	0.00181	0.00178
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00163	-0.00165	-0.00164
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00177	0.00180	0.00178
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00144	-0.00145	-0.00144
	(A1 * A2 * !B2 * !C1 * !Y)	0.00177	0.00179	0.00178
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00144	-0.00145	-0.00144
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00208	0.00188	0.00186
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00208	-0.00234	-0.00234
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00176	0.00177	0.00176
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00240	-0.00241	-0.00239
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00064	0.00064	0.00061
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00284	-0.00286	-0.00289
	(A1 * !A2 * !B2 * !C1 * Y)	0.00064	0.00064	0.00061
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00284	-0.00286	-0.00289
	(!A1 * B2 * C1 * C2 * !Y)	0.00207	0.00188	0.00186
	(!A1 * B2 * C1 * C2 * !Y)	-0.00209	-0.00234	-0.00234
	(!A1 * !B2 * C1 * C2 * !Y)	0.00176	0.00177	0.00176
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00240	-0.00240	-0.00239
	(!A1 * !B2 * C1 * !C2 * Y)	0.00064	0.00064	0.00061
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00284	-0.00286	-0.00289
	(!A1 * !B2 * !C1 * Y)	0.00064	0.00064	0.00061
	(!A1 * !B2 * !C1 * Y)	-0.00284	-0.00286	-0.00289

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)	-0.00091	-0.00090	-0.00090
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00085	0.00085	0.00085
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00081	-0.00082	-0.00084
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00077	0.00077	0.00075
	(A1 * A2 * B2 * !C1 * !Y)	-0.00081	-0.00082	-0.00084
	(A1 * A2 * B2 * !C1 * !Y)	0.00077	0.00077	0.00075
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00084	-0.00086	-0.00086
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00081	0.00081	0.00081
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00083	-0.00086	-0.00085
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00070	0.00070	0.00069
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00083	-0.00086	-0.00085
	(A1 * A2 * !B2 * !C1 * !Y)	0.00070	0.00070	0.00069
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00089	-0.00089	-0.00088
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00113	0.00114	0.00113
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00082	-0.00085	-0.00084
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00117	0.00118	0.00116
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00029	-0.00029	-0.00029
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00136	0.00137	0.00136
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00029	-0.00029	-0.00029
	(A1 * !A2 * !B2 * !C1 * Y)	0.00136	0.00137	0.00136
	(!A1 * B2 * C1 * C2 * !Y)	-0.00089	-0.00089	-0.00088
	(!A1 * B2 * C1 * C2 * !Y)	0.00114	0.00114	0.00113
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00082	-0.00085	-0.00084
	(!A1 * !B2 * C1 * C2 * !Y)	0.00117	0.00117	0.00116
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00029	-0.00029	-0.00029
	(!A1 * !B2 * C1 * !C2 * Y)	0.00136	0.00137	0.00136
	(!A1 * !B2 * !C1 * Y)	-0.00029	-0.00029	-0.00029
	(!A1 * !B2 * !C1 * Y)	0.00136	0.00137	0.00136

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	-0.00187	-0.00188	-0.00187
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00172	0.00173	0.00172
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00174	-0.00174	-0.00176
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00157	0.00156	0.00154
	(A1 * A2 * B2 * !C1 * !Y)	-0.00173	-0.00174	-0.00176
	(A1 * A2 * B2 * !C1 * !Y)	0.00155	0.00156	0.00154
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00172	-0.00180	-0.00178
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00163	0.00165	0.00164
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00172	-0.00180	-0.00178
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00145	0.00145	0.00144
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00172	-0.00179	-0.00178
	(A1 * A2 * !B2 * !C1 * !Y)	0.00145	0.00145	0.00144
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00185	-0.00186	-0.00184
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00235	0.00236	0.00234
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00170	-0.00177	-0.00176
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00241	0.00242	0.00240
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00060	-0.00060	-0.00059
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00290	0.00289	0.00289
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00060	-0.00060	-0.00059
	(A1 * !A2 * !B2 * !C1 * Y)	0.00290	0.00289	0.00289
	(!A1 * B2 * C1 * C2 * !Y)	-0.00184	-0.00186	-0.00184
	(!A1 * B2 * C1 * C2 * !Y)	0.00232	0.00236	0.00234
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00170	-0.00177	-0.00176
	(!A1 * !B2 * C1 * C2 * !Y)	0.00241	0.00242	0.00240
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00060	-0.00060	-0.00059
	(!A1 * !B2 * C1 * !C2 * Y)	0.00290	0.00289	0.00289
	(!A1 * !B2 * !C1 * Y)	-0.00060	-0.00060	-0.00059
	(!A1 * !B2 * !C1 * Y)	0.00290	0.00289	0.00289

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)	0.00100	0.00099	0.00099
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00085	-0.00085	-0.00085
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00098	0.00098	0.00098
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00070	-0.00070	-0.00070
	(A1 * A2 * B1 * !C1 * !Y)	0.00098	0.00098	0.00098
	(A1 * A2 * B1 * !C1 * !Y)	-0.00070	-0.00070	-0.00070
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00094	0.00095	0.00094
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00081	-0.00082	-0.00081
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00093	0.00095	0.00093
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00069	-0.00070	-0.00070
	(A1 * A2 * !B1 * !C1 * !Y)	0.00093	0.00095	0.00093
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00069	-0.00070	-0.00070
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00108	0.00099	0.00097
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00101	-0.00114	-0.00114
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00092	0.00093	0.00093
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00116	-0.00117	-0.00116
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00082	0.00082	0.00082
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00127	-0.00128	-0.00127
	(A1 * !A2 * !B1 * !C1 * Y)	0.00082	0.00082	0.00082
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00127	-0.00128	-0.00127
	(!A1 * B1 * C1 * C2 * !Y)	0.00108	0.00099	0.00097
	(!A1 * B1 * C1 * C2 * !Y)	-0.00101	-0.00114	-0.00114
	(!A1 * !B1 * C1 * !C2 * Y)	0.00082	0.00082	0.00082
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00127	-0.00128	-0.00127
	(!A1 * !B1 * !C1 * Y)	0.00082	0.00082	0.00082
	(!A1 * !B1 * !C1 * Y)	-0.00127	-0.00128	-0.00127

	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00184	0.00185	0.00183
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00159	-0.00160	-0.00159
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00182	0.00182	0.00182
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00131	-0.00131	-0.00131
	(A1 * A2 * B1 * !C1 * !Y)	0.00182	0.00182	0.00182
	(A1 * A2 * B1 * !C1 * !Y)	-0.00131	-0.00131	-0.00131
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00173	0.00175	0.00173
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00152	-0.00153	-0.00152
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00172	0.00175	0.00172
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00130	-0.00131	-0.00130
	(A1 * A2 * !B1 * !C1 * !Y)	0.00173	0.00175	0.00172
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00130	-0.00131	-0.00130
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00203	0.00184	0.00181
sky130_fd_sc_hs__a222oi_2	**(A1 * !A2 * B1 * C1 * C2 * !Y)**	-0.00187	-0.00217	-0.00217
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00171	0.00172	0.00171
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00222	-0.00223	-0.00222
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00162	0.00164	0.00163
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00230	-0.00231	-0.00231
	(A1 * !A2 * !B1 * !C1 * Y)	0.00162	0.00164	0.00163
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00230	-0.00231	-0.00231
	(!A1 * B1 * C1 * C2 * !Y)	0.00203	0.00184	0.00181
	(!A1 * B1 * C1 * C2 * !Y)	-0.00188	-0.00217	-0.00217
	(!A1 * !B1 * C1 * !C2 * Y)	0.00162	0.00163	0.00163
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00230	-0.00231	-0.00231
	(!A1 * !B1 * !C1 * Y)	0.00162	0.00163	0.00163
	(!A1 * !B1 * !C1 * Y)	-0.00230	-0.00231	-0.00231

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)	-0.00099	-0.00099	-0.00099
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00085	0.00085	0.00085
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00089	-0.00090	-0.00093
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00077	0.00077	0.00075
	(A1 * A2 * B1 * !C1 * !Y)	-0.00090	-0.00090	-0.00093
	(A1 * A2 * B1 * !C1 * !Y)	0.00077	0.00077	0.00075
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00091	-0.00095	-0.00094
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00081	0.00082	0.00081
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00091	-0.00094	-0.00093
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00069	0.00070	0.00070
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00091	-0.00094	-0.00093
	(A1 * A2 * !B1 * !C1 * !Y)	0.00069	0.00070	0.00070
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00097	-0.00098	-0.00097
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00114	0.00114	0.00114
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00090	-0.00093	-0.00093
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00116	0.00118	0.00117
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00077	-0.00082	-0.00082
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00131	0.00129	0.00128
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00077	-0.00082	-0.00082
	(A1 * !A2 * !B1 * !C1 * Y)	0.00131	0.00129	0.00128
	(!A1 * B1 * C1 * C2 * !Y)	-0.00097	-0.00098	-0.00097
	(!A1 * B1 * C1 * C2 * !Y)	0.00114	0.00114	0.00114
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00077	-0.00082	-0.00082
	(!A1 * !B1 * C1 * !C2 * Y)	0.00131	0.00129	0.00128
	(!A1 * !B1 * !C1 * Y)	-0.00077	-0.00082	-0.00082
	(!A1 * !B1 * !C1 * Y)	0.00131	0.00129	0.00128

	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00182	-0.00183	-0.00182
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00159	0.00160	0.00159
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00168	-0.00169	-0.00171
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00143	0.00143	0.00140
	(A1 * A2 * B1 * !C1 * !Y)	-0.00168	-0.00169	-0.00171
	(A1 * A2 * B1 * !C1 * !Y)	0.00143	0.00143	0.00140
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00168	-0.00174	-0.00173
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00152	0.00153	0.00152
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00168	-0.00173	-0.00172
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00131	0.00131	0.00130
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00168	-0.00173	-0.00172
	(A1 * A2 * !B1 * !C1 * !Y)	0.00131	0.00131	0.00130
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00180	-0.00181	-0.00179
sky130_fd_sc_hs__a222oi_2	**(A1 * !A2 * B1 * C1 * C2 * !Y)**	0.00216	0.00219	0.00217
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00166	-0.00172	-0.00171
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00223	0.00225	0.00223
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00153	-0.00164	-0.00163
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00238	0.00233	0.00231
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00153	-0.00164	-0.00163
	(A1 * !A2 * !B1 * !C1 * Y)	0.00238	0.00233	0.00231
	(!A1 * B1 * C1 * C2 * !Y)	-0.00179	-0.00181	-0.00179
	(!A1 * B1 * C1 * C2 * !Y)	0.00215	0.00218	0.00217
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00153	-0.00163	-0.00163
	(!A1 * !B1 * C1 * !C2 * Y)	0.00238	0.00233	0.00231
	(!A1 * !B1 * !C1 * Y)	-0.00153	-0.00163	-0.00163
	(!A1 * !B1 * !C1 * Y)	0.00238	0.00233	0.00231

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)	0.00108	0.00108	0.00108
	(A1 * B1 * B2 * C2 * !Y)	-0.00061	-0.00061	-0.00061
	(A1 * B1 * B2 * !C2 * !Y)	0.00103	0.00103	0.00103
	(A1 * B1 * B2 * !C2 * !Y)	-0.00061	-0.00061	-0.00061
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00108	0.00108	0.00108
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00061	-0.00061	-0.00061
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00103	0.00104	0.00103
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00061	-0.00062	-0.00061
	(A1 * A2 * !B1 * C2 * !Y)	0.00108	0.00108	0.00108
	(A1 * A2 * !B1 * C2 * !Y)	-0.00061	-0.00061	-0.00061
	(A1 * A2 * !B1 * !C2 * !Y)	0.00103	0.00104	0.00103
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00061	-0.00062	-0.00061
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00035	0.00035	0.00034
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00138	-0.00138	-0.00140
	(A1 * !A2 * !B1 * !C2 * Y)	0.00035	0.00035	0.00034
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00138	-0.00138	-0.00140
	(!A1 * B1 * B2 * C2 * !Y)	0.00107	0.00108	0.00108
	(!A1 * B1 * B2 * C2 * !Y)	-0.00061	-0.00061	-0.00061
	(!A1 * B1 * B2 * !C2 * !Y)	0.00103	0.00104	0.00103
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00061	-0.00062	-0.00061
	(!A1 * B1 * !B2 * !C2 * Y)	0.00035	0.00035	0.00034
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00138	-0.00138	-0.00140
	(!A1 * !B1 * !C2 * Y)	0.00035	0.00035	0.00034
	(!A1 * !B1 * !C2 * Y)	-0.00138	-0.00138	-0.00140

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	0.00190	0.00190	0.00190
	(A1 * B1 * B2 * C2 * !Y)	-0.00120	-0.00120	-0.00119
	(A1 * B1 * B2 * !C2 * !Y)	0.00180	0.00183	0.00181
	(A1 * B1 * B2 * !C2 * !Y)	-0.00119	-0.00120	-0.00119
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00190	0.00190	0.00190
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00120	-0.00120	-0.00119
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00180	0.00182	0.00180
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00118	-0.00120	-0.00119
	(A1 * A2 * !B1 * C2 * !Y)	0.00190	0.00191	0.00190
	(A1 * A2 * !B1 * C2 * !Y)	-0.00120	-0.00120	-0.00119
	(A1 * A2 * !B1 * !C2 * !Y)	0.00180	0.00182	0.00181
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00119	-0.00119	-0.00119
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00062	0.00062	0.00059
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00256	-0.00255	-0.00260
	(A1 * !A2 * !B1 * !C2 * Y)	0.00062	0.00062	0.00059
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00254	-0.00255	-0.00260
	(!A1 * B1 * B2 * C2 * !Y)	0.00190	0.00190	0.00190
	(!A1 * B1 * B2 * C2 * !Y)	-0.00120	-0.00120	-0.00120
	(!A1 * B1 * B2 * !C2 * !Y)	0.00180	0.00182	0.00181
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00119	-0.00120	-0.00119
	(!A1 * B1 * !B2 * !C2 * Y)	0.00062	0.00062	0.00059
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00256	-0.00255	-0.00260
	(!A1 * !B1 * !C2 * Y)	0.00062	0.00062	0.00059
	(!A1 * !B1 * !C2 * Y)	-0.00254	-0.00255	-0.00260

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)**	-0.00097	-0.00097	-0.00107
	(A1 * B1 * B2 * C2 * !Y)	0.00071	0.00070	0.00063
	(A1 * B1 * B2 * !C2 * !Y)	-0.00101	-0.00103	-0.00103
	(A1 * B1 * B2 * !C2 * !Y)	0.00061	0.00062	0.00061
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00081	-0.00082	-0.00103
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00082	0.00082	0.00066
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00101	-0.00104	-0.00103
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00061	0.00062	0.00061
	(A1 * A2 * !B1 * C2 * !Y)	-0.00081	-0.00082	-0.00103
	(A1 * A2 * !B1 * C2 * !Y)	0.00082	0.00082	0.00066
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00101	-0.00104	-0.00103
	(A1 * A2 * !B1 * !C2 * !Y)	0.00061	0.00062	0.00061
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00033	-0.00033	-0.00033
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00139	0.00140	0.00140
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00033	-0.00033	-0.00033
	(A1 * !A2 * !B1 * !C2 * Y)	0.00139	0.00140	0.00140
	(!A1 * B1 * B2 * C2 * !Y)	-0.00097	-0.00098	-0.00106
	(!A1 * B1 * B2 * C2 * !Y)	0.00071	0.00071	0.00064
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00101	-0.00104	-0.00103
	(!A1 * B1 * B2 * !C2 * !Y)	0.00062	0.00062	0.00061
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00033	-0.00033	-0.00033
	(!A1 * B1 * !B2 * !C2 * Y)	0.00139	0.00140	0.00140
	(!A1 * !B1 * !C2 * Y)	-0.00033	-0.00033	-0.00033
	(!A1 * !B1 * !C2 * Y)	0.00139	0.00140	0.00140

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	-0.00168	-0.00170	-0.00187
	(A1 * B1 * B2 * C2 * !Y)	0.00137	0.00137	0.00124
	(A1 * B1 * B2 * !C2 * !Y)	-0.00175	-0.00183	-0.00181
	(A1 * B1 * B2 * !C2 * !Y)	0.00119	0.00120	0.00119
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00141	-0.00144	-0.00181
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00155	0.00155	0.00128
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00174	-0.00182	-0.00180
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00118	0.00120	0.00119
	(A1 * A2 * !B1 * C2 * !Y)	-0.00142	-0.00144	-0.00181
	(A1 * A2 * !B1 * C2 * !Y)	0.00155	0.00155	0.00128
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00175	-0.00182	-0.00181
	(A1 * A2 * !B1 * !C2 * !Y)	0.00120	0.00119	0.00119
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00058	-0.00058	-0.00058
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00261	0.00261	0.00261
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00058	-0.00058	-0.00058
	(A1 * !A2 * !B1 * !C2 * Y)	0.00261	0.00261	0.00261
	(!A1 * B1 * B2 * C2 * !Y)	-0.00168	-0.00170	-0.00187
	(!A1 * B1 * B2 * C2 * !Y)	0.00138	0.00138	0.00124
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00175	-0.00182	-0.00181
	(!A1 * B1 * B2 * !C2 * !Y)	0.00120	0.00120	0.00119
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00058	-0.00058	-0.00058
	(!A1 * B1 * !B2 * !C2 * Y)	0.00261	0.00261	0.00261
	(!A1 * !B1 * !C2 * Y)	-0.00058	-0.00058	-0.00058
	(!A1 * !B1 * !C2 * Y)	0.00261	0.00261	0.00261

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)**	0.00112	0.00112	0.00112
	(A1 * B1 * B2 * C1 * !Y)	-0.00062	-0.00062	-0.00062
	(A1 * B1 * B2 * !C1 * !Y)	0.00107	0.00109	0.00107
	(A1 * B1 * B2 * !C1 * !Y)	-0.00062	-0.00062	-0.00062
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00113	0.00113	0.00112
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00063	-0.00062	-0.00062
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00107	0.00109	0.00107
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00062	-0.00062	-0.00062
	(A1 * A2 * !B1 * C1 * !Y)	0.00113	0.00113	0.00112
	(A1 * A2 * !B1 * C1 * !Y)	-0.00063	-0.00063	-0.00062
	(A1 * A2 * !B1 * !C1 * !Y)	0.00107	0.00109	0.00107
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00062	-0.00062	-0.00062
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00083	0.00084	0.00083
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00130	-0.00130	-0.00130
	(A1 * !A2 * !B1 * !C1 * Y)	0.00083	0.00084	0.00083
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00130	-0.00130	-0.00130
	(!A1 * B1 * B2 * C1 * !Y)	0.00112	0.00113	0.00112
	(!A1 * B1 * B2 * C1 * !Y)	-0.00063	-0.00063	-0.00062
	(!A1 * B1 * B2 * !C1 * !Y)	0.00107	0.00109	0.00107
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00062	-0.00063	-0.00062
	(!A1 * B1 * !B2 * !C1 * Y)	0.00083	0.00084	0.00083
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00130	-0.00130	-0.00130
	(!A1 * !B1 * !C1 * Y)	0.00083	0.00084	0.00083
	(!A1 * !B1 * !C1 * Y)	-0.00130	-0.00131	-0.00130

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00225	0.00226	0.00225
	(A1 * B1 * B2 * C1 * !Y)	-0.00124	-0.00124	-0.00124
	(A1 * B1 * B2 * !C1 * !Y)	0.00216	0.00219	0.00216
	(A1 * B1 * B2 * !C1 * !Y)	-0.00123	-0.00124	-0.00124
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00226	0.00226	0.00225
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00125	-0.00124	-0.00124
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00217	0.00220	0.00216
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00123	-0.00124	-0.00124
	(A1 * A2 * !B1 * C1 * !Y)	0.00226	0.00226	0.00225
	(A1 * A2 * !B1 * C1 * !Y)	-0.00125	-0.00124	-0.00124
	(A1 * A2 * !B1 * !C1 * !Y)	0.00216	0.00220	0.00216
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00123	-0.00124	-0.00124
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00166	0.00167	0.00167
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00260	-0.00261	-0.00260
	(A1 * !A2 * !B1 * !C1 * Y)	0.00166	0.00168	0.00167
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00260	-0.00262	-0.00260
	(!A1 * B1 * B2 * C1 * !Y)	0.00226	0.00226	0.00225
	(!A1 * B1 * B2 * C1 * !Y)	-0.00125	-0.00125	-0.00124
	(!A1 * B1 * B2 * !C1 * !Y)	0.00216	0.00220	0.00216
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00124	-0.00125	-0.00124
	(!A1 * B1 * !B2 * !C1 * Y)	0.00166	0.00168	0.00167
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00260	-0.00261	-0.00260
	(!A1 * !B1 * !C1 * Y)	0.00166	0.00168	0.00167
	(!A1 * !B1 * !C1 * Y)	-0.00260	-0.00262	-0.00260

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)**	-0.00101	-0.00102	-0.00111
	(A1 * B1 * B2 * C1 * !Y)	0.00072	0.00071	0.00065
	(A1 * B1 * B2 * !C1 * !Y)	-0.00105	-0.00108	-0.00107
	(A1 * B1 * B2 * !C1 * !Y)	0.00062	0.00062	0.00062
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00086	-0.00086	-0.00107
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00083	0.00082	0.00067
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00105	-0.00108	-0.00107
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00062	0.00062	0.00062
	(A1 * A2 * !B1 * C1 * !Y)	-0.00086	-0.00086	-0.00107
	(A1 * A2 * !B1 * C1 * !Y)	0.00083	0.00082	0.00067
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00105	-0.00108	-0.00107
	(A1 * A2 * !B1 * !C1 * !Y)	0.00062	0.00062	0.00062
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00078	-0.00084	-0.00083
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00133	0.00132	0.00130
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00078	-0.00084	-0.00083
	(A1 * !A2 * !B1 * !C1 * Y)	0.00133	0.00132	0.00130
	(!A1 * B1 * B2 * C1 * !Y)	-0.00101	-0.00102	-0.00111
	(!A1 * B1 * B2 * C1 * !Y)	0.00072	0.00072	0.00065
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00105	-0.00108	-0.00107
	(!A1 * B1 * B2 * !C1 * !Y)	0.00062	0.00063	0.00062
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00078	-0.00084	-0.00083
	(!A1 * B1 * !B2 * !C1 * Y)	0.00133	0.00132	0.00130
	(!A1 * !B1 * !C1 * Y)	-0.00078	-0.00084	-0.00083
	(!A1 * !B1 * !C1 * Y)	0.00133	0.00132	0.00130

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00203	-0.00205	-0.00222
	(A1 * B1 * B2 * C1 * !Y)	0.00141	0.00141	0.00128
	(A1 * B1 * B2 * !C1 * !Y)	-0.00211	-0.00217	-0.00216
	(A1 * B1 * B2 * !C1 * !Y)	0.00123	0.00124	0.00124
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00177	-0.00178	-0.00216
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00161	0.00159	0.00133
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00211	-0.00217	-0.00216
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00123	0.00124	0.00124
	(A1 * A2 * !B1 * C1 * !Y)	-0.00177	-0.00178	-0.00216
	(A1 * A2 * !B1 * C1 * !Y)	0.00161	0.00159	0.00133
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00211	-0.00217	-0.00216
	(A1 * A2 * !B1 * !C1 * !Y)	0.00123	0.00124	0.00124
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00157	-0.00167	-0.00167
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00266	0.00263	0.00261
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00157	-0.00167	-0.00167
	(A1 * !A2 * !B1 * !C1 * Y)	0.00266	0.00263	0.00261
	(!A1 * B1 * B2 * C1 * !Y)	-0.00204	-0.00204	-0.00222
	(!A1 * B1 * B2 * C1 * !Y)	0.00143	0.00142	0.00129
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00211	-0.00217	-0.00216
	(!A1 * B1 * B2 * !C1 * !Y)	0.00124	0.00125	0.00124
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00157	-0.00167	-0.00167
	(!A1 * B1 * !B2 * !C1 * Y)	0.00266	0.00263	0.00261
	(!A1 * !B1 * !C1 * Y)	-0.00157	-0.00167	-0.00167
	(!A1 * !B1 * !C1 * Y)	0.00266	0.00263	0.00261

SKY130_FD_SC_HS__A222Ox

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a222o_1	15.98400
sky130_fd_sc_hs__a222o_2	17.58240

Pin Capacitance Information

Cell Name	Pin Cap(pf)						Max Cap(pf)
	A1	A2	B1	B2	C1	C2	X
sky130_fd_sc_hs__a222o_1	0.00246	0.00250	0.00255	0.00244	0.00253	0.00259	0.77131
sky130_fd_sc_hs__a222o_2	0.00249	0.00235	0.00248	0.00243	0.00250	0.00264	1.36649

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222o_1	0.00000	0.04742	0.12518
sky130_fd_sc_hs__a222o_2	0.00000	0.06016	0.12939

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)	0.13771	0.87803	7.38341
	A2->X (RR)	0.14303	0.87200	7.46822
	B1->X (RR)	0.13033	0.85405	7.28153
	B2->X (RR)	0.13455	0.85122	7.36072
	C1->X (RR)	0.11833	0.81950	7.17868
	C2->X (RR)	0.12286	0.81730	7.24121
sky130_fd_sc_hs__a222o_2	A1->X (RR)	0.15739	0.82996	7.51208
	A2->X (RR)	0.16426	0.81381	7.56693
	B1->X (RR)	0.14382	0.79660	7.41139
	B2->X (RR)	0.14846	0.78696	7.47454
	C1->X (RR)	0.13096	0.76779	7.33373
	C2->X (RR)	0.13633	0.76021	7.38276

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222o_1	A1->X (FF)	0.50262	1.13288	5.65508
	A2->X (FF)	0.54035	1.17562	5.75307
	B1->X (FF)	0.46927	1.09866	5.67220
	B2->X (FF)	0.49704	1.13814	5.79796
	C1->X (FF)	0.35987	0.96715	5.25420
	C2->X (FF)	0.39130	1.00297	5.35680
sky130_fd_sc_hs__a222o_2	A1->X (FF)	0.59337	1.20711	5.71299
	A2->X (FF)	0.61298	1.23952	5.81641
	B1->X (FF)	0.56175	1.17836	5.83637
	B2->X (FF)	0.57342	1.19583	5.88407
	C1->X (FF)	0.45298	1.03929	5.42051
	C2->X (FF)	0.49516	1.09149	5.54194

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.01085	0.01065	0.01193
	A1	0.00540	0.00520	0.00654
	A2	0.01150	0.01127	0.01187
	A2	0.00542	0.00518	0.00582
	B1	0.00909	0.00910	0.01064
	B1	0.00408	0.00406	0.00579
	B2	0.00963	0.00965	0.01057
	B2	0.00416	0.00417	0.00527
	C1	0.00677	0.00676	0.00918
	C1	0.00228	0.00224	0.00511
	C2	0.00734	0.00732	0.00903
	C2	0.00232	0.00228	0.00448
sky130_fd_sc_hs__a222o_2	A1	0.01239	0.01260	0.01400
	A1	0.00737	0.00754	0.00902
	A2	0.01327	0.01354	0.01436
	A2	0.00733	0.00759	0.00842
	B1	0.01062	0.01083	0.01254
	B1	0.00586	0.00611	0.00784
	B2	0.01131	0.01158	0.01264
	B2	0.00585	0.00613	0.00723
	C1	0.00884	0.00891	0.01126
	C1	0.00442	0.00451	0.00695
	C2	0.00946	0.00952	0.01116
	C2	0.00441	0.00448	0.00630

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.00340	0.00340	0.00435
	A1	0.00954	0.00956	0.00983
	A2	0.00360	0.00351	0.00431
	A2	0.01033	0.01026	0.01048
	B1	0.00337	0.00321	0.00464
	B1	0.00881	0.00874	0.00944
	B2	0.00362	0.00369	0.00508
	B2	0.00949	0.00950	0.01014
	C1	0.00332	0.00339	0.00699
	C1	0.00805	0.00808	0.01086
	C2	0.00357	0.00372	0.00715
	C2	0.00878	0.00895	0.01159
sky130_fd_sc_hs__a222o_2	A1	0.00448	0.00435	0.00585
	A1	0.01082	0.01071	0.01100
	A2	0.00503	0.00534	0.00664
	A2	0.01201	0.01222	0.01261
	B1	0.00522	0.00537	0.00705
	B1	0.01050	0.01067	0.01154
	B2	0.00578	0.00600	0.00689
	B2	0.01127	0.01151	0.01235
	C1	0.00549	0.00537	0.00893
	C1	0.00977	0.00998	0.01274
	C2	0.00576	0.00592	0.00927
	C2	0.01065	0.01092	0.01359

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)**	0.00091	0.00092	0.00090
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00110	-0.00115	-0.00113
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00091	0.00092	0.00091
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00109	-0.00115	-0.00114
	(A2 * B1 * B2 * !C1 * X)	0.00091	0.00092	0.00091
	(A2 * B1 * B2 * !C1 * X)	-0.00109	-0.00115	-0.00114
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00091	0.00092	0.00091
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00104	-0.00111	-0.00110
	(A2 * !B1 * C1 * C2 * X)	0.00091	0.00092	0.00091
	(A2 * !B1 * C1 * C2 * X)	-0.00104	-0.00110	-0.00110
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00085	0.00086	0.00085
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00117	-0.00118	-0.00117
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00085	0.00086	0.00086
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00117	-0.00117	-0.00117
	(!A2 * B1 * B2 * !C1 * X)	0.00085	0.00086	0.00086
	(!A2 * B1 * B2 * !C1 * X)	-0.00117	-0.00117	-0.00117
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00085	0.00085	0.00086
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00117	-0.00117	-0.00117
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00033	0.00032	0.00031
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00136	-0.00136	-0.00137
	(!A2 * B1 * !B2 * !C1 * !X)	0.00033	0.00032	0.00031
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00136	-0.00136	-0.00137
	(!A2 * !B1 * C1 * C2 * X)	0.00086	0.00086	0.00086
	(!A2 * !B1 * C1 * C2 * X)	-0.00117	-0.00118	-0.00117
	(!A2 * !B1 * C1 * !C2 * !X)	0.00033	0.00032	0.00031
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00136	-0.00136	-0.00137
	(!A2 * !B1 * !C1 * !X)	0.00033	0.00032	0.00031
	(!A2 * !B1 * !C1 * !X)	-0.00136	-0.00136	-0.00137

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	0.00098	0.00098	0.00097
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00110	-0.00114	-0.00113
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00098	0.00098	0.00097
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00109	-0.00114	-0.00113
	(A2 * B1 * B2 * !C1 * X)	0.00098	0.00098	0.00098
	(A2 * B1 * B2 * !C1 * X)	-0.00109	-0.00114	-0.00113
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00099	0.00099	0.00097
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00104	-0.00109	-0.00109
	(A2 * !B1 * C1 * C2 * X)	0.00099	0.00099	0.00097
	(A2 * !B1 * C1 * C2 * X)	-0.00104	-0.00109	-0.00109
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00093	0.00093	0.00093
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00115	-0.00115	-0.00115
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00094	0.00094	0.00094
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00115	-0.00115	-0.00115
	(!A2 * B1 * B2 * !C1 * X)	0.00094	0.00094	0.00093
	(!A2 * B1 * B2 * !C1 * X)	-0.00115	-0.00115	-0.00115
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00093	0.00093	0.00093
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00116	-0.00116	-0.00116
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00038	0.00038	0.00035
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00138	-0.00138	-0.00142
	(!A2 * B1 * !B2 * !C1 * !X)	0.00038	0.00038	0.00035
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00138	-0.00138	-0.00142
	(!A2 * !B1 * C1 * C2 * X)	0.00093	0.00093	0.00093
	(!A2 * !B1 * C1 * C2 * X)	-0.00116	-0.00116	-0.00116
	(!A2 * !B1 * C1 * !C2 * !X)	0.00038	0.00038	0.00035
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00138	-0.00138	-0.00142
	(!A2 * !B1 * !C1 * !X)	0.00038	0.00038	0.00035
	(!A2 * !B1 * !C1 * !X)	-0.00138	-0.00138	-0.00142

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)	-0.00091	-0.00091	-0.00090
	(A2 * B1 * B2 * C1 * C2 * X)	0.00114	0.00115	0.00113
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00091	-0.00091	-0.00090
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00114	0.00115	0.00114
	(A2 * B1 * B2 * !C1 * X)	-0.00091	-0.00091	-0.00090
	(A2 * B1 * B2 * !C1 * X)	0.00114	0.00115	0.00114
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00091	-0.00090	-0.00090
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00111	0.00111	0.00110
	(A2 * !B1 * C1 * C2 * X)	-0.00091	-0.00090	-0.00090
	(A2 * !B1 * C1 * C2 * X)	0.00111	0.00110	0.00110
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00084	-0.00086	-0.00085
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00118	0.00118	0.00117
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00084	-0.00086	-0.00086
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00118	0.00119	0.00117
	(!A2 * B1 * B2 * !C1 * X)	-0.00084	-0.00086	-0.00086
	(!A2 * B1 * B2 * !C1 * X)	0.00118	0.00119	0.00117
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00084	-0.00085	-0.00086
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00118	0.00119	0.00117
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00031	-0.00031	-0.00031
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00137	0.00138	0.00138
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00031	-0.00031	-0.00031
	(!A2 * B1 * !B2 * !C1 * !X)	0.00137	0.00138	0.00138
	(!A2 * !B1 * C1 * C2 * X)	-0.00084	-0.00086	-0.00086
	(!A2 * !B1 * C1 * C2 * X)	0.00118	0.00119	0.00117
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00031	-0.00031	-0.00031
	(!A2 * !B1 * C1 * !C2 * !X)	0.00137	0.00138	0.00138
	(!A2 * !B1 * !C1 * !X)	-0.00031	-0.00031	-0.00031
	(!A2 * !B1 * !C1 * !X)	0.00137	0.00138	0.00138

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	-0.00098	-0.00098	-0.00097
	(A2 * B1 * B2 * C1 * C2 * X)	0.00114	0.00114	0.00113
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00098	-0.00098	-0.00097
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00113	0.00114	0.00113
	(A2 * B1 * B2 * !C1 * X)	-0.00098	-0.00098	-0.00097
	(A2 * B1 * B2 * !C1 * X)	0.00114	0.00114	0.00113
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00098	-0.00097	-0.00097
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00110	0.00109	0.00109
	(A2 * !B1 * C1 * C2 * X)	-0.00098	-0.00097	-0.00097
	(A2 * !B1 * C1 * C2 * X)	0.00110	0.00109	0.00109
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00090	-0.00093	-0.00093
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00116	0.00116	0.00115
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00090	-0.00094	-0.00094
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00115	0.00117	0.00115
	(!A2 * B1 * B2 * !C1 * X)	-0.00090	-0.00094	-0.00093
	(!A2 * B1 * B2 * !C1 * X)	0.00115	0.00117	0.00115
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00089	-0.00093	-0.00093
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00116	0.00118	0.00116
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00034	-0.00034	-0.00034
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00142	0.00143	0.00143
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00034	-0.00034	-0.00034
	(!A2 * B1 * !B2 * !C1 * !X)	0.00142	0.00143	0.00143
	(!A2 * !B1 * C1 * C2 * X)	-0.00089	-0.00093	-0.00093
	(!A2 * !B1 * C1 * C2 * X)	0.00116	0.00118	0.00116
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00034	-0.00034	-0.00034
	(!A2 * !B1 * C1 * !C2 * !X)	0.00142	0.00143	0.00143
	(!A2 * !B1 * !C1 * !X)	-0.00034	-0.00034	-0.00034
	(!A2 * !B1 * !C1 * !X)	0.00142	0.00143	0.00143

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)	0.00101	0.00103	0.00101
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00105	-0.00111	-0.00110
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00101	0.00103	0.00101
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00105	-0.00110	-0.00110
	(A1 * B1 * B2 * !C1 * X)	0.00101	0.00103	0.00101
	(A1 * B1 * B2 * !C1 * X)	-0.00105	-0.00110	-0.00110
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00102	0.00103	0.00102
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00101	-0.00106	-0.00107
	(A1 * !B1 * C1 * C2 * X)	0.00102	0.00103	0.00102
	(A1 * !B1 * C1 * C2 * X)	-0.00101	-0.00106	-0.00107
	(!A1 * B1 * B2 * X)	0.00097	0.00098	0.00097
	(!A1 * B1 * B2 * X)	-0.00112	-0.00113	-0.00113
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00096	0.00098	0.00097
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00112	-0.00113	-0.00113
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00082	0.00083	0.00082
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00127	-0.00128	-0.00127
	(!A1 * B1 * !B2 * !C1 * !X)	0.00082	0.00083	0.00082
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00127	-0.00128	-0.00127
	(!A1 * !B1 * C1 * !C2 * !X)	0.00082	0.00083	0.00082
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00128	-0.00128	-0.00127
	(!A1 * !B1 * !C1 * !X)	0.00082	0.00083	0.00082
	(!A1 * !B1 * !C1 * !X)	-0.00128	-0.00128	-0.00127

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * C2 * X)**	0.00095	0.00096	0.00095
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00110	-0.00114	-0.00113
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00096	0.00096	0.00095
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00109	-0.00114	-0.00113
	(A1 * B1 * B2 * !C1 * X)	0.00096	0.00096	0.00095
	(A1 * B1 * B2 * !C1 * X)	-0.00109	-0.00114	-0.00113
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00097	0.00096	0.00095
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00104	-0.00109	-0.00109
	(A1 * !B1 * C1 * C2 * X)	0.00096	0.00096	0.00095
	(A1 * !B1 * C1 * C2 * X)	-0.00103	-0.00109	-0.00110
	(!A1 * B1 * B2 * X)	0.00090	0.00091	0.00090
	(!A1 * B1 * B2 * X)	-0.00115	-0.00116	-0.00115
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00090	0.00091	0.00091
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00115	-0.00116	-0.00115
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00089	0.00090	0.00090
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00116	-0.00116	-0.00116
	(!A1 * B1 * !B2 * !C1 * !X)	0.00089	0.00090	0.00090
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00116	-0.00116	-0.00116
	(!A1 * !B1 * C1 * !C2 * !X)	0.00089	0.00090	0.00090
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00116	-0.00116	-0.00116
	(!A1 * !B1 * !C1 * !X)	0.00089	0.00090	0.00090
	(!A1 * !B1 * !C1 * !X)	-0.00116	-0.00116	-0.00116

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)**	-0.00101	-0.00102	-0.00101
	(A1 * B1 * B2 * C1 * C2 * X)	0.00110	0.00111	0.00110
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00101	-0.00102	-0.00101
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00110	0.00110	0.00110
	(A1 * B1 * B2 * !C1 * X)	-0.00101	-0.00102	-0.00101
	(A1 * B1 * B2 * !C1 * X)	0.00110	0.00110	0.00110
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00101	-0.00101	-0.00101
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00107	0.00106	0.00107
	(A1 * !B1 * C1 * C2 * X)	-0.00101	-0.00101	-0.00101
	(A1 * !B1 * C1 * C2 * X)	0.00107	0.00106	0.00107
	(!A1 * B1 * B2 * X)	-0.00094	-0.00097	-0.00097
	(!A1 * B1 * B2 * X)	0.00112	0.00114	0.00113
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00094	-0.00097	-0.00097
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00113	0.00114	0.00113
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00077	-0.00082	-0.00082
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00131	0.00129	0.00128
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00077	-0.00082	-0.00082
	(!A1 * B1 * !B2 * !C1 * !X)	0.00131	0.00129	0.00128
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00077	-0.00082	-0.00082
	(!A1 * !B1 * C1 * !C2 * !X)	0.00131	0.00129	0.00128
	(!A1 * !B1 * !C1 * !X)	-0.00077	-0.00082	-0.00082
	(!A1 * !B1 * !C1 * !X)	0.00131	0.00129	0.00128

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * C2 * X)**	-0.00095	-0.00095	-0.00095
	(A1 * B1 * B2 * C1 * C2 * X)	0.00114	0.00114	0.00113
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00095	-0.00095	-0.00095
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00114	0.00114	0.00113
	(A1 * B1 * B2 * !C1 * X)	-0.00095	-0.00095	-0.00095
	(A1 * B1 * B2 * !C1 * X)	0.00114	0.00114	0.00113
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00095	-0.00095	-0.00095
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00110	0.00109	0.00109
	(A1 * !B1 * C1 * C2 * X)	-0.00095	-0.00095	-0.00095
	(A1 * !B1 * C1 * C2 * X)	0.00110	0.00109	0.00110
	(!A1 * B1 * B2 * X)	-0.00087	-0.00091	-0.00090
	(!A1 * B1 * B2 * X)	0.00115	0.00116	0.00116
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00087	-0.00091	-0.00091
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00115	0.00116	0.00116
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00085	-0.00090	-0.00090
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00117	0.00117	0.00116
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00085	-0.00090	-0.00090
	(!A1 * B1 * !B2 * !C1 * !X)	0.00117	0.00117	0.00116
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00085	-0.00090	-0.00090
	(!A1 * !B1 * C1 * !C2 * !X)	0.00117	0.00117	0.00116
	(!A1 * !B1 * !C1 * !X)	-0.00085	-0.00090	-0.00090
	(!A1 * !B1 * !C1 * !X)	0.00117	0.00117	0.00116

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)**	0.00095	0.00095	0.00095
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00088	-0.00088	-0.00088
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00094	0.00094	0.00094
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00073	-0.00073	-0.00073
	(A1 * A2 * B2 * !C1 * X)	0.00095	0.00094	0.00094
	(A1 * A2 * B2 * !C1 * X)	-0.00075	-0.00073	-0.00073
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00090	0.00091	0.00090
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00085	-0.00086	-0.00084
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00089	0.00091	0.00089
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00073	-0.00074	-0.00073
	(A1 * A2 * !B2 * !C1 * X)	0.00089	0.00091	0.00089
	(A1 * A2 * !B2 * !C1 * X)	-0.00073	-0.00074	-0.00073
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00101	0.00095	0.00094
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00108	-0.00118	-0.00118
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00089	0.00090	0.00089
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00120	-0.00121	-0.00121
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00034	0.00034	0.00033
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00141	-0.00142	-0.00143
	(A1 * !A2 * !B2 * !C1 * !X)	0.00034	0.00034	0.00033
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00141	-0.00142	-0.00143
	(!A1 * B2 * C1 * C2 * X)	0.00101	0.00095	0.00094
	(!A1 * B2 * C1 * C2 * X)	-0.00108	-0.00118	-0.00118
	(!A1 * !B2 * C1 * C2 * X)	0.00089	0.00090	0.00089
	(!A1 * !B2 * C1 * C2 * X)	-0.00121	-0.00121	-0.00121
	(!A1 * !B2 * C1 * !C2 * !X)	0.00034	0.00034	0.00033
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00141	-0.00142	-0.00143
	(!A1 * !B2 * !C1 * !X)	0.00034	0.00034	0.00033
	(!A1 * !B2 * !C1 * !X)	-0.00141	-0.00142	-0.00143

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	0.00093	0.00092	0.00092
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00083	-0.00082	-0.00082
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00091	0.00091	0.00091
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00067	-0.00067	-0.00067
	(A1 * A2 * B2 * !C1 * X)	0.00091	0.00091	0.00091
	(A1 * A2 * B2 * !C1 * X)	-0.00067	-0.00067	-0.00067
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00086	0.00087	0.00087
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00079	-0.00079	-0.00079
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00086	0.00087	0.00086
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00068	-0.00068	-0.00067
	(A1 * A2 * !B2 * !C1 * X)	0.00086	0.00087	0.00086
	(A1 * A2 * !B2 * !C1 * X)	-0.00068	-0.00068	-0.00067
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00102	0.00092	0.00091
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00096	-0.00110	-0.00110
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00085	0.00086	0.00085
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00113	-0.00115	-0.00114
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00032	0.00032	0.00031
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00131	-0.00132	-0.00133
	(A1 * !A2 * !B2 * !C1 * !X)	0.00032	0.00032	0.00031
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00130	-0.00132	-0.00133
	(!A1 * B2 * C1 * C2 * X)	0.00102	0.00092	0.00091
	(!A1 * B2 * C1 * C2 * X)	-0.00096	-0.00110	-0.00110
	(!A1 * !B2 * C1 * C2 * X)	0.00085	0.00086	0.00085
	(!A1 * !B2 * C1 * C2 * X)	-0.00114	-0.00115	-0.00114
	(!A1 * !B2 * C1 * !C2 * !X)	0.00033	0.00033	0.00032
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00130	-0.00132	-0.00133
	(!A1 * !B2 * !C1 * !X)	0.00033	0.00033	0.00032
	(!A1 * !B2 * !C1 * !X)	-0.00130	-0.00132	-0.00133

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)	-0.00095	-0.00095	-0.00094
	(A1 * A2 * B2 * C1 * C2 * X)	0.00088	0.00088	0.00088
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00087	-0.00088	-0.00088
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00079	0.00079	0.00079
	(A1 * A2 * B2 * !C1 * X)	-0.00087	-0.00088	-0.00088
	(A1 * A2 * B2 * !C1 * X)	0.00079	0.00079	0.00079
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00088	-0.00091	-0.00090
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00085	0.00086	0.00084
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00087	-0.00090	-0.00089
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00073	0.00074	0.00073
	(A1 * A2 * !B2 * !C1 * X)	-0.00087	-0.00090	-0.00089
	(A1 * A2 * !B2 * !C1 * X)	0.00073	0.00074	0.00073
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00094	-0.00094	-0.00093
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00117	0.00118	0.00118
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00087	-0.00090	-0.00089
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00121	0.00123	0.00121
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00032	-0.00032	-0.00032
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00143	0.00144	0.00143
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00032	-0.00032	-0.00032
	(A1 * !A2 * !B2 * !C1 * !X)	0.00143	0.00144	0.00143
	(!A1 * B2 * C1 * C2 * X)	-0.00094	-0.00094	-0.00093
	(!A1 * B2 * C1 * C2 * X)	0.00117	0.00118	0.00118
	(!A1 * !B2 * C1 * C2 * X)	-0.00087	-0.00090	-0.00089
	(!A1 * !B2 * C1 * C2 * X)	0.00121	0.00123	0.00121
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00032	-0.00032	-0.00032
	(!A1 * !B2 * C1 * !C2 * !X)	0.00143	0.00144	0.00143
	(!A1 * !B2 * !C1 * !X)	-0.00032	-0.00032	-0.00032
	(!A1 * !B2 * !C1 * !X)	0.00143	0.00144	0.00143

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	-0.00092	-0.00092	-0.00092
	(A1 * A2 * B2 * C1 * C2 * X)	0.00083	0.00082	0.00082
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00084	-0.00084	-0.00086
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00075	0.00074	0.00073
	(A1 * A2 * B2 * !C1 * X)	-0.00084	-0.00084	-0.00086
	(A1 * A2 * B2 * !C1 * X)	0.00075	0.00074	0.00073
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00085	-0.00087	-0.00087
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00079	0.00079	0.00079
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00084	-0.00087	-0.00086
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00068	0.00068	0.00067
	(A1 * A2 * !B2 * !C1 * X)	-0.00084	-0.00087	-0.00086
	(A1 * A2 * !B2 * !C1 * X)	0.00068	0.00068	0.00067
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00091	-0.00091	-0.00090
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00110	0.00110	0.00110
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00083	-0.00086	-0.00085
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00115	0.00115	0.00114
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00030	-0.00030	-0.00030
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00133	0.00134	0.00134
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00030	-0.00030	-0.00030
	(A1 * !A2 * !B2 * !C1 * !X)	0.00133	0.00134	0.00134
	(!A1 * B2 * C1 * C2 * X)	-0.00091	-0.00091	-0.00090
	(!A1 * B2 * C1 * C2 * X)	0.00110	0.00110	0.00110
	(!A1 * !B2 * C1 * C2 * X)	-0.00083	-0.00086	-0.00085
	(!A1 * !B2 * C1 * C2 * X)	0.00115	0.00115	0.00114
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00031	-0.00031	-0.00031
	(!A1 * !B2 * C1 * !C2 * !X)	0.00133	0.00134	0.00134
	(!A1 * !B2 * !C1 * !X)	-0.00031	-0.00031	-0.00031
	(!A1 * !B2 * !C1 * !X)	0.00133	0.00134	0.00134

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)	0.00092	0.00091	0.00091
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00084	-0.00084	-0.00083
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00091	0.00091	0.00091
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00069	-0.00069	-0.00069
	(A1 * A2 * B1 * !C1 * X)	0.00091	0.00091	0.00091
	(A1 * A2 * B1 * !C1 * X)	-0.00069	-0.00069	-0.00069
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00086	0.00087	0.00086
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00080	-0.00081	-0.00080
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00086	0.00087	0.00086
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00069	-0.00069	-0.00069
	(A1 * A2 * !B1 * !C1 * X)	0.00086	0.00087	0.00086
	(A1 * A2 * !B1 * !C1 * X)	-0.00069	-0.00069	-0.00069
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00098	0.00091	0.00090
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00102	-0.00112	-0.00112
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00086	0.00086	0.00086
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00115	-0.00115	-0.00115
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00081	0.00083	0.00082
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00119	-0.00120	-0.00119
	(A1 * !A2 * !B1 * !C1 * !X)	0.00081	0.00082	0.00082
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00119	-0.00119	-0.00119
	(!A1 * B1 * C1 * C2 * X)	0.00098	0.00091	0.00090
	(!A1 * B1 * C1 * C2 * X)	-0.00102	-0.00112	-0.00112
	(!A1 * !B1 * C1 * !C2 * !X)	0.00081	0.00083	0.00082
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00119	-0.00120	-0.00119
	(!A1 * !B1 * !C1 * !X)	0.00081	0.00082	0.00082
	(!A1 * !B1 * !C1 * !X)	-0.00119	-0.00119	-0.00119

	(A1 * A2 * B1 * C1 * C2 * X)	0.00094	0.00094	0.00093
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00083	-0.00082	-0.00082
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00092	0.00092	0.00092
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00067	-0.00067	-0.00067
	(A1 * A2 * B1 * !C1 * X)	0.00092	0.00092	0.00092
	(A1 * A2 * B1 * !C1 * X)	-0.00067	-0.00067	-0.00067
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00088	0.00089	0.00088
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00078	-0.00079	-0.00078
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00088	0.00089	0.00087
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00067	-0.00068	-0.00067
	(A1 * A2 * !B1 * !C1 * X)	0.00088	0.00089	0.00087
	(A1 * A2 * !B1 * !C1 * X)	-0.00067	-0.00068	-0.00067
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00102	0.00093	0.00092
sky130_fd_sc_hs__a222o_2	**(A1 * !A2 * B1 * C1 * C2 * X)**	-0.00097	-0.00110	-0.00110
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00086	0.00087	0.00087
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00113	-0.00114	-0.00114
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00084	0.00085	0.00084
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00114	-0.00114	-0.00114
	(A1 * !A2 * !B1 * !C1 * !X)	0.00085	0.00085	0.00085
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00114	-0.00114	-0.00114
	(!A1 * B1 * C1 * C2 * X)	0.00103	0.00093	0.00092
	(!A1 * B1 * C1 * C2 * X)	-0.00096	-0.00110	-0.00110
	(!A1 * !B1 * C1 * !C2 * !X)	0.00087	0.00088	0.00087
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00113	-0.00114	-0.00113
	(!A1 * !B1 * !C1 * !X)	0.00087	0.00088	0.00087
	(!A1 * !B1 * !C1 * !X)	-0.00113	-0.00114	-0.00113

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)	-0.00091	-0.00091	-0.00091
	(A1 * A2 * B1 * C1 * C2 * X)	0.00084	0.00084	0.00083
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00083	-0.00083	-0.00084
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00075	0.00075	0.00075
	(A1 * A2 * B1 * !C1 * X)	-0.00083	-0.00083	-0.00084
	(A1 * A2 * B1 * !C1 * X)	0.00075	0.00075	0.00075
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00084	-0.00087	-0.00086
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00080	0.00081	0.00080
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00084	-0.00087	-0.00086
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00069	0.00069	0.00069
	(A1 * A2 * !B1 * !C1 * X)	-0.00084	-0.00087	-0.00086
	(A1 * A2 * !B1 * !C1 * X)	0.00069	0.00069	0.00069
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00090	-0.00090	-0.00090
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00112	0.00112	0.00112
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00083	-0.00086	-0.00086
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00115	0.00117	0.00115
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00076	-0.00082	-0.00082
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00122	0.00121	0.00119
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00076	-0.00082	-0.00082
	(A1 * !A2 * !B1 * !C1 * !X)	0.00122	0.00121	0.00119
	(!A1 * B1 * C1 * C2 * X)	-0.00090	-0.00090	-0.00090
	(!A1 * B1 * C1 * C2 * X)	0.00112	0.00112	0.00112
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00076	-0.00082	-0.00082
	(!A1 * !B1 * C1 * !C2 * !X)	0.00122	0.00121	0.00119
	(!A1 * !B1 * !C1 * !X)	-0.00076	-0.00082	-0.00082
	(!A1 * !B1 * !C1 * !X)	0.00122	0.00121	0.00119

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B1 * C1 * C2 * X)**	-0.00093	-0.00093	-0.00093
	(A1 * A2 * B1 * C1 * C2 * X)	0.00083	0.00082	0.00082
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00085	-0.00085	-0.00087
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00075	0.00075	0.00073
	(A1 * A2 * B1 * !C1 * X)	-0.00085	-0.00085	-0.00087
	(A1 * A2 * B1 * !C1 * X)	0.00075	0.00075	0.00073
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00086	-0.00088	-0.00088
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00078	0.00079	0.00078
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00085	-0.00088	-0.00087
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00067	0.00068	0.00067
	(A1 * A2 * !B1 * !C1 * X)	-0.00085	-0.00088	-0.00087
	(A1 * A2 * !B1 * !C1 * X)	0.00067	0.00068	0.00067
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00092	-0.00092	-0.00091
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00110	0.00111	0.00110
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00084	-0.00087	-0.00087
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00114	0.00114	0.00114
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00079	-0.00085	-0.00084
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00118	0.00115	0.00114
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00079	-0.00085	-0.00085
	(A1 * !A2 * !B1 * !C1 * !X)	0.00118	0.00115	0.00114
	(!A1 * B1 * C1 * C2 * X)	-0.00092	-0.00092	-0.00091
	(!A1 * B1 * C1 * C2 * X)	0.00110	0.00110	0.00110
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00082	-0.00087	-0.00087
	(!A1 * !B1 * C1 * !C2 * !X)	0.00118	0.00115	0.00114
	(!A1 * !B1 * !C1 * !X)	-0.00082	-0.00087	-0.00087
	(!A1 * !B1 * !C1 * !X)	0.00118	0.00115	0.00114

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)	0.00109	0.00109	0.00110
	(A1 * B1 * B2 * C2 * X)	-0.00065	-0.00065	-0.00065
	(A1 * B1 * B2 * !C2 * X)	0.00104	0.00106	0.00105
	(A1 * B1 * B2 * !C2 * X)	-0.00065	-0.00065	-0.00065
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00109	0.00110	0.00110
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00065	-0.00065	-0.00065
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00105	0.00106	0.00105
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00065	-0.00065	-0.00065
	(A1 * A2 * !B1 * C2 * X)	0.00109	0.00110	0.00110
	(A1 * A2 * !B1 * C2 * X)	-0.00065	-0.00065	-0.00065
	(A1 * A2 * !B1 * !C2 * X)	0.00105	0.00106	0.00105
	(A1 * A2 * !B1 * !C2 * X)	-0.00065	-0.00065	-0.00065
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00036	0.00036	0.00035
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00143	-0.00143	-0.00145
	(A1 * !A2 * !B1 * !C2 * !X)	0.00036	0.00036	0.00035
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00143	-0.00143	-0.00145
	(!A1 * B1 * B2 * C2 * X)	0.00109	0.00110	0.00110
	(!A1 * B1 * B2 * C2 * X)	-0.00065	-0.00065	-0.00065
	(!A1 * B1 * B2 * !C2 * X)	0.00105	0.00106	0.00105
	(!A1 * B1 * B2 * !C2 * X)	-0.00065	-0.00065	-0.00065
	(!A1 * B1 * !B2 * !C2 * !X)	0.00036	0.00036	0.00035
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00143	-0.00143	-0.00145
	(!A1 * !B1 * !C2 * !X)	0.00036	0.00036	0.00035
	(!A1 * !B1 * !C2 * !X)	-0.00143	-0.00143	-0.00145

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	0.00106	0.00107	0.00107
	(A1 * B1 * B2 * C2 * X)	-0.00061	-0.00061	-0.00061
	(A1 * B1 * B2 * !C2 * X)	0.00102	0.00103	0.00102
	(A1 * B1 * B2 * !C2 * X)	-0.00061	-0.00061	-0.00061
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00106	0.00107	0.00107
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00061	-0.00061	-0.00061
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00101	0.00103	0.00102
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00060	-0.00061	-0.00061
	(A1 * A2 * !B1 * C2 * X)	0.00106	0.00107	0.00107
	(A1 * A2 * !B1 * C2 * X)	-0.00061	-0.00061	-0.00061
	(A1 * A2 * !B1 * !C2 * X)	0.00102	0.00103	0.00102
	(A1 * A2 * !B1 * !C2 * X)	-0.00061	-0.00061	-0.00061
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00035	0.00035	0.00034
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00136	-0.00136	-0.00138
	(A1 * !A2 * !B1 * !C2 * !X)	0.00035	0.00035	0.00034
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00136	-0.00136	-0.00138
	(!A1 * B1 * B2 * C2 * X)	0.00106	0.00107	0.00107
	(!A1 * B1 * B2 * C2 * X)	-0.00061	-0.00061	-0.00061
	(!A1 * B1 * B2 * !C2 * X)	0.00102	0.00103	0.00102
	(!A1 * B1 * B2 * !C2 * X)	-0.00061	-0.00061	-0.00061
	(!A1 * B1 * !B2 * !C2 * !X)	0.00035	0.00035	0.00034
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00136	-0.00136	-0.00138
	(!A1 * !B1 * !C2 * !X)	0.00035	0.00035	0.00034
	(!A1 * !B1 * !C2 * !X)	-0.00136	-0.00136	-0.00138

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)**	-0.00095	-0.00096	-0.00108
	(A1 * B1 * B2 * C2 * X)	0.00077	0.00077	0.00068
	(A1 * B1 * B2 * !C2 * X)	-0.00103	-0.00106	-0.00105
	(A1 * B1 * B2 * !C2 * X)	0.00065	0.00065	0.00065
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00082	-0.00083	-0.00104
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00086	0.00086	0.00069
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00103	-0.00106	-0.00105
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00065	0.00065	0.00065
	(A1 * A2 * !B1 * C2 * X)	-0.00082	-0.00083	-0.00104
	(A1 * A2 * !B1 * C2 * X)	0.00086	0.00086	0.00069
	(A1 * A2 * !B1 * !C2 * X)	-0.00103	-0.00106	-0.00105
	(A1 * A2 * !B1 * !C2 * X)	0.00065	0.00065	0.00065
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00034	-0.00034	-0.00034
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00145	0.00145	0.00145
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00034	-0.00034	-0.00034
	(A1 * !A2 * !B1 * !C2 * !X)	0.00145	0.00145	0.00145
	(!A1 * B1 * B2 * C2 * X)	-0.00095	-0.00096	-0.00108
	(!A1 * B1 * B2 * C2 * X)	0.00078	0.00077	0.00068
	(!A1 * B1 * B2 * !C2 * X)	-0.00103	-0.00106	-0.00105
	(!A1 * B1 * B2 * !C2 * X)	0.00065	0.00065	0.00065
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00034	-0.00034	-0.00034
	(!A1 * B1 * !B2 * !C2 * !X)	0.00145	0.00145	0.00145
	(!A1 * !B1 * !C2 * !X)	-0.00034	-0.00034	-0.00034
	(!A1 * !B1 * !C2 * !X)	0.00145	0.00145	0.00145

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	-0.00096	-0.00096	-0.00105
	(A1 * B1 * B2 * C2 * X)	0.00070	0.00069	0.00063
	(A1 * B1 * B2 * !C2 * X)	-0.00100	-0.00102	-0.00102
	(A1 * B1 * B2 * !C2 * X)	0.00061	0.00061	0.00061
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00081	-0.00082	-0.00102
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00081	0.00080	0.00066
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00100	-0.00103	-0.00102
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00061	0.00061	0.00061
	(A1 * A2 * !B1 * C2 * X)	-0.00081	-0.00082	-0.00102
	(A1 * A2 * !B1 * C2 * X)	0.00081	0.00080	0.00066
	(A1 * A2 * !B1 * !C2 * X)	-0.00100	-0.00103	-0.00102
	(A1 * A2 * !B1 * !C2 * X)	0.00061	0.00061	0.00061
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00033	-0.00033	-0.00033
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00138	0.00138	0.00138
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00033	-0.00033	-0.00033
	(A1 * !A2 * !B1 * !C2 * !X)	0.00138	0.00138	0.00138
	(!A1 * B1 * B2 * C2 * X)	-0.00096	-0.00096	-0.00105
	(!A1 * B1 * B2 * C2 * X)	0.00070	0.00070	0.00063
	(!A1 * B1 * B2 * !C2 * X)	-0.00100	-0.00103	-0.00102
	(!A1 * B1 * B2 * !C2 * X)	0.00061	0.00061	0.00061
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00033	-0.00033	-0.00033
	(!A1 * B1 * !B2 * !C2 * !X)	0.00138	0.00138	0.00138
	(!A1 * !B1 * !C2 * !X)	-0.00033	-0.00033	-0.00033
	(!A1 * !B1 * !C2 * !X)	0.00138	0.00138	0.00138

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)**	0.00109	0.00109	0.00109
	(A1 * B1 * B2 * C1 * X)	-0.00062	-0.00062	-0.00062
	(A1 * B1 * B2 * !C1 * X)	0.00105	0.00106	0.00104
	(A1 * B1 * B2 * !C1 * X)	-0.00062	-0.00062	-0.00062
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00110	0.00110	0.00109
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00062	-0.00062	-0.00062
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00104	0.00106	0.00105
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00062	-0.00062	-0.00062
	(A1 * A2 * !B1 * C1 * X)	0.00110	0.00110	0.00109
	(A1 * A2 * !B1 * C1 * X)	-0.00062	-0.00062	-0.00062
	(A1 * A2 * !B1 * !C1 * X)	0.00105	0.00106	0.00105
	(A1 * A2 * !B1 * !C1 * X)	-0.00062	-0.00062	-0.00062
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00083	0.00084	0.00083
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00127	-0.00128	-0.00127
	(A1 * !A2 * !B1 * !C1 * !X)	0.00083	0.00084	0.00083
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00127	-0.00128	-0.00127
	(!A1 * B1 * B2 * C1 * X)	0.00110	0.00110	0.00109
	(!A1 * B1 * B2 * C1 * X)	-0.00062	-0.00062	-0.00062
	(!A1 * B1 * B2 * !C1 * X)	0.00105	0.00106	0.00105
	(!A1 * B1 * B2 * !C1 * X)	-0.00062	-0.00062	-0.00062
	(!A1 * B1 * !B2 * !C1 * !X)	0.00083	0.00084	0.00083
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00127	-0.00127	-0.00127
	(!A1 * !B1 * !C1 * !X)	0.00083	0.00084	0.00083
	(!A1 * !B1 * !C1 * !X)	-0.00127	-0.00127	-0.00127

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	0.00113	0.00113	0.00113
	(A1 * B1 * B2 * C1 * X)	-0.00062	-0.00062	-0.00062
	(A1 * B1 * B2 * !C1 * X)	0.00108	0.00110	0.00108
	(A1 * B1 * B2 * !C1 * X)	-0.00062	-0.00062	-0.00062
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00113	0.00113	0.00113
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00062	-0.00062	-0.00062
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00108	0.00110	0.00108
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00062	-0.00062	-0.00062
	(A1 * A2 * !B1 * C1 * X)	0.00113	0.00113	0.00113
	(A1 * A2 * !B1 * C1 * X)	-0.00062	-0.00062	-0.00062
	(A1 * A2 * !B1 * !C1 * X)	0.00108	0.00110	0.00108
	(A1 * A2 * !B1 * !C1 * X)	-0.00062	-0.00062	-0.00062
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00082	0.00082	0.00082
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00132	-0.00132	-0.00132
	(A1 * !A2 * !B1 * !C1 * !X)	0.00082	0.00082	0.00082
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00132	-0.00132	-0.00132
	(!A1 * B1 * B2 * C1 * X)	0.00113	0.00113	0.00113
	(!A1 * B1 * B2 * C1 * X)	-0.00062	-0.00062	-0.00062
	(!A1 * B1 * B2 * !C1 * X)	0.00108	0.00110	0.00108
	(!A1 * B1 * B2 * !C1 * X)	-0.00062	-0.00063	-0.00062
	(!A1 * B1 * !B2 * !C1 * !X)	0.00082	0.00082	0.00082
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00132	-0.00132	-0.00132
	(!A1 * !B1 * !C1 * !X)	0.00082	0.00082	0.00082
	(!A1 * !B1 * !C1 * !X)	-0.00132	-0.00132	-0.00132

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)**	-0.00095	-0.00095	-0.00107
	(A1 * B1 * B2 * C1 * X)	0.00075	0.00074	0.00065
	(A1 * B1 * B2 * !C1 * X)	-0.00102	-0.00105	-0.00104
	(A1 * B1 * B2 * !C1 * X)	0.00062	0.00062	0.00062
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00082	-0.00083	-0.00104
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00083	0.00083	0.00067
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00102	-0.00105	-0.00105
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00062	0.00062	0.00062
	(A1 * A2 * !B1 * C1 * X)	-0.00082	-0.00083	-0.00104
	(A1 * A2 * !B1 * C1 * X)	0.00084	0.00083	0.00067
	(A1 * A2 * !B1 * !C1 * X)	-0.00102	-0.00105	-0.00105
	(A1 * A2 * !B1 * !C1 * X)	0.00062	0.00062	0.00062
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00078	-0.00084	-0.00083
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00130	0.00129	0.00127
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00078	-0.00084	-0.00083
	(A1 * !A2 * !B1 * !C1 * !X)	0.00130	0.00129	0.00127
	(!A1 * B1 * B2 * C1 * X)	-0.00095	-0.00095	-0.00107
	(!A1 * B1 * B2 * C1 * X)	0.00075	0.00074	0.00065
	(!A1 * B1 * B2 * !C1 * X)	-0.00102	-0.00105	-0.00105
	(!A1 * B1 * B2 * !C1 * X)	0.00062	0.00062	0.00062
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00078	-0.00084	-0.00083
	(!A1 * B1 * !B2 * !C1 * !X)	0.00130	0.00129	0.00127
	(!A1 * !B1 * !C1 * !X)	-0.00078	-0.00084	-0.00083
	(!A1 * !B1 * !C1 * !X)	0.00130	0.00129	0.00127

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00102	-0.00102	-0.00112
	(A1 * B1 * B2 * C1 * X)	0.00072	0.00071	0.00064
	(A1 * B1 * B2 * !C1 * X)	-0.00106	-0.00109	-0.00108
	(A1 * B1 * B2 * !C1 * X)	0.00062	0.00062	0.00062
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00088	-0.00088	-0.00108
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00083	0.00081	0.00067
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00106	-0.00109	-0.00108
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00062	0.00062	0.00062
	(A1 * A2 * !B1 * C1 * X)	-0.00088	-0.00088	-0.00108
	(A1 * A2 * !B1 * C1 * X)	0.00082	0.00081	0.00067
	(A1 * A2 * !B1 * !C1 * X)	-0.00106	-0.00109	-0.00108
	(A1 * A2 * !B1 * !C1 * X)	0.00062	0.00062	0.00062
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00077	-0.00082	-0.00082
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00136	0.00134	0.00133
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00077	-0.00082	-0.00082
	(A1 * !A2 * !B1 * !C1 * !X)	0.00136	0.00134	0.00133
	(!A1 * B1 * B2 * C1 * X)	-0.00102	-0.00102	-0.00112
	(!A1 * B1 * B2 * C1 * X)	0.00072	0.00071	0.00064
	(!A1 * B1 * B2 * !C1 * X)	-0.00106	-0.00109	-0.00108
	(!A1 * B1 * B2 * !C1 * X)	0.00062	0.00063	0.00062
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00077	-0.00082	-0.00082
	(!A1 * B1 * !B2 * !C1 * !X)	0.00136	0.00134	0.00133
	(!A1 * !B1 * !C1 * !X)	-0.00077	-0.00082	-0.00082
	(!A1 * !B1 * !C1 * !X)	0.00136	0.00134	0.00133

SKY130_FD_SC_HS__A22OIx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a22oi_1	9.59040
sky130_fd_sc_hs__a22oi_2	15.98400
sky130_fd_sc_hs__a22oi_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	B2	Y
sky130_fd_sc_hs__a22oi_1	0.00266	0.00263	0.00276	0.00277	0.35416
sky130_fd_sc_hs__a22oi_2	0.00583	0.00507	0.00557	0.00505	0.63564
sky130_fd_sc_hs__a22oi_4	0.01017	0.00999	0.01029	0.01011	1.20164

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a22oi_1	0.00000	0.01652	0.04886
sky130_fd_sc_hs__a22oi_2	0.00000	0.03303	0.09773
sky130_fd_sc_hs__a22oi_4	0.00000	0.06606	0.19545

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)	0.16421	1.27043	11.78410
	A2->Y (FR)	0.19272	1.30500	11.85070
	B1->Y (FR)	0.12107	1.20046	11.65440
	B2->Y (FR)	0.14883	1.23877	11.78220
sky130_fd_sc_hs__a22oi_2	A1->Y (FR)	0.17097	1.10248	11.43420
	A2->Y (FR)	0.20262	1.14981	11.64710
	B1->Y (FR)	0.12265	1.04006	11.40990
	B2->Y (FR)	0.15788	1.09343	11.65810
sky130_fd_sc_hs__a22oi_4	A1->Y (FR)	0.15606	0.95879	11.29860
	A2->Y (FR)	0.19434	1.01089	11.52200
	B1->Y (FR)	0.11229	0.90452	11.32040
	B2->Y (FR)	0.15149	0.95758	11.59900

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22oi_1	A1->Y (RF)	0.04340	0.50682	4.92412
	A2->Y (RF)	0.04843	0.48291	4.57296
	B1->Y (RF)	0.03172	0.49111	4.94550
	B2->Y (RF)	0.03679	0.46675	4.61802
sky130_fd_sc_hs__a22oi_2	A1->Y (RF)	0.04498	0.45627	4.81269
	A2->Y (RF)	0.04981	0.43698	4.52577
	B1->Y (RF)	0.03139	0.42460	4.78562
	B2->Y (RF)	0.03771	0.41185	4.49582
sky130_fd_sc_hs__a22oi_4	A1->Y (RF)	0.04449	0.42679	5.03985
	A2->Y (RF)	0.05054	0.38990	4.47348
	B1->Y (RF)	0.02986	0.39373	5.03272
	B2->Y (RF)	0.03621	0.35953	4.43697

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	0.00033	0.00019	0.00025
	A1	0.00480	0.00467	0.00474
	A2	0.00066	0.00056	0.00063
	A2	0.00586	0.00577	0.00583
	B1	0.00040	0.00033	0.00086
	B1	0.00408	0.00401	0.00454
	B2	0.00061	0.00056	0.00110
	B2	0.00502	0.00494	0.00550
sky130_fd_sc_hs__a22oi_2	A1	0.00123	0.00091	0.00108
	A1	0.01074	0.01041	0.01058
	A2	0.00203	0.00179	0.00195
	A2	0.01241	0.01212	0.01230
	B1	0.00096	0.00075	0.00195
	B1	0.00855	0.00837	0.00953
	B2	0.00199	0.00182	0.00305
	B2	0.01063	0.01047	0.01167
sky130_fd_sc_hs__a22oi_4	A1	0.00137	0.00075	0.00117
	A1	0.01928	0.01863	0.01904
	A2	0.00307	0.00259	0.00296
	A2	0.02367	0.02323	0.02357
	B1	0.00118	0.00071	0.00314
	B1	0.01574	0.01526	0.01766
	B2	0.00295	0.00276	0.00497
	B2	0.02017	0.01982	0.02216

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	0.00598	0.00590	0.00617
	A1	0.00175	0.00165	0.00180
	A2	0.00672	0.00662	0.00671
	A2	0.00171	0.00159	0.00168
	B1	0.00363	0.00367	0.00398
	B1	-0.00009	-0.00010	0.00009
	B2	0.00444	0.00441	0.00460
	B2	-0.00007	-0.00013	0.00002
sky130_fd_sc_hs__a22oi_2	A1	0.01206	0.01178	0.01219
	A1	0.00311	0.00283	0.00319
	A2	0.01308	0.01286	0.01304
	A2	0.00315	0.00290	0.00312
	B1	0.00766	0.00761	0.00836
	B1	-0.00006	-0.00012	0.00036
	B2	0.00889	0.00878	0.00914
	B2	0.00002	-0.00014	0.00022
sky130_fd_sc_hs__a22oi_4	A1	0.02278	0.02226	0.02356
	A1	0.00595	0.00536	0.00619
	A2	0.02567	0.02512	0.02612
	A2	0.00589	0.00533	0.00582
	B1	0.01438	0.01428	0.01562
	B1	-0.00045	-0.00063	0.00044
	B2	0.01743	0.01718	0.01828
	B2	-0.00029	-0.00065	0.00015

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)	0.00105	0.00102	0.00100
	(A2 * B1 * B2 * !Y)	-0.00114	-0.00123	-0.00122
	(!A2 * B1 * B2 * !Y)	0.00095	0.00096	0.00095
	(!A2 * B1 * B2 * !Y)	-0.00125	-0.00126	-0.00125
	(!A2 * B1 * !B2 * Y)	0.00038	0.00037	0.00036
	(!A2 * B1 * !B2 * Y)	-0.00143	-0.00144	-0.00146
	(!A2 * !B1 * Y)	0.00037	0.00037	0.00036
	(!A2 * !B1 * Y)	-0.00143	-0.00144	-0.00146
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	0.00237	0.00221	0.00220
	(A2 * B1 * B2 * !Y)	-0.00234	-0.00259	-0.00259
	(!A2 * B1 * B2 * !Y)	0.00208	0.00210	0.00208
	(!A2 * B1 * B2 * !Y)	-0.00268	-0.00270	-0.00268
	(!A2 * B1 * !B2 * Y)	0.00074	0.00075	0.00071
	(!A2 * B1 * !B2 * Y)	-0.00319	-0.00324	-0.00327
	(!A2 * !B1 * Y)	0.00075	0.00075	0.00071
	(!A2 * !B1 * Y)	-0.00323	-0.00324	-0.00327
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	0.00436	0.00411	0.00407
	(A2 * B1 * B2 * !Y)	-0.00447	-0.00493	-0.00492
	(!A2 * B1 * B2 * !Y)	0.00383	0.00385	0.00384
	(!A2 * B1 * B2 * !Y)	-0.00508	-0.00509	-0.00507
	(!A2 * B1 * !B2 * Y)	0.00142	0.00143	0.00135
	(!A2 * B1 * !B2 * Y)	-0.00584	-0.00591	-0.00600
	(!A2 * !B1 * Y)	0.00142	0.00144	0.00136
	(!A2 * !B1 * Y)	-0.00584	-0.00591	-0.00600

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)	-0.00100	-0.00101	-0.00100
	(A2 * B1 * B2 * !Y)	0.00121	0.00123	0.00122
	(!A2 * B1 * B2 * !Y)	-0.00092	-0.00096	-0.00095
	(!A2 * B1 * B2 * !Y)	0.00126	0.00127	0.00125
	(!A2 * B1 * !B2 * Y)	-0.00035	-0.00035	-0.00035
	(!A2 * B1 * !B2 * Y)	0.00145	0.00147	0.00146
	(!A2 * !B1 * Y)	-0.00035	-0.00035	-0.00035
	(!A2 * !B1 * Y)	0.00145	0.00147	0.00146
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	-0.00219	-0.00221	-0.00219
	(A2 * B1 * B2 * !Y)	0.00258	0.00261	0.00259
	(!A2 * B1 * B2 * !Y)	-0.00201	-0.00210	-0.00208
	(!A2 * B1 * B2 * !Y)	0.00270	0.00272	0.00269
	(!A2 * B1 * !B2 * Y)	-0.00070	-0.00070	-0.00069
	(!A2 * B1 * !B2 * Y)	0.00329	0.00330	0.00328
	(!A2 * !B1 * Y)	-0.00070	-0.00070	-0.00069
	(!A2 * !B1 * Y)	0.00329	0.00330	0.00328
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	-0.00406	-0.00408	-0.00405
	(A2 * B1 * B2 * !Y)	0.00490	0.00495	0.00492
	(!A2 * B1 * B2 * !Y)	-0.00367	-0.00385	-0.00384
	(!A2 * B1 * B2 * !Y)	0.00511	0.00512	0.00509
	(!A2 * B1 * !B2 * Y)	-0.00132	-0.00132	-0.00131
	(!A2 * B1 * !B2 * Y)	0.00603	0.00605	0.00601
	(!A2 * !B1 * Y)	-0.00132	-0.00132	-0.00131
	(!A2 * !B1 * Y)	0.00603	0.00605	0.00601

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)	0.00112	0.00108	0.00106
	(A1 * B1 * B2 * !Y)	-0.00118	-0.00127	-0.00127
	(!A1 * B1 * B2 * !Y)	0.00101	0.00101	0.00101
	(!A1 * B1 * B2 * !Y)	-0.00130	-0.00130	-0.00130
	(!A1 * B1 * !B2 * Y)	0.00101	0.00102	0.00101
	(!A1 * B1 * !B2 * Y)	-0.00130	-0.00131	-0.00130
	(!A1 * !B1 * Y)	0.00101	0.00101	0.00101
	(!A1 * !B1 * Y)	-0.00130	-0.00130	-0.00130
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	0.00212	0.00202	0.00201
	(A1 * B1 * B2 * !Y)	-0.00221	-0.00240	-0.00240
	(!A1 * B1 * B2 * !Y)	0.00189	0.00192	0.00190
	(!A1 * B1 * B2 * !Y)	-0.00246	-0.00249	-0.00247
	(!A1 * B1 * !B2 * Y)	0.00182	0.00184	0.00183
	(!A1 * B1 * !B2 * Y)	-0.00253	-0.00255	-0.00254
	(!A1 * !B1 * Y)	0.00182	0.00185	0.00183
	(!A1 * !B1 * Y)	-0.00253	-0.00255	-0.00254
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	0.00439	0.00410	0.00410
	(A1 * B1 * B2 * !Y)	-0.00451	-0.00492	-0.00494
	(!A1 * B1 * B2 * !Y)	0.00382	0.00386	0.00384
	(!A1 * B1 * B2 * !Y)	-0.00508	-0.00511	-0.00509
	(!A1 * B1 * !B2 * Y)	0.00384	0.00389	0.00386
	(!A1 * B1 * !B2 * Y)	-0.00508	-0.00511	-0.00509
	(!A1 * !B1 * Y)	0.00384	0.00389	0.00386
	(!A1 * !B1 * Y)	-0.00508	-0.00511	-0.00509

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)	-0.00106	-0.00107	-0.00106
	(A1 * B1 * B2 * !Y)	0.00127	0.00127	0.00127
	(!A1 * B1 * B2 * !Y)	-0.00098	-0.00101	-0.00101
	(!A1 * B1 * B2 * !Y)	0.00130	0.00132	0.00131
	(!A1 * B1 * !B2 * Y)	-0.00096	-0.00102	-0.00101
	(!A1 * B1 * !B2 * Y)	0.00132	0.00132	0.00131
	(!A1 * !B1 * Y)	-0.00096	-0.00101	-0.00101
	(!A1 * !B1 * Y)	0.00132	0.00132	0.00131
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	-0.00201	-0.00202	-0.00201
	(A1 * B1 * B2 * !Y)	0.00239	0.00243	0.00240
	(!A1 * B1 * B2 * !Y)	-0.00183	-0.00191	-0.00190
	(!A1 * B1 * B2 * !Y)	0.00247	0.00250	0.00248
	(!A1 * B1 * !B2 * Y)	-0.00172	-0.00184	-0.00183
	(!A1 * B1 * !B2 * Y)	0.00260	0.00257	0.00254
	(!A1 * !B1 * Y)	-0.00172	-0.00184	-0.00183
	(!A1 * !B1 * Y)	0.00260	0.00257	0.00254
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	-0.00410	-0.00410	-0.00408
	(A1 * B1 * B2 * !Y)	0.00495	0.00498	0.00494
	(!A1 * B1 * B2 * !Y)	-0.00372	-0.00386	-0.00384
	(!A1 * B1 * B2 * !Y)	0.00512	0.00513	0.00511
	(!A1 * B1 * !B2 * Y)	-0.00362	-0.00386	-0.00386
	(!A1 * B1 * !B2 * Y)	0.00526	0.00517	0.00511
	(!A1 * !B1 * Y)	-0.00362	-0.00386	-0.00386
	(!A1 * !B1 * Y)	0.00526	0.00517	0.00511

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)	0.00115	0.00116	0.00116
	(A1 * A2 * B2 * !Y)	-0.00066	-0.00066	-0.00066
	(A1 * A2 * !B2 * !Y)	0.00109	0.00109	0.00110
	(A1 * A2 * !B2 * !Y)	-0.00065	-0.00066	-0.00066
	(A1 * !A2 * !B2 * Y)	0.00034	0.00034	0.00033
	(A1 * !A2 * !B2 * Y)	-0.00149	-0.00150	-0.00152
	(!A1 * !B2 * Y)	0.00034	0.00034	0.00033
	(!A1 * !B2 * Y)	-0.00149	-0.00150	-0.00152
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	0.00247	0.00249	0.00248
	(A1 * A2 * B2 * !Y)	-0.00128	-0.00128	-0.00128
	(A1 * A2 * !B2 * !Y)	0.00234	0.00238	0.00235
	(A1 * A2 * !B2 * !Y)	-0.00127	-0.00127	-0.00127
	(A1 * !A2 * !B2 * Y)	0.00080	0.00080	0.00077
	(A1 * !A2 * !B2 * Y)	-0.00297	-0.00298	-0.00304
	(!A1 * !B2 * Y)	0.00080	0.00080	0.00077
	(!A1 * !B2 * Y)	-0.00297	-0.00298	-0.00304
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	0.00456	0.00460	0.00458
	(A1 * A2 * B2 * !Y)	-0.00257	-0.00259	-0.00258
	(A1 * A2 * !B2 * !Y)	0.00435	0.00439	0.00437
	(A1 * A2 * !B2 * !Y)	-0.00257	-0.00258	-0.00257
	(A1 * !A2 * !B2 * Y)	0.00142	0.00141	0.00134
	(A1 * !A2 * !B2 * Y)	-0.00589	-0.00590	-0.00602
	(!A1 * !B2 * Y)	0.00142	0.00142	0.00134
	(!A1 * !B2 * Y)	-0.00589	-0.00590	-0.00602

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)	-0.00101	-0.00102	-0.00114
	(A1 * A2 * B2 * !Y)	0.00078	0.00078	0.00069
	(A1 * A2 * !B2 * !Y)	-0.00107	-0.00109	-0.00110
	(A1 * A2 * !B2 * !Y)	0.00066	0.00066	0.00066
	(A1 * !A2 * !B2 * Y)	-0.00032	-0.00032	-0.00032
	(A1 * !A2 * !B2 * Y)	0.00152	0.00153	0.00152
	(!A1 * !B2 * Y)	-0.00032	-0.00032	-0.00032
	(!A1 * !B2 * Y)	0.00152	0.00153	0.00152
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	-0.00221	-0.00223	-0.00244
	(A1 * A2 * B2 * !Y)	0.00149	0.00149	0.00133
	(A1 * A2 * !B2 * !Y)	-0.00228	-0.00236	-0.00235
	(A1 * A2 * !B2 * !Y)	0.00128	0.00127	0.00127
	(A1 * !A2 * !B2 * Y)	-0.00075	-0.00075	-0.00074
	(A1 * !A2 * !B2 * Y)	0.00305	0.00306	0.00304
	(!A1 * !B2 * Y)	-0.00075	-0.00075	-0.00074
	(!A1 * !B2 * Y)	0.00305	0.00306	0.00304
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	-0.00409	-0.00413	-0.00452
	(A1 * A2 * B2 * !Y)	0.00301	0.00299	0.00268
	(A1 * A2 * !B2 * !Y)	-0.00420	-0.00439	-0.00437
	(A1 * A2 * !B2 * !Y)	0.00259	0.00258	0.00257
	(A1 * !A2 * !B2 * Y)	-0.00131	-0.00131	-0.00129
	(A1 * !A2 * !B2 * Y)	0.00605	0.00606	0.00603
	(!A1 * !B2 * Y)	-0.00131	-0.00131	-0.00130
	(!A1 * !B2 * Y)	0.00605	0.00606	0.00603

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)	0.00126	0.00127	0.00126
	(A1 * A2 * B1 * !Y)	-0.00066	-0.00067	-0.00066
	(A1 * A2 * !B1 * !Y)	0.00120	0.00122	0.00120
	(A1 * A2 * !B1 * !Y)	-0.00066	-0.00067	-0.00066
	(A1 * !A2 * !B1 * Y)	0.00101	0.00102	0.00101
	(A1 * !A2 * !B1 * Y)	-0.00134	-0.00135	-0.00135
	(!A1 * !B1 * Y)	0.00101	0.00102	0.00101
	(!A1 * !B1 * Y)	-0.00134	-0.00135	-0.00135
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	0.00219	0.00219	0.00218
	(A1 * A2 * B1 * !Y)	-0.00129	-0.00129	-0.00128
	(A1 * A2 * !B1 * !Y)	0.00208	0.00209	0.00208
	(A1 * A2 * !B1 * !Y)	-0.00128	-0.00129	-0.00128
	(A1 * !A2 * !B1 * Y)	0.00182	0.00184	0.00183
	(A1 * !A2 * !B1 * Y)	-0.00250	-0.00252	-0.00251
	(!A1 * !B1 * Y)	0.00181	0.00184	0.00183
	(!A1 * !B1 * Y)	-0.00250	-0.00252	-0.00251
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	0.00460	0.00460	0.00458
	(A1 * A2 * B1 * !Y)	-0.00260	-0.00259	-0.00258
	(A1 * A2 * !B1 * !Y)	0.00437	0.00439	0.00436
	(A1 * A2 * !B1 * !Y)	-0.00258	-0.00258	-0.00257
	(A1 * !A2 * !B1 * Y)	0.00384	0.00388	0.00384
	(A1 * !A2 * !B1 * Y)	-0.00507	-0.00509	-0.00506
	(!A1 * !B1 * Y)	0.00384	0.00388	0.00385
	(!A1 * !B1 * Y)	-0.00505	-0.00509	-0.00506

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)	-0.00112	-0.00112	-0.00124
	(A1 * A2 * B1 * !Y)	0.00079	0.00078	0.00069
	(A1 * A2 * !B1 * !Y)	-0.00118	-0.00121	-0.00120
	(A1 * A2 * !B1 * !Y)	0.00066	0.00067	0.00066
	(A1 * !A2 * !B1 * Y)	-0.00096	-0.00102	-0.00101
	(A1 * !A2 * !B1 * Y)	0.00139	0.00136	0.00135
	(!A1 * !B1 * Y)	-0.00096	-0.00102	-0.00101
	(!A1 * !B1 * Y)	0.00139	0.00136	0.00135
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	-0.00192	-0.00194	-0.00215
	(A1 * A2 * B1 * !Y)	0.00149	0.00150	0.00133
	(A1 * A2 * !B1 * !Y)	-0.00201	-0.00208	-0.00208
	(A1 * A2 * !B1 * !Y)	0.00128	0.00129	0.00128
	(A1 * !A2 * !B1 * Y)	-0.00173	-0.00183	-0.00183
	(A1 * !A2 * !B1 * Y)	0.00257	0.00254	0.00252
	(!A1 * !B1 * Y)	-0.00173	-0.00183	-0.00183
	(!A1 * !B1 * Y)	0.00257	0.00254	0.00252
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	-0.00407	-0.00411	-0.00452
	(A1 * A2 * B1 * !Y)	0.00299	0.00299	0.00268
	(A1 * A2 * !B1 * !Y)	-0.00423	-0.00437	-0.00436
	(A1 * A2 * !B1 * !Y)	0.00259	0.00258	0.00257
	(A1 * !A2 * !B1 * Y)	-0.00362	-0.00386	-0.00384
	(A1 * !A2 * !B1 * Y)	0.00521	0.00512	0.00507
	(!A1 * !B1 * Y)	-0.00362	-0.00386	-0.00385
	(!A1 * !B1 * Y)	0.00521	0.00512	0.00507

SKY130_FD_SC_HS__A22Ox

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a22o_1	11.18880
sky130_fd_sc_hs__a22o_2	12.78720
sky130_fd_sc_hs__a22o_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	B2	X
sky130_fd_sc_hs__a22o_1	0.00260	0.00238	0.00254	0.00260	0.75986
sky130_fd_sc_hs__a22o_2	0.00271	0.00249	0.00267	0.00260	1.49833
sky130_fd_sc_hs__a22o_4	0.00459	0.00483	0.00460	0.00507	3.01026

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a22o_1	0.00000	0.05147	0.12518
sky130_fd_sc_hs__a22o_2	0.00000	0.06614	0.12939
sky130_fd_sc_hs__a22o_4	0.00000	0.13411	0.25878

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)	0.12089	0.82741	7.14332
	A2->X (RR)	0.12732	0.82633	7.24800
	B1->X (RR)	0.10586	0.78822	7.09831
	B2->X (RR)	0.11109	0.79309	7.17180
sky130_fd_sc_hs__a22o_2	A1->X (RR)	0.12116	0.73780	7.31075
	A2->X (RR)	0.12804	0.72834	7.38175
	B1->X (RR)	0.10612	0.70085	7.25063
	B2->X (RR)	0.11077	0.69838	7.30487
sky130_fd_sc_hs__a22o_4	A1->X (RR)	0.11828	0.63957	7.30001
	A2->X (RR)	0.12431	0.63908	7.39374
	B1->X (RR)	0.10509	0.60505	7.21581
	B2->X (RR)	0.11074	0.60707	7.29360

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22o_1	A1->X (FF)	0.23639	0.81173	4.94445
	A2->X (FF)	0.25952	0.84985	5.10728
	B1->X (FF)	0.20631	0.76359	4.66970
	B2->X (FF)	0.22473	0.79056	4.74950
sky130_fd_sc_hs__a22o_2	A1->X (FF)	0.29502	0.86166	5.22787
	A2->X (FF)	0.32443	0.90537	5.39889
	B1->X (FF)	0.26865	0.82524	4.97098
	B2->X (FF)	0.28711	0.84812	5.05527
sky130_fd_sc_hs__a22o_4	A1->X (FF)	0.28424	0.82942	5.34894
	A2->X (FF)	0.30447	0.85842	5.47221
	B1->X (FF)	0.25371	0.78618	5.08351
	B2->X (FF)	0.26576	0.80040	5.13970

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.00768	0.00764	0.00940
	A1	0.00372	0.00368	0.00548
	A2	0.00841	0.00844	0.00955
	A2	0.00373	0.00376	0.00492
	B1	0.00586	0.00582	0.00900
	B1	0.00233	0.00231	0.00553
	B2	0.00648	0.00646	0.00883
	B2	0.00231	0.00228	0.00461
sky130_fd_sc_hs__a22o_2	A1	0.00944	0.00960	0.01130
	A1	0.00537	0.00551	0.00729
	A2	0.01019	0.01043	0.01148
	A2	0.00533	0.00557	0.00668
	B1	0.00768	0.00782	0.01068
	B1	0.00395	0.00410	0.00707
	B2	0.00833	0.00856	0.01065
	B2	0.00393	0.00417	0.00632
sky130_fd_sc_hs__a22o_4	A1	0.01857	0.01889	0.02285
	A1	0.01093	0.01128	0.01544
	A2	0.02009	0.02050	0.02297
	A2	0.01095	0.01138	0.01397
	B1	0.01456	0.01476	0.02057
	B1	0.00816	0.00836	0.01472
	B2	0.01588	0.01609	0.02031
	B2	0.00798	0.00820	0.01290

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.00252	0.00240	0.00387
	A1	0.00663	0.00650	0.00762
	A2	0.00290	0.00303	0.00411
	A2	0.00766	0.00777	0.00877
	B1	0.00281	0.00296	0.00647
	B1	0.00623	0.00637	0.00971
	B2	0.00303	0.00324	0.00662
	B2	0.00708	0.00730	0.01047
sky130_fd_sc_hs__a22o_2	A1	0.00423	0.00418	0.00597
	A1	0.00859	0.00866	0.00970
	A2	0.00490	0.00521	0.00689
	A2	0.00991	0.01022	0.01123
	B1	0.00461	0.00486	0.00893
	B1	0.00826	0.00856	0.01187
	B2	0.00491	0.00532	0.00857
	B2	0.00917	0.00963	0.01280
sky130_fd_sc_hs__a22o_4	A1	0.00817	0.00871	0.01249
	A1	0.01613	0.01669	0.01886
	A2	0.00760	0.00820	0.01203
	A2	0.01769	0.01839	0.02041
	B1	0.00813	0.00839	0.01704
	B1	0.01444	0.01513	0.02152
	B2	0.00867	0.00955	0.01675
	B2	0.01638	0.01724	0.02346

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)	0.00114	0.00108	0.00106
	(A2 * B1 * B2 * X)	-0.00099	-0.00110	-0.00109
	(!A2 * B1 * B2 * X)	0.00101	0.00102	0.00101
	(!A2 * B1 * B2 * X)	-0.00111	-0.00112	-0.00112
	(!A2 * B1 * !B2 * !X)	0.00037	0.00037	0.00034
	(!A2 * B1 * !B2 * !X)	-0.00142	-0.00143	-0.00146
	(!A2 * !B1 * !X)	0.00037	0.00037	0.00034
	(!A2 * !B1 * !X)	-0.00142	-0.00143	-0.00146
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	0.00124	0.00119	0.00117
	(A2 * B1 * B2 * X)	-0.00098	-0.00109	-0.00108
	(!A2 * B1 * B2 * X)	0.00112	0.00112	0.00112
	(!A2 * B1 * B2 * X)	-0.00111	-0.00111	-0.00110
	(!A2 * B1 * !B2 * !X)	0.00041	0.00041	0.00037
	(!A2 * B1 * !B2 * !X)	-0.00142	-0.00143	-0.00147
	(!A2 * !B1 * !X)	0.00041	0.00041	0.00037
	(!A2 * !B1 * !X)	-0.00142	-0.00143	-0.00147
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	0.00189	0.00175	0.00171
	(A2 * B1 * B2 * X)	-0.00204	-0.00227	-0.00226
	(!A2 * B1 * B2 * X)	0.00160	0.00161	0.00161
	(!A2 * B1 * B2 * X)	-0.00232	-0.00234	-0.00233
	(!A2 * B1 * !B2 * !X)	0.00057	0.00057	0.00055
	(!A2 * B1 * !B2 * !X)	-0.00267	-0.00269	-0.00272
	(!A2 * !B1 * !X)	0.00057	0.00057	0.00055
	(!A2 * !B1 * !X)	-0.00266	-0.00269	-0.00272

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)	-0.00106	-0.00106	-0.00106
	(A2 * B1 * B2 * X)	0.00110	0.00110	0.00109
	(!A2 * B1 * B2 * X)	-0.00097	-0.00102	-0.00101
	(!A2 * B1 * B2 * X)	0.00112	0.00114	0.00112
	(!A2 * B1 * !B2 * !X)	-0.00033	-0.00034	-0.00033
	(!A2 * B1 * !B2 * !X)	0.00146	0.00147	0.00147
	(!A2 * !B1 * !X)	-0.00033	-0.00034	-0.00033
	(!A2 * !B1 * !X)	0.00146	0.00147	0.00147
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	-0.00117	-0.00117	-0.00116
	(A2 * B1 * B2 * X)	0.00109	0.00109	0.00108
	(!A2 * B1 * B2 * X)	-0.00107	-0.00112	-0.00112
	(!A2 * B1 * B2 * X)	0.00112	0.00112	0.00111
	(!A2 * B1 * !B2 * !X)	-0.00036	-0.00036	-0.00036
	(!A2 * B1 * !B2 * !X)	0.00147	0.00148	0.00148
	(!A2 * !B1 * !X)	-0.00036	-0.00036	-0.00036
	(!A2 * !B1 * !X)	0.00147	0.00148	0.00148
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	-0.00170	-0.00171	-0.00170
	(A2 * B1 * B2 * X)	0.00225	0.00228	0.00226
	(!A2 * B1 * B2 * X)	-0.00155	-0.00161	-0.00161
	(!A2 * B1 * B2 * X)	0.00233	0.00237	0.00234
	(!A2 * B1 * !B2 * !X)	-0.00053	-0.00053	-0.00053
	(!A2 * B1 * !B2 * !X)	0.00274	0.00274	0.00273
	(!A2 * !B1 * !X)	-0.00053	-0.00053	-0.00053
	(!A2 * !B1 * !X)	0.00274	0.00274	0.00273

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)	0.00113	0.00105	0.00105
	(A1 * B1 * B2 * X)	-0.00099	-0.00109	-0.00110
	(!A1 * B1 * B2 * X)	0.00100	0.00100	0.00099
	(!A1 * B1 * B2 * X)	-0.00112	-0.00112	-0.00112
	(!A1 * B1 * !B2 * !X)	0.00099	0.00100	0.00099
	(!A1 * B1 * !B2 * !X)	-0.00112	-0.00113	-0.00112
	(!A1 * !B1 * !X)	0.00099	0.00100	0.00099
	(!A1 * !B1 * !X)	-0.00112	-0.00113	-0.00112
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	0.00115	0.00109	0.00107
	(A1 * B1 * B2 * X)	-0.00103	-0.00114	-0.00113
	(!A1 * B1 * B2 * X)	0.00101	0.00103	0.00102
	(!A1 * B1 * B2 * X)	-0.00115	-0.00116	-0.00116
	(!A1 * B1 * !B2 * !X)	0.00102	0.00103	0.00102
	(!A1 * B1 * !B2 * !X)	-0.00116	-0.00116	-0.00116
	(!A1 * !B1 * !X)	0.00101	0.00102	0.00101
	(!A1 * !B1 * !X)	-0.00116	-0.00117	-0.00116
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	0.00225	0.00212	0.00210
	(A1 * B1 * B2 * X)	-0.00200	-0.00222	-0.00222
	(!A1 * B1 * B2 * X)	0.00199	0.00201	0.00200
	(!A1 * B1 * B2 * X)	-0.00227	-0.00229	-0.00228
	(!A1 * B1 * !B2 * !X)	0.00195	0.00198	0.00196
	(!A1 * B1 * !B2 * !X)	-0.00232	-0.00234	-0.00232
	(!A1 * !B1 * !X)	0.00195	0.00197	0.00196
	(!A1 * !B1 * !X)	-0.00232	-0.00233	-0.00232

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)	-0.00104	-0.00104	-0.00104
	(A1 * B1 * B2 * X)	0.00109	0.00110	0.00110
	(!A1 * B1 * B2 * X)	-0.00096	-0.00100	-0.00099
	(!A1 * B1 * B2 * X)	0.00113	0.00114	0.00112
	(!A1 * B1 * !B2 * !X)	-0.00095	-0.00099	-0.00099
	(!A1 * B1 * !B2 * !X)	0.00114	0.00114	0.00113
	(!A1 * !B1 * !X)	-0.00095	-0.00100	-0.00099
	(!A1 * !B1 * !X)	0.00114	0.00114	0.00113
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	-0.00107	-0.00107	-0.00106
	(A1 * B1 * B2 * X)	0.00114	0.00114	0.00113
	(!A1 * B1 * B2 * X)	-0.00098	-0.00102	-0.00102
	(!A1 * B1 * B2 * X)	0.00115	0.00117	0.00116
	(!A1 * B1 * !B2 * !X)	-0.00096	-0.00102	-0.00102
	(!A1 * B1 * !B2 * !X)	0.00117	0.00117	0.00116
	(!A1 * !B1 * !X)	-0.00096	-0.00102	-0.00101
	(!A1 * !B1 * !X)	0.00117	0.00117	0.00116
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	-0.00209	-0.00210	-0.00208
	(A1 * B1 * B2 * X)	0.00221	0.00223	0.00222
	(!A1 * B1 * B2 * X)	-0.00195	-0.00201	-0.00200
	(!A1 * B1 * B2 * X)	0.00229	0.00232	0.00229
	(!A1 * B1 * !B2 * !X)	-0.00187	-0.00198	-0.00196
	(!A1 * B1 * !B2 * !X)	0.00239	0.00236	0.00233
	(!A1 * !B1 * !X)	-0.00187	-0.00197	-0.00196
	(!A1 * !B1 * !X)	0.00239	0.00236	0.00233

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)	0.00101	0.00102	0.00102
	(A1 * A2 * B2 * X)	-0.00060	-0.00060	-0.00060
	(A1 * A2 * !B2 * X)	0.00096	0.00098	0.00097
	(A1 * A2 * !B2 * X)	-0.00060	-0.00061	-0.00060
	(A1 * !A2 * !B2 * !X)	0.00032	0.00032	0.00031
	(A1 * !A2 * !B2 * !X)	-0.00132	-0.00133	-0.00134
	(!A1 * !B2 * !X)	0.00033	0.00033	0.00032
	(!A1 * !B2 * !X)	-0.00132	-0.00133	-0.00134
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	0.00113	0.00114	0.00114
	(A1 * A2 * B2 * X)	-0.00059	-0.00059	-0.00059
	(A1 * A2 * !B2 * X)	0.00108	0.00109	0.00108
	(A1 * A2 * !B2 * X)	-0.00059	-0.00060	-0.00059
	(A1 * !A2 * !B2 * !X)	0.00035	0.00035	0.00033
	(A1 * !A2 * !B2 * !X)	-0.00134	-0.00135	-0.00137
	(!A1 * !B2 * !X)	0.00035	0.00036	0.00034
	(!A1 * !B2 * !X)	-0.00134	-0.00135	-0.00137
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	0.00188	0.00189	0.00189
	(A1 * A2 * B2 * X)	-0.00118	-0.00118	-0.00118
	(A1 * A2 * !B2 * X)	0.00179	0.00181	0.00179
	(A1 * A2 * !B2 * X)	-0.00117	-0.00119	-0.00117
	(A1 * !A2 * !B2 * !X)	0.00059	0.00060	0.00057
	(A1 * !A2 * !B2 * !X)	-0.00254	-0.00257	-0.00260
	(!A1 * !B2 * !X)	0.00059	0.00060	0.00057
	(!A1 * !B2 * !X)	-0.00254	-0.00257	-0.00260

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)	-0.00092	-0.00092	-0.00100
	(A1 * A2 * B2 * X)	0.00070	0.00069	0.00062
	(A1 * A2 * !B2 * X)	-0.00095	-0.00098	-0.00097
	(A1 * A2 * !B2 * X)	0.00060	0.00061	0.00060
	(A1 * !A2 * !B2 * !X)	-0.00030	-0.00030	-0.00030
	(A1 * !A2 * !B2 * !X)	0.00134	0.00135	0.00134
	(!A1 * !B2 * !X)	-0.00031	-0.00032	-0.00031
	(!A1 * !B2 * !X)	0.00134	0.00134	0.00134
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	-0.00103	-0.00104	-0.00112
	(A1 * A2 * B2 * X)	0.00069	0.00068	0.00061
	(A1 * A2 * !B2 * X)	-0.00105	-0.00109	-0.00108
	(A1 * A2 * !B2 * X)	0.00060	0.00060	0.00059
	(A1 * !A2 * !B2 * !X)	-0.00032	-0.00033	-0.00032
	(A1 * !A2 * !B2 * !X)	0.00137	0.00137	0.00137
	(!A1 * !B2 * !X)	-0.00033	-0.00033	-0.00033
	(!A1 * !B2 * !X)	0.00137	0.00137	0.00137
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	-0.00166	-0.00167	-0.00186
	(A1 * A2 * B2 * X)	0.00137	0.00136	0.00122
	(A1 * A2 * !B2 * X)	-0.00174	-0.00181	-0.00179
	(A1 * A2 * !B2 * X)	0.00118	0.00119	0.00117
	(A1 * !A2 * !B2 * !X)	-0.00055	-0.00055	-0.00055
	(A1 * !A2 * !B2 * !X)	0.00261	0.00261	0.00261
	(!A1 * !B2 * !X)	-0.00055	-0.00055	-0.00055
	(!A1 * !B2 * !X)	0.00261	0.00261	0.00261

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)	0.00106	0.00107	0.00107
	(A1 * A2 * B1 * X)	-0.00065	-0.00065	-0.00065
	(A1 * A2 * !B1 * X)	0.00102	0.00102	0.00102
	(A1 * A2 * !B1 * X)	-0.00065	-0.00065	-0.00065
	(A1 * !A2 * !B1 * !X)	0.00087	0.00088	0.00087
	(A1 * !A2 * !B1 * !X)	-0.00119	-0.00119	-0.00118
	(!A1 * !B1 * !X)	0.00093	0.00094	0.00093
	(!A1 * !B1 * !X)	-0.00118	-0.00119	-0.00118
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	0.00111	0.00112	0.00111
	(A1 * A2 * B1 * X)	-0.00062	-0.00062	-0.00062
	(A1 * A2 * !B1 * X)	0.00106	0.00108	0.00106
	(A1 * A2 * !B1 * X)	-0.00062	-0.00062	-0.00062
	(A1 * !A2 * !B1 * !X)	0.00096	0.00097	0.00096
	(A1 * !A2 * !B1 * !X)	-0.00114	-0.00114	-0.00113
	(!A1 * !B1 * !X)	0.00098	0.00100	0.00099
	(!A1 * !B1 * !X)	-0.00113	-0.00114	-0.00113
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	0.00206	0.00206	0.00206
	(A1 * A2 * B1 * X)	-0.00129	-0.00130	-0.00129
	(A1 * A2 * !B1 * X)	0.00199	0.00200	0.00198
	(A1 * A2 * !B1 * X)	-0.00128	-0.00129	-0.00129
	(A1 * !A2 * !B1 * !X)	0.00157	0.00159	0.00158
	(A1 * !A2 * !B1 * !X)	-0.00258	-0.00259	-0.00258
	(!A1 * !B1 * !X)	0.00157	0.00159	0.00158
	(!A1 * !B1 * !X)	-0.00258	-0.00259	-0.00258

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)	-0.00096	-0.00096	-0.00105
	(A1 * A2 * B1 * X)	0.00075	0.00074	0.00067
	(A1 * A2 * !B1 * X)	-0.00100	-0.00102	-0.00102
	(A1 * A2 * !B1 * X)	0.00065	0.00066	0.00065
	(A1 * !A2 * !B1 * !X)	-0.00082	-0.00087	-0.00087
	(A1 * !A2 * !B1 * !X)	0.00123	0.00119	0.00119
	(!A1 * !B1 * !X)	-0.00088	-0.00092	-0.00093
	(!A1 * !B1 * !X)	0.00122	0.00119	0.00118
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	-0.00101	-0.00101	-0.00110
	(A1 * A2 * B1 * X)	0.00072	0.00071	0.00064
	(A1 * A2 * !B1 * X)	-0.00103	-0.00107	-0.00106
	(A1 * A2 * !B1 * X)	0.00062	0.00062	0.00062
	(A1 * !A2 * !B1 * !X)	-0.00091	-0.00096	-0.00096
	(A1 * !A2 * !B1 * !X)	0.00118	0.00115	0.00114
	(!A1 * !B1 * !X)	-0.00093	-0.00099	-0.00099
	(!A1 * !B1 * !X)	0.00117	0.00115	0.00114
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	-0.00183	-0.00184	-0.00203
	(A1 * A2 * B1 * X)	0.00149	0.00147	0.00134
	(A1 * A2 * !B1 * X)	-0.00192	-0.00198	-0.00198
	(A1 * A2 * !B1 * X)	0.00128	0.00130	0.00129
	(A1 * !A2 * !B1 * !X)	-0.00148	-0.00159	-0.00158
	(A1 * !A2 * !B1 * !X)	0.00264	0.00261	0.00259
	(!A1 * !B1 * !X)	-0.00148	-0.00159	-0.00158
	(!A1 * !B1 * !X)	0.00263	0.00261	0.00259

SKY130_FD_SC_HS__A2BB2OIx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a2bb2oi_1	11.18880
sky130_fd_sc_hs__a2bb2oi_2	17.58240
sky130_fd_sc_hs__a2bb2oi_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1_N	A2_N	B1	B2	Y
sky130_fd_sc_hs__a2bb2oi_1	0.00224	0.00244	0.00259	0.00278	0.33969
sky130_fd_sc_hs__a2bb2oi_2	0.00246	0.00256	0.00503	0.00510	0.68378
sky130_fd_sc_hs__a2bb2oi_4	0.00386	0.00407	0.00999	0.01024	1.27890

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2bb2oi_1	0.00000	0.03549	0.08196
sky130_fd_sc_hs__a2bb2oi_2	0.00000	0.04970	0.10343
sky130_fd_sc_hs__a2bb2oi_4	0.00000	0.09589	0.20686

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)	0.16184	1.05621	7.49225
	A2_N->Y (RR)	0.15571	1.03006	7.41890
	B1->Y (FR)	0.15549	1.27525	11.81250
	B2->Y (FR)	0.12296	1.20392	11.44110
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (RR)	0.14488	0.87063	7.44014
	A2_N->Y (RR)	0.14019	0.85462	7.39248
	B1->Y (FR)	0.14236	1.08846	11.79320
	B2->Y (FR)	0.10645	1.04092	11.62830
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (RR)	0.16942	0.82625	7.85491
	A2_N->Y (RR)	0.15774	0.79310	7.75119
	B1->Y (FR)	0.14008	0.95643	11.69420
	B2->Y (FR)	0.10302	0.90486	11.42920

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)	0.17579	0.65369	3.38231
	A2_N->Y (FF)	0.15927	0.61299	3.07375
	B1->Y (RF)	0.03923	0.46376	4.45536
	B2->Y (RF)	0.03516	0.48828	4.79021
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (FF)	0.22829	0.72180	3.79544
	A2_N->Y (FF)	0.21106	0.68848	3.50276
	B1->Y (RF)	0.03984	0.43407	4.73492
	B2->Y (RF)	0.03274	0.45516	5.13407
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (FF)	0.22562	0.69467	3.64192
	A2_N->Y (FF)	0.19559	0.64265	3.30802
	B1->Y (RF)	0.03902	0.37937	4.61236
	B2->Y (RF)	0.03294	0.41262	5.19630

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	0.00639	0.00628	0.00792
	A1_N	0.00419	0.00408	0.00573
	A2_N	0.00537	0.00514	0.00796
	A2_N	0.00364	0.00342	0.00624
	B1	0.00111	0.00102	0.00111
	B1	0.00449	0.00441	0.00452
	B2	0.00068	0.00059	0.00067
	B2	0.00352	0.00342	0.00352
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.00950	0.00944	0.01154
	A1_N	0.00797	0.00791	0.01004
	A2_N	0.00829	0.00811	0.01125
	A2_N	0.00734	0.00717	0.01031
	B1	0.00250	0.00230	0.00249
	B1	0.00927	0.00908	0.00926
	B2	0.00136	0.00121	0.00143
	B2	0.00675	0.00663	0.00681
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.01716	0.01692	0.01955
	A1_N	0.01536	0.01512	0.01782
	A2_N	0.01481	0.01459	0.01912
	A2_N	0.01390	0.01368	0.01828
	B1	0.00461	0.00422	0.00464
	B1	0.01827	0.01785	0.01826
	B2	0.00263	0.00231	0.00282
	B2	0.01361	0.01330	0.01383

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	A1_N	0.00334	0.00345	0.00477
	A1_N	0.00550	0.00560	0.00694
	A2_N	0.00333	0.00364	0.00668
	A2_N	0.00500	0.00525	0.00836
	B1	0.00428	0.00419	0.00428
	B1	0.00090	0.00078	0.00089
	B2	0.00370	0.00357	0.00382
	B2	0.00089	0.00077	0.00097
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.00551	0.00588	0.00738
	A1_N	0.00693	0.00730	0.00880
	A2_N	0.00567	0.00619	0.00949
	A2_N	0.00643	0.00691	0.01021
	B1	0.00818	0.00792	0.00831
	B1	0.00138	0.00113	0.00135
	B2	0.00673	0.00649	0.00711
	B2	0.00141	0.00113	0.00154
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.01154	0.01235	0.01426
	A1_N	0.01317	0.01397	0.01588
	A2_N	0.01122	0.01226	0.01770
	A2_N	0.01177	0.01248	0.01817
	B1	0.01617	0.01560	0.01627
	B1	0.00246	0.00191	0.00244
	B2	0.01329	0.01272	0.01408
	B2	0.00248	0.00189	0.00278

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)	0.00095	0.00083	0.00081
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00101	-0.00114	-0.00115
	(!A2_N * B1 * B2 * !Y)	0.00416	0.00399	0.00550
	(!A2_N * B1 * B2 * !Y)	0.00106	0.00089	0.00242
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00122	0.00110	0.00108
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00097	-0.00110	-0.00112
	(!A2_N * B1 * B2 * !Y)	0.00530	0.00515	0.00698
	(!A2_N * B1 * B2 * !Y)	0.00192	0.00176	0.00362
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00140	0.00116	0.00114
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00197	-0.00226	-0.00228
	(!A2_N * B1 * B2 * !Y)	0.00919	0.00879	0.01103
	(!A2_N * B1 * B2 * !Y)	0.00367	0.00326	0.00556

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)	-0.00080	-0.00081	-0.00080
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00115	0.00116	0.00115
	(!A2_N * B1 * B2 * !Y)	0.00113	0.00102	0.00245
	(!A2_N * B1 * B2 * !Y)	0.00420	0.00409	0.00552
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00107	-0.00108	-0.00107
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00111	0.00112	0.00112
	(!A2_N * B1 * B2 * !Y)	0.00193	0.00180	0.00334
	(!A2_N * B1 * B2 * !Y)	0.00527	0.00514	0.00668
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00113	-0.00113	-0.00112
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00227	0.00228	0.00228
	(!A2_N * B1 * B2 * !Y)	0.00439	0.00418	0.00627
	(!A2_N * B1 * B2 * !Y)	0.00983	0.00965	0.01172

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)	0.00096	0.00096	0.00096
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00062	-0.00062	-0.00062
	(!A1_N * B1 * B2 * !Y)	0.00318	0.00293	0.00571
	(!A1_N * B1 * B2 * !Y)	0.00055	0.00031	0.00309
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00108	0.00109	0.00109
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00061	-0.00061	-0.00061
	(!A1_N * B1 * B2 * !Y)	0.00420	0.00396	0.00701
	(!A1_N * B1 * B2 * !Y)	0.00139	0.00115	0.00421
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00157	0.00156	0.00156
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00126	-0.00125	-0.00125
	(!A1_N * B1 * B2 * !Y)	0.00678	0.00635	0.01049
	(!A1_N * B1 * B2 * !Y)	0.00211	0.00167	0.00585

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)	-0.00092	-0.00092	-0.00096
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00066	0.00065	0.00063
	(!A1_N * B1 * B2 * !Y)	0.00111	0.00118	0.00443
	(!A1_N * B1 * B2 * !Y)	0.00372	0.00379	0.00704
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00105	-0.00104	-0.00108
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00066	0.00065	0.00063
	(!A1_N * B1 * B2 * !Y)	0.00208	0.00212	0.00561
	(!A1_N * B1 * B2 * !Y)	0.00486	0.00490	0.00839
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00142	-0.00142	-0.00155
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00138	0.00137	0.00129
	(!A1_N * B1 * B2 * !Y)	0.00407	0.00405	0.00956
	(!A1_N * B1 * B2 * !Y)	0.00866	0.00865	0.01416

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)	0.00102	0.00102	0.00101
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00126	-0.00126	-0.00125
	(!A1_N * !A2_N * B2 * !Y)	0.00114	0.00108	0.00107
	(!A1_N * !A2_N * B2 * !Y)	-0.00114	-0.00123	-0.00123
	(!A1_N * !A2_N * !B2 * !Y)	0.00101	0.00102	0.00101
	(!A1_N * !A2_N * !B2 * !Y)	-0.00125	-0.00126	-0.00126
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00194	0.00196	0.00194
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00255	-0.00256	-0.00254
	(!A1_N * !A2_N * B2 * !Y)	0.00220	0.00208	0.00206
	(!A1_N * !A2_N * B2 * !Y)	-0.00232	-0.00249	-0.00250
	(!A1_N * !A2_N * !B2 * !Y)	0.00194	0.00196	0.00194
	(!A1_N * !A2_N * !B2 * !Y)	-0.00254	-0.00256	-0.00255
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00386	0.00390	0.00387
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00509	-0.00512	-0.00510
	(!A1_N * !A2_N * B2 * !Y)	0.00444	0.00416	0.00412
	(!A1_N * !A2_N * B2 * !Y)	-0.00459	-0.00498	-0.00501
	(!A1_N * !A2_N * !B2 * !Y)	0.00385	0.00391	0.00386
	(!A1_N * !A2_N * !B2 * !Y)	-0.00509	-0.00513	-0.00510

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)	-0.00096	-0.00102	-0.00101
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00128	0.00127	0.00126
	(!A1_N * !A2_N * B2 * !Y)	-0.00107	-0.00107	-0.00107
	(!A1_N * !A2_N * B2 * !Y)	0.00124	0.00124	0.00123
	(!A1_N * !A2_N * !B2 * !Y)	-0.00098	-0.00102	-0.00101
	(!A1_N * !A2_N * !B2 * !Y)	0.00125	0.00127	0.00126
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00183	-0.00195	-0.00194
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00260	0.00258	0.00255
	(!A1_N * !A2_N * B2 * !Y)	-0.00205	-0.00206	-0.00205
	(!A1_N * !A2_N * B2 * !Y)	0.00249	0.00249	0.00250
	(!A1_N * !A2_N * !B2 * !Y)	-0.00187	-0.00195	-0.00194
	(!A1_N * !A2_N * !B2 * !Y)	0.00254	0.00258	0.00255
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00364	-0.00388	-0.00387
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00527	0.00518	0.00512
	(!A1_N * !A2_N * B2 * !Y)	-0.00412	-0.00410	-0.00411
	(!A1_N * !A2_N * B2 * !Y)	0.00501	0.00498	0.00501
	(!A1_N * !A2_N * !B2 * !Y)	-0.00375	-0.00390	-0.00386
	(!A1_N * !A2_N * !B2 * !Y)	0.00513	0.00516	0.00512

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)	0.00046	0.00046	0.00045
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00149	-0.00149	-0.00151
	(!A1_N * !A2_N * B1 * !Y)	0.00113	0.00107	0.00106
	(!A1_N * !A2_N * B1 * !Y)	-0.00122	-0.00132	-0.00132
	(!A1_N * !A2_N * !B1 * !Y)	0.00101	0.00101	0.00100
	(!A1_N * !A2_N * !B1 * !Y)	-0.00134	-0.00135	-0.00134
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00078	0.00078	0.00073
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00289	-0.00291	-0.00296
	(!A1_N * !A2_N * B1 * !Y)	0.00217	0.00207	0.00205
	(!A1_N * !A2_N * B1 * !Y)	-0.00230	-0.00247	-0.00248
	(!A1_N * !A2_N * !B1 * !Y)	0.00194	0.00196	0.00195
	(!A1_N * !A2_N * !B1 * !Y)	-0.00252	-0.00253	-0.00252
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00145	0.00146	0.00138
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00589	-0.00596	-0.00605
	(!A1_N * !A2_N * B1 * !Y)	0.00440	0.00413	0.00409
	(!A1_N * !A2_N * B1 * !Y)	-0.00461	-0.00503	-0.00503
	(!A1_N * !A2_N * !B1 * !Y)	0.00385	0.00389	0.00386
	(!A1_N * !A2_N * !B1 * !Y)	-0.00511	-0.00515	-0.00512

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)	-0.00044	-0.00044	-0.00043
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00151	0.00152	0.00151
	(!A1_N * !A2_N * B1 * !Y)	-0.00106	-0.00107	-0.00106
	(!A1_N * !A2_N * B1 * !Y)	0.00132	0.00134	0.00132
	(!A1_N * !A2_N * !B1 * !Y)	-0.00097	-0.00101	-0.00100
	(!A1_N * !A2_N * !B1 * !Y)	0.00134	0.00136	0.00135
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00071	-0.00071	-0.00071
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00298	0.00299	0.00297
	(!A1_N * !A2_N * B1 * !Y)	-0.00205	-0.00205	-0.00205
	(!A1_N * !A2_N * B1 * !Y)	0.00248	0.00247	0.00248
	(!A1_N * !A2_N * !B1 * !Y)	-0.00185	-0.00196	-0.00195
	(!A1_N * !A2_N * !B1 * !Y)	0.00252	0.00256	0.00253
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00135	-0.00135	-0.00133
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00608	0.00610	0.00606
	(!A1_N * !A2_N * B1 * !Y)	-0.00408	-0.00409	-0.00408
	(!A1_N * !A2_N * B1 * !Y)	0.00500	0.00503	0.00503
	(!A1_N * !A2_N * !B1 * !Y)	-0.00368	-0.00389	-0.00386
	(!A1_N * !A2_N * !B1 * !Y)	0.00511	0.00520	0.00514

SKY130_FD_SC_HS__A2BB2Ox

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a2bb2o_1	14.38560
sky130_fd_sc_hs__a2bb2o_2	15.98400
sky130_fd_sc_hs__a2bb2o_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1_N	A2_N	B1	B2	X
sky130_fd_sc_hs__a2bb2o_1	0.00221	0.00229	0.00242	0.00235	0.75717
sky130_fd_sc_hs__a2bb2o_2	0.00233	0.00239	0.00254	0.00273	1.36590
sky130_fd_sc_hs__a2bb2o_4	0.00254	0.00270	0.00457	0.00462	2.86318

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2bb2o_1	0.00000	0.06390	0.11155
sky130_fd_sc_hs__a2bb2o_2	0.00000	0.07823	0.11777
sky130_fd_sc_hs__a2bb2o_4	0.00000	0.12120	0.14907

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)	0.24695	1.09615	9.00735
	A2_N->X (FR)	0.22762	1.05195	8.67901
	B1->X (RR)	0.11118	0.79697	7.10715
	B2->X (RR)	0.10568	0.78691	6.97504
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (FR)	0.25287	0.99652	8.94010
	A2_N->X (FR)	0.23396	0.95281	8.62064
	B1->X (RR)	0.10919	0.70122	7.13039
	B2->X (RR)	0.10563	0.70235	7.03923
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (FR)	0.31262	0.98666	9.34773
	A2_N->X (FR)	0.29529	0.95374	9.06180
	B1->X (RR)	0.12184	0.62868	7.24321
	B2->X (RR)	0.11499	0.62429	7.12649

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)	0.23898	0.59247	2.55105
	A2_N->X (RF)	0.23097	0.56605	2.47527
	B1->X (FF)	0.23125	0.80344	4.85759
	B2->X (FF)	0.19834	0.75933	4.70239
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (RF)	0.29440	0.63338	2.48525
	A2_N->X (RF)	0.28653	0.60330	2.40552
	B1->X (FF)	0.28686	0.85368	5.03974
	B2->X (FF)	0.25447	0.81134	4.89804
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (RF)	0.28133	0.59762	2.64763
	A2_N->X (RF)	0.27220	0.57292	2.57422
	B1->X (FF)	0.28495	0.82295	5.22009
	B2->X (FF)	0.24684	0.77567	5.06072

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	0.00582	0.00584	0.00719
	A1_N	0.00780	0.00783	0.00925
	A2_N	0.00578	0.00588	0.00930
	A2_N	0.00724	0.00734	0.01082
	B1	0.00664	0.00666	0.00790
	B1	0.00327	0.00328	0.00456
	B2	0.00593	0.00592	0.00792
	B2	0.00327	0.00326	0.00527
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.00763	0.00797	0.00931
	A1_N	0.00976	0.01010	0.01157
	A2_N	0.00767	0.00805	0.01149
	A2_N	0.00920	0.00960	0.01305
	B1	0.00856	0.00880	0.01000
	B1	0.00516	0.00540	0.00669
	B2	0.00796	0.00812	0.00998
	B2	0.00517	0.00533	0.00724
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.01252	0.01330	0.01467
	A1_N	0.01409	0.01484	0.01666
	A2_N	0.01247	0.01332	0.01662
	A2_N	0.01349	0.01436	0.01792
	B1	0.01564	0.01612	0.01863
	B1	0.00929	0.00979	0.01250
	B2	0.01433	0.01471	0.01882
	B2	0.00931	0.00970	0.01394

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	A1_N	0.00840	0.00834	0.00991
	A1_N	0.00639	0.00632	0.00783
	A2_N	0.00728	0.00728	0.00999
	A2_N	0.00577	0.00569	0.00845
	B1	0.00323	0.00324	0.00481
	B1	0.00659	0.00669	0.00782
	B2	0.00305	0.00309	0.00470
	B2	0.00574	0.00577	0.00708
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.01008	0.01039	0.01190
	A1_N	0.00791	0.00813	0.00970
	A2_N	0.00896	0.00929	0.01198
	A2_N	0.00736	0.00755	0.01033
	B1	0.00482	0.00505	0.00687
	B1	0.00819	0.00857	0.00969
	B2	0.00457	0.00477	0.00659
	B2	0.00739	0.00766	0.00887
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.01697	0.01791	0.02013
	A1_N	0.01527	0.01602	0.01810
	A2_N	0.01568	0.01665	0.01993
	A2_N	0.01452	0.01534	0.01843
	B1	0.01020	0.01090	0.01469
	B1	0.01650	0.01717	0.01942
	B2	0.00941	0.00996	0.01319
	B2	0.01452	0.01514	0.01759

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)	0.00101	0.00089	0.00087
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00094	-0.00107	-0.00109
	(!A2_N * B1 * B2 * X)	0.00401	0.00384	0.00537
	(!A2_N * B1 * B2 * X)	0.00104	0.00086	0.00241
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00105	0.00092	0.00090
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00100	-0.00114	-0.00115
	(!A2_N * B1 * B2 * X)	0.00410	0.00392	0.00544
	(!A2_N * B1 * B2 * X)	0.00097	0.00078	0.00233
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00115	0.00103	0.00102
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00109	-0.00122	-0.00123
	(!A2_N * B1 * B2 * X)	0.00536	0.00518	0.00697
	(!A2_N * B1 * B2 * X)	0.00186	0.00166	0.00348

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)	-0.00086	-0.00087	-0.00086
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00108	0.00110	0.00109
	(!A2_N * B1 * B2 * X)	0.00111	0.00101	0.00245
	(!A2_N * B1 * B2 * X)	0.00406	0.00397	0.00540
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00090	-0.00090	-0.00089
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00114	0.00116	0.00115
	(!A2_N * B1 * B2 * X)	0.00104	0.00093	0.00237
	(!A2_N * B1 * B2 * X)	0.00415	0.00404	0.00548
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00101	-0.00102	-0.00101
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00123	0.00124	0.00123
	(!A2_N * B1 * B2 * X)	0.00096	0.00082	0.00227
	(!A2_N * B1 * B2 * X)	0.00442	0.00429	0.00575

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)	0.00096	0.00096	0.00096
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00058	-0.00059	-0.00059
	(!A1_N * B1 * B2 * X)	0.00296	0.00275	0.00556
	(!A1_N * B1 * B2 * X)	0.00049	0.00028	0.00309
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00097	0.00097	0.00097
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00058	-0.00059	-0.00058
	(!A1_N * B1 * B2 * X)	0.00302	0.00280	0.00560
	(!A1_N * B1 * B2 * X)	0.00048	0.00025	0.00306
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00115	0.00115	0.00115
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00065	-0.00065	-0.00065
	(!A1_N * B1 * B2 * X)	0.00425	0.00400	0.00684
	(!A1_N * B1 * B2 * X)	0.00128	0.00102	0.00388

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)	-0.00092	-0.00092	-0.00095
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00063	0.00062	0.00060
	(!A1_N * B1 * B2 * X)	0.00110	0.00120	0.00445
	(!A1_N * B1 * B2 * X)	0.00356	0.00366	0.00690
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00093	-0.00093	-0.00096
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00063	0.00062	0.00060
	(!A1_N * B1 * B2 * X)	0.00108	0.00116	0.00441
	(!A1_N * B1 * B2 * X)	0.00360	0.00370	0.00695
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00110	-0.00110	-0.00114
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00070	0.00069	0.00066
	(!A1_N * B1 * B2 * X)	0.00095	0.00096	0.00407
	(!A1_N * B1 * B2 * X)	0.00388	0.00390	0.00701

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)	0.00107	0.00108	0.00107
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00114	-0.00115	-0.00114
	(!A1_N * !A2_N * B2 * X)	0.00118	0.00112	0.00111
	(!A1_N * !A2_N * B2 * X)	-0.00104	-0.00113	-0.00113
	(!A1_N * !A2_N * !B2 * X)	0.00107	0.00107	0.00106
	(!A1_N * !A2_N * !B2 * X)	-0.00114	-0.00115	-0.00114
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00102	0.00103	0.00102
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00116	-0.00117	-0.00116
	(!A1_N * !A2_N * B2 * X)	0.00116	0.00108	0.00108
	(!A1_N * !A2_N * B2 * X)	-0.00104	-0.00114	-0.00115
	(!A1_N * !A2_N * !B2 * X)	0.00101	0.00103	0.00101
	(!A1_N * !A2_N * !B2 * X)	-0.00116	-0.00118	-0.00117
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00171	0.00172	0.00171
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00234	-0.00235	-0.00234
	(!A1_N * !A2_N * B2 * X)	0.00200	0.00184	0.00182
	(!A1_N * !A2_N * B2 * X)	-0.00208	-0.00229	-0.00230
	(!A1_N * !A2_N * !B2 * X)	0.00172	0.00173	0.00171
	(!A1_N * !A2_N * !B2 * X)	-0.00234	-0.00235	-0.00234

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)	-0.00103	-0.00107	-0.00107
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00117	0.00116	0.00115
	(!A1_N * !A2_N * B2 * X)	-0.00110	-0.00111	-0.00110
	(!A1_N * !A2_N * B2 * X)	0.00112	0.00114	0.00113
	(!A1_N * !A2_N * !B2 * X)	-0.00104	-0.00107	-0.00106
	(!A1_N * !A2_N * !B2 * X)	0.00115	0.00116	0.00115
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00097	-0.00103	-0.00102
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00121	0.00119	0.00117
	(!A1_N * !A2_N * B2 * X)	-0.00108	-0.00108	-0.00107
	(!A1_N * !A2_N * B2 * X)	0.00115	0.00115	0.00115
	(!A1_N * !A2_N * !B2 * X)	-0.00099	-0.00102	-0.00101
	(!A1_N * !A2_N * !B2 * X)	0.00117	0.00118	0.00117
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00160	-0.00172	-0.00171
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00241	0.00237	0.00235
	(!A1_N * !A2_N * B2 * X)	-0.00181	-0.00183	-0.00181
	(!A1_N * !A2_N * B2 * X)	0.00229	0.00234	0.00230
	(!A1_N * !A2_N * !B2 * X)	-0.00165	-0.00172	-0.00171
	(!A1_N * !A2_N * !B2 * X)	0.00234	0.00236	0.00234

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)	0.00042	0.00042	0.00041
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00130	-0.00131	-0.00132
	(!A1_N * !A2_N * B1 * X)	0.00094	0.00086	0.00086
	(!A1_N * !A2_N * B1 * X)	-0.00114	-0.00123	-0.00124
	(!A1_N * !A2_N * !B1 * X)	0.00081	0.00082	0.00081
	(!A1_N * !A2_N * !B1 * X)	-0.00125	-0.00126	-0.00125
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00042	0.00042	0.00040
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00142	-0.00142	-0.00144
	(!A1_N * !A2_N * B1 * X)	0.00116	0.00107	0.00106
	(!A1_N * !A2_N * B1 * X)	-0.00111	-0.00121	-0.00122
	(!A1_N * !A2_N * !B1 * X)	0.00099	0.00100	0.00099
	(!A1_N * !A2_N * !B1 * X)	-0.00124	-0.00125	-0.00124
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00071	0.00071	0.00067
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00263	-0.00264	-0.00269
	(!A1_N * !A2_N * B1 * X)	0.00200	0.00184	0.00182
	(!A1_N * !A2_N * B1 * X)	-0.00210	-0.00229	-0.00230
	(!A1_N * !A2_N * !B1 * X)	0.00170	0.00172	0.00171
	(!A1_N * !A2_N * !B1 * X)	-0.00233	-0.00235	-0.00233

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)	-0.00040	-0.00040	-0.00040
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00133	0.00133	0.00133
	(!A1_N * !A2_N * B1 * X)	-0.00086	-0.00086	-0.00085
	(!A1_N * !A2_N * B1 * X)	0.00124	0.00124	0.00124
	(!A1_N * !A2_N * !B1 * X)	-0.00079	-0.00082	-0.00081
	(!A1_N * !A2_N * !B1 * X)	0.00126	0.00126	0.00125
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00039	-0.00039	-0.00039
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00144	0.00145	0.00144
	(!A1_N * !A2_N * B1 * X)	-0.00106	-0.00106	-0.00105
	(!A1_N * !A2_N * B1 * X)	0.00123	0.00122	0.00122
	(!A1_N * !A2_N * !B1 * X)	-0.00097	-0.00100	-0.00099
	(!A1_N * !A2_N * !B1 * X)	0.00125	0.00126	0.00125
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00066	-0.00066	-0.00065
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00271	0.00271	0.00270
	(!A1_N * !A2_N * B1 * X)	-0.00181	-0.00183	-0.00181
	(!A1_N * !A2_N * B1 * X)	0.00229	0.00233	0.00230
	(!A1_N * !A2_N * !B1 * X)	-0.00165	-0.00172	-0.00171
	(!A1_N * !A2_N * !B1 * X)	0.00235	0.00237	0.00234

SKY130_FD_SC_HS__A311OIx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a311oi_1	11.18880
sky130_fd_sc_hs__a311oi_2	19.18080
sky130_fd_sc_hs__a311oi_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	C1	Y
sky130_fd_sc_hs__a311oi_1	0.00278	0.00283	0.00274	0.00291	0.00277	0.22463
sky130_fd_sc_hs__a311oi_2	0.00527	0.00504	0.00486	0.00420	0.00410	0.43402
sky130_fd_sc_hs__a311oi_4	0.01019	0.00984	0.00985	0.00787	0.00800	0.79626

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a311oi_1	0.00000	0.01124	0.02834
sky130_fd_sc_hs__a311oi_2	0.00000	0.02065	0.05668
sky130_fd_sc_hs__a311oi_4	0.00000	0.04129	0.11335

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)	0.24706	1.43180	11.12390
	A2->Y (FR)	0.30436	1.51837	11.39530
	A3->Y (FR)	0.33109	1.53354	11.28090
	B1->Y (FR)	0.26674	1.48775	11.79970
	C1->Y (FR)	0.20967	1.40224	11.48800
sky130_fd_sc_hs__a311oi_2	A1->Y (FR)	0.20736	1.22683	11.16770
	A2->Y (FR)	0.25648	1.28188	11.26600
	A3->Y (FR)	0.30228	1.33455	11.32960
	B1->Y (FR)	0.26013	1.30100	11.79300
	C1->Y (FR)	0.19010	1.20315	11.47420
sky130_fd_sc_hs__a311oi_4	A1->Y (FR)	0.19323	1.05218	10.84790
	A2->Y (FR)	0.24863	1.11685	11.03520
	A3->Y (FR)	0.30164	1.18623	11.21190
	B1->Y (FR)	0.25566	1.15122	11.73460
	C1->Y (FR)	0.18752	1.05920	11.43650

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311oi_1	A1->Y (RF)	0.05580	0.52967	4.47827
	A2->Y (RF)	0.06555	0.51873	4.29216
	A3->Y (RF)	0.06922	0.48012	3.83743
	B1->Y (RF)	0.03040	0.37139	3.22531
	C1->Y (RF)	0.02729	0.36131	3.21872
sky130_fd_sc_hs__a311oi_2	A1->Y (RF)	0.04842	0.50839	4.87976
	A2->Y (RF)	0.05819	0.47539	4.42450
	A3->Y (RF)	0.06430	0.44270	3.94567
	B1->Y (RF)	0.03791	0.44870	4.51906
	C1->Y (RF)	0.03022	0.43074	4.48925
sky130_fd_sc_hs__a311oi_4	A1->Y (RF)	0.04733	0.46298	4.89940
	A2->Y (RF)	0.05808	0.43250	4.41563
	A3->Y (RF)	0.06392	0.39210	3.82432
	B1->Y (RF)	0.03461	0.39368	4.35008
	C1->Y (RF)	0.02906	0.38887	4.54568

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311oi_1	A1	0.00047	0.00030	0.00035
	A1	0.00534	0.00517	0.00522
	A2	0.00092	0.00073	0.00078
	A2	0.00644	0.00627	0.00632
	A3	0.00111	0.00097	0.00102
	A3	0.00729	0.00717	0.00720
	B1	0.00121	0.00104	0.00118
	B1	0.00658	0.00642	0.00654
	C1	0.00115	0.00107	0.00176
	C1	0.00592	0.00585	0.00622
sky130_fd_sc_hs__a311oi_2	A1	0.00013	-0.00013	-0.00004
	A1	0.00909	0.00883	0.00892
	A2	0.00101	0.00074	0.00082
	A2	0.01116	0.01090	0.01097
	A3	0.00197	0.00173	0.00181
	A3	0.01331	0.01308	0.01311
	B1	0.00266	0.00250	0.00261
	B1	0.01146	0.01130	0.01138
	C1	0.00259	0.00249	0.00335
	C1	0.01004	0.00995	0.01077

sky130_fd_sc_hs__a311oi_4	**A1**	-0.00020	-0.00069	-0.00042
	A1	0.01728	0.01679	0.01710
	A2	0.00160	0.00099	0.00121
	A2	0.02155	0.02089	0.02120
	A3	0.00330	0.00281	0.00299
	A3	0.02585	0.02539	0.02553
	B1	0.00467	0.00437	0.00466
	B1	0.02195	0.02161	0.02189
	C1	0.00457	0.00441	0.00611
	C1	0.01933	0.01918	0.01983

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311oi_1	**A1**	0.00642	0.00628	0.00649
	A1	0.00168	0.00151	0.00171
	A2	0.00712	0.00700	0.00703
	A2	0.00166	0.00150	0.00160
	A3	0.00781	0.00767	0.00776
	A3	0.00164	0.00148	0.00155
	B1	0.00610	0.00603	0.00627
	B1	0.00063	0.00052	0.00079
	C1	0.00483	0.00485	0.00511
	C1	-0.00005	-0.00009	0.00019

sky130_fd_sc_hs__a311oi_2	**A1**	0.01189	0.01159	0.01190
	A1	0.00326	0.00292	0.00331
	A2	0.01323	0.01291	0.01318
	A2	0.00328	0.00297	0.00315
	A3	0.01452	0.01425	0.01431
	A3	0.00327	0.00296	0.00310
	B1	0.00998	0.00978	0.01014
	B1	0.00098	0.00070	0.00103
	C1	0.00685	0.00689	0.00732
	C1	-0.00085	-0.00091	-0.00052
sky130_fd_sc_hs__a311oi_4	**A1**	0.02294	0.02228	0.02318
	A1	0.00608	0.00537	0.00621
	A2	0.02563	0.02502	0.02552
	A2	0.00606	0.00540	0.00582
	A3	0.02846	0.02786	0.02841
	A3	0.00603	0.00538	0.00571
	B1	0.01928	0.01883	0.01974
	B1	0.00156	0.00098	0.00173
	C1	0.01348	0.01348	0.01453
	C1	-0.00178	-0.00198	-0.00103

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)**	0.00107	0.00107	0.00107
	(A2 * A3 * B1 * C1 * !Y)	-0.00115	-0.00121	-0.00120
	(A2 * A3 * B1 * !C1 * !Y)	0.00108	0.00107	0.00107
	(A2 * A3 * B1 * !C1 * !Y)	-0.00115	-0.00121	-0.00120
	(A2 * A3 * !B1 * C1 * !Y)	0.00107	0.00108	0.00106
	(A2 * A3 * !B1 * C1 * !Y)	-0.00109	-0.00117	-0.00116
	(A2 * !A3 * B1 * C1 * !Y)	0.00098	0.00099	0.00098
	(A2 * !A3 * B1 * C1 * !Y)	-0.00124	-0.00124	-0.00124
	(A2 * !A3 * B1 * !C1 * !Y)	0.00098	0.00099	0.00098
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00124	-0.00124	-0.00124
	(A2 * !A3 * !B1 * C1 * !Y)	0.00098	0.00099	0.00098
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00123	-0.00124	-0.00124
	(A2 * !A3 * !B1 * !C1 * Y)	0.00035	0.00035	0.00032
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00145	-0.00146	-0.00151
	(!A2 * B1 * C1 * !Y)	0.00101	0.00102	0.00101
	(!A2 * B1 * C1 * !Y)	-0.00124	-0.00124	-0.00124
	(!A2 * B1 * !C1 * !Y)	0.00101	0.00102	0.00101
	(!A2 * B1 * !C1 * !Y)	-0.00124	-0.00124	-0.00124
	(!A2 * !B1 * C1 * !Y)	0.00101	0.00101	0.00101
	(!A2 * !B1 * C1 * !Y)	-0.00124	-0.00124	-0.00124
	(!A2 * !B1 * !C1 * Y)	0.00036	0.00036	0.00034
	(!A2 * !B1 * !C1 * Y)	-0.00149	-0.00150	-0.00152

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	0.00207	0.00207	0.00208
	(A2 * A3 * B1 * C1 * !Y)	-0.00239	-0.00250	-0.00250
	(A2 * A3 * B1 * !C1 * !Y)	0.00209	0.00211	0.00208
	(A2 * A3 * B1 * !C1 * !Y)	-0.00240	-0.00252	-0.00250
	(A2 * A3 * !B1 * C1 * !Y)	0.00209	0.00211	0.00208
	(A2 * A3 * !B1 * C1 * !Y)	-0.00228	-0.00243	-0.00242
	(A2 * !A3 * B1 * C1 * !Y)	0.00191	0.00194	0.00192
	(A2 * !A3 * B1 * C1 * !Y)	-0.00258	-0.00260	-0.00258
	(A2 * !A3 * B1 * !C1 * !Y)	0.00191	0.00194	0.00192
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00258	-0.00260	-0.00258
	(A2 * !A3 * !B1 * C1 * !Y)	0.00192	0.00194	0.00192
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00258	-0.00260	-0.00258
	(A2 * !A3 * !B1 * !C1 * Y)	0.00077	0.00078	0.00070
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00289	-0.00292	-0.00304
	(!A2 * B1 * C1 * !Y)	0.00197	0.00198	0.00197
	(!A2 * B1 * C1 * !Y)	-0.00258	-0.00259	-0.00258
	(!A2 * B1 * !C1 * !Y)	0.00197	0.00200	0.00197
	(!A2 * B1 * !C1 * !Y)	-0.00259	-0.00260	-0.00258
	(!A2 * !B1 * C1 * !Y)	0.00197	0.00198	0.00197
	(!A2 * !B1 * C1 * !Y)	-0.00258	-0.00259	-0.00258
	(!A2 * !B1 * !C1 * Y)	0.00075	0.00076	0.00072
	(!A2 * !B1 * !C1 * Y)	-0.00299	-0.00302	-0.00306

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	0.00407	0.00409	0.00407
	(A2 * A3 * B1 * C1 * !Y)	-0.00476	-0.00499	-0.00495
	(A2 * A3 * B1 * !C1 * !Y)	0.00407	0.00409	0.00407
	(A2 * A3 * B1 * !C1 * !Y)	-0.00474	-0.00498	-0.00495
	(A2 * A3 * !B1 * C1 * !Y)	0.00410	0.00409	0.00407
	(A2 * A3 * !B1 * C1 * !Y)	-0.00451	-0.00483	-0.00478
	(A2 * !A3 * B1 * C1 * !Y)	0.00375	0.00378	0.00376
	(A2 * !A3 * B1 * C1 * !Y)	-0.00510	-0.00513	-0.00511
	(A2 * !A3 * B1 * !C1 * !Y)	0.00374	0.00377	0.00375
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00510	-0.00513	-0.00511
	(A2 * !A3 * !B1 * C1 * !Y)	0.00375	0.00377	0.00374
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00513	-0.00511	-0.00511
	(A2 * !A3 * !B1 * !C1 * Y)	0.00147	0.00147	0.00133
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00572	-0.00576	-0.00600
	(!A2 * B1 * C1 * !Y)	0.00383	0.00388	0.00385
	(!A2 * B1 * C1 * !Y)	-0.00510	-0.00514	-0.00511
	(!A2 * B1 * !C1 * !Y)	0.00383	0.00387	0.00384
	(!A2 * B1 * !C1 * !Y)	-0.00510	-0.00512	-0.00511
	(!A2 * !B1 * C1 * !Y)	0.00383	0.00387	0.00384
	(!A2 * !B1 * C1 * !Y)	-0.00509	-0.00514	-0.00511
	(!A2 * !B1 * !C1 * Y)	0.00145	0.00145	0.00138
	(!A2 * !B1 * !C1 * Y)	-0.00592	-0.00596	-0.00604

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)**	-0.00107	-0.00107	-0.00107
	(A2 * A3 * B1 * C1 * !Y)	0.00120	0.00122	0.00120
	(A2 * A3 * B1 * !C1 * !Y)	-0.00107	-0.00107	-0.00107
	(A2 * A3 * B1 * !C1 * !Y)	0.00120	0.00122	0.00120
	(A2 * A3 * !B1 * C1 * !Y)	-0.00107	-0.00107	-0.00106
	(A2 * A3 * !B1 * C1 * !Y)	0.00117	0.00117	0.00116
	(A2 * !A3 * B1 * C1 * !Y)	-0.00092	-0.00099	-0.00098
	(A2 * !A3 * B1 * C1 * !Y)	0.00124	0.00125	0.00124
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00091	-0.00099	-0.00098
	(A2 * !A3 * B1 * !C1 * !Y)	0.00124	0.00125	0.00124
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00090	-0.00099	-0.00098
	(A2 * !A3 * !B1 * C1 * !Y)	0.00124	0.00125	0.00124
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00032	-0.00032	-0.00032
	(A2 * !A3 * !B1 * !C1 * Y)	0.00151	0.00152	0.00152
	(!A2 * B1 * C1 * !Y)	-0.00098	-0.00102	-0.00101
	(!A2 * B1 * C1 * !Y)	0.00124	0.00125	0.00124
	(!A2 * B1 * !C1 * !Y)	-0.00098	-0.00102	-0.00101
	(!A2 * B1 * !C1 * !Y)	0.00125	0.00125	0.00124
	(!A2 * !B1 * C1 * !Y)	-0.00098	-0.00101	-0.00101
	(!A2 * !B1 * C1 * !Y)	0.00124	0.00125	0.00124
	(!A2 * !B1 * !C1 * Y)	-0.00033	-0.00033	-0.00033
	(!A2 * !B1 * !C1 * Y)	0.00152	0.00152	0.00152

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	-0.00207	-0.00207	-0.00208
	(A2 * A3 * B1 * C1 * !Y)	0.00251	0.00252	0.00250
	(A2 * A3 * B1 * !C1 * !Y)	-0.00208	-0.00208	-0.00208
	(A2 * A3 * B1 * !C1 * !Y)	0.00251	0.00252	0.00250
	(A2 * A3 * !B1 * C1 * !Y)	-0.00208	-0.00209	-0.00208
	(A2 * A3 * !B1 * C1 * !Y)	0.00241	0.00243	0.00242
	(A2 * !A3 * B1 * C1 * !Y)	-0.00178	-0.00194	-0.00192
	(A2 * !A3 * B1 * C1 * !Y)	0.00260	0.00262	0.00259
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00174	-0.00194	-0.00192
	(A2 * !A3 * B1 * !C1 * !Y)	0.00259	0.00262	0.00259
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00173	-0.00194	-0.00192
	(A2 * !A3 * !B1 * C1 * !Y)	0.00259	0.00262	0.00259
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00068	-0.00069	-0.00068
	(A2 * !A3 * !B1 * !C1 * Y)	0.00306	0.00308	0.00307
	(!A2 * B1 * C1 * !Y)	-0.00190	-0.00198	-0.00197
	(!A2 * B1 * C1 * !Y)	0.00258	0.00261	0.00259
	(!A2 * B1 * !C1 * !Y)	-0.00191	-0.00200	-0.00197
	(!A2 * B1 * !C1 * !Y)	0.00260	0.00262	0.00259
	(!A2 * !B1 * C1 * !Y)	-0.00190	-0.00198	-0.00197
	(!A2 * !B1 * C1 * !Y)	0.00260	0.00262	0.00259
	(!A2 * !B1 * !C1 * Y)	-0.00070	-0.00070	-0.00070
	(!A2 * !B1 * !C1 * Y)	0.00306	0.00308	0.00307

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	-0.00407	-0.00408	-0.00406
	(A2 * A3 * B1 * C1 * !Y)	0.00496	0.00499	0.00495
	(A2 * A3 * B1 * !C1 * !Y)	-0.00407	-0.00407	-0.00406
	(A2 * A3 * B1 * !C1 * !Y)	0.00496	0.00498	0.00495
	(A2 * A3 * !B1 * C1 * !Y)	-0.00407	-0.00409	-0.00407
	(A2 * A3 * !B1 * C1 * !Y)	0.00477	0.00483	0.00478
	(A2 * !A3 * B1 * C1 * !Y)	-0.00342	-0.00378	-0.00376
	(A2 * !A3 * B1 * C1 * !Y)	0.00515	0.00518	0.00513
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00337	-0.00377	-0.00375
	(A2 * !A3 * B1 * !C1 * !Y)	0.00514	0.00519	0.00513
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00333	-0.00377	-0.00374
	(A2 * !A3 * !B1 * C1 * !Y)	0.00515	0.00511	0.00513
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00129	-0.00131	-0.00129
	(A2 * !A3 * !B1 * !C1 * Y)	0.00602	0.00608	0.00605
	(!A2 * B1 * C1 * !Y)	-0.00372	-0.00388	-0.00385
	(!A2 * B1 * C1 * !Y)	0.00513	0.00519	0.00513
	(!A2 * B1 * !C1 * !Y)	-0.00370	-0.00387	-0.00384
	(!A2 * B1 * !C1 * !Y)	0.00510	0.00512	0.00513
	(!A2 * !B1 * C1 * !Y)	-0.00368	-0.00387	-0.00384
	(!A2 * !B1 * C1 * !Y)	0.00509	0.00515	0.00513
	(!A2 * !B1 * !C1 * Y)	-0.00135	-0.00134	-0.00134
	(!A2 * !B1 * !C1 * Y)	0.00608	0.00608	0.00605

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)**	0.00113	0.00112	0.00111
	(A1 * A3 * B1 * C1 * !Y)	-0.00116	-0.00121	-0.00120
	(A1 * A3 * B1 * !C1 * !Y)	0.00112	0.00112	0.00111
	(A1 * A3 * B1 * !C1 * !Y)	-0.00114	-0.00121	-0.00120
	(A1 * A3 * !B1 * C1 * !Y)	0.00112	0.00113	0.00111
	(A1 * A3 * !B1 * C1 * !Y)	-0.00109	-0.00117	-0.00116
	(A1 * !A3 * B1 * C1 * !Y)	0.00105	0.00105	0.00105
	(A1 * !A3 * B1 * C1 * !Y)	-0.00123	-0.00124	-0.00124
	(A1 * !A3 * B1 * !C1 * !Y)	0.00105	0.00105	0.00105
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00124	-0.00124	-0.00124
	(A1 * !A3 * !B1 * C1 * !Y)	0.00105	0.00105	0.00105
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00124	-0.00124	-0.00124
	(A1 * !A3 * !B1 * !C1 * Y)	0.00042	0.00042	0.00042
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00138	-0.00138	-0.00137
	(!A1 * A3 * B1 * !Y)	0.00106	0.00106	0.00106
	(!A1 * A3 * B1 * !Y)	-0.00124	-0.00124	-0.00124
	(!A1 * A3 * !B1 * C1 * !Y)	0.00106	0.00107	0.00106
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00124	-0.00124	-0.00124
	(!A1 * A3 * !B1 * !C1 * Y)	0.00091	0.00092	0.00092
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00137	-0.00138	-0.00137
	(!A1 * !A3 * B1 * !Y)	0.00067	0.00067	0.00066
	(!A1 * !A3 * B1 * !Y)	-0.00124	-0.00124	-0.00124
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00067	0.00067	0.00066
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00124	-0.00124	-0.00124
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00049	0.00049	0.00048
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00139	-0.00139	-0.00138

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00204	0.00204	0.00205
	(A1 * A3 * B1 * C1 * !Y)	-0.00236	-0.00248	-0.00247
	(A1 * A3 * B1 * !C1 * !Y)	0.00205	0.00205	0.00205
	(A1 * A3 * B1 * !C1 * !Y)	-0.00236	-0.00248	-0.00247
	(A1 * A3 * !B1 * C1 * !Y)	0.00206	0.00208	0.00205
	(A1 * A3 * !B1 * C1 * !Y)	-0.00225	-0.00240	-0.00239
	(A1 * !A3 * B1 * C1 * !Y)	0.00193	0.00195	0.00193
	(A1 * !A3 * B1 * C1 * !Y)	-0.00257	-0.00256	-0.00256
	(A1 * !A3 * B1 * !C1 * !Y)	0.00193	0.00195	0.00193
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00257	-0.00257	-0.00256
	(A1 * !A3 * !B1 * C1 * !Y)	0.00193	0.00193	0.00193
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00257	-0.00256	-0.00256
	(A1 * !A3 * !B1 * !C1 * Y)	0.00093	0.00094	0.00094
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00256	-0.00257	-0.00255
	(!A1 * A3 * B1 * !Y)	0.00195	0.00196	0.00194
	(!A1 * A3 * B1 * !Y)	-0.00255	-0.00257	-0.00256
	(!A1 * A3 * !B1 * C1 * !Y)	0.00195	0.00195	0.00195
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00255	-0.00256	-0.00256
	(!A1 * A3 * !B1 * !C1 * Y)	0.00194	0.00196	0.00194
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00257	-0.00258	-0.00256
	(!A1 * !A3 * B1 * !Y)	0.00116	0.00117	0.00116
	(!A1 * !A3 * B1 * !Y)	-0.00255	-0.00257	-0.00256
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00116	0.00117	0.00117
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00255	-0.00257	-0.00256
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00109	0.00108	0.00108
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00260	-0.00259	-0.00258

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	0.00407	0.00408	0.00408
	(A1 * A3 * B1 * C1 * !Y)	-0.00470	-0.00494	-0.00491
	(A1 * A3 * B1 * !C1 * !Y)	0.00408	0.00408	0.00408
	(A1 * A3 * B1 * !C1 * !Y)	-0.00469	-0.00494	-0.00491
	(A1 * A3 * !B1 * C1 * !Y)	0.00411	0.00414	0.00409
	(A1 * A3 * !B1 * C1 * !Y)	-0.00448	-0.00478	-0.00475
	(A1 * !A3 * B1 * C1 * !Y)	0.00380	0.00384	0.00382
	(A1 * !A3 * B1 * C1 * !Y)	-0.00505	-0.00509	-0.00507
	(A1 * !A3 * B1 * !C1 * !Y)	0.00382	0.00384	0.00381
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00509	-0.00510	-0.00507
	(A1 * !A3 * !B1 * C1 * !Y)	0.00381	0.00382	0.00380
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00509	-0.00509	-0.00507
	(A1 * !A3 * !B1 * !C1 * Y)	0.00178	0.00180	0.00180
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00507	-0.00510	-0.00506
	(!A1 * A3 * B1 * !Y)	0.00386	0.00388	0.00387
	(!A1 * A3 * B1 * !Y)	-0.00506	-0.00508	-0.00507
	(!A1 * A3 * !B1 * C1 * !Y)	0.00386	0.00391	0.00387
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00507	-0.00510	-0.00507
	(!A1 * A3 * !B1 * !C1 * Y)	0.00386	0.00386	0.00387
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00506	-0.00507	-0.00507
	(!A1 * !A3 * B1 * !Y)	0.00222	0.00224	0.00222
	(!A1 * !A3 * B1 * !Y)	-0.00507	-0.00510	-0.00508
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00222	0.00224	0.00223
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00507	-0.00510	-0.00508
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00206	0.00207	0.00206
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00510	-0.00513	-0.00511

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)**	-0.00111	-0.00112	-0.00111
	(A1 * A3 * B1 * C1 * !Y)	0.00119	0.00122	0.00120
	(A1 * A3 * B1 * !C1 * !Y)	-0.00111	-0.00112	-0.00111
	(A1 * A3 * B1 * !C1 * !Y)	0.00120	0.00122	0.00120
	(A1 * A3 * !B1 * C1 * !Y)	-0.00111	-0.00112	-0.00111
	(A1 * A3 * !B1 * C1 * !Y)	0.00116	0.00117	0.00116
	(A1 * !A3 * B1 * C1 * !Y)	-0.00102	-0.00105	-0.00105
	(A1 * !A3 * B1 * C1 * !Y)	0.00123	0.00126	0.00124
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00103	-0.00105	-0.00105
	(A1 * !A3 * B1 * !C1 * !Y)	0.00125	0.00125	0.00124
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00103	-0.00105	-0.00105
	(A1 * !A3 * !B1 * C1 * !Y)	0.00125	0.00125	0.00124
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00039	-0.00040	-0.00041
	(A1 * !A3 * !B1 * !C1 * Y)	0.00140	0.00141	0.00139
	(!A1 * A3 * B1 * !Y)	-0.00103	-0.00106	-0.00106
	(!A1 * A3 * B1 * !Y)	0.00124	0.00125	0.00124
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00103	-0.00107	-0.00106
	(!A1 * A3 * !B1 * C1 * !Y)	0.00124	0.00125	0.00124
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00086	-0.00092	-0.00092
	(!A1 * A3 * !B1 * !C1 * Y)	0.00141	0.00140	0.00138
	(!A1 * !A3 * B1 * !Y)	-0.00067	-0.00067	-0.00066
	(!A1 * !A3 * B1 * !Y)	0.00124	0.00124	0.00124
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00067	-0.00067	-0.00066
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00124	0.00124	0.00124
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00049	-0.00049	-0.00048
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00143	0.00144	0.00139

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00204	-0.00204	-0.00204
	(A1 * A3 * B1 * C1 * !Y)	0.00248	0.00251	0.00247
	(A1 * A3 * B1 * !C1 * !Y)	-0.00204	-0.00205	-0.00204
	(A1 * A3 * B1 * !C1 * !Y)	0.00246	0.00251	0.00247
	(A1 * A3 * !B1 * C1 * !Y)	-0.00204	-0.00205	-0.00205
	(A1 * A3 * !B1 * C1 * !Y)	0.00238	0.00240	0.00239
	(A1 * !A3 * B1 * C1 * !Y)	-0.00185	-0.00195	-0.00193
	(A1 * !A3 * B1 * C1 * !Y)	0.00257	0.00256	0.00256
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00185	-0.00195	-0.00193
	(A1 * !A3 * B1 * !C1 * !Y)	0.00257	0.00258	0.00257
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00185	-0.00193	-0.00193
	(A1 * !A3 * !B1 * C1 * !Y)	0.00257	0.00258	0.00257
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00087	-0.00088	-0.00090
	(A1 * !A3 * !B1 * !C1 * Y)	0.00264	0.00264	0.00259
	(!A1 * A3 * B1 * !Y)	-0.00187	-0.00196	-0.00194
	(!A1 * A3 * B1 * !Y)	0.00255	0.00259	0.00256
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00187	-0.00195	-0.00195
	(!A1 * A3 * !B1 * C1 * !Y)	0.00255	0.00259	0.00256
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00179	-0.00196	-0.00194
	(!A1 * A3 * !B1 * !C1 * Y)	0.00264	0.00260	0.00257
	(!A1 * !A3 * B1 * !Y)	-0.00116	-0.00117	-0.00116
	(!A1 * !A3 * B1 * !Y)	0.00256	0.00257	0.00257
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00116	-0.00117	-0.00117
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00256	0.00257	0.00257
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00109	-0.00108	-0.00108
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00269	0.00270	0.00261

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00407	-0.00408	-0.00407
	(A1 * A3 * B1 * C1 * !Y)	0.00490	0.00495	0.00491
	(A1 * A3 * B1 * !C1 * !Y)	-0.00407	-0.00408	-0.00407
	(A1 * A3 * B1 * !C1 * !Y)	0.00490	0.00495	0.00491
	(A1 * A3 * !B1 * C1 * !Y)	-0.00408	-0.00410	-0.00408
	(A1 * A3 * !B1 * C1 * !Y)	0.00474	0.00478	0.00475
	(A1 * !A3 * B1 * C1 * !Y)	-0.00366	-0.00384	-0.00382
	(A1 * !A3 * B1 * C1 * !Y)	0.00510	0.00511	0.00509
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00366	-0.00384	-0.00381
	(A1 * !A3 * B1 * !C1 * !Y)	0.00510	0.00511	0.00509
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00366	-0.00382	-0.00380
	(A1 * !A3 * !B1 * C1 * !Y)	0.00510	0.00512	0.00509
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00168	-0.00169	-0.00173
	(A1 * !A3 * !B1 * !C1 * Y)	0.00522	0.00524	0.00513
	(!A1 * A3 * B1 * !Y)	-0.00372	-0.00388	-0.00387
	(!A1 * A3 * B1 * !Y)	0.00507	0.00515	0.00509
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00372	-0.00391	-0.00387
	(!A1 * A3 * !B1 * C1 * !Y)	0.00507	0.00515	0.00509
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00355	-0.00386	-0.00387
	(!A1 * A3 * !B1 * !C1 * Y)	0.00527	0.00515	0.00509
	(!A1 * !A3 * B1 * !Y)	-0.00222	-0.00224	-0.00222
	(!A1 * !A3 * B1 * !Y)	0.00511	0.00511	0.00509
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00222	-0.00224	-0.00223
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00511	0.00511	0.00509
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00206	-0.00207	-0.00206
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00538	0.00536	0.00517

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)**	0.00119	0.00118	0.00118
	(A1 * A2 * B1 * C1 * !Y)	-0.00116	-0.00121	-0.00121
	(A1 * A2 * B1 * !C1 * !Y)	0.00119	0.00118	0.00118
	(A1 * A2 * B1 * !C1 * !Y)	-0.00116	-0.00121	-0.00121
	(A1 * A2 * !B1 * C1 * !Y)	0.00119	0.00119	0.00118
	(A1 * A2 * !B1 * C1 * !Y)	-0.00110	-0.00118	-0.00117
	(A1 * !A2 * !B1 * !C1 * Y)	0.00101	0.00102	0.00101
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00135	-0.00136	-0.00135
	(!A2 * B1 * !Y)	0.00111	0.00113	0.00112
	(!A2 * B1 * !Y)	-0.00124	-0.00125	-0.00124
	(!A2 * !B1 * C1 * !Y)	0.00111	0.00113	0.00112
	(!A2 * !B1 * C1 * !Y)	-0.00124	-0.00125	-0.00124
	(!A1 * A2 * B1 * !Y)	0.00110	0.00111	0.00110
	(!A1 * A2 * B1 * !Y)	-0.00124	-0.00125	-0.00124
	(!A1 * A2 * !B1 * C1 * !Y)	0.00111	0.00111	0.00110
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00124	-0.00125	-0.00124
	(!A1 * A2 * !B1 * !C1 * Y)	0.00099	0.00100	0.00099
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00135	-0.00136	-0.00135
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00101	0.00102	0.00101
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00135	-0.00135	-0.00135

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00201	0.00200	0.00201
	(A1 * A2 * B1 * C1 * !Y)	-0.00232	-0.00243	-0.00242
	(A1 * A2 * B1 * !C1 * !Y)	0.00201	0.00200	0.00201
	(A1 * A2 * B1 * !C1 * !Y)	-0.00232	-0.00243	-0.00242
	(A1 * A2 * !B1 * C1 * !Y)	0.00203	0.00203	0.00201
	(A1 * A2 * !B1 * C1 * !Y)	-0.00222	-0.00235	-0.00234
	(A1 * !A2 * !B1 * !C1 * Y)	0.00190	0.00191	0.00189
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00250	-0.00251	-0.00250
	(!A2 * B1 * !Y)	0.00190	0.00192	0.00190
	(!A2 * B1 * !Y)	-0.00250	-0.00251	-0.00250
	(!A2 * !B1 * C1 * !Y)	0.00190	0.00192	0.00190
	(!A2 * !B1 * C1 * !Y)	-0.00250	-0.00251	-0.00250
	(!A1 * A2 * B1 * !Y)	0.00185	0.00186	0.00184
	(!A1 * A2 * B1 * !Y)	-0.00250	-0.00250	-0.00250
	(!A1 * A2 * !B1 * C1 * !Y)	0.00185	0.00186	0.00184
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00250	-0.00251	-0.00250
	(!A1 * A2 * !B1 * !C1 * Y)	0.00185	0.00186	0.00184
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00250	-0.00251	-0.00250
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00190	0.00191	0.00189
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00250	-0.00251	-0.00250

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.00407	0.00407	0.00407
	(A1 * A2 * B1 * C1 * !Y)	-0.00470	-0.00492	-0.00489
	(A1 * A2 * B1 * !C1 * !Y)	0.00407	0.00407	0.00407
	(A1 * A2 * B1 * !C1 * !Y)	-0.00469	-0.00491	-0.00489
	(A1 * A2 * !B1 * C1 * !Y)	0.00410	0.00413	0.00407
	(A1 * A2 * !B1 * C1 * !Y)	-0.00448	-0.00475	-0.00473
	(A1 * !A2 * !B1 * !C1 * Y)	0.00381	0.00386	0.00382
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00504	-0.00508	-0.00505
	(!A2 * B1 * !Y)	0.00380	0.00385	0.00381
	(!A2 * B1 * !Y)	-0.00504	-0.00507	-0.00505
	(!A2 * !B1 * C1 * !Y)	0.00381	0.00385	0.00382
	(!A2 * !B1 * C1 * !Y)	-0.00504	-0.00507	-0.00505
	(!A1 * A2 * B1 * !Y)	0.00372	0.00374	0.00371
	(!A1 * A2 * B1 * !Y)	-0.00506	-0.00507	-0.00505
	(!A1 * A2 * !B1 * C1 * !Y)	0.00373	0.00375	0.00371
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00506	-0.00508	-0.00505
	(!A1 * A2 * !B1 * !C1 * Y)	0.00372	0.00375	0.00371
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00507	-0.00508	-0.00505
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00379	0.00384	0.00380
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00504	-0.00508	-0.00505

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)**	-0.00118	-0.00118	-0.00118
	(A1 * A2 * B1 * C1 * !Y)	0.00121	0.00123	0.00121
	(A1 * A2 * B1 * !C1 * !Y)	-0.00119	-0.00118	-0.00118
	(A1 * A2 * B1 * !C1 * !Y)	0.00122	0.00123	0.00121
	(A1 * A2 * !B1 * C1 * !Y)	-0.00118	-0.00118	-0.00118
	(A1 * A2 * !B1 * C1 * !Y)	0.00118	0.00118	0.00117
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00098	-0.00102	-0.00101
	(A1 * !A2 * !B1 * !C1 * Y)	0.00136	0.00138	0.00136
	(!A2 * B1 * !Y)	-0.00110	-0.00113	-0.00112
	(!A2 * B1 * !Y)	0.00125	0.00126	0.00125
	(!A2 * !B1 * C1 * !Y)	-0.00110	-0.00113	-0.00112
	(!A2 * !B1 * C1 * !Y)	0.00125	0.00125	0.00125
	(!A1 * A2 * B1 * !Y)	-0.00105	-0.00111	-0.00110
	(!A1 * A2 * B1 * !Y)	0.00124	0.00125	0.00125
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00105	-0.00111	-0.00110
	(!A1 * A2 * !B1 * C1 * !Y)	0.00124	0.00125	0.00125
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00094	-0.00100	-0.00099
	(!A1 * A2 * !B1 * !C1 * Y)	0.00135	0.00136	0.00136
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00098	-0.00101	-0.00101
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00136	0.00135	0.00136

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00200	-0.00200	-0.00200
	(A1 * A2 * B1 * C1 * !Y)	0.00241	0.00244	0.00242
	(A1 * A2 * B1 * !C1 * !Y)	-0.00200	-0.00200	-0.00200
	(A1 * A2 * B1 * !C1 * !Y)	0.00241	0.00244	0.00242
	(A1 * A2 * !B1 * C1 * !Y)	-0.00200	-0.00201	-0.00200
	(A1 * A2 * !B1 * C1 * !Y)	0.00233	0.00235	0.00234
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00181	-0.00191	-0.00189
	(A1 * !A2 * !B1 * !C1 * Y)	0.00250	0.00253	0.00250
	(!A2 * B1 * !Y)	-0.00183	-0.00191	-0.00190
	(!A2 * B1 * !Y)	0.00250	0.00252	0.00250
	(!A2 * !B1 * C1 * !Y)	-0.00183	-0.00191	-0.00190
	(!A2 * !B1 * C1 * !Y)	0.00250	0.00252	0.00250
	(!A1 * A2 * B1 * !Y)	-0.00173	-0.00186	-0.00184
	(!A1 * A2 * B1 * !Y)	0.00250	0.00252	0.00250
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00173	-0.00186	-0.00184
	(!A1 * A2 * !B1 * C1 * !Y)	0.00250	0.00252	0.00250
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00172	-0.00186	-0.00184
	(!A1 * A2 * !B1 * !C1 * Y)	0.00251	0.00252	0.00251
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00182	-0.00191	-0.00189
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00250	0.00253	0.00250

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00407	-0.00407	-0.00406
	(A1 * A2 * B1 * C1 * !Y)	0.00491	0.00497	0.00489
	(A1 * A2 * B1 * !C1 * !Y)	-0.00407	-0.00407	-0.00406
	(A1 * A2 * B1 * !C1 * !Y)	0.00491	0.00497	0.00489
	(A1 * A2 * !B1 * C1 * !Y)	-0.00407	-0.00408	-0.00407
	(A1 * A2 * !B1 * C1 * !Y)	0.00473	0.00475	0.00473
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00364	-0.00384	-0.00382
	(A1 * !A2 * !B1 * !C1 * Y)	0.00505	0.00511	0.00506
	(!A2 * B1 * !Y)	-0.00367	-0.00384	-0.00381
	(!A2 * B1 * !Y)	0.00504	0.00509	0.00506
	(!A2 * !B1 * C1 * !Y)	-0.00367	-0.00384	-0.00382
	(!A2 * !B1 * C1 * !Y)	0.00504	0.00509	0.00506
	(!A1 * A2 * B1 * !Y)	-0.00347	-0.00374	-0.00371
	(!A1 * A2 * B1 * !Y)	0.00506	0.00508	0.00506
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00347	-0.00375	-0.00371
	(!A1 * A2 * !B1 * C1 * !Y)	0.00506	0.00509	0.00506
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00346	-0.00375	-0.00371
	(!A1 * A2 * !B1 * !C1 * Y)	0.00507	0.00509	0.00506
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00365	-0.00384	-0.00380
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00505	0.00511	0.00506

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)**	0.00125	0.00121	0.00117
	(A1 * A2 * A3 * C1 * !Y)	-0.00088	-0.00088	-0.00088
	(A1 * A2 * A3 * !C1 * !Y)	0.00114	0.00115	0.00114
	(A1 * A2 * A3 * !C1 * !Y)	-0.00070	-0.00071	-0.00071
	(A1 * A2 * !A3 * C1 * !Y)	0.00129	0.00115	0.00113
	(A1 * A2 * !A3 * C1 * !Y)	-0.00102	-0.00121	-0.00121
	(A1 * !A2 * C1 * !Y)	0.00129	0.00115	0.00113
	(A1 * !A2 * C1 * !Y)	-0.00102	-0.00121	-0.00121
	(!A1 * C1 * !Y)	0.00128	0.00115	0.00113
	(!A1 * C1 * !Y)	-0.00103	-0.00121	-0.00121
sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * A3 * C1 * !Y)**	0.00129	0.00123	0.00118
	(A1 * A2 * A3 * C1 * !Y)	-0.00181	-0.00183	-0.00182
	(A1 * A2 * A3 * !C1 * !Y)	0.00116	0.00116	0.00115
	(A1 * A2 * A3 * !C1 * !Y)	-0.00147	-0.00148	-0.00149
	(A1 * A2 * !A3 * C1 * !Y)	0.00145	0.00117	0.00114
	(A1 * A2 * !A3 * C1 * !Y)	-0.00217	-0.00250	-0.00249
	(A1 * !A2 * C1 * !Y)	0.00145	0.00117	0.00114
	(A1 * !A2 * C1 * !Y)	-0.00217	-0.00250	-0.00249
	(!A1 * C1 * !Y)	0.00145	0.00117	0.00114
	(!A1 * C1 * !Y)	-0.00217	-0.00250	-0.00249
sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	0.00252	0.00239	0.00227
	(A1 * A2 * A3 * C1 * !Y)	-0.00355	-0.00356	-0.00355
	(A1 * A2 * A3 * !C1 * !Y)	0.00222	0.00223	0.00221
	(A1 * A2 * A3 * !C1 * !Y)	-0.00288	-0.00290	-0.00291
	(A1 * A2 * !A3 * C1 * !Y)	0.00286	0.00224	0.00219
	(A1 * A2 * !A3 * C1 * !Y)	-0.00417	-0.00492	-0.00492
	(A1 * !A2 * C1 * !Y)	0.00286	0.00224	0.00219
	(A1 * !A2 * C1 * !Y)	-0.00419	-0.00493	-0.00492
	(!A1 * C1 * !Y)	0.00284	0.00224	0.00219
	(!A1 * C1 * !Y)	-0.00419	-0.00493	-0.00492

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)	-0.00115	-0.00115	-0.00115
	(A1 * A2 * A3 * C1 * !Y)	0.00088	0.00088	0.00088
	(A1 * A2 * A3 * !C1 * !Y)	-0.00109	-0.00109	-0.00112
	(A1 * A2 * A3 * !C1 * !Y)	0.00076	0.00075	0.00074
	(A1 * A2 * !A3 * C1 * !Y)	-0.00112	-0.00113	-0.00112
	(A1 * A2 * !A3 * C1 * !Y)	0.00120	0.00121	0.00121
	(A1 * !A2 * C1 * !Y)	-0.00113	-0.00113	-0.00112
	(A1 * !A2 * C1 * !Y)	0.00121	0.00121	0.00121
	(!A1 * C1 * !Y)	-0.00113	-0.00113	-0.00112
	(!A1 * C1 * !Y)	0.00121	0.00121	0.00121
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * A3 * C1 * !Y)	-0.00116	-0.00116	-0.00116
	(A1 * A2 * A3 * C1 * !Y)	0.00181	0.00183	0.00182
	(A1 * A2 * A3 * !C1 * !Y)	-0.00105	-0.00105	-0.00109
	(A1 * A2 * A3 * !C1 * !Y)	0.00159	0.00157	0.00157
	(A1 * A2 * !A3 * C1 * !Y)	-0.00115	-0.00115	-0.00114
	(A1 * A2 * !A3 * C1 * !Y)	0.00250	0.00250	0.00249
	(A1 * !A2 * C1 * !Y)	-0.00115	-0.00115	-0.00114
	(A1 * !A2 * C1 * !Y)	0.00250	0.00250	0.00249
	(!A1 * C1 * !Y)	-0.00115	-0.00115	-0.00114
	(!A1 * C1 * !Y)	0.00250	0.00250	0.00249

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	-0.00222	-0.00223	-0.00222
	(A1 * A2 * A3 * C1 * !Y)	0.00355	0.00356	0.00355
	(A1 * A2 * A3 * !C1 * !Y)	-0.00200	-0.00201	-0.00209
	(A1 * A2 * A3 * !C1 * !Y)	0.00311	0.00309	0.00305
	(A1 * A2 * !A3 * C1 * !Y)	-0.00220	-0.00220	-0.00218
	(A1 * A2 * !A3 * C1 * !Y)	0.00491	0.00492	0.00492
	(A1 * !A2 * C1 * !Y)	-0.00220	-0.00220	-0.00218
	(A1 * !A2 * C1 * !Y)	0.00494	0.00493	0.00492
	(!A1 * C1 * !Y)	-0.00219	-0.00220	-0.00218
	(!A1 * C1 * !Y)	0.00489	0.00493	0.00492

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)	0.00120	0.00120	0.00120
	(A1 * A2 * B1 * !Y)	-0.00067	-0.00067	-0.00067
	(A1 * A2 * A3 * !B1 * !Y)	0.00120	0.00121	0.00120
	(A1 * A2 * A3 * !B1 * !Y)	-0.00066	-0.00067	-0.00066
	(A1 * !A2 * B1 * !Y)	0.00120	0.00121	0.00120
	(A1 * !A2 * B1 * !Y)	-0.00067	-0.00067	-0.00067
	(!A1 * B1 * !Y)	0.00120	0.00121	0.00120
	(!A1 * B1 * !Y)	-0.00067	-0.00067	-0.00067
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	0.00135	0.00136	0.00136
	(A1 * A2 * B1 * !Y)	-0.00130	-0.00130	-0.00130
	(A1 * A2 * A3 * !B1 * !Y)	0.00135	0.00136	0.00136
	(A1 * A2 * A3 * !B1 * !Y)	-0.00129	-0.00130	-0.00130
	(A1 * !A2 * B1 * !Y)	0.00135	0.00136	0.00136
	(A1 * !A2 * B1 * !Y)	-0.00130	-0.00130	-0.00130
	(!A1 * B1 * !Y)	0.00136	0.00136	0.00136
	(!A1 * B1 * !Y)	-0.00131	-0.00130	-0.00130
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	0.00270	0.00269	0.00269
	(A1 * A2 * B1 * !Y)	-0.00259	-0.00258	-0.00258
	(A1 * A2 * A3 * !B1 * !Y)	0.00269	0.00270	0.00270
	(A1 * A2 * A3 * !B1 * !Y)	-0.00257	-0.00258	-0.00257
	(A1 * !A2 * B1 * !Y)	0.00269	0.00269	0.00270
	(A1 * !A2 * B1 * !Y)	-0.00258	-0.00258	-0.00258
	(!A1 * B1 * !Y)	0.00271	0.00270	0.00270
	(!A1 * B1 * !Y)	-0.00261	-0.00258	-0.00258

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)	-0.00115	-0.00116	-0.00120
	(A1 * A2 * B1 * !Y)	0.00072	0.00071	0.00068
	(A1 * A2 * A3 * !B1 * !Y)	-0.00102	-0.00103	-0.00117
	(A1 * A2 * A3 * !B1 * !Y)	0.00080	0.00080	0.00070
	(A1 * !A2 * B1 * !Y)	-0.00115	-0.00116	-0.00120
	(A1 * !A2 * B1 * !Y)	0.00072	0.00071	0.00068
	(!A1 * B1 * !Y)	-0.00115	-0.00116	-0.00120
	(!A1 * B1 * !Y)	0.00071	0.00071	0.00068
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	-0.00120	-0.00121	-0.00134
	(A1 * A2 * B1 * !Y)	0.00144	0.00144	0.00134
	(A1 * A2 * A3 * !B1 * !Y)	-0.00091	-0.00092	-0.00127
	(A1 * A2 * A3 * !B1 * !Y)	0.00163	0.00162	0.00137
	(A1 * !A2 * B1 * !Y)	-0.00120	-0.00121	-0.00134
	(A1 * !A2 * B1 * !Y)	0.00145	0.00144	0.00134
	(!A1 * B1 * !Y)	-0.00120	-0.00121	-0.00134
	(!A1 * B1 * !Y)	0.00144	0.00144	0.00134
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	-0.00243	-0.00244	-0.00267
	(A1 * A2 * B1 * !Y)	0.00284	0.00282	0.00265
	(A1 * A2 * A3 * !B1 * !Y)	-0.00185	-0.00187	-0.00253
	(A1 * A2 * A3 * !B1 * !Y)	0.00317	0.00316	0.00272
	(A1 * !A2 * B1 * !Y)	-0.00243	-0.00243	-0.00267
	(A1 * !A2 * B1 * !Y)	0.00284	0.00282	0.00265
	(!A1 * B1 * !Y)	-0.00241	-0.00244	-0.00267
	(!A1 * B1 * !Y)	0.00282	0.00282	0.00265

SKY130_FD_SC_HS__A311Ox

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a311o_1	12.78720
sky130_fd_sc_hs__a311o_2	14.38560
sky130_fd_sc_hs__a311o_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	C1	X
sky130_fd_sc_hs__a311o_1	0.00254	0.00239	0.00241	0.00249	0.00258	0.77170
sky130_fd_sc_hs__a311o_2	0.00262	0.00260	0.00276	0.00281	0.00266	1.36747
sky130_fd_sc_hs__a311o_4	0.00478	0.00443	0.00470	0.00460	0.00460	2.44780

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a311o_1	0.00000	0.03263	0.06470
sky130_fd_sc_hs__a311o_2	0.00000	0.04054	0.06891
sky130_fd_sc_hs__a311o_4	0.00000	0.08252	0.13782

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)	0.13580	0.84620	7.15496
	A2->X (RR)	0.14456	0.85934	7.30435
	A3->X (RR)	0.14973	0.84357	7.29014
	B1->X (RR)	0.08976	0.77392	7.06256
	C1->X (RR)	0.08572	0.75660	7.03131
sky130_fd_sc_hs__a311o_2	A1->X (RR)	0.14727	0.78673	7.29502
	A2->X (RR)	0.15606	0.79073	7.39949
	A3->X (RR)	0.16195	0.77099	7.36417
	B1->X (RR)	0.09287	0.69950	7.15265
	C1->X (RR)	0.08878	0.68621	7.11165
sky130_fd_sc_hs__a311o_4	A1->X (RR)	0.17510	0.74704	7.20299
	A2->X (RR)	0.18904	0.76104	7.35830
	A3->X (RR)	0.19448	0.71652	7.24352
	B1->X (RR)	0.09185	0.60833	6.95855
	C1->X (RR)	0.08659	0.59079	6.90982

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311o_1	A1->X (FF)	0.31915	0.90797	5.05360
	A2->X (FF)	0.36751	0.96456	5.23286
	A3->X (FF)	0.40410	1.00728	5.35895
	B1->X (FF)	0.36825	0.97297	5.40469
	C1->X (FF)	0.32159	0.90582	5.05156
sky130_fd_sc_hs__a311o_2	A1->X (FF)	0.43360	1.01399	5.25204
	A2->X (FF)	0.49644	1.08647	5.41269
	A3->X (FF)	0.54252	1.13754	5.52919
	B1->X (FF)	0.50790	1.10851	5.65864
	C1->X (FF)	0.45311	1.02835	5.30914
sky130_fd_sc_hs__a311o_4	A1->X (FF)	0.44229	0.97176	5.02491
	A2->X (FF)	0.50397	1.04172	5.19712
	A3->X (FF)	0.55449	1.10185	5.33166
	B1->X (FF)	0.51721	1.07227	5.48685
	C1->X (FF)	0.44161	0.97032	5.12240

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311o_1	A1	0.00790	0.00774	0.00926
	A1	0.00372	0.00358	0.00511
	A2	0.00836	0.00818	0.00904
	A2	0.00372	0.00354	0.00445
	A3	0.00897	0.00875	0.00936
	A3	0.00371	0.00349	0.00418
	B1	0.00741	0.00737	0.00922
	B1	0.00277	0.00274	0.00479
	C1	0.00645	0.00639	0.00907
	C1	0.00222	0.00214	0.00535
sky130_fd_sc_hs__a311o_2	A1	0.01014	0.01017	0.01153
	A1	0.00565	0.00568	0.00715
	A2	0.01079	0.01083	0.01161
	A2	0.00564	0.00568	0.00652
	A3	0.01159	0.01158	0.01205
	A3	0.00565	0.00563	0.00617
	B1	0.01004	0.01021	0.01177
	B1	0.00475	0.00493	0.00657
	C1	0.00890	0.00907	0.01111
	C1	0.00413	0.00431	0.00642

sky130_fd_sc_hs__a311o_4	**A1**	0.01979	0.02001	0.02325
	A1	0.01190	0.01214	0.01564
	A2	0.02086	0.02121	0.02302
	A2	0.01184	0.01220	0.01421
	A3	0.02231	0.02263	0.02397
	A3	0.01193	0.01226	0.01363
	B1	0.01886	0.01900	0.02234
	B1	0.00983	0.01000	0.01334
	C1	0.01594	0.01622	0.02113
	C1	0.00796	0.00823	0.01376

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311o_1	**A1**	0.00231	0.00227	0.00326
	A1	0.00656	0.00659	0.00722
	A2	0.00278	0.00281	0.00373
	A2	0.00746	0.00750	0.00807
	A3	0.00302	0.00299	0.00406
	A3	0.00826	0.00823	0.00875
	B1	0.00262	0.00265	0.00452
	B1	0.00747	0.00748	0.00864
	C1	0.00281	0.00290	0.00596
	C1	0.00694	0.00708	0.00998

sky130_fd_sc_hs__a311o_2	**A1**	0.00429	0.00446	0.00520
	A1	0.00885	0.00905	0.00975
	A2	0.00472	0.00484	0.00609
	A2	0.00989	0.01009	0.01073
	A3	0.00491	0.00484	0.00584
	A3	0.01081	0.01077	0.01126
	B1	0.00496	0.00490	0.00689
	B1	0.01013	0.01013	0.01118
	C1	0.00496	0.00499	0.00781
	C1	0.00960	0.00972	0.01242
sky130_fd_sc_hs__a311o_4	**A1**	0.00870	0.00875	0.01140
	A1	0.01674	0.01716	0.01843
	A2	0.01001	0.01032	0.01224
	A2	0.01910	0.01952	0.02067
	A3	0.01028	0.01053	0.01184
	A3	0.02059	0.02088	0.02185
	B1	0.01047	0.01063	0.01369
	B1	0.01928	0.01948	0.02142
	C1	0.01042	0.01084	0.01630
	C1	0.01814	0.01854	0.02390

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)**	0.00101	0.00101	0.00100
	(A2 * A3 * B1 * C1 * X)	-0.00105	-0.00110	-0.00110
	(A2 * A3 * B1 * !C1 * X)	0.00101	0.00101	0.00100
	(A2 * A3 * B1 * !C1 * X)	-0.00105	-0.00110	-0.00110
	(A2 * A3 * !B1 * C1 * X)	0.00102	0.00101	0.00100
	(A2 * A3 * !B1 * C1 * X)	-0.00100	-0.00107	-0.00106
	(A2 * !A3 * B1 * C1 * X)	0.00093	0.00094	0.00093
	(A2 * !A3 * B1 * C1 * X)	-0.00113	-0.00114	-0.00113
	(A2 * !A3 * B1 * !C1 * X)	0.00093	0.00093	0.00093
	(A2 * !A3 * B1 * !C1 * X)	-0.00113	-0.00113	-0.00113
	(A2 * !A3 * !B1 * C1 * X)	0.00093	0.00094	0.00094
	(A2 * !A3 * !B1 * C1 * X)	-0.00113	-0.00113	-0.00113
	(A2 * !A3 * !B1 * !C1 * !X)	0.00042	0.00042	0.00040
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00128	-0.00128	-0.00134
	(!A2 * B1 * C1 * X)	0.00095	0.00096	0.00095
	(!A2 * B1 * C1 * X)	-0.00113	-0.00114	-0.00113
	(!A2 * B1 * !C1 * X)	0.00095	0.00096	0.00095
	(!A2 * B1 * !C1 * X)	-0.00113	-0.00114	-0.00113
	(!A2 * !B1 * C1 * X)	0.00095	0.00096	0.00095
	(!A2 * !B1 * C1 * X)	-0.00113	-0.00114	-0.00113
	(!A2 * !B1 * !C1 * !X)	0.00042	0.00042	0.00041
	(!A2 * !B1 * !C1 * !X)	-0.00132	-0.00133	-0.00134

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	0.00106	0.00107	0.00106
	(A2 * A3 * B1 * C1 * X)	-0.00104	-0.00110	-0.00109
	(A2 * A3 * B1 * !C1 * X)	0.00107	0.00107	0.00106
	(A2 * A3 * B1 * !C1 * X)	-0.00105	-0.00110	-0.00109
	(A2 * A3 * !B1 * C1 * X)	0.00107	0.00107	0.00106
	(A2 * A3 * !B1 * C1 * X)	-0.00098	-0.00106	-0.00106
	(A2 * !A3 * B1 * C1 * X)	0.00097	0.00098	0.00097
	(A2 * !A3 * B1 * C1 * X)	-0.00112	-0.00113	-0.00112
	(A2 * !A3 * B1 * !C1 * X)	0.00097	0.00098	0.00097
	(A2 * !A3 * B1 * !C1 * X)	-0.00112	-0.00113	-0.00112
	(A2 * !A3 * !B1 * C1 * X)	0.00097	0.00098	0.00097
	(A2 * !A3 * !B1 * C1 * X)	-0.00112	-0.00113	-0.00112
	(A2 * !A3 * !B1 * !C1 * !X)	0.00036	0.00036	0.00033
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00132	-0.00133	-0.00138
	(!A2 * B1 * C1 * X)	0.00100	0.00101	0.00100
	(!A2 * B1 * C1 * X)	-0.00112	-0.00112	-0.00112
	(!A2 * B1 * !C1 * X)	0.00100	0.00101	0.00100
	(!A2 * B1 * !C1 * X)	-0.00113	-0.00113	-0.00112
	(!A2 * !B1 * C1 * X)	0.00100	0.00101	0.00100
	(!A2 * !B1 * C1 * X)	-0.00112	-0.00113	-0.00112
	(!A2 * !B1 * !C1 * !X)	0.00037	0.00037	0.00035
	(!A2 * !B1 * !C1 * !X)	-0.00136	-0.00136	-0.00139

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	0.00183	0.00182	0.00182
	(A2 * A3 * B1 * C1 * X)	-0.00219	-0.00229	-0.00227
	(A2 * A3 * B1 * !C1 * X)	0.00183	0.00182	0.00182
	(A2 * A3 * B1 * !C1 * X)	-0.00218	-0.00228	-0.00227
	(A2 * A3 * !B1 * C1 * X)	0.00183	0.00184	0.00182
	(A2 * A3 * !B1 * C1 * X)	-0.00208	-0.00222	-0.00221
	(A2 * !A3 * B1 * C1 * X)	0.00166	0.00168	0.00167
	(A2 * !A3 * B1 * C1 * X)	-0.00235	-0.00236	-0.00235
	(A2 * !A3 * B1 * !C1 * X)	0.00167	0.00168	0.00167
	(A2 * !A3 * B1 * !C1 * X)	-0.00235	-0.00236	-0.00235
	(A2 * !A3 * !B1 * C1 * X)	0.00166	0.00168	0.00167
	(A2 * !A3 * !B1 * C1 * X)	-0.00234	-0.00236	-0.00235
	(A2 * !A3 * !B1 * !C1 * !X)	0.00069	0.00069	0.00061
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00259	-0.00262	-0.00275
	(!A2 * B1 * C1 * X)	0.00173	0.00174	0.00173
	(!A2 * B1 * C1 * X)	-0.00234	-0.00236	-0.00235
	(!A2 * B1 * !C1 * X)	0.00173	0.00174	0.00173
	(!A2 * B1 * !C1 * X)	-0.00236	-0.00237	-0.00235
	(!A2 * !B1 * C1 * X)	0.00173	0.00174	0.00173
	(!A2 * !B1 * C1 * X)	-0.00236	-0.00237	-0.00235
	(!A2 * !B1 * !C1 * !X)	0.00073	0.00073	0.00068
	(!A2 * !B1 * !C1 * !X)	-0.00266	-0.00268	-0.00275

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)**	-0.00100	-0.00101	-0.00100
	(A2 * A3 * B1 * C1 * X)	0.00109	0.00110	0.00110
	(A2 * A3 * B1 * !C1 * X)	-0.00100	-0.00101	-0.00100
	(A2 * A3 * B1 * !C1 * X)	0.00109	0.00110	0.00110
	(A2 * A3 * !B1 * C1 * X)	-0.00100	-0.00100	-0.00100
	(A2 * A3 * !B1 * C1 * X)	0.00106	0.00107	0.00106
	(A2 * !A3 * B1 * C1 * X)	-0.00088	-0.00094	-0.00093
	(A2 * !A3 * B1 * C1 * X)	0.00114	0.00114	0.00113
	(A2 * !A3 * B1 * !C1 * X)	-0.00087	-0.00093	-0.00093
	(A2 * !A3 * B1 * !C1 * X)	0.00113	0.00115	0.00113
	(A2 * !A3 * !B1 * C1 * X)	-0.00087	-0.00094	-0.00094
	(A2 * !A3 * !B1 * C1 * X)	0.00113	0.00115	0.00113
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00040	-0.00039	-0.00039
	(A2 * !A3 * !B1 * !C1 * !X)	0.00135	0.00135	0.00134
	(!A2 * B1 * C1 * X)	-0.00093	-0.00096	-0.00095
	(!A2 * B1 * C1 * X)	0.00113	0.00115	0.00113
	(!A2 * B1 * !C1 * X)	-0.00093	-0.00096	-0.00095
	(!A2 * B1 * !C1 * X)	0.00113	0.00115	0.00113
	(!A2 * !B1 * C1 * X)	-0.00093	-0.00096	-0.00095
	(!A2 * !B1 * C1 * X)	0.00113	0.00115	0.00113
	(!A2 * !B1 * !C1 * !X)	-0.00040	-0.00040	-0.00040
	(!A2 * !B1 * !C1 * !X)	0.00135	0.00135	0.00134

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	-0.00106	-0.00107	-0.00106
	(A2 * A3 * B1 * C1 * X)	0.00109	0.00111	0.00109
	(A2 * A3 * B1 * !C1 * X)	-0.00106	-0.00107	-0.00106
	(A2 * A3 * B1 * !C1 * X)	0.00110	0.00111	0.00109
	(A2 * A3 * !B1 * C1 * X)	-0.00106	-0.00106	-0.00105
	(A2 * A3 * !B1 * C1 * X)	0.00106	0.00106	0.00106
	(A2 * !A3 * B1 * C1 * X)	-0.00091	-0.00098	-0.00097
	(A2 * !A3 * B1 * C1 * X)	0.00112	0.00113	0.00112
	(A2 * !A3 * B1 * !C1 * X)	-0.00090	-0.00098	-0.00097
	(A2 * !A3 * B1 * !C1 * X)	0.00112	0.00113	0.00113
	(A2 * !A3 * !B1 * C1 * X)	-0.00090	-0.00098	-0.00097
	(A2 * !A3 * !B1 * C1 * X)	0.00112	0.00114	0.00113
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00033	-0.00033	-0.00033
	(A2 * !A3 * !B1 * !C1 * !X)	0.00138	0.00139	0.00139
	(!A2 * B1 * C1 * X)	-0.00097	-0.00101	-0.00100
	(!A2 * B1 * C1 * X)	0.00112	0.00113	0.00112
	(!A2 * B1 * !C1 * X)	-0.00097	-0.00101	-0.00100
	(!A2 * B1 * !C1 * X)	0.00113	0.00113	0.00112
	(!A2 * !B1 * C1 * X)	-0.00097	-0.00101	-0.00100
	(!A2 * !B1 * C1 * X)	0.00113	0.00113	0.00113
	(!A2 * !B1 * !C1 * !X)	-0.00034	-0.00034	-0.00034
	(!A2 * !B1 * !C1 * !X)	0.00139	0.00139	0.00139

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	-0.00182	-0.00182	-0.00182
	(A2 * A3 * B1 * C1 * X)	0.00227	0.00230	0.00227
	(A2 * A3 * B1 * !C1 * X)	-0.00182	-0.00182	-0.00182
	(A2 * A3 * B1 * !C1 * X)	0.00226	0.00230	0.00227
	(A2 * A3 * !B1 * C1 * X)	-0.00181	-0.00182	-0.00181
	(A2 * A3 * !B1 * C1 * X)	0.00220	0.00222	0.00221
	(A2 * !A3 * B1 * C1 * X)	-0.00153	-0.00168	-0.00167
	(A2 * !A3 * B1 * C1 * X)	0.00235	0.00238	0.00236
	(A2 * !A3 * B1 * !C1 * X)	-0.00152	-0.00168	-0.00167
	(A2 * !A3 * B1 * !C1 * X)	0.00235	0.00238	0.00236
	(A2 * !A3 * !B1 * C1 * X)	-0.00152	-0.00168	-0.00167
	(A2 * !A3 * !B1 * C1 * X)	0.00235	0.00238	0.00236
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00061	-0.00061	-0.00061
	(A2 * !A3 * !B1 * !C1 * !X)	0.00278	0.00277	0.00277
	(!A2 * B1 * C1 * X)	-0.00165	-0.00174	-0.00173
	(!A2 * B1 * C1 * X)	0.00234	0.00238	0.00236
	(!A2 * B1 * !C1 * X)	-0.00166	-0.00174	-0.00173
	(!A2 * B1 * !C1 * X)	0.00237	0.00238	0.00236
	(!A2 * !B1 * C1 * X)	-0.00166	-0.00174	-0.00173
	(!A2 * !B1 * C1 * X)	0.00237	0.00238	0.00236
	(!A2 * !B1 * !C1 * !X)	-0.00066	-0.00065	-0.00065
	(!A2 * !B1 * !C1 * !X)	0.00277	0.00277	0.00276

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)**	0.00088	0.00088	0.00087
	(A1 * A3 * B1 * C1 * X)	-0.00108	-0.00114	-0.00112
	(A1 * A3 * B1 * !C1 * X)	0.00088	0.00088	0.00087
	(A1 * A3 * B1 * !C1 * X)	-0.00108	-0.00114	-0.00112
	(A1 * A3 * !B1 * C1 * X)	0.00088	0.00088	0.00087
	(A1 * A3 * !B1 * C1 * X)	-0.00102	-0.00110	-0.00109
	(A1 * !A3 * B1 * C1 * X)	0.00082	0.00083	0.00082
	(A1 * !A3 * B1 * C1 * X)	-0.00117	-0.00117	-0.00116
	(A1 * !A3 * B1 * !C1 * X)	0.00082	0.00083	0.00082
	(A1 * !A3 * B1 * !C1 * X)	-0.00117	-0.00117	-0.00116
	(A1 * !A3 * !B1 * C1 * X)	0.00082	0.00082	0.00082
	(A1 * !A3 * !B1 * C1 * X)	-0.00117	-0.00116	-0.00116
	(A1 * !A3 * !B1 * !C1 * !X)	0.00035	0.00035	0.00035
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00122	-0.00122	-0.00121
	(!A1 * A3 * B1 * X)	0.00082	0.00082	0.00082
	(!A1 * A3 * B1 * X)	-0.00116	-0.00117	-0.00116
	(!A1 * A3 * !B1 * C1 * X)	0.00082	0.00083	0.00082
	(!A1 * A3 * !B1 * C1 * X)	-0.00116	-0.00117	-0.00116
	(!A1 * A3 * !B1 * !C1 * !X)	0.00077	0.00078	0.00077
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00121	-0.00122	-0.00121
	(!A1 * !A3 * B1 * X)	0.00050	0.00049	0.00049
	(!A1 * !A3 * B1 * X)	-0.00116	-0.00117	-0.00116
	(!A1 * !A3 * !B1 * C1 * X)	0.00050	0.00050	0.00049
	(!A1 * !A3 * !B1 * C1 * X)	-0.00116	-0.00117	-0.00116
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00041	0.00041	0.00041
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00122	-0.00122	-0.00122

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	0.00106	0.00106	0.00105
	(A1 * A3 * B1 * C1 * X)	-0.00105	-0.00110	-0.00109
	(A1 * A3 * B1 * !C1 * X)	0.00106	0.00106	0.00105
	(A1 * A3 * B1 * !C1 * X)	-0.00105	-0.00110	-0.00109
	(A1 * A3 * !B1 * C1 * X)	0.00106	0.00106	0.00105
	(A1 * A3 * !B1 * C1 * X)	-0.00099	-0.00106	-0.00106
	(A1 * !A3 * B1 * C1 * X)	0.00098	0.00099	0.00099
	(A1 * !A3 * B1 * C1 * X)	-0.00112	-0.00112	-0.00112
	(A1 * !A3 * B1 * !C1 * X)	0.00098	0.00099	0.00099
	(A1 * !A3 * B1 * !C1 * X)	-0.00112	-0.00112	-0.00112
	(A1 * !A3 * !B1 * C1 * X)	0.00098	0.00099	0.00099
	(A1 * !A3 * !B1 * C1 * X)	-0.00112	-0.00112	-0.00112
	(A1 * !A3 * !B1 * !C1 * !X)	0.00042	0.00042	0.00043
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00120	-0.00119	-0.00119
	(!A1 * A3 * B1 * X)	0.00099	0.00100	0.00099
	(!A1 * A3 * B1 * X)	-0.00112	-0.00112	-0.00112
	(!A1 * A3 * !B1 * C1 * X)	0.00099	0.00100	0.00099
	(!A1 * A3 * !B1 * C1 * X)	-0.00112	-0.00113	-0.00112
	(!A1 * A3 * !B1 * !C1 * !X)	0.00092	0.00093	0.00092
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00119	-0.00120	-0.00119
	(!A1 * !A3 * B1 * X)	0.00060	0.00061	0.00060
	(!A1 * !A3 * B1 * X)	-0.00112	-0.00113	-0.00112
	(!A1 * !A3 * !B1 * C1 * X)	0.00061	0.00061	0.00060
	(!A1 * !A3 * !B1 * C1 * X)	-0.00112	-0.00113	-0.00112
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00049	0.00049	0.00048
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00121	-0.00120	-0.00120

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	0.00174	0.00176	0.00174
	(A1 * A3 * B1 * C1 * X)	-0.00216	-0.00227	-0.00225
	(A1 * A3 * B1 * !C1 * X)	0.00174	0.00176	0.00174
	(A1 * A3 * B1 * !C1 * X)	-0.00216	-0.00227	-0.00225
	(A1 * A3 * !B1 * C1 * X)	0.00175	0.00176	0.00174
	(A1 * A3 * !B1 * C1 * X)	-0.00208	-0.00220	-0.00219
	(A1 * !A3 * B1 * C1 * X)	0.00164	0.00166	0.00165
	(A1 * !A3 * B1 * C1 * X)	-0.00230	-0.00233	-0.00231
	(A1 * !A3 * B1 * !C1 * X)	0.00164	0.00166	0.00165
	(A1 * !A3 * B1 * !C1 * X)	-0.00230	-0.00233	-0.00231
	(A1 * !A3 * !B1 * C1 * X)	0.00164	0.00165	0.00165
	(A1 * !A3 * !B1 * C1 * X)	-0.00230	-0.00231	-0.00231
	(A1 * !A3 * !B1 * !C1 * !X)	0.00080	0.00081	0.00082
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00231	-0.00232	-0.00230
	(!A1 * A3 * B1 * X)	0.00165	0.00167	0.00166
	(!A1 * A3 * B1 * X)	-0.00230	-0.00232	-0.00231
	(!A1 * A3 * !B1 * C1 * X)	0.00165	0.00167	0.00166
	(!A1 * A3 * !B1 * C1 * X)	-0.00230	-0.00232	-0.00231
	(!A1 * A3 * !B1 * !C1 * !X)	0.00166	0.00167	0.00166
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00231	-0.00232	-0.00231
	(!A1 * !A3 * B1 * X)	0.00104	0.00105	0.00104
	(!A1 * !A3 * B1 * X)	-0.00231	-0.00233	-0.00231
	(!A1 * !A3 * !B1 * C1 * X)	0.00104	0.00105	0.00104
	(!A1 * !A3 * !B1 * C1 * X)	-0.00230	-0.00232	-0.00231
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00095	0.00096	0.00095
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00232	-0.00233	-0.00232

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)**	-0.00087	-0.00088	-0.00087
	(A1 * A3 * B1 * C1 * X)	0.00113	0.00114	0.00112
	(A1 * A3 * B1 * !C1 * X)	-0.00087	-0.00088	-0.00087
	(A1 * A3 * B1 * !C1 * X)	0.00113	0.00114	0.00112
	(A1 * A3 * !B1 * C1 * X)	-0.00087	-0.00087	-0.00086
	(A1 * A3 * !B1 * C1 * X)	0.00110	0.00110	0.00109
	(A1 * !A3 * B1 * C1 * X)	-0.00080	-0.00083	-0.00082
	(A1 * !A3 * B1 * C1 * X)	0.00117	0.00118	0.00117
	(A1 * !A3 * B1 * !C1 * X)	-0.00080	-0.00083	-0.00082
	(A1 * !A3 * B1 * !C1 * X)	0.00117	0.00118	0.00117
	(A1 * !A3 * !B1 * C1 * X)	-0.00080	-0.00082	-0.00082
	(A1 * !A3 * !B1 * C1 * X)	0.00117	0.00118	0.00117
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00033	-0.00033	-0.00034
	(A1 * !A3 * !B1 * !C1 * !X)	0.00124	0.00125	0.00122
	(!A1 * A3 * B1 * X)	-0.00079	-0.00082	-0.00082
	(!A1 * A3 * B1 * X)	0.00116	0.00118	0.00117
	(!A1 * A3 * !B1 * C1 * X)	-0.00079	-0.00083	-0.00082
	(!A1 * A3 * !B1 * C1 * X)	0.00117	0.00118	0.00117
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00071	-0.00077	-0.00077
	(!A1 * A3 * !B1 * !C1 * !X)	0.00126	0.00123	0.00122
	(!A1 * !A3 * B1 * X)	-0.00050	-0.00049	-0.00049
	(!A1 * !A3 * B1 * X)	0.00116	0.00117	0.00117
	(!A1 * !A3 * !B1 * C1 * X)	-0.00050	-0.00050	-0.00049
	(!A1 * !A3 * !B1 * C1 * X)	0.00116	0.00117	0.00117
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00041	-0.00041	-0.00041
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00127	0.00128	0.00123

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	-0.00105	-0.00106	-0.00105
	(A1 * A3 * B1 * C1 * X)	0.00108	0.00111	0.00109
	(A1 * A3 * B1 * !C1 * X)	-0.00105	-0.00106	-0.00105
	(A1 * A3 * B1 * !C1 * X)	0.00108	0.00111	0.00109
	(A1 * A3 * !B1 * C1 * X)	-0.00105	-0.00105	-0.00105
	(A1 * A3 * !B1 * C1 * X)	0.00105	0.00106	0.00106
	(A1 * !A3 * B1 * C1 * X)	-0.00096	-0.00099	-0.00099
	(A1 * !A3 * B1 * C1 * X)	0.00112	0.00114	0.00112
	(A1 * !A3 * B1 * !C1 * X)	-0.00096	-0.00099	-0.00099
	(A1 * !A3 * B1 * !C1 * X)	0.00112	0.00114	0.00112
	(A1 * !A3 * !B1 * C1 * X)	-0.00096	-0.00099	-0.00099
	(A1 * !A3 * !B1 * C1 * X)	0.00112	0.00114	0.00113
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00040	-0.00040	-0.00041
	(A1 * !A3 * !B1 * !C1 * !X)	0.00123	0.00123	0.00121
	(!A1 * A3 * B1 * X)	-0.00096	-0.00100	-0.00099
	(!A1 * A3 * B1 * X)	0.00112	0.00113	0.00112
	(!A1 * A3 * !B1 * C1 * X)	-0.00096	-0.00100	-0.00099
	(!A1 * A3 * !B1 * C1 * X)	0.00112	0.00113	0.00113
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00086	-0.00093	-0.00092
	(!A1 * A3 * !B1 * !C1 * !X)	0.00123	0.00121	0.00120
	(!A1 * !A3 * B1 * X)	-0.00060	-0.00061	-0.00060
	(!A1 * !A3 * B1 * X)	0.00112	0.00113	0.00113
	(!A1 * !A3 * !B1 * C1 * X)	-0.00061	-0.00061	-0.00060
	(!A1 * !A3 * !B1 * C1 * X)	0.00112	0.00113	0.00113
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00049	-0.00049	-0.00048
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00126	0.00126	0.00122

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	-0.00174	-0.00175	-0.00174
	(A1 * A3 * B1 * C1 * X)	0.00224	0.00227	0.00225
	(A1 * A3 * B1 * !C1 * X)	-0.00174	-0.00175	-0.00174
	(A1 * A3 * B1 * !C1 * X)	0.00224	0.00227	0.00225
	(A1 * A3 * !B1 * C1 * X)	-0.00173	-0.00174	-0.00173
	(A1 * A3 * !B1 * C1 * X)	0.00219	0.00220	0.00219
	(A1 * !A3 * B1 * C1 * X)	-0.00158	-0.00166	-0.00165
	(A1 * !A3 * B1 * C1 * X)	0.00230	0.00234	0.00232
	(A1 * !A3 * B1 * !C1 * X)	-0.00159	-0.00166	-0.00165
	(A1 * !A3 * B1 * !C1 * X)	0.00233	0.00234	0.00232
	(A1 * !A3 * !B1 * C1 * X)	-0.00159	-0.00165	-0.00165
	(A1 * !A3 * !B1 * C1 * X)	0.00233	0.00234	0.00232
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00076	-0.00076	-0.00078
	(A1 * !A3 * !B1 * !C1 * !X)	0.00240	0.00240	0.00234
	(!A1 * A3 * B1 * X)	-0.00157	-0.00167	-0.00166
	(!A1 * A3 * B1 * X)	0.00230	0.00234	0.00232
	(!A1 * A3 * !B1 * C1 * X)	-0.00157	-0.00167	-0.00166
	(!A1 * A3 * !B1 * C1 * X)	0.00230	0.00234	0.00232
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00152	-0.00167	-0.00166
	(!A1 * A3 * !B1 * !C1 * !X)	0.00237	0.00234	0.00232
	(!A1 * !A3 * B1 * X)	-0.00104	-0.00105	-0.00104
	(!A1 * !A3 * B1 * X)	0.00231	0.00233	0.00232
	(!A1 * !A3 * !B1 * C1 * X)	-0.00104	-0.00105	-0.00104
	(!A1 * !A3 * !B1 * C1 * X)	0.00231	0.00233	0.00232
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00095	-0.00096	-0.00095
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00242	0.00242	0.00234

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)**	0.00097	0.00097	0.00096
	(A1 * A2 * B1 * C1 * X)	-0.00107	-0.00112	-0.00110
	(A1 * A2 * B1 * !C1 * X)	0.00097	0.00097	0.00096
	(A1 * A2 * B1 * !C1 * X)	-0.00106	-0.00112	-0.00111
	(A1 * A2 * !B1 * C1 * X)	0.00096	0.00097	0.00096
	(A1 * A2 * !B1 * C1 * X)	-0.00100	-0.00108	-0.00107
	(A1 * !A2 * !B1 * !C1 * !X)	0.00078	0.00080	0.00079
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00126	-0.00127	-0.00126
	(!A2 * B1 * X)	0.00091	0.00092	0.00091
	(!A2 * B1 * X)	-0.00114	-0.00115	-0.00114
	(!A2 * !B1 * C1 * X)	0.00091	0.00092	0.00091
	(!A2 * !B1 * C1 * X)	-0.00113	-0.00114	-0.00114
	(!A1 * A2 * B1 * X)	0.00089	0.00090	0.00089
	(!A1 * A2 * B1 * X)	-0.00114	-0.00114	-0.00114
	(!A1 * A2 * !B1 * C1 * X)	0.00089	0.00090	0.00089
	(!A1 * A2 * !B1 * C1 * X)	-0.00114	-0.00114	-0.00114
	(!A1 * A2 * !B1 * !C1 * !X)	0.00077	0.00078	0.00077
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00126	-0.00127	-0.00126
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00079	0.00079	0.00079
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00126	-0.00127	-0.00126

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	0.00121	0.00122	0.00120
	(A1 * A2 * B1 * C1 * X)	-0.00103	-0.00110	-0.00108
	(A1 * A2 * B1 * !C1 * X)	0.00121	0.00122	0.00120
	(A1 * A2 * B1 * !C1 * X)	-0.00103	-0.00110	-0.00108
	(A1 * A2 * !B1 * C1 * X)	0.00121	0.00121	0.00120
	(A1 * A2 * !B1 * C1 * X)	-0.00098	-0.00106	-0.00105
	(A1 * !A2 * !B1 * !C1 * !X)	0.00093	0.00094	0.00093
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00132	-0.00133	-0.00132
	(!A2 * B1 * X)	0.00113	0.00114	0.00114
	(!A2 * B1 * X)	-0.00111	-0.00112	-0.00111
	(!A2 * !B1 * C1 * X)	0.00114	0.00114	0.00114
	(!A2 * !B1 * C1 * X)	-0.00111	-0.00111	-0.00111
	(!A1 * A2 * B1 * X)	0.00112	0.00113	0.00112
	(!A1 * A2 * B1 * X)	-0.00111	-0.00112	-0.00111
	(!A1 * A2 * !B1 * C1 * X)	0.00112	0.00113	0.00112
	(!A1 * A2 * !B1 * C1 * X)	-0.00111	-0.00112	-0.00111
	(!A1 * A2 * !B1 * !C1 * !X)	0.00091	0.00091	0.00091
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00133	-0.00132	-0.00132
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00093	0.00094	0.00093
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00132	-0.00133	-0.00132

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	0.00201	0.00202	0.00200
	(A1 * A2 * B1 * C1 * X)	-0.00209	-0.00220	-0.00218
	(A1 * A2 * B1 * !C1 * X)	0.00201	0.00202	0.00200
	(A1 * A2 * B1 * !C1 * X)	-0.00209	-0.00220	-0.00218
	(A1 * A2 * !B1 * C1 * X)	0.00202	0.00202	0.00199
	(A1 * A2 * !B1 * C1 * X)	-0.00201	-0.00213	-0.00212
	(A1 * !A2 * !B1 * !C1 * !X)	0.00167	0.00170	0.00168
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00245	-0.00247	-0.00246
	(!A2 * B1 * X)	0.00190	0.00191	0.00190
	(!A2 * B1 * X)	-0.00224	-0.00225	-0.00224
	(!A2 * !B1 * C1 * X)	0.00190	0.00191	0.00190
	(!A2 * !B1 * C1 * X)	-0.00224	-0.00225	-0.00224
	(!A1 * A2 * B1 * X)	0.00187	0.00188	0.00187
	(!A1 * A2 * B1 * X)	-0.00224	-0.00225	-0.00224
	(!A1 * A2 * !B1 * C1 * X)	0.00188	0.00188	0.00187
	(!A1 * A2 * !B1 * C1 * X)	-0.00224	-0.00224	-0.00224
	(!A1 * A2 * !B1 * !C1 * !X)	0.00166	0.00166	0.00165
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00246	-0.00246	-0.00246
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00167	0.00170	0.00168
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00245	-0.00247	-0.00246

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)**	-0.00096	-0.00096	-0.00096
	(A1 * A2 * B1 * C1 * X)	0.00111	0.00112	0.00110
	(A1 * A2 * B1 * !C1 * X)	-0.00096	-0.00096	-0.00096
	(A1 * A2 * B1 * !C1 * X)	0.00111	0.00112	0.00111
	(A1 * A2 * !B1 * C1 * X)	-0.00095	-0.00096	-0.00095
	(A1 * A2 * !B1 * C1 * X)	0.00108	0.00108	0.00107
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00075	-0.00079	-0.00079
	(A1 * !A2 * !B1 * !C1 * !X)	0.00126	0.00128	0.00127
	(!A2 * B1 * X)	-0.00088	-0.00091	-0.00091
	(!A2 * B1 * X)	0.00114	0.00115	0.00114
	(!A2 * !B1 * C1 * X)	-0.00088	-0.00091	-0.00091
	(!A2 * !B1 * C1 * X)	0.00114	0.00115	0.00114
	(!A1 * A2 * B1 * X)	-0.00084	-0.00090	-0.00089
	(!A1 * A2 * B1 * X)	0.00114	0.00115	0.00114
	(!A1 * A2 * !B1 * C1 * X)	-0.00084	-0.00090	-0.00089
	(!A1 * A2 * !B1 * C1 * X)	0.00114	0.00115	0.00114
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00072	-0.00078	-0.00077
	(!A1 * A2 * !B1 * !C1 * !X)	0.00126	0.00127	0.00127
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00076	-0.00079	-0.00079
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00126	0.00128	0.00127

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00120	-0.00121	-0.00120
	(A1 * A2 * B1 * C1 * X)	0.00108	0.00110	0.00108
	(A1 * A2 * B1 * !C1 * X)	-0.00121	-0.00121	-0.00120
	(A1 * A2 * B1 * !C1 * X)	0.00109	0.00110	0.00108
	(A1 * A2 * !B1 * C1 * X)	-0.00120	-0.00120	-0.00120
	(A1 * A2 * !B1 * C1 * X)	0.00106	0.00106	0.00105
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00089	-0.00094	-0.00093
	(A1 * !A2 * !B1 * !C1 * !X)	0.00133	0.00135	0.00133
	(!A2 * B1 * X)	-0.00111	-0.00114	-0.00114
	(!A2 * B1 * X)	0.00111	0.00112	0.00112
	(!A2 * !B1 * C1 * X)	-0.00111	-0.00114	-0.00114
	(!A2 * !B1 * C1 * X)	0.00111	0.00113	0.00112
	(!A1 * A2 * B1 * X)	-0.00107	-0.00113	-0.00112
	(!A1 * A2 * B1 * X)	0.00111	0.00112	0.00112
	(!A1 * A2 * !B1 * C1 * X)	-0.00107	-0.00113	-0.00112
	(!A1 * A2 * !B1 * C1 * X)	0.00111	0.00112	0.00112
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00085	-0.00091	-0.00091
	(!A1 * A2 * !B1 * !C1 * !X)	0.00133	0.00133	0.00133
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00090	-0.00094	-0.00093
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00133	0.00135	0.00133

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00200	-0.00201	-0.00200
	(A1 * A2 * B1 * C1 * X)	0.00219	0.00220	0.00218
	(A1 * A2 * B1 * !C1 * X)	-0.00200	-0.00201	-0.00200
	(A1 * A2 * B1 * !C1 * X)	0.00219	0.00220	0.00218
	(A1 * A2 * !B1 * C1 * X)	-0.00199	-0.00200	-0.00199
	(A1 * A2 * !B1 * C1 * X)	0.00211	0.00213	0.00212
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00162	-0.00169	-0.00168
	(A1 * !A2 * !B1 * !C1 * !X)	0.00247	0.00249	0.00247
	(!A2 * B1 * X)	-0.00186	-0.00191	-0.00190
	(!A2 * B1 * X)	0.00225	0.00226	0.00225
	(!A2 * !B1 * C1 * X)	-0.00186	-0.00191	-0.00190
	(!A2 * !B1 * C1 * X)	0.00225	0.00226	0.00225
	(!A1 * A2 * B1 * X)	-0.00178	-0.00188	-0.00187
	(!A1 * A2 * B1 * X)	0.00224	0.00226	0.00225
	(!A1 * A2 * !B1 * C1 * X)	-0.00178	-0.00188	-0.00187
	(!A1 * A2 * !B1 * C1 * X)	0.00224	0.00226	0.00225
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00156	-0.00166	-0.00165
	(!A1 * A2 * !B1 * !C1 * !X)	0.00246	0.00247	0.00246
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00162	-0.00169	-0.00168
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00247	0.00249	0.00247

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)**	0.00109	0.00105	0.00100
	(A1 * A2 * A3 * C1 * X)	-0.00081	-0.00080	-0.00081
	(A1 * A2 * A3 * !C1 * X)	0.00099	0.00099	0.00098
	(A1 * A2 * A3 * !C1 * X)	-0.00065	-0.00065	-0.00065
	(A1 * A2 * !A3 * C1 * X)	0.00115	0.00100	0.00098
	(A1 * A2 * !A3 * C1 * X)	-0.00092	-0.00109	-0.00110
	(A1 * !A2 * C1 * X)	0.00115	0.00098	0.00098
	(A1 * !A2 * C1 * X)	-0.00092	-0.00108	-0.00110
	(!A1 * C1 * X)	0.00115	0.00100	0.00098
	(!A1 * C1 * X)	-0.00093	-0.00109	-0.00110
sky130_fd_sc_hs__a311o_2	**(A1 * A2 * A3 * C1 * X)**	0.00126	0.00122	0.00118
	(A1 * A2 * A3 * C1 * X)	-0.00080	-0.00081	-0.00081
	(A1 * A2 * A3 * !C1 * X)	0.00115	0.00116	0.00115
	(A1 * A2 * A3 * !C1 * X)	-0.00064	-0.00065	-0.00065
	(A1 * A2 * !A3 * C1 * X)	0.00131	0.00116	0.00114
	(A1 * A2 * !A3 * C1 * X)	-0.00092	-0.00109	-0.00110
	(A1 * !A2 * C1 * X)	0.00131	0.00116	0.00114
	(A1 * !A2 * C1 * X)	-0.00092	-0.00109	-0.00110
	(!A1 * C1 * X)	0.00130	0.00116	0.00114
	(!A1 * C1 * X)	-0.00092	-0.00109	-0.00110
sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	0.00196	0.00191	0.00185
	(A1 * A2 * A3 * C1 * X)	-0.00174	-0.00175	-0.00174
	(A1 * A2 * A3 * !C1 * X)	0.00182	0.00183	0.00182
	(A1 * A2 * A3 * !C1 * X)	-0.00140	-0.00141	-0.00141
	(A1 * A2 * !A3 * C1 * X)	0.00213	0.00184	0.00181
	(A1 * A2 * !A3 * C1 * X)	-0.00193	-0.00229	-0.00229
	(A1 * !A2 * C1 * X)	0.00213	0.00184	0.00181
	(A1 * !A2 * C1 * X)	-0.00193	-0.00229	-0.00229
	(!A1 * C1 * X)	0.00213	0.00184	0.00181
	(!A1 * C1 * X)	-0.00193	-0.00229	-0.00229

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)	-0.00099	-0.00098	-0.00098
	(A1 * A2 * A3 * C1 * X)	0.00081	0.00080	0.00081
	(A1 * A2 * A3 * !C1 * X)	-0.00094	-0.00094	-0.00096
	(A1 * A2 * A3 * !C1 * X)	0.00070	0.00070	0.00068
	(A1 * A2 * !A3 * C1 * X)	-0.00097	-0.00097	-0.00096
	(A1 * A2 * !A3 * C1 * X)	0.00109	0.00110	0.00110
	(A1 * !A2 * C1 * X)	-0.00097	-0.00097	-0.00096
	(A1 * !A2 * C1 * X)	0.00109	0.00110	0.00110
	(!A1 * C1 * X)	-0.00097	-0.00097	-0.00096
	(!A1 * C1 * X)	0.00109	0.00111	0.00110
sky130_fd_sc_hs__a311o_2	(A1 * A2 * A3 * C1 * X)	-0.00115	-0.00116	-0.00115
	(A1 * A2 * A3 * C1 * X)	0.00080	0.00081	0.00081
	(A1 * A2 * A3 * !C1 * X)	-0.00110	-0.00111	-0.00113
	(A1 * A2 * A3 * !C1 * X)	0.00070	0.00070	0.00068
	(A1 * A2 * !A3 * C1 * X)	-0.00114	-0.00114	-0.00113
	(A1 * A2 * !A3 * C1 * X)	0.00110	0.00110	0.00110
	(A1 * !A2 * C1 * X)	-0.00114	-0.00114	-0.00113
	(A1 * !A2 * C1 * X)	0.00110	0.00110	0.00110
	(!A1 * C1 * X)	-0.00114	-0.00114	-0.00113
	(!A1 * C1 * X)	0.00110	0.00110	0.00110

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	-0.00182	-0.00183	-0.00182
	(A1 * A2 * A3 * C1 * X)	0.00174	0.00175	0.00174
	(A1 * A2 * A3 * !C1 * X)	-0.00172	-0.00173	-0.00176
	(A1 * A2 * A3 * !C1 * X)	0.00151	0.00150	0.00148
	(A1 * A2 * !A3 * C1 * X)	-0.00179	-0.00180	-0.00179
	(A1 * A2 * !A3 * C1 * X)	0.00227	0.00230	0.00229
	(A1 * !A2 * C1 * X)	-0.00179	-0.00180	-0.00179
	(A1 * !A2 * C1 * X)	0.00227	0.00229	0.00229
	(!A1 * C1 * X)	-0.00179	-0.00180	-0.00179
	(!A1 * C1 * X)	0.00227	0.00229	0.00229

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)	0.00120	0.00120	0.00119
	(A1 * A2 * B1 * X)	-0.00060	-0.00060	-0.00060
	(A1 * A2 * A3 * !B1 * X)	0.00119	0.00120	0.00119
	(A1 * A2 * A3 * !B1 * X)	-0.00059	-0.00060	-0.00059
	(A1 * !A2 * B1 * X)	0.00120	0.00120	0.00119
	(A1 * !A2 * B1 * X)	-0.00060	-0.00060	-0.00060
	(!A1 * B1 * X)	0.00120	0.00120	0.00119
	(!A1 * B1 * X)	-0.00060	-0.00060	-0.00060
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	0.00117	0.00118	0.00118
	(A1 * A2 * B1 * X)	-0.00063	-0.00063	-0.00063
	(A1 * A2 * A3 * !B1 * X)	0.00117	0.00118	0.00118
	(A1 * A2 * A3 * !B1 * X)	-0.00063	-0.00063	-0.00063
	(A1 * !A2 * B1 * X)	0.00117	0.00118	0.00118
	(A1 * !A2 * B1 * X)	-0.00063	-0.00064	-0.00063
	(!A1 * B1 * X)	0.00117	0.00118	0.00118
	(!A1 * B1 * X)	-0.00063	-0.00064	-0.00063
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	0.00193	0.00194	0.00193
	(A1 * A2 * B1 * X)	-0.00135	-0.00135	-0.00135
	(A1 * A2 * A3 * !B1 * X)	0.00193	0.00194	0.00194
	(A1 * A2 * A3 * !B1 * X)	-0.00135	-0.00135	-0.00134
	(A1 * !A2 * B1 * X)	0.00193	0.00194	0.00193
	(A1 * !A2 * B1 * X)	-0.00135	-0.00135	-0.00135
	(!A1 * B1 * X)	0.00193	0.00194	0.00193
	(!A1 * B1 * X)	-0.00135	-0.00135	-0.00135

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)	-0.00115	-0.00116	-0.00119
	(A1 * A2 * B1 * X)	0.00063	0.00064	0.00061
	(A1 * A2 * A3 * !B1 * X)	-0.00103	-0.00104	-0.00116
	(A1 * A2 * A3 * !B1 * X)	0.00071	0.00072	0.00062
	(A1 * !A2 * B1 * X)	-0.00115	-0.00116	-0.00119
	(A1 * !A2 * B1 * X)	0.00063	0.00064	0.00061
	(!A1 * B1 * X)	-0.00115	-0.00116	-0.00119
	(!A1 * B1 * X)	0.00063	0.00064	0.00061
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	-0.00113	-0.00114	-0.00117
	(A1 * A2 * B1 * X)	0.00068	0.00067	0.00064
	(A1 * A2 * A3 * !B1 * X)	-0.00102	-0.00102	-0.00115
	(A1 * A2 * A3 * !B1 * X)	0.00076	0.00075	0.00066
	(A1 * !A2 * B1 * X)	-0.00113	-0.00114	-0.00117
	(A1 * !A2 * B1 * X)	0.00068	0.00067	0.00065
	(!A1 * B1 * X)	-0.00113	-0.00114	-0.00117
	(!A1 * B1 * X)	0.00068	0.00067	0.00065
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	-0.00180	-0.00181	-0.00192
	(A1 * A2 * B1 * X)	0.00148	0.00147	0.00138
	(A1 * A2 * A3 * !B1 * X)	-0.00154	-0.00155	-0.00186
	(A1 * A2 * A3 * !B1 * X)	0.00166	0.00165	0.00142
	(A1 * !A2 * B1 * X)	-0.00180	-0.00181	-0.00192
	(A1 * !A2 * B1 * X)	0.00148	0.00148	0.00138
	(!A1 * B1 * X)	-0.00180	-0.00181	-0.00192
	(!A1 * B1 * X)	0.00148	0.00148	0.00138

SKY130_FD_SC_HS__A31OIx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a31oi_1	9.59040
sky130_fd_sc_hs__a31oi_2	14.38560
sky130_fd_sc_hs__a31oi_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	A3	B1	Y
sky130_fd_sc_hs__a31oi_1	0.00273	0.00281	0.00270	0.00278	0.35564
sky130_fd_sc_hs__a31oi_2	0.00521	0.00505	0.00539	0.00414	0.69337
sky130_fd_sc_hs__a31oi_4	0.01056	0.00995	0.00992	0.00835	1.19911

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a31oi_1	0.00000	0.01544	0.03116
sky130_fd_sc_hs__a31oi_2	0.00000	0.02903	0.06232
sky130_fd_sc_hs__a31oi_4	0.00000	0.05805	0.12463

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)	0.13205	1.21130	11.54850
	A2->Y (FR)	0.16709	1.26731	11.77040
	A3->Y (FR)	0.18465	1.28160	11.71460
	B1->Y (FR)	0.12549	1.20839	11.69090
sky130_fd_sc_hs__a31oi_2	A1->Y (FR)	0.11812	1.05888	11.73600
	A2->Y (FR)	0.14370	1.08356	11.72640
	A3->Y (FR)	0.16567	1.09480	11.56570
	B1->Y (FR)	0.09586	1.02003	11.66790
sky130_fd_sc_hs__a31oi_4	A1->Y (FR)	0.11687	0.92768	11.37400
	A2->Y (FR)	0.14759	0.95163	11.28530
	A3->Y (FR)	0.17942	0.99744	11.46060
	B1->Y (FR)	0.13123	0.93880	11.51700

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31oi_1	A1->Y (RF)	0.04958	0.58366	5.71862
	A2->Y (RF)	0.05944	0.56954	5.43458
	A3->Y (RF)	0.06276	0.52905	4.90410
	B1->Y (RF)	0.02447	0.40070	4.04510
sky130_fd_sc_hs__a31oi_2	A1->Y (RF)	0.04656	0.55167	6.17510
	A2->Y (RF)	0.05409	0.50586	5.49931
	A3->Y (RF)	0.05967	0.47667	5.03106
	B1->Y (RF)	0.02936	0.50240	5.84169
sky130_fd_sc_hs__a31oi_4	A1->Y (RF)	0.04846	0.50545	6.22878
	A2->Y (RF)	0.05923	0.46929	5.56854
	A3->Y (RF)	0.06474	0.42691	4.90873
	B1->Y (RF)	0.02714	0.41408	5.34906

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	0.00008	-0.00004	0.00004
	A1	0.00395	0.00383	0.00391
	A2	0.00054	0.00039	0.00046
	A2	0.00512	0.00497	0.00504
	A3	0.00074	0.00063	0.00071
	A3	0.00599	0.00588	0.00595
	B1	0.00071	0.00066	0.00122
	B1	0.00516	0.00508	0.00566
sky130_fd_sc_hs__a31oi_2	A1	0.00015	-0.00004	0.00013
	A1	0.00744	0.00726	0.00745
	A2	0.00098	0.00076	0.00093
	A2	0.00950	0.00928	0.00941
	A3	0.00169	0.00148	0.00162
	A3	0.01160	0.01139	0.01149
	B1	0.00244	0.00238	0.00300
	B1	0.00962	0.00956	0.01016
sky130_fd_sc_hs__a31oi_4	A1	-0.00080	-0.00117	-0.00070
	A1	0.01417	0.01376	0.01429
	A2	0.00145	0.00090	0.00129
	A2	0.01890	0.01832	0.01868
	A3	0.00314	0.00267	0.00301
	A3	0.02315	0.02272	0.02301
	B1	0.00437	0.00424	0.00560
	B1	0.01930	0.01890	0.02052

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	0.00500	0.00488	0.00528
	A1	0.00119	0.00106	0.00124
	A2	0.00574	0.00561	0.00589
	A2	0.00119	0.00105	0.00114
	A3	0.00641	0.00629	0.00650
	A3	0.00113	0.00100	0.00108
	B1	0.00456	0.00457	0.00480
	B1	-0.00001	-0.00007	0.00018
sky130_fd_sc_hs__a31oi_2	A1	0.00910	0.00885	0.00912
	A1	0.00197	0.00166	0.00203
	A2	0.01041	0.01021	0.01090
	A2	0.00195	0.00168	0.00188
	A3	0.01196	0.01173	0.01201
	A3	0.00198	0.00169	0.00186
	B1	0.00652	0.00657	0.00714
	B1	-0.00094	-0.00104	-0.00069
sky130_fd_sc_hs__a31oi_4	A1	0.01842	0.01775	0.01909
	A1	0.00376	0.00305	0.00384
	A2	0.02101	0.02038	0.02124
	A2	0.00369	0.00308	0.00351
	A3	0.02388	0.02332	0.02434
	A3	0.00364	0.00303	0.00343
	B1	0.01358	0.01357	0.01456
	B1	-0.00195	-0.00211	-0.00135

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)**	0.00110	0.00106	0.00105
	(A2 * A3 * B1 * !Y)	-0.00113	-0.00121	-0.00120
	(A2 * !A3 * B1 * !Y)	0.00096	0.00097	0.00097
	(A2 * !A3 * B1 * !Y)	-0.00123	-0.00124	-0.00124
	(A2 * !A3 * !B1 * Y)	0.00037	0.00037	0.00034
	(A2 * !A3 * !B1 * Y)	-0.00142	-0.00143	-0.00149
	(!A2 * B1 * !Y)	0.00099	0.00100	0.00099
	(!A2 * B1 * !Y)	-0.00124	-0.00124	-0.00124
	(!A2 * !B1 * Y)	0.00037	0.00037	0.00035
	(!A2 * !B1 * Y)	-0.00146	-0.00147	-0.00149
sky130_fd_sc_hs__a31oi_2	**(A2 * A3 * B1 * !Y)**	0.00219	0.00212	0.00211
	(A2 * A3 * B1 * !Y)	-0.00232	-0.00246	-0.00246
	(A2 * !A3 * B1 * !Y)	0.00196	0.00196	0.00195
	(A2 * !A3 * B1 * !Y)	-0.00253	-0.00253	-0.00252
	(A2 * !A3 * !B1 * Y)	0.00071	0.00071	0.00065
	(A2 * !A3 * !B1 * Y)	-0.00290	-0.00292	-0.00306
	(!A2 * B1 * !Y)	0.00200	0.00201	0.00200
	(!A2 * B1 * !Y)	-0.00252	-0.00253	-0.00252
	(!A2 * !B1 * Y)	0.00068	0.00069	0.00066
	(!A2 * !B1 * Y)	-0.00300	-0.00304	-0.00308
sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	0.00453	0.00440	0.00437
	(A2 * A3 * B1 * !Y)	-0.00451	-0.00487	-0.00484
	(A2 * !A3 * B1 * !Y)	0.00404	0.00408	0.00405
	(A2 * !A3 * B1 * !Y)	-0.00497	-0.00500	-0.00498
	(A2 * !A3 * !B1 * Y)	0.00152	0.00152	0.00137
	(A2 * !A3 * !B1 * Y)	-0.00582	-0.00583	-0.00613
	(!A2 * B1 * !Y)	0.00414	0.00418	0.00416
	(!A2 * B1 * !Y)	-0.00497	-0.00500	-0.00498
	(!A2 * !B1 * Y)	0.00152	0.00153	0.00144
	(!A2 * !B1 * Y)	-0.00600	-0.00604	-0.00616

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)	-0.00105	-0.00105	-0.00105
	(A2 * A3 * B1 * !Y)	0.00120	0.00121	0.00120
	(A2 * !A3 * B1 * !Y)	-0.00089	-0.00097	-0.00097
	(A2 * !A3 * B1 * !Y)	0.00123	0.00125	0.00124
	(A2 * !A3 * !B1 * Y)	-0.00033	-0.00033	-0.00033
	(A2 * !A3 * !B1 * Y)	0.00149	0.00150	0.00149
	(!A2 * B1 * !Y)	-0.00097	-0.00100	-0.00099
	(!A2 * B1 * !Y)	0.00125	0.00125	0.00124
	(!A2 * !B1 * Y)	-0.00034	-0.00034	-0.00034
	(!A2 * !B1 * Y)	0.00149	0.00150	0.00149
sky130_fd_sc_hs__a31oi_2	(A2 * A3 * B1 * !Y)	-0.00211	-0.00211	-0.00211
	(A2 * A3 * B1 * !Y)	0.00245	0.00247	0.00246
	(A2 * !A3 * B1 * !Y)	-0.00177	-0.00196	-0.00195
	(A2 * !A3 * B1 * !Y)	0.00254	0.00256	0.00253
	(A2 * !A3 * !B1 * Y)	-0.00063	-0.00063	-0.00062
	(A2 * !A3 * !B1 * Y)	0.00309	0.00310	0.00309
	(!A2 * B1 * !Y)	-0.00192	-0.00201	-0.00200
	(!A2 * B1 * !Y)	0.00254	0.00256	0.00253
	(!A2 * !B1 * Y)	-0.00064	-0.00064	-0.00064
	(!A2 * !B1 * Y)	0.00310	0.00311	0.00309

sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	-0.00438	-0.00439	-0.00437
	(A2 * A3 * B1 * !Y)	0.00485	0.00487	0.00484
	(A2 * !A3 * B1 * !Y)	-0.00366	-0.00408	-0.00405
	(A2 * !A3 * B1 * !Y)	0.00501	0.00505	0.00499
	(A2 * !A3 * !B1 * Y)	-0.00134	-0.00136	-0.00135
	(A2 * !A3 * !B1 * Y)	0.00613	0.00622	0.00617
	(!A2 * B1 * !Y)	-0.00399	-0.00418	-0.00416
	(!A2 * B1 * !Y)	0.00497	0.00501	0.00499
	(!A2 * !B1 * Y)	-0.00139	-0.00141	-0.00140
	(!A2 * !B1 * Y)	0.00614	0.00622	0.00618

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)**	0.00117	0.00114	0.00112
	(A1 * A3 * B1 * !Y)	-0.00113	-0.00121	-0.00120
	(A1 * !A3 * B1 * !Y)	0.00106	0.00107	0.00106
	(A1 * !A3 * B1 * !Y)	-0.00124	-0.00124	-0.00124
	(A1 * !A3 * !B1 * Y)	0.00043	0.00043	0.00043
	(A1 * !A3 * !B1 * Y)	-0.00138	-0.00138	-0.00137
	(!A1 * A3 * B1 * !Y)	0.00106	0.00107	0.00106
	(!A1 * A3 * B1 * !Y)	-0.00124	-0.00124	-0.00123
	(!A1 * A3 * !B1 * Y)	0.00093	0.00093	0.00093
	(!A1 * A3 * !B1 * Y)	-0.00137	-0.00138	-0.00137
	(!A1 * !A3 * B1 * !Y)	0.00068	0.00068	0.00068
	(!A1 * !A3 * B1 * !Y)	-0.00124	-0.00124	-0.00123
	(!A1 * !A3 * !B1 * Y)	0.00049	0.00050	0.00049
	(!A1 * !A3 * !B1 * Y)	-0.00138	-0.00139	-0.00138

sky130_fd_sc_hs__a31oi_2	**(A1 * A3 * B1 * !Y)**	0.00202	0.00198	0.00195
	(A1 * A3 * B1 * !Y)	-0.00232	-0.00249	-0.00247
	(A1 * !A3 * B1 * !Y)	0.00184	0.00186	0.00184
	(A1 * !A3 * B1 * !Y)	-0.00255	-0.00256	-0.00254
	(A1 * !A3 * !B1 * Y)	0.00084	0.00085	0.00084
	(A1 * !A3 * !B1 * Y)	-0.00254	-0.00256	-0.00254
	(!A1 * A3 * B1 * !Y)	0.00184	0.00185	0.00184
	(!A1 * A3 * B1 * !Y)	-0.00254	-0.00256	-0.00254
	(!A1 * A3 * !B1 * Y)	0.00183	0.00184	0.00183
	(!A1 * A3 * !B1 * Y)	-0.00255	-0.00255	-0.00255
	(!A1 * !A3 * B1 * !Y)	0.00106	0.00108	0.00107
	(!A1 * !A3 * B1 * !Y)	-0.00254	-0.00255	-0.00254
	(!A1 * !A3 * !B1 * Y)	0.00097	0.00098	0.00097
	(!A1 * !A3 * !B1 * Y)	-0.00257	-0.00258	-0.00257
sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	0.00431	0.00414	0.00415
	(A1 * A3 * B1 * !Y)	-0.00461	-0.00495	-0.00495
	(A1 * !A3 * B1 * !Y)	0.00386	0.00386	0.00385
	(A1 * !A3 * B1 * !Y)	-0.00512	-0.00511	-0.00510
	(A1 * !A3 * !B1 * Y)	0.00182	0.00184	0.00185
	(A1 * !A3 * !B1 * Y)	-0.00513	-0.00517	-0.00512
	(!A1 * A3 * B1 * !Y)	0.00394	0.00397	0.00395
	(!A1 * A3 * B1 * !Y)	-0.00508	-0.00512	-0.00510
	(!A1 * A3 * !B1 * Y)	0.00389	0.00395	0.00391
	(!A1 * A3 * !B1 * Y)	-0.00512	-0.00516	-0.00513
	(!A1 * !A3 * B1 * !Y)	0.00235	0.00237	0.00235
	(!A1 * !A3 * B1 * !Y)	-0.00509	-0.00513	-0.00510
	(!A1 * !A3 * !B1 * Y)	0.00212	0.00215	0.00213
	(!A1 * !A3 * !B1 * Y)	-0.00517	-0.00521	-0.00518

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)	-0.00112	-0.00113	-0.00112
	(A1 * A3 * B1 * !Y)	0.00120	0.00121	0.00120
	(A1 * !A3 * B1 * !Y)	-0.00103	-0.00107	-0.00106
	(A1 * !A3 * B1 * !Y)	0.00124	0.00125	0.00124
	(A1 * !A3 * !B1 * Y)	-0.00040	-0.00040	-0.00041
	(A1 * !A3 * !B1 * Y)	0.00141	0.00141	0.00139
	(!A1 * A3 * B1 * !Y)	-0.00103	-0.00107	-0.00106
	(!A1 * A3 * B1 * !Y)	0.00124	0.00125	0.00124
	(!A1 * A3 * !B1 * Y)	-0.00086	-0.00093	-0.00093
	(!A1 * A3 * !B1 * Y)	0.00141	0.00139	0.00138
	(!A1 * !A3 * B1 * !Y)	-0.00068	-0.00068	-0.00068
	(!A1 * !A3 * B1 * !Y)	0.00124	0.00124	0.00124
	(!A1 * !A3 * !B1 * Y)	-0.00049	-0.00050	-0.00049
	(!A1 * !A3 * !B1 * Y)	0.00144	0.00145	0.00139
sky130_fd_sc_hs__a31oi_2	(A1 * A3 * B1 * !Y)	-0.00194	-0.00196	-0.00195
	(A1 * A3 * B1 * !Y)	0.00246	0.00249	0.00247
	(A1 * !A3 * B1 * !Y)	-0.00176	-0.00186	-0.00184
	(A1 * !A3 * B1 * !Y)	0.00256	0.00256	0.00255
	(A1 * !A3 * !B1 * Y)	-0.00079	-0.00079	-0.00081
	(A1 * !A3 * !B1 * Y)	0.00262	0.00263	0.00258
	(!A1 * A3 * B1 * !Y)	-0.00176	-0.00185	-0.00184
	(!A1 * A3 * B1 * !Y)	0.00254	0.00257	0.00255
	(!A1 * A3 * !B1 * Y)	-0.00170	-0.00184	-0.00183
	(!A1 * A3 * !B1 * Y)	0.00262	0.00259	0.00255
	(!A1 * !A3 * B1 * !Y)	-0.00106	-0.00108	-0.00107
	(!A1 * !A3 * B1 * !Y)	0.00256	0.00255	0.00255
	(!A1 * !A3 * !B1 * Y)	-0.00097	-0.00098	-0.00097
	(!A1 * !A3 * !B1 * Y)	0.00269	0.00268	0.00260

sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	-0.00414	-0.00414	-0.00414
	(A1 * A3 * B1 * !Y)	0.00493	0.00498	0.00495
	(A1 * !A3 * B1 * !Y)	-0.00370	-0.00386	-0.00385
	(A1 * !A3 * B1 * !Y)	0.00513	0.00514	0.00512
	(A1 * !A3 * !B1 * Y)	-0.00172	-0.00173	-0.00177
	(A1 * !A3 * !B1 * Y)	0.00529	0.00531	0.00520
	(!A1 * A3 * B1 * !Y)	-0.00377	-0.00397	-0.00395
	(!A1 * A3 * B1 * !Y)	0.00508	0.00517	0.00512
	(!A1 * A3 * !B1 * Y)	-0.00359	-0.00395	-0.00391
	(!A1 * A3 * !B1 * Y)	0.00528	0.00521	0.00515
	(!A1 * !A3 * B1 * !Y)	-0.00235	-0.00237	-0.00235
	(!A1 * !A3 * B1 * !Y)	0.00514	0.00513	0.00512
	(!A1 * !A3 * !B1 * Y)	-0.00212	-0.00215	-0.00213
	(!A1 * !A3 * !B1 * Y)	0.00541	0.00540	0.00523

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)**	0.00120	0.00118	0.00116
	(A1 * A2 * B1 * !Y)	-0.00117	-0.00125	-0.00124
	(A1 * !A2 * !B1 * Y)	0.00102	0.00103	0.00102
	(A1 * !A2 * !B1 * Y)	-0.00136	-0.00136	-0.00136
	(!A2 * B1 * !Y)	0.00110	0.00110	0.00110
	(!A2 * B1 * !Y)	-0.00127	-0.00127	-0.00127
	(!A1 * A2 * B1 * !Y)	0.00109	0.00110	0.00109
	(!A1 * A2 * B1 * !Y)	-0.00127	-0.00128	-0.00127
	(!A1 * A2 * !B1 * Y)	0.00101	0.00101	0.00100
	(!A1 * A2 * !B1 * Y)	-0.00136	-0.00136	-0.00136
	(!A1 * !A2 * !B1 * Y)	0.00102	0.00103	0.00102
	(!A1 * !A2 * !B1 * Y)	-0.00136	-0.00136	-0.00136

sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	0.00223	0.00219	0.00216
	(A1 * A2 * B1 * !Y)	-0.00230	-0.00247	-0.00245
	(A1 * !A2 * !B1 * Y)	0.00200	0.00201	0.00200
	(A1 * !A2 * !B1 * Y)	-0.00251	-0.00252	-0.00252
	(!A2 * B1 * !Y)	0.00205	0.00206	0.00205
	(!A2 * B1 * !Y)	-0.00252	-0.00252	-0.00251
	(!A1 * A2 * B1 * !Y)	0.00198	0.00199	0.00197
	(!A1 * A2 * B1 * !Y)	-0.00251	-0.00253	-0.00251
	(!A1 * A2 * !B1 * Y)	0.00197	0.00199	0.00197
	(!A1 * A2 * !B1 * Y)	-0.00252	-0.00253	-0.00252
	(!A1 * !A2 * !B1 * Y)	0.00200	0.00203	0.00201
	(!A1 * !A2 * !B1 * Y)	-0.00252	-0.00253	-0.00252
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	0.00428	0.00418	0.00412
	(A1 * A2 * B1 * !Y)	-0.00462	-0.00498	-0.00493
	(A1 * !A2 * !B1 * Y)	0.00385	0.00389	0.00385
	(A1 * !A2 * !B1 * Y)	-0.00508	-0.00511	-0.00508
	(!A2 * B1 * !Y)	0.00383	0.00387	0.00385
	(!A2 * B1 * !Y)	-0.00507	-0.00509	-0.00508
	(!A1 * A2 * B1 * !Y)	0.00377	0.00378	0.00376
	(!A1 * A2 * B1 * !Y)	-0.00509	-0.00509	-0.00508
	(!A1 * A2 * !B1 * Y)	0.00377	0.00378	0.00375
	(!A1 * A2 * !B1 * Y)	-0.00510	-0.00510	-0.00508
	(!A1 * !A2 * !B1 * Y)	0.00382	0.00386	0.00384
	(!A1 * !A2 * !B1 * Y)	-0.00507	-0.00510	-0.00508

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)**	-0.00116	-0.00117	-0.00116
	(A1 * A2 * B1 * !Y)	0.00125	0.00125	0.00124
	(A1 * !A2 * !B1 * Y)	-0.00099	-0.00102	-0.00102
	(A1 * !A2 * !B1 * Y)	0.00136	0.00136	0.00136
	(!A2 * B1 * !Y)	-0.00107	-0.00110	-0.00110
	(!A2 * B1 * !Y)	0.00127	0.00129	0.00128
	(!A1 * A2 * B1 * !Y)	-0.00103	-0.00110	-0.00109
	(!A1 * A2 * B1 * !Y)	0.00127	0.00129	0.00128
	(!A1 * A2 * !B1 * Y)	-0.00094	-0.00101	-0.00100
	(!A1 * A2 * !B1 * Y)	0.00136	0.00137	0.00136
	(!A1 * !A2 * !B1 * Y)	-0.00099	-0.00102	-0.00102
	(!A1 * !A2 * !B1 * Y)	0.00137	0.00137	0.00136
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	-0.00216	-0.00217	-0.00215
	(A1 * A2 * B1 * !Y)	0.00244	0.00247	0.00245
	(A1 * !A2 * !B1 * Y)	-0.00192	-0.00201	-0.00200
	(A1 * !A2 * !B1 * Y)	0.00252	0.00255	0.00253
	(!A2 * B1 * !Y)	-0.00200	-0.00206	-0.00205
	(!A2 * B1 * !Y)	0.00253	0.00254	0.00252
	(!A1 * A2 * B1 * !Y)	-0.00186	-0.00199	-0.00197
	(!A1 * A2 * B1 * !Y)	0.00252	0.00254	0.00252
	(!A1 * A2 * !B1 * Y)	-0.00185	-0.00199	-0.00197
	(!A1 * A2 * !B1 * Y)	0.00253	0.00254	0.00253
	(!A1 * !A2 * !B1 * Y)	-0.00194	-0.00202	-0.00201
	(!A1 * !A2 * !B1 * Y)	0.00252	0.00255	0.00253

sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	-0.00411	-0.00413	-0.00411
	(A1 * A2 * B1 * !Y)	0.00492	0.00498	0.00493
	(A1 * !A2 * !B1 * Y)	-0.00368	-0.00387	-0.00385
	(A1 * !A2 * !B1 * Y)	0.00509	0.00515	0.00510
	(!A2 * B1 * !Y)	-0.00372	-0.00387	-0.00385
	(!A2 * B1 * !Y)	0.00511	0.00512	0.00509
	(!A1 * A2 * B1 * !Y)	-0.00352	-0.00378	-0.00376
	(!A1 * A2 * B1 * !Y)	0.00509	0.00511	0.00509
	(!A1 * A2 * !B1 * Y)	-0.00351	-0.00378	-0.00375
	(!A1 * A2 * !B1 * Y)	0.00510	0.00512	0.00510
	(!A1 * !A2 * !B1 * Y)	-0.00369	-0.00386	-0.00384
	(!A1 * !A2 * !B1 * Y)	0.00509	0.00515	0.00510

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)**	0.00128	0.00129	0.00128
	(A1 * A2 * A3 * !Y)	-0.00064	-0.00064	-0.00064
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * A3 * !Y)**	0.00136	0.00137	0.00136
	(A1 * A2 * A3 * !Y)	-0.00126	-0.00127	-0.00127
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * A3 * !Y)**	0.00283	0.00285	0.00284
	(A1 * A2 * A3 * !Y)	-0.00260	-0.00261	-0.00259

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)	-0.00117	-0.00117	-0.00126
	(A1 * A2 * A3 * !Y)	0.00074	0.00073	0.00066
sky130_fd_sc_hs__a31oi_2	(A1 * A2 * A3 * !Y)	-0.00110	-0.00110	-0.00133
	(A1 * A2 * A3 * !Y)	0.00150	0.00148	0.00132
sky130_fd_sc_hs__a31oi_4	(A1 * A2 * A3 * !Y)	-0.00232	-0.00235	-0.00277
	(A1 * A2 * A3 * !Y)	0.00302	0.00302	0.00270

SKY130_FD_SC_HS__A31Ox

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a31o_1	11.18880
sky130_fd_sc_hs__a31o_2	12.78720
sky130_fd_sc_hs__a31o_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	A3	B1	X
sky130_fd_sc_hs__a31o_1	0.00244	0.00241	0.00241	0.00263	0.77097
sky130_fd_sc_hs__a31o_2	0.00272	0.00262	0.00263	0.00256	1.51372
sky130_fd_sc_hs__a31o_4	0.00479	0.00463	0.00461	0.00478	3.00146

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a31o_1	0.00000	0.04744	0.07174
sky130_fd_sc_hs__a31o_2	0.00000	0.05966	0.07595
sky130_fd_sc_hs__a31o_4	0.00000	0.12099	0.15190

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)	0.12419	0.81238	7.03227
	A2->X (RR)	0.13278	0.82891	7.17949
	A3->X (RR)	0.13733	0.81612	7.17360
	B1->X (RR)	0.08262	0.74745	7.00777
sky130_fd_sc_hs__a31o_2	A1->X (RR)	0.12914	0.73198	7.17971
	A2->X (RR)	0.13742	0.73903	7.28951
	A3->X (RR)	0.14199	0.72134	7.26602
	B1->X (RR)	0.07832	0.65014	7.09155
sky130_fd_sc_hs__a31o_4	A1->X (RR)	0.14580	0.68225	7.35712
	A2->X (RR)	0.15512	0.68292	7.45996
	A3->X (RR)	0.16103	0.66507	7.43298
	B1->X (RR)	0.07820	0.57102	7.21461

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31o_1	A1->X (FF)	0.19638	0.75962	4.73416
	A2->X (FF)	0.22932	0.80270	4.88970
	A3->X (FF)	0.24900	0.83069	5.00714
	B1->X (FF)	0.21433	0.77522	4.67897
sky130_fd_sc_hs__a31o_2	A1->X (FF)	0.26310	0.82702	5.08990
	A2->X (FF)	0.30473	0.87633	5.25902
	A3->X (FF)	0.32035	0.89708	5.34883
	B1->X (FF)	0.28317	0.84739	5.04805
sky130_fd_sc_hs__a31o_4	A1->X (FF)	0.25669	0.79131	5.14739
	A2->X (FF)	0.28954	0.83289	5.28478
	A3->X (FF)	0.32053	0.87041	5.42582
	B1->X (FF)	0.27540	0.80671	5.09847

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.00656	0.00646	0.00833
	A1	0.00314	0.00305	0.00495
	A2	0.00711	0.00701	0.00816
	A2	0.00315	0.00305	0.00426
	A3	0.00772	0.00761	0.00845
	A3	0.00314	0.00302	0.00392
	B1	0.00630	0.00623	0.00913
	B1	0.00215	0.00210	0.00564
sky130_fd_sc_hs__a31o_2	A1	0.00864	0.00869	0.01040
	A1	0.00493	0.00497	0.00681
	A2	0.00927	0.00935	0.01040
	A2	0.00493	0.00502	0.00618
	A3	0.00997	0.01005	0.01082
	A3	0.00492	0.00500	0.00589
	B1	0.00836	0.00845	0.01105
	B1	0.00394	0.00436	0.00694
sky130_fd_sc_hs__a31o_4	A1	0.01661	0.01685	0.02069
	A1	0.00980	0.01004	0.01401
	A2	0.01782	0.01819	0.02054
	A2	0.00980	0.01019	0.01260
	A3	0.01910	0.01951	0.02141
	A3	0.00979	0.01021	0.01220
	B1	0.01499	0.01523	0.02139
	B1	0.00709	0.00743	0.01437

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.00231	0.00230	0.00371
	A1	0.00577	0.00575	0.00693
	A2	0.00266	0.00267	0.00405
	A2	0.00662	0.00667	0.00771
	A3	0.00285	0.00281	0.00392
	A3	0.00738	0.00737	0.00832
	B1	0.00194	0.00215	0.00627
	B1	0.00660	0.00671	0.00997
sky130_fd_sc_hs__a31o_2	A1	0.00389	0.00398	0.00570
	A1	0.00764	0.00784	0.00899
	A2	0.00430	0.00453	0.00618
	A2	0.00863	0.00888	0.00995
	A3	0.00456	0.00464	0.00658
	A3	0.00953	0.00972	0.01070
	B1	0.00418	0.00450	0.00829
	B1	0.00875	0.00915	0.01226
sky130_fd_sc_hs__a31o_4	A1	0.00795	0.00844	0.01208
	A1	0.01490	0.01538	0.01753
	A2	0.00866	0.00924	0.01173
	A2	0.01672	0.01727	0.01920
	A3	0.00941	0.01010	0.01251
	A3	0.01861	0.01926	0.02109
	B1	0.00943	0.01008	0.01825
	B1	0.01704	0.01780	0.02421

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)**	0.00095	0.00089	0.00088
	(A2 * A3 * B1 * X)	-0.00103	-0.00114	-0.00113
	(A2 * !A3 * B1 * X)	0.00080	0.00081	0.00081
	(A2 * !A3 * B1 * X)	-0.00116	-0.00117	-0.00116
	(A2 * !A3 * !B1 * !X)	0.00029	0.00029	0.00027
	(A2 * !A3 * !B1 * !X)	-0.00132	-0.00133	-0.00138
	(!A2 * B1 * X)	0.00083	0.00084	0.00083
	(!A2 * B1 * X)	-0.00117	-0.00117	-0.00116
	(!A2 * !B1 * !X)	0.00030	0.00030	0.00028
	(!A2 * !B1 * !X)	-0.00136	-0.00136	-0.00138
sky130_fd_sc_hs__a31o_2	**(A2 * A3 * B1 * X)**	0.00117	0.00111	0.00111
	(A2 * A3 * B1 * X)	-0.00100	-0.00108	-0.00109
	(A2 * !A3 * B1 * X)	0.00102	0.00104	0.00103
	(A2 * !A3 * B1 * X)	-0.00112	-0.00113	-0.00112
	(A2 * !A3 * !B1 * !X)	0.00037	0.00037	0.00034
	(A2 * !A3 * !B1 * !X)	-0.00136	-0.00137	-0.00142
	(!A2 * B1 * X)	0.00105	0.00106	0.00105
	(!A2 * B1 * X)	-0.00112	-0.00112	-0.00112
	(!A2 * !B1 * !X)	0.00038	0.00038	0.00036
	(!A2 * !B1 * !X)	-0.00140	-0.00140	-0.00143
sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	0.00196	0.00190	0.00187
	(A2 * A3 * B1 * X)	-0.00207	-0.00228	-0.00226
	(A2 * !A3 * B1 * X)	0.00173	0.00175	0.00174
	(A2 * !A3 * B1 * X)	-0.00233	-0.00235	-0.00234
	(A2 * !A3 * !B1 * !X)	0.00070	0.00070	0.00062
	(A2 * !A3 * !B1 * !X)	-0.00266	-0.00267	-0.00280
	(!A2 * B1 * X)	0.00178	0.00180	0.00178
	(!A2 * B1 * X)	-0.00234	-0.00235	-0.00233
	(!A2 * !B1 * !X)	0.00068	0.00068	0.00065
	(!A2 * !B1 * !X)	-0.00275	-0.00277	-0.00281

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)	-0.00088	-0.00088	-0.00087
	(A2 * A3 * B1 * X)	0.00113	0.00114	0.00113
	(A2 * !A3 * B1 * X)	-0.00075	-0.00081	-0.00081
	(A2 * !A3 * B1 * X)	0.00117	0.00118	0.00117
	(A2 * !A3 * !B1 * !X)	-0.00026	-0.00027	-0.00027
	(A2 * !A3 * !B1 * !X)	0.00138	0.00139	0.00138
	(!A2 * B1 * X)	-0.00081	-0.00083	-0.00083
	(!A2 * B1 * X)	0.00117	0.00117	0.00117
	(!A2 * !B1 * !X)	-0.00027	-0.00027	-0.00027
	(!A2 * !B1 * !X)	0.00138	0.00139	0.00138
sky130_fd_sc_hs__a31o_2	(A2 * A3 * B1 * X)	-0.00111	-0.00111	-0.00110
	(A2 * A3 * B1 * X)	0.00109	0.00110	0.00109
	(A2 * !A3 * B1 * X)	-0.00096	-0.00104	-0.00103
	(A2 * !A3 * B1 * X)	0.00113	0.00113	0.00112
	(A2 * !A3 * !B1 * !X)	-0.00034	-0.00034	-0.00034
	(A2 * !A3 * !B1 * !X)	0.00143	0.00143	0.00143
	(!A2 * B1 * X)	-0.00102	-0.00106	-0.00105
	(!A2 * B1 * X)	0.00113	0.00113	0.00112
	(!A2 * !B1 * !X)	-0.00035	-0.00035	-0.00035
	(!A2 * !B1 * !X)	0.00142	0.00143	0.00143

sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	-0.00187	-0.00188	-0.00186
	(A2 * A3 * B1 * X)	0.00227	0.00228	0.00226
	(A2 * !A3 * B1 * X)	-0.00162	-0.00175	-0.00174
	(A2 * !A3 * B1 * X)	0.00236	0.00237	0.00234
	(A2 * !A3 * !B1 * !X)	-0.00061	-0.00061	-0.00061
	(A2 * !A3 * !B1 * !X)	0.00281	0.00282	0.00282
	(!A2 * B1 * X)	-0.00173	-0.00179	-0.00178
	(!A2 * B1 * X)	0.00236	0.00236	0.00234
	(!A2 * !B1 * !X)	-0.00062	-0.00063	-0.00062
	(!A2 * !B1 * !X)	0.00281	0.00282	0.00282

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)**	0.00093	0.00088	0.00086
	(A1 * A3 * B1 * X)	-0.00103	-0.00113	-0.00112
	(A1 * !A3 * B1 * X)	0.00081	0.00081	0.00081
	(A1 * !A3 * B1 * X)	-0.00116	-0.00117	-0.00116
	(A1 * !A3 * !B1 * !X)	0.00035	0.00035	0.00035
	(A1 * !A3 * !B1 * !X)	-0.00120	-0.00120	-0.00119
	(!A1 * A3 * B1 * X)	0.00081	0.00082	0.00081
	(!A1 * A3 * B1 * X)	-0.00116	-0.00116	-0.00116
	(!A1 * A3 * !B1 * !X)	0.00078	0.00078	0.00078
	(!A1 * A3 * !B1 * !X)	-0.00120	-0.00121	-0.00120
	(!A1 * !A3 * B1 * X)	0.00048	0.00048	0.00048
	(!A1 * !A3 * B1 * X)	-0.00116	-0.00117	-0.00116
	(!A1 * !A3 * !B1 * !X)	0.00040	0.00040	0.00040
	(!A1 * !A3 * !B1 * !X)	-0.00120	-0.00121	-0.00120

sky130_fd_sc_hs__a31o_2	**(A1 * A3 * B1 * X)**	0.00113	0.00108	0.00106
	(A1 * A3 * B1 * X)	-0.00100	-0.00110	-0.00109
	(A1 * !A3 * B1 * X)	0.00100	0.00100	0.00100
	(A1 * !A3 * B1 * X)	-0.00112	-0.00112	-0.00112
	(A1 * !A3 * !B1 * !X)	0.00043	0.00043	0.00043
	(A1 * !A3 * !B1 * !X)	-0.00121	-0.00121	-0.00120
	(!A1 * A3 * B1 * X)	0.00101	0.00102	0.00101
	(!A1 * A3 * B1 * X)	-0.00112	-0.00112	-0.00112
	(!A1 * A3 * !B1 * !X)	0.00093	0.00094	0.00093
	(!A1 * A3 * !B1 * !X)	-0.00120	-0.00121	-0.00120
	(!A1 * !A3 * B1 * X)	0.00063	0.00063	0.00063
	(!A1 * !A3 * B1 * X)	-0.00112	-0.00112	-0.00112
	(!A1 * !A3 * !B1 * !X)	0.00050	0.00050	0.00050
	(!A1 * !A3 * !B1 * !X)	-0.00122	-0.00121	-0.00121
sky130_fd_sc_hs__a31o_4	**(A1 * A3 * B1 * X)**	0.00196	0.00188	0.00185
	(A1 * A3 * B1 * X)	-0.00211	-0.00230	-0.00228
	(A1 * !A3 * B1 * X)	0.00174	0.00175	0.00174
	(A1 * !A3 * B1 * X)	-0.00237	-0.00238	-0.00236
	(A1 * !A3 * !B1 * !X)	0.00087	0.00087	0.00087
	(A1 * !A3 * !B1 * !X)	-0.00238	-0.00238	-0.00236
	(!A1 * A3 * B1 * X)	0.00176	0.00178	0.00176
	(!A1 * A3 * B1 * X)	-0.00236	-0.00237	-0.00236
	(!A1 * A3 * !B1 * !X)	0.00176	0.00177	0.00176
	(!A1 * A3 * !B1 * !X)	-0.00236	-0.00237	-0.00236
	(!A1 * !A3 * B1 * X)	0.00109	0.00109	0.00108
	(!A1 * !A3 * B1 * X)	-0.00237	-0.00237	-0.00236
	(!A1 * !A3 * !B1 * !X)	0.00099	0.00100	0.00100
	(!A1 * !A3 * !B1 * !X)	-0.00238	-0.00240	-0.00239

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)	-0.00086	-0.00087	-0.00086
	(A1 * A3 * B1 * X)	0.00113	0.00114	0.00112
	(A1 * !A3 * B1 * X)	-0.00079	-0.00081	-0.00081
	(A1 * !A3 * B1 * X)	0.00117	0.00118	0.00116
	(A1 * !A3 * !B1 * !X)	-0.00032	-0.00033	-0.00034
	(A1 * !A3 * !B1 * !X)	0.00123	0.00123	0.00121
	(!A1 * A3 * B1 * X)	-0.00079	-0.00082	-0.00081
	(!A1 * A3 * B1 * X)	0.00116	0.00117	0.00116
	(!A1 * A3 * !B1 * !X)	-0.00072	-0.00078	-0.00078
	(!A1 * A3 * !B1 * !X)	0.00124	0.00122	0.00120
	(!A1 * !A3 * B1 * X)	-0.00048	-0.00048	-0.00048
	(!A1 * !A3 * B1 * X)	0.00116	0.00117	0.00116
	(!A1 * !A3 * !B1 * !X)	-0.00040	-0.00040	-0.00040
	(!A1 * !A3 * !B1 * !X)	0.00125	0.00126	0.00122
sky130_fd_sc_hs__a31o_2	(A1 * A3 * B1 * X)	-0.00107	-0.00107	-0.00106
	(A1 * A3 * B1 * X)	0.00109	0.00110	0.00109
	(A1 * !A3 * B1 * X)	-0.00098	-0.00100	-0.00100
	(A1 * !A3 * B1 * X)	0.00113	0.00114	0.00112
	(A1 * !A3 * !B1 * !X)	-0.00040	-0.00041	-0.00042
	(A1 * !A3 * !B1 * !X)	0.00123	0.00124	0.00121
	(!A1 * A3 * B1 * X)	-0.00098	-0.00102	-0.00101
	(!A1 * A3 * B1 * X)	0.00112	0.00113	0.00112
	(!A1 * A3 * !B1 * !X)	-0.00087	-0.00094	-0.00093
	(!A1 * A3 * !B1 * !X)	0.00124	0.00122	0.00121
	(!A1 * !A3 * B1 * X)	-0.00063	-0.00063	-0.00063
	(!A1 * !A3 * B1 * X)	0.00112	0.00112	0.00112
	(!A1 * !A3 * !B1 * !X)	-0.00050	-0.00050	-0.00050
	(!A1 * !A3 * !B1 * !X)	0.00126	0.00127	0.00122

sky130_fd_sc_hs__a31o_4	**(A1 * A3 * B1 * X)**	-0.00184	-0.00185	-0.00184
	(A1 * A3 * B1 * X)	0.00227	0.00230	0.00228
	(A1 * !A3 * B1 * X)	-0.00166	-0.00175	-0.00174
	(A1 * !A3 * B1 * X)	0.00238	0.00240	0.00237
	(A1 * !A3 * !B1 * !X)	-0.00081	-0.00081	-0.00083
	(A1 * !A3 * !B1 * !X)	0.00244	0.00245	0.00240
	(!A1 * A3 * B1 * X)	-0.00170	-0.00177	-0.00176
	(!A1 * A3 * B1 * X)	0.00238	0.00239	0.00237
	(!A1 * A3 * !B1 * !X)	-0.00164	-0.00177	-0.00176
	(!A1 * A3 * !B1 * !X)	0.00247	0.00240	0.00237
	(!A1 * !A3 * B1 * X)	-0.00109	-0.00109	-0.00108
	(!A1 * !A3 * B1 * X)	0.00238	0.00237	0.00237
	(!A1 * !A3 * !B1 * !X)	-0.00099	-0.00100	-0.00100
	(!A1 * !A3 * !B1 * !X)	0.00250	0.00250	0.00242

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)**	0.00101	0.00097	0.00095
	(A1 * A2 * B1 * X)	-0.00102	-0.00112	-0.00111
	(A1 * !A2 * !B1 * !X)	0.00079	0.00080	0.00079
	(A1 * !A2 * !B1 * !X)	-0.00125	-0.00126	-0.00125
	(!A2 * B1 * X)	0.00090	0.00090	0.00090
	(!A2 * B1 * X)	-0.00114	-0.00114	-0.00114
	(!A1 * A2 * B1 * X)	0.00088	0.00089	0.00088
	(!A1 * A2 * B1 * X)	-0.00114	-0.00115	-0.00114
	(!A1 * A2 * !B1 * !X)	0.00078	0.00078	0.00078
	(!A1 * A2 * !B1 * !X)	-0.00125	-0.00126	-0.00125
	(!A1 * !A2 * !B1 * !X)	0.00079	0.00080	0.00079
	(!A1 * !A2 * !B1 * !X)	-0.00125	-0.00126	-0.00125

sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	0.00120	0.00116	0.00114
	(A1 * A2 * B1 * X)	-0.00099	-0.00108	-0.00107
	(A1 * !A2 * !B1 * !X)	0.00093	0.00094	0.00093
	(A1 * !A2 * !B1 * !X)	-0.00126	-0.00127	-0.00126
	(!A2 * B1 * X)	0.00108	0.00109	0.00108
	(!A2 * B1 * X)	-0.00110	-0.00111	-0.00110
	(!A1 * A2 * B1 * X)	0.00107	0.00108	0.00107
	(!A1 * A2 * B1 * X)	-0.00110	-0.00111	-0.00110
	(!A1 * A2 * !B1 * !X)	0.00092	0.00092	0.00092
	(!A1 * A2 * !B1 * !X)	-0.00126	-0.00126	-0.00126
	(!A1 * !A2 * !B1 * !X)	0.00093	0.00094	0.00093
	(!A1 * !A2 * !B1 * !X)	-0.00126	-0.00127	-0.00126
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	0.00193	0.00186	0.00183
	(A1 * A2 * B1 * X)	-0.00211	-0.00231	-0.00229
	(A1 * !A2 * !B1 * !X)	0.00172	0.00172	0.00171
	(A1 * !A2 * !B1 * !X)	-0.00238	-0.00237	-0.00237
	(!A2 * B1 * X)	0.00172	0.00173	0.00172
	(!A2 * B1 * X)	-0.00237	-0.00237	-0.00237
	(!A1 * A2 * B1 * X)	0.00168	0.00170	0.00168
	(!A1 * A2 * B1 * X)	-0.00236	-0.00238	-0.00237
	(!A1 * A2 * !B1 * !X)	0.00167	0.00169	0.00168
	(!A1 * A2 * !B1 * !X)	-0.00237	-0.00238	-0.00237
	(!A1 * !A2 * !B1 * !X)	0.00172	0.00172	0.00172
	(!A1 * !A2 * !B1 * !X)	-0.00238	-0.00237	-0.00237

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)**	-0.00095	-0.00095	-0.00095
	(A1 * A2 * B1 * X)	0.00111	0.00112	0.00111
	(A1 * !A2 * !B1 * !X)	-0.00076	-0.00080	-0.00079
	(A1 * !A2 * !B1 * !X)	0.00125	0.00128	0.00126
	(!A2 * B1 * X)	-0.00088	-0.00090	-0.00090
	(!A2 * B1 * X)	0.00114	0.00115	0.00114
	(!A1 * A2 * B1 * X)	-0.00084	-0.00089	-0.00088
	(!A1 * A2 * B1 * X)	0.00114	0.00115	0.00114
	(!A1 * A2 * !B1 * !X)	-0.00072	-0.00078	-0.00078
	(!A1 * A2 * !B1 * !X)	0.00125	0.00126	0.00126
	(!A1 * !A2 * !B1 * !X)	-0.00076	-0.00080	-0.00079
	(!A1 * !A2 * !B1 * !X)	0.00125	0.00128	0.00126
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	-0.00114	-0.00115	-0.00114
	(A1 * A2 * B1 * X)	0.00108	0.00108	0.00107
	(A1 * !A2 * !B1 * !X)	-0.00089	-0.00094	-0.00093
	(A1 * !A2 * !B1 * !X)	0.00126	0.00128	0.00126
	(!A2 * B1 * X)	-0.00106	-0.00109	-0.00108
	(!A2 * B1 * X)	0.00110	0.00111	0.00111
	(!A1 * A2 * B1 * X)	-0.00101	-0.00108	-0.00107
	(!A1 * A2 * B1 * X)	0.00110	0.00111	0.00111
	(!A1 * A2 * !B1 * !X)	-0.00085	-0.00092	-0.00092
	(!A1 * A2 * !B1 * !X)	0.00126	0.00127	0.00126
	(!A1 * !A2 * !B1 * !X)	-0.00090	-0.00094	-0.00093
	(!A1 * !A2 * !B1 * !X)	0.00126	0.00128	0.00126

sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	-0.00182	-0.00184	-0.00182
	(A1 * A2 * B1 * X)	0.00228	0.00231	0.00229
	(A1 * !A2 * !B1 * !X)	-0.00165	-0.00172	-0.00171
	(A1 * !A2 * !B1 * !X)	0.00239	0.00240	0.00238
	(!A2 * B1 * X)	-0.00167	-0.00173	-0.00172
	(!A2 * B1 * X)	0.00238	0.00239	0.00237
	(!A1 * A2 * B1 * X)	-0.00158	-0.00170	-0.00168
	(!A1 * A2 * B1 * X)	0.00237	0.00239	0.00237
	(!A1 * A2 * !B1 * !X)	-0.00157	-0.00169	-0.00168
	(!A1 * A2 * !B1 * !X)	0.00238	0.00239	0.00238
	(!A1 * !A2 * !B1 * !X)	-0.00165	-0.00172	-0.00172
	(!A1 * !A2 * !B1 * !X)	0.00239	0.00240	0.00238

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)**	0.00128	0.00128	0.00127
	(A1 * A2 * A3 * X)	-0.00060	-0.00060	-0.00060
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * A3 * X)**	0.00120	0.00120	0.00120
	(A1 * A2 * A3 * X)	-0.00058	-0.00059	-0.00059
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * A3 * X)**	0.00208	0.00209	0.00209
	(A1 * A2 * A3 * X)	-0.00127	-0.00127	-0.00127

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)	-0.00117	-0.00118	-0.00126
	(A1 * A2 * A3 * X)	0.00068	0.00068	0.00062
sky130_fd_sc_hs__a31o_2	(A1 * A2 * A3 * X)	-0.00110	-0.00110	-0.00119
	(A1 * A2 * A3 * X)	0.00067	0.00067	0.00061
sky130_fd_sc_hs__a31o_4	(A1 * A2 * A3 * X)	-0.00183	-0.00183	-0.00205
	(A1 * A2 * A3 * X)	0.00149	0.00148	0.00132

SKY130_FD_SC_HS__A32OIx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a32oi_1	11.18880
sky130_fd_sc_hs__a32oi_2	20.77920
sky130_fd_sc_hs__a32oi_4	35.16480

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	B2	Y
sky130_fd_sc_hs__a32oi_1	0.00279	0.00278	0.00251	0.00285	0.00263	0.35280
sky130_fd_sc_hs__a32oi_2	0.00524	0.00508	0.00498	0.00530	0.00515	0.65964
sky130_fd_sc_hs__a32oi_4	0.01037	0.01001	0.00996	0.01058	0.01020	1.12900

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a32oi_1	0.00000	0.01685	0.04886
sky130_fd_sc_hs__a32oi_2	0.00000	0.03370	0.09773
sky130_fd_sc_hs__a32oi_4	0.00000	0.06739	0.19545

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)	0.18514	1.28833	11.76080
	A2->Y (FR)	0.21112	1.31438	11.77730
	A3->Y (FR)	0.23109	1.33461	11.74710
	B1->Y (FR)	0.13248	1.21401	11.68080
	B2->Y (FR)	0.15512	1.23683	11.69300
sky130_fd_sc_hs__a32oi_2	A1->Y (FR)	0.16574	1.08752	11.36260
	A2->Y (FR)	0.21012	1.15662	11.71630
	A3->Y (FR)	0.23006	1.17545	11.64260
	B1->Y (FR)	0.11429	1.03538	11.52220
	B2->Y (FR)	0.15092	1.07857	11.64360
sky130_fd_sc_hs__a32oi_4	A1->Y (FR)	0.18272	0.99754	11.33560
	A2->Y (FR)	0.21598	1.02885	11.31120
	A3->Y (FR)	0.24294	1.06222	11.33600
	B1->Y (FR)	0.14939	0.93988	11.16460
	B2->Y (FR)	0.19224	1.00178	11.45300

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32oi_1	A1->Y (RF)	0.06349	0.59698	5.69796
	A2->Y (RF)	0.07130	0.58320	5.42886
	A3->Y (RF)	0.07500	0.54154	4.88148
	B1->Y (RF)	0.03426	0.48835	4.87846
	B2->Y (RF)	0.03806	0.46203	4.54100
sky130_fd_sc_hs__a32oi_2	A1->Y (RF)	0.06302	0.56721	6.04242
	A2->Y (RF)	0.07607	0.55454	5.73319
	A3->Y (RF)	0.08001	0.49241	4.91743
	B1->Y (RF)	0.02998	0.44070	5.02725
	B2->Y (RF)	0.03744	0.41813	4.62064
sky130_fd_sc_hs__a32oi_4	A1->Y (RF)	0.06511	0.51117	5.88596
	A2->Y (RF)	0.07682	0.49204	5.48358
	A3->Y (RF)	0.08105	0.43042	4.64162
	B1->Y (RF)	0.03080	0.39016	4.87684
	B2->Y (RF)	0.03728	0.35526	4.29061

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32oi_1	A1	0.00075	0.00058	0.00063
	A1	0.00547	0.00531	0.00536
	A2	0.00105	0.00090	0.00094
	A2	0.00643	0.00628	0.00633
	A3	0.00144	0.00135	0.00140
	A3	0.00736	0.00728	0.00732
	B1	0.00116	0.00104	0.00158
	B1	0.00562	0.00545	0.00604
	B2	0.00142	0.00138	0.00192
	B2	0.00650	0.00637	0.00699
sky130_fd_sc_hs__a32oi_2	A1	0.00091	0.00060	0.00073
	A1	0.01021	0.00991	0.01004
	A2	0.00216	0.00182	0.00192
	A2	0.01277	0.01242	0.01250
	A3	0.00269	0.00251	0.00261
	A3	0.01457	0.01439	0.01444
	B1	0.00173	0.00156	0.00260
	B1	0.01038	0.01022	0.01125
	B2	0.00278	0.00267	0.00369
	B2	0.01280	0.01270	0.01368

sky130_fd_sc_hs__a32oi_4	**A1**	0.00168	0.00096	0.00135
	A1	0.02038	0.01966	0.01999
	A2	0.00354	0.00282	0.00315
	A2	0.02480	0.02411	0.02434
	A3	0.00473	0.00433	0.00463
	A3	0.02862	0.02823	0.02839
	B1	0.00294	0.00235	0.00472
	B1	0.02048	0.01965	0.02058
	B2	0.00478	0.00455	0.00677
	B2	0.02493	0.02471	0.02688

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32oi_1	**A1**	0.00655	0.00644	0.00663
	A1	0.00208	0.00197	0.00210
	A2	0.00726	0.00716	0.00719
	A2	0.00207	0.00195	0.00202
	A3	0.00783	0.00773	0.00798
	A3	0.00204	0.00193	0.00199
	B1	0.00463	0.00465	0.00491
	B1	0.00004	-0.00003	0.00021
	B2	0.00527	0.00524	0.00543
	B2	0.00003	-0.00004	0.00011

sky130_fd_sc_hs__a32oi_2	**A1**	0.01273	0.01248	0.01278
	A1	0.00400	0.00374	0.00405
	A2	0.01416	0.01389	0.01407
	A2	0.00400	0.00371	0.00386
	A3	0.01556	0.01532	0.01540
	A3	0.00398	0.00371	0.00385
	B1	0.00880	0.00887	0.00945
	B1	-0.00014	-0.00028	0.00026
	B2	0.01033	0.01029	0.01081
	B2	-0.00011	-0.00027	0.00007
sky130_fd_sc_hs__a32oi_4	**A1**	0.02490	0.02430	0.02565
	A1	0.00737	0.00673	0.00745
	A2	0.02763	0.02704	0.02809
	A2	0.00729	0.00668	0.00708
	A3	0.03043	0.02987	0.03068
	A3	0.00720	0.00661	0.00697
	B1	0.01776	0.01761	0.01890
	B1	-0.00033	-0.00061	0.00051
	B2	0.02074	0.02053	0.02141
	B2	-0.00018	-0.00060	0.00020

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)**	0.00113	0.00111	0.00109
	(A2 * A3 * B1 * B2 * !Y)	-0.00114	-0.00121	-0.00120
	(A2 * !A3 * B1 * B2 * !Y)	0.00100	0.00102	0.00101
	(A2 * !A3 * B1 * B2 * !Y)	-0.00123	-0.00124	-0.00124
	(A2 * !A3 * B1 * !B2 * Y)	0.00038	0.00038	0.00035
	(A2 * !A3 * B1 * !B2 * Y)	-0.00144	-0.00145	-0.00151
	(A2 * !A3 * !B1 * Y)	0.00038	0.00038	0.00035
	(A2 * !A3 * !B1 * Y)	-0.00144	-0.00145	-0.00151
	(!A2 * B1 * B2 * !Y)	0.00103	0.00104	0.00103
	(!A2 * B1 * B2 * !Y)	-0.00124	-0.00124	-0.00124
	(!A2 * B1 * !B2 * Y)	0.00037	0.00037	0.00036
	(!A2 * B1 * !B2 * Y)	-0.00149	-0.00150	-0.00151
	(!A2 * !B1 * Y)	0.00037	0.00037	0.00036
	(!A2 * !B1 * Y)	-0.00149	-0.00150	-0.00151
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	0.00221	0.00219	0.00216
	(A2 * A3 * B1 * B2 * !Y)	-0.00225	-0.00241	-0.00240
	(A2 * !A3 * B1 * B2 * !Y)	0.00199	0.00200	0.00200
	(A2 * !A3 * B1 * B2 * !Y)	-0.00247	-0.00248	-0.00247
	(A2 * !A3 * B1 * !B2 * Y)	0.00080	0.00080	0.00072
	(A2 * !A3 * B1 * !B2 * Y)	-0.00283	-0.00283	-0.00298
	(A2 * !A3 * !B1 * Y)	0.00081	0.00080	0.00072
	(A2 * !A3 * !B1 * Y)	-0.00283	-0.00283	-0.00298
	(!A2 * B1 * B2 * !Y)	0.00205	0.00207	0.00206
	(!A2 * B1 * B2 * !Y)	-0.00246	-0.00248	-0.00247
	(!A2 * B1 * !B2 * Y)	0.00081	0.00081	0.00076
	(!A2 * B1 * !B2 * Y)	-0.00292	-0.00294	-0.00300
	(!A2 * !B1 * Y)	0.00082	0.00082	0.00076
	(!A2 * !B1 * Y)	-0.00292	-0.00294	-0.00300

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	0.00443	0.00428	0.00426
	(A2 * A3 * B1 * B2 * !Y)	-0.00447	-0.00482	-0.00480
	(A2 * !A3 * B1 * B2 * !Y)	0.00391	0.00394	0.00392
	(A2 * !A3 * B1 * B2 * !Y)	-0.00495	-0.00497	-0.00495
	(A2 * !A3 * B1 * !B2 * Y)	0.00143	0.00145	0.00130
	(A2 * !A3 * B1 * !B2 * Y)	-0.00574	-0.00580	-0.00604
	(A2 * !A3 * !B1 * Y)	0.00144	0.00143	0.00131
	(A2 * !A3 * !B1 * Y)	-0.00574	-0.00573	-0.00604
	(!A2 * B1 * B2 * !Y)	0.00405	0.00409	0.00405
	(!A2 * B1 * B2 * !Y)	-0.00496	-0.00498	-0.00495
	(!A2 * B1 * !B2 * Y)	0.00145	0.00146	0.00138
	(!A2 * B1 * !B2 * Y)	-0.00593	-0.00599	-0.00608
	(!A2 * !B1 * Y)	0.00145	0.00147	0.00138
	(!A2 * !B1 * Y)	-0.00592	-0.00599	-0.00608

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)**	-0.00110	-0.00110	-0.00109
	(A2 * A3 * B1 * B2 * !Y)	0.00121	0.00121	0.00120
	(A2 * !A3 * B1 * B2 * !Y)	-0.00093	-0.00102	-0.00101
	(A2 * !A3 * B1 * B2 * !Y)	0.00125	0.00126	0.00124
	(A2 * !A3 * B1 * !B2 * Y)	-0.00034	-0.00034	-0.00034
	(A2 * !A3 * B1 * !B2 * Y)	0.00151	0.00152	0.00152
	(A2 * !A3 * !B1 * Y)	-0.00034	-0.00034	-0.00034
	(A2 * !A3 * !B1 * Y)	0.00151	0.00152	0.00152
	(!A2 * B1 * B2 * !Y)	-0.00100	-0.00104	-0.00103
	(!A2 * B1 * B2 * !Y)	0.00124	0.00126	0.00124
	(!A2 * B1 * !B2 * Y)	-0.00035	-0.00035	-0.00035
	(!A2 * B1 * !B2 * Y)	0.00151	0.00152	0.00152
	(!A2 * !B1 * Y)	-0.00035	-0.00035	-0.00035
	(!A2 * !B1 * Y)	0.00151	0.00152	0.00152
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	-0.00216	-0.00216	-0.00215
	(A2 * A3 * B1 * B2 * !Y)	0.00241	0.00241	0.00240
	(A2 * !A3 * B1 * B2 * !Y)	-0.00178	-0.00200	-0.00200
	(A2 * !A3 * B1 * B2 * !Y)	0.00247	0.00251	0.00248
	(A2 * !A3 * B1 * !B2 * Y)	-0.00071	-0.00072	-0.00071
	(A2 * !A3 * B1 * !B2 * Y)	0.00299	0.00303	0.00301
	(A2 * !A3 * !B1 * Y)	-0.00071	-0.00072	-0.00072
	(A2 * !A3 * !B1 * Y)	0.00299	0.00302	0.00301
	(!A2 * B1 * B2 * !Y)	-0.00197	-0.00207	-0.00206
	(!A2 * B1 * B2 * !Y)	0.00248	0.00248	0.00247
	(!A2 * B1 * !B2 * Y)	-0.00074	-0.00074	-0.00074
	(!A2 * B1 * !B2 * Y)	0.00302	0.00302	0.00301
	(!A2 * !B1 * Y)	-0.00074	-0.00074	-0.00074
	(!A2 * !B1 * Y)	0.00302	0.00302	0.00301

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	-0.00427	-0.00427	-0.00425
	(A2 * A3 * B1 * B2 * !Y)	0.00481	0.00482	0.00480
	(A2 * !A3 * B1 * B2 * !Y)	-0.00348	-0.00394	-0.00392
	(A2 * !A3 * B1 * B2 * !Y)	0.00495	0.00502	0.00496
	(A2 * !A3 * B1 * !B2 * Y)	-0.00130	-0.00130	-0.00129
	(A2 * !A3 * B1 * !B2 * Y)	0.00610	0.00612	0.00609
	(A2 * !A3 * !B1 * Y)	-0.00130	-0.00130	-0.00129
	(A2 * !A3 * !B1 * Y)	0.00610	0.00612	0.00609
	(!A2 * B1 * B2 * !Y)	-0.00389	-0.00409	-0.00405
	(!A2 * B1 * B2 * !Y)	0.00498	0.00499	0.00496
	(!A2 * B1 * !B2 * Y)	-0.00134	-0.00134	-0.00133
	(!A2 * B1 * !B2 * Y)	0.00611	0.00613	0.00609
	(!A2 * !B1 * Y)	-0.00135	-0.00135	-0.00134
	(!A2 * !B1 * Y)	0.00611	0.00613	0.00609

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)**	0.00116	0.00114	0.00112
	(A1 * A3 * B1 * B2 * !Y)	-0.00114	-0.00121	-0.00120
	(A1 * !A3 * B1 * B2 * !Y)	0.00107	0.00108	0.00107
	(A1 * !A3 * B1 * B2 * !Y)	-0.00124	-0.00124	-0.00124
	(A1 * !A3 * B1 * !B2 * Y)	0.00050	0.00051	0.00050
	(A1 * !A3 * B1 * !B2 * Y)	-0.00131	-0.00131	-0.00130
	(A1 * !A3 * !B1 * Y)	0.00050	0.00051	0.00050
	(A1 * !A3 * !B1 * Y)	-0.00131	-0.00131	-0.00130
	(!A1 * A3 * B1 * B2 * !Y)	0.00106	0.00107	0.00106
	(!A1 * A3 * B1 * B2 * !Y)	-0.00124	-0.00124	-0.00124
	(!A1 * A3 * B1 * !B2 * Y)	0.00099	0.00101	0.00100
	(!A1 * A3 * B1 * !B2 * Y)	-0.00130	-0.00131	-0.00130
	(!A1 * A3 * !B1 * Y)	0.00099	0.00100	0.00100
	(!A1 * A3 * !B1 * Y)	-0.00130	-0.00131	-0.00130
	(!A1 * !A3 * B1 * B2 * !Y)	0.00068	0.00068	0.00067
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00124	-0.00124	-0.00124
	(!A1 * !A3 * B1 * !B2 * Y)	0.00057	0.00057	0.00057
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00131	-0.00131	-0.00131
	(!A1 * !A3 * !B1 * Y)	0.00057	0.00057	0.00057
	(!A1 * !A3 * !B1 * Y)	-0.00131	-0.00131	-0.00131

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	0.00215	0.00210	0.00207
	(A1 * A3 * B1 * B2 * !Y)	-0.00231	-0.00251	-0.00248
	(A1 * !A3 * B1 * B2 * !Y)	0.00193	0.00194	0.00194
	(A1 * !A3 * B1 * B2 * !Y)	-0.00256	-0.00257	-0.00257
	(A1 * !A3 * B1 * !B2 * Y)	0.00093	0.00093	0.00094
	(A1 * !A3 * B1 * !B2 * Y)	-0.00261	-0.00261	-0.00259
	(A1 * !A3 * !B1 * Y)	0.00093	0.00094	0.00094
	(A1 * !A3 * !B1 * Y)	-0.00261	-0.00261	-0.00259
	(!A1 * A3 * B1 * B2 * !Y)	0.00196	0.00199	0.00197
	(!A1 * A3 * B1 * B2 * !Y)	-0.00255	-0.00258	-0.00256
	(!A1 * A3 * B1 * !B2 * Y)	0.00193	0.00195	0.00194
	(!A1 * A3 * B1 * !B2 * Y)	-0.00258	-0.00260	-0.00259
	(!A1 * A3 * !B1 * Y)	0.00193	0.00195	0.00194
	(!A1 * A3 * !B1 * Y)	-0.00258	-0.00260	-0.00259
	(!A1 * !A3 * B1 * B2 * !Y)	0.00122	0.00122	0.00121
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00258	-0.00259	-0.00257
	(!A1 * !A3 * B1 * !B2 * Y)	0.00108	0.00109	0.00109
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00261	-0.00263	-0.00262
	(!A1 * !A3 * !B1 * Y)	0.00109	0.00110	0.00109
	(!A1 * !A3 * !B1 * Y)	-0.00261	-0.00263	-0.00262

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	0.00434	0.00418	0.00415
	(A1 * A3 * B1 * B2 * !Y)	-0.00457	-0.00494	-0.00493
	(A1 * !A3 * B1 * B2 * !Y)	0.00384	0.00386	0.00385
	(A1 * !A3 * B1 * B2 * !Y)	-0.00508	-0.00511	-0.00509
	(A1 * !A3 * B1 * !B2 * Y)	0.00177	0.00179	0.00180
	(A1 * !A3 * B1 * !B2 * Y)	-0.00514	-0.00517	-0.00512
	(A1 * !A3 * !B1 * Y)	0.00177	0.00179	0.00180
	(A1 * !A3 * !B1 * Y)	-0.00514	-0.00517	-0.00512
	(!A1 * A3 * B1 * B2 * !Y)	0.00393	0.00399	0.00395
	(!A1 * A3 * B1 * B2 * !Y)	-0.00508	-0.00512	-0.00509
	(!A1 * A3 * B1 * !B2 * Y)	0.00388	0.00394	0.00390
	(!A1 * A3 * B1 * !B2 * Y)	-0.00512	-0.00517	-0.00513
	(!A1 * A3 * !B1 * Y)	0.00388	0.00388	0.00390
	(!A1 * A3 * !B1 * Y)	-0.00512	-0.00512	-0.00513
	(!A1 * !A3 * B1 * B2 * !Y)	0.00228	0.00231	0.00229
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00508	-0.00512	-0.00509
	(!A1 * !A3 * B1 * !B2 * Y)	0.00205	0.00207	0.00205
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00518	-0.00521	-0.00518
	(!A1 * !A3 * !B1 * Y)	0.00205	0.00207	0.00205
	(!A1 * !A3 * !B1 * Y)	-0.00518	-0.00521	-0.00518

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)**	-0.00113	-0.00113	-0.00112
	(A1 * A3 * B1 * B2 * !Y)	0.00121	0.00121	0.00120
	(A1 * !A3 * B1 * B2 * !Y)	-0.00104	-0.00108	-0.00107
	(A1 * !A3 * B1 * B2 * !Y)	0.00125	0.00126	0.00124
	(A1 * !A3 * B1 * !B2 * Y)	-0.00047	-0.00048	-0.00048
	(A1 * !A3 * B1 * !B2 * Y)	0.00133	0.00134	0.00131
	(A1 * !A3 * !B1 * Y)	-0.00047	-0.00048	-0.00048
	(A1 * !A3 * !B1 * Y)	0.00133	0.00134	0.00131
	(!A1 * A3 * B1 * B2 * !Y)	-0.00103	-0.00107	-0.00106
	(!A1 * A3 * B1 * B2 * !Y)	0.00124	0.00126	0.00124
	(!A1 * A3 * B1 * !B2 * Y)	-0.00093	-0.00100	-0.00100
	(!A1 * A3 * B1 * !B2 * Y)	0.00136	0.00133	0.00131
	(!A1 * A3 * !B1 * Y)	-0.00093	-0.00100	-0.00100
	(!A1 * A3 * !B1 * Y)	0.00136	0.00133	0.00131
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00068	-0.00068	-0.00067
	(!A1 * !A3 * B1 * B2 * !Y)	0.00124	0.00124	0.00124
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00057	-0.00057	-0.00057
	(!A1 * !A3 * B1 * !B2 * Y)	0.00137	0.00137	0.00132
	(!A1 * !A3 * !B1 * Y)	-0.00057	-0.00057	-0.00057
	(!A1 * !A3 * !B1 * Y)	0.00137	0.00137	0.00132

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	-0.00206	-0.00208	-0.00206
	(A1 * A3 * B1 * B2 * !Y)	0.00247	0.00251	0.00248
	(A1 * !A3 * B1 * B2 * !Y)	-0.00187	-0.00194	-0.00194
	(A1 * !A3 * B1 * B2 * !Y)	0.00259	0.00259	0.00258
	(A1 * !A3 * B1 * !B2 * Y)	-0.00087	-0.00087	-0.00090
	(A1 * !A3 * B1 * !B2 * Y)	0.00267	0.00268	0.00263
	(A1 * !A3 * !B1 * Y)	-0.00087	-0.00088	-0.00090
	(A1 * !A3 * !B1 * Y)	0.00267	0.00268	0.00263
	(!A1 * A3 * B1 * B2 * !Y)	-0.00188	-0.00199	-0.00197
	(!A1 * A3 * B1 * B2 * !Y)	0.00257	0.00260	0.00257
	(!A1 * A3 * B1 * !B2 * Y)	-0.00179	-0.00195	-0.00194
	(!A1 * A3 * B1 * !B2 * Y)	0.00267	0.00263	0.00260
	(!A1 * A3 * !B1 * Y)	-0.00179	-0.00195	-0.00194
	(!A1 * A3 * !B1 * Y)	0.00267	0.00263	0.00260
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00122	-0.00122	-0.00121
	(!A1 * !A3 * B1 * B2 * !Y)	0.00260	0.00259	0.00258
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00108	-0.00109	-0.00109
	(!A1 * !A3 * B1 * !B2 * Y)	0.00271	0.00272	0.00264
	(!A1 * !A3 * !B1 * Y)	-0.00109	-0.00110	-0.00109
	(!A1 * !A3 * !B1 * Y)	0.00271	0.00272	0.00264

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	-0.00414	-0.00415	-0.00414
	(A1 * A3 * B1 * B2 * !Y)	0.00491	0.00494	0.00493
	(A1 * !A3 * B1 * B2 * !Y)	-0.00373	-0.00386	-0.00385
	(A1 * !A3 * B1 * B2 * !Y)	0.00513	0.00514	0.00511
	(A1 * !A3 * B1 * !B2 * Y)	-0.00167	-0.00168	-0.00172
	(A1 * !A3 * B1 * !B2 * Y)	0.00529	0.00531	0.00520
	(A1 * !A3 * !B1 * Y)	-0.00168	-0.00168	-0.00173
	(A1 * !A3 * !B1 * Y)	0.00529	0.00531	0.00520
	(!A1 * A3 * B1 * B2 * !Y)	-0.00378	-0.00399	-0.00395
	(!A1 * A3 * B1 * B2 * !Y)	0.00509	0.00516	0.00511
	(!A1 * A3 * B1 * !B2 * Y)	-0.00356	-0.00394	-0.00390
	(!A1 * A3 * B1 * !B2 * Y)	0.00534	0.00521	0.00515
	(!A1 * A3 * !B1 * Y)	-0.00357	-0.00388	-0.00390
	(!A1 * A3 * !B1 * Y)	0.00534	0.00521	0.00515
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00228	-0.00231	-0.00229
	(!A1 * !A3 * B1 * B2 * !Y)	0.00513	0.00512	0.00511
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00205	-0.00207	-0.00205
	(!A1 * !A3 * B1 * !B2 * Y)	0.00543	0.00543	0.00524
	(!A1 * !A3 * !B1 * Y)	-0.00205	-0.00207	-0.00205
	(!A1 * !A3 * !B1 * Y)	0.00543	0.00543	0.00524

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)**	0.00109	0.00107	0.00105
	(A1 * A2 * B1 * B2 * !Y)	-0.00116	-0.00122	-0.00122
	(A1 * !A2 * B1 * !B2 * Y)	0.00100	0.00101	0.00100
	(A1 * !A2 * B1 * !B2 * Y)	-0.00125	-0.00126	-0.00125
	(A1 * !A2 * !B1 * Y)	0.00100	0.00101	0.00100
	(A1 * !A2 * !B1 * Y)	-0.00125	-0.00126	-0.00125
	(!A2 * B1 * B2 * !Y)	0.00100	0.00100	0.00100
	(!A2 * B1 * B2 * !Y)	-0.00125	-0.00125	-0.00125
	(!A1 * A2 * B1 * B2 * !Y)	0.00098	0.00099	0.00098
	(!A1 * A2 * B1 * B2 * !Y)	-0.00125	-0.00125	-0.00125
	(!A1 * A2 * B1 * !B2 * Y)	0.00098	0.00099	0.00098
	(!A1 * A2 * B1 * !B2 * Y)	-0.00125	-0.00125	-0.00125
	(!A1 * A2 * !B1 * Y)	0.00098	0.00099	0.00098
	(!A1 * A2 * !B1 * Y)	-0.00125	-0.00125	-0.00125
	(!A1 * !A2 * B1 * !B2 * Y)	0.00100	0.00101	0.00100
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00125	-0.00126	-0.00125
	(!A1 * !A2 * !B1 * Y)	0.00100	0.00101	0.00100
	(!A1 * !A2 * !B1 * Y)	-0.00125	-0.00126	-0.00125

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	0.00220	0.00213	0.00212
	(A1 * A2 * B1 * B2 * !Y)	-0.00231	-0.00244	-0.00245
	(A1 * !A2 * B1 * !B2 * Y)	0.00200	0.00201	0.00200
	(A1 * !A2 * B1 * !B2 * Y)	-0.00253	-0.00254	-0.00253
	(A1 * !A2 * !B1 * Y)	0.00200	0.00201	0.00200
	(A1 * !A2 * !B1 * Y)	-0.00253	-0.00254	-0.00253
	(!A2 * B1 * B2 * !Y)	0.00199	0.00202	0.00200
	(!A2 * B1 * B2 * !Y)	-0.00253	-0.00255	-0.00253
	(!A1 * A2 * B1 * B2 * !Y)	0.00198	0.00199	0.00197
	(!A1 * A2 * B1 * B2 * !Y)	-0.00253	-0.00255	-0.00253
	(!A1 * A2 * B1 * !B2 * Y)	0.00198	0.00198	0.00197
	(!A1 * A2 * B1 * !B2 * Y)	-0.00253	-0.00254	-0.00253
	(!A1 * A2 * !B1 * Y)	0.00198	0.00198	0.00197
	(!A1 * A2 * !B1 * Y)	-0.00253	-0.00254	-0.00253
	(!A1 * !A2 * B1 * !B2 * Y)	0.00199	0.00201	0.00200
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00253	-0.00255	-0.00253
	(!A1 * !A2 * !B1 * Y)	0.00199	0.00201	0.00200
	(!A1 * !A2 * !B1 * Y)	-0.00253	-0.00254	-0.00253

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	0.00431	0.00412	0.00411
	(A1 * A2 * B1 * B2 * !Y)	-0.00463	-0.00496	-0.00496
	(A1 * !A2 * B1 * !B2 * Y)	0.00384	0.00387	0.00383
	(A1 * !A2 * B1 * !B2 * Y)	-0.00513	-0.00515	-0.00512
	(A1 * !A2 * !B1 * Y)	0.00384	0.00387	0.00383
	(A1 * !A2 * !B1 * Y)	-0.00513	-0.00515	-0.00512
	(!A2 * B1 * B2 * !Y)	0.00384	0.00386	0.00384
	(!A2 * B1 * B2 * !Y)	-0.00512	-0.00514	-0.00512
	(!A1 * A2 * B1 * B2 * !Y)	0.00378	0.00379	0.00376
	(!A1 * A2 * B1 * B2 * !Y)	-0.00513	-0.00514	-0.00512
	(!A1 * A2 * B1 * !B2 * Y)	0.00373	0.00378	0.00375
	(!A1 * A2 * B1 * !B2 * Y)	-0.00510	-0.00515	-0.00512
	(!A1 * A2 * !B1 * Y)	0.00373	0.00378	0.00375
	(!A1 * A2 * !B1 * Y)	-0.00510	-0.00514	-0.00512
	(!A1 * !A2 * B1 * !B2 * Y)	0.00382	0.00387	0.00383
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00512	-0.00515	-0.00512
	(!A1 * !A2 * !B1 * Y)	0.00382	0.00382	0.00383
	(!A1 * !A2 * !B1 * Y)	-0.00512	-0.00512	-0.00512

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)**	-0.00105	-0.00106	-0.00105
	(A1 * A2 * B1 * B2 * !Y)	0.00122	0.00122	0.00122
	(A1 * !A2 * B1 * !B2 * Y)	-0.00096	-0.00101	-0.00100
	(A1 * !A2 * B1 * !B2 * Y)	0.00125	0.00126	0.00125
	(A1 * !A2 * !B1 * Y)	-0.00096	-0.00101	-0.00100
	(A1 * !A2 * !B1 * Y)	0.00125	0.00126	0.00125
	(!A2 * B1 * B2 * !Y)	-0.00097	-0.00100	-0.00100
	(!A2 * B1 * B2 * !Y)	0.00125	0.00126	0.00125
	(!A1 * A2 * B1 * B2 * !Y)	-0.00092	-0.00099	-0.00098
	(!A1 * A2 * B1 * B2 * !Y)	0.00125	0.00126	0.00125
	(!A1 * A2 * B1 * !B2 * Y)	-0.00092	-0.00099	-0.00098
	(!A1 * A2 * B1 * !B2 * Y)	0.00125	0.00126	0.00125
	(!A1 * A2 * !B1 * Y)	-0.00092	-0.00099	-0.00098
	(!A1 * A2 * !B1 * Y)	0.00125	0.00126	0.00125
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00097	-0.00101	-0.00100
	(!A1 * !A2 * B1 * !B2 * Y)	0.00125	0.00126	0.00125
	(!A1 * !A2 * !B1 * Y)	-0.00097	-0.00101	-0.00100
	(!A1 * !A2 * !B1 * Y)	0.00125	0.00126	0.00125

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	-0.00211	-0.00211	-0.00211
	(A1 * A2 * B1 * B2 * !Y)	0.00244	0.00244	0.00245
	(A1 * !A2 * B1 * !B2 * Y)	-0.00193	-0.00201	-0.00200
	(A1 * !A2 * B1 * !B2 * Y)	0.00254	0.00256	0.00254
	(A1 * !A2 * !B1 * Y)	-0.00193	-0.00201	-0.00200
	(A1 * !A2 * !B1 * Y)	0.00254	0.00256	0.00254
	(!A2 * B1 * B2 * !Y)	-0.00194	-0.00201	-0.00200
	(!A2 * B1 * B2 * !Y)	0.00255	0.00256	0.00254
	(!A1 * A2 * B1 * B2 * !Y)	-0.00186	-0.00199	-0.00197
	(!A1 * A2 * B1 * B2 * !Y)	0.00253	0.00255	0.00254
	(!A1 * A2 * B1 * !B2 * Y)	-0.00185	-0.00198	-0.00197
	(!A1 * A2 * B1 * !B2 * Y)	0.00253	0.00255	0.00254
	(!A1 * A2 * !B1 * Y)	-0.00186	-0.00198	-0.00197
	(!A1 * A2 * !B1 * Y)	0.00253	0.00255	0.00254
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00193	-0.00201	-0.00200
	(!A1 * !A2 * B1 * !B2 * Y)	0.00254	0.00256	0.00254
	(!A1 * !A2 * !B1 * Y)	-0.00193	-0.00201	-0.00200
	(!A1 * !A2 * !B1 * Y)	0.00254	0.00256	0.00254

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	-0.00409	-0.00412	-0.00410
	(A1 * A2 * B1 * B2 * !Y)	0.00493	0.00499	0.00496
	(A1 * !A2 * B1 * !B2 * Y)	-0.00369	-0.00386	-0.00383
	(A1 * !A2 * B1 * !B2 * Y)	0.00515	0.00518	0.00514
	(A1 * !A2 * !B1 * Y)	-0.00369	-0.00386	-0.00383
	(A1 * !A2 * !B1 * Y)	0.00515	0.00518	0.00514
	(!A2 * B1 * B2 * !Y)	-0.00372	-0.00386	-0.00384
	(!A2 * B1 * B2 * !Y)	0.00515	0.00517	0.00513
	(!A1 * A2 * B1 * B2 * !Y)	-0.00354	-0.00379	-0.00376
	(!A1 * A2 * B1 * B2 * !Y)	0.00513	0.00516	0.00513
	(!A1 * A2 * B1 * !B2 * Y)	-0.00353	-0.00378	-0.00375
	(!A1 * A2 * B1 * !B2 * Y)	0.00514	0.00517	0.00514
	(!A1 * A2 * !B1 * Y)	-0.00353	-0.00378	-0.00375
	(!A1 * A2 * !B1 * Y)	0.00514	0.00517	0.00514
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00370	-0.00386	-0.00383
	(!A1 * !A2 * B1 * !B2 * Y)	0.00515	0.00518	0.00514
	(!A1 * !A2 * !B1 * Y)	-0.00370	-0.00382	-0.00383
	(!A1 * !A2 * !B1 * Y)	0.00515	0.00518	0.00514

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)**	0.00123	0.00124	0.00123
	(A1 * A2 * A3 * B2 * !Y)	-0.00064	-0.00064	-0.00064
	(A1 * A2 * A3 * !B2 * !Y)	0.00118	0.00119	0.00118
	(A1 * A2 * A3 * !B2 * !Y)	-0.00064	-0.00064	-0.00064
	(A1 * A2 * !A3 * !B2 * Y)	0.00037	0.00037	0.00035
	(A1 * A2 * !A3 * !B2 * Y)	-0.00152	-0.00153	-0.00155
	(A1 * !A2 * !B2 * Y)	0.00037	0.00037	0.00035
	(A1 * !A2 * !B2 * Y)	-0.00152	-0.00153	-0.00155
	(!A1 * !B2 * Y)	0.00037	0.00036	0.00035
	(!A1 * !B2 * Y)	-0.00152	-0.00153	-0.00155
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B2 * !Y)**	0.00234	0.00235	0.00234
	(A1 * A2 * A3 * B2 * !Y)	-0.00129	-0.00128	-0.00128
	(A1 * A2 * A3 * !B2 * !Y)	0.00223	0.00224	0.00223
	(A1 * A2 * A3 * !B2 * !Y)	-0.00127	-0.00128	-0.00127
	(A1 * A2 * !A3 * !B2 * Y)	0.00077	0.00077	0.00072
	(A1 * A2 * !A3 * !B2 * Y)	-0.00293	-0.00294	-0.00301
	(A1 * !A2 * !B2 * Y)	0.00077	0.00077	0.00072
	(A1 * !A2 * !B2 * Y)	-0.00293	-0.00294	-0.00301
	(!A1 * !B2 * Y)	0.00077	0.00077	0.00072
	(!A1 * !B2 * Y)	-0.00293	-0.00294	-0.00301
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	0.00471	0.00475	0.00472
	(A1 * A2 * A3 * B2 * !Y)	-0.00258	-0.00261	-0.00259
	(A1 * A2 * A3 * !B2 * !Y)	0.00447	0.00451	0.00449
	(A1 * A2 * A3 * !B2 * !Y)	-0.00258	-0.00259	-0.00258
	(A1 * A2 * !A3 * !B2 * Y)	0.00147	0.00146	0.00138
	(A1 * A2 * !A3 * !B2 * Y)	-0.00597	-0.00598	-0.00611
	(A1 * !A2 * !B2 * Y)	0.00147	0.00146	0.00138
	(A1 * !A2 * !B2 * Y)	-0.00597	-0.00598	-0.00611
	(!A1 * !B2 * Y)	0.00147	0.00146	0.00139
	(!A1 * !B2 * Y)	-0.00597	-0.00598	-0.00611

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)	-0.00107	-0.00107	-0.00121
	(A1 * A2 * A3 * B2 * !Y)	0.00079	0.00078	0.00067
	(A1 * A2 * A3 * !B2 * !Y)	-0.00115	-0.00119	-0.00118
	(A1 * A2 * A3 * !B2 * !Y)	0.00064	0.00064	0.00064
	(A1 * A2 * !A3 * !B2 * Y)	-0.00035	-0.00035	-0.00034
	(A1 * A2 * !A3 * !B2 * Y)	0.00155	0.00156	0.00155
	(A1 * !A2 * !B2 * Y)	-0.00035	-0.00035	-0.00034
	(A1 * !A2 * !B2 * Y)	0.00155	0.00156	0.00155
	(!A1 * !B2 * Y)	-0.00035	-0.00035	-0.00034
	(!A1 * !B2 * Y)	0.00155	0.00156	0.00155
sky130_fd_sc_hs__a32oi_2	(A1 * A2 * A3 * B2 * !Y)	-0.00200	-0.00202	-0.00229
	(A1 * A2 * A3 * B2 * !Y)	0.00156	0.00156	0.00134
	(A1 * A2 * A3 * !B2 * !Y)	-0.00214	-0.00224	-0.00223
	(A1 * A2 * A3 * !B2 * !Y)	0.00128	0.00128	0.00127
	(A1 * A2 * !A3 * !B2 * Y)	-0.00071	-0.00070	-0.00070
	(A1 * A2 * !A3 * !B2 * Y)	0.00302	0.00303	0.00301
	(A1 * !A2 * !B2 * Y)	-0.00071	-0.00070	-0.00070
	(A1 * !A2 * !B2 * Y)	0.00302	0.00303	0.00301
	(!A1 * !B2 * Y)	-0.00071	-0.00071	-0.00070
	(!A1 * !B2 * Y)	0.00302	0.00303	0.00301

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	-0.00411	-0.00415	-0.00464
	(A1 * A2 * A3 * B2 * !Y)	0.00312	0.00310	0.00271
	(A1 * A2 * A3 * !B2 * !Y)	-0.00432	-0.00451	-0.00449
	(A1 * A2 * A3 * !B2 * !Y)	0.00260	0.00259	0.00258
	(A1 * A2 * !A3 * !B2 * Y)	-0.00133	-0.00135	-0.00134
	(A1 * A2 * !A3 * !B2 * Y)	0.00609	0.00616	0.00612
	(A1 * !A2 * !B2 * Y)	-0.00133	-0.00135	-0.00134
	(A1 * !A2 * !B2 * Y)	0.00609	0.00616	0.00612
	(!A1 * !B2 * Y)	-0.00133	-0.00135	-0.00134
	(!A1 * !B2 * Y)	0.00609	0.00615	0.00612

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)**	0.00118	0.00119	0.00118
	(A1 * A2 * A3 * B1 * !Y)	-0.00067	-0.00067	-0.00067
	(A1 * A2 * A3 * !B1 * !Y)	0.00112	0.00115	0.00113
	(A1 * A2 * A3 * !B1 * !Y)	-0.00067	-0.00068	-0.00067
	(A1 * A2 * !A3 * !B1 * Y)	0.00099	0.00101	0.00100
	(A1 * A2 * !A3 * !B1 * Y)	-0.00129	-0.00130	-0.00129
	(A1 * !A2 * !B1 * Y)	0.00099	0.00101	0.00100
	(A1 * !A2 * !B1 * Y)	-0.00129	-0.00130	-0.00129
	(!A1 * !B1 * Y)	0.00099	0.00101	0.00100
	(!A1 * !B1 * Y)	-0.00129	-0.00130	-0.00129

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00233	0.00234	0.00233
	(A1 * A2 * A3 * B1 * !Y)	-0.00131	-0.00131	-0.00131
	(A1 * A2 * A3 * !B1 * !Y)	0.00223	0.00223	0.00222
	(A1 * A2 * A3 * !B1 * !Y)	-0.00131	-0.00131	-0.00131
	(A1 * A2 * !A3 * !B1 * Y)	0.00198	0.00199	0.00198
	(A1 * A2 * !A3 * !B1 * Y)	-0.00254	-0.00255	-0.00254
	(A1 * !A2 * !B1 * Y)	0.00198	0.00199	0.00198
	(A1 * !A2 * !B1 * Y)	-0.00254	-0.00255	-0.00254
	(!A1 * !B1 * Y)	0.00198	0.00198	0.00198
	(!A1 * !B1 * Y)	-0.00254	-0.00254	-0.00254
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00459	0.00465	0.00462
	(A1 * A2 * A3 * B1 * !Y)	-0.00258	-0.00262	-0.00260
	(A1 * A2 * A3 * !B1 * !Y)	0.00438	0.00445	0.00438
	(A1 * A2 * A3 * !B1 * !Y)	-0.00261	-0.00261	-0.00260
	(A1 * A2 * !A3 * !B1 * Y)	0.00385	0.00391	0.00387
	(A1 * A2 * !A3 * !B1 * Y)	-0.00506	-0.00510	-0.00507
	(A1 * !A2 * !B1 * Y)	0.00387	0.00392	0.00388
	(A1 * !A2 * !B1 * Y)	-0.00506	-0.00510	-0.00507
	(!A1 * !B1 * Y)	0.00387	0.00392	0.00389
	(!A1 * !B1 * Y)	-0.00506	-0.00510	-0.00507

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)**	-0.00101	-0.00102	-0.00116
	(A1 * A2 * A3 * B1 * !Y)	0.00082	0.00081	0.00071
	(A1 * A2 * A3 * !B1 * !Y)	-0.00110	-0.00114	-0.00113
	(A1 * A2 * A3 * !B1 * !Y)	0.00067	0.00068	0.00067
	(A1 * A2 * !A3 * !B1 * Y)	-0.00094	-0.00100	-0.00100
	(A1 * A2 * !A3 * !B1 * Y)	0.00133	0.00130	0.00130
	(A1 * !A2 * !B1 * Y)	-0.00094	-0.00100	-0.00100
	(A1 * !A2 * !B1 * Y)	0.00133	0.00130	0.00130
	(!A1 * !B1 * Y)	-0.00094	-0.00100	-0.00100
	(!A1 * !B1 * Y)	0.00133	0.00130	0.00130
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00199	-0.00201	-0.00228
	(A1 * A2 * A3 * B1 * !Y)	0.00159	0.00159	0.00137
	(A1 * A2 * A3 * !B1 * !Y)	-0.00215	-0.00223	-0.00222
	(A1 * A2 * A3 * !B1 * !Y)	0.00131	0.00131	0.00131
	(A1 * A2 * !A3 * !B1 * Y)	-0.00187	-0.00199	-0.00198
	(A1 * A2 * !A3 * !B1 * Y)	0.00259	0.00257	0.00254
	(A1 * !A2 * !B1 * Y)	-0.00187	-0.00199	-0.00198
	(A1 * !A2 * !B1 * Y)	0.00259	0.00256	0.00254
	(!A1 * !B1 * Y)	-0.00187	-0.00198	-0.00198
	(!A1 * !B1 * Y)	0.00259	0.00257	0.00254
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	-0.00399	-0.00404	-0.00454
	(A1 * A2 * A3 * B1 * !Y)	0.00311	0.00311	0.00272
	(A1 * A2 * A3 * !B1 * !Y)	-0.00426	-0.00441	-0.00438
	(A1 * A2 * A3 * !B1 * !Y)	0.00261	0.00261	0.00260
	(A1 * A2 * !A3 * !B1 * Y)	-0.00366	-0.00390	-0.00387
	(A1 * A2 * !A3 * !B1 * Y)	0.00521	0.00513	0.00508
	(A1 * !A2 * !B1 * Y)	-0.00366	-0.00390	-0.00388
	(A1 * !A2 * !B1 * Y)	0.00521	0.00513	0.00508
	(!A1 * !B1 * Y)	-0.00366	-0.00391	-0.00389
	(!A1 * !B1 * Y)	0.00521	0.00513	0.00508

SKY130_FD_SC_HS__A32Ox

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a32o_1	12.78720
sky130_fd_sc_hs__a32o_2	14.38560
sky130_fd_sc_hs__a32o_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	B2	X
sky130_fd_sc_hs__a32o_1	0.00249	0.00245	0.00254	0.00248	0.00230	0.75767
sky130_fd_sc_hs__a32o_2	0.00266	0.00261	0.00269	0.00262	0.00247	1.38267
sky130_fd_sc_hs__a32o_4	0.00455	0.00511	0.00457	0.00475	0.00543	2.88828

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a32o_1	0.00000	0.05450	0.12518
sky130_fd_sc_hs__a32o_2	0.00000	0.07112	0.12939
sky130_fd_sc_hs__a32o_4	0.00000	0.14396	0.25878

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)	0.14886	0.87260	7.25976
	A2->X (RR)	0.15755	0.88127	7.38041
	A3->X (RR)	0.16288	0.86372	7.35496
	B1->X (RR)	0.11084	0.80557	7.14555
	B2->X (RR)	0.11460	0.80422	7.20330
sky130_fd_sc_hs__a32o_2	A1->X (RR)	0.15072	0.79531	7.40483
	A2->X (RR)	0.15973	0.79817	7.49617
	A3->X (RR)	0.16522	0.77808	7.45716
	B1->X (RR)	0.11119	0.72792	7.26534
	B2->X (RR)	0.11597	0.72141	7.31325
sky130_fd_sc_hs__a32o_4	A1->X (RR)	0.16112	0.71666	7.42195
	A2->X (RR)	0.17306	0.72697	7.54268
	A3->X (RR)	0.17897	0.70583	7.50293
	B1->X (RR)	0.11042	0.63247	7.28263
	B2->X (RR)	0.11575	0.63072	7.33539

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32o_1	A1->X (FF)	0.26676	0.85848	5.06952
	A2->X (FF)	0.29679	0.89595	5.18690
	A3->X (FF)	0.31234	0.91514	5.28873
	B1->X (FF)	0.23473	0.81001	4.81718
	B2->X (FF)	0.25734	0.84357	4.92044
sky130_fd_sc_hs__a32o_2	A1->X (FF)	0.32749	0.90143	5.18432
	A2->X (FF)	0.36234	0.94390	5.32370
	A3->X (FF)	0.38992	0.97566	5.43268
	B1->X (FF)	0.30029	0.86350	4.96428
	B2->X (FF)	0.33340	0.90303	5.09866
sky130_fd_sc_hs__a32o_4	A1->X (FF)	0.30528	0.84951	5.27475
	A2->X (FF)	0.32697	0.87871	5.39815
	A3->X (FF)	0.36551	0.92299	5.53563
	B1->X (FF)	0.29042	0.82452	5.09514
	B2->X (FF)	0.31144	0.84976	5.18131

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32o_1	A1	0.00825	0.00806	0.00969
	A1	0.00414	0.00395	0.00563
	A2	0.00879	0.00859	0.00953
	A2	0.00413	0.00393	0.00490
	A3	0.00944	0.00918	0.00984
	A3	0.00412	0.00387	0.00456
	B1	0.00649	0.00644	0.00907
	B1	0.00241	0.00237	0.00558
	B2	0.00705	0.00703	0.00887
	B2	0.00241	0.00239	0.00479
sky130_fd_sc_hs__a32o_2	A1	0.01013	0.01015	0.01170
	A1	0.00593	0.00594	0.00751
	A2	0.01077	0.01081	0.01172
	A2	0.00594	0.00593	0.00685
	A3	0.01153	0.01154	0.01211
	A3	0.00592	0.00591	0.00649
	B1	0.00864	0.00880	0.01100
	B1	0.00424	0.00447	0.00672
	B2	0.00934	0.00956	0.01102
	B2	0.00423	0.00447	0.00666

sky130_fd_sc_hs__a32o_4	**A1**	0.01917	0.01953	0.02329
	A1	0.01156	0.01187	0.01571
	A2	0.02086	0.02115	0.02340
	A2	0.01154	0.01183	0.01412
	A3	0.02202	0.02244	0.02422
	A3	0.01156	0.01198	0.01385
	B1	0.01585	0.01608	0.02179
	B1	0.00790	0.00814	0.01405
	B2	0.01769	0.01797	0.02207
	B2	0.00785	0.00817	0.01294

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32o_1	**A1**	0.00288	0.00286	0.00373
	A1	0.00716	0.00714	0.00800
	A2	0.00322	0.00322	0.00435
	A2	0.00800	0.00805	0.00884
	A3	0.00341	0.00332	0.00413
	A3	0.00879	0.00870	0.00940
	B1	0.00289	0.00297	0.00670
	B1	0.00712	0.00715	0.01024
	B2	0.00308	0.00323	0.00672
	B2	0.00783	0.00795	0.01092

sky130_fd_sc_hs__a32o_2	**A1**	0.00442	0.00446	0.00558
	A1	0.00892	0.00911	0.01002
	A2	0.00481	0.00507	0.00597
	A2	0.00991	0.01016	0.01102
	A3	0.00506	0.00494	0.00623
	A3	0.01084	0.01082	0.01152
	B1	0.00432	0.00457	0.00828
	B1	0.00890	0.00907	0.01201
	B2	0.00497	0.00517	0.00822
	B2	0.00989	0.01021	0.01298
sky130_fd_sc_hs__a32o_4	**A1**	0.00827	0.00857	0.01226
	A1	0.01654	0.01705	0.01894
	A2	0.00832	0.00873	0.01251
	A2	0.01857	0.01913	0.02080
	A3	0.00918	0.00983	0.01289
	A3	0.02049	0.02111	0.02268
	B1	0.00927	0.00990	0.01711
	B1	0.01697	0.01758	0.02378
	B2	0.00927	0.00983	0.01757
	B2	0.01872	0.01945	0.02550

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)**	0.00100	0.00096	0.00094
	(A2 * A3 * B1 * B2 * X)	-0.00101	-0.00110	-0.00109
	(A2 * !A3 * B1 * B2 * X)	0.00087	0.00088	0.00087
	(A2 * !A3 * B1 * B2 * X)	-0.00112	-0.00113	-0.00112
	(A2 * !A3 * B1 * !B2 * !X)	0.00033	0.00033	0.00030
	(A2 * !A3 * B1 * !B2 * !X)	-0.00131	-0.00132	-0.00136
	(A2 * !A3 * !B1 * !X)	0.00033	0.00033	0.00030
	(A2 * !A3 * !B1 * !X)	-0.00131	-0.00132	-0.00136
	(!A2 * B1 * B2 * X)	0.00090	0.00090	0.00090
	(!A2 * B1 * B2 * X)	-0.00112	-0.00112	-0.00112
	(!A2 * B1 * !B2 * !X)	0.00034	0.00033	0.00032
	(!A2 * B1 * !B2 * !X)	-0.00135	-0.00135	-0.00137
	(!A2 * !B1 * !X)	0.00034	0.00033	0.00032
	(!A2 * !B1 * !X)	-0.00135	-0.00135	-0.00137
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	0.00113	0.00109	0.00107
	(A2 * A3 * B1 * B2 * X)	-0.00101	-0.00109	-0.00109
	(A2 * !A3 * B1 * B2 * X)	0.00099	0.00100	0.00099
	(A2 * !A3 * B1 * B2 * X)	-0.00112	-0.00113	-0.00112
	(A2 * !A3 * B1 * !B2 * !X)	0.00037	0.00037	0.00034
	(A2 * !A3 * B1 * !B2 * !X)	-0.00133	-0.00134	-0.00139
	(A2 * !A3 * !B1 * !X)	0.00037	0.00037	0.00034
	(A2 * !A3 * !B1 * !X)	-0.00133	-0.00134	-0.00139
	(!A2 * B1 * B2 * X)	0.00102	0.00102	0.00102
	(!A2 * B1 * B2 * X)	-0.00112	-0.00112	-0.00112
	(!A2 * B1 * !B2 * !X)	0.00037	0.00037	0.00035
	(!A2 * B1 * !B2 * !X)	-0.00137	-0.00138	-0.00140
	(!A2 * !B1 * !X)	0.00037	0.00037	0.00035
	(!A2 * !B1 * !X)	-0.00137	-0.00138	-0.00140

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	0.00179	0.00173	0.00171
	(A2 * A3 * B1 * B2 * X)	-0.00203	-0.00219	-0.00218
	(A2 * !A3 * B1 * B2 * X)	0.00156	0.00157	0.00157
	(A2 * !A3 * B1 * B2 * X)	-0.00223	-0.00225	-0.00224
	(A2 * !A3 * B1 * !B2 * !X)	0.00062	0.00063	0.00056
	(A2 * !A3 * B1 * !B2 * !X)	-0.00245	-0.00248	-0.00261
	(A2 * !A3 * !B1 * !X)	0.00062	0.00063	0.00056
	(A2 * !A3 * !B1 * !X)	-0.00245	-0.00248	-0.00261
	(!A2 * B1 * B2 * X)	0.00161	0.00161	0.00161
	(!A2 * B1 * B2 * X)	-0.00223	-0.00225	-0.00224
	(!A2 * B1 * !B2 * !X)	0.00059	0.00059	0.00056
	(!A2 * B1 * !B2 * !X)	-0.00256	-0.00258	-0.00262
	(!A2 * !B1 * !X)	0.00059	0.00059	0.00056
	(!A2 * !B1 * !X)	-0.00256	-0.00258	-0.00262

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)**	-0.00094	-0.00094	-0.00094
	(A2 * A3 * B1 * B2 * X)	0.00109	0.00110	0.00109
	(A2 * !A3 * B1 * B2 * X)	-0.00081	-0.00088	-0.00087
	(A2 * !A3 * B1 * B2 * X)	0.00113	0.00115	0.00113
	(A2 * !A3 * B1 * !B2 * !X)	-0.00030	-0.00030	-0.00030
	(A2 * !A3 * B1 * !B2 * !X)	0.00137	0.00138	0.00137
	(A2 * !A3 * !B1 * !X)	-0.00030	-0.00030	-0.00030
	(A2 * !A3 * !B1 * !X)	0.00137	0.00138	0.00137
	(!A2 * B1 * B2 * X)	-0.00087	-0.00090	-0.00090
	(!A2 * B1 * B2 * X)	0.00113	0.00114	0.00113
	(!A2 * B1 * !B2 * !X)	-0.00031	-0.00031	-0.00031
	(!A2 * B1 * !B2 * !X)	0.00137	0.00138	0.00137
	(!A2 * !B1 * !X)	-0.00031	-0.00031	-0.00031
	(!A2 * !B1 * !X)	0.00137	0.00138	0.00137
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	-0.00107	-0.00108	-0.00107
	(A2 * A3 * B1 * B2 * X)	0.00109	0.00109	0.00109
	(A2 * !A3 * B1 * B2 * X)	-0.00092	-0.00100	-0.00099
	(A2 * !A3 * B1 * B2 * X)	0.00113	0.00114	0.00112
	(A2 * !A3 * B1 * !B2 * !X)	-0.00033	-0.00034	-0.00033
	(A2 * !A3 * B1 * !B2 * !X)	0.00140	0.00141	0.00140
	(A2 * !A3 * !B1 * !X)	-0.00033	-0.00034	-0.00033
	(A2 * !A3 * !B1 * !X)	0.00139	0.00141	0.00140
	(!A2 * B1 * B2 * X)	-0.00099	-0.00102	-0.00102
	(!A2 * B1 * B2 * X)	0.00113	0.00113	0.00112
	(!A2 * B1 * !B2 * !X)	-0.00034	-0.00034	-0.00034
	(!A2 * B1 * !B2 * !X)	0.00140	0.00141	0.00140
	(!A2 * !B1 * !X)	-0.00034	-0.00034	-0.00034
	(!A2 * !B1 * !X)	0.00140	0.00141	0.00140

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	-0.00169	-0.00170	-0.00170
	(A2 * A3 * B1 * B2 * X)	0.00216	0.00219	0.00218
	(A2 * !A3 * B1 * B2 * X)	-0.00142	-0.00157	-0.00157
	(A2 * !A3 * B1 * B2 * X)	0.00224	0.00227	0.00225
	(A2 * !A3 * B1 * !B2 * !X)	-0.00053	-0.00053	-0.00052
	(A2 * !A3 * B1 * !B2 * !X)	0.00264	0.00263	0.00263
	(A2 * !A3 * !B1 * !X)	-0.00053	-0.00053	-0.00052
	(A2 * !A3 * !B1 * !X)	0.00264	0.00263	0.00263
	(!A2 * B1 * B2 * X)	-0.00154	-0.00161	-0.00161
	(!A2 * B1 * B2 * X)	0.00223	0.00227	0.00225
	(!A2 * B1 * !B2 * !X)	-0.00055	-0.00055	-0.00054
	(!A2 * B1 * !B2 * !X)	0.00264	0.00264	0.00263
	(!A2 * !B1 * !X)	-0.00055	-0.00055	-0.00054
	(!A2 * !B1 * !X)	0.00264	0.00264	0.00263

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)**	0.00098	0.00094	0.00092
	(A1 * A3 * B1 * B2 * X)	-0.00101	-0.00110	-0.00109
	(A1 * !A3 * B1 * B2 * X)	0.00087	0.00088	0.00087
	(A1 * !A3 * B1 * B2 * X)	-0.00112	-0.00113	-0.00112
	(A1 * !A3 * B1 * !B2 * !X)	0.00038	0.00038	0.00038
	(A1 * !A3 * B1 * !B2 * !X)	-0.00120	-0.00120	-0.00120
	(A1 * !A3 * !B1 * !X)	0.00038	0.00038	0.00038
	(A1 * !A3 * !B1 * !X)	-0.00120	-0.00120	-0.00120
	(!A1 * A3 * B1 * B2 * X)	0.00088	0.00088	0.00088
	(!A1 * A3 * B1 * B2 * X)	-0.00112	-0.00112	-0.00112
	(!A1 * A3 * B1 * !B2 * !X)	0.00080	0.00081	0.00080
	(!A1 * A3 * B1 * !B2 * !X)	-0.00119	-0.00121	-0.00120
	(!A1 * A3 * !B1 * !X)	0.00080	0.00080	0.00080
	(!A1 * A3 * !B1 * !X)	-0.00120	-0.00120	-0.00120
	(!A1 * !A3 * B1 * B2 * X)	0.00055	0.00055	0.00055
	(!A1 * !A3 * B1 * B2 * X)	-0.00112	-0.00113	-0.00112
	(!A1 * !A3 * B1 * !B2 * !X)	0.00044	0.00044	0.00043
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00121	-0.00121	-0.00121
	(!A1 * !A3 * !B1 * !X)	0.00044	0.00044	0.00043
	(!A1 * !A3 * !B1 * !X)	-0.00121	-0.00121	-0.00121

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	0.00111	0.00107	0.00105
	(A1 * A3 * B1 * B2 * X)	-0.00101	-0.00110	-0.00109
	(A1 * !A3 * B1 * B2 * X)	0.00099	0.00100	0.00099
	(A1 * !A3 * B1 * B2 * X)	-0.00112	-0.00113	-0.00112
	(A1 * !A3 * B1 * !B2 * !X)	0.00043	0.00043	0.00043
	(A1 * !A3 * B1 * !B2 * !X)	-0.00120	-0.00120	-0.00119
	(A1 * !A3 * !B1 * !X)	0.00043	0.00043	0.00043
	(A1 * !A3 * !B1 * !X)	-0.00120	-0.00120	-0.00119
	(!A1 * A3 * B1 * B2 * X)	0.00100	0.00101	0.00100
	(!A1 * A3 * B1 * B2 * X)	-0.00112	-0.00112	-0.00112
	(!A1 * A3 * B1 * !B2 * !X)	0.00093	0.00093	0.00093
	(!A1 * A3 * B1 * !B2 * !X)	-0.00120	-0.00120	-0.00120
	(!A1 * A3 * !B1 * !X)	0.00093	0.00093	0.00093
	(!A1 * A3 * !B1 * !X)	-0.00120	-0.00120	-0.00120
	(!A1 * !A3 * B1 * B2 * X)	0.00062	0.00062	0.00062
	(!A1 * !A3 * B1 * B2 * X)	-0.00112	-0.00113	-0.00112
	(!A1 * !A3 * B1 * !B2 * !X)	0.00050	0.00050	0.00049
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00121	-0.00121	-0.00120
	(!A1 * !A3 * !B1 * !X)	0.00050	0.00050	0.00049
	(!A1 * !A3 * !B1 * !X)	-0.00121	-0.00121	-0.00120

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	0.00195	0.00185	0.00181
	(A1 * A3 * B1 * B2 * X)	-0.00214	-0.00238	-0.00237
	(A1 * !A3 * B1 * B2 * X)	0.00172	0.00173	0.00172
	(A1 * !A3 * B1 * B2 * X)	-0.00245	-0.00247	-0.00245
	(A1 * !A3 * B1 * !B2 * !X)	0.00080	0.00080	0.00078
	(A1 * !A3 * B1 * !B2 * !X)	-0.00258	-0.00258	-0.00256
	(A1 * !A3 * !B1 * !X)	0.00080	0.00080	0.00078
	(A1 * !A3 * !B1 * !X)	-0.00258	-0.00258	-0.00256
	(!A1 * A3 * B1 * B2 * X)	0.00171	0.00172	0.00172
	(!A1 * A3 * B1 * B2 * X)	-0.00245	-0.00246	-0.00245
	(!A1 * A3 * B1 * !B2 * !X)	0.00160	0.00162	0.00161
	(!A1 * A3 * B1 * !B2 * !X)	-0.00256	-0.00258	-0.00257
	(!A1 * A3 * !B1 * !X)	0.00160	0.00162	0.00161
	(!A1 * A3 * !B1 * !X)	-0.00256	-0.00258	-0.00257
	(!A1 * !A3 * B1 * B2 * X)	0.00112	0.00113	0.00112
	(!A1 * !A3 * B1 * B2 * X)	-0.00245	-0.00247	-0.00245
	(!A1 * !A3 * B1 * !B2 * !X)	0.00092	0.00093	0.00093
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00258	-0.00260	-0.00259
	(!A1 * !A3 * !B1 * !X)	0.00093	0.00093	0.00093
	(!A1 * !A3 * !B1 * !X)	-0.00259	-0.00260	-0.00259

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)**	-0.00092	-0.00092	-0.00092
	(A1 * A3 * B1 * B2 * X)	0.00110	0.00110	0.00109
	(A1 * !A3 * B1 * B2 * X)	-0.00085	-0.00088	-0.00087
	(A1 * !A3 * B1 * B2 * X)	0.00113	0.00114	0.00113
	(A1 * !A3 * B1 * !B2 * !X)	-0.00035	-0.00036	-0.00036
	(A1 * !A3 * B1 * !B2 * !X)	0.00123	0.00123	0.00121
	(A1 * !A3 * !B1 * !X)	-0.00035	-0.00036	-0.00036
	(A1 * !A3 * !B1 * !X)	0.00123	0.00123	0.00121
	(!A1 * A3 * B1 * B2 * X)	-0.00085	-0.00088	-0.00088
	(!A1 * A3 * B1 * B2 * X)	0.00112	0.00114	0.00113
	(!A1 * A3 * B1 * !B2 * !X)	-0.00074	-0.00081	-0.00080
	(!A1 * A3 * B1 * !B2 * !X)	0.00124	0.00122	0.00120
	(!A1 * A3 * !B1 * !X)	-0.00074	-0.00080	-0.00080
	(!A1 * A3 * !B1 * !X)	0.00124	0.00122	0.00120
	(!A1 * !A3 * B1 * B2 * X)	-0.00055	-0.00055	-0.00055
	(!A1 * !A3 * B1 * B2 * X)	0.00112	0.00113	0.00113
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00044	-0.00044	-0.00043
	(!A1 * !A3 * B1 * !B2 * !X)	0.00126	0.00126	0.00122
	(!A1 * !A3 * !B1 * !X)	-0.00044	-0.00044	-0.00043
	(!A1 * !A3 * !B1 * !X)	0.00126	0.00126	0.00122

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	-0.00105	-0.00106	-0.00105
	(A1 * A3 * B1 * B2 * X)	0.00108	0.00110	0.00109
	(A1 * !A3 * B1 * B2 * X)	-0.00097	-0.00100	-0.00099
	(A1 * !A3 * B1 * B2 * X)	0.00113	0.00114	0.00112
	(A1 * !A3 * B1 * !B2 * !X)	-0.00040	-0.00040	-0.00041
	(A1 * !A3 * B1 * !B2 * !X)	0.00123	0.00123	0.00121
	(A1 * !A3 * !B1 * !X)	-0.00040	-0.00040	-0.00041
	(A1 * !A3 * !B1 * !X)	0.00123	0.00123	0.00121
	(!A1 * A3 * B1 * B2 * X)	-0.00097	-0.00101	-0.00100
	(!A1 * A3 * B1 * B2 * X)	0.00112	0.00113	0.00112
	(!A1 * A3 * B1 * !B2 * !X)	-0.00086	-0.00093	-0.00093
	(!A1 * A3 * B1 * !B2 * !X)	0.00123	0.00122	0.00120
	(!A1 * A3 * !B1 * !X)	-0.00086	-0.00093	-0.00093
	(!A1 * A3 * !B1 * !X)	0.00123	0.00122	0.00120
	(!A1 * !A3 * B1 * B2 * X)	-0.00062	-0.00062	-0.00062
	(!A1 * !A3 * B1 * B2 * X)	0.00112	0.00113	0.00112
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00050	-0.00050	-0.00049
	(!A1 * !A3 * B1 * !B2 * !X)	0.00126	0.00126	0.00122
	(!A1 * !A3 * !B1 * !X)	-0.00050	-0.00050	-0.00049
	(!A1 * !A3 * !B1 * !X)	0.00126	0.00126	0.00122

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	-0.00180	-0.00181	-0.00180
	(A1 * A3 * B1 * B2 * X)	0.00236	0.00239	0.00237
	(A1 * !A3 * B1 * B2 * X)	-0.00164	-0.00173	-0.00172
	(A1 * !A3 * B1 * B2 * X)	0.00248	0.00249	0.00247
	(A1 * !A3 * B1 * !B2 * !X)	-0.00073	-0.00073	-0.00075
	(A1 * !A3 * B1 * !B2 * !X)	0.00264	0.00264	0.00260
	(A1 * !A3 * !B1 * !X)	-0.00073	-0.00073	-0.00075
	(A1 * !A3 * !B1 * !X)	0.00264	0.00264	0.00260
	(!A1 * A3 * B1 * B2 * X)	-0.00165	-0.00172	-0.00172
	(!A1 * A3 * B1 * B2 * X)	0.00245	0.00248	0.00246
	(!A1 * A3 * B1 * !B2 * !X)	-0.00147	-0.00162	-0.00161
	(!A1 * A3 * B1 * !B2 * !X)	0.00265	0.00261	0.00258
	(!A1 * A3 * !B1 * !X)	-0.00147	-0.00162	-0.00161
	(!A1 * A3 * !B1 * !X)	0.00265	0.00261	0.00258
	(!A1 * !A3 * B1 * B2 * X)	-0.00112	-0.00113	-0.00112
	(!A1 * !A3 * B1 * B2 * X)	0.00248	0.00247	0.00247
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00092	-0.00093	-0.00093
	(!A1 * !A3 * B1 * !B2 * !X)	0.00271	0.00267	0.00261
	(!A1 * !A3 * !B1 * !X)	-0.00093	-0.00093	-0.00093
	(!A1 * !A3 * !B1 * !X)	0.00271	0.00267	0.00261

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)**	0.00109	0.00106	0.00104
	(A1 * A2 * B1 * B2 * X)	-0.00100	-0.00108	-0.00108
	(A1 * !A2 * B1 * !B2 * !X)	0.00081	0.00081	0.00081
	(A1 * !A2 * B1 * !B2 * !X)	-0.00128	-0.00129	-0.00129
	(A1 * !A2 * !B1 * !X)	0.00081	0.00081	0.00081
	(A1 * !A2 * !B1 * !X)	-0.00128	-0.00129	-0.00129
	(!A2 * B1 * B2 * X)	0.00099	0.00100	0.00099
	(!A2 * B1 * B2 * X)	-0.00110	-0.00111	-0.00110
	(!A1 * A2 * B1 * B2 * X)	0.00098	0.00099	0.00098
	(!A1 * A2 * B1 * B2 * X)	-0.00110	-0.00111	-0.00110
	(!A1 * A2 * B1 * !B2 * !X)	0.00080	0.00080	0.00080
	(!A1 * A2 * B1 * !B2 * !X)	-0.00129	-0.00129	-0.00129
	(!A1 * A2 * !B1 * !X)	0.00080	0.00081	0.00080
	(!A1 * A2 * !B1 * !X)	-0.00129	-0.00129	-0.00129
	(!A1 * !A2 * B1 * !B2 * !X)	0.00081	0.00081	0.00081
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00128	-0.00129	-0.00129
	(!A1 * !A2 * !B1 * !X)	0.00081	0.00081	0.00081
	(!A1 * !A2 * !B1 * !X)	-0.00128	-0.00129	-0.00129

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	0.00122	0.00119	0.00117
	(A1 * A2 * B1 * B2 * X)	-0.00100	-0.00109	-0.00108
	(A1 * !A2 * B1 * !B2 * !X)	0.00094	0.00094	0.00094
	(A1 * !A2 * B1 * !B2 * !X)	-0.00128	-0.00129	-0.00129
	(A1 * !A2 * !B1 * !X)	0.00094	0.00094	0.00094
	(A1 * !A2 * !B1 * !X)	-0.00128	-0.00129	-0.00129
	(!A2 * B1 * B2 * X)	0.00111	0.00112	0.00112
	(!A2 * B1 * B2 * X)	-0.00111	-0.00111	-0.00111
	(!A1 * A2 * B1 * B2 * X)	0.00110	0.00111	0.00110
	(!A1 * A2 * B1 * B2 * X)	-0.00111	-0.00111	-0.00111
	(!A1 * A2 * B1 * !B2 * !X)	0.00092	0.00093	0.00092
	(!A1 * A2 * B1 * !B2 * !X)	-0.00129	-0.00129	-0.00128
	(!A1 * A2 * !B1 * !X)	0.00092	0.00093	0.00092
	(!A1 * A2 * !B1 * !X)	-0.00129	-0.00129	-0.00128
	(!A1 * !A2 * B1 * !B2 * !X)	0.00094	0.00095	0.00094
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00129	-0.00128	-0.00129
	(!A1 * !A2 * !B1 * !X)	0.00094	0.00095	0.00094
	(!A1 * !A2 * !B1 * !X)	-0.00129	-0.00128	-0.00129

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	0.00192	0.00183	0.00180
	(A1 * A2 * B1 * B2 * X)	-0.00210	-0.00230	-0.00229
	(A1 * !A2 * B1 * !B2 * !X)	0.00170	0.00171	0.00169
	(A1 * !A2 * B1 * !B2 * !X)	-0.00237	-0.00238	-0.00237
	(A1 * !A2 * !B1 * !X)	0.00170	0.00170	0.00169
	(A1 * !A2 * !B1 * !X)	-0.00237	-0.00237	-0.00237
	(!A2 * B1 * B2 * X)	0.00170	0.00172	0.00170
	(!A2 * B1 * B2 * X)	-0.00237	-0.00238	-0.00236
	(!A1 * A2 * B1 * B2 * X)	0.00165	0.00166	0.00165
	(!A1 * A2 * B1 * B2 * X)	-0.00236	-0.00237	-0.00236
	(!A1 * A2 * B1 * !B2 * !X)	0.00165	0.00166	0.00165
	(!A1 * A2 * B1 * !B2 * !X)	-0.00236	-0.00237	-0.00237
	(!A1 * A2 * !B1 * !X)	0.00165	0.00166	0.00165
	(!A1 * A2 * !B1 * !X)	-0.00236	-0.00237	-0.00237
	(!A1 * !A2 * B1 * !B2 * !X)	0.00169	0.00171	0.00169
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00237	-0.00238	-0.00237
	(!A1 * !A2 * !B1 * !X)	0.00170	0.00171	0.00169
	(!A1 * !A2 * !B1 * !X)	-0.00237	-0.00238	-0.00237

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)**	-0.00104	-0.00104	-0.00104
	(A1 * A2 * B1 * B2 * X)	0.00108	0.00108	0.00108
	(A1 * !A2 * B1 * !B2 * !X)	-0.00078	-0.00081	-0.00081
	(A1 * !A2 * B1 * !B2 * !X)	0.00128	0.00130	0.00129
	(A1 * !A2 * !B1 * !X)	-0.00078	-0.00081	-0.00081
	(A1 * !A2 * !B1 * !X)	0.00128	0.00130	0.00129
	(!A2 * B1 * B2 * X)	-0.00096	-0.00099	-0.00099
	(!A2 * B1 * B2 * X)	0.00110	0.00112	0.00111
	(!A1 * A2 * B1 * B2 * X)	-0.00093	-0.00099	-0.00098
	(!A1 * A2 * B1 * B2 * X)	0.00111	0.00111	0.00111
	(!A1 * A2 * B1 * !B2 * !X)	-0.00074	-0.00080	-0.00080
	(!A1 * A2 * B1 * !B2 * !X)	0.00129	0.00130	0.00129
	(!A1 * A2 * !B1 * !X)	-0.00074	-0.00080	-0.00080
	(!A1 * A2 * !B1 * !X)	0.00129	0.00130	0.00129
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00078	-0.00081	-0.00081
	(!A1 * !A2 * B1 * !B2 * !X)	0.00128	0.00130	0.00129
	(!A1 * !A2 * !B1 * !X)	-0.00078	-0.00081	-0.00081
	(!A1 * !A2 * !B1 * !X)	0.00128	0.00130	0.00129

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	-0.00117	-0.00117	-0.00117
	(A1 * A2 * B1 * B2 * X)	0.00109	0.00109	0.00108
	(A1 * !A2 * B1 * !B2 * !X)	-0.00091	-0.00094	-0.00094
	(A1 * !A2 * B1 * !B2 * !X)	0.00129	0.00130	0.00129
	(A1 * !A2 * !B1 * !X)	-0.00091	-0.00094	-0.00094
	(A1 * !A2 * !B1 * !X)	0.00129	0.00130	0.00129
	(!A2 * B1 * B2 * X)	-0.00109	-0.00112	-0.00112
	(!A2 * B1 * B2 * X)	0.00112	0.00112	0.00111
	(!A1 * A2 * B1 * B2 * X)	-0.00104	-0.00111	-0.00110
	(!A1 * A2 * B1 * B2 * X)	0.00111	0.00112	0.00111
	(!A1 * A2 * B1 * !B2 * !X)	-0.00086	-0.00093	-0.00092
	(!A1 * A2 * B1 * !B2 * !X)	0.00129	0.00130	0.00129
	(!A1 * A2 * !B1 * !X)	-0.00086	-0.00093	-0.00092
	(!A1 * A2 * !B1 * !X)	0.00129	0.00130	0.00129
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00091	-0.00094	-0.00094
	(!A1 * !A2 * B1 * !B2 * !X)	0.00129	0.00128	0.00129
	(!A1 * !A2 * !B1 * !X)	-0.00091	-0.00094	-0.00094
	(!A1 * !A2 * !B1 * !X)	0.00129	0.00128	0.00129

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	-0.00178	-0.00180	-0.00178
	(A1 * A2 * B1 * B2 * X)	0.00227	0.00230	0.00229
	(A1 * !A2 * B1 * !B2 * !X)	-0.00162	-0.00171	-0.00169
	(A1 * !A2 * B1 * !B2 * !X)	0.00238	0.00240	0.00237
	(A1 * !A2 * !B1 * !X)	-0.00162	-0.00170	-0.00169
	(A1 * !A2 * !B1 * !X)	0.00238	0.00240	0.00237
	(!A2 * B1 * B2 * X)	-0.00164	-0.00171	-0.00170
	(!A2 * B1 * B2 * X)	0.00237	0.00239	0.00237
	(!A1 * A2 * B1 * B2 * X)	-0.00154	-0.00166	-0.00165
	(!A1 * A2 * B1 * B2 * X)	0.00237	0.00239	0.00237
	(!A1 * A2 * B1 * !B2 * !X)	-0.00153	-0.00166	-0.00165
	(!A1 * A2 * B1 * !B2 * !X)	0.00238	0.00239	0.00237
	(!A1 * A2 * !B1 * !X)	-0.00153	-0.00166	-0.00165
	(!A1 * A2 * !B1 * !X)	0.00238	0.00239	0.00237
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00163	-0.00171	-0.00169
	(!A1 * !A2 * B1 * !B2 * !X)	0.00238	0.00240	0.00237
	(!A1 * !A2 * !B1 * !X)	-0.00163	-0.00171	-0.00169
	(!A1 * !A2 * !B1 * !X)	0.00238	0.00240	0.00237

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)**	0.00102	0.00103	0.00102
	(A1 * A2 * A3 * B2 * X)	-0.00059	-0.00059	-0.00059
	(A1 * A2 * A3 * !B2 * X)	0.00097	0.00098	0.00097
	(A1 * A2 * A3 * !B2 * X)	-0.00058	-0.00059	-0.00058
	(A1 * A2 * !A3 * !B2 * !X)	0.00031	0.00032	0.00030
	(A1 * A2 * !A3 * !B2 * !X)	-0.00133	-0.00134	-0.00135
	(A1 * !A2 * !B2 * !X)	0.00031	0.00032	0.00030
	(A1 * !A2 * !B2 * !X)	-0.00133	-0.00134	-0.00135
	(!A1 * !B2 * !X)	0.00031	0.00032	0.00030
	(!A1 * !B2 * !X)	-0.00133	-0.00134	-0.00135
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B2 * X)**	0.00113	0.00114	0.00114
	(A1 * A2 * A3 * B2 * X)	-0.00059	-0.00059	-0.00059
	(A1 * A2 * A3 * !B2 * X)	0.00108	0.00110	0.00108
	(A1 * A2 * A3 * !B2 * X)	-0.00059	-0.00060	-0.00059
	(A1 * A2 * !A3 * !B2 * !X)	0.00039	0.00039	0.00037
	(A1 * A2 * !A3 * !B2 * !X)	-0.00132	-0.00133	-0.00135
	(A1 * !A2 * !B2 * !X)	0.00039	0.00039	0.00037
	(A1 * !A2 * !B2 * !X)	-0.00132	-0.00133	-0.00135
	(!A1 * !B2 * !X)	0.00039	0.00039	0.00037
	(!A1 * !B2 * !X)	-0.00132	-0.00133	-0.00135
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	0.00204	0.00205	0.00204
	(A1 * A2 * A3 * B2 * X)	-0.00119	-0.00119	-0.00118
	(A1 * A2 * A3 * !B2 * X)	0.00192	0.00194	0.00192
	(A1 * A2 * A3 * !B2 * X)	-0.00118	-0.00118	-0.00118
	(A1 * A2 * !A3 * !B2 * !X)	0.00058	0.00059	0.00056
	(A1 * A2 * !A3 * !B2 * !X)	-0.00268	-0.00270	-0.00273
	(A1 * !A2 * !B2 * !X)	0.00058	0.00059	0.00056
	(A1 * !A2 * !B2 * !X)	-0.00268	-0.00270	-0.00273
	(!A1 * !B2 * !X)	0.00058	0.00059	0.00056
	(!A1 * !B2 * !X)	-0.00268	-0.00270	-0.00273

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)	-0.00088	-0.00089	-0.00100
	(A1 * A2 * A3 * B2 * X)	0.00071	0.00071	0.00061
	(A1 * A2 * A3 * !B2 * X)	-0.00095	-0.00098	-0.00097
	(A1 * A2 * A3 * !B2 * X)	0.00059	0.00059	0.00059
	(A1 * A2 * !A3 * !B2 * !X)	-0.00030	-0.00030	-0.00030
	(A1 * A2 * !A3 * !B2 * !X)	0.00135	0.00136	0.00135
	(A1 * !A2 * !B2 * !X)	-0.00030	-0.00030	-0.00030
	(A1 * !A2 * !B2 * !X)	0.00135	0.00136	0.00135
	(!A1 * !B2 * !X)	-0.00030	-0.00030	-0.00030
	(!A1 * !B2 * !X)	0.00135	0.00136	0.00135
sky130_fd_sc_hs__a32o_2	(A1 * A2 * A3 * B2 * X)	-0.00099	-0.00100	-0.00112
	(A1 * A2 * A3 * B2 * X)	0.00072	0.00071	0.00062
	(A1 * A2 * A3 * !B2 * X)	-0.00105	-0.00110	-0.00108
	(A1 * A2 * A3 * !B2 * X)	0.00060	0.00060	0.00059
	(A1 * A2 * !A3 * !B2 * !X)	-0.00036	-0.00036	-0.00036
	(A1 * A2 * !A3 * !B2 * !X)	0.00135	0.00136	0.00136
	(A1 * !A2 * !B2 * !X)	-0.00036	-0.00036	-0.00036
	(A1 * !A2 * !B2 * !X)	0.00135	0.00136	0.00136
	(!A1 * !B2 * !X)	-0.00036	-0.00036	-0.00036
	(!A1 * !B2 * !X)	0.00135	0.00136	0.00136

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	-0.00174	-0.00175	-0.00200
	(A1 * A2 * A3 * B2 * X)	0.00144	0.00143	0.00124
	(A1 * A2 * A3 * !B2 * X)	-0.00187	-0.00194	-0.00192
	(A1 * A2 * A3 * !B2 * X)	0.00119	0.00118	0.00118
	(A1 * A2 * !A3 * !B2 * !X)	-0.00054	-0.00055	-0.00054
	(A1 * A2 * !A3 * !B2 * !X)	0.00273	0.00274	0.00274
	(A1 * !A2 * !B2 * !X)	-0.00054	-0.00055	-0.00054
	(A1 * !A2 * !B2 * !X)	0.00273	0.00274	0.00274
	(!A1 * !B2 * !X)	-0.00054	-0.00055	-0.00054
	(!A1 * !B2 * !X)	0.00273	0.00274	0.00274

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)**	0.00100	0.00100	0.00100
	(A1 * A2 * A3 * B1 * X)	-0.00062	-0.00062	-0.00061
	(A1 * A2 * A3 * !B1 * X)	0.00095	0.00097	0.00095
	(A1 * A2 * A3 * !B1 * X)	-0.00061	-0.00062	-0.00061
	(A1 * A2 * !A3 * !B1 * !X)	0.00087	0.00088	0.00087
	(A1 * A2 * !A3 * !B1 * !X)	-0.00113	-0.00114	-0.00114
	(A1 * !A2 * !B1 * !X)	0.00087	0.00088	0.00087
	(A1 * !A2 * !B1 * !X)	-0.00113	-0.00114	-0.00114
	(!A1 * !B1 * !X)	0.00086	0.00088	0.00087
	(!A1 * !B1 * !X)	-0.00113	-0.00114	-0.00114

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	0.00115	0.00115	0.00115
	(A1 * A2 * A3 * B1 * X)	-0.00063	-0.00063	-0.00063
	(A1 * A2 * A3 * !B1 * X)	0.00110	0.00111	0.00110
	(A1 * A2 * A3 * !B1 * X)	-0.00062	-0.00063	-0.00062
	(A1 * A2 * !A3 * !B1 * !X)	0.00102	0.00103	0.00102
	(A1 * A2 * !A3 * !B1 * !X)	-0.00114	-0.00115	-0.00114
	(A1 * !A2 * !B1 * !X)	0.00102	0.00103	0.00102
	(A1 * !A2 * !B1 * !X)	-0.00114	-0.00115	-0.00114
	(!A1 * !B1 * !X)	0.00102	0.00103	0.00102
	(!A1 * !B1 * !X)	-0.00114	-0.00115	-0.00114
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	0.00261	0.00262	0.00260
	(A1 * A2 * A3 * B1 * X)	-0.00124	-0.00125	-0.00123
	(A1 * A2 * A3 * !B1 * X)	0.00248	0.00252	0.00248
	(A1 * A2 * A3 * !B1 * X)	-0.00123	-0.00125	-0.00123
	(A1 * A2 * !A3 * !B1 * !X)	0.00217	0.00219	0.00217
	(A1 * A2 * !A3 * !B1 * !X)	-0.00242	-0.00243	-0.00242
	(A1 * !A2 * !B1 * !X)	0.00217	0.00220	0.00218
	(A1 * !A2 * !B1 * !X)	-0.00242	-0.00243	-0.00242
	(!A1 * !B1 * !X)	0.00217	0.00220	0.00218
	(!A1 * !B1 * !X)	-0.00242	-0.00243	-0.00242

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)**	-0.00085	-0.00086	-0.00098
	(A1 * A2 * A3 * B1 * X)	0.00074	0.00073	0.00064
	(A1 * A2 * A3 * !B1 * X)	-0.00093	-0.00096	-0.00095
	(A1 * A2 * A3 * !B1 * X)	0.00061	0.00062	0.00061
	(A1 * A2 * !A3 * !B1 * !X)	-0.00082	-0.00088	-0.00087
	(A1 * A2 * !A3 * !B1 * !X)	0.00117	0.00116	0.00114
	(A1 * !A2 * !B1 * !X)	-0.00082	-0.00088	-0.00087
	(A1 * !A2 * !B1 * !X)	0.00117	0.00116	0.00114
	(!A1 * !B1 * !X)	-0.00082	-0.00088	-0.00087
	(!A1 * !B1 * !X)	0.00117	0.00116	0.00114
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00101	-0.00101	-0.00113
	(A1 * A2 * A3 * B1 * X)	0.00075	0.00074	0.00065
	(A1 * A2 * A3 * !B1 * X)	-0.00107	-0.00110	-0.00110
	(A1 * A2 * A3 * !B1 * X)	0.00062	0.00063	0.00062
	(A1 * A2 * !A3 * !B1 * !X)	-0.00097	-0.00103	-0.00102
	(A1 * A2 * !A3 * !B1 * !X)	0.00116	0.00115	0.00115
	(A1 * !A2 * !B1 * !X)	-0.00097	-0.00103	-0.00102
	(A1 * !A2 * !B1 * !X)	0.00116	0.00115	0.00115
	(!A1 * !B1 * !X)	-0.00097	-0.00103	-0.00102
	(!A1 * !B1 * !X)	0.00116	0.00115	0.00115
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	-0.00230	-0.00232	-0.00256
	(A1 * A2 * A3 * B1 * X)	0.00149	0.00149	0.00129
	(A1 * A2 * A3 * !B1 * X)	-0.00244	-0.00251	-0.00248
	(A1 * A2 * A3 * !B1 * X)	0.00124	0.00125	0.00123
	(A1 * A2 * !A3 * !B1 * !X)	-0.00206	-0.00219	-0.00217
	(A1 * A2 * !A3 * !B1 * !X)	0.00252	0.00245	0.00243
	(A1 * !A2 * !B1 * !X)	-0.00207	-0.00220	-0.00218
	(A1 * !A2 * !B1 * !X)	0.00252	0.00245	0.00243
	(!A1 * !B1 * !X)	-0.00207	-0.00220	-0.00218
	(!A1 * !B1 * !X)	0.00252	0.00245	0.00243

SKY130_FD_SC_HS__A41OIx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT					OUTPUT
A1	A2	A3	A4	B1	Y
0	x	x	x	0	1
x	x	x	x	1	0
1	0	x	x	0	1
1	1	0	x	0	1
1	1	1	0	0	1
1	1	1	1	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__a41oi_1	11.18880
sky130_fd_sc_hs__a41oi_2	19.18080
sky130_fd_sc_hs__a41oi_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	A4	B1	Y
sky130_fd_sc_hs__a41oi_1	0.00274	0.00277	0.00272	0.00275	0.00279	0.33253
sky130_fd_sc_hs__a41oi_2	0.00530	0.00514	0.00505	0.00504	0.00407	0.65212
sky130_fd_sc_hs__a41oi_4	0.01034	0.00995	0.01006	0.00996	0.00803	1.15773

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a41oi_1	0.00000	0.01541	0.04056
sky130_fd_sc_hs__a41oi_2	0.00000	0.02884	0.08111
sky130_fd_sc_hs__a41oi_4	0.00000	0.05768	0.16222

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)	0.15618	1.25661	11.55040
	A2->Y (FR)	0.19131	1.30747	11.72140
	A3->Y (FR)	0.21077	1.31067	11.54980
	A4->Y (FR)	0.21992	1.28419	11.21360
	B1->Y (FR)	0.13517	1.22993	11.66170
sky130_fd_sc_hs__a41oi_2	A1->Y (FR)	0.12885	1.08619	11.74790
	A2->Y (FR)	0.15926	1.09661	11.52500
	A3->Y (FR)	0.18460	1.13041	11.60850
	A4->Y (FR)	0.21142	1.16733	11.67520
	B1->Y (FR)	0.14977	1.08638	11.59910
sky130_fd_sc_hs__a41oi_4	A1->Y (FR)	0.11887	0.92666	11.17510
	A2->Y (FR)	0.15440	0.94934	11.02560
	A3->Y (FR)	0.18590	0.99530	11.21310
	A4->Y (FR)	0.21604	1.04416	11.42500
	B1->Y (FR)	0.15692	0.97634	11.51040

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41oi_1	A1->Y (RF)	0.06377	0.65060	6.19313
	A2->Y (RF)	0.07700	0.64570	5.97659
	A3->Y (RF)	0.08491	0.61651	5.51444
	A4->Y (RF)	0.08979	0.58886	5.08450
	B1->Y (RF)	0.02476	0.39100	3.88140
sky130_fd_sc_hs__a41oi_2	A1->Y (RF)	0.05648	0.62187	6.84506
	A2->Y (RF)	0.07458	0.62280	6.61197
	A3->Y (RF)	0.08354	0.57735	5.92710
	A4->Y (RF)	0.09001	0.55645	5.50568
	B1->Y (RF)	0.02756	0.48375	5.56546
sky130_fd_sc_hs__a41oi_4	A1->Y (RF)	0.05414	0.55292	6.76037
	A2->Y (RF)	0.07485	0.55378	6.47423
	A3->Y (RF)	0.08532	0.51333	5.81048
	A4->Y (RF)	0.09039	0.48215	5.26806
	B1->Y (RF)	0.02603	0.41192	5.30503

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41oi_1	A1	0.00028	0.00016	0.00021
	A1	0.00446	0.00435	0.00439
	A2	0.00080	0.00065	0.00070
	A2	0.00556	0.00542	0.00545
	A3	0.00123	0.00109	0.00113
	A3	0.00655	0.00641	0.00645
	A4	0.00148	0.00137	0.00141
	A4	0.00745	0.00733	0.00735
	B1	0.00142	0.00135	0.00194
	B1	0.00648	0.00632	0.00689
sky130_fd_sc_hs__a41oi_2	A1	-0.00044	-0.00055	-0.00040
	A1	0.00716	0.00705	0.00722
	A2	0.00083	0.00053	0.00065
	A2	0.00975	0.00945	0.00957
	A3	0.00159	0.00134	0.00144
	A3	0.01167	0.01136	0.01148
	A4	0.00255	0.00232	0.00241
	A4	0.01392	0.01368	0.01373
	B1	0.00313	0.00308	0.00372
	B1	0.01166	0.01161	0.01220

sky130_fd_sc_hs__a41oi_4	**A1**	-0.00131	-0.00157	-0.00109
	A1	0.01378	0.01353	0.01402
	A2	0.00154	0.00088	0.00126
	A2	0.01926	0.01855	0.01895
	A3	0.00307	0.00243	0.00276
	A3	0.02342	0.02277	0.02281
	A4	0.00460	0.00413	0.00442
	A4	0.02738	0.02691	0.02708
	B1	0.00584	0.00578	0.00721
	B1	0.02286	0.02277	0.02418

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41oi_1	**A1**	0.00555	0.00539	0.00555
	A1	0.00148	0.00133	0.00149
	A2	0.00617	0.00604	0.00611
	A2	0.00148	0.00134	0.00141
	A3	0.00679	0.00668	0.00698
	A3	0.00146	0.00132	0.00138
	A4	0.00750	0.00737	0.00751
	A4	0.00147	0.00132	0.00137
	B1	0.00507	0.00508	0.00532
	B1	-0.00018	-0.00025	0.00001

sky130_fd_sc_hs__a41oi_2	**A1**	0.01002	0.00971	0.00997
	A1	0.00263	0.00228	0.00262
	A2	0.01143	0.01116	0.01150
	A2	0.00261	0.00229	0.00244
	A3	0.01270	0.01239	0.01264
	A3	0.00259	0.00229	0.00242
	A4	0.01415	0.01390	0.01396
	A4	0.00257	0.00226	0.00238
	B1	0.00801	0.00808	0.00840
	B1	-0.00097	-0.00106	-0.00070
sky130_fd_sc_hs__a41oi_4	**A1**	0.01943	0.01877	0.01949
	A1	0.00474	0.00400	0.00483
	A2	0.02221	0.02159	0.02259
	A2	0.00469	0.00403	0.00443
	A3	0.02506	0.02445	0.02512
	A3	0.00462	0.00396	0.00432
	A4	0.02778	0.02721	0.02768
	A4	0.00459	0.00395	0.00430
	B1	0.01596	0.01602	0.01778
	B1	-0.00199	-0.00214	-0.00124

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)**	0.00111	0.00109	0.00108
	(A2 * A3 * A4 * B1 * !Y)	-0.00118	-0.00125	-0.00124
	(A2 * A3 * !A4 * B1 * !Y)	0.00099	0.00100	0.00099
	(A2 * A3 * !A4 * B1 * !Y)	-0.00129	-0.00129	-0.00128
	(A2 * A3 * !A4 * !B1 * Y)	0.00043	0.00043	0.00038
	(A2 * A3 * !A4 * !B1 * Y)	-0.00142	-0.00143	-0.00152
	(A2 * !A3 * B1 * !Y)	0.00100	0.00101	0.00100
	(A2 * !A3 * B1 * !Y)	-0.00128	-0.00129	-0.00128
	(A2 * !A3 * !B1 * Y)	0.00042	0.00042	0.00038
	(A2 * !A3 * !B1 * Y)	-0.00146	-0.00147	-0.00153
	(!A2 * B1 * !Y)	0.00103	0.00103	0.00103
	(!A2 * B1 * !Y)	-0.00128	-0.00129	-0.00128
	(!A2 * !B1 * Y)	0.00041	0.00041	0.00039
	(!A2 * !B1 * Y)	-0.00151	-0.00151	-0.00153
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	0.00219	0.00216	0.00215
	(A2 * A3 * A4 * B1 * !Y)	-0.00229	-0.00243	-0.00242
	(A2 * A3 * !A4 * B1 * !Y)	0.00196	0.00196	0.00196
	(A2 * A3 * !A4 * B1 * !Y)	-0.00251	-0.00251	-0.00250
	(A2 * A3 * !A4 * !B1 * Y)	0.00081	0.00080	0.00069
	(A2 * A3 * !A4 * !B1 * Y)	-0.00279	-0.00279	-0.00303
	(A2 * !A3 * B1 * !Y)	0.00199	0.00201	0.00200
	(A2 * !A3 * B1 * !Y)	-0.00249	-0.00251	-0.00250
	(A2 * !A3 * !B1 * Y)	0.00076	0.00076	0.00068
	(A2 * !A3 * !B1 * Y)	-0.00291	-0.00291	-0.00306
	(!A2 * B1 * !Y)	0.00205	0.00207	0.00205
	(!A2 * B1 * !Y)	-0.00251	-0.00251	-0.00250
	(!A2 * !B1 * Y)	0.00076	0.00076	0.00071
	(!A2 * !B1 * Y)	-0.00300	-0.00303	-0.00308

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	0.00439	0.00433	0.00431
	(A2 * A3 * A4 * B1 * !Y)	-0.00450	-0.00482	-0.00479
	(A2 * A3 * !A4 * B1 * !Y)	0.00388	0.00390	0.00388
	(A2 * A3 * !A4 * B1 * !Y)	-0.00496	-0.00497	-0.00495
	(A2 * A3 * !A4 * !B1 * Y)	0.00161	0.00161	0.00139
	(A2 * A3 * !A4 * !B1 * Y)	-0.00546	-0.00548	-0.00595
	(A2 * !A3 * B1 * !Y)	0.00397	0.00399	0.00397
	(A2 * !A3 * B1 * !Y)	-0.00496	-0.00498	-0.00495
	(A2 * !A3 * !B1 * Y)	0.00153	0.00153	0.00139
	(A2 * !A3 * !B1 * Y)	-0.00567	-0.00568	-0.00600
	(!A2 * B1 * !Y)	0.00410	0.00414	0.00410
	(!A2 * B1 * !Y)	-0.00497	-0.00498	-0.00495
	(!A2 * !B1 * Y)	0.00157	0.00159	0.00148
	(!A2 * !B1 * Y)	-0.00586	-0.00592	-0.00603

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)**	-0.00108	-0.00108	-0.00108
	(A2 * A3 * A4 * B1 * !Y)	0.00125	0.00125	0.00124
	(A2 * A3 * !A4 * B1 * !Y)	-0.00090	-0.00100	-0.00099
	(A2 * A3 * !A4 * B1 * !Y)	0.00130	0.00130	0.00129
	(A2 * A3 * !A4 * !B1 * Y)	-0.00037	-0.00038	-0.00038
	(A2 * A3 * !A4 * !B1 * Y)	0.00153	0.00154	0.00153
	(A2 * !A3 * B1 * !Y)	-0.00093	-0.00101	-0.00100
	(A2 * !A3 * B1 * !Y)	0.00128	0.00130	0.00129
	(A2 * !A3 * !B1 * Y)	-0.00038	-0.00038	-0.00038
	(A2 * !A3 * !B1 * Y)	0.00153	0.00154	0.00153
	(!A2 * B1 * !Y)	-0.00100	-0.00103	-0.00103
	(!A2 * B1 * !Y)	0.00129	0.00130	0.00129
	(!A2 * !B1 * Y)	-0.00038	-0.00039	-0.00038
	(!A2 * !B1 * Y)	0.00153	0.00154	0.00154
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	-0.00214	-0.00215	-0.00214
	(A2 * A3 * A4 * B1 * !Y)	0.00242	0.00243	0.00242
	(A2 * A3 * !A4 * B1 * !Y)	-0.00174	-0.00196	-0.00196
	(A2 * A3 * !A4 * B1 * !Y)	0.00252	0.00254	0.00251
	(A2 * A3 * !A4 * !B1 * Y)	-0.00066	-0.00067	-0.00066
	(A2 * A3 * !A4 * !B1 * Y)	0.00306	0.00310	0.00308
	(A2 * !A3 * B1 * !Y)	-0.00178	-0.00201	-0.00200
	(A2 * !A3 * B1 * !Y)	0.00251	0.00254	0.00251
	(A2 * !A3 * !B1 * Y)	-0.00066	-0.00067	-0.00066
	(A2 * !A3 * !B1 * Y)	0.00307	0.00310	0.00308
	(!A2 * B1 * !Y)	-0.00196	-0.00207	-0.00205
	(!A2 * B1 * !Y)	0.00252	0.00251	0.00251
	(!A2 * !B1 * Y)	-0.00069	-0.00069	-0.00068
	(!A2 * !B1 * Y)	0.00310	0.00311	0.00309

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	-0.00429	-0.00431	-0.00430
	(A2 * A3 * A4 * B1 * !Y)	0.00477	0.00482	0.00479
	(A2 * A3 * !A4 * B1 * !Y)	-0.00340	-0.00390	-0.00388
	(A2 * A3 * !A4 * B1 * !Y)	0.00496	0.00503	0.00497
	(A2 * A3 * !A4 * !B1 * Y)	-0.00138	-0.00138	-0.00138
	(A2 * A3 * !A4 * !B1 * Y)	0.00605	0.00608	0.00604
	(A2 * !A3 * B1 * !Y)	-0.00350	-0.00399	-0.00397
	(A2 * !A3 * B1 * !Y)	0.00496	0.00503	0.00497
	(A2 * !A3 * !B1 * Y)	-0.00139	-0.00139	-0.00138
	(A2 * !A3 * !B1 * Y)	0.00606	0.00608	0.00604
	(!A2 * B1 * !Y)	-0.00391	-0.00414	-0.00410
	(!A2 * B1 * !Y)	0.00498	0.00500	0.00497
	(!A2 * !B1 * Y)	-0.00144	-0.00144	-0.00143
	(!A2 * !B1 * Y)	0.00606	0.00609	0.00605

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)**	0.00106	0.00105	0.00104
	(A1 * A3 * A4 * B1 * !Y)	-0.00117	-0.00125	-0.00124
	(A1 * A3 * !A4 * B1 * !Y)	0.00095	0.00096	0.00096
	(A1 * A3 * !A4 * B1 * !Y)	-0.00128	-0.00129	-0.00128
	(A1 * A3 * !A4 * !B1 * Y)	0.00042	0.00042	0.00043
	(A1 * A3 * !A4 * !B1 * Y)	-0.00134	-0.00135	-0.00134
	(A1 * !A3 * B1 * !Y)	0.00098	0.00100	0.00099
	(A1 * !A3 * B1 * !Y)	-0.00128	-0.00129	-0.00128
	(A1 * !A3 * !B1 * Y)	0.00045	0.00045	0.00045
	(A1 * !A3 * !B1 * Y)	-0.00135	-0.00135	-0.00134
	(!A1 * A3 * A4 * B1 * !Y)	0.00098	0.00099	0.00099
	(!A1 * A3 * A4 * B1 * !Y)	-0.00128	-0.00129	-0.00128
	(!A1 * A3 * A4 * !B1 * Y)	0.00093	0.00092	0.00093
	(!A1 * A3 * A4 * !B1 * Y)	-0.00134	-0.00134	-0.00134
	(!A1 * A3 * !A4 * B1 * !Y)	0.00061	0.00061	0.00061
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00128	-0.00129	-0.00128
	(!A1 * A3 * !A4 * !B1 * Y)	0.00052	0.00052	0.00052
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00136	-0.00135	-0.00135
	(!A1 * !A3 * B1 * !Y)	0.00063	0.00063	0.00063
	(!A1 * !A3 * B1 * !Y)	-0.00128	-0.00129	-0.00128
	(!A1 * !A3 * !B1 * Y)	0.00053	0.00053	0.00052
	(!A1 * !A3 * !B1 * Y)	-0.00136	-0.00136	-0.00135

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00215	0.00212	0.00210
	(A1 * A3 * A4 * B1 * !Y)	-0.00234	-0.00248	-0.00247
	(A1 * A3 * !A4 * B1 * !Y)	0.00193	0.00193	0.00192
	(A1 * A3 * !A4 * B1 * !Y)	-0.00257	-0.00257	-0.00256
	(A1 * A3 * !A4 * !B1 * Y)	0.00092	0.00093	0.00094
	(A1 * A3 * !A4 * !B1 * Y)	-0.00257	-0.00259	-0.00257
	(A1 * !A3 * B1 * !Y)	0.00198	0.00198	0.00199
	(A1 * !A3 * B1 * !Y)	-0.00255	-0.00255	-0.00256
	(A1 * !A3 * !B1 * Y)	0.00097	0.00098	0.00098
	(A1 * !A3 * !B1 * Y)	-0.00258	-0.00260	-0.00258
	(!A1 * A3 * A4 * B1 * !Y)	0.00199	0.00200	0.00199
	(!A1 * A3 * A4 * B1 * !Y)	-0.00257	-0.00257	-0.00256
	(!A1 * A3 * A4 * !B1 * Y)	0.00196	0.00198	0.00196
	(!A1 * A3 * A4 * !B1 * Y)	-0.00259	-0.00260	-0.00258
	(!A1 * A3 * !A4 * B1 * !Y)	0.00122	0.00123	0.00122
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00255	-0.00257	-0.00256
	(!A1 * A3 * !A4 * !B1 * Y)	0.00113	0.00114	0.00113
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00260	-0.00262	-0.00260
	(!A1 * !A3 * B1 * !Y)	0.00126	0.00126	0.00125
	(!A1 * !A3 * B1 * !Y)	-0.00256	-0.00257	-0.00256
	(!A1 * !A3 * !B1 * Y)	0.00112	0.00113	0.00112
	(!A1 * !A3 * !B1 * Y)	-0.00260	-0.00262	-0.00261

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00426	0.00419	0.00414
	(A1 * A3 * A4 * B1 * !Y)	-0.00462	-0.00491	-0.00489
	(A1 * A3 * !A4 * B1 * !Y)	0.00374	0.00377	0.00375
	(A1 * A3 * !A4 * B1 * !Y)	-0.00506	-0.00509	-0.00507
	(A1 * A3 * !A4 * !B1 * Y)	0.00175	0.00178	0.00182
	(A1 * A3 * !A4 * !B1 * Y)	-0.00507	-0.00512	-0.00506
	(A1 * !A3 * B1 * !Y)	0.00384	0.00388	0.00386
	(A1 * !A3 * B1 * !Y)	-0.00505	-0.00509	-0.00507
	(A1 * !A3 * !B1 * Y)	0.00183	0.00185	0.00186
	(A1 * !A3 * !B1 * Y)	-0.00508	-0.00512	-0.00507
	(!A1 * A3 * A4 * B1 * !Y)	0.00394	0.00397	0.00394
	(!A1 * A3 * A4 * B1 * !Y)	-0.00509	-0.00510	-0.00507
	(!A1 * A3 * A4 * !B1 * Y)	0.00391	0.00394	0.00391
	(!A1 * A3 * A4 * !B1 * Y)	-0.00511	-0.00512	-0.00510
	(!A1 * A3 * !A4 * B1 * !Y)	0.00232	0.00234	0.00232
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00507	-0.00510	-0.00507
	(!A1 * A3 * !A4 * !B1 * Y)	0.00219	0.00221	0.00219
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00511	-0.00515	-0.00512
	(!A1 * !A3 * B1 * !Y)	0.00234	0.00237	0.00235
	(!A1 * !A3 * B1 * !Y)	-0.00505	-0.00510	-0.00507
	(!A1 * !A3 * !B1 * Y)	0.00213	0.00216	0.00214
	(!A1 * !A3 * !B1 * Y)	-0.00511	-0.00515	-0.00512

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)**	-0.00104	-0.00104	-0.00103
	(A1 * A3 * A4 * B1 * !Y)	0.00125	0.00125	0.00124
	(A1 * A3 * !A4 * B1 * !Y)	-0.00087	-0.00096	-0.00096
	(A1 * A3 * !A4 * B1 * !Y)	0.00129	0.00130	0.00129
	(A1 * A3 * !A4 * !B1 * Y)	-0.00041	-0.00041	-0.00042
	(A1 * A3 * !A4 * !B1 * Y)	0.00138	0.00138	0.00136
	(A1 * !A3 * B1 * !Y)	-0.00095	-0.00100	-0.00099
	(A1 * !A3 * B1 * !Y)	0.00129	0.00130	0.00129
	(A1 * !A3 * !B1 * Y)	-0.00042	-0.00042	-0.00043
	(A1 * !A3 * !B1 * Y)	0.00138	0.00138	0.00136
	(!A1 * A3 * A4 * B1 * !Y)	-0.00095	-0.00099	-0.00099
	(!A1 * A3 * A4 * B1 * !Y)	0.00129	0.00130	0.00129
	(!A1 * A3 * A4 * !B1 * Y)	-0.00086	-0.00092	-0.00093
	(!A1 * A3 * A4 * !B1 * Y)	0.00140	0.00136	0.00135
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00061	-0.00061	-0.00061
	(!A1 * A3 * !A4 * B1 * !Y)	0.00129	0.00129	0.00129
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00052	-0.00052	-0.00052
	(!A1 * A3 * !A4 * !B1 * Y)	0.00137	0.00136	0.00135
	(!A1 * !A3 * B1 * !Y)	-0.00063	-0.00063	-0.00063
	(!A1 * !A3 * B1 * !Y)	0.00128	0.00129	0.00129
	(!A1 * !A3 * !B1 * Y)	-0.00053	-0.00053	-0.00052
	(!A1 * !A3 * !B1 * Y)	0.00140	0.00141	0.00136

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00210	-0.00210	-0.00209
	(A1 * A3 * A4 * B1 * !Y)	0.00248	0.00248	0.00247
	(A1 * A3 * !A4 * B1 * !Y)	-0.00174	-0.00193	-0.00192
	(A1 * A3 * !A4 * B1 * !Y)	0.00258	0.00259	0.00256
	(A1 * A3 * !A4 * !B1 * Y)	-0.00088	-0.00089	-0.00091
	(A1 * A3 * !A4 * !B1 * Y)	0.00266	0.00267	0.00262
	(A1 * !A3 * B1 * !Y)	-0.00192	-0.00198	-0.00199
	(A1 * !A3 * B1 * !Y)	0.00257	0.00257	0.00256
	(A1 * !A3 * !B1 * Y)	-0.00091	-0.00092	-0.00094
	(A1 * !A3 * !B1 * Y)	0.00266	0.00267	0.00262
	(!A1 * A3 * A4 * B1 * !Y)	-0.00190	-0.00200	-0.00199
	(!A1 * A3 * A4 * B1 * !Y)	0.00257	0.00257	0.00256
	(!A1 * A3 * A4 * !B1 * Y)	-0.00177	-0.00197	-0.00196
	(!A1 * A3 * A4 * !B1 * Y)	0.00272	0.00260	0.00259
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00122	-0.00123	-0.00122
	(!A1 * A3 * !A4 * B1 * !Y)	0.00255	0.00257	0.00256
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00113	-0.00114	-0.00113
	(!A1 * A3 * !A4 * !B1 * Y)	0.00264	0.00262	0.00260
	(!A1 * !A3 * B1 * !Y)	-0.00126	-0.00126	-0.00125
	(!A1 * !A3 * B1 * !Y)	0.00256	0.00257	0.00256
	(!A1 * !A3 * !B1 * Y)	-0.00112	-0.00113	-0.00112
	(!A1 * !A3 * !B1 * Y)	0.00270	0.00271	0.00263

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00415	-0.00414	-0.00413
	(A1 * A3 * A4 * B1 * !Y)	0.00492	0.00491	0.00489
	(A1 * A3 * !A4 * B1 * !Y)	-0.00334	-0.00377	-0.00375
	(A1 * A3 * !A4 * B1 * !Y)	0.00512	0.00515	0.00509
	(A1 * A3 * !A4 * !B1 * Y)	-0.00169	-0.00170	-0.00174
	(A1 * A3 * !A4 * !B1 * Y)	0.00524	0.00526	0.00515
	(A1 * !A3 * B1 * !Y)	-0.00372	-0.00388	-0.00386
	(A1 * !A3 * B1 * !Y)	0.00510	0.00510	0.00509
	(A1 * !A3 * !B1 * Y)	-0.00173	-0.00174	-0.00178
	(A1 * !A3 * !B1 * Y)	0.00524	0.00526	0.00515
	(!A1 * A3 * A4 * B1 * !Y)	-0.00375	-0.00397	-0.00394
	(!A1 * A3 * A4 * B1 * !Y)	0.00509	0.00511	0.00509
	(!A1 * A3 * A4 * !B1 * Y)	-0.00353	-0.00394	-0.00391
	(!A1 * A3 * A4 * !B1 * Y)	0.00536	0.00514	0.00511
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00232	-0.00234	-0.00232
	(!A1 * A3 * !A4 * B1 * !Y)	0.00507	0.00511	0.00509
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00219	-0.00221	-0.00219
	(!A1 * A3 * !A4 * !B1 * Y)	0.00519	0.00516	0.00512
	(!A1 * !A3 * B1 * !Y)	-0.00234	-0.00237	-0.00235
	(!A1 * !A3 * B1 * !Y)	0.00508	0.00510	0.00509
	(!A1 * !A3 * !B1 * Y)	-0.00213	-0.00216	-0.00214
	(!A1 * !A3 * !B1 * Y)	0.00530	0.00534	0.00517

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)**	0.00104	0.00103	0.00102
	(A1 * A2 * A4 * B1 * !Y)	-0.00118	-0.00125	-0.00124
	(A1 * A2 * !A4 * B1 * !Y)	0.00096	0.00097	0.00096
	(A1 * A2 * !A4 * B1 * !Y)	-0.00128	-0.00128	-0.00128
	(A1 * A2 * !A4 * !B1 * Y)	0.00043	0.00043	0.00043
	(A1 * A2 * !A4 * !B1 * Y)	-0.00133	-0.00133	-0.00133
	(A1 * !A2 * A4 * !B1 * Y)	0.00093	0.00093	0.00093
	(A1 * !A2 * A4 * !B1 * Y)	-0.00133	-0.00133	-0.00133
	(A1 * !A2 * !A4 * !B1 * Y)	0.00051	0.00051	0.00050
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00134	-0.00134	-0.00133
	(!A2 * A4 * B1 * !Y)	0.00097	0.00098	0.00097
	(!A2 * A4 * B1 * !Y)	-0.00128	-0.00129	-0.00128
	(!A2 * !A4 * B1 * !Y)	0.00059	0.00059	0.00058
	(!A2 * !A4 * B1 * !Y)	-0.00128	-0.00129	-0.00128
	(!A1 * A2 * A4 * B1 * !Y)	0.00094	0.00095	0.00094
	(!A1 * A2 * A4 * B1 * !Y)	-0.00128	-0.00129	-0.00128
	(!A1 * A2 * A4 * !B1 * Y)	0.00090	0.00091	0.00090
	(!A1 * A2 * A4 * !B1 * Y)	-0.00132	-0.00133	-0.00132
	(!A1 * A2 * !A4 * B1 * !Y)	0.00058	0.00059	0.00058
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00128	-0.00128	-0.00128
	(!A1 * A2 * !A4 * !B1 * Y)	0.00051	0.00051	0.00050
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00133	-0.00133	-0.00133
	(!A1 * !A2 * A4 * !B1 * Y)	0.00093	0.00092	0.00093
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00133	-0.00132	-0.00133
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00053	0.00053	0.00052
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00133	-0.00133	-0.00133

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	0.00210	0.00206	0.00206
	(A1 * A2 * A4 * B1 * !Y)	-0.00232	-0.00247	-0.00246
	(A1 * A2 * !A4 * B1 * !Y)	0.00192	0.00193	0.00193
	(A1 * A2 * !A4 * B1 * !Y)	-0.00253	-0.00255	-0.00254
	(A1 * A2 * !A4 * !B1 * Y)	0.00097	0.00097	0.00097
	(A1 * A2 * !A4 * !B1 * Y)	-0.00251	-0.00250	-0.00249
	(A1 * !A2 * A4 * !B1 * Y)	0.00195	0.00197	0.00195
	(A1 * !A2 * A4 * !B1 * Y)	-0.00254	-0.00255	-0.00254
	(A1 * !A2 * !A4 * !B1 * Y)	0.00110	0.00111	0.00110
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00254	-0.00256	-0.00254
	(!A2 * A4 * B1 * !Y)	0.00195	0.00197	0.00195
	(!A2 * A4 * B1 * !Y)	-0.00254	-0.00256	-0.00254
	(!A2 * !A4 * B1 * !Y)	0.00117	0.00118	0.00117
	(!A2 * !A4 * B1 * !Y)	-0.00254	-0.00256	-0.00254
	(!A1 * A2 * A4 * B1 * !Y)	0.00190	0.00192	0.00191
	(!A1 * A2 * A4 * B1 * !Y)	-0.00254	-0.00254	-0.00254
	(!A1 * A2 * A4 * !B1 * Y)	0.00191	0.00192	0.00191
	(!A1 * A2 * A4 * !B1 * Y)	-0.00254	-0.00255	-0.00254
	(!A1 * A2 * !A4 * B1 * !Y)	0.00117	0.00117	0.00117
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00254	-0.00254	-0.00254
	(!A1 * A2 * !A4 * !B1 * Y)	0.00110	0.00110	0.00110
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00256	-0.00255	-0.00255
	(!A1 * !A2 * A4 * !B1 * Y)	0.00195	0.00196	0.00195
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00254	-0.00255	-0.00254
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00114	0.00115	0.00114
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00253	-0.00255	-0.00254

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	0.00419	0.00415	0.00409
	(A1 * A2 * A4 * B1 * !Y)	-0.00465	-0.00496	-0.00495
	(A1 * A2 * !A4 * B1 * !Y)	0.00384	0.00387	0.00385
	(A1 * A2 * !A4 * B1 * !Y)	-0.00513	-0.00516	-0.00513
	(A1 * A2 * !A4 * !B1 * Y)	0.00181	0.00183	0.00182
	(A1 * A2 * !A4 * !B1 * Y)	-0.00505	-0.00509	-0.00505
	(A1 * !A2 * A4 * !B1 * Y)	0.00380	0.00386	0.00382
	(A1 * !A2 * A4 * !B1 * Y)	-0.00512	-0.00516	-0.00513
	(A1 * !A2 * !A4 * !B1 * Y)	0.00206	0.00208	0.00206
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00513	-0.00516	-0.00513
	(!A2 * A4 * B1 * !Y)	0.00380	0.00384	0.00382
	(!A2 * A4 * B1 * !Y)	-0.00512	-0.00514	-0.00513
	(!A2 * !A4 * B1 * !Y)	0.00218	0.00222	0.00220
	(!A2 * !A4 * B1 * !Y)	-0.00511	-0.00516	-0.00513
	(!A1 * A2 * A4 * B1 * !Y)	0.00373	0.00376	0.00374
	(!A1 * A2 * A4 * B1 * !Y)	-0.00513	-0.00515	-0.00513
	(!A1 * A2 * A4 * !B1 * Y)	0.00374	0.00376	0.00374
	(!A1 * A2 * A4 * !B1 * Y)	-0.00515	-0.00515	-0.00513
	(!A1 * A2 * !A4 * B1 * !Y)	0.00226	0.00228	0.00226
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00513	-0.00516	-0.00513
	(!A1 * A2 * !A4 * !B1 * Y)	0.00212	0.00215	0.00212
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00514	-0.00518	-0.00514
	(!A1 * !A2 * A4 * !B1 * Y)	0.00381	0.00382	0.00381
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00513	-0.00513	-0.00513
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00214	0.00215	0.00214
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00512	-0.00515	-0.00513

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)**	-0.00101	-0.00102	-0.00102
	(A1 * A2 * A4 * B1 * !Y)	0.00123	0.00125	0.00124
	(A1 * A2 * !A4 * B1 * !Y)	-0.00093	-0.00097	-0.00096
	(A1 * A2 * !A4 * B1 * !Y)	0.00129	0.00128	0.00128
	(A1 * A2 * !A4 * !B1 * Y)	-0.00042	-0.00042	-0.00042
	(A1 * A2 * !A4 * !B1 * Y)	0.00133	0.00134	0.00133
	(A1 * !A2 * A4 * !B1 * Y)	-0.00089	-0.00093	-0.00093
	(A1 * !A2 * A4 * !B1 * Y)	0.00133	0.00134	0.00133
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00051	-0.00051	-0.00050
	(A1 * !A2 * !A4 * !B1 * Y)	0.00134	0.00134	0.00134
	(!A2 * A4 * B1 * !Y)	-0.00094	-0.00098	-0.00097
	(!A2 * A4 * B1 * !Y)	0.00129	0.00130	0.00128
	(!A2 * !A4 * B1 * !Y)	-0.00059	-0.00059	-0.00058
	(!A2 * !A4 * B1 * !Y)	0.00128	0.00129	0.00129
	(!A1 * A2 * A4 * B1 * !Y)	-0.00087	-0.00095	-0.00094
	(!A1 * A2 * A4 * B1 * !Y)	0.00128	0.00130	0.00128
	(!A1 * A2 * A4 * !B1 * Y)	-0.00083	-0.00091	-0.00090
	(!A1 * A2 * A4 * !B1 * Y)	0.00133	0.00134	0.00133
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00058	-0.00059	-0.00058
	(!A1 * A2 * !A4 * B1 * !Y)	0.00128	0.00128	0.00129
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00051	-0.00051	-0.00050
	(!A1 * A2 * !A4 * !B1 * Y)	0.00133	0.00133	0.00133
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00089	-0.00092	-0.00093
	(!A1 * !A2 * A4 * !B1 * Y)	0.00133	0.00134	0.00133
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00053	-0.00053	-0.00052
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00133	0.00134	0.00133

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	-0.00206	-0.00206	-0.00205
	(A1 * A2 * A4 * B1 * !Y)	0.00246	0.00248	0.00246
	(A1 * A2 * !A4 * B1 * !Y)	-0.00184	-0.00193	-0.00193
	(A1 * A2 * !A4 * B1 * !Y)	0.00256	0.00256	0.00255
	(A1 * A2 * !A4 * !B1 * Y)	-0.00091	-0.00092	-0.00091
	(A1 * A2 * !A4 * !B1 * Y)	0.00253	0.00257	0.00255
	(A1 * !A2 * A4 * !B1 * Y)	-0.00185	-0.00197	-0.00195
	(A1 * !A2 * A4 * !B1 * Y)	0.00254	0.00257	0.00255
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00110	-0.00111	-0.00110
	(A1 * !A2 * !A4 * !B1 * Y)	0.00257	0.00257	0.00255
	(!A2 * A4 * B1 * !Y)	-0.00188	-0.00197	-0.00195
	(!A2 * A4 * B1 * !Y)	0.00254	0.00258	0.00255
	(!A2 * !A4 * B1 * !Y)	-0.00117	-0.00118	-0.00117
	(!A2 * !A4 * B1 * !Y)	0.00256	0.00257	0.00255
	(!A1 * A2 * A4 * B1 * !Y)	-0.00175	-0.00192	-0.00191
	(!A1 * A2 * A4 * B1 * !Y)	0.00255	0.00257	0.00255
	(!A1 * A2 * A4 * !B1 * Y)	-0.00174	-0.00192	-0.00191
	(!A1 * A2 * A4 * !B1 * Y)	0.00256	0.00258	0.00255
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00117	-0.00117	-0.00117
	(!A1 * A2 * !A4 * B1 * !Y)	0.00254	0.00257	0.00255
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00110	-0.00110	-0.00110
	(!A1 * A2 * !A4 * !B1 * Y)	0.00257	0.00258	0.00256
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00186	-0.00196	-0.00195
	(!A1 * !A2 * A4 * !B1 * Y)	0.00254	0.00258	0.00255
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00114	-0.00115	-0.00114
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00256	0.00257	0.00255

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	-0.00408	-0.00409	-0.00408
	(A1 * A2 * A4 * B1 * !Y)	0.00494	0.00496	0.00495
	(A1 * A2 * !A4 * B1 * !Y)	-0.00369	-0.00387	-0.00385
	(A1 * A2 * !A4 * B1 * !Y)	0.00516	0.00518	0.00515
	(A1 * A2 * !A4 * !B1 * Y)	-0.00173	-0.00173	-0.00172
	(A1 * A2 * !A4 * !B1 * Y)	0.00516	0.00518	0.00516
	(A1 * !A2 * A4 * !B1 * Y)	-0.00361	-0.00386	-0.00382
	(A1 * !A2 * A4 * !B1 * Y)	0.00513	0.00520	0.00514
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00206	-0.00208	-0.00206
	(A1 * !A2 * !A4 * !B1 * Y)	0.00518	0.00517	0.00515
	(!A2 * A4 * B1 * !Y)	-0.00367	-0.00384	-0.00382
	(!A2 * A4 * B1 * !Y)	0.00513	0.00521	0.00515
	(!A2 * !A4 * B1 * !Y)	-0.00218	-0.00222	-0.00220
	(!A2 * !A4 * B1 * !Y)	0.00517	0.00516	0.00515
	(!A1 * A2 * A4 * B1 * !Y)	-0.00339	-0.00376	-0.00374
	(!A1 * A2 * A4 * B1 * !Y)	0.00516	0.00520	0.00515
	(!A1 * A2 * A4 * !B1 * Y)	-0.00338	-0.00376	-0.00374
	(!A1 * A2 * A4 * !B1 * Y)	0.00518	0.00520	0.00514
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00226	-0.00228	-0.00226
	(!A1 * A2 * !A4 * B1 * !Y)	0.00513	0.00516	0.00515
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00212	-0.00215	-0.00212
	(!A1 * A2 * !A4 * !B1 * Y)	0.00515	0.00518	0.00515
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00363	-0.00382	-0.00381
	(!A1 * !A2 * A4 * !B1 * Y)	0.00513	0.00520	0.00514
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00214	-0.00215	-0.00214
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00515	0.00516	0.00515

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)**	0.00111	0.00110	0.00109
	(A1 * A2 * A3 * B1 * !Y)	-0.00117	-0.00124	-0.00123
	(A1 * A2 * !A3 * !B1 * Y)	0.00094	0.00095	0.00094
	(A1 * A2 * !A3 * !B1 * Y)	-0.00137	-0.00137	-0.00137
	(A1 * !A2 * A3 * !B1 * Y)	0.00092	0.00093	0.00092
	(A1 * !A2 * A3 * !B1 * Y)	-0.00137	-0.00138	-0.00137
	(A1 * !A2 * !A3 * !B1 * Y)	0.00093	0.00095	0.00094
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00137	-0.00137	-0.00137
	(!A3 * B1 * !Y)	0.00103	0.00104	0.00103
	(!A3 * B1 * !Y)	-0.00127	-0.00128	-0.00127
	(!A2 * A3 * B1 * !Y)	0.00101	0.00102	0.00101
	(!A2 * A3 * B1 * !Y)	-0.00128	-0.00128	-0.00127
	(!A1 * A2 * A3 * B1 * !Y)	0.00101	0.00101	0.00101
	(!A1 * A2 * A3 * B1 * !Y)	-0.00128	-0.00128	-0.00127
	(!A1 * A2 * A3 * !B1 * Y)	0.00091	0.00092	0.00091
	(!A1 * A2 * A3 * !B1 * Y)	-0.00136	-0.00138	-0.00137
	(!A1 * !A3 * !B1 * Y)	0.00094	0.00095	0.00094
	(!A1 * !A3 * !B1 * Y)	-0.00137	-0.00138	-0.00137
	(!A1 * !A2 * A3 * !B1 * Y)	0.00092	0.00093	0.00092
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00137	-0.00138	-0.00137

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00211	0.00210	0.00207
	(A1 * A2 * A3 * B1 * !Y)	-0.00233	-0.00249	-0.00247
	(A1 * A2 * !A3 * !B1 * Y)	0.00195	0.00197	0.00195
	(A1 * A2 * !A3 * !B1 * Y)	-0.00254	-0.00256	-0.00255
	(A1 * !A2 * A3 * !B1 * Y)	0.00190	0.00192	0.00190
	(A1 * !A2 * A3 * !B1 * Y)	-0.00255	-0.00256	-0.00255
	(A1 * !A2 * !A3 * !B1 * Y)	0.00195	0.00197	0.00195
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00254	-0.00256	-0.00255
	(!A3 * B1 * !Y)	0.00195	0.00196	0.00195
	(!A3 * B1 * !Y)	-0.00254	-0.00256	-0.00255
	(!A2 * A3 * B1 * !Y)	0.00190	0.00191	0.00190
	(!A2 * A3 * B1 * !Y)	-0.00254	-0.00255	-0.00255
	(!A1 * A2 * A3 * B1 * !Y)	0.00188	0.00190	0.00188
	(!A1 * A2 * A3 * B1 * !Y)	-0.00254	-0.00256	-0.00255
	(!A1 * A2 * A3 * !B1 * Y)	0.00188	0.00190	0.00188
	(!A1 * A2 * A3 * !B1 * Y)	-0.00255	-0.00257	-0.00255
	(!A1 * !A3 * !B1 * Y)	0.00195	0.00196	0.00195
	(!A1 * !A3 * !B1 * Y)	-0.00254	-0.00255	-0.00255
	(!A1 * !A2 * A3 * !B1 * Y)	0.00191	0.00192	0.00190
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00255	-0.00256	-0.00255

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00421	0.00416	0.00410
	(A1 * A2 * A3 * B1 * !Y)	-0.00464	-0.00496	-0.00492
	(A1 * A2 * !A3 * !B1 * Y)	0.00385	0.00389	0.00386
	(A1 * A2 * !A3 * !B1 * Y)	-0.00509	-0.00512	-0.00509
	(A1 * !A2 * A3 * !B1 * Y)	0.00374	0.00376	0.00373
	(A1 * !A2 * A3 * !B1 * Y)	-0.00510	-0.00512	-0.00509
	(A1 * !A2 * !A3 * !B1 * Y)	0.00386	0.00390	0.00387
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00508	-0.00512	-0.00509
	(!A3 * B1 * !Y)	0.00383	0.00387	0.00385
	(!A3 * B1 * !Y)	-0.00508	-0.00511	-0.00509
	(!A2 * A3 * B1 * !Y)	0.00375	0.00376	0.00373
	(!A2 * A3 * B1 * !Y)	-0.00511	-0.00512	-0.00509
	(!A1 * A2 * A3 * B1 * !Y)	0.00373	0.00376	0.00372
	(!A1 * A2 * A3 * B1 * !Y)	-0.00510	-0.00513	-0.00509
	(!A1 * A2 * A3 * !B1 * Y)	0.00372	0.00374	0.00370
	(!A1 * A2 * A3 * !B1 * Y)	-0.00510	-0.00513	-0.00510
	(!A1 * !A3 * !B1 * Y)	0.00386	0.00391	0.00387
	(!A1 * !A3 * !B1 * Y)	-0.00508	-0.00512	-0.00509
	(!A1 * !A2 * A3 * !B1 * Y)	0.00374	0.00376	0.00373
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00510	-0.00512	-0.00509

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)**	-0.00109	-0.00109	-0.00109
	(A1 * A2 * A3 * B1 * !Y)	0.00124	0.00124	0.00123
	(A1 * A2 * !A3 * !B1 * Y)	-0.00091	-0.00094	-0.00094
	(A1 * A2 * !A3 * !B1 * Y)	0.00138	0.00137	0.00137
	(A1 * !A2 * A3 * !B1 * Y)	-0.00087	-0.00093	-0.00092
	(A1 * !A2 * A3 * !B1 * Y)	0.00137	0.00138	0.00137
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00091	-0.00094	-0.00094
	(A1 * !A2 * !A3 * !B1 * Y)	0.00138	0.00137	0.00137
	(!A3 * B1 * !Y)	-0.00101	-0.00104	-0.00103
	(!A3 * B1 * !Y)	0.00128	0.00129	0.00128
	(!A2 * A3 * B1 * !Y)	-0.00096	-0.00102	-0.00101
	(!A2 * A3 * B1 * !Y)	0.00128	0.00128	0.00128
	(!A1 * A2 * A3 * B1 * !Y)	-0.00095	-0.00101	-0.00101
	(!A1 * A2 * A3 * B1 * !Y)	0.00129	0.00128	0.00128
	(!A1 * A2 * A3 * !B1 * Y)	-0.00086	-0.00092	-0.00091
	(!A1 * A2 * A3 * !B1 * Y)	0.00138	0.00138	0.00137
	(!A1 * !A3 * !B1 * Y)	-0.00091	-0.00095	-0.00094
	(!A1 * !A3 * !B1 * Y)	0.00138	0.00139	0.00137
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00087	-0.00093	-0.00092
	(!A1 * !A2 * A3 * !B1 * Y)	0.00137	0.00138	0.00137

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00206	-0.00208	-0.00207
	(A1 * A2 * A3 * B1 * !Y)	0.00246	0.00249	0.00247
	(A1 * A2 * !A3 * !B1 * Y)	-0.00186	-0.00196	-0.00195
	(A1 * A2 * !A3 * !B1 * Y)	0.00254	0.00258	0.00255
	(A1 * !A2 * A3 * !B1 * Y)	-0.00177	-0.00192	-0.00190
	(A1 * !A2 * A3 * !B1 * Y)	0.00256	0.00257	0.00255
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00187	-0.00196	-0.00195
	(A1 * !A2 * !A3 * !B1 * Y)	0.00254	0.00258	0.00255
	(!A3 * B1 * !Y)	-0.00187	-0.00196	-0.00195
	(!A3 * B1 * !Y)	0.00254	0.00258	0.00255
	(!A2 * A3 * B1 * !Y)	-0.00178	-0.00191	-0.00190
	(!A2 * A3 * B1 * !Y)	0.00256	0.00257	0.00255
	(!A1 * A2 * A3 * B1 * !Y)	-0.00174	-0.00190	-0.00188
	(!A1 * A2 * A3 * B1 * !Y)	0.00255	0.00257	0.00255
	(!A1 * A2 * A3 * !B1 * Y)	-0.00173	-0.00190	-0.00188
	(!A1 * A2 * A3 * !B1 * Y)	0.00255	0.00257	0.00256
	(!A1 * !A3 * !B1 * Y)	-0.00186	-0.00196	-0.00195
	(!A1 * !A3 * !B1 * Y)	0.00254	0.00258	0.00255
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00177	-0.00192	-0.00190
	(!A1 * !A2 * A3 * !B1 * Y)	0.00256	0.00257	0.00255

sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * B1 * !Y)	-0.00409	-0.00411	-0.00410
	(A1 * A2 * A3 * B1 * !Y)	0.00490	0.00496	0.00492
	(A1 * A2 * !A3 * !B1 * Y)	-0.00370	-0.00388	-0.00386
	(A1 * A2 * !A3 * !B1 * Y)	0.00512	0.00516	0.00511
	(A1 * !A2 * A3 * !B1 * Y)	-0.00348	-0.00376	-0.00373
	(A1 * !A2 * A3 * !B1 * Y)	0.00510	0.00513	0.00511
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00372	-0.00388	-0.00387
	(A1 * !A2 * !A3 * !B1 * Y)	0.00512	0.00516	0.00511
	(!A3 * B1 * !Y)	-0.00374	-0.00387	-0.00385
	(!A3 * B1 * !Y)	0.00512	0.00513	0.00511
	(!A2 * A3 * B1 * !Y)	-0.00349	-0.00376	-0.00373
	(!A2 * A3 * B1 * !Y)	0.00511	0.00513	0.00511
	(!A1 * A2 * A3 * B1 * !Y)	-0.00344	-0.00376	-0.00372
	(!A1 * A2 * A3 * B1 * !Y)	0.00510	0.00514	0.00511
	(!A1 * A2 * A3 * !B1 * Y)	-0.00344	-0.00374	-0.00370
	(!A1 * A2 * A3 * !B1 * Y)	0.00510	0.00514	0.00511
	(!A1 * !A3 * !B1 * Y)	-0.00372	-0.00388	-0.00387
	(!A1 * !A3 * !B1 * Y)	0.00512	0.00516	0.00511
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00348	-0.00376	-0.00373
	(!A1 * !A2 * A3 * !B1 * Y)	0.00510	0.00513	0.00511

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)	0.00128	0.00128	0.00128
	(A1 * A2 * A3 * A4 * !Y)	-0.00065	-0.00065	-0.00065
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	0.00136	0.00137	0.00136
	(A1 * A2 * A3 * A4 * !Y)	-0.00132	-0.00133	-0.00132
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	0.00271	0.00270	0.00269
	(A1 * A2 * A3 * A4 * !Y)	-0.00263	-0.00262	-0.00261

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)	-0.00112	-0.00112	-0.00125
	(A1 * A2 * A3 * A4 * !Y)	0.00078	0.00077	0.00068
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	-0.00103	-0.00104	-0.00132
	(A1 * A2 * A3 * A4 * !Y)	0.00160	0.00159	0.00139
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	-0.00207	-0.00209	-0.00261
	(A1 * A2 * A3 * A4 * !Y)	0.00313	0.00310	0.00273

SKY130_FD_SC_HS__A41Ox

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT					OUTPUT
A1	A2	A3	A4	B1	X
0	x	x	x	0	0
x	x	x	x	1	1
1	0	x	x	0	0
1	1	0	x	0	0
1	1	1	0	0	0
1	1	1	1	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__a41o_1	14.38560
sky130_fd_sc_hs__a41o_2	15.98400
sky130_fd_sc_hs__a41o_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	A4	B1	X
sky130_fd_sc_hs__a41o_1	0.00258	0.00254	0.00256	0.00250	0.00265	0.77613
sky130_fd_sc_hs__a41o_2	0.00253	0.00260	0.00266	0.00249	0.00268	1.52335
sky130_fd_sc_hs__a41o_4	0.00500	0.00482	0.00497	0.00478	0.00494	2.59363

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a41o_1	0.00000	0.04750	0.09165
sky130_fd_sc_hs__a41o_2	0.00000	0.06119	0.09586
sky130_fd_sc_hs__a41o_4	0.00000	0.12239	0.19173

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)	0.15038	0.85215	7.12052
	A2->X (RR)	0.16245	0.87046	7.26890
	A3->X (RR)	0.17129	0.86733	7.28717
	A4->X (RR)	0.17583	0.85464	7.27966
	B1->X (RR)	0.08818	0.75761	7.09178
sky130_fd_sc_hs__a41o_2	A1->X (RR)	0.15770	0.78523	7.39008
	A2->X (RR)	0.17147	0.80091	7.52048
	A3->X (RR)	0.18011	0.79121	7.51469
	A4->X (RR)	0.18391	0.77321	7.47889
	B1->X (RR)	0.07958	0.66574	7.26318
sky130_fd_sc_hs__a41o_4	A1->X (RR)	0.17290	0.73938	7.35449
	A2->X (RR)	0.19011	0.76127	7.50090
	A3->X (RR)	0.19879	0.73220	7.43224
	A4->X (RR)	0.20391	0.71887	7.40432
	B1->X (RR)	0.07480	0.58461	7.16352

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41o_1	A1->X (FF)	0.21655	0.78539	4.80081
	A2->X (FF)	0.25463	0.83313	4.97827
	A3->X (FF)	0.28226	0.86896	5.11931
	A4->X (FF)	0.30908	0.90395	5.25409
	B1->X (FF)	0.26190	0.83385	4.86975
sky130_fd_sc_hs__a41o_2	A1->X (FF)	0.26100	0.82712	5.07319
	A2->X (FF)	0.30332	0.87622	5.25740
	A3->X (FF)	0.32936	0.90809	5.37090
	A4->X (FF)	0.35336	0.93907	5.47801
	B1->X (FF)	0.30824	0.87165	5.12985
sky130_fd_sc_hs__a41o_4	A1->X (FF)	0.26643	0.79533	4.92691
	A2->X (FF)	0.30561	0.84222	5.08254
	A3->X (FF)	0.33681	0.88089	5.21360
	A4->X (FF)	0.36798	0.91640	5.35138
	B1->X (FF)	0.31665	0.85087	5.03208

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41o_1	A1	0.00806	0.00802	0.00979
	A1	0.00447	0.00456	0.00624
	A2	0.00874	0.00873	0.00982
	A2	0.00447	0.00447	0.00561
	A3	0.00941	0.00940	0.01026
	A3	0.00447	0.00447	0.00538
	A4	0.01010	0.01012	0.01083
	A4	0.00446	0.00448	0.00525
	B1	0.00778	0.00762	0.01067
	B1	0.00293	0.00278	0.00714
sky130_fd_sc_hs__a41o_2	A1	0.00919	0.00932	0.01108
	A1	0.00559	0.00574	0.00756
	A2	0.00989	0.01011	0.01116
	A2	0.00559	0.00581	0.00688
	A3	0.01059	0.01081	0.01167
	A3	0.00560	0.00582	0.00670
	A4	0.01123	0.01149	0.01223
	A4	0.00558	0.00584	0.00663
	B1	0.00897	0.00900	0.01180
	B1	0.00408	0.00410	0.00720

sky130_fd_sc_hs__a41o_4	**A1**	0.01759	0.01778	0.02115
	A1	0.01039	0.01060	0.01412
	A2	0.01890	0.01929	0.02140
	A2	0.01038	0.01078	0.01297
	A3	0.02041	0.02082	0.02259
	A3	0.01038	0.01080	0.01266
	A4	0.02171	0.02222	0.02372
	A4	0.01034	0.01085	0.01248
	B1	0.01698	0.01714	0.02288
	B1	0.00717	0.00732	0.01355

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41o_1	**A1**	0.00238	0.00233	0.00379
	A1	0.00605	0.00601	0.00708
	A2	0.00274	0.00271	0.00389
	A2	0.00703	0.00703	0.00795
	A3	0.00315	0.00319	0.00416
	A3	0.00804	0.00807	0.00891
	A4	0.00345	0.00355	0.00437
	A4	0.00894	0.00906	0.00982
	B1	0.00311	0.00334	0.00697
	B1	0.00813	0.00834	0.01147

sky130_fd_sc_hs__a41o_2	**A1**	0.00393	0.00411	0.00517
	A1	0.00760	0.00784	0.00882
	A2	0.00437	0.00464	0.00563
	A2	0.00869	0.00896	0.00985
	A3	0.00477	0.00506	0.00756
	A3	0.00971	0.00999	0.01083
	A4	0.00499	0.00537	0.00710
	A4	0.01050	0.01087	0.01167
	B1	0.00474	0.00519	0.00905
	B1	0.00977	0.01012	0.01325
sky130_fd_sc_hs__a41o_4	**A1**	0.00757	0.00787	0.00984
	A1	0.01492	0.01521	0.01713
	A2	0.00873	0.00908	0.01160
	A2	0.01727	0.01771	0.01953
	A3	0.00929	0.00989	0.01227
	A3	0.01917	0.01976	0.02148
	A4	0.01020	0.01087	0.01390
	A4	0.02121	0.02187	0.02352
	B1	0.01028	0.01087	0.01730
	B1	0.01957	0.02016	0.02651

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)**	0.00103	0.00101	0.00100
	(A2 * A3 * A4 * B1 * X)	-0.00106	-0.00114	-0.00113
	(A2 * A3 * !A4 * B1 * X)	0.00091	0.00092	0.00091
	(A2 * A3 * !A4 * B1 * X)	-0.00117	-0.00117	-0.00117
	(A2 * A3 * !A4 * !B1 * !X)	0.00039	0.00039	0.00034
	(A2 * A3 * !A4 * !B1 * !X)	-0.00126	-0.00127	-0.00137
	(A2 * !A3 * B1 * X)	0.00092	0.00093	0.00092
	(A2 * !A3 * B1 * X)	-0.00117	-0.00118	-0.00117
	(A2 * !A3 * !B1 * !X)	0.00037	0.00037	0.00034
	(A2 * !A3 * !B1 * !X)	-0.00131	-0.00132	-0.00137
	(!A2 * B1 * X)	0.00094	0.00095	0.00094
	(!A2 * B1 * X)	-0.00116	-0.00117	-0.00117
	(!A2 * !B1 * !X)	0.00036	0.00036	0.00034
	(!A2 * !B1 * !X)	-0.00135	-0.00136	-0.00138
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	0.00102	0.00100	0.00099
	(A2 * A3 * A4 * B1 * X)	-0.00106	-0.00114	-0.00113
	(A2 * A3 * !A4 * B1 * X)	0.00091	0.00091	0.00091
	(A2 * A3 * !A4 * B1 * X)	-0.00118	-0.00117	-0.00117
	(A2 * A3 * !A4 * !B1 * !X)	0.00039	0.00039	0.00034
	(A2 * A3 * !A4 * !B1 * !X)	-0.00125	-0.00126	-0.00136
	(A2 * !A3 * B1 * X)	0.00091	0.00092	0.00092
	(A2 * !A3 * B1 * X)	-0.00117	-0.00118	-0.00117
	(A2 * !A3 * !B1 * !X)	0.00038	0.00038	0.00035
	(A2 * !A3 * !B1 * !X)	-0.00129	-0.00130	-0.00137
	(!A2 * B1 * X)	0.00094	0.00095	0.00094
	(!A2 * B1 * X)	-0.00118	-0.00118	-0.00117
	(!A2 * !B1 * !X)	0.00038	0.00038	0.00036
	(!A2 * !B1 * !X)	-0.00134	-0.00134	-0.00137

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	0.00216	0.00213	0.00210
	(A2 * A3 * A4 * B1 * X)	-0.00217	-0.00233	-0.00230
	(A2 * A3 * !A4 * B1 * X)	0.00189	0.00192	0.00190
	(A2 * A3 * !A4 * B1 * X)	-0.00238	-0.00240	-0.00239
	(A2 * A3 * !A4 * !B1 * !X)	0.00086	0.00086	0.00074
	(A2 * A3 * !A4 * !B1 * !X)	-0.00254	-0.00256	-0.00278
	(A2 * !A3 * B1 * X)	0.00192	0.00193	0.00193
	(A2 * !A3 * B1 * X)	-0.00238	-0.00239	-0.00239
	(A2 * !A3 * !B1 * !X)	0.00080	0.00081	0.00073
	(A2 * !A3 * !B1 * !X)	-0.00265	-0.00267	-0.00280
	(!A2 * B1 * X)	0.00198	0.00201	0.00199
	(!A2 * B1 * X)	-0.00238	-0.00240	-0.00239
	(!A2 * !B1 * !X)	0.00082	0.00082	0.00078
	(!A2 * !B1 * !X)	-0.00275	-0.00276	-0.00282

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)**	-0.00100	-0.00100	-0.00100
	(A2 * A3 * A4 * B1 * X)	0.00114	0.00114	0.00113
	(A2 * A3 * !A4 * B1 * X)	-0.00084	-0.00092	-0.00091
	(A2 * A3 * !A4 * B1 * X)	0.00118	0.00118	0.00117
	(A2 * A3 * !A4 * !B1 * !X)	-0.00032	-0.00033	-0.00032
	(A2 * A3 * !A4 * !B1 * !X)	0.00138	0.00139	0.00138
	(A2 * !A3 * B1 * X)	-0.00085	-0.00093	-0.00092
	(A2 * !A3 * B1 * X)	0.00117	0.00118	0.00117
	(A2 * !A3 * !B1 * !X)	-0.00032	-0.00033	-0.00032
	(A2 * !A3 * !B1 * !X)	0.00138	0.00139	0.00138
	(!A2 * B1 * X)	-0.00092	-0.00095	-0.00094
	(!A2 * B1 * X)	0.00118	0.00118	0.00117
	(!A2 * !B1 * !X)	-0.00033	-0.00033	-0.00033
	(!A2 * !B1 * !X)	0.00138	0.00139	0.00138
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	-0.00099	-0.00099	-0.00099
	(A2 * A3 * A4 * B1 * X)	0.00114	0.00114	0.00113
	(A2 * A3 * !A4 * B1 * X)	-0.00083	-0.00091	-0.00091
	(A2 * A3 * !A4 * B1 * X)	0.00119	0.00119	0.00118
	(A2 * A3 * !A4 * !B1 * !X)	-0.00034	-0.00034	-0.00034
	(A2 * A3 * !A4 * !B1 * !X)	0.00137	0.00138	0.00137
	(A2 * !A3 * B1 * X)	-0.00085	-0.00092	-0.00092
	(A2 * !A3 * B1 * X)	0.00117	0.00119	0.00118
	(A2 * !A3 * !B1 * !X)	-0.00034	-0.00034	-0.00034
	(A2 * !A3 * !B1 * !X)	0.00137	0.00138	0.00137
	(!A2 * B1 * X)	-0.00091	-0.00095	-0.00094
	(!A2 * B1 * X)	0.00118	0.00119	0.00118
	(!A2 * !B1 * !X)	-0.00035	-0.00035	-0.00035
	(!A2 * !B1 * !X)	0.00137	0.00138	0.00137

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	-0.00209	-0.00211	-0.00209
	(A2 * A3 * A4 * B1 * X)	0.00229	0.00233	0.00230
	(A2 * A3 * !A4 * B1 * X)	-0.00170	-0.00192	-0.00190
	(A2 * A3 * !A4 * B1 * X)	0.00239	0.00242	0.00239
	(A2 * A3 * !A4 * !B1 * !X)	-0.00072	-0.00072	-0.00072
	(A2 * A3 * !A4 * !B1 * !X)	0.00284	0.00283	0.00283
	(A2 * !A3 * B1 * X)	-0.00174	-0.00193	-0.00193
	(A2 * !A3 * B1 * X)	0.00239	0.00242	0.00239
	(A2 * !A3 * !B1 * !X)	-0.00073	-0.00073	-0.00073
	(A2 * !A3 * !B1 * !X)	0.00284	0.00283	0.00283
	(!A2 * B1 * X)	-0.00190	-0.00201	-0.00199
	(!A2 * B1 * X)	0.00239	0.00242	0.00239
	(!A2 * !B1 * !X)	-0.00076	-0.00075	-0.00075
	(!A2 * !B1 * !X)	0.00284	0.00283	0.00283

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)**	0.00105	0.00103	0.00102
	(A1 * A3 * A4 * B1 * X)	-0.00105	-0.00113	-0.00112
	(A1 * A3 * !A4 * B1 * X)	0.00093	0.00095	0.00094
	(A1 * A3 * !A4 * B1 * X)	-0.00116	-0.00117	-0.00116
	(A1 * A3 * !A4 * !B1 * !X)	0.00046	0.00046	0.00046
	(A1 * A3 * !A4 * !B1 * !X)	-0.00117	-0.00117	-0.00116
	(A1 * !A3 * B1 * X)	0.00096	0.00097	0.00096
	(A1 * !A3 * B1 * X)	-0.00116	-0.00117	-0.00116
	(A1 * !A3 * !B1 * !X)	0.00047	0.00047	0.00047
	(A1 * !A3 * !B1 * !X)	-0.00117	-0.00117	-0.00116
	(!A1 * A3 * A4 * B1 * X)	0.00096	0.00096	0.00096
	(!A1 * A3 * A4 * B1 * X)	-0.00116	-0.00116	-0.00116
	(!A1 * A3 * A4 * !B1 * !X)	0.00096	0.00096	0.00096
	(!A1 * A3 * A4 * !B1 * !X)	-0.00117	-0.00117	-0.00117
	(!A1 * A3 * !A4 * B1 * X)	0.00058	0.00059	0.00058
	(!A1 * A3 * !A4 * B1 * X)	-0.00116	-0.00116	-0.00116
	(!A1 * A3 * !A4 * !B1 * !X)	0.00055	0.00056	0.00055
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00117	-0.00117	-0.00117
	(!A1 * !A3 * B1 * X)	0.00059	0.00059	0.00058
	(!A1 * !A3 * B1 * X)	-0.00116	-0.00116	-0.00116
	(!A1 * !A3 * !B1 * !X)	0.00054	0.00054	0.00054
	(!A1 * !A3 * !B1 * !X)	-0.00117	-0.00117	-0.00117

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	0.00106	0.00104	0.00103
	(A1 * A3 * A4 * B1 * X)	-0.00106	-0.00113	-0.00113
	(A1 * A3 * !A4 * B1 * X)	0.00094	0.00095	0.00095
	(A1 * A3 * !A4 * B1 * X)	-0.00116	-0.00117	-0.00117
	(A1 * A3 * !A4 * !B1 * !X)	0.00046	0.00046	0.00047
	(A1 * A3 * !A4 * !B1 * !X)	-0.00117	-0.00117	-0.00116
	(A1 * !A3 * B1 * X)	0.00097	0.00098	0.00097
	(A1 * !A3 * B1 * X)	-0.00117	-0.00117	-0.00117
	(A1 * !A3 * !B1 * !X)	0.00049	0.00049	0.00049
	(A1 * !A3 * !B1 * !X)	-0.00117	-0.00117	-0.00116
	(!A1 * A3 * A4 * B1 * X)	0.00098	0.00099	0.00098
	(!A1 * A3 * A4 * B1 * X)	-0.00117	-0.00117	-0.00117
	(!A1 * A3 * A4 * !B1 * !X)	0.00097	0.00098	0.00097
	(!A1 * A3 * A4 * !B1 * !X)	-0.00117	-0.00117	-0.00117
	(!A1 * A3 * !A4 * B1 * X)	0.00059	0.00059	0.00059
	(!A1 * A3 * !A4 * B1 * X)	-0.00117	-0.00116	-0.00117
	(!A1 * A3 * !A4 * !B1 * !X)	0.00056	0.00057	0.00056
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00117	-0.00118	-0.00117
	(!A1 * !A3 * B1 * X)	0.00062	0.00062	0.00061
	(!A1 * !A3 * B1 * X)	-0.00117	-0.00117	-0.00117
	(!A1 * !A3 * !B1 * !X)	0.00058	0.00057	0.00057
	(!A1 * !A3 * !B1 * !X)	-0.00118	-0.00118	-0.00117

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	0.00210	0.00207	0.00204
	(A1 * A3 * A4 * B1 * X)	-0.00212	-0.00229	-0.00226
	(A1 * A3 * !A4 * B1 * X)	0.00186	0.00188	0.00186
	(A1 * A3 * !A4 * B1 * X)	-0.00234	-0.00236	-0.00235
	(A1 * A3 * !A4 * !B1 * !X)	0.00087	0.00089	0.00090
	(A1 * A3 * !A4 * !B1 * !X)	-0.00233	-0.00235	-0.00233
	(A1 * !A3 * B1 * X)	0.00190	0.00191	0.00191
	(A1 * !A3 * B1 * X)	-0.00234	-0.00236	-0.00235
	(A1 * !A3 * !B1 * !X)	0.00089	0.00090	0.00091
	(A1 * !A3 * !B1 * !X)	-0.00233	-0.00235	-0.00233
	(!A1 * A3 * A4 * B1 * X)	0.00194	0.00196	0.00194
	(!A1 * A3 * A4 * B1 * X)	-0.00234	-0.00236	-0.00235
	(!A1 * A3 * A4 * !B1 * !X)	0.00194	0.00195	0.00194
	(!A1 * A3 * A4 * !B1 * !X)	-0.00235	-0.00236	-0.00235
	(!A1 * A3 * !A4 * B1 * X)	0.00114	0.00115	0.00114
	(!A1 * A3 * !A4 * B1 * X)	-0.00235	-0.00237	-0.00235
	(!A1 * A3 * !A4 * !B1 * !X)	0.00108	0.00109	0.00108
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00236	-0.00237	-0.00236
	(!A1 * !A3 * B1 * X)	0.00113	0.00114	0.00113
	(!A1 * !A3 * B1 * X)	-0.00234	-0.00236	-0.00235
	(!A1 * !A3 * !B1 * !X)	0.00104	0.00105	0.00104
	(!A1 * !A3 * !B1 * !X)	-0.00236	-0.00237	-0.00236

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)**	-0.00102	-0.00102	-0.00101
	(A1 * A3 * A4 * B1 * X)	0.00113	0.00113	0.00112
	(A1 * A3 * !A4 * B1 * X)	-0.00086	-0.00095	-0.00094
	(A1 * A3 * !A4 * B1 * X)	0.00117	0.00118	0.00116
	(A1 * A3 * !A4 * !B1 * !X)	-0.00043	-0.00044	-0.00044
	(A1 * A3 * !A4 * !B1 * !X)	0.00120	0.00120	0.00117
	(A1 * !A3 * B1 * X)	-0.00093	-0.00097	-0.00096
	(A1 * !A3 * B1 * X)	0.00117	0.00117	0.00116
	(A1 * !A3 * !B1 * !X)	-0.00044	-0.00044	-0.00045
	(A1 * !A3 * !B1 * !X)	0.00119	0.00120	0.00117
	(!A1 * A3 * A4 * B1 * X)	-0.00093	-0.00096	-0.00096
	(!A1 * A3 * A4 * B1 * X)	0.00117	0.00118	0.00116
	(!A1 * A3 * A4 * !B1 * !X)	-0.00088	-0.00096	-0.00096
	(!A1 * A3 * A4 * !B1 * !X)	0.00123	0.00119	0.00117
	(!A1 * A3 * !A4 * B1 * X)	-0.00058	-0.00059	-0.00058
	(!A1 * A3 * !A4 * B1 * X)	0.00117	0.00116	0.00116
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00055	-0.00056	-0.00055
	(!A1 * A3 * !A4 * !B1 * !X)	0.00120	0.00118	0.00117
	(!A1 * !A3 * B1 * X)	-0.00059	-0.00059	-0.00058
	(!A1 * !A3 * B1 * X)	0.00116	0.00117	0.00116
	(!A1 * !A3 * !B1 * !X)	-0.00054	-0.00054	-0.00054
	(!A1 * !A3 * !B1 * !X)	0.00123	0.00123	0.00118

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	-0.00103	-0.00103	-0.00102
	(A1 * A3 * A4 * B1 * X)	0.00113	0.00113	0.00113
	(A1 * A3 * !A4 * B1 * X)	-0.00087	-0.00095	-0.00095
	(A1 * A3 * !A4 * B1 * X)	0.00118	0.00118	0.00117
	(A1 * A3 * !A4 * !B1 * !X)	-0.00045	-0.00045	-0.00046
	(A1 * A3 * !A4 * !B1 * !X)	0.00120	0.00121	0.00118
	(A1 * !A3 * B1 * X)	-0.00094	-0.00098	-0.00097
	(A1 * !A3 * B1 * X)	0.00118	0.00118	0.00117
	(A1 * !A3 * !B1 * !X)	-0.00046	-0.00046	-0.00047
	(A1 * !A3 * !B1 * !X)	0.00120	0.00121	0.00118
	(!A1 * A3 * A4 * B1 * X)	-0.00094	-0.00099	-0.00098
	(!A1 * A3 * A4 * B1 * X)	0.00117	0.00118	0.00117
	(!A1 * A3 * A4 * !B1 * !X)	-0.00090	-0.00098	-0.00097
	(!A1 * A3 * A4 * !B1 * !X)	0.00123	0.00119	0.00118
	(!A1 * A3 * !A4 * B1 * X)	-0.00059	-0.00059	-0.00059
	(!A1 * A3 * !A4 * B1 * X)	0.00118	0.00117	0.00117
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00056	-0.00057	-0.00056
	(!A1 * A3 * !A4 * !B1 * !X)	0.00121	0.00118	0.00117
	(!A1 * !A3 * B1 * X)	-0.00062	-0.00062	-0.00061
	(!A1 * !A3 * B1 * X)	0.00117	0.00117	0.00117
	(!A1 * !A3 * !B1 * !X)	-0.00058	-0.00057	-0.00057
	(!A1 * !A3 * !B1 * !X)	0.00122	0.00123	0.00118

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	-0.00204	-0.00206	-0.00204
	(A1 * A3 * A4 * B1 * X)	0.00225	0.00229	0.00226
	(A1 * A3 * !A4 * B1 * X)	-0.00167	-0.00188	-0.00186
	(A1 * A3 * !A4 * B1 * X)	0.00235	0.00238	0.00235
	(A1 * A3 * !A4 * !B1 * !X)	-0.00083	-0.00083	-0.00084
	(A1 * A3 * !A4 * !B1 * !X)	0.00244	0.00243	0.00238
	(A1 * !A3 * B1 * X)	-0.00183	-0.00191	-0.00191
	(A1 * !A3 * B1 * X)	0.00235	0.00236	0.00235
	(A1 * !A3 * !B1 * !X)	-0.00085	-0.00085	-0.00087
	(A1 * !A3 * !B1 * !X)	0.00244	0.00243	0.00237
	(!A1 * A3 * A4 * B1 * X)	-0.00184	-0.00196	-0.00194
	(!A1 * A3 * A4 * B1 * X)	0.00234	0.00236	0.00235
	(!A1 * A3 * A4 * !B1 * !X)	-0.00174	-0.00195	-0.00194
	(!A1 * A3 * A4 * !B1 * !X)	0.00245	0.00237	0.00235
	(!A1 * A3 * !A4 * B1 * X)	-0.00114	-0.00115	-0.00114
	(!A1 * A3 * !A4 * B1 * X)	0.00235	0.00237	0.00236
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00108	-0.00109	-0.00108
	(!A1 * A3 * !A4 * !B1 * !X)	0.00242	0.00239	0.00236
	(!A1 * !A3 * B1 * X)	-0.00113	-0.00114	-0.00113
	(!A1 * !A3 * B1 * X)	0.00237	0.00237	0.00236
	(!A1 * !A3 * !B1 * !X)	-0.00104	-0.00105	-0.00104
	(!A1 * !A3 * !B1 * !X)	0.00248	0.00249	0.00239

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)**	0.00104	0.00101	0.00100
	(A1 * A2 * A4 * B1 * X)	-0.00107	-0.00115	-0.00114
	(A1 * A2 * !A4 * B1 * X)	0.00094	0.00095	0.00094
	(A1 * A2 * !A4 * B1 * X)	-0.00118	-0.00119	-0.00119
	(A1 * A2 * !A4 * !B1 * !X)	0.00048	0.00048	0.00048
	(A1 * A2 * !A4 * !B1 * !X)	-0.00117	-0.00117	-0.00116
	(A1 * !A2 * A4 * !B1 * !X)	0.00095	0.00095	0.00095
	(A1 * !A2 * A4 * !B1 * !X)	-0.00119	-0.00119	-0.00119
	(A1 * !A2 * !A4 * !B1 * !X)	0.00056	0.00056	0.00055
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00119	-0.00119	-0.00119
	(!A2 * A4 * B1 * X)	0.00095	0.00096	0.00095
	(!A2 * A4 * B1 * X)	-0.00119	-0.00119	-0.00119
	(!A2 * !A4 * B1 * X)	0.00059	0.00059	0.00058
	(!A2 * !A4 * B1 * X)	-0.00119	-0.00119	-0.00119
	(!A1 * A2 * A4 * B1 * X)	0.00092	0.00093	0.00092
	(!A1 * A2 * A4 * B1 * X)	-0.00118	-0.00119	-0.00119
	(!A1 * A2 * A4 * !B1 * !X)	0.00092	0.00093	0.00092
	(!A1 * A2 * A4 * !B1 * !X)	-0.00118	-0.00119	-0.00118
	(!A1 * A2 * !A4 * B1 * X)	0.00057	0.00057	0.00057
	(!A1 * A2 * !A4 * B1 * X)	-0.00119	-0.00119	-0.00119
	(!A1 * A2 * !A4 * !B1 * !X)	0.00054	0.00055	0.00054
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00118	-0.00119	-0.00119
	(!A1 * !A2 * A4 * !B1 * !X)	0.00095	0.00095	0.00095
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00119	-0.00119	-0.00119
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00058	0.00058	0.00057
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00118	-0.00119	-0.00119

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	0.00108	0.00106	0.00104
	(A1 * A2 * A4 * B1 * X)	-0.00106	-0.00114	-0.00113
	(A1 * A2 * !A4 * B1 * X)	0.00098	0.00099	0.00098
	(A1 * A2 * !A4 * B1 * X)	-0.00118	-0.00118	-0.00117
	(A1 * A2 * !A4 * !B1 * !X)	0.00049	0.00049	0.00049
	(A1 * A2 * !A4 * !B1 * !X)	-0.00118	-0.00118	-0.00117
	(A1 * !A2 * A4 * !B1 * !X)	0.00099	0.00100	0.00099
	(A1 * !A2 * A4 * !B1 * !X)	-0.00118	-0.00118	-0.00117
	(A1 * !A2 * !A4 * !B1 * !X)	0.00056	0.00057	0.00056
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00117	-0.00118	-0.00117
	(!A2 * A4 * B1 * X)	0.00099	0.00100	0.00099
	(!A2 * A4 * B1 * X)	-0.00118	-0.00118	-0.00117
	(!A2 * !A4 * B1 * X)	0.00060	0.00060	0.00059
	(!A2 * !A4 * B1 * X)	-0.00118	-0.00118	-0.00117
	(!A1 * A2 * A4 * B1 * X)	0.00097	0.00098	0.00097
	(!A1 * A2 * A4 * B1 * X)	-0.00117	-0.00118	-0.00117
	(!A1 * A2 * A4 * !B1 * !X)	0.00096	0.00097	0.00097
	(!A1 * A2 * A4 * !B1 * !X)	-0.00117	-0.00118	-0.00117
	(!A1 * A2 * !A4 * B1 * X)	0.00060	0.00060	0.00060
	(!A1 * A2 * !A4 * B1 * X)	-0.00117	-0.00118	-0.00117
	(!A1 * A2 * !A4 * !B1 * !X)	0.00057	0.00057	0.00057
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00117	-0.00118	-0.00117
	(!A1 * !A2 * A4 * !B1 * !X)	0.00099	0.00100	0.00099
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00118	-0.00118	-0.00117
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00059	0.00059	0.00058
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00118	-0.00118	-0.00117

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	0.00214	0.00211	0.00209
	(A1 * A2 * A4 * B1 * X)	-0.00214	-0.00231	-0.00229
	(A1 * A2 * !A4 * B1 * X)	0.00196	0.00198	0.00197
	(A1 * A2 * !A4 * B1 * X)	-0.00238	-0.00239	-0.00238
	(A1 * A2 * !A4 * !B1 * !X)	0.00096	0.00097	0.00096
	(A1 * A2 * !A4 * !B1 * !X)	-0.00233	-0.00234	-0.00232
	(A1 * !A2 * A4 * !B1 * !X)	0.00193	0.00197	0.00194
	(A1 * !A2 * A4 * !B1 * !X)	-0.00237	-0.00239	-0.00238
	(A1 * !A2 * !A4 * !B1 * !X)	0.00109	0.00109	0.00108
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00240	-0.00239	-0.00238
	(!A2 * A4 * B1 * X)	0.00193	0.00195	0.00194
	(!A2 * A4 * B1 * X)	-0.00237	-0.00238	-0.00238
	(!A2 * !A4 * B1 * X)	0.00116	0.00116	0.00115
	(!A2 * !A4 * B1 * X)	-0.00240	-0.00240	-0.00238
	(!A1 * A2 * A4 * B1 * X)	0.00190	0.00192	0.00190
	(!A1 * A2 * A4 * B1 * X)	-0.00238	-0.00239	-0.00238
	(!A1 * A2 * A4 * !B1 * !X)	0.00190	0.00191	0.00190
	(!A1 * A2 * A4 * !B1 * !X)	-0.00238	-0.00239	-0.00238
	(!A1 * A2 * !A4 * B1 * X)	0.00115	0.00117	0.00116
	(!A1 * A2 * !A4 * B1 * X)	-0.00238	-0.00240	-0.00238
	(!A1 * A2 * !A4 * !B1 * !X)	0.00110	0.00110	0.00109
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00239	-0.00240	-0.00239
	(!A1 * !A2 * A4 * !B1 * !X)	0.00193	0.00196	0.00194
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00237	-0.00239	-0.00238
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00113	0.00112	0.00112
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00239	-0.00238	-0.00238

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)**	-0.00099	-0.00100	-0.00099
	(A1 * A2 * A4 * B1 * X)	0.00114	0.00115	0.00114
	(A1 * A2 * !A4 * B1 * X)	-0.00091	-0.00095	-0.00094
	(A1 * A2 * !A4 * B1 * X)	0.00119	0.00120	0.00119
	(A1 * A2 * !A4 * !B1 * !X)	-0.00046	-0.00046	-0.00046
	(A1 * A2 * !A4 * !B1 * !X)	0.00119	0.00119	0.00119
	(A1 * !A2 * A4 * !B1 * !X)	-0.00091	-0.00095	-0.00095
	(A1 * !A2 * A4 * !B1 * !X)	0.00119	0.00120	0.00119
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00056	-0.00056	-0.00055
	(A1 * !A2 * !A4 * !B1 * !X)	0.00119	0.00119	0.00119
	(!A2 * A4 * B1 * X)	-0.00092	-0.00095	-0.00095
	(!A2 * A4 * B1 * X)	0.00119	0.00120	0.00119
	(!A2 * !A4 * B1 * X)	-0.00059	-0.00059	-0.00058
	(!A2 * !A4 * B1 * X)	0.00119	0.00119	0.00119
	(!A1 * A2 * A4 * B1 * X)	-0.00085	-0.00093	-0.00092
	(!A1 * A2 * A4 * B1 * X)	0.00119	0.00120	0.00119
	(!A1 * A2 * A4 * !B1 * !X)	-0.00085	-0.00093	-0.00092
	(!A1 * A2 * A4 * !B1 * !X)	0.00119	0.00120	0.00119
	(!A1 * A2 * !A4 * B1 * X)	-0.00057	-0.00057	-0.00057
	(!A1 * A2 * !A4 * B1 * X)	0.00120	0.00119	0.00119
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00054	-0.00055	-0.00054
	(!A1 * A2 * !A4 * !B1 * !X)	0.00118	0.00119	0.00119
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00091	-0.00095	-0.00095
	(!A1 * !A2 * A4 * !B1 * !X)	0.00119	0.00120	0.00119
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00058	-0.00058	-0.00057
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00118	0.00119	0.00119

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	-0.00104	-0.00105	-0.00104
	(A1 * A2 * A4 * B1 * X)	0.00113	0.00114	0.00113
	(A1 * A2 * !A4 * B1 * X)	-0.00096	-0.00099	-0.00098
	(A1 * A2 * !A4 * B1 * X)	0.00118	0.00119	0.00118
	(A1 * A2 * !A4 * !B1 * !X)	-0.00048	-0.00048	-0.00048
	(A1 * A2 * !A4 * !B1 * !X)	0.00118	0.00118	0.00118
	(A1 * !A2 * A4 * !B1 * !X)	-0.00095	-0.00100	-0.00099
	(A1 * !A2 * A4 * !B1 * !X)	0.00118	0.00119	0.00118
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00056	-0.00057	-0.00056
	(A1 * !A2 * !A4 * !B1 * !X)	0.00118	0.00119	0.00118
	(!A2 * A4 * B1 * X)	-0.00096	-0.00100	-0.00099
	(!A2 * A4 * B1 * X)	0.00118	0.00119	0.00118
	(!A2 * !A4 * B1 * X)	-0.00060	-0.00060	-0.00059
	(!A2 * !A4 * B1 * X)	0.00118	0.00118	0.00118
	(!A1 * A2 * A4 * B1 * X)	-0.00089	-0.00098	-0.00097
	(!A1 * A2 * A4 * B1 * X)	0.00118	0.00119	0.00118
	(!A1 * A2 * A4 * !B1 * !X)	-0.00089	-0.00097	-0.00097
	(!A1 * A2 * A4 * !B1 * !X)	0.00118	0.00119	0.00118
	(!A1 * A2 * !A4 * B1 * X)	-0.00060	-0.00060	-0.00060
	(!A1 * A2 * !A4 * B1 * X)	0.00119	0.00118	0.00118
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00057	-0.00057	-0.00057
	(!A1 * A2 * !A4 * !B1 * !X)	0.00117	0.00118	0.00118
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00095	-0.00100	-0.00099
	(!A1 * !A2 * A4 * !B1 * !X)	0.00118	0.00119	0.00118
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00059	-0.00059	-0.00058
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00118	0.00118	0.00118

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	-0.00208	-0.00209	-0.00208
	(A1 * A2 * A4 * B1 * X)	0.00228	0.00231	0.00229
	(A1 * A2 * !A4 * B1 * X)	-0.00187	-0.00198	-0.00197
	(A1 * A2 * !A4 * B1 * X)	0.00240	0.00240	0.00239
	(A1 * A2 * !A4 * !B1 * !X)	-0.00089	-0.00090	-0.00089
	(A1 * A2 * !A4 * !B1 * !X)	0.00240	0.00241	0.00240
	(A1 * !A2 * A4 * !B1 * !X)	-0.00185	-0.00197	-0.00194
	(A1 * !A2 * A4 * !B1 * !X)	0.00238	0.00241	0.00239
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00109	-0.00109	-0.00108
	(A1 * !A2 * !A4 * !B1 * !X)	0.00240	0.00240	0.00239
	(!A2 * A4 * B1 * X)	-0.00187	-0.00195	-0.00194
	(!A2 * A4 * B1 * X)	0.00238	0.00242	0.00239
	(!A2 * !A4 * B1 * X)	-0.00116	-0.00116	-0.00115
	(!A2 * !A4 * B1 * X)	0.00240	0.00240	0.00239
	(!A1 * A2 * A4 * B1 * X)	-0.00175	-0.00192	-0.00190
	(!A1 * A2 * A4 * B1 * X)	0.00240	0.00241	0.00239
	(!A1 * A2 * A4 * !B1 * !X)	-0.00174	-0.00191	-0.00190
	(!A1 * A2 * A4 * !B1 * !X)	0.00241	0.00241	0.00239
	(!A1 * A2 * !A4 * B1 * X)	-0.00115	-0.00117	-0.00116
	(!A1 * A2 * !A4 * B1 * X)	0.00238	0.00240	0.00239
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00110	-0.00110	-0.00109
	(!A1 * A2 * !A4 * !B1 * !X)	0.00239	0.00240	0.00239
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00186	-0.00196	-0.00194
	(!A1 * !A2 * A4 * !B1 * !X)	0.00238	0.00241	0.00239
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00113	-0.00112	-0.00112
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00239	0.00240	0.00239

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)**	0.00110	0.00108	0.00107
	(A1 * A2 * A3 * B1 * X)	-0.00106	-0.00115	-0.00114
	(A1 * A2 * !A3 * !B1 * !X)	0.00101	0.00102	0.00102
	(A1 * A2 * !A3 * !B1 * !X)	-0.00118	-0.00118	-0.00118
	(A1 * !A2 * A3 * !B1 * !X)	0.00099	0.00100	0.00099
	(A1 * !A2 * A3 * !B1 * !X)	-0.00118	-0.00119	-0.00118
	(A1 * !A2 * !A3 * !B1 * !X)	0.00102	0.00103	0.00102
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00118	-0.00119	-0.00118
	(!A3 * B1 * X)	0.00102	0.00102	0.00101
	(!A3 * B1 * X)	-0.00118	-0.00118	-0.00118
	(!A2 * A3 * B1 * X)	0.00100	0.00101	0.00100
	(!A2 * A3 * B1 * X)	-0.00118	-0.00119	-0.00118
	(!A1 * A2 * A3 * B1 * X)	0.00099	0.00099	0.00099
	(!A1 * A2 * A3 * B1 * X)	-0.00118	-0.00118	-0.00118
	(!A1 * A2 * A3 * !B1 * !X)	0.00098	0.00100	0.00099
	(!A1 * A2 * A3 * !B1 * !X)	-0.00118	-0.00118	-0.00118
	(!A1 * !A3 * !B1 * !X)	0.00102	0.00103	0.00102
	(!A1 * !A3 * !B1 * !X)	-0.00118	-0.00119	-0.00118
	(!A1 * !A2 * A3 * !B1 * !X)	0.00100	0.00101	0.00100
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00118	-0.00119	-0.00118

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	0.00109	0.00107	0.00106
	(A1 * A2 * A3 * B1 * X)	-0.00106	-0.00115	-0.00114
	(A1 * A2 * !A3 * !B1 * !X)	0.00100	0.00102	0.00100
	(A1 * A2 * !A3 * !B1 * !X)	-0.00118	-0.00119	-0.00118
	(A1 * !A2 * A3 * !B1 * !X)	0.00098	0.00099	0.00098
	(A1 * !A2 * A3 * !B1 * !X)	-0.00118	-0.00118	-0.00118
	(A1 * !A2 * !A3 * !B1 * !X)	0.00100	0.00101	0.00100
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00118	-0.00119	-0.00118
	(!A3 * B1 * X)	0.00099	0.00100	0.00100
	(!A3 * B1 * X)	-0.00118	-0.00118	-0.00118
	(!A2 * A3 * B1 * X)	0.00099	0.00100	0.00099
	(!A2 * A3 * B1 * X)	-0.00118	-0.00119	-0.00118
	(!A1 * A2 * A3 * B1 * X)	0.00098	0.00098	0.00098
	(!A1 * A2 * A3 * B1 * X)	-0.00118	-0.00118	-0.00118
	(!A1 * A2 * A3 * !B1 * !X)	0.00098	0.00099	0.00098
	(!A1 * A2 * A3 * !B1 * !X)	-0.00118	-0.00118	-0.00118
	(!A1 * !A3 * !B1 * !X)	0.00100	0.00102	0.00100
	(!A1 * !A3 * !B1 * !X)	-0.00118	-0.00119	-0.00118
	(!A1 * !A2 * A3 * !B1 * !X)	0.00098	0.00099	0.00098
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00118	-0.00118	-0.00118

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A3 * B1 * X)**	0.00211	0.00209	0.00206
	(A1 * A2 * A3 * B1 * X)	-0.00212	-0.00226	-0.00224
	(A1 * A2 * !A3 * !B1 * !X)	0.00195	0.00196	0.00194
	(A1 * A2 * !A3 * !B1 * !X)	-0.00232	-0.00233	-0.00232
	(A1 * !A2 * A3 * !B1 * !X)	0.00188	0.00190	0.00189
	(A1 * !A2 * A3 * !B1 * !X)	-0.00232	-0.00233	-0.00232
	(A1 * !A2 * !A3 * !B1 * !X)	0.00195	0.00197	0.00195
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00232	-0.00233	-0.00232
	(!A3 * B1 * X)	0.00195	0.00195	0.00195
	(!A3 * B1 * X)	-0.00232	-0.00232	-0.00232
	(!A2 * A3 * B1 * X)	0.00190	0.00191	0.00189
	(!A2 * A3 * B1 * X)	-0.00233	-0.00233	-0.00232
	(!A1 * A2 * A3 * B1 * X)	0.00187	0.00187	0.00187
	(!A1 * A2 * A3 * B1 * X)	-0.00232	-0.00232	-0.00232
	(!A1 * A2 * A3 * !B1 * !X)	0.00186	0.00189	0.00187
	(!A1 * A2 * A3 * !B1 * !X)	-0.00232	-0.00233	-0.00232
	(!A1 * !A3 * !B1 * !X)	0.00194	0.00196	0.00194
	(!A1 * !A3 * !B1 * !X)	-0.00232	-0.00233	-0.00232
	(!A1 * !A2 * A3 * !B1 * !X)	0.00188	0.00191	0.00189
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00232	-0.00233	-0.00232

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)**	-0.00106	-0.00107	-0.00106
	(A1 * A2 * A3 * B1 * X)	0.00114	0.00115	0.00114
	(A1 * A2 * !A3 * !B1 * !X)	-0.00098	-0.00102	-0.00102
	(A1 * A2 * !A3 * !B1 * !X)	0.00118	0.00119	0.00118
	(A1 * !A2 * A3 * !B1 * !X)	-0.00094	-0.00100	-0.00099
	(A1 * !A2 * A3 * !B1 * !X)	0.00118	0.00119	0.00118
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00098	-0.00102	-0.00102
	(A1 * !A2 * !A3 * !B1 * !X)	0.00118	0.00119	0.00118
	(!A3 * B1 * X)	-0.00098	-0.00102	-0.00101
	(!A3 * B1 * X)	0.00118	0.00119	0.00118
	(!A2 * A3 * B1 * X)	-0.00094	-0.00101	-0.00100
	(!A2 * A3 * B1 * X)	0.00118	0.00119	0.00118
	(!A1 * A2 * A3 * B1 * X)	-0.00093	-0.00099	-0.00099
	(!A1 * A2 * A3 * B1 * X)	0.00119	0.00118	0.00118
	(!A1 * A2 * A3 * !B1 * !X)	-0.00093	-0.00100	-0.00099
	(!A1 * A2 * A3 * !B1 * !X)	0.00119	0.00118	0.00118
	(!A1 * !A3 * !B1 * !X)	-0.00098	-0.00102	-0.00102
	(!A1 * !A3 * !B1 * !X)	0.00118	0.00119	0.00118
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00094	-0.00101	-0.00100
	(!A1 * !A2 * A3 * !B1 * !X)	0.00118	0.00119	0.00118

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00106	-0.00106	-0.00105
	(A1 * A2 * A3 * B1 * X)	0.00114	0.00115	0.00114
	(A1 * A2 * !A3 * !B1 * !X)	-0.00097	-0.00101	-0.00100
	(A1 * A2 * !A3 * !B1 * !X)	0.00118	0.00119	0.00118
	(A1 * !A2 * A3 * !B1 * !X)	-0.00093	-0.00099	-0.00098
	(A1 * !A2 * A3 * !B1 * !X)	0.00118	0.00119	0.00119
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00097	-0.00101	-0.00100
	(A1 * !A2 * !A3 * !B1 * !X)	0.00118	0.00121	0.00118
	(!A3 * B1 * X)	-0.00097	-0.00100	-0.00100
	(!A3 * B1 * X)	0.00118	0.00119	0.00119
	(!A2 * A3 * B1 * X)	-0.00093	-0.00100	-0.00099
	(!A2 * A3 * B1 * X)	0.00118	0.00119	0.00119
	(!A1 * A2 * A3 * B1 * X)	-0.00092	-0.00098	-0.00098
	(!A1 * A2 * A3 * B1 * X)	0.00119	0.00118	0.00119
	(!A1 * A2 * A3 * !B1 * !X)	-0.00092	-0.00099	-0.00098
	(!A1 * A2 * A3 * !B1 * !X)	0.00119	0.00118	0.00118
	(!A1 * !A3 * !B1 * !X)	-0.00097	-0.00101	-0.00100
	(!A1 * !A3 * !B1 * !X)	0.00118	0.00121	0.00118
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00093	-0.00099	-0.00098
	(!A1 * !A2 * A3 * !B1 * !X)	0.00118	0.00119	0.00119

sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * B1 * X)	-0.00205	-0.00206	-0.00206
	(A1 * A2 * A3 * B1 * X)	0.00223	0.00226	0.00224
	(A1 * A2 * !A3 * !B1 * !X)	-0.00186	-0.00195	-0.00194
	(A1 * A2 * !A3 * !B1 * !X)	0.00232	0.00235	0.00233
	(A1 * !A2 * A3 * !B1 * !X)	-0.00176	-0.00190	-0.00189
	(A1 * !A2 * A3 * !B1 * !X)	0.00233	0.00234	0.00233
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00187	-0.00195	-0.00195
	(A1 * !A2 * !A3 * !B1 * !X)	0.00232	0.00235	0.00233
	(!A3 * B1 * X)	-0.00188	-0.00195	-0.00195
	(!A3 * B1 * X)	0.00232	0.00234	0.00233
	(!A2 * A3 * B1 * X)	-0.00176	-0.00191	-0.00189
	(!A2 * A3 * B1 * X)	0.00233	0.00234	0.00233
	(!A1 * A2 * A3 * B1 * X)	-0.00173	-0.00187	-0.00187
	(!A1 * A2 * A3 * B1 * X)	0.00232	0.00234	0.00233
	(!A1 * A2 * A3 * !B1 * !X)	-0.00173	-0.00189	-0.00187
	(!A1 * A2 * A3 * !B1 * !X)	0.00233	0.00234	0.00233
	(!A1 * !A3 * !B1 * !X)	-0.00187	-0.00195	-0.00194
	(!A1 * !A3 * !B1 * !X)	0.00232	0.00235	0.00233
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00176	-0.00191	-0.00189
	(!A1 * !A2 * A3 * !B1 * !X)	0.00233	0.00234	0.00233

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)	0.00120	0.00121	0.00120
	(A1 * A2 * A3 * A4 * X)	-0.00061	-0.00061	-0.00061
sky130_fd_sc_hs__a41o_2	(A1 * A2 * A3 * A4 * X)	0.00121	0.00122	0.00122
	(A1 * A2 * A3 * A4 * X)	-0.00062	-0.00062	-0.00062
sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * A4 * X)	0.00228	0.00229	0.00229
	(A1 * A2 * A3 * A4 * X)	-0.00127	-0.00127	-0.00127

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)	-0.00105	-0.00105	-0.00118
	(A1 * A2 * A3 * A4 * X)	0.00074	0.00073	0.00064
sky130_fd_sc_hs__a41o_2	(A1 * A2 * A3 * A4 * X)	-0.00106	-0.00107	-0.00120
	(A1 * A2 * A3 * A4 * X)	0.00075	0.00074	0.00065
sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * A4 * X)	-0.00195	-0.00198	-0.00224
	(A1 * A2 * A3 * A4 * X)	0.00153	0.00153	0.00133

SKY130_FD_SC_HS__AND2Bx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT		OUTPUT
A_N	B	X
x	0	0
0	1	1
1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__and2b_1	11.18880
sky130_fd_sc_hs__and2b_2	11.18880
sky130_fd_sc_hs__and2b_4	15.98400

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A_N	B	X
sky130_fd_sc_hs__and2b_1	0.00249	0.00234	0.77944
sky130_fd_sc_hs__and2b_2	0.00223	0.00271	1.37142
sky130_fd_sc_hs__and2b_4	0.00249	0.00491	2.90440

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2b_1	0.00000	0.14319	0.24640
sky130_fd_sc_hs__and2b_2	0.00000	0.13226	0.17294
sky130_fd_sc_hs__and2b_4	0.00000	0.23586	0.50194

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)	0.17260	0.97881	8.44007
	B->X (RR)	0.09631	0.74491	7.03156
sky130_fd_sc_hs__and2b_2	A_N->X (FR)	0.18531	0.90124	8.45026
	B->X (RR)	0.10086	0.66897	7.04199
sky130_fd_sc_hs__and2b_4	A_N->X (FR)	0.18857	0.83592	8.76403
	B->X (RR)	0.10279	0.57858	7.16983

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)	0.13742	0.46510	2.52689
	B->X (FF)	0.11290	0.63513	4.30688
sky130_fd_sc_hs__and2b_2	A_N->X (RF)	0.15960	0.45363	2.33451
	B->X (FF)	0.13460	0.65981	4.39743
sky130_fd_sc_hs__and2b_4	A_N->X (RF)	0.15619	0.43388	2.50443
	B->X (FF)	0.13597	0.63059	4.54079

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	0.00433	0.00446	0.00905
	A_N	0.00674	0.00688	0.01148
	B	0.00533	0.00523	0.00805
	B	0.00291	0.00280	0.00565
sky130_fd_sc_hs__and2b_2	A_N	0.00654	0.00693	0.01118
	A_N	0.00871	0.00909	0.01338
	B	0.00739	0.00751	0.00909
	B	0.00454	0.00466	0.00630
sky130_fd_sc_hs__and2b_4	A_N	0.01217	0.01299	0.01728
	A_N	0.01447	0.01533	0.01996
	B	0.01399	0.01431	0.01984
	B	0.00900	0.00932	0.01505

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	A_N	0.00740	0.00722	0.01099
	A_N	0.00499	0.00480	0.00858
	B	0.00246	0.00272	0.00714
	B	0.00486	0.00511	0.00935
sky130_fd_sc_hs__and2b_2	A_N	0.00893	0.00898	0.01236
	A_N	0.00675	0.00678	0.01010
	B	0.00390	0.00428	0.00807
	B	0.00672	0.00708	0.01043
sky130_fd_sc_hs__and2b_4	A_N	0.01384	0.01449	0.01882
	A_N	0.01153	0.01214	0.01618
	B	0.00763	0.00877	0.01749
	B	0.01259	0.01349	0.02221

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	0.00417	0.00396	0.00776
	(!B * !X)	0.00147	0.00127	0.00506
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00399	0.00382	0.00760
	(!B * !X)	0.00147	0.00130	0.00509
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.00496	0.00479	0.00840
	(!B * !X)	0.00209	0.00191	0.00553

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	0.00006	0.00018	0.00452
	(!B * !X)	0.00276	0.00289	0.00723
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00023	0.00041	0.00467
	(!B * !X)	0.00275	0.00293	0.00719
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.00044	0.00058	0.00440
	(!B * !X)	0.00333	0.00346	0.00728

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	0.00092	0.00093	0.00092
	(A_N * !X)	-0.00112	-0.00112	-0.00112
sky130_fd_sc_hs__and2b_2	(A_N * !X)	0.00112	0.00112	0.00112
	(A_N * !X)	-0.00126	-0.00126	-0.00126
sky130_fd_sc_hs__and2b_4	(A_N * !X)	0.00198	0.00196	0.00197
	(A_N * !X)	-0.00226	-0.00225	-0.00226

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	-0.00087	-0.00091	-0.00092
	(A_N * !X)	0.00115	0.00113	0.00112
sky130_fd_sc_hs__and2b_2	(A_N * !X)	-0.00107	-0.00112	-0.00112
	(A_N * !X)	0.00130	0.00129	0.00127
sky130_fd_sc_hs__and2b_4	(A_N * !X)	-0.00190	-0.00196	-0.00197
	(A_N * !X)	0.00231	0.00229	0.00227

SKY130_FD_SC_HS__AND2x

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT		OUTPUT
A	B	X
0	x	0
1	0	0
1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__and2_1	7.99200
sky130_fd_sc_hs__and2_2	7.99200
sky130_fd_sc_hs__and2_4	14.38560

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	X
sky130_fd_sc_hs__and2_1	0.00240	0.00234	0.76012
sky130_fd_sc_hs__and2_2	0.00260	0.00287	1.48885
sky130_fd_sc_hs__and2_4	0.00424	0.00471	2.91777

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2_1	0.00000	0.08203	0.24395
sky130_fd_sc_hs__and2_2	0.00000	0.07110	0.12939
sky130_fd_sc_hs__and2_4	0.00000	0.20280	0.49632

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)	0.08908	0.73547	6.95351
	B->X (RR)	0.09522	0.75220	7.01840
sky130_fd_sc_hs__and2_2	A->X (RR)	0.09199	0.65661	7.04727
	B->X (RR)	0.09838	0.66327	7.11954
sky130_fd_sc_hs__and2_4	A->X (RR)	0.09062	0.56559	7.10713
	B->X (RR)	0.09894	0.57892	7.18992

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and2_1	A->X (FF)	0.10096	0.60295	4.18409
	B->X (FF)	0.11552	0.63808	4.28992
sky130_fd_sc_hs__and2_2	A->X (FF)	0.11411	0.63094	4.50264
	B->X (FF)	0.13115	0.66219	4.61644
sky130_fd_sc_hs__and2_4	A->X (FF)	0.12297	0.60136	4.40931
	B->X (FF)	0.13608	0.62625	4.49213

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.00498	0.00491	0.00929
	A	0.00233	0.00227	0.00665
	B	0.00543	0.00528	0.00787
	B	0.00234	0.00220	0.00480
sky130_fd_sc_hs__and2_2	A	0.00678	0.00685	0.00998
	A	0.00391	0.00398	0.00717
	B	0.00762	0.00762	0.00942
	B	0.00397	0.00397	0.00585
sky130_fd_sc_hs__and2_4	A	0.01247	0.01287	0.02104
	A	0.00793	0.00839	0.01665
	B	0.01407	0.01447	0.02003
	B	0.00789	0.00830	0.01406

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.00190	0.00217	0.00674
	A	0.00455	0.00477	0.00926
	B	0.00242	0.00264	0.00689
	B	0.00546	0.00568	0.00981
sky130_fd_sc_hs__and2_2	A	0.00373	0.00420	0.00782
	A	0.00661	0.00695	0.01068
	B	0.00398	0.00427	0.00781
	B	0.00759	0.00786	0.01134
sky130_fd_sc_hs__and2_4	A	0.00708	0.00803	0.01843
	A	0.01162	0.01248	0.02178
	B	0.00744	0.00876	0.01774
	B	0.01350	0.01457	0.02321

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	0.00054	0.00054	0.00052
	(!B * !X)	-0.00118	-0.00118	-0.00120
sky130_fd_sc_hs__and2_2	(!B * !X)	0.00039	0.00039	0.00038
	(!B * !X)	-0.00138	-0.00139	-0.00141
sky130_fd_sc_hs__and2_4	(!B * !X)	0.00059	0.00059	0.00056
	(!B * !X)	-0.00228	-0.00229	-0.00233

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	-0.00052	-0.00052	-0.00051
	(!B * !X)	0.00121	0.00121	0.00120
sky130_fd_sc_hs__and2_2	(!B * !X)	-0.00037	-0.00037	-0.00037
	(!B * !X)	0.00141	0.00141	0.00141
sky130_fd_sc_hs__and2_4	(!B * !X)	-0.00054	-0.00054	-0.00054
	(!B * !X)	0.00234	0.00235	0.00234

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	0.00080	0.00081	0.00080
	(!A * !X)	-0.00113	-0.00113	-0.00113
sky130_fd_sc_hs__and2_2	(!A * !X)	0.00093	0.00094	0.00093
	(!A * !X)	-0.00136	-0.00137	-0.00136
sky130_fd_sc_hs__and2_4	(!A * !X)	0.00189	0.00191	0.00189
	(!A * !X)	-0.00209	-0.00210	-0.00209

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	-0.00076	-0.00081	-0.00080
	(!A * !X)	0.00115	0.00114	0.00113
sky130_fd_sc_hs__and2_2	(!A * !X)	-0.00088	-0.00094	-0.00093
	(!A * !X)	0.00140	0.00139	0.00137
sky130_fd_sc_hs__and2_4	(!A * !X)	-0.00180	-0.00190	-0.00189
	(!A * !X)	0.00216	0.00211	0.00210

SKY130_FD_SC_HS__AND3Bx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT			OUTPUT
A_N	B	C	X
x	0	x	0
x	1	0	0
0	1	1	1
1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__and3b_1	12.78720
sky130_fd_sc_hs__and3b_2	14.38560
sky130_fd_sc_hs__and3b_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A_N	B	C	X
sky130_fd_sc_hs__and3b_1	0.00218	0.00230	0.00229	0.75900
sky130_fd_sc_hs__and3b_2	0.00226	0.00275	0.00263	1.36738
sky130_fd_sc_hs__and3b_4	0.00252	0.00469	0.00482	2.89584

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and3b_1	0.00000	0.13015	0.36627
sky130_fd_sc_hs__and3b_2	0.00000	0.12935	0.19233
sky130_fd_sc_hs__and3b_4	0.00000	0.17031	0.38538

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)	0.19154	0.99962	8.47202
	B->X (RR)	0.12654	0.80853	7.20326
	C->X (RR)	0.13214	0.80076	7.18182
sky130_fd_sc_hs__and3b_2	A_N->X (FR)	0.21028	0.92662	8.44567
	B->X (RR)	0.13479	0.73321	7.20361
	C->X (RR)	0.14053	0.71980	7.17413
sky130_fd_sc_hs__and3b_4	A_N->X (FR)	0.23342	0.89882	8.86947
	B->X (RR)	0.15437	0.67338	7.37644
	C->X (RR)	0.15950	0.64543	7.31157

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)	0.14774	0.46219	2.39049
	B->X (FF)	0.12904	0.65936	4.28890
	C->X (FF)	0.13660	0.68003	4.36538
sky130_fd_sc_hs__and3b_2	A_N->X (RF)	0.16101	0.45110	2.26834
	B->X (FF)	0.13958	0.66956	4.41866
	C->X (FF)	0.15744	0.70019	4.53009
sky130_fd_sc_hs__and3b_4	A_N->X (RF)	0.15411	0.43287	2.48774
	B->X (FF)	0.13182	0.63457	4.60936
	C->X (FF)	0.14138	0.65433	4.69351

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	0.00524	0.00539	0.01001
	A_N	0.00724	0.00738	0.01202
	B	0.00597	0.00591	0.00901
	B	0.00351	0.00343	0.00657
	C	0.00658	0.00649	0.00863
	C	0.00359	0.00350	0.00569
sky130_fd_sc_hs__and3b_2	A_N	0.00740	0.00781	0.01224
	A_N	0.00949	0.00990	0.01435
	B	0.00832	0.00839	0.01052
	B	0.00542	0.00549	0.00772
	C	0.00900	0.00905	0.01028
	C	0.00554	0.00560	0.00693
sky130_fd_sc_hs__and3b_4	A_N	0.01338	0.01416	0.01834
	A_N	0.01541	0.01620	0.02059
	B	0.01520	0.01552	0.01969
	B	0.01008	0.01040	0.01468
	C	0.01652	0.01682	0.02036
	C	0.01011	0.01041	0.01413

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	A_N	0.00688	0.00670	0.01068
	A_N	0.00490	0.00472	0.00865
	B	0.00250	0.00272	0.00704
	B	0.00497	0.00515	0.00945
	C	0.00275	0.00298	0.00714
	C	0.00567	0.00588	0.00990
sky130_fd_sc_hs__and3b_2	A_N	0.00872	0.00881	0.01258
	A_N	0.00663	0.00673	0.01043
	B	0.00390	0.00421	0.00800
	B	0.00678	0.00709	0.01066
	C	0.00425	0.00453	0.00784
	C	0.00762	0.00788	0.01103
sky130_fd_sc_hs__and3b_4	A_N	0.01448	0.01508	0.01917
	A_N	0.01243	0.01300	0.01676
	B	0.00826	0.00892	0.01589
	B	0.01335	0.01399	0.02095
	C	0.00870	0.00979	0.01753
	C	0.01493	0.01564	0.02249

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)	0.00356	0.00343	0.00740
	(B * !C * !X)	0.00114	0.00100	0.00498
	(!B * !X)	0.00355	0.00342	0.00739
	(!B * !X)	0.00115	0.00101	0.00498
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00386	0.00370	0.00755
	(B * !C * !X)	0.00135	0.00118	0.00503
	(!B * !X)	0.00385	0.00369	0.00754
	(!B * !X)	0.00135	0.00118	0.00503
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.00530	0.00511	0.00868
	(B * !C * !X)	0.00251	0.00232	0.00590
	(!B * !X)	0.00526	0.00508	0.00865
	(!B * !X)	0.00252	0.00232	0.00590

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)	0.00008	0.00020	0.00466
	(B * !C * !X)	0.00255	0.00267	0.00711
	(!B * !X)	0.00007	0.00030	0.00466
	(!B * !X)	0.00248	0.00272	0.00707
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00017	0.00036	0.00464
	(B * !C * !X)	0.00274	0.00294	0.00720
	(!B * !X)	0.00016	0.00024	0.00463
	(!B * !X)	0.00267	0.00276	0.00714
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.00037	0.00046	0.00425
	(B * !C * !X)	0.00326	0.00336	0.00712
	(!B * !X)	0.00038	0.00048	0.00428
	(!B * !X)	0.00314	0.00325	0.00704

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)	0.00092	0.00093	0.00092
	(A_N * C * !X)	-0.00103	-0.00104	-0.00103
	(A_N * !C * !X)	0.00059	0.00059	0.00059
	(A_N * !C * !X)	-0.00104	-0.00104	-0.00104
	(!A_N * !C * !X)	0.00037	0.00038	0.00037
	(!A_N * !C * !X)	-0.00118	-0.00119	-0.00119
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	0.00114	0.00114	0.00114
	(A_N * C * !X)	-0.00122	-0.00123	-0.00122
	(A_N * !C * !X)	0.00075	0.00075	0.00074
	(A_N * !C * !X)	-0.00123	-0.00123	-0.00123
	(!A_N * !C * !X)	0.00050	0.00050	0.00050
	(!A_N * !C * !X)	-0.00139	-0.00140	-0.00140
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	0.00179	0.00181	0.00180
	(A_N * C * !X)	-0.00233	-0.00235	-0.00234
	(A_N * !C * !X)	0.00111	0.00111	0.00111
	(A_N * !C * !X)	-0.00237	-0.00237	-0.00236
	(!A_N * !C * !X)	0.00081	0.00081	0.00082
	(!A_N * !C * !X)	-0.00251	-0.00251	-0.00251

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)	-0.00087	-0.00092	-0.00092
	(A_N * C * !X)	0.00108	0.00105	0.00104
	(A_N * !C * !X)	-0.00059	-0.00059	-0.00059
	(A_N * !C * !X)	0.00110	0.00110	0.00105
	(!A_N * !C * !X)	-0.00035	-0.00035	-0.00036
	(!A_N * !C * !X)	0.00120	0.00121	0.00120
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	-0.00108	-0.00114	-0.00114
	(A_N * C * !X)	0.00127	0.00125	0.00123
	(A_N * !C * !X)	-0.00075	-0.00075	-0.00074
	(A_N * !C * !X)	0.00129	0.00129	0.00124
	(!A_N * !C * !X)	-0.00047	-0.00047	-0.00048
	(!A_N * !C * !X)	0.00142	0.00143	0.00141
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	-0.00168	-0.00181	-0.00180
	(A_N * C * !X)	0.00242	0.00237	0.00235
	(A_N * !C * !X)	-0.00111	-0.00111	-0.00111
	(A_N * !C * !X)	0.00246	0.00246	0.00239
	(!A_N * !C * !X)	-0.00075	-0.00076	-0.00078
	(!A_N * !C * !X)	0.00257	0.00258	0.00254

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)	0.00080	0.00081	0.00080
	(A_N * B * !X)	-0.00108	-0.00108	-0.00108
	(A_N * !B * !X)	0.00081	0.00082	0.00081
	(A_N * !B * !X)	-0.00108	-0.00108	-0.00108
	(!A_N * !B * !X)	0.00081	0.00082	0.00081
	(!A_N * !B * !X)	-0.00108	-0.00108	-0.00108
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	0.00100	0.00101	0.00100
	(A_N * B * !X)	-0.00122	-0.00123	-0.00122
	(A_N * !B * !X)	0.00101	0.00102	0.00101
	(A_N * !B * !X)	-0.00122	-0.00123	-0.00122
	(!A_N * !B * !X)	0.00102	0.00102	0.00101
	(!A_N * !B * !X)	-0.00123	-0.00123	-0.00122
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	0.00170	0.00171	0.00169
	(A_N * B * !X)	-0.00243	-0.00243	-0.00242
	(A_N * !B * !X)	0.00170	0.00170	0.00169
	(A_N * !B * !X)	-0.00242	-0.00243	-0.00242
	(!A_N * !B * !X)	0.00170	0.00171	0.00170
	(!A_N * !B * !X)	-0.00242	-0.00243	-0.00242

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)	-0.00076	-0.00081	-0.00080
	(A_N * B * !X)	0.00108	0.00109	0.00108
	(A_N * !B * !X)	-0.00078	-0.00082	-0.00081
	(A_N * !B * !X)	0.00108	0.00109	0.00108
	(!A_N * !B * !X)	-0.00078	-0.00082	-0.00081
	(!A_N * !B * !X)	0.00108	0.00109	0.00108
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	-0.00095	-0.00101	-0.00100
	(A_N * B * !X)	0.00123	0.00123	0.00123
	(A_N * !B * !X)	-0.00098	-0.00102	-0.00101
	(A_N * !B * !X)	0.00123	0.00124	0.00123
	(!A_N * !B * !X)	-0.00098	-0.00102	-0.00101
	(!A_N * !B * !X)	0.00123	0.00124	0.00123
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	-0.00160	-0.00170	-0.00169
	(A_N * B * !X)	0.00243	0.00244	0.00243
	(A_N * !B * !X)	-0.00164	-0.00170	-0.00169
	(A_N * !B * !X)	0.00244	0.00245	0.00243
	(!A_N * !B * !X)	-0.00163	-0.00171	-0.00170
	(!A_N * !B * !X)	0.00245	0.00245	0.00243

SKY130_FD_SC_HS__AND3x

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT			OUTPUT
A	B	C	X
0	x	x	0
1	0	x	0
1	1	0	0
1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__and3_1	9.59040
sky130_fd_sc_hs__and3_2	11.18880
sky130_fd_sc_hs__and3_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	X
sky130_fd_sc_hs__and3_1	0.00248	0.00227	0.00224	0.78475
sky130_fd_sc_hs__and3_2	0.00245	0.00224	0.00227	1.51640
sky130_fd_sc_hs__and3_4	0.00445	0.00431	0.00446	2.91896

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and3_1	0.00000	0.06899	0.36381
sky130_fd_sc_hs__and3_2	0.00000	0.09090	0.36802
sky130_fd_sc_hs__and3_4	0.00000	0.18179	0.73605

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)	0.11124	0.77304	7.04247
	B->X (RR)	0.12014	0.79355	7.14299
	C->X (RR)	0.12485	0.78631	7.13418
sky130_fd_sc_hs__and3_2	A->X (RR)	0.12553	0.71657	7.24809
	B->X (RR)	0.13429	0.73084	7.34072
	C->X (RR)	0.13896	0.71574	7.30142
sky130_fd_sc_hs__and3_4	A->X (RR)	0.13421	0.65468	7.34280
	B->X (RR)	0.14682	0.67348	7.44770
	C->X (RR)	0.15235	0.64424	7.37731

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and3_1	A->X (FF)	0.11181	0.62636	4.25791
	B->X (FF)	0.12690	0.65866	4.35519
	C->X (FF)	0.13076	0.67506	4.42415
sky130_fd_sc_hs__and3_2	A->X (FF)	0.13808	0.65902	4.45074
	B->X (FF)	0.15295	0.68584	4.54835
	C->X (FF)	0.16003	0.70137	4.61346
sky130_fd_sc_hs__and3_4	A->X (FF)	0.12869	0.61633	4.45117
	B->X (FF)	0.14410	0.64501	4.55277
	C->X (FF)	0.15586	0.66804	4.64338

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.00555	0.00551	0.00959
	A	0.00277	0.00273	0.00684
	B	0.00585	0.00579	0.00888
	B	0.00278	0.00271	0.00585
	C	0.00645	0.00637	0.00884
	C	0.00276	0.00267	0.00518
sky130_fd_sc_hs__and3_2	A	0.00729	0.00744	0.01111
	A	0.00452	0.00466	0.00844
	B	0.00758	0.00772	0.01042
	B	0.00454	0.00467	0.00746
	C	0.00821	0.00834	0.01026
	C	0.00454	0.00466	0.00668
sky130_fd_sc_hs__and3_4	A	0.01361	0.01393	0.02138
	A	0.00849	0.00883	0.01641
	B	0.01482	0.01518	0.02057
	B	0.00856	0.00892	0.01437
	C	0.01618	0.01656	0.02106
	C	0.00856	0.00894	0.01356

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.00179	0.00205	0.00655
	A	0.00458	0.00478	0.00922
	B	0.00246	0.00267	0.00707
	B	0.00549	0.00566	0.00993
	C	0.00270	0.00297	0.00710
	C	0.00628	0.00654	0.01064
sky130_fd_sc_hs__and3_2	A	0.00338	0.00377	0.00847
	A	0.00616	0.00654	0.01090
	B	0.00404	0.00447	0.00927
	B	0.00705	0.00746	0.01169
	C	0.00422	0.00465	0.00930
	C	0.00780	0.00822	0.01218
sky130_fd_sc_hs__and3_4	A	0.00725	0.00834	0.01790
	A	0.01236	0.01312	0.02198
	B	0.00828	0.00903	0.01828
	B	0.01444	0.01518	0.02373
	C	0.00876	0.00961	0.01837
	C	0.01612	0.01695	0.02527

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	0.00059	0.00058	0.00056
	(B * !C * !X)	-0.00113	-0.00113	-0.00119
	(!B * !X)	0.00059	0.00059	0.00057
	(!B * !X)	-0.00117	-0.00118	-0.00119
sky130_fd_sc_hs__and3_2	(B * !C * !X)	0.00059	0.00060	0.00056
	(B * !C * !X)	-0.00112	-0.00113	-0.00117
	(!B * !X)	0.00060	0.00060	0.00058
	(!B * !X)	-0.00115	-0.00116	-0.00118
sky130_fd_sc_hs__and3_4	(B * !C * !X)	0.00069	0.00070	0.00062
	(B * !C * !X)	-0.00230	-0.00232	-0.00244
	(!B * !X)	0.00070	0.00071	0.00066
	(!B * !X)	-0.00239	-0.00240	-0.00246

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	-0.00056	-0.00055	-0.00055
	(B * !C * !X)	0.00120	0.00120	0.00120
	(!B * !X)	-0.00057	-0.00056	-0.00056
	(!B * !X)	0.00120	0.00120	0.00120
sky130_fd_sc_hs__and3_2	(B * !C * !X)	-0.00057	-0.00057	-0.00056
	(B * !C * !X)	0.00118	0.00118	0.00118
	(!B * !X)	-0.00058	-0.00057	-0.00057
	(!B * !X)	0.00118	0.00118	0.00118
sky130_fd_sc_hs__and3_4	(B * !C * !X)	-0.00061	-0.00062	-0.00061
	(B * !C * !X)	0.00246	0.00248	0.00246
	(!B * !X)	-0.00063	-0.00064	-0.00063
	(!B * !X)	0.00246	0.00248	0.00247

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	0.00036	0.00036	0.00037
	(A * !C * !X)	-0.00103	-0.00103	-0.00102
	(!A * C * !X)	0.00077	0.00078	0.00078
	(!A * C * !X)	-0.00102	-0.00103	-0.00103
	(!A * !C * !X)	0.00043	0.00043	0.00042
	(!A * !C * !X)	-0.00104	-0.00103	-0.00103
sky130_fd_sc_hs__and3_2	(A * !C * !X)	0.00035	0.00035	0.00035
	(A * !C * !X)	-0.00101	-0.00101	-0.00100
	(!A * C * !X)	0.00077	0.00078	0.00078
	(!A * C * !X)	-0.00100	-0.00101	-0.00101
	(!A * !C * !X)	0.00041	0.00041	0.00041
	(!A * !C * !X)	-0.00102	-0.00101	-0.00101
sky130_fd_sc_hs__and3_4	(A * !C * !X)	0.00084	0.00084	0.00085
	(A * !C * !X)	-0.00200	-0.00201	-0.00199
	(!A * C * !X)	0.00171	0.00172	0.00171
	(!A * C * !X)	-0.00200	-0.00201	-0.00200
	(!A * !C * !X)	0.00098	0.00098	0.00097
	(!A * !C * !X)	-0.00202	-0.00202	-0.00202

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	-0.00035	-0.00034	-0.00035
	(A * !C * !X)	0.00107	0.00106	0.00104
	(!A * C * !X)	-0.00073	-0.00078	-0.00078
	(!A * C * !X)	0.00107	0.00104	0.00103
	(!A * !C * !X)	-0.00043	-0.00043	-0.00042
	(!A * !C * !X)	0.00109	0.00108	0.00104
sky130_fd_sc_hs__and3_2	(A * !C * !X)	-0.00034	-0.00033	-0.00034
	(A * !C * !X)	0.00105	0.00104	0.00102
	(!A * C * !X)	-0.00072	-0.00078	-0.00078
	(!A * C * !X)	0.00105	0.00103	0.00101
	(!A * !C * !X)	-0.00041	-0.00041	-0.00041
	(!A * !C * !X)	0.00107	0.00107	0.00103
sky130_fd_sc_hs__and3_4	(A * !C * !X)	-0.00079	-0.00079	-0.00081
	(A * !C * !X)	0.00207	0.00207	0.00203
	(!A * C * !X)	-0.00159	-0.00172	-0.00171
	(!A * C * !X)	0.00209	0.00203	0.00201
	(!A * !C * !X)	-0.00098	-0.00098	-0.00097
	(!A * !C * !X)	0.00210	0.00211	0.00204

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	0.00081	0.00081	0.00081
	(A * !B * !X)	-0.00106	-0.00106	-0.00106
	(!A * B * !X)	0.00079	0.00080	0.00079
	(!A * B * !X)	-0.00106	-0.00106	-0.00106
	(!A * !B * !X)	0.00081	0.00081	0.00081
	(!A * !B * !X)	-0.00106	-0.00107	-0.00106
sky130_fd_sc_hs__and3_2	(A * !B * !X)	0.00079	0.00080	0.00079
	(A * !B * !X)	-0.00107	-0.00107	-0.00107
	(!A * B * !X)	0.00078	0.00079	0.00078
	(!A * B * !X)	-0.00106	-0.00107	-0.00107
	(!A * !B * !X)	0.00079	0.00079	0.00079
	(!A * !B * !X)	-0.00107	-0.00107	-0.00107
sky130_fd_sc_hs__and3_4	(A * !B * !X)	0.00167	0.00170	0.00168
	(A * !B * !X)	-0.00210	-0.00212	-0.00211
	(!A * B * !X)	0.00165	0.00167	0.00165
	(!A * B * !X)	-0.00212	-0.00212	-0.00211
	(!A * !B * !X)	0.00168	0.00170	0.00168
	(!A * !B * !X)	-0.00211	-0.00213	-0.00211

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	-0.00078	-0.00081	-0.00081
	(A * !B * !X)	0.00106	0.00107	0.00106
	(!A * B * !X)	-0.00074	-0.00080	-0.00079
	(!A * B * !X)	0.00106	0.00107	0.00106
	(!A * !B * !X)	-0.00078	-0.00081	-0.00081
	(!A * !B * !X)	0.00106	0.00107	0.00106
sky130_fd_sc_hs__and3_2	(A * !B * !X)	-0.00076	-0.00080	-0.00079
	(A * !B * !X)	0.00107	0.00109	0.00107
	(!A * B * !X)	-0.00074	-0.00079	-0.00078
	(!A * B * !X)	0.00107	0.00107	0.00107
	(!A * !B * !X)	-0.00076	-0.00079	-0.00079
	(!A * !B * !X)	0.00107	0.00108	0.00107
sky130_fd_sc_hs__and3_4	(A * !B * !X)	-0.00163	-0.00169	-0.00168
	(A * !B * !X)	0.00213	0.00214	0.00212
	(!A * B * !X)	-0.00156	-0.00167	-0.00165
	(!A * B * !X)	0.00212	0.00213	0.00212
	(!A * !B * !X)	-0.00163	-0.00170	-0.00168
	(!A * !B * !X)	0.00212	0.00214	0.00212

SKY130_FD_SC_HS__AND4BBx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT				OUTPUT
A_N	B_N	C	D	X
0	x	0	x	0
0	x	1	0	0
0	0	1	1	1
x	1	1	1	0
1	x	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__and4bb_1	15.98400
sky130_fd_sc_hs__and4bb_2	17.58240
sky130_fd_sc_hs__and4bb_4	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A_N	B_N	C	D	X
sky130_fd_sc_hs__and4bb_1	0.00223	0.00226	0.00238	0.00232	0.70926
sky130_fd_sc_hs__and4bb_2	0.00226	0.00215	0.00260	0.00265	1.47211
sky130_fd_sc_hs__and4bb_4	0.00243	0.00259	0.00482	0.00466	2.87754

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4bb_1	0.00000	0.17703	0.48859
sky130_fd_sc_hs__and4bb_2	0.00000	0.18507	0.28929
sky130_fd_sc_hs__and4bb_4	0.00000	0.19217	0.51197

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)	0.23057	1.06553	8.56988
	B_N->X (FR)	0.24055	1.07484	8.56994
	C->X (RR)	0.17219	0.87811	7.34224
	D->X (RR)	0.17661	0.86823	7.32880
sky130_fd_sc_hs__and4bb_2	A_N->X (FR)	0.22722	0.93863	8.48025
	B_N->X (FR)	0.24958	0.96877	8.55642
	C->X (RR)	0.17634	0.77227	7.36378
	D->X (RR)	0.18273	0.75935	7.32938
sky130_fd_sc_hs__and4bb_4	A_N->X (FR)	0.27836	0.96742	9.00475
	B_N->X (FR)	0.30964	1.00481	9.08568
	C->X (RR)	0.21430	0.73528	7.53308
	D->X (RR)	0.21958	0.71640	7.47328

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)	0.15695	0.47757	2.37492
	B_N->X (RF)	0.16487	0.48791	2.38276
	C->X (FF)	0.14455	0.69163	4.34560
	D->X (FF)	0.15489	0.71302	4.42583
sky130_fd_sc_hs__and4bb_2	A_N->X (RF)	0.16379	0.46620	2.55140
	B_N->X (RF)	0.18145	0.49471	2.62810
	C->X (FF)	0.15646	0.71474	4.83481
	D->X (FF)	0.16817	0.73423	4.92029
sky130_fd_sc_hs__and4bb_4	A_N->X (RF)	0.17266	0.45963	2.54257
	B_N->X (RF)	0.18009	0.47427	2.58729
	C->X (FF)	0.14463	0.66316	4.72963
	D->X (FF)	0.15537	0.68419	4.81497

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	0.00562	0.00592	0.01016
	A_N	0.00766	0.00796	0.01219
	B_N	0.00608	0.00646	0.01085
	B_N	0.00839	0.00877	0.01317
	C	0.00678	0.00684	0.00949
	C	0.00434	0.00439	0.00708
	D	0.00732	0.00739	0.00988
	D	0.00442	0.00450	0.00701
sky130_fd_sc_hs__and4bb_2	A_N	0.00754	0.00793	0.01236
	A_N	0.00949	0.00988	0.01435
	B_N	0.00856	0.00886	0.01293
	B_N	0.01057	0.01089	0.01500
	C	0.00915	0.00918	0.01082
	C	0.00631	0.00634	0.00805
	D	0.00990	0.00988	0.01100
	D	0.00643	0.00641	0.00762
sky130_fd_sc_hs__and4bb_4	A_N	0.01511	0.01586	0.02008
	A_N	0.01683	0.01755	0.02206
	B_N	0.01656	0.01729	0.02128
	B_N	0.01861	0.01934	0.02335
	C	0.01790	0.01816	0.02158
	C	0.01261	0.01288	0.01631
	D	0.01902	0.01931	0.02218
	D	0.01266	0.01294	0.01592

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4bb_1	A_N	0.00740	0.00714	0.01056
	A_N	0.00537	0.00507	0.00847
	B_N	0.00760	0.00757	0.01138
	B_N	0.00528	0.00520	0.00904
	C	0.00318	0.00339	0.00780
	C	0.00561	0.00581	0.01008
	D	0.00346	0.00372	0.00795
	D	0.00627	0.00653	0.01074
sky130_fd_sc_hs__and4bb_2	A_N	0.00866	0.00883	0.01248
	A_N	0.00672	0.00683	0.01053
	B_N	0.00908	0.00919	0.01267
	B_N	0.00706	0.00718	0.01054
	C	0.00447	0.00481	0.00898
	C	0.00728	0.00761	0.01106
	D	0.00476	0.00505	0.00869
	D	0.00814	0.00841	0.01162
sky130_fd_sc_hs__and4bb_4	A_N	0.01448	0.01517	0.01893
	A_N	0.01276	0.01339	0.01702
	B_N	0.01559	0.01623	0.02009
	B_N	0.01353	0.01416	0.01770
	C	0.00853	0.00936	0.01588
	C	0.01377	0.01445	0.02111
	D	0.00931	0.01000	0.01643
	D	0.01547	0.01615	0.02256

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)	0.00356	0.00341	0.00728
	(B_N * !X)	0.00125	0.00109	0.00496
	(!B_N * C * !D * !X)	0.00372	0.00357	0.00744
	(!B_N * C * !D * !X)	0.00140	0.00124	0.00512
	(!B_N * !C * !X)	0.00372	0.00357	0.00744
	(!B_N * !C * !X)	0.00140	0.00124	0.00512
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00362	0.00347	0.00737
	(B_N * !X)	0.00128	0.00111	0.00502
	(!B_N * C * !D * !X)	0.00377	0.00362	0.00752
	(!B_N * C * !D * !X)	0.00142	0.00126	0.00517
	(!B_N * !C * !X)	0.00377	0.00362	0.00752
	(!B_N * !C * !X)	0.00143	0.00126	0.00517
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.00501	0.00486	0.00835
	(B_N * !X)	0.00259	0.00243	0.00593
	(!B_N * C * !D * !X)	0.00532	0.00517	0.00865
	(!B_N * C * !D * !X)	0.00288	0.00272	0.00622
	(!B_N * !C * !X)	0.00532	0.00516	0.00865
	(!B_N * !C * !X)	0.00288	0.00273	0.00622

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)	0.00033	0.00053	0.00484
	(B_N * !X)	0.00264	0.00285	0.00715
	(!B_N * C * !D * !X)	0.00020	0.00039	0.00469
	(!B_N * C * !D * !X)	0.00258	0.00278	0.00706
	(!B_N * !C * !X)	0.00018	0.00038	0.00468
	(!B_N * !C * !X)	0.00251	0.00272	0.00701
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00025	0.00045	0.00478
	(B_N * !X)	0.00260	0.00278	0.00713
	(!B_N * C * !D * !X)	0.00013	0.00032	0.00464
	(!B_N * C * !D * !X)	0.00256	0.00275	0.00705
	(!B_N * !C * !X)	0.00011	0.00030	0.00463
	(!B_N * !C * !X)	0.00249	0.00268	0.00700
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.00094	0.00097	0.00480
	(B_N * !X)	0.00335	0.00339	0.00722
	(!B_N * C * !D * !X)	0.00068	0.00071	0.00452
	(!B_N * C * !D * !X)	0.00325	0.00328	0.00705
	(!B_N * !C * !X)	0.00064	0.00068	0.00450
	(!B_N * !C * !X)	0.00310	0.00314	0.00695

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)	0.00358	0.00339	0.00712
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00100	0.00079	0.00454
	(!C * !X)	0.00365	0.00348	0.00729
	(!C * !X)	0.00101	0.00084	0.00464
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00361	0.00341	0.00705
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00120	0.00098	0.00463
	(!C * !X)	0.00369	0.00353	0.00725
	(!C * !X)	0.00120	0.00103	0.00476
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00499	0.00467	0.00792
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00224	0.00192	0.00516
	(!C * !X)	0.00511	0.00492	0.00825
	(!C * !X)	0.00224	0.00203	0.00537

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)	0.00073	0.00091	0.00524
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00332	0.00350	0.00782
	(!C * !X)	0.00040	0.00058	0.00493
	(!C * !X)	0.00304	0.00322	0.00756
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00105	0.00123	0.00551
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00346	0.00364	0.00792
	(!C * !X)	0.00066	0.00084	0.00513
	(!C * !X)	0.00313	0.00332	0.00761
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00212	0.00223	0.00592
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00487	0.00499	0.00868
	(!C * !X)	0.00141	0.00152	0.00524
	(!C * !X)	0.00426	0.00437	0.00809

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)**	0.00103	0.00104	0.00103
	(A_N * B_N * D * !X)	-0.00100	-0.00101	-0.00100
	(A_N * B_N * !D * !X)	0.00074	0.00074	0.00074
	(A_N * B_N * !D * !X)	-0.00100	-0.00100	-0.00100
	(A_N * !B_N * D * !X)	0.00079	0.00080	0.00079
	(A_N * !B_N * D * !X)	-0.00125	-0.00126	-0.00124
	(A_N * !B_N * !D * !X)	0.00048	0.00048	0.00047
	(A_N * !B_N * !D * !X)	-0.00134	-0.00134	-0.00133
	(!A_N * B_N * D * !X)	0.00104	0.00104	0.00103
	(!A_N * B_N * D * !X)	-0.00100	-0.00101	-0.00100
	(!A_N * B_N * !D * !X)	0.00072	0.00072	0.00072
	(!A_N * B_N * !D * !X)	-0.00101	-0.00100	-0.00100
	(!A_N * !B_N * !D * !X)	0.00039	0.00040	0.00040
	(!A_N * !B_N * !D * !X)	-0.00124	-0.00125	-0.00125
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	0.00110	0.00111	0.00110
	(A_N * B_N * D * !X)	-0.00118	-0.00119	-0.00118
	(A_N * B_N * !D * !X)	0.00075	0.00075	0.00075
	(A_N * B_N * !D * !X)	-0.00118	-0.00118	-0.00118
	(A_N * !B_N * D * !X)	0.00090	0.00091	0.00090
	(A_N * !B_N * D * !X)	-0.00139	-0.00139	-0.00137
	(A_N * !B_N * !D * !X)	0.00053	0.00053	0.00052
	(A_N * !B_N * !D * !X)	-0.00149	-0.00149	-0.00148
	(!A_N * B_N * D * !X)	0.00110	0.00111	0.00110
	(!A_N * B_N * D * !X)	-0.00118	-0.00119	-0.00118
	(!A_N * B_N * !D * !X)	0.00073	0.00073	0.00072
	(!A_N * B_N * !D * !X)	-0.00119	-0.00118	-0.00118
	(!A_N * !B_N * !D * !X)	0.00044	0.00044	0.00044
	(!A_N * !B_N * !D * !X)	-0.00137	-0.00138	-0.00138

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * D * !X)**	0.00184	0.00185	0.00184
	(A_N * B_N * D * !X)	-0.00245	-0.00245	-0.00245
	(A_N * B_N * !D * !X)	0.00120	0.00120	0.00120
	(A_N * B_N * !D * !X)	-0.00246	-0.00246	-0.00246
	(A_N * !B_N * D * !X)	0.00173	0.00174	0.00173
	(A_N * !B_N * D * !X)	-0.00259	-0.00260	-0.00256
	(A_N * !B_N * !D * !X)	0.00103	0.00105	0.00104
	(A_N * !B_N * !D * !X)	-0.00275	-0.00278	-0.00277
	(!A_N * B_N * D * !X)	0.00184	0.00186	0.00184
	(!A_N * B_N * D * !X)	-0.00245	-0.00246	-0.00245
	(!A_N * B_N * !D * !X)	0.00115	0.00116	0.00116
	(!A_N * B_N * !D * !X)	-0.00245	-0.00247	-0.00246
	(!A_N * !B_N * !D * !X)	0.00089	0.00090	0.00089
	(!A_N * !B_N * !D * !X)	-0.00257	-0.00259	-0.00258

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)**	-0.00102	-0.00104	-0.00103
	(A_N * B_N * D * !X)	0.00101	0.00102	0.00101
	(A_N * B_N * !D * !X)	-0.00074	-0.00074	-0.00074
	(A_N * B_N * !D * !X)	0.00101	0.00101	0.00101
	(A_N * !B_N * D * !X)	-0.00074	-0.00080	-0.00079
	(A_N * !B_N * D * !X)	0.00130	0.00127	0.00124
	(A_N * !B_N * !D * !X)	-0.00048	-0.00048	-0.00047
	(A_N * !B_N * !D * !X)	0.00137	0.00138	0.00137
	(!A_N * B_N * D * !X)	-0.00102	-0.00104	-0.00103
	(!A_N * B_N * D * !X)	0.00102	0.00102	0.00101
	(!A_N * B_N * !D * !X)	-0.00072	-0.00072	-0.00072
	(!A_N * B_N * !D * !X)	0.00103	0.00103	0.00101
	(!A_N * !B_N * !D * !X)	-0.00039	-0.00038	-0.00038
	(!A_N * !B_N * !D * !X)	0.00128	0.00127	0.00126
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	-0.00107	-0.00110	-0.00110
	(A_N * B_N * D * !X)	0.00118	0.00120	0.00119
	(A_N * B_N * !D * !X)	-0.00075	-0.00075	-0.00075
	(A_N * B_N * !D * !X)	0.00118	0.00119	0.00119
	(A_N * !B_N * D * !X)	-0.00085	-0.00091	-0.00090
	(A_N * !B_N * D * !X)	0.00144	0.00140	0.00137
	(A_N * !B_N * !D * !X)	-0.00053	-0.00053	-0.00052
	(A_N * !B_N * !D * !X)	0.00150	0.00153	0.00153
	(!A_N * B_N * D * !X)	-0.00107	-0.00110	-0.00110
	(!A_N * B_N * D * !X)	0.00120	0.00120	0.00119
	(!A_N * B_N * !D * !X)	-0.00073	-0.00073	-0.00072
	(!A_N * B_N * !D * !X)	0.00121	0.00121	0.00119
	(!A_N * !B_N * !D * !X)	-0.00041	-0.00042	-0.00042
	(!A_N * !B_N * !D * !X)	0.00140	0.00141	0.00140

sky130_fd_sc_hs__and4bb_4	(A_N * B_N * D * !X)	-0.00180	-0.00185	-0.00184
	(A_N * B_N * D * !X)	0.00245	0.00248	0.00246
	(A_N * B_N * !D * !X)	-0.00120	-0.00120	-0.00120
	(A_N * B_N * !D * !X)	0.00247	0.00248	0.00247
	(A_N * !B_N * D * !X)	-0.00162	-0.00174	-0.00173
	(A_N * !B_N * D * !X)	0.00270	0.00261	0.00256
	(A_N * !B_N * !D * !X)	-0.00103	-0.00105	-0.00104
	(A_N * !B_N * !D * !X)	0.00280	0.00286	0.00285
	(!A_N * B_N * D * !X)	-0.00179	-0.00186	-0.00184
	(!A_N * B_N * D * !X)	0.00247	0.00248	0.00246
	(!A_N * B_N * !D * !X)	-0.00115	-0.00116	-0.00116
	(!A_N * B_N * !D * !X)	0.00251	0.00251	0.00248
	(!A_N * !B_N * !D * !X)	-0.00084	-0.00084	-0.00084
	(!A_N * !B_N * !D * !X)	0.00262	0.00263	0.00262

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)	0.00093	0.00094	0.00093
	(A_N * B_N * C * !X)	-0.00098	-0.00098	-0.00098
	(A_N * !C * !X)	0.00094	0.00095	0.00094
	(A_N * !C * !X)	-0.00098	-0.00098	-0.00098
	(A_N * !B_N * C * !X)	0.00081	0.00081	0.00080
	(A_N * !B_N * C * !X)	-0.00112	-0.00112	-0.00112
	(!A_N * B_N * C * !X)	0.00094	0.00094	0.00093
	(!A_N * B_N * C * !X)	-0.00098	-0.00098	-0.00098
	(!A_N * B_N * !C * !X)	0.00094	0.00095	0.00093
	(!A_N * B_N * !C * !X)	-0.00098	-0.00098	-0.00098
	(!A_N * !B_N * !C * !X)	0.00082	0.00083	0.00082
	(!A_N * !B_N * !C * !X)	-0.00110	-0.00110	-0.00109

sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	0.00097	0.00097	0.00097
	(A_N * B_N * C * !X)	-0.00125	-0.00125	-0.00125
	(A_N * !C * !X)	0.00098	0.00099	0.00098
	(A_N * !C * !X)	-0.00125	-0.00126	-0.00125
	(A_N * !B_N * C * !X)	0.00091	0.00092	0.00091
	(A_N * !B_N * C * !X)	-0.00133	-0.00133	-0.00133
	(!A_N * B_N * C * !X)	0.00097	0.00098	0.00097
	(!A_N * B_N * C * !X)	-0.00125	-0.00126	-0.00125
	(!A_N * B_N * !C * !X)	0.00098	0.00098	0.00098
	(!A_N * B_N * !C * !X)	-0.00125	-0.00125	-0.00125
	(!A_N * !B_N * !C * !X)	0.00093	0.00095	0.00094
	(!A_N * !B_N * !C * !X)	-0.00129	-0.00131	-0.00130
sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	0.00164	0.00164	0.00163
	(A_N * B_N * C * !X)	-0.00243	-0.00243	-0.00242
	(A_N * !C * !X)	0.00166	0.00167	0.00165
	(A_N * !C * !X)	-0.00243	-0.00243	-0.00242
	(A_N * !B_N * C * !X)	0.00160	0.00162	0.00161
	(A_N * !B_N * C * !X)	-0.00248	-0.00250	-0.00247
	(!A_N * B_N * C * !X)	0.00164	0.00165	0.00163
	(!A_N * B_N * C * !X)	-0.00243	-0.00243	-0.00242
	(!A_N * B_N * !C * !X)	0.00166	0.00167	0.00165
	(!A_N * B_N * !C * !X)	-0.00243	-0.00244	-0.00242
	(!A_N * !B_N * !C * !X)	0.00165	0.00167	0.00165
	(!A_N * !B_N * !C * !X)	-0.00243	-0.00244	-0.00242

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)**	-0.00089	-0.00093	-0.00093
	(A_N * B_N * C * !X)	0.00099	0.00099	0.00098
	(A_N * !C * !X)	-0.00091	-0.00094	-0.00094
	(A_N * !C * !X)	0.00098	0.00099	0.00098
	(A_N * !B_N * C * !X)	-0.00075	-0.00081	-0.00080
	(A_N * !B_N * C * !X)	0.00115	0.00112	0.00112
	(!A_N * B_N * C * !X)	-0.00089	-0.00094	-0.00093
	(!A_N * B_N * C * !X)	0.00099	0.00099	0.00098
	(!A_N * B_N * !C * !X)	-0.00091	-0.00094	-0.00093
	(!A_N * B_N * !C * !X)	0.00098	0.00099	0.00098
	(!A_N * !B_N * !C * !X)	-0.00079	-0.00082	-0.00082
	(!A_N * !B_N * !C * !X)	0.00110	0.00111	0.00110
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	-0.00092	-0.00097	-0.00097
	(A_N * B_N * C * !X)	0.00126	0.00127	0.00126
	(A_N * !C * !X)	-0.00095	-0.00098	-0.00098
	(A_N * !C * !X)	0.00127	0.00127	0.00126
	(A_N * !B_N * C * !X)	-0.00086	-0.00092	-0.00091
	(A_N * !B_N * C * !X)	0.00137	0.00133	0.00133
	(!A_N * B_N * C * !X)	-0.00092	-0.00098	-0.00097
	(!A_N * B_N * C * !X)	0.00126	0.00127	0.00126
	(!A_N * B_N * !C * !X)	-0.00095	-0.00098	-0.00098
	(!A_N * B_N * !C * !X)	0.00126	0.00127	0.00126
	(!A_N * !B_N * !C * !X)	-0.00091	-0.00094	-0.00094
	(!A_N * !B_N * !C * !X)	0.00131	0.00132	0.00130

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	-0.00155	-0.00164	-0.00163
	(A_N * B_N * C * !X)	0.00243	0.00245	0.00243
	(A_N * !C * !X)	-0.00159	-0.00167	-0.00165
	(A_N * !C * !X)	0.00243	0.00245	0.00243
	(A_N * !B_N * C * !X)	-0.00151	-0.00162	-0.00161
	(A_N * !B_N * C * !X)	0.00253	0.00250	0.00247
	(!A_N * B_N * C * !X)	-0.00155	-0.00165	-0.00163
	(!A_N * B_N * C * !X)	0.00243	0.00245	0.00243
	(!A_N * B_N * !C * !X)	-0.00159	-0.00167	-0.00165
	(!A_N * B_N * !C * !X)	0.00243	0.00245	0.00243
	(!A_N * !B_N * !C * !X)	-0.00158	-0.00166	-0.00165
	(!A_N * !B_N * !C * !X)	0.00244	0.00245	0.00243

SKY130_FD_SC_HS__AND4Bx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT				OUTPUT
A_N	B	C	D	X
x	0	x	x	0
x	1	0	x	0
x	1	1	0	0
0	1	1	1	1
1	1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__and4b_1	14.38560
sky130_fd_sc_hs__and4b_2	14.38560
sky130_fd_sc_hs__and4b_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A_N	B	C	D	X
sky130_fd_sc_hs__and4b_1	0.00237	0.00249	0.00239	0.00231	0.75757
sky130_fd_sc_hs__and4b_2	0.00219	0.00265	0.00264	0.00272	1.36767
sky130_fd_sc_hs__and4b_4	0.00239	0.00489	0.00527	0.00487	2.58678

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__and4b_1	0.00000	0.11587	0.48613
sky130_fd_sc_hs__and4b_2	0.00000	0.12391	0.25281
sky130_fd_sc_hs__and4b_4	0.00000	0.15912	0.50634

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)	0.21451	1.02922	8.51753
	B->X (RR)	0.15671	0.86211	7.35558
	C->X (RR)	0.16383	0.85832	7.36014
	D->X (RR)	0.17045	0.85197	7.32961
sky130_fd_sc_hs__and4b_2	A_N->X (FR)	0.23842	0.96731	8.52391
	B->X (RR)	0.16253	0.78065	7.31063
	C->X (RR)	0.17139	0.77383	7.30652
	D->X (RR)	0.17692	0.76017	7.26561
sky130_fd_sc_hs__and4b_4	A_N->X (FR)	0.29027	0.99050	9.01309
	B->X (RR)	0.18536	0.73530	7.42526
	C->X (RR)	0.20340	0.73349	7.41466
	D->X (RR)	0.20527	0.71803	7.39389

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)	0.14717	0.47119	2.47006
	B->X (FF)	0.13096	0.67204	4.39170
	C->X (FF)	0.14222	0.69462	4.47615
	D->X (FF)	0.15472	0.71947	4.56620
sky130_fd_sc_hs__and4b_2	A_N->X (RF)	0.17289	0.47351	2.35747
	B->X (FF)	0.14980	0.68725	4.49117
	C->X (FF)	0.16380	0.71051	4.58656
	D->X (FF)	0.17369	0.72725	4.65944
sky130_fd_sc_hs__and4b_4	A_N->X (RF)	0.18970	0.48335	2.37867
	B->X (FF)	0.14470	0.64827	4.41796
	C->X (FF)	0.15979	0.67322	4.51526
	D->X (FF)	0.18366	0.70705	4.63299

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	0.00538	0.00556	0.01004
	A_N	0.00732	0.00751	0.01201
	B	0.00633	0.00620	0.00898
	B	0.00346	0.00332	0.00616
	C	0.00694	0.00681	0.00938
	C	0.00359	0.00345	0.00605
	D	0.00741	0.00721	0.00898
	D	0.00358	0.00350	0.00521
sky130_fd_sc_hs__and4b_2	A_N	0.00751	0.00792	0.01208
	A_N	0.00934	0.00975	0.01390
	B	0.00827	0.00838	0.01031
	B	0.00522	0.00533	0.00735
	C	0.00890	0.00899	0.01072
	C	0.00533	0.00542	0.00725
	D	0.00966	0.00972	0.01073
	D	0.00533	0.00540	0.00652
sky130_fd_sc_hs__and4b_4	A_N	0.01512	0.01584	0.02001
	A_N	0.01718	0.01788	0.02218
	B	0.01642	0.01675	0.02086
	B	0.01083	0.01116	0.01536
	C	0.01814	0.01846	0.02152
	C	0.01114	0.01147	0.01462
	D	0.01894	0.01930	0.02251
	D	0.01118	0.01153	0.01485

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4b_1	A_N	0.00684	0.00665	0.01058
	A_N	0.00491	0.00472	0.00857
	B	0.00252	0.00265	0.00700
	B	0.00539	0.00550	0.00963
	C	0.00266	0.00283	0.00723
	C	0.00595	0.00611	0.01021
	D	0.00314	0.00324	0.00744
	D	0.00683	0.00693	0.01080
sky130_fd_sc_hs__and4b_2	A_N	0.00905	0.00913	0.01243
	A_N	0.00723	0.00729	0.01054
	B	0.00415	0.00445	0.00867
	B	0.00720	0.00748	0.01099
	C	0.00452	0.00486	0.00852
	C	0.00800	0.00833	0.01178
	D	0.00473	0.00493	0.00819
	D	0.00888	0.00907	0.01218
sky130_fd_sc_hs__and4b_4	A_N	0.01554	0.01612	0.01936
	A_N	0.01347	0.01401	0.01720
	B	0.00775	0.00845	0.01534
	B	0.01333	0.01401	0.02088
	C	0.00842	0.00898	0.01628
	C	0.01523	0.01576	0.02223
	D	0.00940	0.01019	0.01727
	D	0.01683	0.01760	0.02408

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)	0.00366	0.00349	0.00742
	(B * C * !D * !X)	0.00104	0.00085	0.00480
	(B * !C * !X)	0.00366	0.00349	0.00742
	(B * !C * !X)	0.00104	0.00085	0.00480
	(!B * !X)	0.00365	0.00348	0.00741
	(!B * !X)	0.00104	0.00086	0.00480
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00405	0.00389	0.00766
	(B * C * !D * !X)	0.00156	0.00139	0.00517
	(B * !C * !X)	0.00405	0.00389	0.00766
	(B * !C * !X)	0.00156	0.00139	0.00517
	(!B * !X)	0.00404	0.00387	0.00765
	(!B * !X)	0.00156	0.00139	0.00517
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.00625	0.00608	0.00942
	(B * C * !D * !X)	0.00324	0.00306	0.00642
	(B * !C * !X)	0.00624	0.00607	0.00941
	(B * !C * !X)	0.00324	0.00306	0.00642
	(!B * !X)	0.00619	0.00603	0.00937
	(!B * !X)	0.00324	0.00306	0.00642

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)	0.00015	0.00033	0.00468
	(B * C * !D * !X)	0.00285	0.00304	0.00736
	(B * !C * !X)	0.00013	0.00031	0.00467
	(B * !C * !X)	0.00280	0.00298	0.00733
	(!B * !X)	0.00013	0.00031	0.00468
	(!B * !X)	0.00274	0.00292	0.00729
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00022	0.00040	0.00465
	(B * C * !D * !X)	0.00280	0.00299	0.00721
	(B * !C * !X)	0.00021	0.00039	0.00464
	(B * !C * !X)	0.00275	0.00294	0.00718
	(!B * !X)	0.00020	0.00038	0.00465
	(!B * !X)	0.00268	0.00287	0.00713
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.00050	0.00063	0.00422
	(B * C * !D * !X)	0.00369	0.00381	0.00735
	(B * !C * !X)	0.00048	0.00061	0.00422
	(B * !C * !X)	0.00360	0.00372	0.00730
	(!B * !X)	0.00047	0.00061	0.00424
	(!B * !X)	0.00345	0.00357	0.00720

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)**	0.00095	0.00096	0.00096
	(A_N * C * D * !X)	-0.00114	-0.00115	-0.00114
	(A_N * C * !D * !X)	0.00063	0.00064	0.00063
	(A_N * C * !D * !X)	-0.00114	-0.00115	-0.00115
	(A_N * !C * !X)	0.00061	0.00061	0.00061
	(A_N * !C * !X)	-0.00115	-0.00115	-0.00114
	(!A_N * C * !D * !X)	0.00039	0.00040	0.00040
	(!A_N * C * !D * !X)	-0.00128	-0.00128	-0.00129
	(!A_N * !C * !X)	0.00039	0.00040	0.00040
	(!A_N * !C * !X)	-0.00130	-0.00130	-0.00130
sky130_fd_sc_hs__and4b_2	**(A_N * C * D * !X)**	0.00109	0.00110	0.00109
	(A_N * C * D * !X)	-0.00119	-0.00119	-0.00119
	(A_N * C * !D * !X)	0.00070	0.00071	0.00070
	(A_N * C * !D * !X)	-0.00119	-0.00120	-0.00119
	(A_N * !C * !X)	0.00071	0.00071	0.00071
	(A_N * !C * !X)	-0.00120	-0.00120	-0.00119
	(!A_N * C * !D * !X)	0.00042	0.00042	0.00043
	(!A_N * C * !D * !X)	-0.00135	-0.00136	-0.00137
	(!A_N * !C * !X)	0.00045	0.00045	0.00045
	(!A_N * !C * !X)	-0.00138	-0.00138	-0.00138
sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	0.00223	0.00225	0.00224
	(A_N * C * D * !X)	-0.00225	-0.00226	-0.00225
	(A_N * C * !D * !X)	0.00156	0.00158	0.00157
	(A_N * C * !D * !X)	-0.00225	-0.00227	-0.00226
	(A_N * !C * !X)	0.00160	0.00160	0.00160
	(A_N * !C * !X)	-0.00227	-0.00226	-0.00226
	(!A_N * C * !D * !X)	0.00096	0.00096	0.00096
	(!A_N * C * !D * !X)	-0.00264	-0.00265	-0.00269
	(!A_N * !C * !X)	0.00100	0.00101	0.00100
	(!A_N * !C * !X)	-0.00268	-0.00269	-0.00270

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)	-0.00090	-0.00096	-0.00096
	(A_N * C * D * !X)	0.00120	0.00116	0.00115
	(A_N * C * !D * !X)	-0.00063	-0.00064	-0.00063
	(A_N * C * !D * !X)	0.00118	0.00116	0.00115
	(A_N * !C * !X)	-0.00061	-0.00061	-0.00061
	(A_N * !C * !X)	0.00120	0.00120	0.00116
	(!A_N * C * !D * !X)	-0.00038	-0.00037	-0.00038
	(!A_N * C * !D * !X)	0.00134	0.00133	0.00131
	(!A_N * !C * !X)	-0.00037	-0.00038	-0.00038
	(!A_N * !C * !X)	0.00132	0.00133	0.00131
sky130_fd_sc_hs__and4b_2	(A_N * C * D * !X)	-0.00103	-0.00110	-0.00109
	(A_N * C * D * !X)	0.00124	0.00121	0.00119
	(A_N * C * !D * !X)	-0.00070	-0.00071	-0.00070
	(A_N * C * !D * !X)	0.00122	0.00121	0.00120
	(A_N * !C * !X)	-0.00071	-0.00071	-0.00071
	(A_N * !C * !X)	0.00125	0.00125	0.00121
	(!A_N * C * !D * !X)	-0.00041	-0.00041	-0.00042
	(!A_N * C * !D * !X)	0.00140	0.00141	0.00139
	(!A_N * !C * !X)	-0.00041	-0.00042	-0.00043
	(!A_N * !C * !X)	0.00140	0.00141	0.00139

sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	-0.00213	-0.00224	-0.00224
	(A_N * C * D * !X)	0.00235	0.00227	0.00226
	(A_N * C * !D * !X)	-0.00156	-0.00158	-0.00157
	(A_N * C * !D * !X)	0.00232	0.00232	0.00227
	(A_N * !C * !X)	-0.00160	-0.00160	-0.00160
	(A_N * !C * !X)	0.00236	0.00238	0.00228
	(!A_N * C * !D * !X)	-0.00093	-0.00092	-0.00094
	(!A_N * C * !D * !X)	0.00276	0.00276	0.00273
	(!A_N * !C * !X)	-0.00095	-0.00095	-0.00096
	(!A_N * !C * !X)	0.00276	0.00276	0.00273

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)**	0.00096	0.00097	0.00096
	(A_N * B * D * !X)	-0.00102	-0.00103	-0.00102
	(A_N * B * !D * !X)	0.00065	0.00066	0.00065
	(A_N * B * !D * !X)	-0.00103	-0.00104	-0.00103
	(A_N * !B * D * !X)	0.00097	0.00097	0.00096
	(A_N * !B * D * !X)	-0.00102	-0.00103	-0.00102
	(A_N * !B * !D * !X)	0.00065	0.00065	0.00065
	(A_N * !B * !D * !X)	-0.00103	-0.00103	-0.00103
	(!A_N * B * !D * !X)	0.00057	0.00057	0.00057
	(!A_N * B * !D * !X)	-0.00103	-0.00103	-0.00102
	(!A_N * !B * D * !X)	0.00096	0.00096	0.00096
	(!A_N * !B * D * !X)	-0.00103	-0.00104	-0.00103
	(!A_N * !B * !D * !X)	0.00063	0.00063	0.00062
	(!A_N * !B * !D * !X)	-0.00104	-0.00104	-0.00104

sky130_fd_sc_hs__and4b_2	**(A_N * B * D * !X)**	0.00092	0.00093	0.00092
	(A_N * B * D * !X)	-0.00117	-0.00118	-0.00117
	(A_N * B * !D * !X)	0.00054	0.00054	0.00054
	(A_N * B * !D * !X)	-0.00118	-0.00118	-0.00118
	(A_N * !B * D * !X)	0.00094	0.00095	0.00094
	(A_N * !B * D * !X)	-0.00118	-0.00118	-0.00118
	(A_N * !B * !D * !X)	0.00054	0.00053	0.00053
	(A_N * !B * !D * !X)	-0.00118	-0.00118	-0.00118
	(!A_N * B * !D * !X)	0.00043	0.00043	0.00043
	(!A_N * B * !D * !X)	-0.00119	-0.00119	-0.00119
	(!A_N * !B * D * !X)	0.00093	0.00094	0.00093
	(!A_N * !B * D * !X)	-0.00119	-0.00120	-0.00119
	(!A_N * !B * !D * !X)	0.00050	0.00050	0.00050
	(!A_N * !B * !D * !X)	-0.00120	-0.00120	-0.00119
sky130_fd_sc_hs__and4b_4	**(A_N * B * D * !X)**	0.00208	0.00209	0.00208
	(A_N * B * D * !X)	-0.00240	-0.00241	-0.00240
	(A_N * B * !D * !X)	0.00143	0.00144	0.00143
	(A_N * B * !D * !X)	-0.00241	-0.00241	-0.00241
	(A_N * !B * D * !X)	0.00209	0.00211	0.00210
	(A_N * !B * D * !X)	-0.00239	-0.00241	-0.00240
	(A_N * !B * !D * !X)	0.00145	0.00145	0.00145
	(A_N * !B * !D * !X)	-0.00241	-0.00241	-0.00241
	(!A_N * B * !D * !X)	0.00122	0.00122	0.00122
	(!A_N * B * !D * !X)	-0.00244	-0.00244	-0.00244
	(!A_N * !B * D * !X)	0.00207	0.00208	0.00207
	(!A_N * !B * D * !X)	-0.00244	-0.00244	-0.00243
	(!A_N * !B * !D * !X)	0.00136	0.00137	0.00136
	(!A_N * !B * !D * !X)	-0.00245	-0.00245	-0.00245

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)	-0.00090	-0.00097	-0.00096
	(A_N * B * D * !X)	0.00103	0.00104	0.00103
	(A_N * B * !D * !X)	-0.00065	-0.00066	-0.00065
	(A_N * B * !D * !X)	0.00103	0.00104	0.00103
	(A_N * !B * D * !X)	-0.00094	-0.00097	-0.00096
	(A_N * !B * D * !X)	0.00103	0.00104	0.00103
	(A_N * !B * !D * !X)	-0.00065	-0.00065	-0.00065
	(A_N * !B * !D * !X)	0.00104	0.00104	0.00103
	(!A_N * B * !D * !X)	-0.00055	-0.00054	-0.00054
	(!A_N * B * !D * !X)	0.00106	0.00106	0.00104
	(!A_N * !B * D * !X)	-0.00093	-0.00096	-0.00096
	(!A_N * !B * D * !X)	0.00105	0.00105	0.00104
	(!A_N * !B * !D * !X)	-0.00063	-0.00063	-0.00062
	(!A_N * !B * !D * !X)	0.00107	0.00107	0.00105
sky130_fd_sc_hs__and4b_2	(A_N * B * D * !X)	-0.00086	-0.00093	-0.00092
	(A_N * B * D * !X)	0.00118	0.00119	0.00118
	(A_N * B * !D * !X)	-0.00054	-0.00054	-0.00054
	(A_N * B * !D * !X)	0.00118	0.00118	0.00118
	(A_N * !B * D * !X)	-0.00090	-0.00095	-0.00094
	(A_N * !B * D * !X)	0.00118	0.00119	0.00118
	(A_N * !B * !D * !X)	-0.00054	-0.00053	-0.00053
	(A_N * !B * !D * !X)	0.00118	0.00119	0.00119
	(!A_N * B * !D * !X)	-0.00041	-0.00042	-0.00042
	(!A_N * B * !D * !X)	0.00120	0.00121	0.00120
	(!A_N * !B * D * !X)	-0.00088	-0.00093	-0.00093
	(!A_N * !B * D * !X)	0.00120	0.00120	0.00119
	(!A_N * !B * !D * !X)	-0.00050	-0.00050	-0.00050
	(!A_N * !B * !D * !X)	0.00122	0.00122	0.00120

sky130_fd_sc_hs__and4b_4	**(A_N * B * D * !X)**	-0.00196	-0.00209	-0.00208
	(A_N * B * D * !X)	0.00242	0.00241	0.00241
	(A_N * B * !D * !X)	-0.00143	-0.00144	-0.00143
	(A_N * B * !D * !X)	0.00242	0.00241	0.00241
	(A_N * !B * D * !X)	-0.00201	-0.00211	-0.00210
	(A_N * !B * D * !X)	0.00240	0.00242	0.00241
	(A_N * !B * !D * !X)	-0.00145	-0.00145	-0.00145
	(A_N * !B * !D * !X)	0.00242	0.00241	0.00242
	(!A_N * B * !D * !X)	-0.00120	-0.00120	-0.00120
	(!A_N * B * !D * !X)	0.00247	0.00247	0.00245
	(!A_N * !B * D * !X)	-0.00197	-0.00208	-0.00207
	(!A_N * !B * D * !X)	0.00245	0.00245	0.00244
	(!A_N * !B * !D * !X)	-0.00136	-0.00137	-0.00136
	(!A_N * !B * !D * !X)	0.00248	0.00247	0.00246

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)**	0.00079	0.00079	0.00079
	(A_N * B * C * !X)	-0.00111	-0.00111	-0.00112
	(A_N * !C * !X)	0.00081	0.00082	0.00081
	(A_N * !C * !X)	-0.00112	-0.00112	-0.00112
	(A_N * !B * C * !X)	0.00079	0.00079	0.00079
	(A_N * !B * C * !X)	-0.00112	-0.00112	-0.00112
	(!A_N * B * !C * !X)	0.00081	0.00082	0.00081
	(!A_N * B * !C * !X)	-0.00112	-0.00112	-0.00112
	(!A_N * !B * C * !X)	0.00079	0.00080	0.00079
	(!A_N * !B * C * !X)	-0.00112	-0.00112	-0.00112
	(!A_N * !B * !C * !X)	0.00081	0.00082	0.00081
	(!A_N * !B * !C * !X)	-0.00112	-0.00112	-0.00112

sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	0.00092	0.00093	0.00093
	(A_N * B * C * !X)	-0.00127	-0.00128	-0.00127
	(A_N * !C * !X)	0.00094	0.00096	0.00095
	(A_N * !C * !X)	-0.00127	-0.00128	-0.00127
	(A_N * !B * C * !X)	0.00092	0.00093	0.00092
	(A_N * !B * C * !X)	-0.00127	-0.00128	-0.00127
	(!A_N * B * !C * !X)	0.00093	0.00094	0.00093
	(!A_N * B * !C * !X)	-0.00129	-0.00129	-0.00129
	(!A_N * !B * C * !X)	0.00091	0.00092	0.00091
	(!A_N * !B * C * !X)	-0.00128	-0.00129	-0.00129
	(!A_N * !B * !C * !X)	0.00093	0.00094	0.00093
	(!A_N * !B * !C * !X)	-0.00129	-0.00130	-0.00129
sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	0.00169	0.00170	0.00168
	(A_N * B * C * !X)	-0.00239	-0.00240	-0.00239
	(A_N * !C * !X)	0.00170	0.00171	0.00169
	(A_N * !C * !X)	-0.00239	-0.00240	-0.00239
	(A_N * !B * C * !X)	0.00169	0.00169	0.00168
	(A_N * !B * C * !X)	-0.00240	-0.00240	-0.00239
	(!A_N * B * !C * !X)	0.00166	0.00168	0.00166
	(!A_N * B * !C * !X)	-0.00242	-0.00243	-0.00242
	(!A_N * !B * C * !X)	0.00166	0.00166	0.00165
	(!A_N * !B * C * !X)	-0.00243	-0.00243	-0.00242
	(!A_N * !B * !C * !X)	0.00167	0.00169	0.00167
	(!A_N * !B * !C * !X)	-0.00242	-0.00244	-0.00242

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)**	-0.00074	-0.00079	-0.00079
	(A_N * B * C * !X)	0.00113	0.00113	0.00112
	(A_N * !C * !X)	-0.00078	-0.00082	-0.00081
	(A_N * !C * !X)	0.00112	0.00113	0.00112
	(A_N * !B * C * !X)	-0.00074	-0.00079	-0.00079
	(A_N * !B * C * !X)	0.00112	0.00113	0.00112
	(!A_N * B * !C * !X)	-0.00078	-0.00082	-0.00081
	(!A_N * B * !C * !X)	0.00112	0.00113	0.00112
	(!A_N * !B * C * !X)	-0.00074	-0.00080	-0.00079
	(!A_N * !B * C * !X)	0.00112	0.00113	0.00112
	(!A_N * !B * !C * !X)	-0.00078	-0.00082	-0.00081
	(!A_N * !B * !C * !X)	0.00112	0.00113	0.00112
sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	-0.00088	-0.00093	-0.00093
	(A_N * B * C * !X)	0.00129	0.00128	0.00128
	(A_N * !C * !X)	-0.00092	-0.00095	-0.00095
	(A_N * !C * !X)	0.00128	0.00130	0.00128
	(A_N * !B * C * !X)	-0.00087	-0.00093	-0.00092
	(A_N * !B * C * !X)	0.00128	0.00128	0.00128
	(!A_N * B * !C * !X)	-0.00090	-0.00094	-0.00093
	(!A_N * B * !C * !X)	0.00130	0.00131	0.00129
	(!A_N * !B * C * !X)	-0.00086	-0.00092	-0.00091
	(!A_N * !B * C * !X)	0.00129	0.00130	0.00129
	(!A_N * !B * !C * !X)	-0.00090	-0.00094	-0.00093
	(!A_N * !B * !C * !X)	0.00129	0.00131	0.00129

sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	-0.00156	-0.00170	-0.00168
	(A_N * B * C * !X)	0.00239	0.00240	0.00240
	(A_N * !C * !X)	-0.00165	-0.00171	-0.00169
	(A_N * !C * !X)	0.00240	0.00242	0.00240
	(A_N * !B * C * !X)	-0.00157	-0.00169	-0.00168
	(A_N * !B * C * !X)	0.00240	0.00241	0.00240
	(!A_N * B * !C * !X)	-0.00161	-0.00167	-0.00166
	(!A_N * B * !C * !X)	0.00243	0.00245	0.00243
	(!A_N * !B * C * !X)	-0.00154	-0.00166	-0.00165
	(!A_N * !B * C * !X)	0.00243	0.00244	0.00243
	(!A_N * !B * !C * !X)	-0.00162	-0.00168	-0.00167
	(!A_N * !B * !C * !X)	0.00243	0.00245	0.00243

SKY130_FD_SC_HS__AND4x

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT				OUTPUT
A	B	C	D	X
0	x	x	x	0
1	0	x	x	0
1	1	0	x	0
1	1	1	0	0
1	1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__and4_1	11.18880
sky130_fd_sc_hs__and4_2	12.78720
sky130_fd_sc_hs__and4_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D	X
sky130_fd_sc_hs__and4_1	0.00251	0.00248	0.00238	0.00240	0.76152
sky130_fd_sc_hs__and4_2	0.00270	0.00277	0.00262	0.00258	1.36486
sky130_fd_sc_hs__and4_4	0.00465	0.00480	0.00528	0.00469	2.88352

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4_1	0.00000	0.05471	0.48368
sky130_fd_sc_hs__and4_2	0.00000	0.06275	0.25036
sky130_fd_sc_hs__and4_4	0.00000	0.12606	0.50072

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)	0.14197	0.83549	7.22396
	B->X (RR)	0.15272	0.85772	7.32915
	C->X (RR)	0.15921	0.85322	7.33251
	D->X (RR)	0.16632	0.84445	7.30231
sky130_fd_sc_hs__and4_2	A->X (RR)	0.15080	0.77515	7.24229
	B->X (RR)	0.16276	0.78926	7.34557
	C->X (RR)	0.17042	0.78126	7.33932
	D->X (RR)	0.17602	0.76688	7.29942
sky130_fd_sc_hs__and4_4	A->X (RR)	0.15932	0.69419	7.33879
	B->X (RR)	0.17451	0.71637	7.45739
	C->X (RR)	0.18954	0.71390	7.44947
	D->X (RR)	0.19090	0.69697	7.42547

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and4_1	A->X (FF)	0.11742	0.63667	4.23591
	B->X (FF)	0.13079	0.66670	4.32239
	C->X (FF)	0.14139	0.68978	4.40523
	D->X (FF)	0.15374	0.71325	4.49350
sky130_fd_sc_hs__and4_2	A->X (FF)	0.12923	0.65381	4.36061
	B->X (FF)	0.14593	0.68197	4.46892
	C->X (FF)	0.15758	0.70382	4.55995
	D->X (FF)	0.17483	0.73053	4.66442
sky130_fd_sc_hs__and4_4	A->X (FF)	0.12783	0.62622	4.58026
	B->X (FF)	0.13437	0.64043	4.64036
	C->X (FF)	0.14797	0.66441	4.73739
	D->X (FF)	0.15451	0.68008	4.80898

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.00593	0.00587	0.00967
	A	0.00302	0.00297	0.00681
	B	0.00641	0.00638	0.00921
	B	0.00304	0.00301	0.00587
	C	0.00698	0.00692	0.00955
	C	0.00305	0.00299	0.00565
	D	0.00762	0.00751	0.00934
	D	0.00305	0.00294	0.00481
sky130_fd_sc_hs__and4_2	A	0.00797	0.00805	0.01077
	A	0.00477	0.00485	0.00767
	B	0.00865	0.00873	0.01066
	B	0.00484	0.00492	0.00694
	C	0.00925	0.00934	0.01104
	C	0.00487	0.00496	0.00679
	D	0.00998	0.01004	0.01102
	D	0.00488	0.00493	0.00602
sky130_fd_sc_hs__and4_4	A	0.01473	0.01504	0.02097
	A	0.00924	0.00957	0.01563
	B	0.01613	0.01647	0.02066
	B	0.00924	0.00958	0.01384
	C	0.01778	0.01809	0.02139
	C	0.00928	0.00960	0.01296
	D	0.01843	0.01883	0.02214
	D	0.00927	0.00968	0.01327

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.00220	0.00239	0.00668
	A	0.00511	0.00525	0.00957
	B	0.00253	0.00269	0.00694
	B	0.00586	0.00601	0.01020
	C	0.00276	0.00295	0.00730
	C	0.00659	0.00676	0.01092
	D	0.00306	0.00318	0.00723
	D	0.00745	0.00756	0.01147
sky130_fd_sc_hs__and4_2	A	0.00366	0.00403	0.00752
	A	0.00687	0.00714	0.01072
	B	0.00402	0.00434	0.00795
	B	0.00777	0.00804	0.01152
	C	0.00442	0.00476	0.00848
	C	0.00868	0.00901	0.01244
	D	0.00472	0.00496	0.00803
	D	0.00960	0.00984	0.01287
sky130_fd_sc_hs__and4_4	A	0.00730	0.00820	0.01572
	A	0.01279	0.01343	0.02067
	B	0.00769	0.00836	0.01532
	B	0.01449	0.01514	0.02208
	C	0.00828	0.00905	0.01562
	C	0.01653	0.01710	0.02374
	D	0.00928	0.01002	0.01756
	D	0.01805	0.01876	0.02545

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)	0.00036	0.00036	0.00032
	(B * C * !D * !X)	-0.00121	-0.00122	-0.00129
	(B * !C * !X)	0.00034	0.00034	0.00032
	(B * !C * !X)	-0.00125	-0.00126	-0.00130
	(!B * !X)	0.00033	0.00034	0.00032
	(!B * !X)	-0.00128	-0.00129	-0.00130
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	0.00044	0.00044	0.00039
	(B * C * !D * !X)	-0.00136	-0.00137	-0.00146
	(B * !C * !X)	0.00042	0.00042	0.00039
	(B * !C * !X)	-0.00141	-0.00142	-0.00147
	(!B * !X)	0.00040	0.00040	0.00039
	(!B * !X)	-0.00145	-0.00146	-0.00148
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	0.00062	0.00063	0.00054
	(B * C * !D * !X)	-0.00248	-0.00252	-0.00269
	(B * !C * !X)	0.00060	0.00061	0.00054
	(B * !C * !X)	-0.00257	-0.00260	-0.00271
	(!B * !X)	0.00057	0.00057	0.00055
	(!B * !X)	-0.00266	-0.00269	-0.00272

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)	-0.00031	-0.00031	-0.00031
	(B * C * !D * !X)	0.00130	0.00131	0.00131
	(B * !C * !X)	-0.00031	-0.00031	-0.00031
	(B * !C * !X)	0.00130	0.00131	0.00131
	(!B * !X)	-0.00031	-0.00032	-0.00031
	(!B * !X)	0.00130	0.00131	0.00131
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	-0.00037	-0.00038	-0.00037
	(B * C * !D * !X)	0.00147	0.00149	0.00148
	(B * !C * !X)	-0.00037	-0.00038	-0.00037
	(B * !C * !X)	0.00147	0.00149	0.00148
	(!B * !X)	-0.00038	-0.00038	-0.00038
	(!B * !X)	0.00148	0.00149	0.00148
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	-0.00051	-0.00051	-0.00050
	(B * C * !D * !X)	0.00274	0.00273	0.00273
	(B * !C * !X)	-0.00052	-0.00051	-0.00050
	(B * !C * !X)	0.00274	0.00273	0.00273
	(!B * !X)	-0.00053	-0.00053	-0.00053
	(!B * !X)	0.00274	0.00274	0.00273

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)**	0.00038	0.00038	0.00038
	(A * C * !D * !X)	-0.00105	-0.00105	-0.00104
	(A * !C * !X)	0.00038	0.00039	0.00038
	(A * !C * !X)	-0.00104	-0.00105	-0.00104
	(!A * C * D * !X)	0.00082	0.00082	0.00082
	(!A * C * D * !X)	-0.00105	-0.00105	-0.00105
	(!A * C * !D * !X)	0.00045	0.00046	0.00046
	(!A * C * !D * !X)	-0.00104	-0.00105	-0.00105
	(!A * !C * !X)	0.00043	0.00043	0.00043
	(!A * !C * !X)	-0.00105	-0.00105	-0.00105
sky130_fd_sc_hs__and4_2	**(A * C * !D * !X)**	0.00045	0.00045	0.00045
	(A * C * !D * !X)	-0.00125	-0.00125	-0.00124
	(A * !C * !X)	0.00046	0.00046	0.00046
	(A * !C * !X)	-0.00125	-0.00125	-0.00124
	(!A * C * D * !X)	0.00094	0.00096	0.00095
	(!A * C * D * !X)	-0.00124	-0.00125	-0.00125
	(!A * C * !D * !X)	0.00054	0.00054	0.00054
	(!A * C * !D * !X)	-0.00125	-0.00125	-0.00125
	(!A * !C * !X)	0.00053	0.00053	0.00053
	(!A * !C * !X)	-0.00125	-0.00126	-0.00125
sky130_fd_sc_hs__and4_4	**(A * C * !D * !X)**	0.00095	0.00095	0.00094
	(A * C * !D * !X)	-0.00234	-0.00234	-0.00234
	(A * !C * !X)	0.00099	0.00099	0.00098
	(A * !C * !X)	-0.00235	-0.00235	-0.00234
	(!A * C * D * !X)	0.00184	0.00186	0.00184
	(!A * C * D * !X)	-0.00233	-0.00235	-0.00233
	(!A * C * !D * !X)	0.00110	0.00110	0.00110
	(!A * C * !D * !X)	-0.00235	-0.00236	-0.00236
	(!A * !C * !X)	0.00111	0.00113	0.00111
	(!A * !C * !X)	-0.00237	-0.00239	-0.00237

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)	-0.00036	-0.00036	-0.00037
	(A * C * !D * !X)	0.00107	0.00107	0.00105
	(A * !C * !X)	-0.00036	-0.00036	-0.00037
	(A * !C * !X)	0.00107	0.00107	0.00105
	(!A * C * D * !X)	-0.00075	-0.00082	-0.00082
	(!A * C * D * !X)	0.00112	0.00107	0.00105
	(!A * C * !D * !X)	-0.00045	-0.00046	-0.00046
	(!A * C * !D * !X)	0.00110	0.00107	0.00105
	(!A * !C * !X)	-0.00043	-0.00043	-0.00043
	(!A * !C * !X)	0.00110	0.00111	0.00106
sky130_fd_sc_hs__and4_2	(A * C * !D * !X)	-0.00043	-0.00043	-0.00043
	(A * C * !D * !X)	0.00128	0.00128	0.00126
	(A * !C * !X)	-0.00043	-0.00043	-0.00044
	(A * !C * !X)	0.00127	0.00128	0.00126
	(!A * C * D * !X)	-0.00088	-0.00096	-0.00095
	(!A * C * D * !X)	0.00131	0.00127	0.00125
	(!A * C * !D * !X)	-0.00054	-0.00054	-0.00054
	(!A * C * !D * !X)	0.00129	0.00127	0.00125
	(!A * !C * !X)	-0.00053	-0.00053	-0.00053
	(!A * !C * !X)	0.00132	0.00131	0.00127

sky130_fd_sc_hs__and4_4	(A * C * !D * !X)	-0.00091	-0.00092	-0.00092
	(A * C * !D * !X)	0.00241	0.00245	0.00237
	(A * !C * !X)	-0.00093	-0.00095	-0.00095
	(A * !C * !X)	0.00242	0.00245	0.00237
	(!A * C * D * !X)	-0.00169	-0.00185	-0.00184
	(!A * C * D * !X)	0.00244	0.00236	0.00234
	(!A * C * !D * !X)	-0.00110	-0.00110	-0.00110
	(!A * C * !D * !X)	0.00244	0.00243	0.00236
	(!A * !C * !X)	-0.00111	-0.00113	-0.00111
	(!A * !C * !X)	0.00249	0.00251	0.00239

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)	0.00044	0.00045	0.00044
	(A * B * !D * !X)	-0.00099	-0.00099	-0.00099
	(A * !B * D * !X)	0.00085	0.00086	0.00085
	(A * !B * D * !X)	-0.00101	-0.00101	-0.00101
	(A * !B * !D * !X)	0.00050	0.00050	0.00050
	(A * !B * !D * !X)	-0.00101	-0.00101	-0.00101
	(!A * B * D * !X)	0.00083	0.00084	0.00083
	(!A * B * D * !X)	-0.00101	-0.00101	-0.00101
	(!A * B * !D * !X)	0.00049	0.00049	0.00049
	(!A * B * !D * !X)	-0.00101	-0.00101	-0.00101
	(!A * !B * D * !X)	0.00085	0.00086	0.00085
	(!A * !B * D * !X)	-0.00101	-0.00102	-0.00101
	(!A * !B * !D * !X)	0.00051	0.00051	0.00051
	(!A * !B * !D * !X)	-0.00101	-0.00101	-0.00101

sky130_fd_sc_hs__and4_2	**(A * B * !D * !X)**	0.00048	0.00048	0.00048
	(A * B * !D * !X)	-0.00115	-0.00115	-0.00115
	(A * !B * D * !X)	0.00096	0.00096	0.00096
	(A * !B * D * !X)	-0.00117	-0.00118	-0.00117
	(A * !B * !D * !X)	0.00056	0.00056	0.00055
	(A * !B * !D * !X)	-0.00117	-0.00117	-0.00117
	(!A * B * D * !X)	0.00093	0.00094	0.00093
	(!A * B * D * !X)	-0.00117	-0.00117	-0.00117
	(!A * B * !D * !X)	0.00054	0.00054	0.00054
	(!A * B * !D * !X)	-0.00117	-0.00117	-0.00117
	(!A * !B * D * !X)	0.00096	0.00096	0.00096
	(!A * !B * D * !X)	-0.00117	-0.00118	-0.00117
	(!A * !B * !D * !X)	0.00058	0.00058	0.00057
	(!A * !B * !D * !X)	-0.00117	-0.00117	-0.00117
sky130_fd_sc_hs__and4_4	**(A * B * !D * !X)**	0.00122	0.00122	0.00122
	(A * B * !D * !X)	-0.00243	-0.00244	-0.00243
	(A * !B * D * !X)	0.00206	0.00209	0.00208
	(A * !B * D * !X)	-0.00242	-0.00244	-0.00243
	(A * !B * !D * !X)	0.00135	0.00135	0.00135
	(A * !B * !D * !X)	-0.00244	-0.00244	-0.00244
	(!A * B * D * !X)	0.00203	0.00204	0.00203
	(!A * B * D * !X)	-0.00243	-0.00243	-0.00243
	(!A * B * !D * !X)	0.00133	0.00133	0.00132
	(!A * B * !D * !X)	-0.00244	-0.00244	-0.00244
	(!A * !B * D * !X)	0.00207	0.00209	0.00208
	(!A * !B * D * !X)	-0.00243	-0.00244	-0.00243
	(!A * !B * !D * !X)	0.00139	0.00139	0.00139
	(!A * !B * !D * !X)	-0.00245	-0.00245	-0.00244

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)	-0.00043	-0.00042	-0.00042
	(A * B * !D * !X)	0.00103	0.00102	0.00102
	(A * !B * D * !X)	-0.00082	-0.00086	-0.00085
	(A * !B * D * !X)	0.00101	0.00102	0.00101
	(A * !B * !D * !X)	-0.00050	-0.00050	-0.00050
	(A * !B * !D * !X)	0.00105	0.00104	0.00102
	(!A * B * D * !X)	-0.00076	-0.00084	-0.00083
	(!A * B * D * !X)	0.00101	0.00102	0.00101
	(!A * B * !D * !X)	-0.00049	-0.00049	-0.00049
	(!A * B * !D * !X)	0.00102	0.00101	0.00101
	(!A * !B * D * !X)	-0.00083	-0.00086	-0.00085
	(!A * !B * D * !X)	0.00102	0.00102	0.00101
	(!A * !B * !D * !X)	-0.00051	-0.00051	-0.00051
	(!A * !B * !D * !X)	0.00101	0.00101	0.00101
sky130_fd_sc_hs__and4_2	(A * B * !D * !X)	-0.00046	-0.00046	-0.00046
	(A * B * !D * !X)	0.00117	0.00118	0.00118
	(A * !B * D * !X)	-0.00091	-0.00096	-0.00096
	(A * !B * D * !X)	0.00118	0.00119	0.00117
	(A * !B * !D * !X)	-0.00056	-0.00056	-0.00055
	(A * !B * !D * !X)	0.00118	0.00118	0.00118
	(!A * B * D * !X)	-0.00085	-0.00094	-0.00093
	(!A * B * D * !X)	0.00117	0.00118	0.00117
	(!A * B * !D * !X)	-0.00054	-0.00054	-0.00054
	(!A * B * !D * !X)	0.00117	0.00117	0.00117
	(!A * !B * D * !X)	-0.00092	-0.00096	-0.00096
	(!A * !B * D * !X)	0.00118	0.00119	0.00117
	(!A * !B * !D * !X)	-0.00058	-0.00058	-0.00057
	(!A * !B * !D * !X)	0.00117	0.00117	0.00117

sky130_fd_sc_hs__and4_4	(A * B * !D * !X)	-0.00120	-0.00121	-0.00119
	(A * B * !D * !X)	0.00245	0.00249	0.00245
	(A * !B * D * !X)	-0.00197	-0.00209	-0.00208
	(A * !B * D * !X)	0.00243	0.00245	0.00244
	(A * !B * !D * !X)	-0.00135	-0.00135	-0.00135
	(A * !B * !D * !X)	0.00246	0.00248	0.00245
	(!A * B * D * !X)	-0.00189	-0.00204	-0.00203
	(!A * B * D * !X)	0.00245	0.00243	0.00244
	(!A * B * !D * !X)	-0.00133	-0.00133	-0.00132
	(!A * B * !D * !X)	0.00245	0.00244	0.00245
	(!A * !B * D * !X)	-0.00198	-0.00209	-0.00208
	(!A * !B * D * !X)	0.00243	0.00245	0.00244
	(!A * !B * !D * !X)	-0.00139	-0.00139	-0.00139
	(!A * !B * !D * !X)	0.00245	0.00248	0.00245

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)	0.00083	0.00084	0.00083
	(A * B * !C * !X)	-0.00112	-0.00113	-0.00112
	(A * !B * C * !X)	0.00081	0.00082	0.00081
	(A * !B * C * !X)	-0.00112	-0.00113	-0.00112
	(A * !B * !C * !X)	0.00083	0.00084	0.00083
	(A * !B * !C * !X)	-0.00112	-0.00113	-0.00112
	(!A * B * C * !X)	0.00080	0.00081	0.00081
	(!A * B * C * !X)	-0.00112	-0.00112	-0.00112
	(!A * !C * !X)	0.00083	0.00084	0.00083
	(!A * !C * !X)	-0.00112	-0.00113	-0.00112
	(!A * !B * C * !X)	0.00082	0.00083	0.00082
	(!A * !B * C * !X)	-0.00112	-0.00113	-0.00112

sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	0.00098	0.00098	0.00098
	(A * B * !C * !X)	-0.00121	-0.00122	-0.00121
	(A * !B * C * !X)	0.00095	0.00097	0.00096
	(A * !B * C * !X)	-0.00120	-0.00122	-0.00121
	(A * !B * !C * !X)	0.00098	0.00099	0.00098
	(A * !B * !C * !X)	-0.00121	-0.00122	-0.00121
	(!A * B * C * !X)	0.00094	0.00095	0.00095
	(!A * B * C * !X)	-0.00121	-0.00121	-0.00121
	(!A * !C * !X)	0.00098	0.00099	0.00098
	(!A * !C * !X)	-0.00121	-0.00122	-0.00121
	(!A * !B * C * !X)	0.00095	0.00096	0.00096
	(!A * !B * C * !X)	-0.00120	-0.00121	-0.00121
sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	0.00162	0.00163	0.00161
	(A * B * !C * !X)	-0.00237	-0.00238	-0.00237
	(A * !B * C * !X)	0.00160	0.00160	0.00159
	(A * !B * C * !X)	-0.00238	-0.00238	-0.00237
	(A * !B * !C * !X)	0.00162	0.00163	0.00162
	(A * !B * !C * !X)	-0.00237	-0.00238	-0.00237
	(!A * B * C * !X)	0.00157	0.00159	0.00157
	(!A * B * C * !X)	-0.00237	-0.00239	-0.00237
	(!A * !C * !X)	0.00161	0.00163	0.00161
	(!A * !C * !X)	-0.00237	-0.00238	-0.00237
	(!A * !B * C * !X)	0.00160	0.00160	0.00159
	(!A * !B * C * !X)	-0.00238	-0.00238	-0.00237

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)**	-0.00080	-0.00084	-0.00083
	(A * B * !C * !X)	0.00112	0.00114	0.00113
	(A * !B * C * !X)	-0.00077	-0.00082	-0.00081
	(A * !B * C * !X)	0.00112	0.00113	0.00113
	(A * !B * !C * !X)	-0.00080	-0.00084	-0.00083
	(A * !B * !C * !X)	0.00112	0.00113	0.00113
	(!A * B * C * !X)	-0.00076	-0.00081	-0.00081
	(!A * B * C * !X)	0.00113	0.00113	0.00113
	(!A * !C * !X)	-0.00080	-0.00084	-0.00083
	(!A * !C * !X)	0.00112	0.00113	0.00113
	(!A * !B * C * !X)	-0.00077	-0.00082	-0.00082
	(!A * !B * C * !X)	0.00112	0.00113	0.00113
sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	-0.00094	-0.00098	-0.00098
	(A * B * !C * !X)	0.00121	0.00122	0.00122
	(A * !B * C * !X)	-0.00090	-0.00097	-0.00096
	(A * !B * C * !X)	0.00121	0.00122	0.00122
	(A * !B * !C * !X)	-0.00094	-0.00098	-0.00098
	(A * !B * !C * !X)	0.00121	0.00122	0.00122
	(!A * B * C * !X)	-0.00089	-0.00095	-0.00095
	(!A * B * C * !X)	0.00122	0.00121	0.00122
	(!A * !C * !X)	-0.00094	-0.00098	-0.00098
	(!A * !C * !X)	0.00121	0.00122	0.00122
	(!A * !B * C * !X)	-0.00090	-0.00096	-0.00096
	(!A * !B * C * !X)	0.00121	0.00122	0.00122

sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	-0.00155	-0.00162	-0.00161
	(A * B * !C * !X)	0.00238	0.00240	0.00238
	(A * !B * C * !X)	-0.00148	-0.00160	-0.00159
	(A * !B * C * !X)	0.00238	0.00239	0.00238
	(A * !B * !C * !X)	-0.00156	-0.00163	-0.00162
	(A * !B * !C * !X)	0.00238	0.00240	0.00238
	(!A * B * C * !X)	-0.00144	-0.00159	-0.00157
	(!A * B * C * !X)	0.00237	0.00239	0.00238
	(!A * !C * !X)	-0.00155	-0.00162	-0.00161
	(!A * !C * !X)	0.00238	0.00240	0.00238
	(!A * !B * C * !X)	-0.00148	-0.00160	-0.00159
	(!A * !B * C * !X)	0.00238	0.00239	0.00238

SKY130_FD_SC_HS__BUFx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT	OUTPUT
A	X
0	0
1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__buf_1	6.39360
sky130_fd_sc_hs__buf_16	35.16480
sky130_fd_sc_hs__buf_2	7.99200
sky130_fd_sc_hs__buf_4	11.18880
sky130_fd_sc_hs__buf_8	19.18080
sky130_fd_sc_hs__bufbuf_16	43.15680
sky130_fd_sc_hs__bufbuf_8	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	X
sky130_fd_sc_hs__buf_1	0.00242	0.76285
sky130_fd_sc_hs__buf_16	0.01557	11.73855
sky130_fd_sc_hs__buf_2	0.00258	1.44316
sky130_fd_sc_hs__buf_4	0.00353	2.91958
sky130_fd_sc_hs__buf_8	0.00799	5.59518
sky130_fd_sc_hs__bufbuf_16	0.00287	11.70096
sky130_fd_sc_hs__bufbuf_8	0.00225	5.65668

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__buf_1	0.00000	0.07548	0.12408
sky130_fd_sc_hs__buf_16	0.00000	0.31510	0.41619
sky130_fd_sc_hs__buf_2	0.00000	0.06170	0.06891
sky130_fd_sc_hs__buf_4	0.00000	0.17926	0.25659
sky130_fd_sc_hs__buf_8	0.00000	0.15755	0.20809
sky130_fd_sc_hs__bufbuf_16	0.00000	0.37239	0.49370
sky130_fd_sc_hs__bufbuf_8	0.00000	0.23303	0.23498

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)	0.07529	0.72692	7.04341
sky130_fd_sc_hs__buf_16	A->X (RR)	0.07565	0.42269	7.07609
sky130_fd_sc_hs__buf_2	A->X (RR)	0.07646	0.63235	6.94425
sky130_fd_sc_hs__buf_4	A->X (RR)	0.09082	0.59562	7.34641
sky130_fd_sc_hs__buf_8	A->X (RR)	0.07548	0.47733	6.98688
sky130_fd_sc_hs__bufbuf_16	A->X (RR)	0.23281	0.59597	7.31504
sky130_fd_sc_hs__bufbuf_8	A->X (RR)	0.25535	0.63165	7.09144

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__buf_1	A->X (FF)	0.09723	0.59042	4.02399
sky130_fd_sc_hs__buf_16	A->X (FF)	0.12146	0.58037	4.65896
sky130_fd_sc_hs__buf_2	A->X (FF)	0.11934	0.63448	4.38232
sky130_fd_sc_hs__buf_4	A->X (FF)	0.11431	0.58466	4.26688
sky130_fd_sc_hs__buf_8	A->X (FF)	0.12351	0.60843	4.74588
sky130_fd_sc_hs__bufbuf_16	A->X (FF)	0.29974	0.76773	4.72432
sky130_fd_sc_hs__bufbuf_8	A->X (FF)	0.25951	0.67214	4.08793

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	A	0.00461	0.00448	0.00750
	A	0.00212	0.00199	0.00504
sky130_fd_sc_hs__buf_16	A	0.04554	0.04674	0.06435
	A	0.02949	0.03070	0.04884
sky130_fd_sc_hs__buf_2	A	0.00673	0.00674	0.00920
	A	0.00406	0.00440	0.00654
sky130_fd_sc_hs__buf_4	A	0.01080	0.01099	0.01639
	A	0.00714	0.00737	0.01304
sky130_fd_sc_hs__buf_8	A	0.02321	0.02363	0.03187
	A	0.01496	0.01546	0.02363
sky130_fd_sc_hs__bufbuf_16	A	0.05433	0.05793	0.06140
	A	0.05137	0.05512	0.05925
sky130_fd_sc_hs__bufbuf_8	A	0.02716	0.02882	0.03259
	A	0.02484	0.02653	0.03059

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	A	0.00216	0.00246	0.00659
	A	0.00466	0.00491	0.00893
sky130_fd_sc_hs__buf_16	A	0.02933	0.03182	0.05375
	A	0.04544	0.04789	0.06865
sky130_fd_sc_hs__buf_2	A	0.00371	0.00413	0.00760
	A	0.00638	0.00674	0.01005
sky130_fd_sc_hs__buf_4	A	0.00760	0.00855	0.01674
	A	0.01127	0.01218	0.01918
sky130_fd_sc_hs__buf_8	A	0.01459	0.01598	0.02692
	A	0.02288	0.02421	0.03411
sky130_fd_sc_hs__bufbuf_16	A	0.05150	0.05513	0.06246
	A	0.05447	0.05845	0.06236
sky130_fd_sc_hs__bufbuf_8	A	0.02426	0.02730	0.03202
	A	0.02659	0.02879	0.03310

SKY130_FD_SC_HS__CLKBUFx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT	OUTPUT
A	X
0	0
1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__clkbuf_1	6.39360
sky130_fd_sc_hs__clkbuf_16	31.96800
sky130_fd_sc_hs__clkbuf_2	6.39360
sky130_fd_sc_hs__clkbuf_4	9.59040
sky130_fd_sc_hs__clkbuf_8	17.58240

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	X
sky130_fd_sc_hs__clkbuf_1	0.00255	0.76719
sky130_fd_sc_hs__clkbuf_16	0.00856	11.91063
sky130_fd_sc_hs__clkbuf_2	0.00256	1.35909
sky130_fd_sc_hs__clkbuf_4	0.00235	2.93469
sky130_fd_sc_hs__clkbuf_8	0.00439	5.68840

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__clkbuf_1	0.00000	0.02558	0.02558
sky130_fd_sc_hs__clkbuf_16	0.00000	0.25575	0.39548
sky130_fd_sc_hs__clkbuf_2	0.00000	0.03836	0.05001
sky130_fd_sc_hs__clkbuf_4	0.00000	0.06394	0.09887
sky130_fd_sc_hs__clkbuf_8	0.00000	0.12787	0.19774

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)**	0.07946	0.74469	7.11131
sky130_fd_sc_hs__clkbuf_16	**A->X (RR)**	0.10413	0.52806	7.62091
sky130_fd_sc_hs__clkbuf_2	**A->X (RR)**	0.08634	0.67804	7.12784
sky130_fd_sc_hs__clkbuf_4	**A->X (RR)**	0.10999	0.66115	7.61912
sky130_fd_sc_hs__clkbuf_8	**A->X (RR)**	0.10377	0.57781	7.46412

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkbuf_1	**A->X (FF)**	0.09023	0.70915	5.81195
sky130_fd_sc_hs__clkbuf_16	**A->X (FF)**	0.14153	0.66605	6.63914
sky130_fd_sc_hs__clkbuf_2	**A->X (FF)**	0.10861	0.69542	5.72016
sky130_fd_sc_hs__clkbuf_4	**A->X (FF)**	0.14311	0.74543	6.53091
sky130_fd_sc_hs__clkbuf_8	**A->X (FF)**	0.13710	0.69170	6.44282

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00446	0.00428	0.00611
	A	0.00181	0.00164	0.00350
sky130_fd_sc_hs__clkbuf_16	A	0.03443	0.03542	0.04333
	A	0.02555	0.02681	0.03607
sky130_fd_sc_hs__clkbuf_2	A	0.00599	0.00585	0.00736
	A	0.00342	0.00330	0.00488
sky130_fd_sc_hs__clkbuf_4	A	0.00921	0.00940	0.01105
	A	0.00679	0.00698	0.00903
sky130_fd_sc_hs__clkbuf_8	A	0.01756	0.01807	0.02172
	A	0.01302	0.01367	0.01733

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00177	0.00182	0.00455
	A	0.00440	0.00445	0.00697
sky130_fd_sc_hs__clkbuf_16	A	0.02234	0.02510	0.03574
	A	0.03122	0.03392	0.04445
sky130_fd_sc_hs__clkbuf_2	A	0.00278	0.00291	0.00522
	A	0.00535	0.00547	0.00775
sky130_fd_sc_hs__clkbuf_4	A	0.00579	0.00646	0.00887
	A	0.00822	0.00888	0.01124
sky130_fd_sc_hs__clkbuf_8	A	0.01119	0.01298	0.01756
	A	0.01575	0.01712	0.02210

SKY130_FD_SC_HS__CLKDLYINVx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT	OUTPUT
A	Y
0	1
1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__clkdlyinv3sd1_1	9.59040
sky130_fd_sc_hs__clkdlyinv3sd2_1	9.59040
sky130_fd_sc_hs__clkdlyinv3sd3_1	9.59040
sky130_fd_sc_hs__clkdlyinv5sd1_1	17.58240
sky130_fd_sc_hs__clkdlyinv5sd2_1	17.58240
sky130_fd_sc_hs__clkdlyinv5sd3_1	17.58240

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	Y
sky130_fd_sc_hs__clkdlyinv3sd1_1	0.00242	0.77980
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00245	0.77252
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00247	0.78046
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00241	0.77016
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00244	0.76815
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00247	0.76746

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__clkdlyinv3sd1_1	0.00000	0.05639	0.06277
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00000	0.02588	0.04944
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00000	0.02591	0.04944
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00000	0.11802	0.12440
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00000	0.02650	0.05005
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00000	0.02656	0.05010

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)**	0.13744	0.94291	8.46023
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A->Y (FR)**	0.15045	0.96393	8.46433
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A->Y (FR)**	0.16944	1.00844	8.67397
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A->Y (FR)**	0.24600	1.04742	8.49340
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A->Y (FR)**	0.35481	1.16784	8.65738
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A->Y (FR)**	0.63750	1.47533	9.07847

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A->Y (RF)**	0.12739	0.58826	4.35866
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A->Y (RF)**	0.19638	0.68127	4.54681
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A->Y (RF)**	0.35454	0.89288	4.93321
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A->Y (RF)**	0.23809	0.69763	4.40963
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A->Y (RF)**	0.41341	0.89967	4.74417
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A->Y (RF)**	0.85038	1.39112	5.36718

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	A	0.00364	0.00364	0.00641
	A	0.00614	0.00614	0.00894
sky130_fd_sc_hs__clkdlyinv3sd2_1	A	0.00384	0.00379	0.00635
	A	0.00639	0.00632	0.00891
sky130_fd_sc_hs__clkdlyinv3sd3_1	A	0.00420	0.00407	0.00637
	A	0.00676	0.00665	0.00896
sky130_fd_sc_hs__clkdlyinv5sd1_1	A	0.00801	0.00789	0.01053
	A	0.01051	0.01038	0.01305
sky130_fd_sc_hs__clkdlyinv5sd2_1	A	0.00866	0.00849	0.01090
	A	0.01119	0.01101	0.01346
sky130_fd_sc_hs__clkdlyinv5sd3_1	A	0.00998	0.00978	0.01193
	A	0.01254	0.01235	0.01453

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A**	0.00607	0.00592	0.00855
	A	0.00356	0.00343	0.00578
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A**	0.00638	0.00624	0.00880
	A	0.00383	0.00370	0.00591
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A**	0.00732	0.00723	0.00981
	A	0.00476	0.00467	0.00668
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A**	0.01032	0.01011	0.01260
	A	0.00782	0.00760	0.00982
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A**	0.01107	0.01089	0.01303
	A	0.00854	0.00836	0.01037
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A**	0.01322	0.01309	0.01501
	A	0.01066	0.01053	0.01242

SKY130_FD_SC_HS__CLKINVx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT	OUTPUT
A	Y
0	1
1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__clkinv_1	4.79520
sky130_fd_sc_hs__clkinv_16	38.36160
sky130_fd_sc_hs__clkinv_2	6.39360
sky130_fd_sc_hs__clkinv_4	11.18880
sky130_fd_sc_hs__clkinv_8	20.77920

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	Y
sky130_fd_sc_hs__clkinv_1	0.00309	1.14188
sky130_fd_sc_hs__clkinv_16	0.04554	17.35368
sky130_fd_sc_hs__clkinv_2	0.00587	2.11326
sky130_fd_sc_hs__clkinv_4	0.01162	4.18033
sky130_fd_sc_hs__clkinv_8	0.02327	8.00702

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__clkinv_1	0.00000	0.12044	0.23973
sky130_fd_sc_hs__clkinv_16	0.00000	0.30233	0.58636
sky130_fd_sc_hs__clkinv_2	0.00000	0.03779	0.07330
sky130_fd_sc_hs__clkinv_4	0.00000	0.07558	0.14659
sky130_fd_sc_hs__clkinv_8	0.00000	0.15116	0.29318

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)	0.03262	0.85387	11.39500
sky130_fd_sc_hs__clkinv_16	A->Y (FR)	0.02438	0.57407	11.73800
sky130_fd_sc_hs__clkinv_2	A->Y (FR)	0.03104	0.78906	11.72560
sky130_fd_sc_hs__clkinv_4	A->Y (FR)	0.02752	0.70602	11.69000
sky130_fd_sc_hs__clkinv_8	A->Y (FR)	0.02768	0.63684	11.56240

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkinv_1	A->Y (RF)	0.03171	0.76524	10.26410
sky130_fd_sc_hs__clkinv_16	A->Y (RF)	0.02348	0.44757	10.24950
sky130_fd_sc_hs__clkinv_2	A->Y (RF)	0.02839	0.65445	9.80475
sky130_fd_sc_hs__clkinv_4	A->Y (RF)	0.02549	0.57687	9.87583
sky130_fd_sc_hs__clkinv_8	A->Y (RF)	0.02580	0.50321	9.78443

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	-0.00017	-0.00005	0.00047
	A	0.00301	0.00316	0.00372
sky130_fd_sc_hs__clkinv_16	A	-0.00788	-0.00580	-0.00166
	A	0.03902	0.04123	0.04684
sky130_fd_sc_hs__clkinv_2	A	-0.00059	-0.00041	0.00006
	A	0.00545	0.00567	0.00626
sky130_fd_sc_hs__clkinv_4	A	-0.00141	-0.00090	0.00013
	A	0.01057	0.01116	0.01248
sky130_fd_sc_hs__clkinv_8	A	-0.00271	-0.00195	0.00100
	A	0.02126	0.02221	0.02549

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	0.00240	0.00243	0.00265
	A	-0.00078	-0.00077	-0.00062
sky130_fd_sc_hs__clkinv_16	A	0.03331	0.03325	0.03893
	A	-0.01360	-0.01398	-0.00944
sky130_fd_sc_hs__clkinv_2	A	0.00478	0.00474	0.00515
	A	-0.00127	-0.00122	-0.00090
sky130_fd_sc_hs__clkinv_4	A	0.00864	0.00894	0.00975
	A	-0.00334	-0.00322	-0.00240
sky130_fd_sc_hs__clkinv_8	A	0.01708	0.01715	0.01930
	A	-0.00689	-0.00701	-0.00471

SKY130_FD_SC_HS__CONB

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Footprint

Cell Name	Area
sky130_fd_sc_hs__conb_1	4.79520

Pin Capacitance Information

Cell Name	Max Cap(pf)	
	HI	LO
sky130_fd_sc_hs__conb_1	-	-

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__conb_1	0.00000	0.00000	0.00000

SKY130_FD_SC_HS__DELAYx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT	OUTPUT
A	X
0	0
1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlymetal6s2s_1	15.98400
sky130_fd_sc_hs__dlymetal6s4s_1	15.98400
sky130_fd_sc_hs__dlymetal6s6s_1	15.98400

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	X
sky130_fd_sc_hs__dlymetal6s2s_1	0.00155	0.76192
sky130_fd_sc_hs__dlymetal6s4s_1	0.00155	0.76198
sky130_fd_sc_hs__dlymetal6s6s_1	0.00155	0.76369

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlymetal6s2s_1	0.00000	0.05131	0.07673
sky130_fd_sc_hs__dlymetal6s4s_1	0.00000	0.05131	0.07673
sky130_fd_sc_hs__dlymetal6s6s_1	0.00000	0.05131	0.07673

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)**	0.09185	0.74935	6.90605
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (RR)**	0.18540	0.84154	6.96035
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (RR)**	0.26797	0.92404	7.05421

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlymetal6s2s_1	**A->X (FF)**	0.14695	0.73696	4.89798
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (FF)**	0.29568	0.87364	4.87582
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (FF)**	0.43651	1.01752	5.02526

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.01178	0.01145	0.01332
	A	0.01018	0.00986	0.01173
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.01179	0.01144	0.01371
	A	0.01018	0.00984	0.01213
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.01182	0.01163	0.01264
	A	0.01021	0.01004	0.01108

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.00992	0.00976	0.01080
	A	0.01152	0.01135	0.01236
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.00995	0.00972	0.01103
	A	0.01155	0.01135	0.01263
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.00998	0.00992	0.01104
	A	0.01158	0.01152	0.01252

SKY130_FD_SC_HS__DFBBNx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT				OUTPUT	
D	RESET_B	SET_B	CLK_N	Q	Q_N
0	1	1	F	0	1
1	1	1	F	1	0
x	x	0	x	1	0
x	0	1	x	0	1
x	1	1	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfbbn_1	44.75520
sky130_fd_sc_hs__dfbbn_2	47.95200

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)	
	D	RESET_B	SET_B	CLK_N	Q	Q_N
sky130_fd_sc_hs__dfbbn_1	0.00169	0.00166	0.00524	0.00287	0.76820	0.71177
sky130_fd_sc_hs__dfbbn_2	0.00169	0.00168	0.00516	0.00287	1.49340	1.46762

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfbbn_1	0.00000	0.34078	0.66489
sky130_fd_sc_hs__dfbbn_2	0.00000	0.33558	0.63415

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)	0.58773	1.45482	9.42149
	SET_B->Q (FR)	0.27909	1.17373	9.32305
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FR)	0.66762	1.40791	9.46601
	SET_B->Q (FR)	0.32324	1.10696	9.45370

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)	0.57839	1.12907	4.90136
	RESET_B->Q (FF)	0.34761	0.91530	4.71328
	SET_B->Q (RF)	0.19507	0.57182	2.87841
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FF)	0.63230	1.14323	4.87624
	RESET_B->Q (FF)	0.40039	0.93109	4.72475
	SET_B->Q (RF)	0.24611	0.60124	3.03061

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)	0.53081	1.42748	9.32806
	RESET_B->Q_N (FR)	0.30178	1.22089	9.16331
	SET_B->Q_N (RR)	0.14886	0.88000	7.44626
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FR)	0.53777	1.32290	9.40569
	RESET_B->Q_N (FR)	0.30806	1.11366	9.27160
	SET_B->Q_N (RR)	0.15427	0.78778	7.66134

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)	0.48309	1.11200	4.83823
	SET_B->Q_N (FF)	0.18825	0.81457	5.03624
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FF)	0.53279	1.15287	4.92105
	SET_B->Q_N (FF)	0.20781	0.81951	5.23735

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)	0.02931	0.11344	1.65692
	setup	CLK_N (F)	0.15164	0.03874	-1.61220
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	0.03014	0.11401	1.66361
	setup	CLK_N (F)	0.14250	0.02778	-1.62183

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)	-0.22325	-0.30619	-1.35026
	setup	CLK_N (F)	0.26486	0.34279	1.40146
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.22358	-0.30653	-1.34946
	setup	CLK_N (F)	0.26052	0.33810	1.39948

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)	0.02931	0.11344	1.65692
	setup	CLK_N (F)	0.15164	0.03874	-1.61220
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	0.03014	0.11401	1.66361
	setup	CLK_N (F)	0.14250	0.02778	-1.62183

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)	-0.22325	-0.30619	-1.35026
	setup	CLK_N (F)	0.26486	0.34279	1.40146
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.22358	-0.30653	-1.34946
	setup	CLK_N (F)	0.26052	0.33810	1.39948

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)	0.14557	0.04030	-1.64984
	removal	CLK_N (F)	0.05193	0.13695	1.73754
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.13934	0.03006	-1.65925
	removal	CLK_N (F)	0.05114	0.13405	1.73820

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)	0.14557	0.04030	-1.64984
	removal	CLK_N (F)	0.05193	0.13695	1.73754
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.13934	0.03006	-1.65925
	removal	CLK_N (F)	0.05114	0.13405	1.73820

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 ()	0.30992	0.77881	16.50020
	min_pulse_width	RESET_B ()	0.26939	0.77881	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	RESET_B ()	0.32439	0.77881	16.50020
	min_pulse_width	RESET_B ()	0.27808	0.77881	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)	-0.05188	-0.16615	-1.37039
	removal	CLK_N (F)	0.06891	0.18776	1.95115
	hold	RESET_B (R)	-0.07423	-0.14042	-0.60233
	setup	RESET_B (R)	0.16282	0.20639	1.02508
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.05263	-0.16788	-1.07818
	removal	CLK_N (F)	0.07036	0.19030	1.95453
	hold	RESET_B (R)	-0.10167	-0.17082	-0.75933
	setup	RESET_B (R)	0.17505	0.23493	1.12857

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)	-0.05188	-0.16615	-1.37039
	removal	CLK_N (F)	0.06891	0.18776	1.95115
	hold	RESET_B (R)	-0.07423	-0.14042	-0.60233
	hold	RESET_B (R)	-0.07621	-0.14200	-0.60242
	setup	RESET_B (R)	0.16282	0.20639	1.02508
	setup	RESET_B (R)	0.12040	0.18155	1.02431
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.05263	-0.16788	-1.07818
	removal	CLK_N (F)	0.07036	0.19030	1.95453
	hold	RESET_B (R)	-0.10514	-0.18618	-0.82066
	hold	RESET_B (R)	-0.10167	-0.17082	-0.75933
	setup	RESET_B (R)	0.17505	0.23493	1.12857
	setup	RESET_B (R)	0.13068	0.22051	1.12081

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 ()	0.21151	0.77881	16.50020
	min_pulse_width	SET_B ()	0.19124	0.77881	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	SET_B ()	0.25203	0.77881	16.50020
	min_pulse_width	SET_B ()	0.22598	0.77881	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 ()	0.25782	0.77881	16.50020
	min_pulse_width	CLK_N ()	0.22308	0.77881	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.24913	0.77881	16.50020
	min_pulse_width	CLK_N ()	0.22308	0.77881	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 ()	0.26360	0.77881	16.50020
	min_pulse_width	CLK_N ()	0.31860	0.77881	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.31281	0.77881	16.50020
	min_pulse_width	CLK_N ()	0.33307	0.77881	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	0.00902	0.00910	0.01125
	CLK_N	0.01049	0.01056	0.01227
	SET_B	0.00937	0.00932	0.01364
	SET_B	0.01209	0.01205	0.01581
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01087	0.01119	0.01359
	CLK_N	0.01235	0.01266	0.01447
	SET_B	0.01117	0.01136	0.01604
	SET_B	0.01389	0.01408	0.01789

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.00996	0.01007	0.01168
	CLK_N	0.01130	0.01141	0.01291
	RESET_B	0.01183	0.01194	0.01286
	RESET_B	0.01262	0.01272	0.01361
	SET_B	0.01236	0.01223	0.01387
	SET_B	0.00963	0.00944	0.01108
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01183	0.01219	0.01372
	CLK_N	0.01315	0.01351	0.01503
	RESET_B	0.01371	0.01410	0.01534
	RESET_B	0.01449	0.01487	0.01587
	SET_B	0.01423	0.01439	0.01593
	SET_B	0.01150	0.01159	0.01312

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.00998	0.01008	0.01204
	CLK_N	0.01132	0.01142	0.01309
	RESET_B	0.01184	0.01194	0.01326
	RESET_B	0.01263	0.01273	0.01380
	SET_B	0.01237	0.01221	0.01396
	SET_B	0.00964	0.00945	0.01122
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01184	0.01220	0.01461
	CLK_N	0.01316	0.01352	0.01530
	RESET_B	0.01372	0.01411	0.01556
	RESET_B	0.01450	0.01488	0.01602
	SET_B	0.01424	0.01443	0.01620
	SET_B	0.01151	0.01160	0.01337

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.00901	0.00908	0.01069
	CLK_N	0.01047	0.01054	0.01213
	SET_B	0.00933	0.00929	0.01281
	SET_B	0.01205	0.01200	0.01551
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01085	0.01117	0.01311
	CLK_N	0.01234	0.01265	0.01428
	SET_B	0.01114	0.01133	0.01487
	SET_B	0.01385	0.01403	0.01753

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)	0.00707	0.00686	0.00781
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00566	0.00545	0.00641
	(CLK_N * !SET_B * Q * !Q_N)	0.00459	0.00449	0.00534
	(CLK_N * !SET_B * Q * !Q_N)	0.00281	0.00271	0.00356
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00394	0.00385	0.00467
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00219	0.00209	0.00292
	!CLK_N	0.00246	0.00234	0.00336
	!CLK_N	0.00071	0.00059	0.00161
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00710	0.00688	0.00784
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00568	0.00546	0.00642
	(CLK_N * !SET_B * Q * !Q_N)	0.00460	0.00450	0.00535
	(CLK_N * !SET_B * Q * !Q_N)	0.00282	0.00272	0.00357
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00393	0.00383	0.00466
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00217	0.00207	0.00290
	!CLK_N	0.00245	0.00234	0.00336
	!CLK_N	0.00070	0.00058	0.00161

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)	0.00676	0.00660	0.00751
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00817	0.00800	0.00892
	(CLK_N * !SET_B * Q * !Q_N)	0.00191	0.00182	0.00264
	(CLK_N * !SET_B * Q * !Q_N)	0.00369	0.00360	0.00441
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00247	0.00238	0.00323
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00422	0.00414	0.00499
	!CLK_N	0.00102	0.00096	0.00192
	!CLK_N	0.00277	0.00271	0.00367
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00674	0.00658	0.00750
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00816	0.00800	0.00892
	(CLK_N * !SET_B * Q * !Q_N)	0.00186	0.00178	0.00259
	(CLK_N * !SET_B * Q * !Q_N)	0.00365	0.00356	0.00437
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00245	0.00237	0.00322
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00421	0.00412	0.00497
	!CLK_N	0.00100	0.00094	0.00190
	!CLK_N	0.00276	0.00269	0.00365

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)	0.00776	0.00754	0.00938
	(CLK_N * D * SET_B * !Q * Q_N)	0.00607	0.00584	0.00769
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00460	0.00449	0.00642
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00256	0.00245	0.00438
	(!SET_B * Q * !Q_N)	0.00461	0.00448	0.00650
	(!SET_B * Q * !Q_N)	0.00253	0.00239	0.00442
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.00779	0.00756	0.00941
	(CLK_N * D * SET_B * !Q * Q_N)	0.00607	0.00584	0.00769
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00459	0.00448	0.00641
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00253	0.00241	0.00435
	(!SET_B * Q * !Q_N)	0.00461	0.00449	0.00651
	(!SET_B * Q * !Q_N)	0.00251	0.00238	0.00441

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)	0.00685	0.00675	0.00922
	(CLK_N * D * SET_B * !Q * Q_N)	0.00854	0.00844	0.01091
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00227	0.00221	0.00468
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00431	0.00424	0.00671
	(!SET_B * Q * !Q_N)	0.00160	0.00157	0.00406
	(!SET_B * Q * !Q_N)	0.00369	0.00367	0.00616
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.00688	0.00678	0.00924
	(CLK_N * D * SET_B * !Q * Q_N)	0.00860	0.00850	0.01096
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00229	0.00222	0.00470
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00435	0.00428	0.00676
	(!SET_B * Q * !Q_N)	0.00160	0.00157	0.00407
	(!SET_B * Q * !Q_N)	0.00372	0.00369	0.00618

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)	0.00222	0.00224	0.00223
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00248	-0.00249	-0.00248
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00718	0.00698	0.00932
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00204	0.00181	0.00415
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00220	0.00221	0.00220
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00247	-0.00248	-0.00247
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00718	0.00699	0.00933
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00208	0.00185	0.00420

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)	-0.00220	-0.00224	-0.00223
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00252	0.00252	0.00250
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00079	0.00076	0.00455
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00594	0.00593	0.00971
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00217	-0.00221	-0.00220
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00250	0.00250	0.00248
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00076	0.00073	0.00453
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00586	0.00585	0.00964

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)**	0.01333	0.01307	0.01588
	(D * RESET_B * SET_B * !Q * Q_N)	0.01088	0.01061	0.01342
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00855	0.00823	0.01082
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00575	0.00542	0.00803
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01018	0.00990	0.01270
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00738	0.00709	0.00990
	(!D * SET_B * !Q * Q_N)	0.00805	0.00772	0.01039
	(!D * SET_B * !Q * Q_N)	0.00526	0.00491	0.00760
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01404	0.01363	0.01609
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01090	0.01048	0.01294
	(!D * !SET_B * Q * !Q_N)	0.00904	0.00863	0.01122
	(!D * !SET_B * Q * !Q_N)	0.00626	0.00585	0.00844

sky130_fd_sc_hs__dfbbn_2	**(D * RESET_B * SET_B * !Q * Q_N)**	0.01337	0.01310	0.01592
	(D * RESET_B * SET_B * !Q * Q_N)	0.01091	0.01064	0.01345
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00854	0.00822	0.01081
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00574	0.00541	0.00802
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01018	0.00991	0.01269
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00739	0.00709	0.00989
	(!D * SET_B * !Q * Q_N)	0.00806	0.00773	0.01040
	(!D * SET_B * !Q * Q_N)	0.00527	0.00492	0.00761
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01405	0.01363	0.01609
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01092	0.01049	0.01294
	(!D * !SET_B * Q * !Q_N)	0.00900	0.00860	0.01118
	(!D * !SET_B * Q * !Q_N)	0.00622	0.00581	0.00840

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)	0.00651	0.00633	0.00956
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00931	0.00914	0.01236
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00912	0.00889	0.01199
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01191	0.01169	0.01479
	(!D * SET_B * !Q * Q_N)	0.00702	0.00683	0.01006
	(!D * SET_B * !Q * Q_N)	0.00981	0.00964	0.01286
	(!D * !SET_B * Q * !Q_N)	0.00894	0.00869	0.01196
	(!D * !SET_B * Q * !Q_N)	0.01172	0.01148	0.01475
sky130_fd_sc_hs__dfbbn_2	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00652	0.00633	0.00957
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00931	0.00914	0.01238
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00909	0.00886	0.01196
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01189	0.01166	0.01476
	(!D * SET_B * !Q * Q_N)	0.00701	0.00682	0.01005
	(!D * SET_B * !Q * Q_N)	0.00980	0.00963	0.01285
	(!D * !SET_B * Q * !Q_N)	0.00897	0.00872	0.01199
	(!D * !SET_B * Q * !Q_N)	0.01175	0.01152	0.01478

SKY130_FD_SC_HS__DFBBP

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT				OUTPUT	
D	RESET_B	SET_B	CLK	Q	Q_N
0	1	1	R	0	1
1	1	1	R	1	0
x	x	0	x	1	0
x	0	1	x	0	1
x	1	1	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfbbp_1	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)	
	D	RESET_B	SET_B	CLK	Q	Q_N
sky130_fd_sc_hs__dfbbp_1	0.00148	0.00182	0.00610	0.00283	0.77730	0.71837

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfbbp_1	0.00000	0.34078	0.66489

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)	0.55841	1.23284	7.53577
	SET_B->Q (FR)	0.25640	1.15311	9.32387

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbp_1	CLK->Q (RF)	0.41531	0.76480	2.92948
	RESET_B->Q (FF)	0.33544	0.90046	4.70525
	SET_B->Q (RF)	0.19841	0.56469	2.88379

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)	0.37017	1.06557	7.40889
	RESET_B->Q_N (FR)	0.29095	1.21052	9.21372
	SET_B->Q_N (RR)	0.15374	0.87739	7.50583

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)	0.45696	0.88189	2.87241
	SET_B->Q_N (FF)	0.17222	0.78692	4.95304

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)	-0.04780	-0.09728	-0.49392
	setup	CLK (R)	0.11839	0.13734	0.58809

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)	-0.15405	-0.28719	-2.77550
	setup	CLK (R)	0.25550	0.36510	3.02641

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)	-0.04780	-0.09728	-0.49392
	setup	CLK (R)	0.11839	0.13734	0.58809

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)	-0.15405	-0.28719	-2.77550
	setup	CLK (R)	0.25550	0.36510	3.02641

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)	0.13059	0.14333	0.38980
	removal	CLK (R)	-0.05513	-0.07529	-0.26092

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)	0.13059	0.14333	0.38980
	removal	CLK (R)	-0.05513	-0.07529	-0.26092

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 ()	0.27229	0.77881	16.50020
	min_pulse_width	RESET_B ()	0.27808	0.77881	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)	0.01950	0.00400	2.17348
	removal	CLK (R)	0.09359	0.11932	0.25925
	hold	RESET_B (R)	-0.07796	-0.15070	-0.64221
	setup	RESET_B (R)	0.14391	0.20608	1.09387

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)	0.01950	0.00400	2.17348
	removal	CLK (R)	0.09359	0.11932	0.25925
	hold	RESET_B (R)	-0.07796	-0.15234	-0.64315
	hold	RESET_B (R)	-0.08138	-0.15070	-0.64221
	setup	RESET_B (R)	0.14002	0.20180	1.08656
	setup	RESET_B (R)	0.14391	0.20608	1.09387

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 ()	0.17388	0.77881	16.50020
	min_pulse_width	SET_B ()	0.18546	0.77881	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 ()	0.13915	0.77881	16.50020
	min_pulse_width	CLK ()	0.18835	0.77881	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 ()	0.24624	0.77881	16.50020
	min_pulse_width	CLK ()	0.35912	0.77881	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	0.01062	0.01072	0.01208
	CLK	0.00921	0.00931	0.01067
	SET_B	0.00930	0.00928	0.01357
	SET_B	0.01228	0.01225	0.01602

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01070	0.01070	0.01196
	CLK	0.00914	0.00915	0.01038
	RESET_B	0.01086	0.01095	0.01196
	RESET_B	0.01166	0.01175	0.01264
	SET_B	0.01176	0.01152	0.01322
	SET_B	0.00877	0.00853	0.01017

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01071	0.01072	0.01210
	CLK	0.00916	0.00916	0.01054
	RESET_B	0.01087	0.01095	0.01228
	RESET_B	0.01167	0.01177	0.01283
	SET_B	0.01177	0.01158	0.01330
	SET_B	0.00878	0.00854	0.01030

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01060	0.01069	0.01198
	CLK	0.00919	0.00929	0.01056
	SET_B	0.00926	0.00923	0.01286
	SET_B	0.01224	0.01222	0.01574

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.00163	0.00157	0.00278
	CLK	0.00010	0.00003	0.00125
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00668	0.00650	0.00746
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00532	0.00513	0.00610
	(!CLK * !SET_B * Q * !Q_N)	0.00388	0.00382	0.00475
	(!CLK * !SET_B * Q * !Q_N)	0.00217	0.00210	0.00304
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00315	0.00309	0.00400
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00145	0.00139	0.00230

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	-0.00007	-0.00006	0.00108
	CLK	0.00147	0.00148	0.00261
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00506	0.00493	0.00588
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00642	0.00629	0.00724
	(!CLK * !SET_B * Q * !Q_N)	0.00127	0.00123	0.00209
	(!CLK * !SET_B * Q * !Q_N)	0.00298	0.00295	0.00380
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00187	0.00184	0.00274
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00357	0.00354	0.00444

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)	0.00419	0.00406	0.00605
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00226	0.00213	0.00413
	(!SET_B * Q * !Q_N)	0.00452	0.00437	0.00648
	(!SET_B * Q * !Q_N)	0.00256	0.00241	0.00451
	(!CLK * D * SET_B * !Q * Q_N)	0.00782	0.00753	0.00944
	(!CLK * D * SET_B * !Q * Q_N)	0.00624	0.00595	0.00786

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)	0.00219	0.00211	0.00461
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00411	0.00404	0.00653
	(!SET_B * Q * !Q_N)	0.00119	0.00115	0.00368
	(!SET_B * Q * !Q_N)	0.00316	0.00313	0.00565
	(!CLK * D * SET_B * !Q * Q_N)	0.00581	0.00565	0.00815
	(!CLK * D * SET_B * !Q * Q_N)	0.00738	0.00722	0.00973

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)	0.00224	0.00226	0.00224
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	-0.00315	-0.00317	-0.00316
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00598	0.00575	0.00819
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00014	-0.00011	0.00237

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)	-0.00220	-0.00226	-0.00224
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	0.00316	0.00320	0.00317
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00141	0.00131	0.00517
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00723	0.00716	0.01101

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)	0.00981	0.00947	0.01204
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00685	0.00650	0.00907
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01179	0.01134	0.01395
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00901	0.00855	0.01116
	(!D * SET_B * !Q * Q_N)	0.00991	0.00955	0.01217
	(!D * SET_B * !Q * Q_N)	0.00695	0.00658	0.00921
	(!D * !SET_B * Q * !Q_N)	0.01235	0.01206	0.01470
	(!D * !SET_B * Q * !Q_N)	0.00922	0.00892	0.01156

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)	0.01029	0.01007	0.01317
	(D * RESET_B * SET_B * !Q * Q_N)	0.01342	0.01319	0.01630
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00521	0.00507	0.00828
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00817	0.00804	0.01125
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00655	0.00638	0.00957
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00933	0.00918	0.01236
	(!D * SET_B * !Q * Q_N)	0.00511	0.00500	0.00815
	(!D * SET_B * !Q * Q_N)	0.00807	0.00795	0.01112
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01081	0.01073	0.01423
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01362	0.01354	0.01704
	(!D * !SET_B * Q * !Q_N)	0.00698	0.00690	0.01037
	(!D * !SET_B * Q * !Q_N)	0.01012	0.01005	0.01351

SKY130_FD_SC_HS__DFRBPx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT			OUTPUT	
D	RESET_B	CLK	Q	Q_N
0	1	R	0	1
1	1	R	1	0
x	0	x	0	1
x	1	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfrbp_1	38.36160
sky130_fd_sc_hs__dfrbp_2	46.35360

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	RESET_B	CLK	Q	Q_N
sky130_fd_sc_hs__dfrbp_1	0.00176	0.00538	0.00289	0.77653	0.76299
sky130_fd_sc_hs__dfrbp_2	0.00161	0.00512	0.00290	1.53561	1.52861

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrbp_1	0.00000	0.16417	0.31499
sky130_fd_sc_hs__dfrbp_2	0.00000	0.17443	0.28285

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)	0.35354	1.01773	7.29925
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RR)	0.43659	0.99367	7.82352

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrbp_1	CLK->Q (RF)	0.30610	0.65419	2.68511
	RESET_B->Q (FF)	0.43399	1.03900	5.45483
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RF)	0.34952	0.66912	2.76614
	RESET_B->Q (FF)	0.50995	1.09228	5.69415

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)	0.26042	0.95231	7.21947
	RESET_B->Q_N (FR)	0.38762	1.33062	9.98069
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RR)	0.25216	0.83679	7.19123
	RESET_B->Q_N (FR)	0.41302	1.25701	10.11540

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)	0.26911	0.69683	2.75941
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RF)	0.29464	0.72139	2.88745

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)	-0.07391	-0.16458	-0.87577
	setup	CLK (R)	0.17419	0.23092	1.03332
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.07424	-0.16997	-0.92198
	setup	CLK (R)	0.18757	0.24045	1.08695

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)	-0.07705	-0.23671	-2.60374
	setup	CLK (R)	0.28265	0.40184	3.29974
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.11019	-0.28070	-3.13492
	setup	CLK (R)	0.31196	0.42774	3.39352

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)	-0.07391	-0.16458	-0.87577
	setup	CLK (R)	0.17419	0.23092	1.03332
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.07424	-0.16997	-0.92198
	setup	CLK (R)	0.18757	0.24045	1.08695

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)	-0.07705	-0.23671	-2.60374
	setup	CLK (R)	0.28265	0.40184	3.29974
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.11019	-0.28070	-3.13492
	setup	CLK (R)	0.31196	0.42774	3.39352

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)	0.18827	0.22864	1.17206
	removal	CLK (R)	-0.13089	-0.19861	-1.07969
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.20277	0.24074	1.21473
	removal	CLK (R)	-0.14275	-0.20922	-1.13773

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)	0.18827	0.22864	1.17206
	removal	CLK (R)	-0.13089	-0.19861	-1.07969
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.20277	0.24074	1.21473
	removal	CLK (R)	-0.14275	-0.20922	-1.13773

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 ()	0.22598	0.77881	16.50020
	min_pulse_width	RESET_B ()	0.18256	0.77881	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	RESET_B ()	0.24624	0.77881	16.50020
	min_pulse_width	RESET_B ()	0.19124	0.77881	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 ()	0.20861	0.77881	16.50020
	min_pulse_width	CLK ()	0.11310	0.77881	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.28965	0.77881	16.50020
	min_pulse_width	CLK ()	0.13625	0.77881	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 ()	0.26071	0.77881	16.50020
	min_pulse_width	CLK ()	0.34465	0.77881	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.27518	0.77881	16.50020
	min_pulse_width	CLK ()	0.34754	0.77881	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	0.00988	0.00989	0.01122
	CLK	0.00839	0.00840	0.00973
sky130_fd_sc_hs__dfrbp_2	CLK	0.01083	0.01114	0.01276
	CLK	0.00937	0.00968	0.01122

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.01010	0.01015	0.01164
	CLK	0.00857	0.00863	0.01010
	RESET_B	0.00772	0.00762	0.00915
	RESET_B	0.01070	0.01058	0.01173
sky130_fd_sc_hs__dfrbp_2	CLK	0.01119	0.01159	0.01318
	CLK	0.00972	0.01012	0.01168
	RESET_B	0.00971	0.00998	0.01176
	RESET_B	0.01248	0.01273	0.01386

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.01010	0.01016	0.01181
	CLK	0.00858	0.00864	0.01026
	RESET_B	0.00772	0.00763	0.00896
	RESET_B	0.01071	0.01060	0.01184
sky130_fd_sc_hs__dfrbp_2	CLK	0.01120	0.01163	0.01336
	CLK	0.00974	0.01013	0.01188
	RESET_B	0.00972	0.00999	0.01174
	RESET_B	0.01249	0.01275	0.01404

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.00987	0.00988	0.01111
	CLK	0.00838	0.00839	0.00961
sky130_fd_sc_hs__dfrbp_2	CLK	0.01083	0.01113	0.01249
	CLK	0.00936	0.00967	0.01098

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00261	0.00249	0.00353
	(CLK * RESET_B)	0.00061	0.00047	0.00152
	(CLK * !RESET_B)	0.00029	0.00029	0.00028
	(CLK * !RESET_B)	-0.00086	-0.00086	-0.00087
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00741	0.00729	0.00823
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00530	0.00518	0.00612
	(!CLK * !RESET_B)	0.00029	0.00029	0.00028
	(!CLK * !RESET_B)	-0.00086	-0.00086	-0.00087
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00301	0.00290	0.00388
	(CLK * RESET_B)	0.00126	0.00114	0.00213
	(CLK * !RESET_B)	0.00033	0.00033	0.00032
	(CLK * !RESET_B)	-0.00073	-0.00073	-0.00074
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00911	0.00902	0.00993
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00748	0.00738	0.00829
	(!CLK * !RESET_B)	0.00033	0.00033	0.00032
	(!CLK * !RESET_B)	-0.00073	-0.00073	-0.00074

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00040	0.00028	0.00128
	(CLK * RESET_B)	0.00240	0.00228	0.00329
	(CLK * !RESET_B)	-0.00028	-0.00028	-0.00028
	(CLK * !RESET_B)	0.00087	0.00088	0.00087
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00447	0.00431	0.00549
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00657	0.00641	0.00760
	(!CLK * !RESET_B)	-0.00028	-0.00028	-0.00028
	(!CLK * !RESET_B)	0.00088	0.00088	0.00087
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00063	0.00051	0.00148
	(CLK * RESET_B)	0.00239	0.00226	0.00322
	(CLK * !RESET_B)	-0.00032	-0.00032	-0.00031
	(CLK * !RESET_B)	0.00075	0.00075	0.00075
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00550	0.00530	0.00640
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00715	0.00694	0.00804
	(!CLK * !RESET_B)	-0.00032	-0.00032	-0.00031
	(!CLK * !RESET_B)	0.00075	0.00075	0.00075

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * D * !Q * Q_N)	0.00486	0.00472	0.00547
	(CLK * D * !Q * Q_N)	-0.00094	-0.00110	-0.00034
	(CLK * !D * !Q * Q_N)	0.00228	0.00231	0.00229
	(CLK * !D * !Q * Q_N)	-0.00255	-0.00257	-0.00255
	(!CLK * D * !Q * Q_N)	0.00987	0.00948	0.01051
	(!CLK * D * !Q * Q_N)	0.00399	0.00357	0.00461
	(!CLK * !D * !Q * Q_N)	0.00224	0.00226	0.00224
	(!CLK * !D * !Q * Q_N)	-0.00261	-0.00262	-0.00261
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	0.00542	0.00532	0.00604
	(CLK * D * !Q * Q_N)	-0.00010	-0.00023	0.00049
	(CLK * !D * !Q * Q_N)	0.00251	0.00254	0.00251
	(CLK * !D * !Q * Q_N)	-0.00225	-0.00225	-0.00224
	(!CLK * D * !Q * Q_N)	0.01173	0.01134	0.01235
	(!CLK * D * !Q * Q_N)	0.00633	0.00592	0.00693
	(!CLK * !D * !Q * Q_N)	0.00248	0.00250	0.00247
	(!CLK * !D * !Q * Q_N)	-0.00228	-0.00229	-0.00227

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)	-0.00126	-0.00142	-0.00049
	(CLK * D * !Q * Q_N)	0.00453	0.00440	0.00532
	(CLK * !D * !Q * Q_N)	-0.00225	-0.00230	-0.00229
	(CLK * !D * !Q * Q_N)	0.00260	0.00257	0.00256
	(!CLK * D * !Q * Q_N)	0.00351	0.00305	0.00433
	(!CLK * D * !Q * Q_N)	0.00940	0.00896	0.01024
	(!CLK * !D * !Q * Q_N)	-0.00220	-0.00225	-0.00224
	(!CLK * !D * !Q * Q_N)	0.00265	0.00262	0.00262
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	-0.00127	-0.00140	-0.00050
	(CLK * D * !Q * Q_N)	0.00425	0.00415	0.00504
	(CLK * !D * !Q * Q_N)	-0.00245	-0.00251	-0.00251
	(CLK * !D * !Q * Q_N)	0.00228	0.00225	0.00225
	(!CLK * D * !Q * Q_N)	0.00436	0.00390	0.00511
	(!CLK * D * !Q * Q_N)	0.00976	0.00930	0.01055
	(!CLK * !D * !Q * Q_N)	-0.00241	-0.00248	-0.00247
	(!CLK * !D * !Q * Q_N)	0.00231	0.00229	0.00228

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)	0.00943	0.00907	0.01169
	(D * RESET_B * Q * !Q_N)	0.00642	0.00606	0.00867
	(D * !RESET_B * !Q * Q_N)	0.00971	0.00937	0.01197
	(D * !RESET_B * !Q * Q_N)	0.00670	0.00635	0.00896
	(!D * !Q * Q_N)	0.00970	0.00936	0.01197
	(!D * !Q * Q_N)	0.00670	0.00634	0.00895
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.00857	0.00823	0.01091
	(D * RESET_B * Q * !Q_N)	0.00563	0.00528	0.00797
	(D * !RESET_B * !Q * Q_N)	0.00860	0.00825	0.01093
	(D * !RESET_B * !Q * Q_N)	0.00566	0.00531	0.00799
	(!D * !Q * Q_N)	0.00860	0.00825	0.01093
	(!D * !Q * Q_N)	0.00566	0.00531	0.00799

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)	0.00530	0.00515	0.00837
	(D * RESET_B * Q * !Q_N)	0.00831	0.00817	0.01139
	(D * RESET_B * !Q * Q_N)	0.00963	0.00942	0.01264
	(D * RESET_B * !Q * Q_N)	0.01255	0.01233	0.01557
	(D * !RESET_B * !Q * Q_N)	0.00494	0.00479	0.00802
	(D * !RESET_B * !Q * Q_N)	0.00796	0.00781	0.01104
	(!D * RESET_B * Q * !Q_N)	0.01001	0.00993	0.01343
	(!D * RESET_B * Q * !Q_N)	0.01312	0.01304	0.01655
	(!D * !Q * Q_N)	0.00494	0.00479	0.00802
	(!D * !Q * Q_N)	0.00796	0.00781	0.01104
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.00534	0.00521	0.00842
	(D * RESET_B * Q * !Q_N)	0.00828	0.00815	0.01137
	(D * RESET_B * !Q * Q_N)	0.01176	0.01149	0.01463
	(D * RESET_B * !Q * Q_N)	0.01479	0.01452	0.01768
	(D * !RESET_B * !Q * Q_N)	0.00529	0.00514	0.00838
	(D * !RESET_B * !Q * Q_N)	0.00823	0.00809	0.01132
	(!D * RESET_B * Q * !Q_N)	0.01097	0.01090	0.01449
	(!D * RESET_B * Q * !Q_N)	0.01380	0.01373	0.01732
	(!D * !Q * Q_N)	0.00529	0.00514	0.00839
	(!D * !Q * Q_N)	0.00823	0.00809	0.01132

SKY130_FD_SC_HS__DFRTN

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT			OUTPUT
D	RESET_B	CLK_N	Q
0	1	F	0
1	1	F	1
x	0	x	0
x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfrtn_1	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	RESET_B	CLK_N	Q
sky130_fd_sc_hs__dfrtn_1	0.00173	0.00508	0.00277	0.75231

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrtn_1	0.00000	0.15251	0.28915

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)	0.38131	1.26788	9.23380

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)	0.28954	0.84116	4.59631
	RESET_B->Q (FF)	0.40086	1.00242	5.34007

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)	0.04555	0.12117	1.56109
	setup	CLK_N (F)	0.08829	-0.00100	-1.40949

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)	-0.07454	-0.13686	-1.14235
	setup	CLK_N (F)	0.33969	0.40114	1.36430

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)	0.04555	0.12117	1.56109
	setup	CLK_N (F)	0.08829	-0.00100	-1.40949

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)	-0.07454	-0.13686	-1.14235
	setup	CLK_N (F)	0.33969	0.40114	1.36430

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)	0.09926	-0.00490	-1.32790
	removal	CLK_N (F)	-0.03082	0.05390	1.37051

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)	0.09926	-0.00490	-1.32790
	removal	CLK_N (F)	-0.03082	0.05390	1.37051

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 ()	0.17098	0.77881	16.50020
	min_pulse_width	RESET_B ()	0.22308	0.77881	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 ()	0.18256	0.77881	16.50020
	min_pulse_width	CLK_N ()	0.33018	0.77881	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 ()	0.22598	0.77881	16.50020
	min_pulse_width	CLK_N ()	0.18835	0.77881	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	0.01541	0.01551	0.01946
	CLK_N	0.01823	0.01832	0.02239

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtn_1	CLK_N	0.01435	0.01426	0.01778
	CLK_N	0.01710	0.01699	0.02030
	RESET_B	0.01384	0.01340	0.01584
	RESET_B	0.01936	0.01890	0.02125

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)	0.00732	0.00720	0.00816
	(CLK_N * RESET_B)	0.00548	0.00537	0.00631
	(CLK_N * !RESET_B)	0.00029	0.00030	0.00029
	(CLK_N * !RESET_B)	-0.00085	-0.00085	-0.00086
	(!CLK_N * RESET_B)	0.00254	0.00242	0.00346
	(!CLK_N * RESET_B)	0.00064	0.00051	0.00156
	(!CLK_N * !RESET_B)	0.00030	0.00030	0.00029
	(!CLK_N * !RESET_B)	-0.00085	-0.00085	-0.00086

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)	0.00514	0.00495	0.00618
	(CLK_N * RESET_B)	0.00698	0.00679	0.00802
	(CLK_N * !RESET_B)	-0.00028	-0.00028	-0.00028
	(CLK_N * !RESET_B)	0.00086	0.00087	0.00086
	(!CLK_N * RESET_B)	0.00046	0.00034	0.00135
	(!CLK_N * RESET_B)	0.00236	0.00224	0.00325
	(!CLK_N * !RESET_B)	-0.00029	-0.00028	-0.00028
	(!CLK_N * !RESET_B)	0.00087	0.00087	0.00086

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)	0.00975	0.00939	0.01042
	(CLK_N * D * !Q)	0.00431	0.00394	0.00495
	(CLK_N * !D * !Q)	0.00240	0.00244	0.00242
	(CLK_N * !D * !Q)	-0.00225	-0.00228	-0.00226
	(!CLK_N * D * !Q)	0.00464	0.00454	0.00529
	(!CLK_N * D * !Q)	-0.00089	-0.00102	-0.00025
	(!CLK_N * !D * !Q)	0.00236	0.00238	0.00236
	(!CLK_N * !D * !Q)	-0.00232	-0.00233	-0.00232

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)	0.00411	0.00370	0.00496
	(CLK_N * D * !Q)	0.00956	0.00915	0.01042
	(CLK_N * !D * !Q)	-0.00237	-0.00244	-0.00242
	(CLK_N * !D * !Q)	0.00230	0.00230	0.00227
	(!CLK_N * D * !Q)	-0.00112	-0.00125	-0.00032
	(!CLK_N * D * !Q)	0.00440	0.00430	0.00522
	(!CLK_N * !D * !Q)	-0.00230	-0.00238	-0.00236
	(!CLK_N * !D * !Q)	0.00235	0.00235	0.00233

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)	0.00900	0.00858	0.01123
	(D * RESET_B * Q)	0.00622	0.00579	0.00844
	(D * RESET_B * !Q)	0.01391	0.01354	0.01629
	(D * RESET_B * !Q)	0.01119	0.01081	0.01356
	(D * !RESET_B * !Q)	0.00886	0.00845	0.01106
	(D * !RESET_B * !Q)	0.00608	0.00566	0.00828
	(!D * RESET_B * Q)	0.01354	0.01303	0.01555
	(!D * RESET_B * Q)	0.01070	0.01018	0.01270
	(!D * !Q)	0.00886	0.00845	0.01107
	(!D * !Q)	0.00608	0.00566	0.00828

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)	0.00643	0.00626	0.00943
	(D * RESET_B * Q)	0.00922	0.00904	0.01222
	(D * !RESET_B * !Q)	0.00652	0.00634	0.00952
	(D * !RESET_B * !Q)	0.00931	0.00914	0.01231
	(!D * !Q)	0.00651	0.00633	0.00952
	(!D * !Q)	0.00930	0.00912	0.01231

SKY130_FD_SC_HS__DFRTPx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT			OUTPUT
D	RESET_B	CLK	Q
0	1	R	0
1	1	R	1
x	0	x	0
x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfrtp_1	36.76320
sky130_fd_sc_hs__dfrtp_2	38.36160
sky130_fd_sc_hs__dfrtp_4	44.75520

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	RESET_B	CLK	Q
sky130_fd_sc_hs__dfrtp_1	0.00174	0.00531	0.00291	0.78476
sky130_fd_sc_hs__dfrtp_2	0.00173	0.00522	0.00290	1.51379
sky130_fd_sc_hs__dfrtp_4	0.00174	0.00545	0.00290	3.03345

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dfrtp_1	0.00000	0.15251	0.28915
sky130_fd_sc_hs__dfrtp_2	0.00000	0.17138	0.29336
sky130_fd_sc_hs__dfrtp_4	0.00000	0.24672	0.42166

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)	0.28905	0.96395	7.27174
sky130_fd_sc_hs__dfrtp_2	CLK->Q (RR)	0.28665	0.84244	7.16058
sky130_fd_sc_hs__dfrtp_4	CLK->Q (RR)	0.37466	0.85293	7.42084

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrtp_1	CLK->Q (RF)	0.29379	0.64211	2.69884
	RESET_B->Q (FF)	0.41128	1.01749	5.46103
sky130_fd_sc_hs__dfrtp_2	CLK->Q (RF)	0.32719	0.65498	2.67609
	RESET_B->Q (FF)	0.44276	1.02522	5.44310
sky130_fd_sc_hs__dfrtp_4	CLK->Q (RF)	0.32922	0.63579	2.86867
	RESET_B->Q (FF)	0.45637	1.01393	5.64606

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)	-0.07984	-0.16965	-0.89835
	setup	CLK (R)	0.20086	0.24777	1.11993
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.07822	-0.16915	-0.88750
	setup	CLK (R)	0.19444	0.24618	1.11562
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.07859	-0.16759	-0.87015
	setup	CLK (R)	0.20434	0.25120	1.08626

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)	-0.06559	-0.22315	-2.32633
	setup	CLK (R)	0.28088	0.39966	3.30018
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.05899	-0.22145	-2.31818
	setup	CLK (R)	0.27601	0.39947	3.29146
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.07900	-0.23454	-2.60437
	setup	CLK (R)	0.30040	0.41438	3.31138

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)	-0.07984	-0.16965	-0.89835
	setup	CLK (R)	0.20086	0.24777	1.11993
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.07822	-0.16915	-0.88750
	setup	CLK (R)	0.19444	0.24618	1.11562
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.07859	-0.16759	-0.87015
	setup	CLK (R)	0.20434	0.25120	1.08626

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)	-0.06559	-0.22315	-2.32633
	setup	CLK (R)	0.28088	0.39966	3.30018
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.05899	-0.22145	-2.31818
	setup	CLK (R)	0.27601	0.39947	3.29146
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.07900	-0.23454	-2.60437
	setup	CLK (R)	0.30040	0.41438	3.31138

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)	0.21418	0.24553	1.22442
	removal	CLK (R)	-0.13106	-0.19927	-1.08549
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.20955	0.24308	1.21682
	removal	CLK (R)	-0.12664	-0.19674	-1.07914
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.21787	0.24912	1.19685
	removal	CLK (R)	-0.13899	-0.20409	-1.07381

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)	0.21418	0.24553	1.22442
	removal	CLK (R)	-0.13106	-0.19927	-1.08549
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.20955	0.24308	1.21682
	removal	CLK (R)	-0.12664	-0.19674	-1.07914
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.21787	0.24912	1.19685
	removal	CLK (R)	-0.13899	-0.20409	-1.07381

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 ()	0.22598	0.77881	16.50020
	min_pulse_width	RESET_B ()	0.17098	0.77881	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	RESET_B ()	0.22887	0.77881	16.50020
	min_pulse_width	RESET_B ()	0.17677	0.77881	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	RESET_B ()	0.23756	0.77881	16.50020
	min_pulse_width	RESET_B ()	0.17677	0.77881	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 ()	0.14494	0.77881	16.50020
	min_pulse_width	CLK ()	0.11020	0.77881	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.15362	0.77881	16.50020
	min_pulse_width	CLK ()	0.11310	0.77881	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.21151	0.77881	16.50020
	min_pulse_width	CLK ()	0.11889	0.77881	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 ()	0.28676	0.77881	16.50020
	min_pulse_width	CLK ()	0.34175	0.77881	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.28676	0.77881	16.50020
	min_pulse_width	CLK ()	0.34175	0.77881	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.30702	0.77881	16.50020
	min_pulse_width	CLK ()	0.36780	0.77881	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	0.01778	0.01764	0.02028
	CLK	0.01481	0.01468	0.01739
sky130_fd_sc_hs__dfrtp_2	CLK	0.01953	0.01961	0.02227
	CLK	0.01657	0.01665	0.01936
sky130_fd_sc_hs__dfrtp_4	CLK	0.02446	0.02503	0.02784
	CLK	0.02138	0.02196	0.02509

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	CLK	0.01899	0.01897	0.02206
	CLK	0.01585	0.01583	0.01887
	RESET_B	0.01395	0.01358	0.01639
	RESET_B	0.01988	0.01946	0.02184
sky130_fd_sc_hs__dfrtp_2	CLK	0.02031	0.02070	0.02377
	CLK	0.01719	0.01747	0.02050
	RESET_B	0.01539	0.01531	0.01929
	RESET_B	0.02122	0.02110	0.02349
sky130_fd_sc_hs__dfrtp_4	CLK	0.02613	0.02695	0.03041
	CLK	0.02289	0.02369	0.02673
	RESET_B	0.02014	0.02057	0.02456
	RESET_B	0.02685	0.02722	0.02960

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00258	0.00246	0.00350
	(CLK * RESET_B)	0.00060	0.00046	0.00151
	(CLK * !RESET_B)	0.00029	0.00029	0.00028
	(CLK * !RESET_B)	-0.00084	-0.00085	-0.00085
	(!CLK * RESET_B)	0.00760	0.00747	0.00843
	(!CLK * RESET_B)	0.00549	0.00536	0.00631
	(!CLK * !RESET_B)	0.00029	0.00029	0.00028
	(!CLK * !RESET_B)	-0.00084	-0.00084	-0.00085
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00252	0.00239	0.00344
	(CLK * RESET_B)	0.00056	0.00043	0.00148
	(CLK * !RESET_B)	0.00029	0.00029	0.00028
	(CLK * !RESET_B)	-0.00084	-0.00085	-0.00086
	(!CLK * RESET_B)	0.00729	0.00717	0.00813
	(!CLK * RESET_B)	0.00523	0.00511	0.00607
	(!CLK * !RESET_B)	0.00029	0.00029	0.00028
	(!CLK * !RESET_B)	-0.00084	-0.00085	-0.00086
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00260	0.00248	0.00352
	(CLK * RESET_B)	0.00062	0.00048	0.00153
	(CLK * !RESET_B)	0.00029	0.00029	0.00028
	(CLK * !RESET_B)	-0.00085	-0.00085	-0.00086
	(!CLK * RESET_B)	0.00831	0.00818	0.00911
	(!CLK * RESET_B)	0.00621	0.00608	0.00700
	(!CLK * !RESET_B)	0.00029	0.00029	0.00028
	(!CLK * !RESET_B)	-0.00085	-0.00085	-0.00086

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00039	0.00027	0.00128
	(CLK * RESET_B)	0.00237	0.00226	0.00327
	(CLK * !RESET_B)	-0.00028	-0.00027	-0.00027
	(CLK * !RESET_B)	0.00086	0.00086	0.00086
	(!CLK * RESET_B)	0.00468	0.00449	0.00576
	(!CLK * RESET_B)	0.00680	0.00660	0.00787
	(!CLK * !RESET_B)	-0.00028	-0.00027	-0.00027
	(!CLK * !RESET_B)	0.00086	0.00086	0.00086
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00039	0.00026	0.00129
	(CLK * RESET_B)	0.00235	0.00223	0.00325
	(CLK * !RESET_B)	-0.00028	-0.00027	-0.00027
	(CLK * !RESET_B)	0.00087	0.00087	0.00086
	(!CLK * RESET_B)	0.00467	0.00449	0.00579
	(!CLK * RESET_B)	0.00674	0.00656	0.00786
	(!CLK * !RESET_B)	-0.00028	-0.00027	-0.00027
	(!CLK * !RESET_B)	0.00087	0.00086	0.00086
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00039	0.00028	0.00128
	(CLK * RESET_B)	0.00238	0.00227	0.00327
	(CLK * !RESET_B)	-0.00028	-0.00028	-0.00027
	(CLK * !RESET_B)	0.00086	0.00087	0.00086
	(!CLK * RESET_B)	0.00478	0.00461	0.00582
	(!CLK * RESET_B)	0.00689	0.00672	0.00792
	(!CLK * !RESET_B)	-0.00028	-0.00028	-0.00027
	(!CLK * !RESET_B)	0.00087	0.00087	0.00086

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)	0.00485	0.00471	0.00546
	(CLK * D * !Q)	-0.00094	-0.00111	-0.00034
	(CLK * !D * !Q)	0.00228	0.00232	0.00229
	(CLK * !D * !Q)	-0.00254	-0.00255	-0.00254
	(!CLK * D * !Q)	0.01009	0.00972	0.01074
	(!CLK * D * !Q)	0.00421	0.00380	0.00484
	(!CLK * !D * !Q)	0.00220	0.00221	0.00221
	(!CLK * !D * !Q)	-0.00262	-0.00262	-0.00262
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	0.00474	0.00461	0.00537
	(CLK * D * !Q)	-0.00096	-0.00112	-0.00035
	(CLK * !D * !Q)	0.00226	0.00229	0.00227
	(CLK * !D * !Q)	-0.00250	-0.00250	-0.00250
	(!CLK * D * !Q)	0.00974	0.00935	0.01043
	(!CLK * D * !Q)	0.00395	0.00357	0.00463
	(!CLK * !D * !Q)	0.00219	0.00222	0.00220
	(!CLK * !D * !Q)	-0.00257	-0.00258	-0.00257
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	0.00498	0.00484	0.00559
	(CLK * D * !Q)	-0.00089	-0.00105	-0.00028
	(CLK * !D * !Q)	0.00241	0.00245	0.00242
	(CLK * !D * !Q)	-0.00249	-0.00251	-0.00250
	(!CLK * D * !Q)	0.01074	0.01034	0.01135
	(!CLK * D * !Q)	0.00478	0.00435	0.00537
	(!CLK * !D * !Q)	0.00221	0.00225	0.00222
	(!CLK * !D * !Q)	-0.00269	-0.00271	-0.00270

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)	-0.00127	-0.00143	-0.00050
	(CLK * D * !Q)	0.00451	0.00437	0.00529
	(CLK * !D * !Q)	-0.00224	-0.00229	-0.00229
	(CLK * !D * !Q)	0.00259	0.00255	0.00255
	(!CLK * D * !Q)	0.00366	0.00321	0.00447
	(!CLK * D * !Q)	0.00956	0.00912	0.01039
	(!CLK * !D * !Q)	-0.00216	-0.00221	-0.00221
	(!CLK * !D * !Q)	0.00266	0.00263	0.00263
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	-0.00125	-0.00140	-0.00047
	(CLK * D * !Q)	0.00445	0.00432	0.00524
	(CLK * !D * !Q)	-0.00222	-0.00226	-0.00227
	(CLK * !D * !Q)	0.00255	0.00250	0.00251
	(!CLK * D * !Q)	0.00367	0.00321	0.00452
	(!CLK * D * !Q)	0.00946	0.00900	0.01034
	(!CLK * !D * !Q)	-0.00215	-0.00220	-0.00220
	(!CLK * !D * !Q)	0.00262	0.00258	0.00258
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	-0.00139	-0.00154	-0.00062
	(CLK * D * !Q)	0.00447	0.00434	0.00526
	(CLK * !D * !Q)	-0.00237	-0.00242	-0.00242
	(CLK * !D * !Q)	0.00255	0.00251	0.00251
	(!CLK * D * !Q)	0.00386	0.00340	0.00462
	(!CLK * D * !Q)	0.00984	0.00939	0.01062
	(!CLK * !D * !Q)	-0.00218	-0.00223	-0.00222
	(!CLK * !D * !Q)	0.00274	0.00271	0.00271

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)	0.00975	0.00939	0.01199
	(D * RESET_B * Q)	0.00670	0.00632	0.00893
	(D * !RESET_B * !Q)	0.01014	0.00981	0.01239
	(D * !RESET_B * !Q)	0.00709	0.00674	0.00933
	(!D * !Q)	0.01014	0.00980	0.01238
	(!D * !Q)	0.00709	0.00673	0.00932
sky130_fd_sc_hs__dfrtp_2	(D * RESET_B * Q)	0.00969	0.00932	0.01193
	(D * RESET_B * Q)	0.00666	0.00628	0.00889
	(D * !RESET_B * !Q)	0.01008	0.00974	0.01232
	(D * !RESET_B * !Q)	0.00705	0.00669	0.00928
	(!D * !Q)	0.01008	0.00974	0.01232
	(!D * !Q)	0.00704	0.00669	0.00928
sky130_fd_sc_hs__dfrtp_4	(D * RESET_B * Q)	0.01023	0.00987	0.01239
	(D * RESET_B * Q)	0.00708	0.00670	0.00923
	(D * !RESET_B * !Q)	0.01054	0.01020	0.01273
	(D * !RESET_B * !Q)	0.00739	0.00703	0.00956
	(!D * !Q)	0.01054	0.01019	0.01272
	(!D * !Q)	0.00739	0.00702	0.00956

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)**	0.00534	0.00518	0.00839
	(D * RESET_B * Q)	0.00839	0.00824	0.01145
	(D * RESET_B * !Q)	0.00990	0.00967	0.01287
	(D * RESET_B * !Q)	0.01284	0.01260	0.01581
	(D * !RESET_B * !Q)	0.00493	0.00477	0.00798
	(D * !RESET_B * !Q)	0.00798	0.00782	0.01105
	(!D * RESET_B * Q)	0.01028	0.01019	0.01368
	(!D * RESET_B * Q)	0.01345	0.01336	0.01687
	(!D * !Q)	0.00493	0.00476	0.00798
	(!D * !Q)	0.00798	0.00783	0.01104
sky130_fd_sc_hs__dfrtp_2	**(D * RESET_B * Q)**	0.00535	0.00520	0.00840
	(D * RESET_B * Q)	0.00839	0.00823	0.01144
	(D * RESET_B * !Q)	0.00967	0.00944	0.01265
	(D * RESET_B * !Q)	0.01261	0.01237	0.01559
	(D * !RESET_B * !Q)	0.00494	0.00478	0.00800
	(D * !RESET_B * !Q)	0.00798	0.00782	0.01105
	(!D * RESET_B * Q)	0.01029	0.01020	0.01369
	(!D * RESET_B * Q)	0.01343	0.01334	0.01683
	(!D * !Q)	0.00494	0.00478	0.00800
	(!D * !Q)	0.00798	0.00783	0.01105
sky130_fd_sc_hs__dfrtp_4	**(D * RESET_B * Q)**	0.00555	0.00541	0.00857
	(D * RESET_B * Q)	0.00871	0.00857	0.01173
	(D * RESET_B * !Q)	0.01090	0.01064	0.01380
	(D * RESET_B * !Q)	0.01394	0.01368	0.01684
	(D * !RESET_B * !Q)	0.00521	0.00507	0.00824
	(D * !RESET_B * !Q)	0.00837	0.00823	0.01139
	(!D * RESET_B * Q)	0.01053	0.01046	0.01396
	(!D * RESET_B * Q)	0.01380	0.01373	0.01725
	(!D * !Q)	0.00521	0.00506	0.00824
	(!D * !Q)	0.00837	0.00822	0.01140

SKY130_FD_SC_HS__DFSBPx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT			OUTPUT	
D	SET_B	CLK	Q	Q_N
0	1	R	0	1
1	1	R	1	0
x	0	x	1	0
x	1	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfsbp_1	39.96000
sky130_fd_sc_hs__dfsbp_2	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	SET_B	CLK	Q	Q_N
sky130_fd_sc_hs__dfsbp_1	0.00171	0.00327	0.00286	0.75765	0.72061
sky130_fd_sc_hs__dfsbp_2	0.00172	0.00325	0.00287	1.52850	1.47595

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfsbp_1	0.00000	0.16501	0.19845
sky130_fd_sc_hs__dfsbp_2	0.00000	0.15512	0.16771

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)	0.40438	1.07200	7.38131
	SET_B->Q (FR)	0.40890	1.35321	10.38900
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RR)	0.48614	1.01798	7.36875
	SET_B->Q (FR)	0.49939	1.30650	10.57760

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfsbp_1	CLK->Q (RF)	0.34457	0.69044	2.68735
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RF)	0.39115	0.70397	2.76144

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)	0.29719	1.00704	7.31412
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RR)	0.29734	0.88217	7.22701

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)	0.30991	0.74694	2.76469
	SET_B->Q_N (FF)	0.30844	1.02318	5.86275
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RF)	0.34473	0.76927	2.85863
	SET_B->Q_N (FF)	0.34889	1.05402	6.15261

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)	-0.06973	-0.15879	-0.92806
	setup	CLK (R)	0.12851	0.20087	1.02087
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.06463	-0.15479	-0.91297
	setup	CLK (R)	0.12094	0.19487	0.98089

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)	-0.06768	-0.22541	-2.42289
	setup	CLK (R)	0.31168	0.42660	3.46229
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.07588	-0.23725	-2.65267
	setup	CLK (R)	0.30081	0.42195	3.42497

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)	-0.06973	-0.15879	-0.92806
	setup	CLK (R)	0.12851	0.20087	1.02087
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.06463	-0.15479	-0.91297
	setup	CLK (R)	0.12094	0.19487	0.98089

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)	-0.06768	-0.22541	-2.42289
	setup	CLK (R)	0.31168	0.42660	3.46229
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.07588	-0.23725	-2.65267
	setup	CLK (R)	0.30081	0.42195	3.42497

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)	-0.13786	-0.19171	-0.56887
	removal	CLK (R)	0.16803	0.21378	0.62421
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.14004	-0.18771	-0.56182
	removal	CLK (R)	0.16627	0.21627	0.60502

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)	-0.13786	-0.19171	-0.56887
	removal	CLK (R)	0.16803	0.21378	0.62421
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.14004	-0.18771	-0.56182
	removal	CLK (R)	0.16627	0.21627	0.60502

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 ()	0.31860	0.77881	16.50020
	min_pulse_width	SET_B ()	0.32050	0.81591	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	SET_B ()	0.34592	0.80354	16.50020
	min_pulse_width	SET_B ()	0.40072	0.89011	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 ()	0.25203	0.77881	16.50020
	min_pulse_width	CLK ()	0.13915	0.77881	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.32728	0.77881	16.50020
	min_pulse_width	CLK ()	0.16230	0.77881	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 ()	0.23756	0.77881	16.50020
	min_pulse_width	CLK ()	0.40254	0.77881	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.22887	0.77881	16.50020
	min_pulse_width	CLK ()	0.39096	0.77881	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	0.01017	0.01018	0.01151
	CLK	0.00869	0.00870	0.01002
	SET_B	0.00963	0.00961	0.01022
	SET_B	0.01110	0.01108	0.01162
sky130_fd_sc_hs__dfsbp_2	CLK	0.01182	0.01204	0.01349
	CLK	0.01032	0.01056	0.01198
	SET_B	0.01113	0.01142	0.01245
	SET_B	0.01256	0.01286	0.01353

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01069	0.01071	0.01198
	CLK	0.00929	0.00931	0.01056
sky130_fd_sc_hs__dfsbp_2	CLK	0.01240	0.01270	0.01398
	CLK	0.01097	0.01127	0.01253

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01071	0.01076	0.01216
	CLK	0.00931	0.00933	0.01075
sky130_fd_sc_hs__dfsbp_2	CLK	0.01242	0.01276	0.01425
	CLK	0.01099	0.01129	0.01281

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01015	0.01016	0.01138
	CLK	0.00867	0.00869	0.00989
	SET_B	0.00961	0.00959	0.01004
	SET_B	0.01108	0.01105	0.01149
sky130_fd_sc_hs__dfsbp_2	CLK	0.01181	0.01204	0.01332
	CLK	0.01031	0.01055	0.01181
	SET_B	0.01111	0.01140	0.01191
	SET_B	0.01254	0.01284	0.01333

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00233	0.00221	0.00331
	CLK	0.00055	0.00043	0.00153
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00684	0.00670	0.00746
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00488	0.00475	0.00550
	(!CLK * !SET_B * Q * !Q_N)	0.00534	0.00526	0.00603
	(!CLK * !SET_B * Q * !Q_N)	0.00330	0.00322	0.00400
sky130_fd_sc_hs__dfsbp_2	CLK	0.00232	0.00221	0.00331
	CLK	0.00054	0.00042	0.00152
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00677	0.00663	0.00739
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00474	0.00460	0.00537
	(!CLK * !SET_B * Q * !Q_N)	0.00533	0.00525	0.00603
	(!CLK * !SET_B * Q * !Q_N)	0.00324	0.00315	0.00393

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00023	0.00018	0.00122
	CLK	0.00201	0.00196	0.00299
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00492	0.00481	0.00568
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00687	0.00677	0.00765
	(!CLK * !SET_B * Q * !Q_N)	0.00286	0.00277	0.00355
	(!CLK * !SET_B * Q * !Q_N)	0.00490	0.00482	0.00559
sky130_fd_sc_hs__dfsbp_2	CLK	0.00023	0.00017	0.00122
	CLK	0.00201	0.00196	0.00300
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00471	0.00461	0.00550
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00674	0.00664	0.00753
	(!CLK * !SET_B * Q * !Q_N)	0.00275	0.00267	0.00345
	(!CLK * !SET_B * Q * !Q_N)	0.00485	0.00477	0.00554

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)	0.00172	0.00174	0.00173
	(CLK * Q * !Q_N)	-0.00144	-0.00145	-0.00144
	(!CLK * D * Q * !Q_N)	0.00189	0.00191	0.00189
	(!CLK * D * Q * !Q_N)	-0.00127	-0.00128	-0.00127
	(!CLK * !D * Q * !Q_N)	0.00358	0.00350	0.00426
	(!CLK * !D * Q * !Q_N)	0.00028	0.00019	0.00096
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	0.00174	0.00176	0.00175
	(CLK * Q * !Q_N)	-0.00140	-0.00141	-0.00140
	(!CLK * D * Q * !Q_N)	0.00187	0.00188	0.00187
	(!CLK * D * Q * !Q_N)	-0.00127	-0.00127	-0.00127
	(!CLK * !D * Q * !Q_N)	0.00343	0.00336	0.00413
	(!CLK * !D * Q * !Q_N)	0.00018	0.00008	0.00087

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)	-0.00169	-0.00174	-0.00173
	(CLK * Q * !Q_N)	0.00146	0.00147	0.00145
	(!CLK * D * Q * !Q_N)	-0.00186	-0.00191	-0.00189
	(!CLK * D * Q * !Q_N)	0.00129	0.00130	0.00128
	(!CLK * !D * Q * !Q_N)	-0.00016	-0.00020	0.00073
	(!CLK * !D * Q * !Q_N)	0.00313	0.00310	0.00404
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	-0.00172	-0.00176	-0.00175
	(CLK * Q * !Q_N)	0.00142	0.00143	0.00141
	(!CLK * D * Q * !Q_N)	-0.00184	-0.00188	-0.00187
	(!CLK * D * Q * !Q_N)	0.00129	0.00128	0.00128
	(!CLK * !D * Q * !Q_N)	-0.00013	-0.00018	0.00078
	(!CLK * !D * Q * !Q_N)	0.00313	0.00309	0.00404

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)	0.01007	0.00970	0.01228
	(D * Q * !Q_N)	0.00719	0.00681	0.00939
	(!D * SET_B * !Q * Q_N)	0.00991	0.00955	0.01211
	(!D * SET_B * !Q * Q_N)	0.00703	0.00665	0.00923
	(!D * !SET_B * Q * !Q_N)	0.01758	0.01734	0.02031
	(!D * !SET_B * Q * !Q_N)	0.01444	0.01419	0.01717
sky130_fd_sc_hs__dfsbp_2	(D * Q * !Q_N)	0.00995	0.00958	0.01217
	(D * Q * !Q_N)	0.00702	0.00664	0.00923
	(!D * SET_B * !Q * Q_N)	0.00986	0.00950	0.01207
	(!D * SET_B * !Q * Q_N)	0.00693	0.00655	0.00914
	(!D * !SET_B * Q * !Q_N)	0.01732	0.01709	0.02006
	(!D * !SET_B * Q * !Q_N)	0.01409	0.01385	0.01681

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)	0.01011	0.00993	0.01308
	(D * SET_B * !Q * Q_N)	0.01282	0.01262	0.01579
	(D * Q * !Q_N)	0.00586	0.00578	0.00892
	(D * Q * !Q_N)	0.00875	0.00867	0.01181
	(!D * SET_B * Q * !Q_N)	0.01158	0.01157	0.01502
	(!D * SET_B * Q * !Q_N)	0.01465	0.01462	0.01809
	(!D * SET_B * !Q * Q_N)	0.00598	0.00586	0.00906
	(!D * SET_B * !Q * Q_N)	0.00887	0.00875	0.01195
	(!D * !SET_B * Q * !Q_N)	0.00951	0.00949	0.01294
	(!D * !SET_B * Q * !Q_N)	0.01266	0.01263	0.01609
sky130_fd_sc_hs__dfsbp_2	(D * SET_B * !Q * Q_N)	0.00993	0.00974	0.01291
	(D * SET_B * !Q * Q_N)	0.01263	0.01243	0.01560
	(D * Q * !Q_N)	0.00577	0.00569	0.00885
	(D * Q * !Q_N)	0.00871	0.00861	0.01178
	(!D * SET_B * Q * !Q_N)	0.01126	0.01124	0.01465
	(!D * SET_B * Q * !Q_N)	0.01445	0.01441	0.01783
	(!D * SET_B * !Q * Q_N)	0.00583	0.00571	0.00892
	(!D * SET_B * !Q * Q_N)	0.00877	0.00865	0.01186
	(!D * !SET_B * Q * !Q_N)	0.00929	0.00926	0.01267
	(!D * !SET_B * Q * !Q_N)	0.01254	0.01250	0.01591

SKY130_FD_SC_HS__DFSTPx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT			OUTPUT
D	SET_B	CLK	Q
0	1	R	0
1	1	R	1
x	0	x	1
x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfstp_1	36.76320
sky130_fd_sc_hs__dfstp_2	39.96000
sky130_fd_sc_hs__dfstp_4	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	SET_B	CLK	Q
sky130_fd_sc_hs__dfstp_1	0.00171	0.00333	0.00285	0.77144
sky130_fd_sc_hs__dfstp_2	0.00171	0.00310	0.00287	1.52637
sky130_fd_sc_hs__dfstp_4	0.00170	0.00317	0.00288	2.91993

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dfstp_1	0.00000	0.14731	0.17401
sky130_fd_sc_hs__dfstp_2	0.00000	0.11973	0.15905
sky130_fd_sc_hs__dfstp_4	0.00000	0.26067	0.30652

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)	0.32382	0.99025	7.21201
	SET_B->Q (FR)	0.33226	1.26988	9.98767
sky130_fd_sc_hs__dfstp_2	CLK->Q (RR)	0.33650	0.89014	7.25411
	SET_B->Q (FR)	0.34707	1.17442	10.08400
sky130_fd_sc_hs__dfstp_4	CLK->Q (RR)	0.39751	0.87062	7.35706
	SET_B->Q (FR)	0.40547	1.15251	10.28380

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfstp_1	CLK->Q (RF)	0.32058	0.66545	2.70344
sky130_fd_sc_hs__dfstp_2	CLK->Q (RF)	0.34377	0.66082	2.73117
sky130_fd_sc_hs__dfstp_4	CLK->Q (RF)	0.35200	0.64316	2.72422

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)	-0.06698	-0.15638	-0.91402
	setup	CLK (R)	0.12635	0.19687	1.03991
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.06802	-0.15889	-0.92718
	setup	CLK (R)	0.13062	0.20087	1.04607
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.06725	-0.15446	-0.90970
	setup	CLK (R)	0.11829	0.19090	0.99180

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)	-0.05870	-0.21577	-2.21189
	setup	CLK (R)	0.30021	0.42069	3.45266
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.05874	-0.22191	-2.25082
	setup	CLK (R)	0.30262	0.42228	3.44350
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.06607	-0.22910	-2.41775
	setup	CLK (R)	0.29507	0.41802	3.42491

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)	-0.06698	-0.15638	-0.91402
	setup	CLK (R)	0.12635	0.19687	1.03991
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.06802	-0.15889	-0.92718
	setup	CLK (R)	0.13062	0.20087	1.04607
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.06725	-0.15446	-0.90970
	setup	CLK (R)	0.11829	0.19090	0.99180

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)	-0.05870	-0.21577	-2.21189
	setup	CLK (R)	0.30021	0.42069	3.45266
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.05874	-0.22191	-2.25082
	setup	CLK (R)	0.30262	0.42228	3.44350
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.06607	-0.22910	-2.41775
	setup	CLK (R)	0.29507	0.41802	3.42491

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)	-0.13859	-0.19209	-0.57824
	removal	CLK (R)	0.16168	0.21130	0.66914
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.14261	-0.19530	-0.57620
	removal	CLK (R)	0.16420	0.21378	0.64491
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.13608	-0.18957	-0.56067
	removal	CLK (R)	0.16378	0.20881	0.61248

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)	-0.13859	-0.19209	-0.57824
	removal	CLK (R)	0.16168	0.21130	0.66914
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.14261	-0.19530	-0.57620
	removal	CLK (R)	0.16420	0.21378	0.64491
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.13608	-0.18957	-0.56067
	removal	CLK (R)	0.16378	0.20881	0.61248

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 ()	0.28097	0.77881	16.50020
	min_pulse_width	SET_B ()	0.24624	0.77881	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	SET_B ()	0.29255	0.77881	16.50020
	min_pulse_width	SET_B ()	0.26071	0.77881	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	SET_B ()	0.30413	0.77881	16.50020
	min_pulse_width	SET_B ()	0.29751	0.79324	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 ()	0.17967	0.77881	16.50020
	min_pulse_width	CLK ()	0.12757	0.77881	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.19414	0.77881	16.50020
	min_pulse_width	CLK ()	0.13336	0.77881	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.23756	0.77881	16.50020
	min_pulse_width	CLK ()	0.13625	0.77881	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 ()	0.23756	0.77881	16.50020
	min_pulse_width	CLK ()	0.38806	0.77881	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.23756	0.77881	16.50020
	min_pulse_width	CLK ()	0.39096	0.77881	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.22887	0.77881	16.50020
	min_pulse_width	CLK ()	0.38228	0.77881	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	0.01758	0.01727	0.01986
	CLK	0.01474	0.01444	0.01704
	SET_B	0.01636	0.01599	0.01702
	SET_B	0.01951	0.01913	0.02021
sky130_fd_sc_hs__dfstp_2	CLK	0.01980	0.01975	0.02238
	CLK	0.01683	0.01679	0.01953
	SET_B	0.01864	0.01854	0.01959
	SET_B	0.02151	0.02141	0.02252
sky130_fd_sc_hs__dfstp_4	CLK	0.02433	0.02469	0.02748
	CLK	0.02133	0.02170	0.02479
	SET_B	0.02297	0.02342	0.02463
	SET_B	0.02586	0.02631	0.02764

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.01921	0.01903	0.02160
	CLK	0.01625	0.01605	0.01863
sky130_fd_sc_hs__dfstp_2	CLK	0.02110	0.02117	0.02392
	CLK	0.01822	0.01830	0.02092
sky130_fd_sc_hs__dfstp_4	CLK	0.02594	0.02664	0.02987
	CLK	0.02304	0.02376	0.02647

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00233	0.00221	0.00331
	CLK	0.00056	0.00044	0.00154
	(!CLK * SET_B)	0.00676	0.00663	0.00739
	(!CLK * SET_B)	0.00480	0.00467	0.00544
	(!CLK * !SET_B * Q)	0.00531	0.00523	0.00600
	(!CLK * !SET_B * Q)	0.00326	0.00318	0.00396
sky130_fd_sc_hs__dfstp_2	CLK	0.00235	0.00224	0.00333
	CLK	0.00057	0.00045	0.00155
	(!CLK * SET_B)	0.00675	0.00662	0.00737
	(!CLK * SET_B)	0.00480	0.00466	0.00542
	(!CLK * !SET_B * Q)	0.00530	0.00522	0.00599
	(!CLK * !SET_B * Q)	0.00325	0.00316	0.00393
sky130_fd_sc_hs__dfstp_4	CLK	0.00234	0.00223	0.00332
	CLK	0.00057	0.00045	0.00155
	(!CLK * SET_B)	0.00673	0.00660	0.00736
	(!CLK * SET_B)	0.00475	0.00462	0.00539
	(!CLK * !SET_B * Q)	0.00525	0.00517	0.00595
	(!CLK * !SET_B * Q)	0.00320	0.00311	0.00389

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00029	0.00024	0.00127
	CLK	0.00206	0.00201	0.00305
	(!CLK * SET_B)	0.00472	0.00461	0.00550
	(!CLK * SET_B)	0.00667	0.00656	0.00745
	(!CLK * !SET_B * Q)	0.00276	0.00267	0.00345
	(!CLK * !SET_B * Q)	0.00481	0.00472	0.00550
sky130_fd_sc_hs__dfstp_2	CLK	0.00028	0.00023	0.00126
	CLK	0.00206	0.00201	0.00304
	(!CLK * SET_B)	0.00486	0.00476	0.00564
	(!CLK * SET_B)	0.00682	0.00672	0.00759
	(!CLK * !SET_B * Q)	0.00291	0.00282	0.00360
	(!CLK * !SET_B * Q)	0.00497	0.00488	0.00566
sky130_fd_sc_hs__dfstp_4	CLK	0.00030	0.00025	0.00127
	CLK	0.00207	0.00202	0.00305
	(!CLK * SET_B)	0.00465	0.00455	0.00544
	(!CLK * SET_B)	0.00662	0.00652	0.00741
	(!CLK * !SET_B * Q)	0.00275	0.00266	0.00344
	(!CLK * !SET_B * Q)	0.00480	0.00472	0.00550

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	0.00164	0.00166	0.00165
	(CLK * Q)	-0.00157	-0.00158	-0.00157
	(!CLK * D * Q)	0.00179	0.00180	0.00179
	(!CLK * D * Q)	-0.00144	-0.00144	-0.00144
	(!CLK * !D * Q)	0.00341	0.00333	0.00410
	(!CLK * !D * Q)	0.00004	-0.00006	0.00072
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	0.00161	0.00163	0.00162
	(CLK * Q)	-0.00144	-0.00145	-0.00145
	(!CLK * D * Q)	0.00175	0.00177	0.00175
	(!CLK * D * Q)	-0.00131	-0.00132	-0.00131
	(!CLK * !D * Q)	0.00338	0.00330	0.00406
	(!CLK * !D * Q)	0.00017	0.00007	0.00084
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	0.00170	0.00172	0.00171
	(CLK * Q)	-0.00140	-0.00141	-0.00141
	(!CLK * D * Q)	0.00183	0.00185	0.00183
	(!CLK * D * Q)	-0.00128	-0.00129	-0.00128
	(!CLK * !D * Q)	0.00340	0.00332	0.00409
	(!CLK * !D * Q)	0.00015	0.00006	0.00084

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	-0.00162	-0.00166	-0.00165
	(CLK * Q)	0.00159	0.00160	0.00158
	(!CLK * D * Q)	-0.00175	-0.00178	-0.00179
	(!CLK * D * Q)	0.00146	0.00144	0.00144
	(!CLK * !D * Q)	-0.00007	-0.00012	0.00083
	(!CLK * !D * Q)	0.00330	0.00325	0.00419
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	-0.00159	-0.00163	-0.00162
	(CLK * Q)	0.00146	0.00148	0.00145
	(!CLK * D * Q)	-0.00172	-0.00177	-0.00175
	(!CLK * D * Q)	0.00133	0.00134	0.00132
	(!CLK * !D * Q)	-0.00002	-0.00007	0.00087
	(!CLK * !D * Q)	0.00319	0.00315	0.00409
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	-0.00168	-0.00172	-0.00171
	(CLK * Q)	0.00143	0.00144	0.00142
	(!CLK * D * Q)	-0.00180	-0.00185	-0.00183
	(!CLK * D * Q)	0.00131	0.00132	0.00129
	(!CLK * !D * Q)	-0.00005	-0.00010	0.00084
	(!CLK * !D * Q)	0.00320	0.00316	0.00410

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(D * Q)	0.00996	0.00958	0.01216
	(D * Q)	0.00706	0.00667	0.00926
	(!D * SET_B * !Q)	0.00990	0.00952	0.01209
	(!D * SET_B * !Q)	0.00700	0.00661	0.00918
	(!D * !SET_B * Q)	0.01713	0.01691	0.01978
	(!D * !SET_B * Q)	0.01397	0.01372	0.01661
sky130_fd_sc_hs__dfstp_2	(D * Q)	0.01010	0.00972	0.01230
	(D * Q)	0.00718	0.00678	0.00937
	(!D * SET_B * !Q)	0.00994	0.00957	0.01213
	(!D * SET_B * !Q)	0.00702	0.00663	0.00920
	(!D * !SET_B * Q)	0.01736	0.01712	0.02009
	(!D * !SET_B * Q)	0.01417	0.01391	0.01689
sky130_fd_sc_hs__dfstp_4	(D * Q)	0.00999	0.00961	0.01219
	(D * Q)	0.00704	0.00665	0.00924
	(!D * SET_B * !Q)	0.00994	0.00957	0.01212
	(!D * SET_B * !Q)	0.00699	0.00661	0.00918
	(!D * !SET_B * Q)	0.01703	0.01681	0.01976
	(!D * !SET_B * Q)	0.01381	0.01358	0.01653

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)**	0.01006	0.00986	0.01302
	(D * SET_B * !Q)	0.01280	0.01259	0.01577
	(D * Q)	0.00589	0.00579	0.00895
	(D * Q)	0.00879	0.00870	0.01184
	(!D * SET_B * Q)	0.01127	0.01124	0.01466
	(!D * SET_B * Q)	0.01436	0.01431	0.01775
	(!D * SET_B * !Q)	0.00591	0.00579	0.00899
	(!D * SET_B * !Q)	0.00882	0.00870	0.01190
	(!D * !SET_B * Q)	0.00930	0.00926	0.01268
	(!D * !SET_B * Q)	0.01249	0.01243	0.01586
sky130_fd_sc_hs__dfstp_2	**(D * SET_B * !Q)**	0.00999	0.00980	0.01296
	(D * SET_B * !Q)	0.01275	0.01255	0.01572
	(D * Q)	0.00578	0.00570	0.00885
	(D * Q)	0.00872	0.00863	0.01177
	(!D * SET_B * Q)	0.01136	0.01133	0.01475
	(!D * SET_B * Q)	0.01447	0.01443	0.01785
	(!D * SET_B * !Q)	0.00591	0.00579	0.00899
	(!D * SET_B * !Q)	0.00884	0.00872	0.01192
	(!D * !SET_B * Q)	0.00940	0.00936	0.01278
	(!D * !SET_B * Q)	0.01261	0.01257	0.01599
sky130_fd_sc_hs__dfstp_4	**(D * SET_B * !Q)**	0.00995	0.00976	0.01293
	(D * SET_B * !Q)	0.01271	0.01250	0.01568
	(D * Q)	0.00582	0.00573	0.00889
	(D * Q)	0.00878	0.00867	0.01184
	(!D * SET_B * Q)	0.01112	0.01109	0.01456
	(!D * SET_B * Q)	0.01427	0.01423	0.01770
	(!D * SET_B * !Q)	0.00583	0.00571	0.00891
	(!D * SET_B * !Q)	0.00878	0.00866	0.01187
	(!D * !SET_B * Q)	0.00921	0.00918	0.01264
	(!D * !SET_B * Q)	0.01245	0.01240	0.01587

SKY130_FD_SC_HS__DFXBPx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT		OUTPUT	
D	CLK	Q	Q_N
0	R	0	1
1	R	1	0
x	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfxbp_1	31.96800
sky130_fd_sc_hs__dfxbp_2	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)	
	D	CLK	Q	Q_N
sky130_fd_sc_hs__dfxbp_1	0.00174	0.00286	0.75468	0.75652
sky130_fd_sc_hs__dfxbp_2	0.00170	0.00287	1.36651	1.50941

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxbp_1	0.00000	0.25183	0.36799
sky130_fd_sc_hs__dfxbp_2	0.00000	0.33971	0.57589

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)	0.28846	0.96515	7.22909
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RR)	0.34502	0.92164	7.23304

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxbp_1	CLK->Q (RF)	0.32517	0.69749	2.77196
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RF)	0.31318	0.64098	2.50628

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)	0.38466	1.06406	7.35215
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RR)	0.39466	0.94948	7.25991

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)	0.33696	0.68113	2.68823
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RF)	0.42904	0.74345	2.83448

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)	-0.03107	-0.07795	-0.48948
	setup	CLK (R)	0.11788	0.14724	0.72712
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.02703	-0.06858	-0.44053
	setup	CLK (R)	0.09921	0.13501	0.66392

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)	-0.04925	-0.18955	-2.24370
	setup	CLK (R)	0.22036	0.33438	2.97219
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.05132	-0.18404	-2.29660
	setup	CLK (R)	0.21441	0.32800	2.92423

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 ()	0.13625	0.77881	16.50020
	min_pulse_width	CLK ()	0.11310	0.77881	16.50020
sky130_fd_sc_hs__dfxbp_2	min_pulse_width	CLK ()	0.18546	0.77881	16.50020
	min_pulse_width	CLK ()	0.11310	0.77881	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 ()	0.23466	0.77881	16.50020
	min_pulse_width	CLK ()	0.31281	0.77881	16.50020
sky130_fd_sc_hs__dfxbp_2	min_pulse_width	CLK ()	0.22308	0.77881	16.50020
	min_pulse_width	CLK ()	0.31570	0.77881	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	0.00985	0.00970	0.01102
	CLK	0.00848	0.00832	0.00965
sky130_fd_sc_hs__dfxbp_2	CLK	0.01200	0.01220	0.01350
	CLK	0.01061	0.01077	0.01212

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01015	0.01018	0.01170
	CLK	0.00878	0.00882	0.01032
sky130_fd_sc_hs__dfxbp_2	CLK	0.01252	0.01288	0.01430
	CLK	0.01113	0.01146	0.01296

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01016	0.01019	0.01182
	CLK	0.00879	0.00882	0.01044
sky130_fd_sc_hs__dfxbp_2	CLK	0.01253	0.01290	0.01454
	CLK	0.01114	0.01146	0.01313

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00984	0.00968	0.01089
	CLK	0.00847	0.00831	0.00951
sky130_fd_sc_hs__dfxbp_2	CLK	0.01199	0.01215	0.01330
	CLK	0.01060	0.01076	0.01187

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00170	0.00162	0.00281
	CLK	-0.00011	-0.00020	0.00100
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00612	0.00599	0.00705
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00431	0.00418	0.00524
sky130_fd_sc_hs__dfxbp_2	CLK	0.00160	0.00152	0.00272
	CLK	-0.00017	-0.00025	0.00097
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00601	0.00589	0.00696
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00425	0.00412	0.00520

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	-0.00008	-0.00009	0.00105
	CLK	0.00174	0.00172	0.00286
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00350	0.00342	0.00455
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00531	0.00523	0.00636
sky130_fd_sc_hs__dfxbp_2	CLK	-0.00008	-0.00009	0.00107
	CLK	0.00168	0.00167	0.00283
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00323	0.00315	0.00432
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00499	0.00490	0.00607

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)	0.00896	0.00865	0.01120
	(D * Q * !Q_N)	0.00622	0.00590	0.00846
	(!D * !Q * Q_N)	0.00913	0.00882	0.01139
	(!D * !Q * Q_N)	0.00639	0.00606	0.00864
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.00902	0.00870	0.01123
	(D * Q * !Q_N)	0.00623	0.00591	0.00845
	(!D * !Q * Q_N)	0.00909	0.00877	0.01132
	(!D * !Q * Q_N)	0.00630	0.00598	0.00853

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)	0.00679	0.00662	0.00979
	(D * Q * !Q_N)	0.00953	0.00936	0.01253
	(D * !Q * Q_N)	0.01085	0.01055	0.01375
	(D * !Q * Q_N)	0.01359	0.01329	0.01649
	(!D * Q * !Q_N)	0.01128	0.01115	0.01462
	(!D * Q * !Q_N)	0.01402	0.01388	0.01737
	(!D * !Q * Q_N)	0.00654	0.00636	0.00954
	(!D * !Q * Q_N)	0.00928	0.00911	0.01228
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.00678	0.00660	0.00976
	(D * Q * !Q_N)	0.00956	0.00938	0.01254
	(D * !Q * Q_N)	0.01093	0.01064	0.01381
	(D * !Q * Q_N)	0.01370	0.01341	0.01659
	(!D * Q * !Q_N)	0.01094	0.01082	0.01429
	(!D * Q * !Q_N)	0.01372	0.01360	0.01708
	(!D * !Q * Q_N)	0.00662	0.00645	0.00961
	(!D * !Q * Q_N)	0.00940	0.00924	0.01239

SKY130_FD_SC_HS__DFXTPx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT		OUTPUT
D	CLK	Q
0	R	0
1	R	1
x	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfxtp_1	27.17280
sky130_fd_sc_hs__dfxtp_2	28.77120
sky130_fd_sc_hs__dfxtp_4	31.96800

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	D	CLK	Q
sky130_fd_sc_hs__dfxtp_1	0.00170	0.00286	0.75934
sky130_fd_sc_hs__dfxtp_2	0.00175	0.00286	1.52410
sky130_fd_sc_hs__dfxtp_4	0.00174	0.00287	2.87960

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxtp_1	0.00000	0.20446	0.39731
sky130_fd_sc_hs__dfxtp_2	0.00000	0.18909	0.34214
sky130_fd_sc_hs__dfxtp_4	0.00000	0.30665	0.52982

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)**	0.26244	0.94310	7.24099
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RR)**	0.27861	0.83928	7.22251
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RR)**	0.33398	0.81350	7.28981

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxtp_1	**CLK->Q (RF)**	0.30627	0.67237	2.76826
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RF)**	0.31982	0.65820	2.78751
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RF)**	0.32658	0.63565	2.79972

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)	-0.02822	-0.07819	-0.47993
	setup	CLK (R)	0.12019	0.14688	0.72278
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.02857	-0.07577	-0.46444
	setup	CLK (R)	0.11810	0.14314	0.70558
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.02618	-0.07083	-0.45097
	setup	CLK (R)	0.11053	0.13918	0.68448

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)	-0.05438	-0.19614	-2.25725
	setup	CLK (R)	0.22892	0.34533	2.99616
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.04502	-0.18290	-2.22944
	setup	CLK (R)	0.21105	0.32953	2.93208
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.04819	-0.17980	-2.25813
	setup	CLK (R)	0.21174	0.32544	2.92015

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 ()	0.12467	0.77881	16.50020
	min_pulse_width	CLK ()	0.11020	0.77881	16.50020
sky130_fd_sc_hs__dfxtp_2	min_pulse_width	CLK ()	0.13625	0.77881	16.50020
	min_pulse_width	CLK ()	0.11310	0.77881	16.50020
sky130_fd_sc_hs__dfxtp_4	min_pulse_width	CLK ()	0.17677	0.77881	16.50020
	min_pulse_width	CLK ()	0.11599	0.77881	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 ()	0.24334	0.77881	16.50020
	min_pulse_width	CLK ()	0.32439	0.77881	16.50020
sky130_fd_sc_hs__dfxtp_2	min_pulse_width	CLK ()	0.23756	0.77881	16.50020
	min_pulse_width	CLK ()	0.31281	0.77881	16.50020
sky130_fd_sc_hs__dfxtp_4	min_pulse_width	CLK ()	0.23466	0.77881	16.50020
	min_pulse_width	CLK ()	0.31860	0.77881	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	0.01528	0.01489	0.01750
	CLK	0.01250	0.01211	0.01473
sky130_fd_sc_hs__dfxtp_2	CLK	0.01721	0.01704	0.01965
	CLK	0.01442	0.01426	0.01697
sky130_fd_sc_hs__dfxtp_4	CLK	0.02145	0.02174	0.02441
	CLK	0.01869	0.01899	0.02201

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.01599	0.01596	0.01908
	CLK	0.01321	0.01316	0.01623
sky130_fd_sc_hs__dfxtp_2	CLK	0.01775	0.01800	0.02134
	CLK	0.01496	0.01521	0.01829
sky130_fd_sc_hs__dfxtp_4	CLK	0.02256	0.02342	0.02720
	CLK	0.01980	0.02066	0.02397

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00157	0.00149	0.00267
	CLK	-0.00020	-0.00029	0.00090
	!CLK	0.00602	0.00589	0.00695
	!CLK	0.00425	0.00412	0.00519
sky130_fd_sc_hs__dfxtp_2	CLK	0.00167	0.00159	0.00279
	CLK	-0.00014	-0.00023	0.00098
	!CLK	0.00596	0.00583	0.00689
	!CLK	0.00415	0.00401	0.00508
sky130_fd_sc_hs__dfxtp_4	CLK	0.00158	0.00151	0.00271
	CLK	-0.00022	-0.00031	0.00091
	!CLK	0.00596	0.00583	0.00690
	!CLK	0.00416	0.00402	0.00510

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00017	0.00015	0.00127
	CLK	0.00194	0.00192	0.00304
	!CLK	0.00374	0.00367	0.00478
	!CLK	0.00551	0.00543	0.00655
sky130_fd_sc_hs__dfxtp_2	CLK	-0.00011	-0.00013	0.00102
	CLK	0.00170	0.00169	0.00284
	!CLK	0.00356	0.00348	0.00461
	!CLK	0.00537	0.00528	0.00642
sky130_fd_sc_hs__dfxtp_4	CLK	-0.00007	-0.00008	0.00107
	CLK	0.00173	0.00173	0.00288
	!CLK	0.00350	0.00341	0.00456
	!CLK	0.00530	0.00521	0.00636

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.00900	0.00869	0.01120
	(D * Q)	0.00622	0.00590	0.00842
	(!D * !Q)	0.00932	0.00899	0.01152
	(!D * !Q)	0.00653	0.00621	0.00873
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.00903	0.00872	0.01124
	(D * Q)	0.00624	0.00591	0.00845
	(!D * !Q)	0.00928	0.00895	0.01148
	(!D * !Q)	0.00647	0.00615	0.00869
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.00897	0.00866	0.01118
	(D * Q)	0.00621	0.00589	0.00842
	(!D * !Q)	0.00921	0.00890	0.01143
	(!D * !Q)	0.00645	0.00613	0.00866

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.00707	0.00689	0.01004
	(D * Q)	0.00984	0.00967	0.01282
	(D * !Q)	0.01107	0.01079	0.01394
	(D * !Q)	0.01384	0.01356	0.01672
	(!D * Q)	0.01152	0.01138	0.01488
	(!D * Q)	0.01429	0.01415	0.01767
	(!D * !Q)	0.00668	0.00651	0.00966
	(!D * !Q)	0.00945	0.00929	0.01244
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.00693	0.00675	0.00990
	(D * Q)	0.00971	0.00955	0.01270
	(D * !Q)	0.01082	0.01055	0.01372
	(D * !Q)	0.01361	0.01335	0.01652
	(!D * Q)	0.01144	0.01130	0.01482
	(!D * Q)	0.01423	0.01409	0.01762
	(!D * !Q)	0.00662	0.00645	0.00960
	(!D * !Q)	0.00940	0.00924	0.01239
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.00720	0.00702	0.01016
	(D * Q)	0.00995	0.00978	0.01292
	(D * !Q)	0.01112	0.01084	0.01399
	(D * !Q)	0.01388	0.01359	0.01675
	(!D * Q)	0.01171	0.01157	0.01508
	(!D * Q)	0.01446	0.01433	0.01785
	(!D * !Q)	0.00687	0.00669	0.00984
	(!D * !Q)	0.00963	0.00946	0.01260

SKY130_FD_SC_HS__DIODE_2

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage 1.44, Temp 25.00

Footprint

Cell Name	Area
sky130_fd_sc_hs__diode_2	0.00000

Pin Capacitance Information

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__diode_2	0.00000	0.00000	0.00000

SKY130_FD_SC_HS__DLCLKPx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage 1.44, Temp 25.00

Truth Table

INPUT		OUTPUT
GATE	CLK	GCLK
x	x	-

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlclkp_1	22.37760
sky130_fd_sc_hs__dlclkp_2	25.57440
sky130_fd_sc_hs__dlclkp_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	GATE	CLK	GCLK
sky130_fd_sc_hs__dlclkp_1	0.00250	0.00430	0.78277
sky130_fd_sc_hs__dlclkp_2	0.00250	0.00462	1.53500
sky130_fd_sc_hs__dlclkp_4	0.00248	0.00483	3.03282

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlclkp_1	0.00000	0.25664	0.43612
sky130_fd_sc_hs__dlclkp_2	0.00000	0.23409	0.32157
sky130_fd_sc_hs__dlclkp_4	0.00000	0.24544	0.25789

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)**	0.09674	0.74671	7.07056
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (RR)**	0.09909	0.65102	7.05835
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (RR)**	0.13570	0.65335	7.50464

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlclkp_1	**CLK->GCLK (FF)**	0.11540	0.63172	4.25170
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (FF)**	0.13125	0.66032	4.61107
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (FF)**	0.17684	0.73246	5.15102

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)	-0.04222	-0.10441	-0.59627
	setup	CLK (R)	0.17707	0.21610	2.15152
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.04246	-0.10441	-0.58740
	setup	CLK (R)	0.18852	0.21044	1.73911
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.04283	-0.10192	-0.57510
	setup	CLK (R)	0.18072	0.18818	1.37562

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)	-0.09528	-0.20444	-2.30699
	setup	CLK (R)	0.17235	0.29118	2.53335
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.09448	-0.20161	-2.29220
	setup	CLK (R)	0.16705	0.27505	2.41149
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.09444	-0.20161	-2.29107
	setup	CLK (R)	0.14074	0.23153	2.39297

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 ()	0.06968	0.77881	16.50020
sky130_fd_sc_hs__dlclkp_2	min_pulse_width	CLK ()	0.07836	0.77881	16.50020
sky130_fd_sc_hs__dlclkp_4	min_pulse_width	CLK ()	0.11020	0.77881	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 ()	0.26650	0.77881	16.50020
	min_pulse_width	CLK ()	0.25203	0.77881	16.50020
sky130_fd_sc_hs__dlclkp_2	min_pulse_width	CLK ()	0.28387	0.77881	16.50020
	min_pulse_width	CLK ()	0.25782	0.77881	16.50020
sky130_fd_sc_hs__dlclkp_4	min_pulse_width	CLK ()	0.27518	0.77881	16.50020
	min_pulse_width	CLK ()	0.24913	0.77881	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	0.01123	0.01097	0.01883
	CLK	0.00677	0.00651	0.01440
sky130_fd_sc_hs__dlclkp_2	CLK	0.01341	0.01334	0.02011
	CLK	0.00862	0.00855	0.01539
sky130_fd_sc_hs__dlclkp_4	CLK	0.01736	0.01760	0.02369
	CLK	0.01245	0.01316	0.01883

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.01243	0.01288	0.02203
	CLK	0.01698	0.01740	0.02649
sky130_fd_sc_hs__dlclkp_2	CLK	0.01452	0.01502	0.02372
	CLK	0.01937	0.01984	0.02819
sky130_fd_sc_hs__dlclkp_4	CLK	0.01880	0.01965	0.02836
	CLK	0.02369	0.02450	0.03226

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.00121	0.00109	0.00107
	CLK	-0.00107	-0.00120	-0.00121
	(!CLK * !GCLK)	0.00803	0.00779	0.00914
	(!CLK * !GCLK)	0.00559	0.00533	0.00669
sky130_fd_sc_hs__dlclkp_2	CLK	0.00094	0.00095	0.00094
	CLK	-0.00133	-0.00135	-0.00134
	(!CLK * !GCLK)	0.00812	0.00789	0.00922
	(!CLK * !GCLK)	0.00570	0.00545	0.00679
sky130_fd_sc_hs__dlclkp_4	CLK	0.00091	0.00092	0.00091
	CLK	-0.00132	-0.00134	-0.00134
	(!CLK * !GCLK)	0.00794	0.00772	0.00904
	(!CLK * !GCLK)	0.00564	0.00540	0.00674

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	-0.00105	-0.00106	-0.00106
	CLK	0.00121	0.00122	0.00122
	(!CLK * !GCLK)	0.00531	0.00509	0.00650
	(!CLK * !GCLK)	0.00776	0.00755	0.00895
sky130_fd_sc_hs__dlclkp_2	CLK	-0.00089	-0.00093	-0.00094
	CLK	0.00138	0.00136	0.00134
	(!CLK * !GCLK)	0.00555	0.00532	0.00672
	(!CLK * !GCLK)	0.00799	0.00777	0.00916
sky130_fd_sc_hs__dlclkp_4	CLK	-0.00086	-0.00091	-0.00091
	CLK	0.00137	0.00136	0.00134
	(!CLK * !GCLK)	0.00595	0.00574	0.00712
	(!CLK * !GCLK)	0.00826	0.00805	0.00943

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(!GATE * !GCLK)	0.00702	0.00674	0.01114
	(!GATE * !GCLK)	0.00277	0.00247	0.00689
sky130_fd_sc_hs__dlclkp_2	(!GATE * !GCLK)	0.00740	0.00712	0.01143
	(!GATE * !GCLK)	0.00284	0.00255	0.00687
sky130_fd_sc_hs__dlclkp_4	(!GATE * !GCLK)	0.00734	0.00707	0.01135
	(!GATE * !GCLK)	0.00264	0.00234	0.00664

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(GATE * !GCLK)	0.00964	0.00958	0.01497
	(GATE * !GCLK)	0.01387	0.01384	0.01923
	(!GATE * !GCLK)	0.00326	0.00326	0.00839
	(!GATE * !GCLK)	0.00751	0.00753	0.01266
sky130_fd_sc_hs__dlclkp_2	(GATE * !GCLK)	0.00991	0.00982	0.01521
	(GATE * !GCLK)	0.01449	0.01441	0.01980
	(!GATE * !GCLK)	0.00342	0.00340	0.00853
	(!GATE * !GCLK)	0.00798	0.00797	0.01311
sky130_fd_sc_hs__dlclkp_4	(GATE * !GCLK)	0.00962	0.00952	0.01487
	(GATE * !GCLK)	0.01444	0.01435	0.01970
	(!GATE * !GCLK)	0.00321	0.00320	0.00827
	(!GATE * !GCLK)	0.00792	0.00790	0.01299

SKY130_FD_SC_HS__DLRBNx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT			OUTPUT	
D	GATE_N	RESET_B	Q	Q_N
0	0	x	0	1
x	1	0	0	1
x	1	1	1	1
1	x	0	0	1
1	0	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlrbn_1	28.77120
sky130_fd_sc_hs__dlrbn_2	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	GATE_N	RESET_B	Q	Q_N
sky130_fd_sc_hs__dlrbn_1	0.00226	0.00249	0.00273	0.75397	0.76654
sky130_fd_sc_hs__dlrbn_2	0.00226	0.00248	0.00284	1.37116	1.50566

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrbn_1	0.00000	0.33573	0.46056
sky130_fd_sc_hs__dlrbn_2	0.00000	0.32375	0.42982

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)	0.37873	1.03053	7.21273
	GATE_N->Q (-R)	0.45330	1.29691	8.93016
	RESET_B->Q (RR)	0.12270	0.80799	7.19426
sky130_fd_sc_hs__dlrbn_2	D->Q (RR)	0.38572	0.94660	7.20647
	GATE_N->Q (-R)	0.46472	1.21796	8.93928
	RESET_B->Q (RR)	0.13167	0.74407	7.33456

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbn_1	D->Q (FF)	0.28627	0.78595	4.00665
	GATE_N->Q (-F)	0.31747	0.86054	4.39148
	RESET_B->Q (FF)	0.14015	0.72602	4.75136
sky130_fd_sc_hs__dlrbn_2	D->Q (FF)	0.31679	0.79313	3.88323
	GATE_N->Q (-F)	0.34861	0.86822	4.26869
	RESET_B->Q (FF)	0.16567	0.74320	4.83345

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)	0.35161	1.15761	8.57635
	GATE_N->Q_N (-R)	0.38300	1.23192	8.96200
	RESET_B->Q_N (FR)	0.20724	1.08480	9.03729
sky130_fd_sc_hs__dlrbn_2	D->Q_N (FR)	0.40893	1.10683	8.85946
	GATE_N->Q_N (-R)	0.44105	1.18205	9.24492
	RESET_B->Q_N (FR)	0.26005	1.05145	9.51851

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)	0.42672	0.74607	2.72720
	GATE_N->Q_N (-F)	0.50145	1.01239	4.44387
	RESET_B->Q_N (RF)	0.17083	0.51893	2.60235
sky130_fd_sc_hs__dlrbn_2	D->Q_N (RF)	0.48304	0.78751	2.95601
	GATE_N->Q_N (-F)	0.56220	1.05915	4.68810
	RESET_B->Q_N (RF)	0.22825	0.58259	3.01760

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 ()**	0.16520	0.77881	16.50020
sky130_fd_sc_hs__dlrbn_2	**min_pulse_width**	**RESET_B ()**	0.20861	0.77881	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	0.00823	0.00824	0.01009
	D	0.00703	0.00703	0.00887
	GATE_N	0.00850	0.00866	0.01129
	GATE_N	0.00965	0.00980	0.01227
	RESET_B	0.00545	0.00545	0.00629
	RESET_B	0.00403	0.00402	0.00488
sky130_fd_sc_hs__dlrbn_2	D	0.00987	0.01016	0.01210
	D	0.00867	0.00897	0.01088
	GATE_N	0.01014	0.01059	0.01326
	GATE_N	0.01129	0.01174	0.01423
	RESET_B	0.00724	0.00753	0.00822
	RESET_B	0.00580	0.00602	0.00673

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.00646	0.00665	0.00873
	D	0.00768	0.00786	0.00990
	GATE_N	0.00787	0.00804	0.01050
	GATE_N	0.00917	0.00934	0.01176
	RESET_B	0.00570	0.00567	0.00693
	RESET_B	0.00702	0.00698	0.00819
sky130_fd_sc_hs__dlrbn_2	D	0.00827	0.00879	0.01097
	D	0.00946	0.00998	0.01205
	GATE_N	0.00966	0.01011	0.01259
	GATE_N	0.01094	0.01144	0.01385
	RESET_B	0.00744	0.00762	0.00899
	RESET_B	0.00879	0.00898	0.01014

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.00648	0.00667	0.00882
	D	0.00769	0.00788	0.01002
	GATE_N	0.00788	0.00806	0.01083
	GATE_N	0.00918	0.00935	0.01197
	RESET_B	0.00571	0.00568	0.00730
	RESET_B	0.00703	0.00699	0.00836
sky130_fd_sc_hs__dlrbn_2	D	0.00828	0.00881	0.01124
	D	0.00948	0.01000	0.01222
	GATE_N	0.00968	0.01017	0.01314
	GATE_N	0.01096	0.01146	0.01413
	RESET_B	0.00744	0.00763	0.00948
	RESET_B	0.00880	0.00900	0.01033

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.00822	0.00823	0.00994
	D	0.00702	0.00702	0.00872
	GATE_N	0.00849	0.00865	0.01100
	GATE_N	0.00964	0.00979	0.01208
	RESET_B	0.00544	0.00545	0.00615
	RESET_B	0.00403	0.00401	0.00473
sky130_fd_sc_hs__dlrbn_2	D	0.00986	0.01015	0.01186
	D	0.00867	0.00895	0.01062
	GATE_N	0.01014	0.01058	0.01290
	GATE_N	0.01128	0.01173	0.01397
	RESET_B	0.00724	0.00750	0.00810
	RESET_B	0.00579	0.00601	0.00655

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)	0.00360	0.00343	0.00708
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00133	0.00114	0.00480
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00669	0.00645	0.01006
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00456	0.00431	0.00794
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)	0.00358	0.00340	0.00705
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00132	0.00113	0.00479
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00632	0.00607	0.00969
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00421	0.00395	0.00758

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)	0.00105	0.00114	0.00552
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00333	0.00342	0.00780
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00490	0.00489	0.00921
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00704	0.00703	0.01135
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)	0.00100	0.00108	0.00544
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00326	0.00334	0.00770
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00504	0.00502	0.00933
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00716	0.00715	0.01146

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)	0.00646	0.00616	0.01042
	(D * RESET_B * Q * !Q_N)	0.00401	0.00369	0.00797
	(D * !RESET_B * !Q * Q_N)	0.01001	0.00969	0.01382
	(D * !RESET_B * !Q * Q_N)	0.00742	0.00709	0.01123
	(!D * !Q * Q_N)	0.00685	0.00657	0.01091
	(!D * !Q * Q_N)	0.00440	0.00411	0.00846
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.00647	0.00616	0.01042
	(D * RESET_B * Q * !Q_N)	0.00404	0.00372	0.00799
	(D * !RESET_B * !Q * Q_N)	0.01013	0.00980	0.01392
	(D * !RESET_B * !Q * Q_N)	0.00756	0.00722	0.01135
	(!D * !Q * Q_N)	0.00678	0.00649	0.01083
	(!D * !Q * Q_N)	0.00435	0.00405	0.00840

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)	0.00499	0.00492	0.01004
	(D * RESET_B * Q * !Q_N)	0.00744	0.00737	0.01250
	(D * !RESET_B * !Q * Q_N)	0.00720	0.00709	0.01205
	(D * !RESET_B * !Q * Q_N)	0.00980	0.00969	0.01464
	(!D * !Q * Q_N)	0.00457	0.00450	0.00966
	(!D * !Q * Q_N)	0.00702	0.00696	0.01211
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.00491	0.00484	0.00994
	(D * RESET_B * Q * !Q_N)	0.00734	0.00728	0.01238
	(D * !RESET_B * !Q * Q_N)	0.00685	0.00674	0.01168
	(D * !RESET_B * !Q * Q_N)	0.00943	0.00932	0.01425
	(!D * !Q * Q_N)	0.00457	0.00450	0.00964
	(!D * !Q * Q_N)	0.00700	0.00694	0.01207

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)	0.00106	0.00107	0.00106
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00136	-0.00137	-0.00136
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00113	0.00114	0.00113
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00137	-0.00138	-0.00137

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)	-0.00101	-0.00106	-0.00106
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00140	0.00139	0.00137
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00108	-0.00113	-0.00113
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00141	0.00141	0.00139

SKY130_FD_SC_HS__DLRBPx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT			OUTPUT	
D	GATE	RESET_B	Q	Q_N
x	x	0	0	1
x	0	1	1	1
0	1	1	0	1
1	1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlrbp_1	27.17280
sky130_fd_sc_hs__dlrbp_2	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	GATE	RESET_B	Q	Q_N
sky130_fd_sc_hs__dlrbp_1	0.00209	0.00238	0.00282	0.75381	0.75556
sky130_fd_sc_hs__dlrbp_2	0.00210	0.00238	0.00283	1.53071	1.53948

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrbp_1	0.00000	0.33573	0.46056
sky130_fd_sc_hs__dlrbp_2	0.00000	0.32375	0.42982

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)	0.36608	1.01398	7.19210
	GATE->Q (-R)	0.32308	0.97381	7.14785
	RESET_B->Q (RR)	0.12478	0.81381	7.23762
sky130_fd_sc_hs__dlrbp_2	D->Q (RR)	0.37646	0.91555	7.27547
	GATE->Q (-R)	0.33026	0.87089	7.21642
	RESET_B->Q (RR)	0.13075	0.72855	7.45583

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbp_1	D->Q (FF)	0.28423	0.77831	3.98005
	GATE->Q (-F)	0.30445	0.64019	2.50507
	RESET_B->Q (FF)	0.14271	0.73130	4.77873
sky130_fd_sc_hs__dlrbp_2	D->Q (FF)	0.31455	0.79689	4.13936
	GATE->Q (-F)	0.33387	0.65560	2.65188
	RESET_B->Q (FF)	0.15918	0.74445	5.09898

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)	0.35239	1.15848	8.60461
	GATE->Q_N (-R)	0.37274	1.02041	7.12894
	RESET_B->Q_N (FR)	0.21268	1.09917	9.11432
sky130_fd_sc_hs__dlrbp_2	D->Q_N (FR)	0.40524	1.08334	8.64090
	GATE->Q_N (-R)	0.42485	0.94209	7.15435
	RESET_B->Q_N (FR)	0.24912	1.02632	9.30584

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)	0.41571	0.72701	2.64143
	GATE->Q_N (-F)	0.37283	0.68745	2.59730
	RESET_B->Q_N (RF)	0.17461	0.52252	2.57772
sky130_fd_sc_hs__dlrbp_2	D->Q_N (RF)	0.46429	0.74694	2.77909
	GATE->Q_N (-F)	0.41814	0.70224	2.71957
	RESET_B->Q_N (RF)	0.21778	0.55691	2.88067

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 ()**	0.16520	0.77881	16.50020
sky130_fd_sc_hs__dlrbp_2	**min_pulse_width**	**RESET_B ()**	0.19703	0.77881	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	0.00779	0.00781	0.00964
	D	0.00665	0.00666	0.00850
	GATE	0.00896	0.00888	0.01111
	GATE	0.00768	0.00759	0.00983
	RESET_B	0.00548	0.00551	0.00630
	RESET_B	0.00402	0.00400	0.00484
sky130_fd_sc_hs__dlrbp_2	D	0.00969	0.00998	0.01195
	D	0.00855	0.00885	0.01077
	GATE	0.01083	0.01104	0.01335
	GATE	0.00955	0.00976	0.01206
	RESET_B	0.00732	0.00755	0.00835
	RESET_B	0.00586	0.00608	0.00686

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.00671	0.00692	0.00898
	D	0.00785	0.00805	0.01008
	GATE	0.00922	0.00930	0.01135
	GATE	0.00812	0.00819	0.01025
	RESET_B	0.00578	0.00573	0.00706
	RESET_B	0.00714	0.00709	0.00830
sky130_fd_sc_hs__dlrbp_2	D	0.00852	0.00902	0.01113
	D	0.00966	0.01016	0.01218
	GATE	0.01102	0.01140	0.01361
	GATE	0.00990	0.01028	0.01247
	RESET_B	0.00756	0.00777	0.00898
	RESET_B	0.00891	0.00913	0.01031

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.00673	0.00693	0.00916
	D	0.00786	0.00806	0.01024
	GATE	0.00923	0.00937	0.01157
	GATE	0.00813	0.00821	0.01046
	RESET_B	0.00579	0.00575	0.00709
	RESET_B	0.00715	0.00710	0.00843
sky130_fd_sc_hs__dlrbp_2	D	0.00854	0.00903	0.01138
	D	0.00967	0.01017	0.01238
	GATE	0.01103	0.01151	0.01378
	GATE	0.00992	0.01030	0.01263
	RESET_B	0.00757	0.00778	0.00924
	RESET_B	0.00892	0.00914	0.01049

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.00778	0.00778	0.00952
	D	0.00664	0.00664	0.00838
	GATE	0.00895	0.00888	0.01091
	GATE	0.00767	0.00759	0.00963
	RESET_B	0.00548	0.00545	0.00619
	RESET_B	0.00402	0.00399	0.00473
sky130_fd_sc_hs__dlrbp_2	D	0.00968	0.00998	0.01173
	D	0.00854	0.00884	0.01057
	GATE	0.01082	0.01102	0.01316
	GATE	0.00954	0.00975	0.01186
	RESET_B	0.00731	0.00757	0.00819
	RESET_B	0.00586	0.00608	0.00671

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)	0.00575	0.00553	0.00921
	(GATE * !RESET_B * !Q * Q_N)	0.00381	0.00358	0.00727
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00348	0.00332	0.00704
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00139	0.00121	0.00494
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.00581	0.00558	0.00925
	(GATE * !RESET_B * !Q * Q_N)	0.00386	0.00363	0.00730
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00348	0.00332	0.00702
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00138	0.00120	0.00491

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)	0.00512	0.00514	0.00948
	(GATE * !RESET_B * !Q * Q_N)	0.00707	0.00710	0.01143
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00081	0.00092	0.00531
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00290	0.00302	0.00740
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.00518	0.00520	0.00951
	(GATE * !RESET_B * !Q * Q_N)	0.00714	0.00715	0.01147
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00087	0.00098	0.00536
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00298	0.00310	0.00747

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)	0.00666	0.00638	0.01066
	(D * RESET_B * Q * !Q_N)	0.00429	0.00399	0.00828
	(D * !RESET_B * !Q * Q_N)	0.00785	0.00744	0.01198
	(D * !RESET_B * !Q * Q_N)	0.00562	0.00521	0.00975
	(!D * !Q * Q_N)	0.00668	0.00642	0.01068
	(!D * !Q * Q_N)	0.00430	0.00404	0.00830
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.00666	0.00638	0.01068
	(D * RESET_B * Q * !Q_N)	0.00428	0.00399	0.00829
	(D * !RESET_B * !Q * Q_N)	0.00783	0.00742	0.01198
	(D * !RESET_B * !Q * Q_N)	0.00562	0.00520	0.00975
	(!D * !Q * Q_N)	0.00666	0.00640	0.01081
	(!D * !Q * Q_N)	0.00427	0.00400	0.00842

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)	0.00413	0.00409	0.00918
	(D * RESET_B * Q * !Q_N)	0.00650	0.00646	0.01156
	(D * !RESET_B * !Q * Q_N)	0.00696	0.00679	0.01206
	(D * !RESET_B * !Q * Q_N)	0.00919	0.00902	0.01429
	(!D * !Q * Q_N)	0.00410	0.00406	0.00919
	(!D * !Q * Q_N)	0.00648	0.00644	0.01157
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.00410	0.00406	0.00916
	(D * RESET_B * Q * !Q_N)	0.00648	0.00645	0.01155
	(D * !RESET_B * !Q * Q_N)	0.00690	0.00674	0.01201
	(D * !RESET_B * !Q * Q_N)	0.00913	0.00897	0.01424
	(!D * !Q * Q_N)	0.00411	0.00406	0.00920
	(!D * !Q * Q_N)	0.00649	0.00645	0.01159

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)	0.00108	0.00109	0.00108
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00139	-0.00140	-0.00139
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00109	0.00109	0.00109
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00139	-0.00139	-0.00139

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)	-0.00103	-0.00108	-0.00107
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00143	0.00143	0.00141
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00104	-0.00109	-0.00109
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00143	0.00143	0.00140

SKY130_FD_SC_HS__DLRTNx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT			OUTPUT
D	GATE_N	RESET_B	Q
0	0	x	0
x	1	0	0
x	1	1	1
1	x	0	0
1	x	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlrtn_1	23.97600
sky130_fd_sc_hs__dlrtn_2	27.17280
sky130_fd_sc_hs__dlrtn_4	31.96800

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	GATE_N	RESET_B	Q
sky130_fd_sc_hs__dlrtn_1	0.00208	0.00241	0.00269	0.77005
sky130_fd_sc_hs__dlrtn_2	0.00210	0.00239	0.00278	1.50544
sky130_fd_sc_hs__dlrtn_4	0.00209	0.00240	0.00453	2.85918

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dlrtn_1	0.00000	0.26244	0.37386
sky130_fd_sc_hs__dlrtn_2	0.00000	0.25917	0.36091
sky130_fd_sc_hs__dlrtn_4	0.00000	0.42797	0.74500

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)	0.35189	0.99602	7.16594
	GATE_N->Q (-R)	0.41307	1.24118	8.82256
	RESET_B->Q (RR)	0.10813	0.77025	7.05628
sky130_fd_sc_hs__dlrtn_2	D->Q (RR)	0.36351	0.89926	7.18224
	GATE_N->Q (-R)	0.42479	1.14412	8.83833
	RESET_B->Q (RR)	0.11431	0.68624	7.19662
sky130_fd_sc_hs__dlrtn_4	D->Q (RR)	0.40523	0.85981	7.22224
	GATE_N->Q (-R)	0.46719	1.10777	8.88241
	RESET_B->Q (RR)	0.12265	0.61107	7.21839

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtn_1	D->Q (FF)	0.26565	0.75553	4.01021
	GATE_N->Q (-F)	0.28778	0.81717	4.34042
	RESET_B->Q (FF)	0.12618	0.68158	4.52130
sky130_fd_sc_hs__dlrtn_2	D->Q (FF)	0.28021	0.74080	3.97176
	GATE_N->Q (-F)	0.30160	0.80198	4.30354
	RESET_B->Q (FF)	0.13925	0.69187	4.75364
sky130_fd_sc_hs__dlrtn_4	D->Q (FF)	0.29414	0.73332	4.06226
	GATE_N->Q (-F)	0.32018	0.80259	4.42397
	RESET_B->Q (FF)	0.14717	0.65332	4.57311

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 ()**	0.14783	0.77881	16.50020
sky130_fd_sc_hs__dlrtn_2	**min_pulse_width**	**RESET_B ()**	0.17388	0.77881	16.50020
sky130_fd_sc_hs__dlrtn_4	**min_pulse_width**	**RESET_B ()**	0.19703	0.77881	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	0.01148	0.01138	0.01500
	D	0.00925	0.00914	0.01279
	GATE_N	0.01193	0.01211	0.01702
	GATE_N	0.01416	0.01433	0.01932
	RESET_B	0.00690	0.00675	0.00872
	RESET_B	0.00412	0.00396	0.00596
sky130_fd_sc_hs__dlrtn_2	D	0.01314	0.01333	0.01705
	D	0.01092	0.01112	0.01494
	GATE_N	0.01363	0.01411	0.01913
	GATE_N	0.01587	0.01633	0.02149
	RESET_B	0.00852	0.00861	0.01007
	RESET_B	0.00565	0.00574	0.00731
sky130_fd_sc_hs__dlrtn_4	D	0.01873	0.01949	0.02355
	D	0.01636	0.01720	0.02141
	GATE_N	0.01922	0.02030	0.02563
	GATE_N	0.02132	0.02239	0.02798
	RESET_B	0.01490	0.01536	0.02054
	RESET_B	0.01023	0.01069	0.01607

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	D	0.00943	0.00964	0.01388
	D	0.01167	0.01188	0.01611
	GATE_N	0.01136	0.01138	0.01675
	GATE_N	0.01394	0.01394	0.01918
	RESET_B	0.00746	0.00737	0.01061
	RESET_B	0.01006	0.00995	0.01300
sky130_fd_sc_hs__dlrtn_2	D	0.01128	0.01187	0.01620
	D	0.01351	0.01407	0.01827
	GATE_N	0.01329	0.01363	0.01889
	GATE_N	0.01579	0.01616	0.02137
	RESET_B	0.00927	0.00939	0.01245
	RESET_B	0.01194	0.01205	0.01449
sky130_fd_sc_hs__dlrtn_4	D	0.01600	0.01717	0.02295
	D	0.01837	0.01952	0.02380
	GATE_N	0.01806	0.01913	0.02507
	GATE_N	0.02072	0.02179	0.02694
	RESET_B	0.01437	0.01535	0.02278
	RESET_B	0.01879	0.01931	0.02689

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)	0.00336	0.00320	0.00688
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00129	0.00112	0.00481
	(!GATE_N * !RESET_B * !Q)	0.00564	0.00543	0.00907
	(!GATE_N * !RESET_B * !Q)	0.00372	0.00350	0.00715
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00339	0.00323	0.00691
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00130	0.00113	0.00481
	(!GATE_N * !RESET_B * !Q)	0.00567	0.00545	0.00909
	(!GATE_N * !RESET_B * !Q)	0.00373	0.00350	0.00715
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00338	0.00322	0.00691
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00129	0.00113	0.00482
	(!GATE_N * !RESET_B * !Q)	0.00599	0.00576	0.00941
	(!GATE_N * !RESET_B * !Q)	0.00407	0.00384	0.00749

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)	0.00109	0.00120	0.00559
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00316	0.00327	0.00765
	(!GATE_N * !RESET_B * !Q)	0.00543	0.00544	0.00978
	(!GATE_N * !RESET_B * !Q)	0.00736	0.00738	0.01172
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00108	0.00118	0.00557
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00317	0.00328	0.00765
	(!GATE_N * !RESET_B * !Q)	0.00547	0.00548	0.00981
	(!GATE_N * !RESET_B * !Q)	0.00742	0.00743	0.01177
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00105	0.00115	0.00555
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00313	0.00324	0.00762
	(!GATE_N * !RESET_B * !Q)	0.00628	0.00629	0.01061
	(!GATE_N * !RESET_B * !Q)	0.00821	0.00823	0.01255

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)	0.00634	0.00605	0.01041
	(D * RESET_B * Q)	0.00394	0.00364	0.00800
	(D * !RESET_B * !Q)	0.00988	0.00959	0.01385
	(D * !RESET_B * !Q)	0.00735	0.00704	0.01131
	(!D * !Q)	0.00630	0.00604	0.01036
	(!D * !Q)	0.00391	0.00364	0.00796
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.00631	0.00603	0.01039
	(D * RESET_B * Q)	0.00394	0.00365	0.00801
	(D * !RESET_B * !Q)	0.00992	0.00962	0.01387
	(D * !RESET_B * !Q)	0.00740	0.00709	0.01135
	(!D * !Q)	0.00626	0.00600	0.01031
	(!D * !Q)	0.00390	0.00363	0.00794
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.00637	0.00608	0.01043
	(D * RESET_B * Q)	0.00399	0.00369	0.00804
	(D * !RESET_B * !Q)	0.01075	0.01046	0.01474
	(D * !RESET_B * !Q)	0.00822	0.00792	0.01220
	(!D * !Q)	0.00629	0.00602	0.01032
	(!D * !Q)	0.00391	0.00364	0.00794

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)	0.00420	0.00414	0.00931
	(D * RESET_B * Q)	0.00660	0.00654	0.01171
	(D * !RESET_B * !Q)	0.00604	0.00595	0.01097
	(D * !RESET_B * !Q)	0.00858	0.00849	0.01351
	(!D * !Q)	0.00419	0.00413	0.00933
	(!D * !Q)	0.00659	0.00654	0.01172
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.00425	0.00420	0.00937
	(D * RESET_B * Q)	0.00662	0.00657	0.01174
	(D * !RESET_B * !Q)	0.00610	0.00601	0.01104
	(D * !RESET_B * !Q)	0.00863	0.00854	0.01357
	(!D * !Q)	0.00426	0.00421	0.00940
	(!D * !Q)	0.00663	0.00658	0.01178
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.00428	0.00422	0.00938
	(D * RESET_B * Q)	0.00666	0.00660	0.01177
	(D * !RESET_B * !Q)	0.00645	0.00637	0.01140
	(D * !RESET_B * !Q)	0.00899	0.00891	0.01394
	(!D * !Q)	0.00432	0.00425	0.00944
	(!D * !Q)	0.00670	0.00664	0.01183

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)	0.00107	0.00108	0.00107
	(D * GATE_N * !Q) + (!D * !Q)	-0.00128	-0.00128	-0.00128
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	0.00110	0.00111	0.00110
	(D * GATE_N * !Q) + (!D * !Q)	-0.00137	-0.00138	-0.00137
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	0.00185	0.00186	0.00185
	(D * GATE_N * !Q) + (!D * !Q)	-0.00211	-0.00212	-0.00211

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)	-0.00102	-0.00106	-0.00107
	(D * GATE_N * !Q) + (!D * !Q)	0.00132	0.00129	0.00129
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	-0.00105	-0.00110	-0.00110
	(D * GATE_N * !Q) + (!D * !Q)	0.00141	0.00140	0.00139
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	-0.00176	-0.00185	-0.00185
	(D * GATE_N * !Q) + (!D * !Q)	0.00217	0.00215	0.00213

SKY130_FD_SC_HS__DLRTPx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT			OUTPUT
D	GATE	RESET_B	Q
x	x	0	0
x	0	1	1
0	1	1	0
1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlrtp_1	22.37760
sky130_fd_sc_hs__dlrtp_2	23.97600
sky130_fd_sc_hs__dlrtp_4	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	GATE	RESET_B	Q
sky130_fd_sc_hs__dlrtp_1	0.00224	0.00243	0.00275	0.77256
sky130_fd_sc_hs__dlrtp_2	0.00221	0.00238	0.00284	1.52117
sky130_fd_sc_hs__dlrtp_4	0.00220	0.00237	0.00432	2.89865

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dlrtp_1	0.00000	0.26244	0.37386
sky130_fd_sc_hs__dlrtp_2	0.00000	0.25917	0.36091
sky130_fd_sc_hs__dlrtp_4	0.00000	0.42797	0.74500

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)	0.34796	0.99029	7.17147
	GATE->Q (-R)	0.30471	0.94794	7.12506
	RESET_B->Q (RR)	0.10877	0.77134	7.07111
sky130_fd_sc_hs__dlrtp_2	D->Q (RR)	0.36264	0.89662	7.21481
	GATE->Q (-R)	0.31833	0.85245	7.15772
	RESET_B->Q (RR)	0.11398	0.68695	7.23544
sky130_fd_sc_hs__dlrtp_4	D->Q (RR)	0.40202	0.85667	7.27668
	GATE->Q (-R)	0.36212	0.81859	7.24429
	RESET_B->Q (RR)	0.12240	0.61207	7.28246

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtp_1	D->Q (FF)	0.27509	0.77268	4.12474
	GATE->Q (-F)	0.29477	0.63472	2.65390
	RESET_B->Q (FF)	0.12666	0.68575	4.60616
sky130_fd_sc_hs__dlrtp_2	D->Q (FF)	0.29256	0.76042	4.08678
	GATE->Q (-F)	0.30915	0.61526	2.59272
	RESET_B->Q (FF)	0.13567	0.68954	4.82021
sky130_fd_sc_hs__dlrtp_4	D->Q (FF)	0.30354	0.74556	4.11022
	GATE->Q (-F)	0.31892	0.60197	2.61301
	RESET_B->Q (FF)	0.14610	0.65344	4.60339

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 ()**	0.14494	0.77881	16.50020
sky130_fd_sc_hs__dlrtp_2	**min_pulse_width**	**RESET_B ()**	0.17098	0.77881	16.50020
sky130_fd_sc_hs__dlrtp_4	**min_pulse_width**	**RESET_B ()**	0.19703	0.77881	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	0.01155	0.01135	0.01492
	D	0.00908	0.00887	0.01246
	GATE	0.01402	0.01361	0.01796
	GATE	0.01140	0.01100	0.01539
	RESET_B	0.00665	0.00644	0.00838
	RESET_B	0.00382	0.00360	0.00557
sky130_fd_sc_hs__dlrtp_2	D	0.01353	0.01366	0.01732
	D	0.01105	0.01118	0.01487
	GATE	0.01579	0.01575	0.02019
	GATE	0.01319	0.01316	0.01772
	RESET_B	0.00854	0.00860	0.01013
	RESET_B	0.00560	0.00567	0.00731
sky130_fd_sc_hs__dlrtp_4	D	0.01894	0.01969	0.02368
	D	0.01642	0.01716	0.02138
	GATE	0.02120	0.02178	0.02644
	GATE	0.01856	0.01915	0.02403
	RESET_B	0.01474	0.01523	0.02056
	RESET_B	0.01028	0.01078	0.01642

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtp_1	D	0.00917	0.00937	0.01374
	D	0.01165	0.01184	0.01607
	GATE	0.01443	0.01441	0.01886
	GATE	0.01214	0.01213	0.01649
	RESET_B	0.00745	0.00733	0.01044
	RESET_B	0.01008	0.00994	0.01302
sky130_fd_sc_hs__dlrtp_2	D	0.01087	0.01141	0.01630
	D	0.01335	0.01389	0.01810
	GATE	0.01590	0.01622	0.02079
	GATE	0.01367	0.01399	0.01845
	RESET_B	0.00908	0.00917	0.01187
	RESET_B	0.01181	0.01189	0.01441
sky130_fd_sc_hs__dlrtp_4	D	0.01581	0.01707	0.02128
	D	0.01834	0.01960	0.02373
	GATE	0.02068	0.02169	0.02654
	GATE	0.01851	0.01947	0.02402
	RESET_B	0.01436	0.01542	0.02387
	RESET_B	0.01858	0.01919	0.02682

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)	0.00600	0.00576	0.00940
	(GATE * !RESET_B * !Q)	0.00385	0.00360	0.00725
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00366	0.00348	0.00715
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00135	0.00115	0.00484
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.00609	0.00583	0.00946
	(GATE * !RESET_B * !Q)	0.00394	0.00368	0.00731
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00368	0.00350	0.00716
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00139	0.00119	0.00486
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.00630	0.00604	0.00966
	(GATE * !RESET_B * !Q)	0.00416	0.00389	0.00751
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00367	0.00348	0.00715
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00138	0.00118	0.00485

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)	0.00505	0.00514	0.00934
	(GATE * !RESET_B * !Q)	0.00720	0.00731	0.01150
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00079	0.00099	0.00525
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00311	0.00331	0.00757
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.00518	0.00517	0.00947
	(GATE * !RESET_B * !Q)	0.00733	0.00734	0.01162
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00084	0.00093	0.00529
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00314	0.00323	0.00759
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.00594	0.00603	0.01023
	(GATE * !RESET_B * !Q)	0.00809	0.00819	0.01239
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00081	0.00089	0.00525
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00310	0.00319	0.00755

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)	0.00697	0.00669	0.01107
	(D * RESET_B * Q)	0.00452	0.00423	0.00862
	(D * !RESET_B * !Q)	0.00821	0.00780	0.01227
	(D * !RESET_B * !Q)	0.00593	0.00551	0.00999
	(!D * !Q)	0.00690	0.00663	0.01099
	(!D * !Q)	0.00444	0.00418	0.00854
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.00680	0.00652	0.01080
	(D * RESET_B * Q)	0.00440	0.00410	0.00839
	(D * !RESET_B * !Q)	0.00808	0.00766	0.01218
	(D * !RESET_B * !Q)	0.00584	0.00540	0.00992
	(!D * !Q)	0.00672	0.00645	0.01069
	(!D * !Q)	0.00430	0.00403	0.00828
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.00670	0.00642	0.01081
	(D * RESET_B * Q)	0.00430	0.00401	0.00841
	(D * !RESET_B * !Q)	0.00829	0.00786	0.01232
	(D * !RESET_B * !Q)	0.00604	0.00561	0.01006
	(!D * !Q)	0.00665	0.00639	0.01062
	(!D * !Q)	0.00425	0.00398	0.00821

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)	0.00410	0.00406	0.00914
	(D * RESET_B * Q)	0.00655	0.00650	0.01159
	(D * !RESET_B * !Q)	0.00696	0.00677	0.01205
	(D * !RESET_B * !Q)	0.00924	0.00906	0.01433
	(!D * !Q)	0.00417	0.00412	0.00923
	(!D * !Q)	0.00663	0.00658	0.01168
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.00413	0.00409	0.00917
	(D * RESET_B * Q)	0.00654	0.00650	0.01159
	(D * !RESET_B * !Q)	0.00709	0.00691	0.01218
	(D * !RESET_B * !Q)	0.00935	0.00917	0.01445
	(!D * !Q)	0.00422	0.00418	0.00930
	(!D * !Q)	0.00663	0.00659	0.01171
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.00408	0.00403	0.00912
	(D * RESET_B * Q)	0.00649	0.00644	0.01153
	(D * !RESET_B * !Q)	0.00788	0.00767	0.01291
	(D * !RESET_B * !Q)	0.01014	0.00994	0.01517
	(!D * !Q)	0.00412	0.00406	0.00919
	(!D * !Q)	0.00653	0.00648	0.01160

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)	0.00107	0.00108	0.00107
	(D * !GATE * !Q) + (!D * !Q)	-0.00132	-0.00133	-0.00132
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	0.00108	0.00109	0.00108
	(D * !GATE * !Q) + (!D * !Q)	-0.00140	-0.00141	-0.00140
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	0.00180	0.00181	0.00180
	(D * !GATE * !Q) + (!D * !Q)	-0.00201	-0.00202	-0.00201

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)	-0.00103	-0.00107	-0.00107
	(D * !GATE * !Q) + (!D * !Q)	0.00136	0.00135	0.00133
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	-0.00103	-0.00107	-0.00108
	(D * !GATE * !Q) + (!D * !Q)	0.00144	0.00142	0.00141
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	-0.00171	-0.00180	-0.00180
	(D * !GATE * !Q) + (!D * !Q)	0.00206	0.00205	0.00203

SKY130_FD_SC_HS__DLXBNx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT		OUTPUT	
D	GATE_N	Q	Q_N
0	0	0	1
x	1	1	1
1	0	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlxbn_1	27.17280
sky130_fd_sc_hs__dlxbn_2	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)	
	D	GATE_N	Q	Q_N
sky130_fd_sc_hs__dlxbn_1	0.00223	0.00243	0.75329	0.76619
sky130_fd_sc_hs__dlxbn_2	0.00211	0.00241	1.36423	1.51210

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbn_1	0.00000	0.30725	0.46056
sky130_fd_sc_hs__dlxbn_2	0.00000	0.30779	0.42982

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)	0.35051	1.00721	7.19870
	GATE_N->Q (-R)	0.41317	1.25432	8.86138
sky130_fd_sc_hs__dlxbn_2	D->Q (RR)	0.35824	0.91190	7.12646
	GATE_N->Q (-R)	0.42027	1.15854	8.78413

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbn_1	D->Q (FF)	0.28184	0.78346	4.08528
	GATE_N->Q (-F)	0.30486	0.84654	4.42191
sky130_fd_sc_hs__dlxbn_2	D->Q (FF)	0.29793	0.76597	3.86057
	GATE_N->Q (-F)	0.32173	0.83009	4.19879

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)	0.34951	1.19354	9.12472
	GATE_N->Q_N (-R)	0.37268	1.25661	9.46003
sky130_fd_sc_hs__dlxbn_2	D->Q_N (FR)	0.38726	1.08404	8.88054
	GATE_N->Q_N (-R)	0.41139	1.14753	9.21770

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)	0.39999	0.72389	2.78332
	GATE_N->Q_N (-F)	0.46265	0.97107	4.44345
sky130_fd_sc_hs__dlxbn_2	D->Q_N (RF)	0.44952	0.75402	2.91766
	GATE_N->Q_N (-F)	0.51154	1.00079	4.57506

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00778	0.00794	0.00982
	D	0.00667	0.00683	0.00871
	GATE_N	0.00797	0.00826	0.01099
	GATE_N	0.00919	0.00947	0.01202
sky130_fd_sc_hs__dlxbn_2	D	0.00958	0.01003	0.01197
	D	0.00852	0.00897	0.01092
	GATE_N	0.00979	0.01039	0.01320
	GATE_N	0.01100	0.01159	0.01419

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00680	0.00707	0.00911
	D	0.00791	0.00818	0.01022
	GATE_N	0.00791	0.00814	0.01070
	GATE_N	0.00912	0.00935	0.01182
sky130_fd_sc_hs__dlxbn_2	D	0.00854	0.00910	0.01126
	D	0.00960	0.01016	0.01224
	GATE_N	0.00963	0.01009	0.01259
	GATE_N	0.01083	0.01128	0.01378

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00682	0.00708	0.00954
	D	0.00793	0.00819	0.01042
	GATE_N	0.00792	0.00815	0.01108
	GATE_N	0.00913	0.00937	0.01203
sky130_fd_sc_hs__dlxbn_2	D	0.00856	0.00912	0.01161
	D	0.00961	0.01018	0.01246
	GATE_N	0.00964	0.01018	0.01302
	GATE_N	0.01085	0.01138	0.01402

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00777	0.00792	0.00968
	D	0.00666	0.00682	0.00856
	GATE_N	0.00796	0.00825	0.01066
	GATE_N	0.00918	0.00946	0.01181
sky130_fd_sc_hs__dlxbn_2	D	0.00957	0.01002	0.01183
	D	0.00851	0.00896	0.01070
	GATE_N	0.00978	0.01037	0.01294
	GATE_N	0.01099	0.01157	0.01391

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)	0.00356	0.00338	0.00706
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00134	0.00116	0.00484
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00348	0.00332	0.00700
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00137	0.00119	0.00488

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)	0.00094	0.00102	0.00541
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00316	0.00325	0.00764
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00097	0.00108	0.00547
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00309	0.00320	0.00758

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)	0.00657	0.00626	0.01061
	(D * Q * !Q_N)	0.00415	0.00383	0.00818
	(!D * !Q * Q_N)	0.00647	0.00620	0.01051
	(!D * !Q * Q_N)	0.00405	0.00376	0.00807
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.00654	0.00624	0.01059
	(D * Q * !Q_N)	0.00413	0.00382	0.00817
	(!D * !Q * Q_N)	0.00645	0.00618	0.01048
	(!D * !Q * Q_N)	0.00404	0.00375	0.00806

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)	0.00429	0.00421	0.00937
	(D * Q * !Q_N)	0.00670	0.00664	0.01180
	(!D * !Q * Q_N)	0.00434	0.00427	0.00944
	(!D * !Q * Q_N)	0.00676	0.00670	0.01187
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.00426	0.00419	0.00934
	(D * Q * !Q_N)	0.00667	0.00661	0.01176
	(!D * !Q * Q_N)	0.00431	0.00424	0.00941
	(!D * !Q * Q_N)	0.00671	0.00666	0.01183

SKY130_FD_SC_HS__DLXBP

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT		OUTPUT	
D	GATE	Q	Q_N
x	0	1	1
0	1	0	1
1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlxbp_1	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)	
	D	GATE	Q	Q_N
sky130_fd_sc_hs__dlxbp_1	0.00221	0.00244	0.75779	0.76664

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbp_1	0.00000	0.30725	0.46056

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)	0.34262	0.99920	7.22132
	GATE->Q (-R)	0.29870	0.95555	7.15986

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbp_1	D->Q (FF)	0.29105	0.79652	4.11307
	GATE->Q (-F)	0.30343	0.64731	2.60938

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)	0.35952	1.20429	9.14022
	GATE->Q_N (-R)	0.37202	1.05519	7.63434

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)	0.39232	0.71434	2.76909
	GATE->Q_N (-F)	0.34843	0.67070	2.70730

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00778	0.00795	0.00980
	D	0.00668	0.00684	0.00870
	GATE	0.00887	0.00892	0.01119
	GATE	0.00765	0.00771	0.00997

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00668	0.00695	0.00899
	D	0.00778	0.00805	0.01009
	GATE	0.00914	0.00927	0.01147
	GATE	0.00792	0.00806	0.01024

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00670	0.00697	0.00941
	D	0.00780	0.00807	0.01029
	GATE	0.00915	0.00931	0.01164
	GATE	0.00793	0.00808	0.01041

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00777	0.00793	0.00966
	D	0.00667	0.00683	0.00855
	GATE	0.00886	0.00892	0.01104
	GATE	0.00764	0.00770	0.00982

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)	0.00365	0.00347	0.00714
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00144	0.00126	0.00494

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)	0.00085	0.00093	0.00531
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00305	0.00314	0.00750

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)	0.00659	0.00631	0.01060
	(D * Q * !Q_N)	0.00416	0.00387	0.00817
	(!D * !Q * Q_N)	0.00663	0.00639	0.01063
	(!D * !Q * Q_N)	0.00421	0.00395	0.00820

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)	0.00403	0.00399	0.00908
	(D * Q * !Q_N)	0.00645	0.00643	0.01152
	(!D * !Q * Q_N)	0.00397	0.00403	0.00906
	(!D * !Q * Q_N)	0.00640	0.00647	0.01149

SKY130_FD_SC_HS__DLXTNx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT		OUTPUT
D	GATE_N	Q
0	0	0
x	1	1
1	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlxtn_1	22.37760
sky130_fd_sc_hs__dlxtn_2	23.97600
sky130_fd_sc_hs__dlxtn_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	D	GATE_N	Q
sky130_fd_sc_hs__dlxtn_1	0.00221	0.00246	0.76953
sky130_fd_sc_hs__dlxtn_2	0.00226	0.00246	1.47596
sky130_fd_sc_hs__dlxtn_4	0.00225	0.00245	2.88853

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtn_1	0.00000	0.25050	0.33789
sky130_fd_sc_hs__dlxtn_2	0.00000	0.24609	0.36091
sky130_fd_sc_hs__dlxtn_4	0.00000	0.38590	0.50527

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)	0.32875	0.97730	7.16759
	GATE_N->Q (-R)	0.39302	1.22755	8.84008
sky130_fd_sc_hs__dlxtn_2	D->Q (RR)	0.33188	0.86295	7.05486
	GATE_N->Q (-R)	0.39351	1.10779	8.71058
sky130_fd_sc_hs__dlxtn_4	D->Q (RR)	0.37612	0.82712	7.24373
	GATE_N->Q (-R)	0.43654	1.07222	8.89538

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtn_1	D->Q (FF)	0.26035	0.75052	4.00205
	GATE_N->Q (-F)	0.28652	0.81785	4.35238
sky130_fd_sc_hs__dlxtn_2	D->Q (FF)	0.27489	0.73573	3.95896
	GATE_N->Q (-F)	0.29901	0.79951	4.30160
sky130_fd_sc_hs__dlxtn_4	D->Q (FF)	0.29277	0.73633	4.14659
	GATE_N->Q (-F)	0.32035	0.80576	4.51510

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.01103	0.01102	0.01466
	D	0.00873	0.00873	0.01242
	GATE_N	0.01134	0.01162	0.01655
	GATE_N	0.01382	0.01410	0.01910
sky130_fd_sc_hs__dlxtn_2	D	0.01287	0.01311	0.01679
	D	0.01053	0.01077	0.01452
	GATE_N	0.01312	0.01369	0.01866
	GATE_N	0.01559	0.01616	0.02122
sky130_fd_sc_hs__dlxtn_4	D	0.01819	0.01882	0.02257
	D	0.01585	0.01650	0.02047
	GATE_N	0.01846	0.01941	0.02451
	GATE_N	0.02094	0.02187	0.02720

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.00931	0.00962	0.01389
	D	0.01160	0.01190	0.01603
	GATE_N	0.01142	0.01158	0.01678
	GATE_N	0.01391	0.01407	0.01915
sky130_fd_sc_hs__dlxtn_2	D	0.01095	0.01152	0.01568
	D	0.01328	0.01385	0.01799
	GATE_N	0.01305	0.01346	0.01892
	GATE_N	0.01552	0.01595	0.02106
sky130_fd_sc_hs__dlxtn_4	D	0.01595	0.01709	0.02242
	D	0.01828	0.01941	0.02361
	GATE_N	0.01807	0.01907	0.02492
	GATE_N	0.02054	0.02153	0.02673

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00356	0.00338	0.00700
	GATE_N	0.00128	0.00108	0.00471
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00358	0.00339	0.00701
	GATE_N	0.00124	0.00104	0.00467
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.00359	0.00340	0.00702
	GATE_N	0.00126	0.00106	0.00468

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00115	0.00133	0.00559
	GATE_N	0.00344	0.00363	0.00788
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00114	0.00131	0.00557
	GATE_N	0.00347	0.00365	0.00792
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.00116	0.00132	0.00559
	GATE_N	0.00349	0.00366	0.00793

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.00683	0.00654	0.01095
	(D * Q)	0.00435	0.00405	0.00846
	(!D * !Q)	0.00672	0.00646	0.01080
	(!D * !Q)	0.00424	0.00396	0.00831
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.00668	0.00639	0.01070
	(D * Q)	0.00421	0.00391	0.00823
	(!D * !Q)	0.00654	0.00628	0.01067
	(!D * !Q)	0.00407	0.00380	0.00819
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.00673	0.00643	0.01074
	(D * Q)	0.00427	0.00395	0.00826
	(!D * !Q)	0.00659	0.00632	0.01070
	(!D * !Q)	0.00413	0.00384	0.00823

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.00429	0.00434	0.00933
	(D * Q)	0.00678	0.00683	0.01183
	(!D * !Q)	0.00437	0.00429	0.00944
	(!D * !Q)	0.00685	0.00679	0.01192
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.00425	0.00418	0.00930
	(D * Q)	0.00671	0.00665	0.01178
	(!D * !Q)	0.00434	0.00428	0.00944
	(!D * !Q)	0.00681	0.00675	0.01191
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.00428	0.00433	0.00933
	(D * Q)	0.00675	0.00680	0.01180
	(!D * !Q)	0.00438	0.00431	0.00946
	(!D * !Q)	0.00685	0.00678	0.01193

SKY130_FD_SC_HS__DLXTP

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT		OUTPUT
D	GATE	Q
x	0	1
0	1	0
1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlxtp_1	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	D	GATE	Q
sky130_fd_sc_hs__dlxtp_1	0.00217	0.00251	0.75538

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtp_1	0.00000	0.23136	0.33648

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)	0.38813	1.03544	7.25395
	GATE->Q (-R)	0.31137	0.96315	7.18990

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtp_1	D->Q (FF)	0.27831	0.77175	4.09654
	GATE->Q (-F)	0.29428	0.63255	2.60743

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.01194	0.01193	0.01563
	D	0.00958	0.00957	0.01330
	GATE	0.01444	0.01420	0.01753
	GATE	0.01184	0.01161	0.01499

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.01049	0.01071	0.01504
	D	0.01285	0.01307	0.01733
	GATE	0.01541	0.01539	0.01964
	GATE	0.01306	0.01303	0.01722

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00335	0.00320	0.00699
	!GATE	0.00111	0.00095	0.00475

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00090	0.00094	0.00533
	!GATE	0.00315	0.00318	0.00758

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.00718	0.00691	0.01120
	(D * Q)	0.00472	0.00443	0.00873
	(!D * !Q)	0.00696	0.00670	0.01109
	(!D * !Q)	0.00449	0.00423	0.00862

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.00354	0.00349	0.00865
	(D * Q)	0.00601	0.00596	0.01113
	(!D * !Q)	0.00385	0.00379	0.00897
	(!D * !Q)	0.00632	0.00627	0.01145

SKY130_FD_SC_HS__DLYGATE4SDx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT	OUTPUT
A	X
0	0
1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlygate4sd1_1	12.78720
sky130_fd_sc_hs__dlygate4sd2_1	12.78720
sky130_fd_sc_hs__dlygate4sd3_1	12.78720

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	X
sky130_fd_sc_hs__dlygate4sd1_1	0.00176	0.76386
sky130_fd_sc_hs__dlygate4sd2_1	0.00177	0.76845
sky130_fd_sc_hs__dlygate4sd3_1	0.00179	0.76557

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlygate4sd1_1	0.00000	0.01898	0.02745
sky130_fd_sc_hs__dlygate4sd2_1	0.00000	0.01772	0.02619
sky130_fd_sc_hs__dlygate4sd3_1	0.00000	0.01776	0.02624

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)**	0.22161	0.87678	7.04394
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (RR)**	0.29320	0.95854	7.23278
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (RR)**	0.56299	1.25051	7.63268

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlygate4sd1_1	**A->X (FF)**	0.29082	0.86927	4.91292
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (FF)**	0.36350	0.96043	5.07752
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (FF)**	0.58211	1.23419	5.54219

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.00853	0.00832	0.00920
	A	0.00670	0.00651	0.00743
sky130_fd_sc_hs__dlygate4sd2_1	A	0.00882	0.00863	0.00945
	A	0.00698	0.00683	0.00771
sky130_fd_sc_hs__dlygate4sd3_1	A	0.00983	0.00969	0.01046
	A	0.00798	0.00783	0.00869

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.00644	0.00630	0.00717
	A	0.00826	0.00816	0.00898
sky130_fd_sc_hs__dlygate4sd2_1	A	0.00677	0.00652	0.00751
	A	0.00861	0.00848	0.00925
sky130_fd_sc_hs__dlygate4sd3_1	A	0.00809	0.00797	0.00880
	A	0.00994	0.00982	0.01030

SKY130_FD_SC_HS__EBUFNx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT		OUTPUT
A	TE_B	Z
0	0	0
1	0	1
-	1	HiZ

Footprint

Cell Name	Area
sky130_fd_sc_hs__ebufn_1	12.78720
sky130_fd_sc_hs__ebufn_2	14.38560
sky130_fd_sc_hs__ebufn_4	19.18080
sky130_fd_sc_hs__ebufn_8	35.16480

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	TE_B	Z
sky130_fd_sc_hs__ebufn_1	0.00226	0.00419	0.36955
sky130_fd_sc_hs__ebufn_2	0.00245	0.00545	0.64145
sky130_fd_sc_hs__ebufn_4	0.00268	0.00833	1.27650
sky130_fd_sc_hs__ebufn_8	0.00517	0.01384	2.27473

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__ebufn_1	0.00000	0.14710	0.24041
sky130_fd_sc_hs__ebufn_2	0.00000	0.08567	0.12231
sky130_fd_sc_hs__ebufn_4	0.00000	0.05286	0.10615
sky130_fd_sc_hs__ebufn_8	0.00000	0.08802	0.20809

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)	0.11316	0.94724	7.24767
	TE_B->Z (RR)	0.03295	0.37291	4.28348
	TE_B->Z (FR)	0.09240	1.17556	11.67810
sky130_fd_sc_hs__ebufn_2	A->Z (RR)	0.10058	0.82814	7.29735
	TE_B->Z (RR)	0.03492	0.37370	4.28425
	TE_B->Z (FR)	0.08915	1.03897	11.65100
sky130_fd_sc_hs__ebufn_4	A->Z (RR)	0.10817	0.74249	7.54724
	TE_B->Z (RR)	0.04358	0.37570	4.28621
	TE_B->Z (FR)	0.08287	0.89424	11.60670
sky130_fd_sc_hs__ebufn_8	A->Z (RR)	0.11426	0.65295	7.46248
	TE_B->Z (RR)	0.06889	0.38010	4.29047
	TE_B->Z (FR)	0.09096	0.79838	11.40960

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ebufn_1	A->Z (FF)	0.11110	0.60654	3.56770
	TE_B->Z (RF)	0.03262	0.37290	4.28349
	TE_B->Z (FF)	0.09043	0.54803	3.38596
sky130_fd_sc_hs__ebufn_2	A->Z (FF)	0.12952	0.64321	3.91211
	TE_B->Z (RF)	0.03469	0.37368	4.28426
	TE_B->Z (FF)	0.09870	0.55814	3.61173
sky130_fd_sc_hs__ebufn_4	A->Z (FF)	0.17427	0.72345	4.53788
	TE_B->Z (RF)	0.04332	0.37567	4.28624
	TE_B->Z (FF)	0.12037	0.60775	4.05827
sky130_fd_sc_hs__ebufn_8	A->Z (FF)	0.16786	0.69334	4.61257
	TE_B->Z (RF)	0.06821	0.38002	4.29057
	TE_B->Z (FF)	0.17314	0.68998	4.59557

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.00480	0.00476	0.00856
	A	0.00241	0.00236	0.00618
	TE_B	0.00213	0.00232	0.00689
	TE_B	0.00641	0.00660	0.01118
sky130_fd_sc_hs__ebufn_2	A	0.00682	0.00699	0.01047
	A	0.00426	0.00444	0.00794
	TE_B	0.00410	0.00418	0.00844
	TE_B	0.00966	0.00972	0.01399
sky130_fd_sc_hs__ebufn_4	A	0.01084	0.01138	0.01411
	A	0.00803	0.00857	0.01130
	TE_B	0.00824	0.00818	0.01167
	TE_B	0.01677	0.01672	0.02022
sky130_fd_sc_hs__ebufn_8	A	0.02094	0.02212	0.02796
	A	0.01549	0.01667	0.02255
	TE_B	0.01686	0.01668	0.01985
	TE_B	0.03109	0.03093	0.03411

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.00231	0.00259	0.00696
	A	0.00471	0.00495	0.00932
	TE_B	0.00247	0.00269	0.00723
	TE_B	0.00668	0.00689	0.01141
sky130_fd_sc_hs__ebufn_2	A	0.00406	0.00469	0.00852
	A	0.00662	0.00715	0.01097
	TE_B	0.00482	0.00498	0.00910
	TE_B	0.01013	0.01028	0.01439
sky130_fd_sc_hs__ebufn_4	A	0.00757	0.00855	0.01222
	A	0.01038	0.01134	0.01467
	TE_B	0.00950	0.00963	0.01291
	TE_B	0.01769	0.01775	0.02107
sky130_fd_sc_hs__ebufn_8	A	0.01488	0.01671	0.02389
	A	0.02036	0.02216	0.02913
	TE_B	0.01927	0.01914	0.02267
	TE_B	0.03285	0.03269	0.03584

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00316	0.00303	0.00694
	(TE_B * Z)	0.00074	0.00060	0.00452
	(TE_B * !Z)	0.00312	0.00299	0.00685
	(TE_B * !Z)	0.00070	0.00056	0.00443
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00436	0.00420	0.00776
	(TE_B * Z)	0.00173	0.00155	0.00512
	(TE_B * !Z)	0.00419	0.00400	0.00748
	(TE_B * !Z)	0.00157	0.00137	0.00486
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.00644	0.00623	0.00879
	(TE_B * Z)	0.00353	0.00331	0.00588
	(TE_B * !Z)	0.00614	0.00592	0.00837
	(TE_B * !Z)	0.00325	0.00301	0.00547
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.01195	0.01156	0.01689
	(TE_B * Z)	0.00628	0.00588	0.01123
	(TE_B * !Z)	0.01134	0.01093	0.01602
	(TE_B * !Z)	0.00571	0.00527	0.01040

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00046	0.00059	0.00503
	(TE_B * Z)	0.00290	0.00304	0.00747
	(TE_B * !Z)	0.00050	0.00075	0.00512
	(TE_B * !Z)	0.00292	0.00317	0.00753
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00097	0.00099	0.00490
	(TE_B * Z)	0.00365	0.00368	0.00759
	(TE_B * !Z)	0.00112	0.00128	0.00518
	(TE_B * !Z)	0.00375	0.00390	0.00780
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.00181	0.00185	0.00483
	(TE_B * Z)	0.00481	0.00486	0.00787
	(TE_B * !Z)	0.00211	0.00218	0.00527
	(TE_B * !Z)	0.00499	0.00506	0.00815
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.00307	0.00316	0.00933
	(TE_B * Z)	0.00893	0.00902	0.01522
	(TE_B * !Z)	0.00371	0.00385	0.01022
	(TE_B * !Z)	0.00931	0.00943	0.01582

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00266	0.00240	0.00638
	(A * Z)	-0.00153	-0.00182	0.00217
	(!A * !Z)	0.00271	0.00247	0.00641
	(!A * !Z)	-0.00148	-0.00173	0.00220
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00295	0.00255	0.00620
	(A * Z)	-0.00238	-0.00281	0.00084
	(!A * !Z)	0.00306	0.00262	0.00629
	(!A * !Z)	-0.00226	-0.00274	0.00094
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00370	0.00298	0.00558
	(A * Z)	-0.00447	-0.00521	-0.00263
	(!A * !Z)	0.00379	0.00311	0.00567
	(!A * !Z)	-0.00435	-0.00512	-0.00254
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.00511	0.00403	0.00590
	(A * Z)	-0.00845	-0.00962	-0.00773
	(!A * !Z)	0.00509	0.00405	0.00600
	(!A * !Z)	-0.00837	-0.00953	-0.00756

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00062	0.00081	0.00534
	(A * Z)	0.00482	0.00504	0.00955
	(!A * !Z)	0.00061	0.00080	0.00532
	(!A * !Z)	0.00480	0.00502	0.00953
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00150	0.00156	0.00577
	(A * Z)	0.00685	0.00693	0.01111
	(!A * !Z)	0.00148	0.00157	0.00574
	(!A * !Z)	0.00682	0.00690	0.01110
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00313	0.00310	0.00652
	(A * Z)	0.01131	0.01133	0.01474
	(!A * !Z)	0.00315	0.00320	0.00650
	(!A * !Z)	0.01129	0.01140	0.01471
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.00646	0.00633	0.00945
	(A * Z)	0.02002	0.01995	0.02309
	(!A * !Z)	0.00663	0.00650	0.00961
	(!A * !Z)	0.02014	0.02009	0.02319

SKY130_FD_SC_HS__EDFXBP

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT			OUTPUT	
D	DE	CLK	Q	Q_N
x	0	R	IQ	IQ_N
0	1	R	0	1
1	1	R	1	0
x	x	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__edfxbp_1	47.95200

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	DE	CLK	Q	Q_N
sky130_fd_sc_hs__edfxbp_1	0.00179	0.00352	0.00282	0.78030	0.77936

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxbp_1	0.00000	0.23027	0.37064

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)	0.27047	0.95450	7.25881

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxbp_1	CLK->Q (RF)	0.27449	0.69479	2.86657

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)	0.39739	1.05335	7.35111

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)	0.36941	0.73474	2.79680

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)	-0.12443	-0.22827	-1.16233
	setup	CLK (R)	0.16795	0.25846	1.20690

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)	-0.54111	-0.66939	-3.93442
	setup	CLK (R)	0.71484	0.80207	4.20573

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)	-0.12443	-0.22827	-1.16233
	setup	CLK (R)	0.16795	0.25846	1.20690

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)	-0.54111	-0.66939	-3.93442
	setup	CLK (R)	0.71484	0.80207	4.20573

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)	-0.00266	0.00724	0.05879
	setup	CLK (R)	0.76123	0.75287	1.22485

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)	-0.21744	-0.37472	-2.30291
	setup	CLK (R)	0.60884	0.71800	3.88750

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)	-0.00266	0.00724	0.05879
	hold	CLK (R)	-0.24891	-0.31144	-0.54941
	setup	CLK (R)	0.16802	0.23772	1.22485
	setup	CLK (R)	0.76123	0.75287	1.06786

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)	-0.56482	-0.69384	-3.84036
	hold	CLK (R)	-0.21744	-0.37472	-2.30291
	setup	CLK (R)	0.60884	0.71800	3.88750
	setup	CLK (R)	0.24178	0.39067	2.32081

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 ()	0.11889	0.77881	16.50020
	min_pulse_width	CLK ()	0.21729	0.77881	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 ()	0.22887	0.77881	16.50020
	min_pulse_width	CLK ()	0.46621	0.77881	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	0.01080	0.01082	0.01223
	CLK	0.00941	0.00942	0.01083

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01050	0.01041	0.01165
	CLK	0.00901	0.00892	0.01014

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01052	0.01042	0.01182
	CLK	0.00903	0.00893	0.01028

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01078	0.01077	0.01207
	CLK	0.00940	0.00939	0.01068

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.00410	0.00396	0.00480
	(CLK * DE)	0.00214	0.00200	0.00284
	(CLK * !DE)	0.00080	0.00081	0.00080
	(CLK * !DE)	-0.00047	-0.00047	-0.00046
	(!CLK * DE * Q * !Q_N)	0.00918	0.00905	0.00984
	(!CLK * DE * Q * !Q_N)	0.00722	0.00709	0.00788
	(!CLK * DE * !Q * Q_N)	0.00876	0.00863	0.00941
	(!CLK * DE * !Q * Q_N)	0.00678	0.00666	0.00743
	(!CLK * !DE)	0.00080	0.00081	0.00080
	(!CLK * !DE)	-0.00047	-0.00047	-0.00046

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.00150	0.00134	0.00218
	(CLK * DE)	0.00348	0.00331	0.00416
	(CLK * !DE)	-0.00026	-0.00026	-0.00026
	(CLK * !DE)	0.00099	0.00099	0.00098
	(!CLK * DE * Q * !Q_N)	0.00648	0.00630	0.00752
	(!CLK * DE * Q * !Q_N)	0.00844	0.00826	0.00948
	(!CLK * DE * !Q * Q_N)	0.00685	0.00665	0.00791
	(!CLK * DE * !Q * Q_N)	0.00883	0.00864	0.00988
	(!CLK * !DE)	-0.00026	-0.00026	-0.00026
	(!CLK * !DE)	0.00099	0.00099	0.00098

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00647	0.00621	0.00920
	CLK	0.00205	0.00177	0.00478
	(!CLK * D * Q * !Q_N)	0.00358	0.00336	0.00581
	(!CLK * D * Q * !Q_N)	-0.00003	-0.00027	0.00219
	(!CLK * D * !Q * Q_N)	0.01151	0.01124	0.01423
	(!CLK * D * !Q * Q_N)	0.00710	0.00681	0.00980
	(!CLK * !D * Q * !Q_N)	0.01087	0.01063	0.01303
	(!CLK * !D * Q * !Q_N)	0.00798	0.00773	0.01013
	(!CLK * !D * !Q * Q_N)	0.00357	0.00337	0.00583
	(!CLK * !D * !Q * Q_N)	-0.00000	-0.00021	0.00225

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00388	0.00381	0.00652
	CLK	0.00676	0.00671	0.00943
	(!CLK * D * Q * !Q_N)	-0.00004	-0.00005	0.00273
	(!CLK * D * Q * !Q_N)	0.00357	0.00356	0.00635
	(!CLK * D * !Q * Q_N)	0.00742	0.00729	0.01089
	(!CLK * D * !Q * Q_N)	0.01185	0.01172	0.01530
	(!CLK * !D * Q * !Q_N)	0.00896	0.00891	0.01158
	(!CLK * !D * Q * !Q_N)	0.01184	0.01180	0.01449
	(!CLK * !D * !Q * Q_N)	-0.00007	-0.00010	0.00269
	(!CLK * !D * !Q * Q_N)	0.00350	0.00349	0.00629

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)	0.01027	0.00990	0.01250
	(D * Q * !Q_N)	0.00740	0.00702	0.00963
	(D * !DE * !Q * Q_N)	0.00996	0.00955	0.01221
	(D * !DE * !Q * Q_N)	0.00708	0.00666	0.00933
	(!D * !Q * Q_N)	0.00996	0.00955	0.01221
	(!D * !Q * Q_N)	0.00708	0.00667	0.00933
	(!D * !DE * Q * !Q_N)	0.01027	0.00989	0.01250
	(!D * !DE * Q * !Q_N)	0.00739	0.00701	0.00963

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)	0.00527	0.00514	0.00830
	(D * Q * !Q_N)	0.00815	0.00802	0.01118
	(D * DE * !Q * Q_N)	0.01051	0.01029	0.01337
	(D * DE * !Q * Q_N)	0.01339	0.01316	0.01625
	(D * !DE * !Q * Q_N)	0.00552	0.00542	0.00852
	(D * !DE * !Q * Q_N)	0.00840	0.00830	0.01140
	(!D * DE * Q * !Q_N)	0.01149	0.01140	0.01493
	(!D * DE * Q * !Q_N)	0.01437	0.01428	0.01780
	(!D * !Q * Q_N)	0.00552	0.00542	0.00852
	(!D * !Q * Q_N)	0.00840	0.00831	0.01141
	(!D * !DE * Q * !Q_N)	0.00527	0.00514	0.00830
	(!D * !DE * Q * !Q_N)	0.00815	0.00802	0.01118

SKY130_FD_SC_HS__EDFXTP

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT			OUTPUT
D	DE	CLK	Q
x	0	R	IQ
0	1	R	0
1	1	R	1
x	x	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__edfxtp_1	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	DE	CLK	Q
sky130_fd_sc_hs__edfxtp_1	0.00183	0.00338	0.00276	0.77826

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxtp_1	0.00000	0.24091	0.42084

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)	0.25632	0.93322	7.20761

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxtp_1	CLK->Q (RF)	0.25047	0.65035	2.72822

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)	-0.12005	-0.22897	-1.16451
	setup	CLK (R)	0.16248	0.25583	1.20913

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)	-0.53239	-0.66459	-3.90149
	setup	CLK (R)	0.71078	0.79905	4.32728

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)	-0.00534	0.00425	0.04912
	setup	CLK (R)	0.75260	0.74344	1.73340

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)	-0.21632	-0.37474	-2.31596
	setup	CLK (R)	0.60397	0.71388	3.88177

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)	-0.00534	0.00425	0.04912
	hold	CLK (R)	-0.24821	-0.29765	-0.53822
	setup	CLK (R)	0.16005	0.23772	1.23427
	setup	CLK (R)	0.75260	0.74344	1.73340

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)	-0.55817	-0.68633	-3.81767
	hold	CLK (R)	-0.21632	-0.37474	-2.31596
	setup	CLK (R)	0.60397	0.71388	3.88177
	setup	CLK (R)	0.23734	0.38751	2.33531

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 ()	0.11020	0.77881	16.50020
	min_pulse_width	CLK ()	0.19414	0.77881	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 ()	0.22308	0.77881	16.50020
	min_pulse_width	CLK ()	0.47490	0.77881	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	0.01818	0.01805	0.02092
	CLK	0.01545	0.01533	0.01822

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.01747	0.01725	0.01993
	CLK	0.01454	0.01434	0.01699

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.00397	0.00383	0.00467
	(CLK * DE)	0.00199	0.00185	0.00270
	(CLK * !DE)	0.00080	0.00081	0.00080
	(CLK * !DE)	-0.00048	-0.00048	-0.00047
	(!CLK * DE * Q)	0.00902	0.00888	0.00970
	(!CLK * DE * Q)	0.00704	0.00691	0.00772
	(!CLK * DE * !Q)	0.00859	0.00847	0.00924
	(!CLK * DE * !Q)	0.00660	0.00647	0.00725
	(!CLK * !DE)	0.00081	0.00080	0.00080
	(!CLK * !DE)	-0.00048	-0.00047	-0.00047

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.00144	0.00128	0.00213
	(CLK * DE)	0.00344	0.00327	0.00412
	(CLK * !DE)	-0.00025	-0.00025	-0.00025
	(CLK * !DE)	0.00101	0.00101	0.00101
	(!CLK * DE * Q)	0.00616	0.00597	0.00717
	(!CLK * DE * Q)	0.00814	0.00795	0.00915
	(!CLK * DE * !Q)	0.00655	0.00636	0.00763
	(!CLK * DE * !Q)	0.00855	0.00836	0.00962
	(!CLK * !DE)	-0.00025	-0.00025	-0.00025
	(!CLK * !DE)	0.00101	0.00101	0.00101

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.00626	0.00601	0.00903
	CLK	0.00198	0.00171	0.00474
	(!CLK * D * Q)	0.00347	0.00330	0.00573
	(!CLK * D * Q)	0.00000	-0.00019	0.00225
	(!CLK * D * !Q)	0.01124	0.01097	0.01399
	(!CLK * D * !Q)	0.00696	0.00669	0.00972
	(!CLK * !D * Q)	0.01045	0.01024	0.01262
	(!CLK * !D * Q)	0.00769	0.00748	0.00986
	(!CLK * !D * !Q)	0.00348	0.00332	0.00576
	(!CLK * !D * !Q)	0.00004	-0.00013	0.00232

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.00376	0.00370	0.00641
	CLK	0.00650	0.00646	0.00918
	(!CLK * D * Q)	-0.00002	-0.00002	0.00277
	(!CLK * D * Q)	0.00345	0.00345	0.00625
	(!CLK * D * !Q)	0.00714	0.00702	0.01061
	(!CLK * D * !Q)	0.01143	0.01131	0.01487
	(!CLK * !D * Q)	0.00881	0.00877	0.01143
	(!CLK * !D * Q)	0.01155	0.01153	0.01421
	(!CLK * !D * !Q)	-0.00005	-0.00008	0.00272
	(!CLK * !D * !Q)	0.00337	0.00337	0.00617

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.00985	0.00946	0.01214
	(D * Q)	0.00703	0.00664	0.00933
	(D * !DE * !Q)	0.00985	0.00945	0.01218
	(D * !DE * !Q)	0.00703	0.00662	0.00936
	(!D * !Q)	0.00985	0.00945	0.01218
	(!D * !Q)	0.00703	0.00662	0.00936
	(!D * !DE * Q)	0.00985	0.00946	0.01214
	(!D * !DE * Q)	0.00703	0.00664	0.00933

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.00528	0.00516	0.00834
	(D * Q)	0.00810	0.00798	0.01116
	(D * DE * !Q)	0.01016	0.00999	0.01308
	(D * DE * !Q)	0.01297	0.01280	0.01591
	(D * !DE * !Q)	0.00520	0.00512	0.00823
	(D * !DE * !Q)	0.00802	0.00793	0.01105
	(!D * DE * Q)	0.01119	0.01114	0.01462
	(!D * DE * Q)	0.01402	0.01396	0.01744
	(!D * !Q)	0.00520	0.00512	0.00823
	(!D * !Q)	0.00802	0.00793	0.01105
	(!D * !DE * Q)	0.00528	0.00516	0.00834
	(!D * !DE * Q)	0.00810	0.00798	0.01116

SKY130_FD_SC_HS__EINVNx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT		OUTPUT
A	TE_B	Z
0	0	1
1	0	0
-	1	HiZ

Footprint

Cell Name	Area
sky130_fd_sc_hs__einvn_1	7.99200
sky130_fd_sc_hs__einvn_2	11.18880
sky130_fd_sc_hs__einvn_4	17.58240
sky130_fd_sc_hs__einvn_8	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	TE_B	Z
sky130_fd_sc_hs__einvn_1	0.00274	0.00306	0.36905
sky130_fd_sc_hs__einvn_2	0.00513	0.00463	0.68808
sky130_fd_sc_hs__einvn_4	0.01023	0.00828	1.33231
sky130_fd_sc_hs__einvn_8	0.02047	0.01378	2.44124

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__einvn_1	0.00000	0.08219	0.11557
sky130_fd_sc_hs__einvn_2	0.00000	0.08740	0.11625
sky130_fd_sc_hs__einvn_4	0.00000	0.03853	0.10194
sky130_fd_sc_hs__einvn_8	0.00000	0.05937	0.19967

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)	0.07982	1.14396	11.57340
	TE_B->Z (RR)	0.03434	0.37257	4.28315
	TE_B->Z (FR)	0.09094	1.17533	11.66910
sky130_fd_sc_hs__einvn_2	A->Z (FR)	0.05425	0.97604	11.55680
	TE_B->Z (RR)	0.04369	0.37427	4.28486
	TE_B->Z (FR)	0.07939	1.01574	11.65560
sky130_fd_sc_hs__einvn_4	A->Z (FR)	0.05005	0.84953	11.56160
	TE_B->Z (RR)	0.04457	0.37571	4.28627
	TE_B->Z (FR)	0.07475	0.87919	11.55770
sky130_fd_sc_hs__einvn_8	A->Z (FR)	0.05139	0.76030	11.52270
	TE_B->Z (RR)	0.06785	0.38213	4.29250
	TE_B->Z (FR)	0.08437	0.78550	11.40800

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvn_1	A->Z (RF)	0.02795	0.48395	4.98415
	TE_B->Z (RF)	0.03386	0.37256	4.28315
	TE_B->Z (FF)	0.09094	0.56451	3.40912
sky130_fd_sc_hs__einvn_2	A->Z (RF)	0.02321	0.43136	5.10566
	TE_B->Z (RF)	0.04297	0.37429	4.28488
	TE_B->Z (FF)	0.10671	0.58892	3.72203
sky130_fd_sc_hs__einvn_4	A->Z (RF)	0.02250	0.38367	5.16142
	TE_B->Z (RF)	0.04374	0.37573	4.28631
	TE_B->Z (FF)	0.10988	0.58527	4.04759
sky130_fd_sc_hs__einvn_8	A->Z (RF)	0.02457	0.35699	5.41991
	TE_B->Z (RF)	0.06691	0.38210	4.29265
	TE_B->Z (FF)	0.15515	0.66023	4.59958

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	-0.00029	-0.00029	0.00024
	A	0.00244	0.00246	0.00298
	TE_B	0.00148	0.00154	0.00451
	TE_B	0.00552	0.00559	0.00857
sky130_fd_sc_hs__einvn_2	A	-0.00130	-0.00122	-0.00002
	A	0.00399	0.00407	0.00526
	TE_B	0.00224	0.00226	0.00521
	TE_B	0.00880	0.00884	0.01177
sky130_fd_sc_hs__einvn_4	A	-0.00257	-0.00233	0.00006
	A	0.00798	0.00824	0.01064
	TE_B	0.00460	0.00456	0.00812
	TE_B	0.01676	0.01674	0.02033
sky130_fd_sc_hs__einvn_8	A	-0.00487	-0.00435	0.00063
	A	0.01631	0.01685	0.02192
	TE_B	0.00956	0.00942	0.01273
	TE_B	0.03106	0.03095	0.03426

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	0.00256	0.00255	0.00289
	A	-0.00018	-0.00019	0.00003
	TE_B	0.00277	0.00292	0.00571
	TE_B	0.00493	0.00507	0.00785
sky130_fd_sc_hs__einvn_2	A	0.00418	0.00426	0.00532
	A	-0.00110	-0.00103	-0.00052
	TE_B	0.00465	0.00479	0.00754
	TE_B	0.00755	0.00764	0.01043
sky130_fd_sc_hs__einvn_4	A	0.00844	0.00856	0.01048
	A	-0.00209	-0.00202	-0.00087
	TE_B	0.00960	0.00964	0.01301
	TE_B	0.01428	0.01431	0.01767
sky130_fd_sc_hs__einvn_8	A	0.01680	0.01675	0.02046
	A	-0.00430	-0.00439	-0.00172
	TE_B	0.01933	0.01941	0.02237
	TE_B	0.02570	0.02562	0.02873

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	0.00058	0.00059	0.00058
	(TE_B * Z)	-0.00093	-0.00093	-0.00093
	(TE_B * !Z)	0.00063	0.00063	0.00063
	(TE_B * !Z)	-0.00086	-0.00086	-0.00086
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	0.00112	0.00112	0.00107
	(TE_B * Z)	-0.00182	-0.00181	-0.00180
	(TE_B * !Z)	0.00126	0.00127	0.00127
	(TE_B * !Z)	-0.00155	-0.00156	-0.00155
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	0.00204	0.00204	0.00197
	(TE_B * Z)	-0.00359	-0.00362	-0.00360
	(TE_B * !Z)	0.00232	0.00232	0.00231
	(TE_B * !Z)	-0.00320	-0.00320	-0.00318
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	0.00394	0.00392	0.00378
	(TE_B * Z)	-0.00711	-0.00714	-0.00711
	(TE_B * !Z)	0.00454	0.00453	0.00452
	(TE_B * !Z)	-0.00636	-0.00633	-0.00629

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	-0.00056	-0.00056	-0.00056
	(TE_B * Z)	0.00093	0.00093	0.00093
	(TE_B * !Z)	-0.00063	-0.00063	-0.00063
	(TE_B * !Z)	0.00088	0.00088	0.00087
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	-0.00106	-0.00106	-0.00105
	(TE_B * Z)	0.00182	0.00181	0.00180
	(TE_B * !Z)	-0.00126	-0.00127	-0.00127
	(TE_B * !Z)	0.00164	0.00163	0.00156
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	-0.00192	-0.00194	-0.00192
	(TE_B * Z)	0.00359	0.00362	0.00360
	(TE_B * !Z)	-0.00232	-0.00232	-0.00231
	(TE_B * !Z)	0.00332	0.00329	0.00318
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	-0.00373	-0.00375	-0.00373
	(TE_B * Z)	0.00711	0.00714	0.00711
	(TE_B * !Z)	-0.00454	-0.00453	-0.00452
	(TE_B * !Z)	0.00651	0.00654	0.00629

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00193	0.00172	0.00428
	(A * !Z)	-0.00115	-0.00141	0.00117
	(!A * Z)	0.00184	0.00167	0.00425
	(!A * Z)	-0.00114	-0.00137	0.00118
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00231	0.00199	0.00431
	(A * !Z)	-0.00242	-0.00279	-0.00044
	(!A * Z)	0.00210	0.00189	0.00420
	(!A * Z)	-0.00236	-0.00274	-0.00042
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00386	0.00325	0.00582
	(A * !Z)	-0.00449	-0.00525	-0.00256
	(!A * Z)	0.00342	0.00302	0.00568
	(!A * Z)	-0.00442	-0.00517	-0.00249
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.00477	0.00387	0.00579
	(A * !Z)	-0.00888	-0.01013	-0.00803
	(!A * Z)	0.00392	0.00343	0.00548
	(!A * Z)	-0.00877	-0.00990	-0.00795

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00091	0.00102	0.00391
	(A * !Z)	0.00402	0.00415	0.00704
	(!A * Z)	0.00095	0.00106	0.00396
	(!A * Z)	0.00397	0.00411	0.00698
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00153	0.00156	0.00439
	(A * !Z)	0.00631	0.00636	0.00918
	(!A * Z)	0.00163	0.00166	0.00451
	(!A * Z)	0.00622	0.00627	0.00910
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00308	0.00302	0.00645
	(A * !Z)	0.01153	0.01153	0.01495
	(!A * Z)	0.00328	0.00325	0.00669
	(!A * Z)	0.01133	0.01132	0.01478
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.00648	0.00634	0.00952
	(A * !Z)	0.02042	0.02028	0.02347
	(!A * Z)	0.00685	0.00672	0.00991
	(!A * Z)	0.01992	0.01987	0.02307

SKY130_FD_SC_HS__EINVPx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT		OUTPUT
A	TE	Z
-	0	HiZ
0	1	1
1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__einvp_1	7.99200
sky130_fd_sc_hs__einvp_2	11.18880
sky130_fd_sc_hs__einvp_4	19.18080
sky130_fd_sc_hs__einvp_8	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	TE	Z
sky130_fd_sc_hs__einvp_1	0.00275	0.00274	0.33906
sky130_fd_sc_hs__einvp_2	0.00505	0.00425	0.70168
sky130_fd_sc_hs__einvp_4	0.01023	0.00765	1.33498
sky130_fd_sc_hs__einvp_8	0.02049	0.01205	2.39321

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__einvp_1	0.00000	0.01356	0.06490
sky130_fd_sc_hs__einvp_2	0.00000	0.04948	0.16376
sky130_fd_sc_hs__einvp_4	0.00000	0.03179	0.12216
sky130_fd_sc_hs__einvp_8	0.00000	0.05263	0.21988

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)	0.08547	1.16272	11.46650
	TE->Z (FR)	0.12509	0.51974	4.28306
	TE->Z (RR)	0.12007	0.97286	7.12121
sky130_fd_sc_hs__einvp_2	A->Z (FR)	0.05309	0.96583	11.55350
	TE->Z (FR)	0.11218	0.46320	4.28412
	TE->Z (RR)	0.11607	0.81644	7.36687
sky130_fd_sc_hs__einvp_4	A->Z (FR)	0.04996	0.84838	11.54900
	TE->Z (FR)	0.12852	0.50940	4.28592
	TE->Z (RR)	0.11281	0.69327	7.28720
sky130_fd_sc_hs__einvp_8	A->Z (FR)	0.05149	0.76009	11.46770
	TE->Z (FR)	0.21135	0.62852	4.29147
	TE->Z (RR)	0.14000	0.67520	7.51919

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvp_1	A->Z (RF)	0.02839	0.47148	4.75810
	TE->Z (FF)	0.12721	0.51827	4.28304
	TE->Z (RF)	0.02945	0.44509	4.42698
sky130_fd_sc_hs__einvp_2	A->Z (RF)	0.02273	0.42253	5.02273
	TE->Z (FF)	0.11403	0.46726	4.28402
	TE->Z (RF)	0.02730	0.39959	4.60917
sky130_fd_sc_hs__einvp_4	A->Z (RF)	0.02280	0.38751	5.20023
	TE->Z (FF)	0.13036	0.51425	4.28579
	TE->Z (RF)	0.02868	0.34997	4.55352
sky130_fd_sc_hs__einvp_8	A->Z (RF)	0.02478	0.36232	5.48737
	TE->Z (FF)	0.21446	0.63377	4.29082
	TE->Z (RF)	0.03442	0.30964	4.43868

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	-0.00043	-0.00040	0.00032
	A	0.00237	0.00242	0.00313
	TE	0.00465	0.00453	0.00560
	TE	0.00294	0.00282	0.00390
sky130_fd_sc_hs__einvp_2	A	-0.00127	-0.00117	-0.00000
	A	0.00393	0.00378	0.00522
	TE	0.00725	0.00713	0.00955
	TE	0.00495	0.00483	0.00728
sky130_fd_sc_hs__einvp_4	A	-0.00246	-0.00220	0.00019
	A	0.00809	0.00836	0.01077
	TE	0.01374	0.01352	0.01633
	TE	0.01015	0.00988	0.01276
sky130_fd_sc_hs__einvp_8	A	-0.00483	-0.00435	0.00054
	A	0.01630	0.01685	0.02167
	TE	0.02407	0.02381	0.02618
	TE	0.02023	0.01995	0.02243

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	0.00265	0.00264	0.00294
	A	-0.00015	-0.00017	0.00005
	TE	0.00591	0.00584	0.00688
	TE	0.00215	0.00203	0.00311
sky130_fd_sc_hs__einvp_2	A	0.00421	0.00429	0.00478
	A	-0.00099	-0.00093	-0.00042
	TE	0.00939	0.00930	0.01188
	TE	0.00331	0.00317	0.00560
sky130_fd_sc_hs__einvp_4	A	0.00831	0.00839	0.01033
	A	-0.00221	-0.00218	-0.00099
	TE	0.01803	0.01780	0.02097
	TE	0.00661	0.00634	0.00914
sky130_fd_sc_hs__einvp_8	A	0.01671	0.01668	0.02070
	A	-0.00442	-0.00450	-0.00184
	TE	0.03262	0.03243	0.03549
	TE	0.01302	0.01273	0.01505

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	0.00050	0.00050	0.00050
	(!TE * Z)	-0.00095	-0.00095	-0.00095
	(!TE * !Z)	0.00056	0.00055	0.00055
	(!TE * !Z)	-0.00088	-0.00087	-0.00087
sky130_fd_sc_hs__einvp_2	(!TE * Z)	0.00093	0.00093	0.00090
	(!TE * Z)	-0.00190	-0.00191	-0.00190
	(!TE * !Z)	0.00107	0.00107	0.00106
	(!TE * !Z)	-0.00165	-0.00165	-0.00164
sky130_fd_sc_hs__einvp_4	(!TE * Z)	0.00179	0.00178	0.00172
	(!TE * Z)	-0.00380	-0.00378	-0.00377
	(!TE * !Z)	0.00206	0.00208	0.00207
	(!TE * !Z)	-0.00326	-0.00329	-0.00328
sky130_fd_sc_hs__einvp_8	(!TE * Z)	0.00348	0.00347	0.00336
	(!TE * Z)	-0.00733	-0.00732	-0.00728
	(!TE * !Z)	0.00407	0.00406	0.00404
	(!TE * !Z)	-0.00639	-0.00638	-0.00634

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	-0.00049	-0.00049	-0.00049
	(!TE * Z)	0.00095	0.00095	0.00095
	(!TE * !Z)	-0.00056	-0.00055	-0.00055
	(!TE * !Z)	0.00090	0.00089	0.00088
sky130_fd_sc_hs__einvp_2	(!TE * Z)	-0.00089	-0.00090	-0.00089
	(!TE * Z)	0.00190	0.00191	0.00190
	(!TE * !Z)	-0.00107	-0.00107	-0.00106
	(!TE * !Z)	0.00176	0.00174	0.00166
sky130_fd_sc_hs__einvp_4	(!TE * Z)	-0.00173	-0.00172	-0.00171
	(!TE * Z)	0.00380	0.00378	0.00377
	(!TE * !Z)	-0.00206	-0.00208	-0.00207
	(!TE * !Z)	0.00346	0.00345	0.00330
sky130_fd_sc_hs__einvp_8	(!TE * Z)	-0.00340	-0.00339	-0.00336
	(!TE * Z)	0.00733	0.00732	0.00728
	(!TE * !Z)	-0.00407	-0.00406	-0.00404
	(!TE * !Z)	0.00664	0.00664	0.00635

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	0.00409	0.00400	0.00507
	(A * !Z)	0.00150	0.00138	0.00247
	(!A * Z)	0.00407	0.00397	0.00504
	(!A * Z)	0.00142	0.00130	0.00237
sky130_fd_sc_hs__einvp_2	(A * !Z)	0.00626	0.00616	0.00857
	(A * !Z)	0.00230	0.00217	0.00460
	(!A * Z)	0.00631	0.00621	0.00857
	(!A * Z)	0.00215	0.00202	0.00441
sky130_fd_sc_hs__einvp_4	(A * !Z)	0.01185	0.01162	0.01440
	(A * !Z)	0.00479	0.00452	0.00732
	(!A * Z)	0.01192	0.01166	0.01440
	(!A * Z)	0.00446	0.00419	0.00692
sky130_fd_sc_hs__einvp_8	(A * !Z)	0.02036	0.02015	0.02249
	(A * !Z)	0.00957	0.00930	0.01164
	(!A * Z)	0.02052	0.02029	0.02248
	(!A * Z)	0.00897	0.00868	0.01094

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	-0.00079	-0.00095	-0.00001
	(A * !Z)	0.00177	0.00165	0.00259
	(!A * Z)	-0.00083	-0.00097	-0.00000
	(!A * Z)	0.00182	0.00169	0.00264
sky130_fd_sc_hs__einvp_2	(A * !Z)	-0.00198	-0.00218	0.00047
	(A * !Z)	0.00192	0.00179	0.00444
	(!A * Z)	-0.00214	-0.00224	0.00043
	(!A * Z)	0.00202	0.00189	0.00452
sky130_fd_sc_hs__einvp_4	(A * !Z)	-0.00361	-0.00396	-0.00101
	(A * !Z)	0.00331	0.00313	0.00606
	(!A * Z)	-0.00387	-0.00406	-0.00107
	(!A * Z)	0.00354	0.00335	0.00623
sky130_fd_sc_hs__einvp_8	(A * !Z)	-0.00676	-0.00754	-0.00490
	(A * !Z)	0.00374	0.00332	0.00594
	(!A * Z)	-0.00718	-0.00775	-0.00505
	(!A * Z)	0.00418	0.00373	0.00626

SKY130_FD_SC_HS__FAHCIN

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT			OUTPUT	
A	B	CIN	COUT	SUM
0	0	0	0	1
0	0	1	0	0
0	1	0	1	0
0	1	1	0	1
1	0	0	1	0
1	0	1	0	1
1	1	0	1	1
1	1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__fahcin_1	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	A	B	CIN	COUT	SUM
sky130_fd_sc_hs__fahcin_1	0.00281	0.00696	0.00492	0.35970	0.76654

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcin_1	0.00000	0.62892	0.70606

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)	0.23990	1.04892	5.69122
	B->COUT (RR)	0.22793	0.93193	5.27982
	CIN->COUT (FR)	0.11428	0.99439	9.61911

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fahcin_1	A->COUT (FF)	0.34882	1.00475	5.04644
	B->COUT (FF)	0.28826	0.89080	4.55422
	CIN->COUT (RF)	0.05442	0.51089	4.80008

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)	-	0.42569	1.35119	9.99521
	B->SUM (-R)	-	0.38993	1.26176	9.43609
	CIN->SUM (RR)	(A * !B) + (!A * B)	0.13073	0.84891	7.41516
	CIN->SUM (FR)	(A * B) + (!A * !B)	0.21322	1.05878	8.84126

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)	-	0.44306	1.07151	5.27792
	B->SUM (-F)	-	0.36588	0.95529	4.82483
	CIN->SUM (FF)	(A * !B) + (!A * B)	0.22410	0.87943	5.29689
	CIN->SUM (RF)	(A * B) + (!A * !B)	0.21416	0.57662	2.58412

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.01078	0.01077	0.01184
	A	0.00942	0.00939	0.01049
	B	0.01137	0.01163	0.01601
	B	0.00798	0.00819	0.01262
	CIN	0.00447	0.00450	0.00666
	CIN	0.00702	0.00708	0.00928

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.00929	0.00933	0.01109
	A	0.01065	0.01069	0.01244
	B	0.00813	0.00841	0.01390
	B	0.01160	0.01186	0.01731
	CIN	0.00743	0.00735	0.00907
	CIN	0.00488	0.00479	0.00649

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.02082	0.02079	0.02353
	A	-	0.01810	0.01808	0.02092
	B	-	0.02093	0.02233	0.03222
	B	-	0.01415	0.01552	0.02546
	CIN	(A * B) + (!A * !B)	0.00678	0.00675	0.01472
	CIN	(A * B) + (!A * !B)	0.01188	0.01184	0.01988
	CIN	(A * !B) + (!A * B)	0.00744	0.00737	0.00918
	CIN	(A * !B) + (!A * B)	0.00488	0.00483	0.00654

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.01747	0.01758	0.02241
	A	-	0.02019	0.02029	0.02438
	B	-	0.01427	0.01551	0.02956
	B	-	0.02105	0.02228	0.03607
	CIN	(A * B) + (!A * !B)	0.01298	0.01268	0.01995
	CIN	(A * B) + (!A * !B)	0.00789	0.00753	0.01480
	CIN	(A * !B) + (!A * B)	0.00447	0.00453	0.00633
	CIN	(A * !B) + (!A * B)	0.00702	0.00709	0.00864

SKY130_FD_SC_HS__FAHCON

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT			OUTPUT	
A	B	CI	COUT_N	SUM
0	0	0	1	0
0	0	1	1	1
0	1	0	1	1
0	1	1	0	0
1	0	0	1	1
1	0	1	0	0
1	1	0	0	0
1	1	1	0	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__fahcon_1	38.36160

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	A	B	CI	COUT_N	SUM
sky130_fd_sc_hs__fahcon_1	0.00279	0.00882	0.00495	0.35325	0.74574

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcon_1	0.00000	0.62892	0.72628

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)	0.33464	1.23450	7.42145
	B->COUT_N (FR)	0.24458	1.09875	9.56006
	CI->COUT_N (FR)	0.10844	0.97524	9.42402

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)	0.27893	0.69932	2.58414
	B->COUT_N (RF)	0.19226	0.60753	4.89249
	CI->COUT_N (RF)	0.05240	0.49855	4.75354

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)	-	0.37775	1.30546	9.66347
	B->SUM (-R)	-	0.31268	1.17988	9.01781
	CI->SUM (RR)	(A * B) + (!A * !B)	0.12467	0.83221	7.26002
	CI->SUM (FR)	(A * !B) + (!A * B)	0.20922	1.06346	8.85257

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)	-	0.41141	1.03247	5.10613
	B->SUM (-F)	-	0.31513	0.88056	4.50791
	CI->SUM (FF)	(A * B) + (!A * !B)	0.21859	0.84860	5.15903
	CI->SUM (RF)	(A * !B) + (!A * B)	0.22891	0.58441	2.55006

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	0.00857	0.00850	0.01029
	A	0.00997	0.00989	0.01173
	B	0.00628	0.00666	0.01442
	B	0.01072	0.01111	0.01893
	CI	0.00445	0.00440	0.00660
	CI	0.00702	0.00697	0.00919

Internal switching power(pJ) to COUT_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcon_1	A	0.00994	0.00968	0.01068
	A	0.00854	0.00824	0.00927
	B	0.01061	0.01073	0.01677
	B	0.00616	0.00624	0.01232
	CI	0.00750	0.00732	0.00925
	CI	0.00493	0.00474	0.00663

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.01822	0.01814	0.02093
	A	-	0.01533	0.01537	0.01828
	B	-	0.02081	0.02541	0.04014
	B	-	0.01195	0.01651	0.03122
	CI	(A * B) + (!A * !B)	0.01281	0.01253	0.01934
	CI	(A * B) + (!A * !B)	0.00769	0.00742	0.01426
	CI	(A * !B) + (!A * B)	0.00445	0.00438	0.00644
	CI	(A * !B) + (!A * B)	0.00702	0.00694	0.00911

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.01656	0.01677	0.02119
	A	-	0.01934	0.01955	0.02368
	B	-	0.01313	0.01750	0.03505
	B	-	0.02202	0.02644	0.04366
	CI	(A * B) + (!A * !B)	0.00770	0.00786	0.01601
	CI	(A * B) + (!A * !B)	0.01284	0.01304	0.02068
	CI	(A * !B) + (!A * B)	0.00750	0.00731	0.00926
	CI	(A * !B) + (!A * B)	0.00493	0.00475	0.00662

SKY130_FD_SC_HS__FAHx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT			OUTPUT	
A	B	CI	COUT	SUM
0	0	0	0	0
0	0	1	0	1
0	1	0	0	1
0	1	1	1	0
1	0	0	0	1
1	0	1	1	0
1	1	0	1	0
1	1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__fah_1	46.35360
sky130_fd_sc_hs__fah_2	47.95200
sky130_fd_sc_hs__fah_4	51.14880

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	A	B	CI	COUT	SUM
sky130_fd_sc_hs__fah_1	0.00467	0.00701	0.00247	0.68889	0.75301
sky130_fd_sc_hs__fah_2	0.00471	0.00800	0.00261	1.37021	1.46696
sky130_fd_sc_hs__fah_4	0.00463	0.00723	0.00249	2.56403	2.87567

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fah_1	0.00000	0.62892	0.74649
sky130_fd_sc_hs__fah_2	0.00000	0.65757	0.77514
sky130_fd_sc_hs__fah_4	0.00000	0.71486	0.83242

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)	0.39039	1.10242	7.50347
	B->COUT (RR)	0.32336	1.09627	7.71414
	CI->COUT (RR)	0.17366	0.97399	7.95608
sky130_fd_sc_hs__fah_2	A->COUT (RR)	0.40508	0.96906	7.12181
	B->COUT (RR)	0.30796	0.93867	7.62628
	CI->COUT (RR)	0.16011	0.80550	7.53941
sky130_fd_sc_hs__fah_4	A->COUT (RR)	0.39752	0.89709	7.50511
	B->COUT (RR)	0.33121	0.89194	7.87779
	CI->COUT (RR)	0.19887	0.79443	8.18688

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fah_1	A->COUT (FF)	0.38269	0.92051	4.28689
	B->COUT (FF)	0.37039	0.97159	8.06419
	CI->COUT (FF)	0.29830	0.94841	5.43684
sky130_fd_sc_hs__fah_2	A->COUT (FF)	0.42530	0.96255	4.31532
	B->COUT (FF)	0.40935	0.99261	5.55177
	CI->COUT (FF)	0.29254	0.93290	5.28561
sky130_fd_sc_hs__fah_4	A->COUT (FF)	0.50020	1.05445	4.46146
	B->COUT (FF)	0.45267	1.04559	8.27007
	CI->COUT (FF)	0.35211	1.00249	5.80001

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)	-	0.40268	1.34411	9.98280
	B->SUM (-R)	-	0.36031	1.23906	11.01910
	CI->SUM (RR)	(A * B) + (!A * !B)	0.17121	0.90987	7.57477
	CI->SUM (FR)	(A * !B) + (!A * B)	0.34450	1.30249	9.98895
sky130_fd_sc_hs__fah_2	A->SUM (-R)	-	0.40585	1.19736	9.45518
	B->SUM (-R)	-	0.38612	1.14669	9.20207
	CI->SUM (RR)	(A * B) + (!A * !B)	0.16001	0.79699	7.54492
	CI->SUM (FR)	(A * !B) + (!A * B)	0.33895	1.14140	9.46138
sky130_fd_sc_hs__fah_4	A->SUM (-R)	-	0.42523	1.14484	9.83951
	B->SUM (-R)	-	0.39203	1.08630	11.10520
	CI->SUM (RR)	(A * B) + (!A * !B)	0.21018	0.78859	7.78307
	CI->SUM (FR)	(A * !B) + (!A * B)	0.42383	1.18785	10.22200

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)	-	0.39021	0.94558	4.44406
	B->SUM (-F)	-	0.39309	1.00623	7.82469
	CI->SUM (FF)	(A * B) + (!A * !B)	0.28117	0.94300	5.38756
	CI->SUM (RF)	(A * !B) + (!A * B)	0.33615	0.81676	3.38194
sky130_fd_sc_hs__fah_2	A->SUM (-F)	-	0.44105	0.97984	4.45467
	B->SUM (-F)	-	0.42414	1.00732	8.09201
	CI->SUM (FF)	(A * B) + (!A * !B)	0.29901	0.93188	5.38098
	CI->SUM (RF)	(A * !B) + (!A * B)	0.31083	0.74897	3.16449
sky130_fd_sc_hs__fah_4	A->SUM (-F)	-	0.49867	1.07027	4.63790
	B->SUM (-F)	-	0.47487	1.09004	7.92097
	CI->SUM (FF)	(A * B) + (!A * !B)	0.35491	1.00510	5.83515
	CI->SUM (RF)	(A * !B) + (!A * B)	0.45750	0.96005	3.85539

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.01367	0.01352	0.01740
	A	0.01132	0.01117	0.01505
	B	0.01231	0.01249	0.01699
	B	0.00900	0.00919	0.01366
	CI	0.00854	0.00859	0.00991
	CI	0.00741	0.00747	0.00875
sky130_fd_sc_hs__fah_2	A	0.01528	0.01541	0.01907
	A	0.01281	0.01297	0.01658
	B	0.01376	0.01430	0.01878
	B	0.00983	0.01037	0.01486
	CI	0.00891	0.00915	0.01049
	CI	0.00757	0.00781	0.00915
sky130_fd_sc_hs__fah_4	A	0.01779	0.01816	0.02240
	A	0.01546	0.01588	0.02007
	B	0.01676	0.01764	0.02292
	B	0.01324	0.01416	0.01928
	CI	0.01359	0.01411	0.01569
	CI	0.01242	0.01297	0.01440

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.01134	0.01146	0.01583
	A	0.01358	0.01370	0.01806
	B	0.00908	0.00958	0.09679
	B	0.01240	0.01292	0.09999
	CI	0.00715	0.00731	0.00900
	CI	0.00828	0.00844	0.00998
sky130_fd_sc_hs__fah_2	A	0.01276	0.01306	0.01672
	A	0.01525	0.01557	0.01918
	B	0.00963	0.01028	0.01585
	B	0.01349	0.01419	0.01918
	CI	0.00763	0.00805	0.00966
	CI	0.00897	0.00938	0.01096
sky130_fd_sc_hs__fah_4	A	0.01536	0.01595	0.02025
	A	0.01757	0.01820	0.02230
	B	0.01342	0.01440	0.10173
	B	0.01694	0.01786	0.10505
	CI	0.01188	0.01254	0.01427
	CI	0.01305	0.01371	0.01537

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.02393	0.02332	0.02979
	A	-	0.01915	0.01853	0.02504
	B	-	0.00908	0.00959	0.09748
	B	-	0.01240	0.01293	0.10069
	CI	(A * B) + (!A * !B)	0.01171	0.01137	0.01362
	CI	(A * B) + (!A * !B)	0.00916	0.00882	0.01116
	CI	(A * !B) + (!A * B)	0.00716	0.00733	0.00915
	CI	(A * !B) + (!A * B)	0.00828	0.00845	0.01015
sky130_fd_sc_hs__fah_2	A	-	0.02540	0.02496	0.03138
	A	-	0.02044	0.01999	0.02648
	B	-	0.02291	0.02536	0.03691
	B	-	0.01504	0.01750	0.02914
	CI	(A * B) + (!A * !B)	0.01197	0.01216	0.01499
	CI	(A * B) + (!A * !B)	0.00928	0.00947	0.01220
	CI	(A * !B) + (!A * B)	0.00763	0.00805	0.01058
	CI	(A * !B) + (!A * B)	0.00898	0.00939	0.01118
sky130_fd_sc_hs__fah_4	A	-	0.02678	0.02688	0.03407
	A	-	0.02199	0.02209	0.02941
	B	-	0.01343	0.01442	0.10214
	B	-	0.01694	0.01788	0.10548
	CI	(A * B) + (!A * !B)	0.01693	0.01716	0.01946
	CI	(A * B) + (!A * !B)	0.01435	0.01460	0.01728
	CI	(A * !B) + (!A * B)	0.01189	0.01254	0.01563
	CI	(A * !B) + (!A * B)	0.01307	0.01374	0.01562

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.01782	0.01798	0.02563
	A	-	0.02281	0.02298	0.03045
	B	-	0.01548	0.01773	0.18403
	B	-	0.02264	0.02497	0.19095
	CI	(A * B) + (!A * !B)	0.00848	0.00838	0.01199
	CI	(A * B) + (!A * !B)	0.01103	0.01101	0.01445
	CI	(A * !B) + (!A * B)	0.00853	0.00856	0.00968
	CI	(A * !B) + (!A * B)	0.00741	0.00748	0.00851
sky130_fd_sc_hs__fah_2	A	-	0.01984	0.02018	0.02785
	A	-	0.02483	0.02515	0.03250
	B	-	0.01539	0.01780	0.20597
	B	-	0.02322	0.02572	0.21361
	CI	(A * B) + (!A * !B)	0.00952	0.00990	0.01504
	CI	(A * B) + (!A * !B)	0.01222	0.01263	0.01624
	CI	(A * !B) + (!A * B)	0.00891	0.00915	0.01038
	CI	(A * !B) + (!A * B)	0.00757	0.00781	0.00897
sky130_fd_sc_hs__fah_4	A	-	0.02159	0.02236	0.03046
	A	-	0.02647	0.02730	0.03495
	B	-	0.02073	0.02569	0.18890
	B	-	0.02810	0.03307	0.19598
	CI	(A * B) + (!A * !B)	0.01352	0.01384	0.02015
	CI	(A * B) + (!A * !B)	0.01609	0.01651	0.02008
	CI	(A * !B) + (!A * B)	0.01359	0.01412	0.01555
	CI	(A * !B) + (!A * B)	0.01241	0.01299	0.01402

SKY130_FD_SC_HS__FAx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT			OUTPUT	
A	B	CIN	COUT	SUM
0	0	0	0	0
0	0	1	0	1
0	1	0	0	1
0	1	1	1	0
1	0	0	0	1
1	0	1	1	0
1	1	0	1	0
1	1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__fa_1	28.77120
sky130_fd_sc_hs__fa_2	30.36960
sky130_fd_sc_hs__fa_4	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	A	B	CIN	COUT	SUM
sky130_fd_sc_hs__fa_1	0.00983	0.00968	0.00702	0.77424	0.77612
sky130_fd_sc_hs__fa_2	0.01043	0.01002	0.00748	1.36740	1.45144
sky130_fd_sc_hs__fa_4	0.01041	0.01015	0.00735	2.89950	2.88777

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fa_1	0.00000	0.11519	0.15963
sky130_fd_sc_hs__fa_2	0.00000	0.14160	0.18590
sky130_fd_sc_hs__fa_4	0.00000	0.19889	0.24319

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)	0.14248	0.86105	7.37876
	B->COUT (RR)	0.14552	0.85350	7.34329
	CIN->COUT (RR)	0.13533	0.85833	7.31596
sky130_fd_sc_hs__fa_2	A->COUT (RR)	0.14752	0.77142	7.40272
	B->COUT (RR)	0.13747	0.75880	7.36518
	CIN->COUT (RR)	0.13779	0.78034	7.35757
sky130_fd_sc_hs__fa_4	A->COUT (RR)	0.19192	0.75206	7.74554
	B->COUT (RR)	0.17129	0.75791	7.70302
	CIN->COUT (RR)	0.17222	0.76383	7.71465

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->COUT (FF)	0.32694	0.94892	5.48660
	B->COUT (FF)	0.28758	0.91912	5.32185
	CIN->COUT (FF)	0.25310	0.88417	5.16802
sky130_fd_sc_hs__fa_2	A->COUT (FF)	0.38718	0.99790	5.60753
	B->COUT (FF)	0.33907	0.96073	5.47008
	CIN->COUT (FF)	0.34902	0.94602	5.30634
sky130_fd_sc_hs__fa_4	A->COUT (FF)	0.52030	1.14787	6.23214
	B->COUT (FF)	0.47344	1.10270	6.14664
	CIN->COUT (FF)	0.47325	1.07699	5.99509

Delay(ns) to SUM rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-R)	0.45519	1.32165	9.75532
	B->SUM (-R)	0.43078	1.29190	9.53791
	CIN->SUM (-R)	0.38884	1.23360	9.21956
sky130_fd_sc_hs__fa_2	A->SUM (-R)	0.57573	1.32886	10.05750
	B->SUM (-R)	0.52803	1.28157	9.85539
	CIN->SUM (-R)	0.53975	1.27052	9.62220
sky130_fd_sc_hs__fa_4	A->SUM (-R)	0.82305	1.47434	10.54500
	B->SUM (-R)	0.76880	1.41899	10.40960
	CIN->SUM (-R)	0.77415	1.39957	10.19010

Delay(ns) to SUM falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-F)	0.38565	0.97104	5.30211
	B->SUM (-F)	0.37496	0.97586	5.37508
	CIN->SUM (-F)	0.32168	0.89168	5.01073
sky130_fd_sc_hs__fa_2	A->SUM (-F)	0.48749	1.07243	5.53854
	B->SUM (-F)	0.49045	1.08746	5.68147
	CIN->SUM (-F)	0.44074	1.00000	5.32834
sky130_fd_sc_hs__fa_4	A->SUM (-F)	0.65969	1.25372	6.15739
	B->SUM (-F)	0.61074	1.22888	6.31111
	CIN->SUM (-F)	0.58471	1.15663	5.99800

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00795	0.00791	0.00854
	A	0.00295	0.00290	0.00348
	B	0.00766	0.00759	0.00857
	B	0.00292	0.00284	0.00378
	CIN	0.00689	0.00678	0.00810
	CIN	0.00364	0.00353	0.00496
sky130_fd_sc_hs__fa_2	A	0.01004	0.01006	0.01071
	A	0.00462	0.00461	0.00518
	B	0.00974	0.00967	0.01063
	B	0.00472	0.00467	0.00559
	CIN	0.00890	0.00877	0.01011
	CIN	0.00545	0.00533	0.00666
sky130_fd_sc_hs__fa_4	A	0.01397	0.01439	0.01594
	A	0.00825	0.00871	0.00956
	B	0.01397	0.01428	0.01603
	B	0.00919	0.00952	0.01065
	CIN	0.01276	0.01307	0.01510
	CIN	0.00952	0.00984	0.01130

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00301	0.00307	0.00375
	A	0.00797	0.00802	0.00857
	B	0.00356	0.00354	0.00517
	B	0.00831	0.00830	0.00983
	CIN	0.00406	0.00410	0.00565
	CIN	0.00714	0.00718	0.00870
sky130_fd_sc_hs__fa_2	A	0.00469	0.00474	0.00543
	A	0.01008	0.01019	0.01069
	B	0.00528	0.00530	0.00713
	B	0.01028	0.01031	0.01185
	CIN	0.00576	0.00580	0.00763
	CIN	0.00926	0.00930	0.01082
sky130_fd_sc_hs__fa_4	A	0.00901	0.00932	0.01057
	A	0.01458	0.01493	0.01543
	B	0.00939	0.00960	0.01207
	B	0.01416	0.01440	0.01596
	CIN	0.01006	0.01014	0.01189
	CIN	0.01334	0.01359	0.01503

Internal switching power(pJ) to SUM rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.01143	0.01141	0.01225
	A	0.00800	0.00805	0.00867
	B	0.01003	0.00979	0.01092
	B	0.00834	0.00832	0.01001
	CIN	0.00887	0.00845	0.01010
	CIN	0.00716	0.00720	0.00891
sky130_fd_sc_hs__fa_2	A	0.01361	0.01386	0.01477
	A	0.01011	0.01022	0.01085
	B	0.01239	0.01252	0.01369
	B	0.01031	0.01034	0.01208
	CIN	0.01129	0.01116	0.01282
	CIN	0.00928	0.00934	0.01103
sky130_fd_sc_hs__fa_4	A	0.01738	0.01798	0.01899
	A	0.01460	0.01495	0.01571
	B	0.01658	0.01677	0.01786
	B	0.01418	0.01442	0.01625
	CIN	0.01489	0.01497	0.01649
	CIN	0.01336	0.01361	0.01530

Internal switching power(pJ) to SUM falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00791	0.00788	0.00838
	A	0.01102	0.01104	0.01201
	B	0.00762	0.00755	0.00838
	B	0.01144	0.01149	0.01264
	CIN	0.00687	0.00676	0.00798
	CIN	0.00913	0.00901	0.01187
sky130_fd_sc_hs__fa_2	A	0.01002	0.01005	0.01053
	A	0.01309	0.01342	0.01447
	B	0.00970	0.00966	0.01042
	B	0.01311	0.01338	0.01457
	CIN	0.00889	0.00876	0.00990
	CIN	0.01131	0.01132	0.01433
sky130_fd_sc_hs__fa_4	A	0.01392	0.01403	0.01529
	A	0.01818	0.01877	0.01993
	B	0.01392	0.01425	0.01516
	B	0.01694	0.01697	0.01824
	CIN	0.01275	0.01294	0.01434
	CIN	0.01520	0.01504	0.01801

SKY130_FD_SC_HS__HAx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT		OUTPUT	
A	B	COUT	SUM
0	0	0	0
0	1	0	1
1	0	0	1
1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__ha_1	15.98400
sky130_fd_sc_hs__ha_2	19.18080
sky130_fd_sc_hs__ha_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)	
	A	B	COUT	SUM
sky130_fd_sc_hs__ha_1	0.00469	0.00448	0.75435	0.70704
sky130_fd_sc_hs__ha_2	0.00473	0.00494	1.36828	1.41633
sky130_fd_sc_hs__ha_4	0.00900	0.00819	2.59679	2.85815

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__ha_1	0.00000	0.18125	0.27400
sky130_fd_sc_hs__ha_2	0.00000	0.15410	0.18247
sky130_fd_sc_hs__ha_4	0.00000	0.42989	0.60529

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)	0.11367	0.80440	7.23476
	B->COUT (RR)	0.10872	0.80103	7.19084
sky130_fd_sc_hs__ha_2	A->COUT (RR)	0.12102	0.73154	7.30390
	B->COUT (RR)	0.11718	0.73619	7.25374
sky130_fd_sc_hs__ha_4	A->COUT (RR)	0.13929	0.65939	7.35069
	B->COUT (RR)	0.12345	0.65341	7.28956

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ha_1	A->COUT (FF)	0.14648	0.71244	4.52283
	B->COUT (FF)	0.13076	0.68323	4.43921
sky130_fd_sc_hs__ha_2	A->COUT (FF)	0.17275	0.74301	4.76452
	B->COUT (FF)	0.16034	0.72039	4.68275
sky130_fd_sc_hs__ha_4	A->COUT (FF)	0.19061	0.71118	4.60392
	B->COUT (FF)	0.16445	0.67521	4.50729

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	0.11448	0.80940	7.09649
	A->SUM (FR)	B	0.23451	1.10614	8.82063
	B->SUM (RR)	!A	0.10053	0.78072	7.02361
	B->SUM (FR)	A	0.23120	1.08967	8.72784
sky130_fd_sc_hs__ha_2	A->SUM (RR)	!B	0.12218	0.70962	7.15688
	A->SUM (FR)	B	0.30391	1.07985	9.16805
	B->SUM (RR)	!A	0.11174	0.68979	7.10061
	B->SUM (FR)	A	0.29852	1.06396	9.07259
sky130_fd_sc_hs__ha_4	A->SUM (RR)	!B	0.13442	0.64745	7.34413
	A->SUM (FR)	B	0.32742	0.99544	9.11934
	B->SUM (RR)	!A	0.11937	0.61861	7.26055
	B->SUM (FR)	A	0.31090	0.97291	9.01178

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	0.21441	0.77597	4.73531
	A->SUM (RF)	B	0.17454	0.52066	2.48478
	B->SUM (FF)	!A	0.19204	0.73279	4.42080
	B->SUM (RF)	A	0.16972	0.51511	2.40503
sky130_fd_sc_hs__ha_2	A->SUM (FF)	!B	0.29184	0.86454	5.22455
	A->SUM (RF)	B	0.22006	0.56444	2.78474
	B->SUM (FF)	!A	0.26967	0.82900	4.91930
	B->SUM (RF)	A	0.21649	0.56821	2.72283
sky130_fd_sc_hs__ha_4	A->SUM (FF)	!B	0.29192	0.83217	5.29459
	A->SUM (RF)	B	0.25388	0.57558	2.93462
	B->SUM (FF)	!A	0.26260	0.78797	4.98790
	B->SUM (RF)	A	0.23785	0.56835	2.85313

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.00554	0.00558	0.00678
	A	0.00277	0.00272	0.00398
	B	0.00523	0.00523	0.00726
	B	0.00299	0.00292	0.00505
sky130_fd_sc_hs__ha_2	A	0.00752	0.00771	0.00884
	A	0.00474	0.00490	0.00602
	B	0.00734	0.00751	0.00903
	B	0.00488	0.00501	0.00656
sky130_fd_sc_hs__ha_4	A	0.01400	0.01467	0.01732
	A	0.00891	0.00957	0.01214
	B	0.01317	0.01373	0.01790
	B	0.00921	0.00975	0.01392

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.00286	0.00303	0.00520
	A	0.00562	0.00579	0.00786
	B	0.00339	0.00344	0.00564
	B	0.00559	0.00563	0.00778
sky130_fd_sc_hs__ha_2	A	0.00520	0.00541	0.00728
	A	0.00797	0.00819	0.00992
	B	0.00548	0.00554	0.00728
	B	0.00791	0.00797	0.00963
sky130_fd_sc_hs__ha_4	A	0.00932	0.00999	0.01456
	A	0.01440	0.01506	0.01929
	B	0.01032	0.01084	0.01545
	B	0.01416	0.01468	0.01908

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	0.00286	0.00303	0.00539
	A	B	0.00562	0.00580	0.00805
	A	!B	0.00802	0.00807	0.00928
	A	!B	0.00275	0.00278	0.00402
	B	A	0.00341	0.00345	0.00584
	B	A	0.00560	0.00564	0.00796
	B	!A	0.00608	0.00606	0.00844
	B	!A	0.00195	0.00192	0.00433
sky130_fd_sc_hs__ha_2	A	B	0.00520	0.00543	0.00786
	A	B	0.00798	0.00820	0.01015
	A	!B	0.01020	0.01043	0.01152
	A	!B	0.00499	0.00521	0.00638
	B	A	0.00549	0.00556	0.00764
	B	A	0.00791	0.00798	0.00982
	B	!A	0.00863	0.00882	0.01078
	B	!A	0.00412	0.00431	0.00634
sky130_fd_sc_hs__ha_4	A	B	0.00934	0.01002	0.01605
	A	B	0.01443	0.01511	0.01982
	A	!B	0.02050	0.02093	0.02325
	A	!B	0.00966	0.01010	0.01254
	B	A	0.01037	0.01096	0.01589
	B	A	0.01420	0.01475	0.01946
	B	!A	0.01639	0.01677	0.02088
	B	!A	0.00805	0.00845	0.01271

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	0.00554	0.00552	0.00672
	A	B	0.00277	0.00272	0.00394
	A	!B	0.00161	0.00166	0.00316
	A	!B	0.00675	0.00682	0.00812
	B	A	0.00523	0.00517	0.00710
	B	A	0.00299	0.00292	0.00489
	B	!A	0.00236	0.00259	0.00598
	B	!A	0.00652	0.00676	0.01010
sky130_fd_sc_hs__ha_2	A	B	0.00752	0.00769	0.00871
	A	B	0.00474	0.00490	0.00585
	A	!B	0.00345	0.00360	0.00504
	A	!B	0.00852	0.00878	0.01007
	B	A	0.00734	0.00747	0.00876
	B	A	0.00488	0.00499	0.00631
	B	!A	0.00387	0.00421	0.00783
	B	!A	0.00845	0.00882	0.01214
sky130_fd_sc_hs__ha_4	A	B	0.01400	0.01468	0.01687
	A	B	0.00891	0.00958	0.01175
	A	!B	0.00680	0.00728	0.01068
	A	!B	0.01738	0.01797	0.02037
	B	A	0.01317	0.01373	0.01741
	B	A	0.00921	0.00978	0.01343
	B	!A	0.00838	0.00915	0.01633
	B	!A	0.01693	0.01768	0.02422

SKY130_FD_SC_HS__INVx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT	OUTPUT
A	Y
0	1
1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__bufinv_16	39.96000
sky130_fd_sc_hs__bufinv_8	20.77920
sky130_fd_sc_hs__inv_1	4.79520
sky130_fd_sc_hs__inv_16	27.17280
sky130_fd_sc_hs__inv_2	4.79520
sky130_fd_sc_hs__inv_4	7.99200
sky130_fd_sc_hs__inv_8	14.38560

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	Y
sky130_fd_sc_hs__bufinv_16	0.00797	11.82711
sky130_fd_sc_hs__bufinv_8	0.00275	4.97324
sky130_fd_sc_hs__inv_1	0.00277	0.76259
sky130_fd_sc_hs__inv_16	0.04203	11.66945
sky130_fd_sc_hs__inv_2	0.00509	1.49813
sky130_fd_sc_hs__inv_4	0.01027	2.86260
sky130_fd_sc_hs__inv_8	0.02033	5.59475

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__bufinv_16	0.00000	0.35806	0.48948
sky130_fd_sc_hs__bufinv_8	0.00000	0.17187	0.23253
sky130_fd_sc_hs__inv_1	0.00000	0.01432	0.02443
sky130_fd_sc_hs__inv_16	0.00000	0.22916	0.39091
sky130_fd_sc_hs__inv_2	0.00000	0.02865	0.04886
sky130_fd_sc_hs__inv_4	0.00000	0.05729	0.09773
sky130_fd_sc_hs__inv_8	0.00000	0.11458	0.19545

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)	0.18178	0.71674	8.98608
sky130_fd_sc_hs__bufinv_8	A->Y (FR)	0.23706	0.87448	9.19474
sky130_fd_sc_hs__inv_1	A->Y (FR)	0.04282	0.96556	11.76150
sky130_fd_sc_hs__inv_16	A->Y (FR)	0.02918	0.61568	11.76630
sky130_fd_sc_hs__inv_2	A->Y (FR)	0.03301	0.84026	11.70400
sky130_fd_sc_hs__inv_4	A->Y (FR)	0.03107	0.75393	11.74260
sky130_fd_sc_hs__inv_8	A->Y (FR)	0.03013	0.67934	11.64380

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__bufinv_16	A->Y (RF)	0.16117	0.39628	2.49029
sky130_fd_sc_hs__bufinv_8	A->Y (RF)	0.19024	0.48192	2.52397
sky130_fd_sc_hs__inv_1	A->Y (RF)	0.02124	0.49498	6.00182
sky130_fd_sc_hs__inv_16	A->Y (RF)	0.01682	0.28473	6.01229
sky130_fd_sc_hs__inv_2	A->Y (RF)	0.01805	0.42434	5.94883
sky130_fd_sc_hs__inv_4	A->Y (RF)	0.01736	0.37891	6.01940
sky130_fd_sc_hs__inv_8	A->Y (RF)	0.01724	0.32904	5.97991

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	A	0.04364	0.04639	0.05860
	A	0.05189	0.05476	0.06789
sky130_fd_sc_hs__bufinv_8	A	0.02286	0.02413	0.02799
	A	0.02568	0.02697	0.03084
sky130_fd_sc_hs__inv_1	A	-0.00051	-0.00044	-0.00009
	A	0.00236	0.00243	0.00288
sky130_fd_sc_hs__inv_16	A	-0.01092	-0.00887	-0.00219
	A	0.03252	0.03457	0.04223
sky130_fd_sc_hs__inv_2	A	-0.00129	-0.00115	-0.00031
	A	0.00397	0.00413	0.00508
sky130_fd_sc_hs__inv_4	A	-0.00255	-0.00196	-0.00052
	A	0.00806	0.00869	0.01035
sky130_fd_sc_hs__inv_8	A	-0.00508	-0.00415	-0.00044
	A	0.01591	0.01695	0.02104

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	A	0.05261	0.05546	0.06519
	A	0.04433	0.04717	0.05685
sky130_fd_sc_hs__bufinv_8	A	0.02532	0.02665	0.02962
	A	0.02250	0.02376	0.02658
sky130_fd_sc_hs__inv_1	A	0.00258	0.00260	0.00358
	A	-0.00029	-0.00030	-0.00012
sky130_fd_sc_hs__inv_16	A	0.03364	0.03380	0.05047
	A	-0.00968	-0.00985	-0.00520
sky130_fd_sc_hs__inv_2	A	0.00414	0.00420	0.00596
	A	-0.00111	-0.00106	-0.00067
sky130_fd_sc_hs__inv_4	A	0.00837	0.00851	0.01334
	A	-0.00222	-0.00215	-0.00125
sky130_fd_sc_hs__inv_8	A	0.01635	0.01651	0.02633
	A	-0.00464	-0.00458	-0.00238

SKY130_FD_SC_HS__MAJ3x

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT			OUTPUT
A	B	C	X
0	0	x	0
0	1	0	0
x	1	1	1
1	0	0	0
1	x	1	1
1	1	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__maj3_1	12.78720
sky130_fd_sc_hs__maj3_2	15.98400
sky130_fd_sc_hs__maj3_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	X
sky130_fd_sc_hs__maj3_1	0.00514	0.00481	0.00503	0.77875
sky130_fd_sc_hs__maj3_2	0.00546	0.00520	0.00534	1.54173
sky130_fd_sc_hs__maj3_4	0.01000	0.00943	0.00985	2.90356

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__maj3_1	0.00000	0.05152	0.12626
sky130_fd_sc_hs__maj3_2	0.00000	0.06492	0.13047
sky130_fd_sc_hs__maj3_4	0.00000	0.13169	0.26093

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)	0.13072	0.83780	7.34213
	B->X (RR)	0.12571	0.82741	7.22436
	C->X (RR)	0.13159	0.84791	7.24693
sky130_fd_sc_hs__maj3_2	A->X (RR)	0.13730	0.74115	7.43000
	B->X (RR)	0.12498	0.73523	7.33596
	C->X (RR)	0.12680	0.72511	7.37994
sky130_fd_sc_hs__maj3_4	A->X (RR)	0.13358	0.65587	7.39080
	B->X (RR)	0.12178	0.64677	7.28719
	C->X (RR)	0.12776	0.64438	7.34699

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__maj3_1	A->X (FF)	0.27662	0.87878	5.29014
	B->X (FF)	0.21881	0.82699	4.95955
	C->X (FF)	0.22962	0.85474	5.18844
sky130_fd_sc_hs__maj3_2	A->X (FF)	0.34866	0.93763	5.51363
	B->X (FF)	0.27618	0.86777	5.17119
	C->X (FF)	0.28402	0.89387	5.40567
sky130_fd_sc_hs__maj3_4	A->X (FF)	0.31765	0.87147	5.45901
	B->X (FF)	0.24455	0.79641	5.11162
	C->X (FF)	0.26043	0.83101	5.34274

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.01059	0.01044	0.01146
	A	0.00307	0.00292	0.00397
	B	0.00885	0.00830	0.01081
	B	0.00297	0.00240	0.00494
	C	0.01013	0.00978	0.01145
	C	0.00356	0.00337	0.00492
sky130_fd_sc_hs__maj3_2	A	0.01261	0.01265	0.01363
	A	0.00457	0.00460	0.00562
	B	0.01117	0.01095	0.01322
	B	0.00479	0.00463	0.00692
	C	0.01247	0.01232	0.01385
	C	0.00545	0.00531	0.00688
sky130_fd_sc_hs__maj3_4	A	0.02342	0.02342	0.02556
	A	0.00917	0.00916	0.01141
	B	0.02014	0.01985	0.02496
	B	0.00884	0.00855	0.01378
	C	0.02294	0.02266	0.02594
	C	0.01028	0.01042	0.01340

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.00183	0.00180	0.00346
	A	0.00928	0.00927	0.01045
	B	0.00257	0.00233	0.00554
	B	0.00840	0.00819	0.01135
	C	0.00282	0.00252	0.00590
	C	0.00934	0.00916	0.01229
sky130_fd_sc_hs__maj3_2	A	0.00400	0.00401	0.00576
	A	0.01202	0.01222	0.01343
	B	0.00428	0.00414	0.00732
	B	0.01065	0.01054	0.01371
	C	0.00458	0.00441	0.00823
	C	0.01171	0.01168	0.01486
sky130_fd_sc_hs__maj3_4	A	0.00747	0.00785	0.01119
	A	0.02159	0.02201	0.02438
	B	0.00802	0.00795	0.01615
	B	0.01923	0.01931	0.02578
	C	0.00865	0.00849	0.01641
	C	0.02129	0.02141	0.02762

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	0.00264	0.00240	0.00236
	(B * C * X)	-0.00189	-0.00217	-0.00219
	(!B * !C * !X)	0.00209	0.00212	0.00210
	(!B * !C * !X)	-0.00236	-0.00238	-0.00237
sky130_fd_sc_hs__maj3_2	(B * C * X)	0.00253	0.00230	0.00227
	(B * C * X)	-0.00225	-0.00252	-0.00253
	(!B * !C * !X)	0.00191	0.00194	0.00192
	(!B * !C * !X)	-0.00278	-0.00280	-0.00279
sky130_fd_sc_hs__maj3_4	(B * C * X)	0.00469	0.00426	0.00420
	(B * C * X)	-0.00387	-0.00441	-0.00444
	(!B * !C * !X)	0.00368	0.00371	0.00369
	(!B * !C * !X)	-0.00483	-0.00485	-0.00483

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	-0.00235	-0.00236	-0.00234
	(B * C * X)	0.00217	0.00219	0.00219
	(!B * !C * !X)	-0.00200	-0.00211	-0.00210
	(!B * !C * !X)	0.00244	0.00238	0.00238
sky130_fd_sc_hs__maj3_2	(B * C * X)	-0.00226	-0.00226	-0.00225
	(B * C * X)	0.00252	0.00253	0.00253
	(!B * !C * !X)	-0.00181	-0.00191	-0.00192
	(!B * !C * !X)	0.00286	0.00280	0.00280
sky130_fd_sc_hs__maj3_4	(B * C * X)	-0.00417	-0.00420	-0.00417
	(B * C * X)	0.00441	0.00446	0.00444
	(!B * !C * !X)	-0.00350	-0.00370	-0.00369
	(!B * !C * !X)	0.00491	0.00487	0.00485

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	0.00196	0.00197	0.00196
	(A * C * X)	-0.00121	-0.00120	-0.00119
	(!A * !C * !X)	0.00054	0.00054	0.00052
	(!A * !C * !X)	-0.00267	-0.00268	-0.00272
sky130_fd_sc_hs__maj3_2	(A * C * X)	0.00230	0.00231	0.00230
	(A * C * X)	-0.00115	-0.00115	-0.00115
	(!A * !C * !X)	0.00067	0.00066	0.00064
	(!A * !C * !X)	-0.00273	-0.00273	-0.00278
sky130_fd_sc_hs__maj3_4	(A * C * X)	0.00384	0.00387	0.00386
	(A * C * X)	-0.00239	-0.00241	-0.00239
	(!A * !C * !X)	0.00126	0.00127	0.00119
	(!A * !C * !X)	-0.00516	-0.00520	-0.00531

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	-0.00187	-0.00188	-0.00195
	(A * C * X)	0.00127	0.00128	0.00122
	(!A * !C * !X)	-0.00050	-0.00051	-0.00051
	(!A * !C * !X)	0.00271	0.00274	0.00272
sky130_fd_sc_hs__maj3_2	(A * C * X)	-0.00220	-0.00222	-0.00229
	(A * C * X)	0.00123	0.00124	0.00117
	(!A * !C * !X)	-0.00063	-0.00062	-0.00062
	(!A * !C * !X)	0.00278	0.00279	0.00278
sky130_fd_sc_hs__maj3_4	(A * C * X)	-0.00365	-0.00367	-0.00383
	(A * C * X)	0.00260	0.00259	0.00245
	(!A * !C * !X)	-0.00114	-0.00116	-0.00115
	(!A * !C * !X)	0.00530	0.00534	0.00532

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	0.00216	0.00204	0.00202
	(A * B * X)	-0.00157	-0.00170	-0.00171
	(!A * !B * !X)	0.00107	0.00108	0.00107
	(!A * !B * !X)	-0.00264	-0.00265	-0.00268
sky130_fd_sc_hs__maj3_2	(A * B * X)	0.00247	0.00235	0.00233
	(A * B * X)	-0.00154	-0.00167	-0.00168
	(!A * !B * !X)	0.00131	0.00132	0.00130
	(!A * !B * !X)	-0.00262	-0.00262	-0.00264
sky130_fd_sc_hs__maj3_4	(A * B * X)	0.00427	0.00407	0.00402
	(A * B * X)	-0.00310	-0.00339	-0.00339
	(!A * !B * !X)	0.00242	0.00245	0.00239
	(!A * !B * !X)	-0.00502	-0.00505	-0.00508

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	-0.00197	-0.00198	-0.00201
	(A * B * X)	0.00174	0.00175	0.00172
	(!A * !B * !X)	-0.00101	-0.00107	-0.00107
	(!A * !B * !X)	0.00271	0.00271	0.00268
sky130_fd_sc_hs__maj3_2	(A * B * X)	-0.00227	-0.00229	-0.00231
	(A * B * X)	0.00171	0.00173	0.00169
	(!A * !B * !X)	-0.00124	-0.00130	-0.00130
	(!A * !B * !X)	0.00267	0.00267	0.00265
sky130_fd_sc_hs__maj3_4	(A * B * X)	-0.00391	-0.00393	-0.00400
	(A * B * X)	0.00346	0.00349	0.00341
	(!A * !B * !X)	-0.00229	-0.00239	-0.00239
	(!A * !B * !X)	0.00511	0.00511	0.00509

SKY130_FD_SC_HS__MUX2Ix

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT			OUTPUT
A0	A1	S	Y
0	0	x	1
0	1	0	1
x	1	1	0
1	x	0	0
1	0	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__mux2i_1	12.78720
sky130_fd_sc_hs__mux2i_2	20.77920
sky130_fd_sc_hs__mux2i_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A0	A1	S	Y
sky130_fd_sc_hs__mux2i_1	0.00277	0.00261	0.00485	0.34986
sky130_fd_sc_hs__mux2i_2	0.00518	0.00548	0.00786	0.60211
sky130_fd_sc_hs__mux2i_4	0.01025	0.01023	0.01366	1.08820

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux2i_1	0.00000	0.07954	0.15565
sky130_fd_sc_hs__mux2i_2	0.00000	0.06981	0.13204
sky130_fd_sc_hs__mux2i_4	0.00000	0.19548	0.38284

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)	-	0.13976	1.21858	11.64360
	A1->Y (FR)	-	0.12534	1.20554	11.63860
	S->Y (RR)	(A0 * !A1)	0.18882	1.04440	7.36563
	S->Y (FR)	(!A0 * A1)	0.15927	1.25726	11.69260
sky130_fd_sc_hs__mux2i_2	A0->Y (FR)	-	0.15223	1.08890	11.56200
	A1->Y (FR)	-	0.14085	1.05030	11.18650
	S->Y (RR)	(A0 * !A1)	0.20113	0.90135	6.92879
	S->Y (FR)	(!A0 * A1)	0.16856	1.11145	11.46480
sky130_fd_sc_hs__mux2i_4	A0->Y (FR)	-	0.13884	0.93971	11.28080
	A1->Y (FR)	-	0.13813	0.95466	11.53830
	S->Y (RR)	(A0 * !A1)	0.22281	0.87999	7.70780
	S->Y (FR)	(!A0 * A1)	0.15779	0.96044	11.11890

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)	-	0.03801	0.50595	4.93461
	A1->Y (RF)	-	0.03980	0.52735	5.15273
	S->Y (FF)	(A0 * !A1)	0.12494	0.61039	3.47377
	S->Y (RF)	(!A0 * A1)	0.04640	0.48506	4.64432
sky130_fd_sc_hs__mux2i_2	A0->Y (RF)	-	0.04664	0.49104	5.23986
	A1->Y (RF)	-	0.04489	0.47857	5.12600
	S->Y (FF)	(A0 * !A1)	0.15448	0.66185	3.98313
	S->Y (RF)	(!A0 * A1)	0.04936	0.42115	4.37467
sky130_fd_sc_hs__mux2i_4	A0->Y (RF)	-	0.04274	0.42763	5.10220
	A1->Y (RF)	-	0.04806	0.45925	5.46831
	S->Y (FF)	(A0 * !A1)	0.15565	0.61576	3.69193
	S->Y (RF)	(!A0 * A1)	0.05199	0.37468	4.29697

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	-	0.00089	0.00079	0.00132
	A0	-	0.00467	0.00455	0.00511
	A1	-	0.00063	0.00055	0.00108
	A1	-	0.00411	0.00404	0.00457
	S	(A0 * !A1)	0.00651	0.00630	0.01008
	S	(A0 * !A1)	0.00340	0.00316	0.00694
	S	(!A0 * A1)	0.00141	0.00138	0.00601
	S	(!A0 * A1)	0.00828	0.00825	0.01286
sky130_fd_sc_hs__mux2i_2	A0	-	0.00190	0.00164	0.00274
	A0	-	0.00925	0.00900	0.01008
	A1	-	0.00174	0.00146	0.00258
	A1	-	0.00906	0.00879	0.00901
	S	(A0 * !A1)	0.01101	0.01074	0.01376
	S	(A0 * !A1)	0.00709	0.00677	0.00981
	S	(!A0 * A1)	0.00336	0.00305	0.00722
	S	(!A0 * A1)	0.01507	0.01479	0.01892
sky130_fd_sc_hs__mux2i_4	A0	-	0.00224	0.00160	0.00401
	A0	-	0.01683	0.01619	0.01855
	A1	-	0.00229	0.00164	0.00402
	A1	-	0.01619	0.01551	0.01790
	S	(A0 * !A1)	0.01882	0.01844	0.02401
	S	(A0 * !A1)	0.01284	0.01236	0.01793
	S	(!A0 * A1)	0.00540	0.00501	0.01290
	S	(!A0 * A1)	0.02658	0.02616	0.03409

Internal switching power(pJ) to Y falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2i_1	A0	-	0.00475	0.00475	0.00500
	A0	-	0.00109	0.00106	0.00122
	A1	-	0.00461	0.00458	0.00494
	A1	-	0.00102	0.00099	0.00115
	S	(A0 * !A1)	0.00395	0.00402	0.00833
	S	(A0 * !A1)	0.00708	0.00714	0.01146
	S	(!A0 * A1)	0.00889	0.00863	0.01258
	S	(!A0 * A1)	0.00199	0.00168	0.00557
sky130_fd_sc_hs__mux2i_2	A0	-	0.00977	0.00968	0.01021
	A0	-	0.00275	0.00258	0.00300
	A1	-	0.00948	0.00932	0.01010
	A1	-	0.00204	0.00187	0.00231
	S	(A0 * !A1)	0.00857	0.00848	0.01185
	S	(A0 * !A1)	0.01235	0.01229	0.01576
	S	(!A0 * A1)	0.01589	0.01544	0.01925
	S	(!A0 * A1)	0.00406	0.00357	0.00717
sky130_fd_sc_hs__mux2i_4	A0	-	0.01810	0.01776	0.01928
	A0	-	0.00408	0.00369	0.00467
	A1	-	0.01802	0.01771	0.01992
	A1	-	0.00380	0.00342	0.00438
	S	(A0 * !A1)	0.01619	0.01603	0.02312
	S	(A0 * !A1)	0.02194	0.02184	0.02898
	S	(!A0 * A1)	0.02932	0.02842	0.03443
	S	(!A0 * A1)	0.00794	0.00703	0.01313

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	0.00125	0.00127	0.00126
	(A1 * S * !Y)	-0.00069	-0.00070	-0.00069
	(!A1 * S * Y)	0.00058	0.00056	0.00053
	(!A1 * S * Y)	-0.00143	-0.00149	-0.00149
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	0.00228	0.00229	0.00228
	(A1 * S * !Y)	-0.00128	-0.00128	-0.00127
	(!A1 * S * Y)	0.00084	0.00085	0.00080
	(!A1 * S * Y)	-0.00279	-0.00289	-0.00293
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	0.00443	0.00450	0.00445
	(A1 * S * !Y)	-0.00262	-0.00266	-0.00261
	(!A1 * S * Y)	0.00164	0.00163	0.00153
	(!A1 * S * Y)	-0.00569	-0.00582	-0.00589

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	-0.00116	-0.00119	-0.00125
	(A1 * S * !Y)	0.00078	0.00078	0.00071
	(!A1 * S * Y)	-0.00053	-0.00053	-0.00053
	(!A1 * S * Y)	0.00149	0.00149	0.00149
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	-0.00210	-0.00219	-0.00228
	(A1 * S * !Y)	0.00138	0.00139	0.00130
	(!A1 * S * Y)	-0.00077	-0.00077	-0.00077
	(!A1 * S * Y)	0.00293	0.00294	0.00293
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	-0.00412	-0.00423	-0.00445
	(A1 * S * !Y)	0.00287	0.00285	0.00268
	(!A1 * S * Y)	-0.00149	-0.00149	-0.00148
	(!A1 * S * Y)	0.00591	0.00591	0.00589

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	0.00113	0.00113	0.00113
	(A0 * !S * !Y)	-0.00070	-0.00070	-0.00070
	(!A0 * !S * Y)	0.00046	0.00046	0.00043
	(!A0 * !S * Y)	-0.00143	-0.00146	-0.00150
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	0.00235	0.00236	0.00235
	(A0 * !S * !Y)	-0.00142	-0.00143	-0.00141
	(!A0 * !S * Y)	0.00092	0.00092	0.00087
	(!A0 * !S * Y)	-0.00292	-0.00297	-0.00302
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	0.00435	0.00438	0.00436
	(A0 * !S * !Y)	-0.00265	-0.00266	-0.00263
	(!A0 * !S * Y)	0.00146	0.00146	0.00137
	(!A0 * !S * Y)	-0.00572	-0.00582	-0.00595

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	-0.00097	-0.00106	-0.00113
	(A0 * !S * !Y)	0.00081	0.00080	0.00072
	(!A0 * !S * Y)	-0.00041	-0.00041	-0.00041
	(!A0 * !S * Y)	0.00149	0.00149	0.00150
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	-0.00211	-0.00223	-0.00235
	(A0 * !S * !Y)	0.00156	0.00156	0.00146
	(!A0 * !S * Y)	-0.00084	-0.00085	-0.00084
	(!A0 * !S * Y)	0.00301	0.00303	0.00302
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	-0.00389	-0.00415	-0.00436
	(A0 * !S * !Y)	0.00290	0.00290	0.00270
	(!A0 * !S * Y)	-0.00133	-0.00133	-0.00133
	(!A0 * !S * Y)	0.00594	0.00597	0.00595

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	0.00482	0.00462	0.00832
	(A0 * A1 * !Y)	-0.00005	-0.00030	0.00343
	(!A0 * !A1 * Y)	0.00488	0.00466	0.00834
	(!A0 * !A1 * Y)	-0.00004	-0.00026	0.00345
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	0.00753	0.00707	0.01034
	(A0 * A1 * !Y)	-0.00003	-0.00058	0.00271
	(!A0 * !A1 * Y)	0.00732	0.00703	0.01028
	(!A0 * !A1 * Y)	-0.00029	-0.00057	0.00271
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	0.01319	0.01241	0.01788
	(A0 * A1 * !Y)	0.00009	-0.00083	0.00465
	(!A0 * !A1 * Y)	0.01289	0.01241	0.01780
	(!A0 * !A1 * Y)	-0.00029	-0.00077	0.00470

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	-0.00025	-0.00021	0.00417
	(A0 * A1 * !Y)	0.00464	0.00469	0.00906
	(!A0 * !A1 * Y)	-0.00032	-0.00027	0.00415
	(!A0 * !A1 * Y)	0.00458	0.00464	0.00904
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	-0.00033	-0.00040	0.00333
	(A0 * A1 * !Y)	0.00726	0.00719	0.01092
	(!A0 * !A1 * Y)	-0.00034	-0.00048	0.00329
	(!A0 * !A1 * Y)	0.00718	0.00713	0.01090
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	-0.00017	-0.00015	0.00686
	(A0 * A1 * !Y)	0.01304	0.01302	0.02000
	(!A0 * !A1 * Y)	-0.00027	-0.00043	0.00675
	(!A0 * !A1 * Y)	0.01275	0.01268	0.01993

SKY130_FD_SC_HS__MUX2x

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT			OUTPUT
A0	A1	S	X
0	0	x	0
0	1	0	0
x	1	1	1
1	x	0	1
1	0	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__mux2_1	14.38560
sky130_fd_sc_hs__mux2_2	17.58240
sky130_fd_sc_hs__mux2_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A0	A1	S	X
sky130_fd_sc_hs__mux2_1	0.00267	0.00314	0.00447	0.77878
sky130_fd_sc_hs__mux2_2	0.00247	0.00280	0.00528	1.36836
sky130_fd_sc_hs__mux2_4	0.00474	0.00476	0.00798	2.58915

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__mux2_1	0.00000	0.11540	0.20957
sky130_fd_sc_hs__mux2_2	0.00000	0.12972	0.21378
sky130_fd_sc_hs__mux2_4	0.00000	0.17211	0.24830

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)	-	0.10307	0.77966	7.08842
	A1->X (RR)	-	0.10434	0.78512	7.10908
	S->X (RR)	(!A0 * A1)	0.10553	0.78226	7.11547
	S->X (FR)	(A0 * !A1)	0.20502	1.02215	8.57047
sky130_fd_sc_hs__mux2_2	A0->X (RR)	-	0.12071	0.73568	7.16617
	A1->X (RR)	-	0.11681	0.72839	7.18945
	S->X (RR)	(!A0 * A1)	0.11911	0.71968	7.19643
	S->X (FR)	(A0 * !A1)	0.21682	0.93406	8.46053
sky130_fd_sc_hs__mux2_4	A0->X (RR)	-	0.15598	0.70931	7.33334
	A1->X (RR)	-	0.15478	0.70745	7.34214
	S->X (RR)	(!A0 * A1)	0.16262	0.68395	7.32357
	S->X (FR)	(A0 * !A1)	0.28057	0.97252	8.95063

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)	-	0.19551	0.78989	4.88230
	A1->X (FF)	-	0.19293	0.78925	4.91199
	S->X (FF)	(!A0 * A1)	0.25340	0.84310	5.15608
	S->X (RF)	(A0 * !A1)	0.28757	0.65136	2.80818
sky130_fd_sc_hs__mux2_2	A0->X (FF)	-	0.24925	0.82817	4.90549
	A1->X (FF)	-	0.25431	0.83956	4.95547
	S->X (FF)	(!A0 * A1)	0.31141	0.88135	5.12781
	S->X (RF)	(A0 * !A1)	0.35825	0.69836	2.56026
sky130_fd_sc_hs__mux2_4	A0->X (FF)	-	0.28268	0.83311	4.89808
	A1->X (FF)	-	0.28396	0.83737	4.92067
	S->X (FF)	(!A0 * A1)	0.33687	0.87183	5.06640
	S->X (RF)	(A0 * !A1)	0.37607	0.70924	2.52935

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	-	0.00684	0.00665	0.00933
	A0	-	0.00325	0.00306	0.00577
	A1	-	0.00712	0.00701	0.00943
	A1	-	0.00322	0.00312	0.00556
	S	(A0 * !A1)	0.00640	0.00634	0.01057
	S	(A0 * !A1)	0.00882	0.00881	0.01303
	S	(!A0 * A1)	0.01115	0.01098	0.01585
	S	(!A0 * A1)	0.00459	0.00442	0.00934
sky130_fd_sc_hs__mux2_2	A0	-	0.00881	0.00898	0.01150
	A0	-	0.00526	0.00545	0.00805
	A1	-	0.00919	0.00933	0.01182
	A1	-	0.00549	0.00570	0.00821
	S	(A0 * !A1)	0.00812	0.00867	0.01290
	S	(A0 * !A1)	0.01112	0.01170	0.01598
	S	(!A0 * A1)	0.01341	0.01328	0.01717
	S	(!A0 * A1)	0.00629	0.00617	0.01017
sky130_fd_sc_hs__mux2_4	A0	-	0.01647	0.01671	0.02115
	A0	-	0.01005	0.01029	0.01490
	A1	-	0.01665	0.01682	0.02164
	A1	-	0.01013	0.01029	0.01536
	S	(A0 * !A1)	0.01518	0.01597	0.01985
	S	(A0 * !A1)	0.01952	0.02030	0.02441
	S	(!A0 * A1)	0.02355	0.02334	0.02806
	S	(!A0 * A1)	0.01220	0.01199	0.01689

Internal switching power(pJ) to X falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2_1	A0	-	0.00291	0.00300	0.00631
	A0	-	0.00664	0.00675	0.01002
	A1	-	0.00338	0.00338	0.00672
	A1	-	0.00726	0.00727	0.01055
	S	(A0 * !A1)	0.00955	0.00936	0.01297
	S	(A0 * !A1)	0.00704	0.00681	0.01030
	S	(!A0 * A1)	0.00360	0.00373	0.00970
	S	(!A0 * A1)	0.01010	0.01026	0.01591
sky130_fd_sc_hs__mux2_2	A0	-	0.00433	0.00467	0.00823
	A0	-	0.00803	0.00834	0.01160
	A1	-	0.00496	0.00509	0.00871
	A1	-	0.00865	0.00890	0.01210
	S	(A0 * !A1)	0.01087	0.01106	0.01453
	S	(A0 * !A1)	0.00781	0.00797	0.01129
	S	(!A0 * A1)	0.00487	0.00507	0.01030
	S	(!A0 * A1)	0.01195	0.01214	0.01734
sky130_fd_sc_hs__mux2_4	A0	-	0.01020	0.01043	0.01731
	A0	-	0.01683	0.01720	0.02307
	A1	-	0.01049	0.01076	0.01787
	A1	-	0.01680	0.01728	0.02338
	S	(A0 * !A1)	0.01984	0.02044	0.02374
	S	(A0 * !A1)	0.01541	0.01596	0.01915
	S	(!A0 * A1)	0.01132	0.01128	0.01878
	S	(!A0 * A1)	0.02259	0.02251	0.02822

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	0.00118	0.00118	0.00118
	(A1 * S * X)	-0.00058	-0.00058	-0.00058
	(!A1 * S * !X)	0.00048	0.00048	0.00044
	(!A1 * S * !X)	-0.00130	-0.00133	-0.00136
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	0.00111	0.00112	0.00112
	(A1 * S * X)	-0.00062	-0.00062	-0.00062
	(!A1 * S * !X)	0.00053	0.00053	0.00049
	(!A1 * S * !X)	-0.00122	-0.00125	-0.00129
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	0.00201	0.00202	0.00202
	(A1 * S * X)	-0.00122	-0.00123	-0.00123
	(!A1 * S * !X)	0.00082	0.00080	0.00075
	(!A1 * S * !X)	-0.00258	-0.00264	-0.00267

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	-0.00109	-0.00112	-0.00118
	(A1 * S * X)	0.00064	0.00065	0.00060
	(!A1 * S * !X)	-0.00043	-0.00043	-0.00043
	(!A1 * S * !X)	0.00136	0.00136	0.00136
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	-0.00100	-0.00104	-0.00111
	(A1 * S * X)	0.00071	0.00071	0.00065
	(!A1 * S * !X)	-0.00047	-0.00048	-0.00047
	(!A1 * S * !X)	0.00129	0.00130	0.00129
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	-0.00187	-0.00191	-0.00201
	(A1 * S * X)	0.00135	0.00134	0.00126
	(!A1 * S * !X)	-0.00074	-0.00074	-0.00074
	(!A1 * S * !X)	0.00267	0.00267	0.00267

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	0.00130	0.00132	0.00130
	(A0 * !S * X)	-0.00069	-0.00070	-0.00069
	(!A0 * !S * !X)	0.00043	0.00042	0.00041
	(!A0 * !S * !X)	-0.00157	-0.00158	-0.00160
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	0.00120	0.00122	0.00120
	(A0 * !S * X)	-0.00060	-0.00061	-0.00060
	(!A0 * !S * !X)	0.00038	0.00038	0.00037
	(!A0 * !S * !X)	-0.00141	-0.00143	-0.00145
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	0.00200	0.00201	0.00200
	(A0 * !S * X)	-0.00124	-0.00124	-0.00123
	(!A0 * !S * !X)	0.00066	0.00066	0.00062
	(!A0 * !S * !X)	-0.00270	-0.00273	-0.00278

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	-0.00122	-0.00127	-0.00130
	(A0 * !S * X)	0.00075	0.00075	0.00071
	(!A0 * !S * !X)	-0.00040	-0.00040	-0.00040
	(!A0 * !S * !X)	0.00160	0.00160	0.00160
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	-0.00110	-0.00115	-0.00120
	(A0 * !S * X)	0.00068	0.00068	0.00062
	(!A0 * !S * !X)	-0.00036	-0.00036	-0.00036
	(!A0 * !S * !X)	0.00145	0.00145	0.00145
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	-0.00182	-0.00193	-0.00200
	(A0 * !S * X)	0.00136	0.00135	0.00126
	(!A0 * !S * !X)	-0.00060	-0.00060	-0.00060
	(!A0 * !S * !X)	0.00277	0.00278	0.00278

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	0.00487	0.00463	0.00825
	(A0 * A1 * X)	0.00046	0.00016	0.00380
	(!A0 * !A1 * !X)	0.00494	0.00475	0.00837
	(!A0 * !A1 * !X)	0.00054	0.00034	0.00397
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	0.00493	0.00470	0.00838
	(A0 * A1 * X)	-0.00003	-0.00034	0.00338
	(!A0 * !A1 * !X)	0.00471	0.00449	0.00819
	(!A0 * !A1 * !X)	-0.00027	-0.00049	0.00322
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	0.00771	0.00734	0.01055
	(A0 * A1 * X)	0.00011	-0.00035	0.00288
	(!A0 * !A1 * !X)	0.00774	0.00745	0.01061
	(!A0 * !A1 * !X)	0.00010	-0.00025	0.00296

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	0.00003	0.00016	0.00438
	(A0 * A1 * X)	0.00444	0.00461	0.00879
	(!A0 * !A1 * !X)	-0.00016	-0.00007	0.00419
	(!A0 * !A1 * !X)	0.00422	0.00433	0.00861
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	-0.00042	-0.00032	0.00396
	(A0 * A1 * X)	0.00459	0.00467	0.00896
	(!A0 * !A1 * !X)	-0.00027	-0.00022	0.00410
	(!A0 * !A1 * !X)	0.00471	0.00478	0.00911
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	-0.00022	-0.00041	0.00331
	(A0 * A1 * X)	0.00745	0.00726	0.01097
	(!A0 * !A1 * !X)	-0.00042	-0.00060	0.00320
	(!A0 * !A1 * !X)	0.00720	0.00704	0.01084

SKY130_FD_SC_HS__MUX4x

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT						OUTPUT
A0	A1	A2	A3	S0	S1	X
0	0	0	0	x	x	0
0	x	0	1	0	x	0
x	0	x	1	1	0	0
x	x	x	1	1	1	1
0	0	1	x	x	0	0
0	x	1	x	0	1	1
0	x	1	0	1	1	0
0	1	0	x	0	x	0
0	1	x	x	1	0	1
0	1	x	0	1	1	0
0	1	1	x	0	0	0
1	0	0	x	0	0	1
1	x	0	0	x	1	0
1	0	x	0	1	x	0
1	x	0	1	0	1	0
1	x	1	x	0	x	1
1	1	0	x	x	0	1
1	1	1	x	1	0	1
1	1	1	0	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__mux4_1	31.96800
sky130_fd_sc_hs__mux4_2	35.16480
sky130_fd_sc_hs__mux4_4	55.94400

Pin Capacitance Information

Cell Name	Pin Cap(pf)						Max Cap(pf)
	A0	A1	A2	A3	S0	S1	X
sky130_fd_sc_hs__mux4_1	0.00231	0.00243	0.00241	0.00268	0.00819	0.00522	0.74719
sky130_fd_sc_hs__mux4_2	0.00262	0.00248	0.00258	0.00252	0.00929	0.00540	1.50785
sky130_fd_sc_hs__mux4_4	0.00460	0.00442	0.00460	0.00461	0.01292	0.00806	2.87348

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux4_1	0.00000	0.17707	0.30717
sky130_fd_sc_hs__mux4_2	0.00000	0.18895	0.32777
sky130_fd_sc_hs__mux4_4	0.00000	0.27920	0.47013

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)	0.18411	0.90838	7.47955
	A1->X (RR)	0.18530	0.91052	7.48252
	A2->X (RR)	0.18620	0.91711	7.52591
	A3->X (RR)	0.18202	0.91096	7.50883
	S0->X (-R)	0.30337	1.18489	9.07073
	S1->X (-R)	0.17923	1.00402	8.54410
sky130_fd_sc_hs__mux4_2	A0->X (RR)	0.19751	0.81578	7.58342
	A1->X (RR)	0.18854	0.81124	7.58025
	A2->X (RR)	0.18260	0.79904	7.53863
	A3->X (RR)	0.17347	0.79159	7.52734
	S0->X (-R)	0.28591	1.05427	9.03848
	S1->X (-R)	0.19026	0.91222	8.57128
sky130_fd_sc_hs__mux4_4	A0->X (RR)	0.22363	0.75740	7.65320
	A1->X (RR)	0.22633	0.76188	7.65864
	A2->X (RR)	0.22766	0.76472	7.65890
	A3->X (RR)	0.21614	0.75802	7.65544
	S0->X (-R)	0.38898	1.12086	9.57187
	S1->X (-R)	0.22562	0.92361	8.99628

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__mux4_1	A0->X (FF)	0.38989	1.02520	5.48801
	A1->X (FF)	0.40759	1.04468	5.53530
	A2->X (FF)	0.42721	1.07051	5.60425
	A3->X (FF)	0.42769	1.06731	5.59857
	S0->X (-F)	0.39292	1.01577	5.29354
	S1->X (-F)	0.18746	0.76543	4.56057
sky130_fd_sc_hs__mux4_2	A0->X (FF)	0.49475	1.14635	5.98039
	A1->X (FF)	0.49062	1.14297	5.96190
	A2->X (FF)	0.48264	1.12734	5.91429
	A3->X (FF)	0.47031	1.11589	5.87792
	S0->X (-F)	0.46094	1.09181	5.70246
	S1->X (-F)	0.24815	0.84425	5.05342
sky130_fd_sc_hs__mux4_4	A0->X (FF)	0.47835	1.08712	5.89265
	A1->X (FF)	0.47201	1.08186	5.88217
	A2->X (FF)	0.51415	1.12289	5.93069
	A3->X (FF)	0.49601	1.10489	5.91578
	S0->X (-F)	0.47200	1.07671	5.75956
	S1->X (-F)	0.26826	0.84723	5.17998

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux4_1	A0	0.01092	0.01098	0.01203
	A0	0.00673	0.00678	0.00787
	A1	0.00999	0.01004	0.01106
	A1	0.00579	0.00583	0.00692
	A2	0.00989	0.00996	0.01101
	A2	0.00578	0.00584	0.00690
	A3	0.00924	0.00928	0.01032
	A3	0.00490	0.00493	0.00598
	S0	0.01783	0.01738	0.02691
	S0	0.01843	0.01853	0.02600
	S1	0.00838	0.00815	0.01455
	S1	0.00836	0.00929	0.01647
sky130_fd_sc_hs__mux4_2	A0	0.01328	0.01354	0.01452
	A0	0.00860	0.00885	0.01004
	A1	0.01241	0.01267	0.01369
	A1	0.00771	0.00797	0.00920
	A2	0.01166	0.01193	0.01292
	A2	0.00719	0.00746	0.00846
	A3	0.01103	0.01131	0.01236
	A3	0.00658	0.00686	0.00793
	S0	0.02103	0.02069	0.03001
	S0	0.01967	0.02008	0.02770
	S1	0.01013	0.01010	0.01626
	S1	0.01035	0.01148	0.01858

sky130_fd_sc_hs__mux4_4	**A0**	0.02436	0.02488	0.02713
	A0	0.01617	0.01669	0.01933
	A1	0.02247	0.02299	0.02521
	A1	0.01436	0.01489	0.01749
	A2	0.02245	0.02299	0.02525
	A2	0.01434	0.01488	0.01752
	A3	0.02131	0.02182	0.02406
	A3	0.01303	0.01355	0.01618
	S0	0.03523	0.03493	0.04912
	S0	0.03258	0.03327	0.04403
	S1	0.01791	0.01790	0.02576
	S1	0.01842	0.02032	0.03054

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__mux4_1	**A0**	0.00357	0.00363	0.00500
	A0	0.00777	0.00788	0.00895
	A1	0.00458	0.00465	0.00613
	A1	0.00875	0.00886	0.00997
	A2	0.00530	0.00539	0.00658
	A2	0.00943	0.00954	0.01063
	A3	0.00599	0.00602	0.00725
	A3	0.01030	0.01036	0.01147
	S0	0.01670	0.01620	0.02284
	S0	0.01632	0.01647	0.02728
	S1	0.00835	0.00896	0.01540
	S1	0.00739	0.00760	0.01484

sky130_fd_sc_hs__mux4_2	**A0**	0.00659	0.00675	0.00795
	A0	0.01126	0.01143	0.01261
	A1	0.00745	0.00764	0.00878
	A1	0.01210	0.01231	0.01339
	A2	0.00722	0.00736	0.00865
	A2	0.01169	0.01186	0.01305
	A3	0.00780	0.00798	0.00915
	A3	0.01220	0.01242	0.01353
	S0	0.01958	0.01908	0.02576
	S0	0.01881	0.01905	0.02986
	S1	0.01070	0.01140	0.01767
	S1	0.00996	0.01027	0.01744
sky130_fd_sc_hs__mux4_4	**A0**	0.01190	0.01225	0.01583
	A0	0.02009	0.02049	0.02282
	A1	0.01400	0.01437	0.01782
	A1	0.02206	0.02252	0.02476
	A2	0.01380	0.01410	0.01794
	A2	0.02191	0.02220	0.02461
	A3	0.01538	0.01566	0.01939
	A3	0.02355	0.02391	0.02615
	S0	0.03294	0.03218	0.04168
	S0	0.03058	0.03107	0.04744
	S1	0.01910	0.02070	0.02940
	S1	0.01718	0.01758	0.02674

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)**	0.00576	0.00560	0.00687
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00241	0.00224	0.00353
	(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)	0.00106	0.00097	0.00096
	(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)	-0.00100	-0.00111	-0.00112
sky130_fd_sc_hs__mux4_2	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.00644	0.00626	0.00744
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00261	0.00243	0.00362
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00118	0.00107	0.00105
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00094	-0.00109	-0.00110
sky130_fd_sc_hs__mux4_4	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.01077	0.01047	0.01300
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00424	0.00391	0.00648
	(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)	0.00206	0.00182	0.00178
	(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)	-0.00203	-0.00230	-0.00232

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)	0.00101	0.00089	0.00225
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00435	0.00425	0.00559
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00094	-0.00096	-0.00096
	(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)	0.00111	0.00112	0.00112
sky130_fd_sc_hs__mux4_2	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00157	0.00140	0.00276
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00539	0.00524	0.00658
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00102	-0.00105	-0.00104
	(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)	0.00109	0.00111	0.00110

sky130_fd_sc_hs__mux4_4	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.00226	0.00201	0.00474
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00878	0.00857	0.01126
	(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)	-0.00174	-0.00179	-0.00178
	(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)	0.00231	0.00234	0.00232

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)**	0.00484	0.00467	0.00594
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00152	0.00133	0.00261
	(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	0.00088	0.00086
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00110	-0.00124	-0.00124

sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00556	0.00540	0.00659
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00174	0.00158	0.00277
	(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)	0.00101	0.00094	0.00093
	(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)	-0.00109	-0.00119	-0.00119
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00892	0.00861	0.01115
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00252	0.00219	0.00476
	(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)	0.00198	0.00174	0.00170
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00199	-0.00226	-0.00228

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)**	0.00200	0.00187	0.00321
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00534	0.00520	0.00654
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00083	-0.00086	-0.00086
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00124	0.00126	0.00125
sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00241	0.00227	0.00359
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00622	0.00610	0.00740
	(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)	-0.00090	-0.00093	-0.00093
	(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)	0.00119	0.00120	0.00119
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00429	0.00408	0.00674
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.01070	0.01050	0.01311
	(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	-0.00172	-0.00170
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00227	0.00228	0.00228

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)	0.00114	0.00103	0.00101
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00093	-0.00107	-0.00108
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00593	0.00578	0.00701
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00256	0.00239	0.00365
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)	0.00130	0.00118	0.00116
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00094	-0.00108	-0.00109
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00608	0.00591	0.00709
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00243	0.00224	0.00344

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)**	0.00215	0.00189	0.00187
	(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)	-0.00190	-0.00216	-0.00220
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01095	0.01064	0.01319
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00428	0.00394	0.00653

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)**	-0.00099	-0.00101	-0.00101
	(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)	0.00108	0.00109	0.00108
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00160	0.00148	0.00281
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00497	0.00486	0.00617

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)**	-0.00113	-0.00115	-0.00115
	(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)	0.00108	0.00110	0.00109
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00165	0.00148	0.00285
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00531	0.00515	0.00650
sky130_fd_sc_hs__mux4_4	**(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)**	-0.00183	-0.00187	-0.00187
	(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)	0.00218	0.00220	0.00220
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00217	0.00191	0.00464
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00884	0.00860	0.01129

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)**	0.00529	0.00509	0.00634
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00171	0.00150	0.00276
	(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	0.00114	0.00112
	(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)	-0.00106	-0.00119	-0.00120
sky130_fd_sc_hs__mux4_2	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00545	0.00530	0.00650
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00185	0.00168	0.00289
	(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)	0.00110	0.00101	0.00099
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00104	-0.00115	-0.00115
sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00977	0.00943	0.01195
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00303	0.00267	0.00521
	(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)	0.00205	0.00183	0.00180
	(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)	-0.00195	-0.00220	-0.00222

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)	0.00226	0.00209	0.00343
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00583	0.00568	0.00699
	(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)	-0.00110	-0.00112	-0.00112
	(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)	0.00121	0.00120	0.00121
sky130_fd_sc_hs__mux4_2	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00220	0.00207	0.00342
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00582	0.00568	0.00702
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00096	-0.00099	-0.00099
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00115	0.00116	0.00116

sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00373	0.00346	0.00612
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.01048	0.01023	0.01283
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00173	-0.00181	-0.00180
	(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)	0.00220	0.00223	0.00222

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)**	0.00658	0.00635	0.00955
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00071	-0.00100	0.00223
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00982	0.00942	0.01263
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00357	0.00316	0.00639
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00945	0.00902	0.01558
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00104	0.00057	0.00714
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00679	0.00654	0.00979
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00056	-0.00085	0.00241
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00923	0.00904	0.01219
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00294	0.00272	0.00586
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00904	0.00886	0.01206
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00269	0.00246	0.00567
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00915	0.00872	0.01544
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00075	0.00027	0.00702
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00974	0.00930	0.01607
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00129	0.00081	0.00758
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00959	0.00918	0.01244
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00325	0.00281	0.00607
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01003	0.00959	0.01616
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00152	0.00104	0.00761

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.00733	0.00707	0.01033
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00013	-0.00012	0.00315
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01046	0.00984	0.01310
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00451	0.00385	0.00713
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01021	0.00977	0.01631
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00179	0.00131	0.00787
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00720	0.00697	0.01029
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00004	-0.00024	0.00308
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01084	0.01009	0.01325
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00513	0.00436	0.00753
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01045	0.00970	0.01295
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00475	0.00397	0.00722
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01027	0.00978	0.01639
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00161	0.00107	0.00772
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01042	0.00991	0.01660
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00179	0.00123	0.00794
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00987	0.00923	0.01248
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00394	0.00327	0.00653
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01086	0.01040	0.01702
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00247	0.00196	0.00860

sky130_fd_sc_hs__mux4_4	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.01032	0.01013	0.01245
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00004	-0.00031	0.00206
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01594	0.01491	0.01715
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00774	0.00670	0.00892
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01543	0.01475	0.02362
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00286	0.00215	0.01108
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01030	0.01005	0.01250
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00008	-0.00033	0.00205
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01613	0.01555	0.01776
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00754	0.00691	0.00915
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01549	0.01490	0.01720
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00687	0.00624	0.00852
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01483	0.01430	0.02336
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00247	0.00191	0.01101
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01538	0.01486	0.02400
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00303	0.00247	0.01161
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01567	0.01462	0.01694
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00735	0.00625	0.00857
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01645	0.01585	0.02473
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00376	0.00313	0.01202

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)**	0.00052	0.00041	0.00421
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00781	0.00772	0.01151
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00471	0.00464	0.00844
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01096	0.01089	0.01468
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00191	0.00180	0.00925
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01032	0.01023	0.01767
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00033	0.00022	0.00398
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00770	0.00759	0.01137
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00446	0.00442	0.00830
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01076	0.01071	0.01460
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00466	0.00461	0.00845
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01104	0.01102	0.01483
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00132	0.00121	0.00877
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00972	0.00963	0.01720
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00076	0.00064	0.00817
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00921	0.00912	0.01665
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00498	0.00490	0.00866
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01133	0.01126	0.01501
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00135	0.00121	0.00866
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00986	0.00975	0.01721

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	-0.00064	-0.00067	0.00317
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00652	0.00651	0.01039
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00360	0.00353	0.00739
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00955	0.00950	0.01333
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00088	0.00081	0.00836
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00929	0.00925	0.01677
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00053	-0.00058	0.00324
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00664	0.00659	0.01044
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00404	0.00399	0.00781
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00974	0.00972	0.01352
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00444	0.00437	0.00814
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01015	0.01011	0.01384
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00049	0.00037	0.00797
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00914	0.00905	0.01663
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00033	0.00019	0.00776
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00897	0.00885	0.01642
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00420	0.00412	0.00793
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01014	0.01009	0.01385
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00020	0.00011	0.00763
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00861	0.00856	0.01606

	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00086	-0.00092	0.00213
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00943	0.00942	0.01252
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00721	0.00703	0.00994
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01541	0.01524	0.01818
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00112	0.00094	0.01104
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01362	0.01345	0.02358
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00081	-0.00086	0.00217
sky130_fd_sc_hs__mux4_4	**(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)**	0.00957	0.00956	0.01261
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00645	0.00647	0.00944
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01501	0.01505	0.01807
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00717	0.00718	0.01007
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01582	0.01586	0.01876
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00092	0.00088	0.01126
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01321	0.01315	0.02358
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00037	0.00029	0.01068
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01274	0.01268	0.02306
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00762	0.00739	0.01023
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01597	0.01578	0.01862
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00012	-0.00005	0.01001
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01284	0.01268	0.02271

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)	0.00434	0.00418	0.00809
	(A1 * A3 * S0 * X)	-0.00023	-0.00039	0.00350
	(A0 * A2 * !S0 * X)	0.00434	0.00419	0.00809
	(A0 * A2 * !S0 * X)	-0.00023	-0.00040	0.00350
	(!A1 * !A3 * S0 * !X)	0.00448	0.00434	0.00827
	(!A1 * !A3 * S0 * !X)	-0.00019	-0.00036	0.00359
	(!A0 * !A2 * !S0 * !X)	0.00448	0.00434	0.00827
	(!A0 * !A2 * !S0 * !X)	-0.00019	-0.00036	0.00359
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	0.00458	0.00447	0.00828
	(A1 * A3 * S0 * X)	-0.00020	-0.00033	0.00350
	(A0 * A2 * !S0 * X)	0.00458	0.00447	0.00828
	(A0 * A2 * !S0 * X)	-0.00020	-0.00033	0.00350
	(!A1 * !A3 * S0 * !X)	0.00455	0.00444	0.00832
	(!A1 * !A3 * S0 * !X)	-0.00026	-0.00040	0.00349
	(!A0 * !A2 * !S0 * !X)	0.00455	0.00443	0.00832
	(!A0 * !A2 * !S0 * !X)	-0.00027	-0.00039	0.00349
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	0.00664	0.00641	0.00929
	(A1 * A3 * S0 * X)	-0.00014	-0.00041	0.00249
	(A0 * A2 * !S0 * X)	0.00664	0.00640	0.00929
	(A0 * A2 * !S0 * X)	-0.00014	-0.00041	0.00249
	(!A1 * !A3 * S0 * !X)	0.00660	0.00638	0.00932
	(!A1 * !A3 * S0 * !X)	-0.00038	-0.00060	0.00232
	(!A0 * !A2 * !S0 * !X)	0.00660	0.00641	0.00932
	(!A0 * !A2 * !S0 * !X)	-0.00038	-0.00062	0.00232

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)	-0.00055	-0.00044	0.00382
	(A1 * A3 * S0 * X)	0.00403	0.00416	0.00840
	(A0 * A2 * !S0 * X)	-0.00055	-0.00045	0.00382
	(A0 * A2 * !S0 * X)	0.00403	0.00415	0.00840
	(!A1 * !A3 * S0 * !X)	-0.00059	-0.00039	0.00368
	(!A1 * !A3 * S0 * !X)	0.00408	0.00429	0.00837
	(!A0 * !A2 * !S0 * !X)	-0.00059	-0.00040	0.00368
	(!A0 * !A2 * !S0 * !X)	0.00408	0.00431	0.00837
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	-0.00059	-0.00049	0.00373
	(A1 * A3 * S0 * X)	0.00416	0.00430	0.00851
	(A0 * A2 * !S0 * X)	-0.00059	-0.00049	0.00373
	(A0 * A2 * !S0 * X)	0.00416	0.00429	0.00851
	(!A1 * !A3 * S0 * !X)	-0.00053	-0.00034	0.00371
	(!A1 * !A3 * S0 * !X)	0.00427	0.00450	0.00855
	(!A0 * !A2 * !S0 * !X)	-0.00053	-0.00034	0.00371
	(!A0 * !A2 * !S0 * !X)	0.00427	0.00449	0.00855
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	-0.00088	-0.00089	0.00257
	(A1 * A3 * S0 * X)	0.00590	0.00591	0.00936
	(A0 * A2 * !S0 * X)	-0.00088	-0.00089	0.00257
	(A0 * A2 * !S0 * X)	0.00590	0.00591	0.00936
	(!A1 * !A3 * S0 * !X)	-0.00061	-0.00071	0.00268
	(!A1 * !A3 * S0 * !X)	0.00636	0.00631	0.00968
	(!A0 * !A2 * !S0 * !X)	-0.00061	-0.00071	0.00268
	(!A0 * !A2 * !S0 * !X)	0.00636	0.00631	0.00968

SKY130_FD_SC_HS__NAND2Bx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage 1.44, Temp 25.00

Truth Table

INPUT		OUTPUT
A_N	B	Y
x	0	1
0	1	0
1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand2b_1	7.99200
sky130_fd_sc_hs__nand2b_2	11.18880
sky130_fd_sc_hs__nand2b_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A_N	B	Y
sky130_fd_sc_hs__nand2b_1	0.00227	0.00270	0.71895
sky130_fd_sc_hs__nand2b_2	0.00254	0.00511	1.37783
sky130_fd_sc_hs__nand2b_4	0.00374	0.00785	1.55390

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand2b_1	0.00000	0.07548	0.12408
sky130_fd_sc_hs__nand2b_2	0.00000	0.06169	0.10335
sky130_fd_sc_hs__nand2b_4	0.00000	0.15481	0.25659

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)	0.08448	0.75086	7.10207
	B->Y (FR)	0.05838	0.97586	11.53500
sky130_fd_sc_hs__nand2b_2	A_N->Y (RR)	0.08040	0.63113	6.78002
	B->Y (FR)	0.05462	0.87672	11.76250
sky130_fd_sc_hs__nand2b_4	A_N->Y (RR)	0.09839	0.66037	7.13168
	B->Y (FR)	0.07329	0.88117	11.83100

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)	0.11000	0.68419	5.12526
	B->Y (RF)	0.03555	0.56686	6.66615
sky130_fd_sc_hs__nand2b_2	A_N->Y (FF)	0.12322	0.70177	5.68052
	B->Y (RF)	0.03625	0.50335	6.76181
sky130_fd_sc_hs__nand2b_4	A_N->Y (FF)	0.09681	0.54252	3.88677
	B->Y (RF)	0.03229	0.37106	4.99374

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	0.00501	0.00495	0.00875
	A_N	0.00262	0.00257	0.00640
	B	0.00019	0.00020	0.00055
	B	0.00288	0.00289	0.00325
sky130_fd_sc_hs__nand2b_2	A_N	0.00658	0.00672	0.00963
	A_N	0.00411	0.00426	0.00718
	B	0.00013	0.00011	0.00085
	B	0.00536	0.00536	0.00619
sky130_fd_sc_hs__nand2b_4	A_N	0.00877	0.00906	0.01517
	A_N	0.00523	0.00553	0.01171
	B	-0.00003	-0.00008	0.00103
	B	0.00798	0.00796	0.00922

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	A_N	0.00259	0.00282	0.00763
	A_N	0.00498	0.00520	0.00954
	B	0.00347	0.00345	0.00379
	B	0.00077	0.00073	0.00084
sky130_fd_sc_hs__nand2b_2	A_N	0.00447	0.00482	0.00858
	A_N	0.00694	0.00728	0.01096
	B	0.00671	0.00675	0.00689
	B	0.00142	0.00135	0.00161
sky130_fd_sc_hs__nand2b_4	A_N	0.00781	0.00823	0.01582
	A_N	0.01135	0.01173	0.01935
	B	0.01170	0.01161	0.01249
	B	0.00360	0.00350	0.00386

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	0.00400	0.00385	0.00770
	(!B * Y)	0.00146	0.00130	0.00516
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.00556	0.00537	0.00884
	(!B * Y)	0.00275	0.00255	0.00602
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.00686	0.00658	0.01314
	(!B * Y)	0.00275	0.00244	0.00903

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	0.00009	0.00018	0.00459
	(!B * Y)	0.00264	0.00273	0.00714
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.00058	0.00068	0.00439
	(!B * Y)	0.00341	0.00352	0.00721
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.00103	0.00115	0.00880
	(!B * Y)	0.00520	0.00532	0.01294

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	0.00119	0.00121	0.00120
	(A_N * Y)	-0.00122	-0.00123	-0.00123
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	0.00206	0.00207	0.00206
	(A_N * Y)	-0.00254	-0.00255	-0.00254
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	0.00415	0.00419	0.00414
	(A_N * Y)	-0.00268	-0.00269	-0.00267

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	-0.00116	-0.00121	-0.00120
	(A_N * Y)	0.00127	0.00125	0.00123
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	-0.00198	-0.00207	-0.00206
	(A_N * Y)	0.00258	0.00257	0.00254
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	-0.00395	-0.00415	-0.00414
	(A_N * Y)	0.00280	0.00272	0.00268

SKY130_FD_SC_HS__NAND2x

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT		OUTPUT
A	B	Y
0	x	1
1	0	1
1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand2_1	4.79520
sky130_fd_sc_hs__nand2_2	7.99200
sky130_fd_sc_hs__nand2_4	14.38560
sky130_fd_sc_hs__nand2_8	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	Y
sky130_fd_sc_hs__nand2_1	0.00271	0.00262	0.75849
sky130_fd_sc_hs__nand2_2	0.00518	0.00512	1.49205
sky130_fd_sc_hs__nand2_4	0.00792	0.00766	1.49633
sky130_fd_sc_hs__nand2_8	0.01515	0.01513	2.82402

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand2_1	0.00000	0.01432	0.04886
sky130_fd_sc_hs__nand2_2	0.00000	0.02863	0.09773
sky130_fd_sc_hs__nand2_4	0.00000	0.03283	0.09773
sky130_fd_sc_hs__nand2_8	0.00000	0.06567	0.19545

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)	0.04538	0.96569	11.72040
	B->Y (FR)	0.05598	0.97679	11.73160
sky130_fd_sc_hs__nand2_2	A->Y (FR)	0.03921	0.85036	11.78030
	B->Y (FR)	0.05333	0.86226	11.74100
sky130_fd_sc_hs__nand2_4	A->Y (FR)	0.05559	0.86514	11.78990
	B->Y (FR)	0.08353	0.88572	11.76230
sky130_fd_sc_hs__nand2_8	A->Y (FR)	0.04405	0.76009	11.54630
	B->Y (FR)	0.06978	0.77219	11.23660

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand2_1	A->Y (RF)	0.02839	0.60764	7.34024
	B->Y (RF)	0.03268	0.57430	6.87649
sky130_fd_sc_hs__nand2_2	A->Y (RF)	0.02712	0.55901	7.79790
	B->Y (RF)	0.03448	0.52711	7.26721
sky130_fd_sc_hs__nand2_4	A->Y (RF)	0.02496	0.41171	5.65810
	B->Y (RF)	0.03134	0.37495	4.99135
sky130_fd_sc_hs__nand2_8	A->Y (RF)	0.02243	0.37082	5.90610
	B->Y (RF)	0.02880	0.31943	4.89885

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	-0.00035	-0.00030	0.00003
	A	0.00250	0.00254	0.00294
	B	-0.00000	0.00001	0.00033
	B	0.00346	0.00347	0.00385
sky130_fd_sc_hs__nand2_2	A	-0.00102	-0.00091	-0.00016
	A	0.00448	0.00461	0.00546
	B	0.00021	0.00016	0.00086
	B	0.00706	0.00703	0.00782
sky130_fd_sc_hs__nand2_4	A	-0.00199	-0.00203	-0.00069
	A	0.00641	0.00638	0.00789
	B	0.00031	0.00015	0.00129
	B	0.01129	0.01076	0.01244
sky130_fd_sc_hs__nand2_8	A	-0.00445	-0.00424	-0.00100
	A	0.01179	0.01207	0.01547
	B	-0.00024	-0.00057	0.00194
	B	0.02147	0.02119	0.02375

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	0.00271	0.00268	0.00292
	A	-0.00013	-0.00015	0.00001
	B	0.00339	0.00336	0.00347
	B	-0.00010	-0.00014	-0.00003
sky130_fd_sc_hs__nand2_2	A	0.00532	0.00539	0.00588
	A	-0.00018	-0.00016	0.00016
	B	0.00685	0.00678	0.00735
	B	-0.00010	-0.00017	0.00007
sky130_fd_sc_hs__nand2_4	A	0.00985	0.00974	0.01157
	A	0.00148	0.00136	0.00193
	B	0.01281	0.01272	0.01336
	B	0.00159	0.00145	0.00182
sky130_fd_sc_hs__nand2_8	A	0.01569	0.01575	0.01991
	A	-0.00052	-0.00051	0.00071
	B	0.02191	0.02176	0.02366
	B	-0.00025	-0.00048	0.00036

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	0.00039	0.00039	0.00038
	(!B * Y)	-0.00151	-0.00152	-0.00153
sky130_fd_sc_hs__nand2_2	(!B * Y)	0.00074	0.00075	0.00070
	(!B * Y)	-0.00291	-0.00294	-0.00300
sky130_fd_sc_hs__nand2_4	(!B * Y)	0.00146	0.00146	0.00137
	(!B * Y)	-0.00353	-0.00355	-0.00367
sky130_fd_sc_hs__nand2_8	(!B * Y)	0.00287	0.00288	0.00272
	(!B * Y)	-0.00678	-0.00684	-0.00706

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	-0.00037	-0.00037	-0.00037
	(!B * Y)	0.00154	0.00154	0.00153
sky130_fd_sc_hs__nand2_2	(!B * Y)	-0.00068	-0.00068	-0.00067
	(!B * Y)	0.00302	0.00302	0.00301
sky130_fd_sc_hs__nand2_4	(!B * Y)	-0.00133	-0.00134	-0.00132
	(!B * Y)	0.00367	0.00373	0.00367
sky130_fd_sc_hs__nand2_8	(!B * Y)	-0.00262	-0.00267	-0.00263
	(!B * Y)	0.00704	0.00718	0.00707

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!A * Y)	0.00100	0.00101	0.00101
	(!A * Y)	-0.00129	-0.00130	-0.00129
sky130_fd_sc_hs__nand2_2	(!A * Y)	0.00194	0.00196	0.00194
	(!A * Y)	-0.00253	-0.00254	-0.00253
sky130_fd_sc_hs__nand2_4	(!A * Y)	0.00382	0.00390	0.00386
	(!A * Y)	-0.00264	-0.00267	-0.00265
sky130_fd_sc_hs__nand2_8	(!A * Y)	0.00764	0.00778	0.00769
	(!A * Y)	-0.00528	-0.00534	-0.00530

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!A * Y)	-0.00095	-0.00101	-0.00101
	(!A * Y)	0.00132	0.00131	0.00130
sky130_fd_sc_hs__nand2_2	(!A * Y)	-0.00184	-0.00195	-0.00194
	(!A * Y)	0.00259	0.00257	0.00254
sky130_fd_sc_hs__nand2_4	(!A * Y)	-0.00365	-0.00387	-0.00386
	(!A * Y)	0.00279	0.00270	0.00266
sky130_fd_sc_hs__nand2_8	(!A * Y)	-0.00725	-0.00778	-0.00769
	(!A * Y)	0.00554	0.00540	0.00532

SKY130_FD_SC_HS__NAND3Bx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage 1.44, Temp 25.00

Truth Table

INPUT			OUTPUT
A_N	B	C	Y
x	0	x	1
x	1	0	1
0	1	1	0
1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand3b_1	9.59040
sky130_fd_sc_hs__nand3b_2	14.38560
sky130_fd_sc_hs__nand3b_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A_N	B	C	Y
sky130_fd_sc_hs__nand3b_1	0.00212	0.00271	0.00263	0.76361
sky130_fd_sc_hs__nand3b_2	0.00251	0.00515	0.00512	1.50313
sky130_fd_sc_hs__nand3b_4	0.00355	0.00743	0.00750	1.38957

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand3b_1	0.00000	0.07203	0.12408
sky130_fd_sc_hs__nand3b_2	0.00000	0.05479	0.15221
sky130_fd_sc_hs__nand3b_4	0.00000	0.14711	0.25659

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)	0.08755	0.73841	7.06732
	B->Y (FR)	0.06675	1.00043	11.93960
	C->Y (FR)	0.07432	0.99862	11.79890
sky130_fd_sc_hs__nand3b_2	A_N->Y (RR)	0.08585	0.63809	7.03337
	B->Y (FR)	0.05817	0.86790	11.80020
	C->Y (FR)	0.06804	0.88452	11.89980
sky130_fd_sc_hs__nand3b_4	A_N->Y (RR)	0.10615	0.67817	6.97575
	B->Y (FR)	0.07954	0.87162	11.31870
	C->Y (FR)	0.10683	0.91596	11.62540

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)	0.11999	0.80044	6.72358
	B->Y (RF)	0.05216	0.70198	8.33958
	C->Y (RF)	0.05650	0.66183	7.78851
sky130_fd_sc_hs__nand3b_2	A_N->Y (FF)	0.14058	0.83252	7.92641
	B->Y (RF)	0.05375	0.65848	9.11923
	C->Y (RF)	0.05769	0.60028	8.35074
sky130_fd_sc_hs__nand3b_4	A_N->Y (FF)	0.11746	0.68332	5.98669
	B->Y (RF)	0.05808	0.57362	7.59192
	C->Y (RF)	0.06259	0.46152	6.05271

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	0.00485	0.00479	0.00863
	A_N	0.00277	0.00271	0.00657
	B	0.00039	0.00037	0.00068
	B	0.00315	0.00314	0.00352
	C	0.00070	0.00068	0.00098
	C	0.00392	0.00391	0.00428
sky130_fd_sc_hs__nand3b_2	A_N	0.00683	0.00695	0.01036
	A_N	0.00451	0.00464	0.00810
	B	0.00053	0.00048	0.00106
	B	0.00605	0.00603	0.00676
	C	0.00117	0.00113	0.00169
	C	0.00796	0.00793	0.00863
sky130_fd_sc_hs__nand3b_4	A_N	0.00909	0.00962	0.01608
	A_N	0.00557	0.00611	0.01258
	B	0.00065	0.00014	0.00135
	B	0.00849	0.00799	0.00922
	C	0.00177	0.00156	0.00265
	C	0.01238	0.01190	0.01334

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	A_N	0.00337	0.00356	0.00823
	A_N	0.00545	0.00565	0.01006
	B	0.00418	0.00414	0.00397
	B	0.00140	0.00135	0.00146
	C	0.00481	0.00476	0.00495
	C	0.00152	0.00147	0.00156
sky130_fd_sc_hs__nand3b_2	A_N	0.00604	0.00640	0.01035
	A_N	0.00835	0.00872	0.01247
	B	0.00792	0.00782	0.00815
	B	0.00235	0.00226	0.00246
	C	0.00932	0.00926	0.00946
	C	0.00236	0.00225	0.00248
sky130_fd_sc_hs__nand3b_4	A_N	0.00833	0.00872	0.01692
	A_N	0.01184	0.01222	0.01977
	B	0.01174	0.01166	0.01193
	B	0.00383	0.00372	0.00403
	C	0.01536	0.01523	0.01603
	C	0.00432	0.00421	0.00451

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)	0.00380	0.00367	0.00755
	(B * !C * Y)	0.00143	0.00128	0.00517
	(!B * Y)	0.00379	0.00365	0.00753
	(!B * Y)	0.00143	0.00128	0.00517
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.00580	0.00561	0.00904
	(B * !C * Y)	0.00279	0.00259	0.00604
	(!B * Y)	0.00570	0.00552	0.00896
	(!B * Y)	0.00279	0.00259	0.00604
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.00693	0.00668	0.01313
	(B * !C * Y)	0.00270	0.00243	0.00889
	(!B * Y)	0.00679	0.00652	0.01301
	(!B * Y)	0.00267	0.00240	0.00888

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	(B * !C * Y)	0.00020	0.00031	0.00473
	(B * !C * Y)	0.00264	0.00275	0.00716
	(!B * Y)	0.00021	0.00032	0.00474
	(!B * Y)	0.00257	0.00269	0.00711
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.00053	0.00063	0.00430
	(B * !C * Y)	0.00365	0.00375	0.00739
	(!B * Y)	0.00063	0.00072	0.00441
	(!B * Y)	0.00355	0.00365	0.00733
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.00112	0.00125	0.00877
	(B * !C * Y)	0.00561	0.00574	0.01319
	(!B * Y)	0.00124	0.00138	0.00894
	(!B * Y)	0.00540	0.00555	0.01309

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)	0.00112	0.00113	0.00112
	(A_N * C * Y)	-0.00127	-0.00127	-0.00126
	(A_N * !C * Y)	0.00071	0.00072	0.00071
	(A_N * !C * Y)	-0.00126	-0.00127	-0.00127
	(!A_N * !C * Y)	0.00042	0.00042	0.00043
	(!A_N * !C * Y)	-0.00148	-0.00149	-0.00149
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	0.00208	0.00209	0.00207
	(A_N * C * Y)	-0.00261	-0.00262	-0.00260
	(A_N * !C * Y)	0.00128	0.00130	0.00129
	(A_N * !C * Y)	-0.00261	-0.00263	-0.00262
	(!A_N * !C * Y)	0.00091	0.00092	0.00093
	(!A_N * !C * Y)	-0.00279	-0.00281	-0.00280
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	0.00417	0.00420	0.00420
	(A_N * C * Y)	-0.00252	-0.00253	-0.00253
	(A_N * !C * Y)	0.00236	0.00237	0.00235
	(A_N * !C * Y)	-0.00282	-0.00282	-0.00281
	(!A_N * !C * Y)	0.00171	0.00172	0.00175
	(!A_N * !C * Y)	-0.00307	-0.00308	-0.00306

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)	-0.00107	-0.00112	-0.00112
	(A_N * C * Y)	0.00130	0.00129	0.00127
	(A_N * !C * Y)	-0.00071	-0.00072	-0.00071
	(A_N * !C * Y)	0.00132	0.00133	0.00128
	(!A_N * !C * Y)	-0.00040	-0.00040	-0.00041
	(!A_N * !C * Y)	0.00151	0.00152	0.00150
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	-0.00197	-0.00209	-0.00207
	(A_N * C * Y)	0.00266	0.00265	0.00261
	(A_N * !C * Y)	-0.00128	-0.00130	-0.00129
	(A_N * !C * Y)	0.00271	0.00272	0.00263
	(!A_N * !C * Y)	-0.00087	-0.00087	-0.00089
	(!A_N * !C * Y)	0.00288	0.00288	0.00283
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	-0.00379	-0.00420	-0.00420
	(A_N * C * Y)	0.00290	0.00257	0.00255
	(A_N * !C * Y)	-0.00236	-0.00237	-0.00235
	(A_N * !C * Y)	0.00305	0.00303	0.00286
	(!A_N * !C * Y)	-0.00165	-0.00164	-0.00169
	(!A_N * !C * Y)	0.00318	0.00318	0.00310

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)	0.00096	0.00097	0.00096
	(A_N * B * Y)	-0.00124	-0.00125	-0.00124
	(A_N * !B * Y)	0.00097	0.00098	0.00097
	(A_N * !B * Y)	-0.00124	-0.00125	-0.00124
	(!A_N * !B * Y)	0.00093	0.00094	0.00093
	(!A_N * !B * Y)	-0.00128	-0.00129	-0.00129
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	0.00210	0.00211	0.00209
	(A_N * B * Y)	-0.00251	-0.00252	-0.00250
	(A_N * !B * Y)	0.00209	0.00210	0.00210
	(A_N * !B * Y)	-0.00250	-0.00251	-0.00251
	(!A_N * !B * Y)	0.00186	0.00188	0.00186
	(!A_N * !B * Y)	-0.00275	-0.00277	-0.00275
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	0.00400	0.00401	0.00398
	(A_N * B * Y)	-0.00259	-0.00259	-0.00257
	(A_N * !B * Y)	0.00396	0.00402	0.00399
	(A_N * !B * Y)	-0.00261	-0.00263	-0.00261
	(!A_N * !B * Y)	0.00368	0.00370	0.00366
	(!A_N * !B * Y)	-0.00295	-0.00296	-0.00292

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)	-0.00092	-0.00097	-0.00096
	(A_N * B * Y)	0.00125	0.00125	0.00125
	(A_N * !B * Y)	-0.00094	-0.00098	-0.00097
	(A_N * !B * Y)	0.00125	0.00127	0.00125
	(!A_N * !B * Y)	-0.00090	-0.00094	-0.00093
	(!A_N * !B * Y)	0.00129	0.00131	0.00129
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	-0.00200	-0.00211	-0.00209
	(A_N * B * Y)	0.00251	0.00252	0.00251
	(A_N * !B * Y)	-0.00203	-0.00210	-0.00210
	(A_N * !B * Y)	0.00250	0.00254	0.00251
	(!A_N * !B * Y)	-0.00178	-0.00187	-0.00186
	(!A_N * !B * Y)	0.00276	0.00278	0.00275
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	-0.00381	-0.00401	-0.00398
	(A_N * B * Y)	0.00262	0.00260	0.00257
	(A_N * !B * Y)	-0.00380	-0.00402	-0.00399
	(A_N * !B * Y)	0.00267	0.00265	0.00261
	(!A_N * !B * Y)	-0.00347	-0.00370	-0.00366
	(!A_N * !B * Y)	0.00300	0.00297	0.00292

SKY130_FD_SC_HS__NAND3x

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT			OUTPUT
A	B	C	Y
0	x	x	1
1	0	x	1
1	1	0	1
1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand3_1	7.99200
sky130_fd_sc_hs__nand3_2	11.18880
sky130_fd_sc_hs__nand3_4	20.77920

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	Y
sky130_fd_sc_hs__nand3_1	0.00275	0.00279	0.00270	0.75979
sky130_fd_sc_hs__nand3_2	0.00514	0.00558	0.00509	1.24328
sky130_fd_sc_hs__nand3_4	0.00767	0.00755	0.00758	1.48578

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand3_1	0.00000	0.01087	0.07330
sky130_fd_sc_hs__nand3_2	0.00000	0.02173	0.14659
sky130_fd_sc_hs__nand3_4	0.00000	0.02514	0.14659

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)	0.05463	0.97472	11.73710
	B->Y (FR)	0.06705	0.98565	11.73160
	C->Y (FR)	0.07504	0.99777	11.76270
sky130_fd_sc_hs__nand3_2	A->Y (FR)	0.04955	0.87937	11.68300
	B->Y (FR)	0.05958	0.83333	10.75600
	C->Y (FR)	0.07005	0.84826	10.79880
sky130_fd_sc_hs__nand3_4	A->Y (FR)	0.05439	0.86175	11.73790
	B->Y (FR)	0.08244	0.87955	11.65250
	C->Y (FR)	0.09982	0.89609	11.53160

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand3_1	A->Y (RF)	0.04195	0.71783	8.65007
	B->Y (RF)	0.05071	0.70162	8.33207
	C->Y (RF)	0.05420	0.66051	7.77883
sky130_fd_sc_hs__nand3_2	A->Y (RF)	0.03484	0.60763	8.14453
	B->Y (RF)	0.04738	0.59762	7.83974
	C->Y (RF)	0.05307	0.55759	7.25436
sky130_fd_sc_hs__nand3_4	A->Y (RF)	0.02818	0.48085	6.64542
	B->Y (RF)	0.03992	0.45837	6.14091
	C->Y (RF)	0.04427	0.40878	5.39005

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	-0.00025	-0.00024	0.00008
	A	0.00278	0.00278	0.00317
	B	0.00023	0.00019	0.00049
	B	0.00386	0.00383	0.00419
	C	0.00046	0.00044	0.00074
	C	0.00477	0.00475	0.00512
sky130_fd_sc_hs__nand3_2	A	-0.00093	-0.00087	-0.00010
	A	0.00480	0.00487	0.00564
	B	0.00033	0.00026	0.00094
	B	0.00759	0.00751	0.00761
	C	0.00126	0.00119	0.00188
	C	0.00965	0.00957	0.00989
sky130_fd_sc_hs__nand3_4	A	-0.00195	-0.00187	-0.00067
	A	0.00653	0.00661	0.00791
	B	0.00038	-0.00003	0.00117
	B	0.01145	0.01065	0.01234
	C	0.00175	0.00153	0.00256
	C	0.01557	0.01537	0.01644

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	0.00374	0.00363	0.00389
	A	0.00073	0.00067	0.00084
	B	0.00444	0.00439	0.00461
	B	0.00075	0.00070	0.00079
	C	0.00512	0.00508	0.00527
	C	0.00072	0.00066	0.00075
sky130_fd_sc_hs__nand3_2	A	0.00635	0.00633	0.00677
	A	0.00064	0.00058	0.00091
	B	0.00793	0.00780	0.00828
	B	0.00058	0.00045	0.00069
	C	0.00926	0.00917	0.00952
	C	0.00062	0.00049	0.00074
sky130_fd_sc_hs__nand3_4	A	0.00955	0.00950	0.01051
	A	0.00110	0.00098	0.00153
	B	0.01247	0.01235	0.01457
	B	0.00119	0.00107	0.00140
	C	0.01538	0.01532	0.01618
	C	0.00105	0.00091	0.00123

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	0.00038	0.00038	0.00035
	(B * !C * Y)	-0.00147	-0.00148	-0.00153
	(!B * Y)	0.00038	0.00038	0.00037
	(!B * Y)	-0.00151	-0.00151	-0.00153
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	0.00075	0.00075	0.00067
	(B * !C * Y)	-0.00272	-0.00274	-0.00287
	(!B * Y)	0.00077	0.00077	0.00072
	(!B * Y)	-0.00281	-0.00283	-0.00288
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	0.00139	0.00139	0.00125
	(B * !C * Y)	-0.00326	-0.00329	-0.00355
	(!B * Y)	0.00142	0.00142	0.00133
	(!B * Y)	-0.00344	-0.00347	-0.00358

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	-0.00035	-0.00035	-0.00035
	(B * !C * Y)	0.00153	0.00155	0.00154
	(!B * Y)	-0.00036	-0.00036	-0.00035
	(!B * Y)	0.00153	0.00155	0.00154
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	-0.00066	-0.00066	-0.00065
	(B * !C * Y)	0.00290	0.00290	0.00289
	(!B * Y)	-0.00070	-0.00070	-0.00070
	(!B * Y)	0.00289	0.00290	0.00289
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	-0.00125	-0.00126	-0.00124
	(B * !C * Y)	0.00359	0.00363	0.00358
	(!B * Y)	-0.00129	-0.00131	-0.00129
	(!B * Y)	0.00358	0.00364	0.00358

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	0.00048	0.00048	0.00048
	(A * !C * Y)	-0.00129	-0.00129	-0.00128
	(!A * C * Y)	0.00098	0.00098	0.00098
	(!A * C * Y)	-0.00129	-0.00129	-0.00129
	(!A * !C * Y)	0.00054	0.00055	0.00055
	(!A * !C * Y)	-0.00129	-0.00130	-0.00129
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	0.00095	0.00097	0.00097
	(A * !C * Y)	-0.00271	-0.00273	-0.00270
	(!A * C * Y)	0.00193	0.00196	0.00194
	(!A * C * Y)	-0.00270	-0.00272	-0.00270
	(!A * !C * Y)	0.00113	0.00114	0.00113
	(!A * !C * Y)	-0.00272	-0.00274	-0.00273
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	0.00174	0.00174	0.00176
	(A * !C * Y)	-0.00267	-0.00267	-0.00264
	(!A * C * Y)	0.00382	0.00387	0.00384
	(!A * C * Y)	-0.00266	-0.00268	-0.00266
	(!A * !C * Y)	0.00204	0.00203	0.00202
	(!A * !C * Y)	-0.00271	-0.00271	-0.00270

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	-0.00045	-0.00045	-0.00047
	(A * !C * Y)	0.00132	0.00133	0.00130
	(!A * C * Y)	-0.00092	-0.00098	-0.00098
	(!A * C * Y)	0.00133	0.00131	0.00130
	(!A * !C * Y)	-0.00054	-0.00055	-0.00055
	(!A * !C * Y)	0.00135	0.00136	0.00131
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	-0.00091	-0.00091	-0.00093
	(A * !C * Y)	0.00280	0.00280	0.00274
	(!A * C * Y)	-0.00181	-0.00196	-0.00194
	(!A * C * Y)	0.00274	0.00274	0.00271
	(!A * !C * Y)	-0.00113	-0.00114	-0.00113
	(!A * !C * Y)	0.00282	0.00281	0.00274
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	-0.00163	-0.00164	-0.00168
	(A * !C * Y)	0.00281	0.00282	0.00271
	(!A * C * Y)	-0.00353	-0.00387	-0.00384
	(!A * C * Y)	0.00284	0.00271	0.00268
	(!A * !C * Y)	-0.00204	-0.00203	-0.00202
	(!A * !C * Y)	0.00291	0.00293	0.00274

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	0.00103	0.00104	0.00104
	(A * !B * Y)	-0.00130	-0.00131	-0.00130
	(!A * B * Y)	0.00103	0.00103	0.00103
	(!A * B * Y)	-0.00130	-0.00131	-0.00130
	(!A * !B * Y)	0.00104	0.00104	0.00104
	(!A * !B * Y)	-0.00130	-0.00130	-0.00130
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	0.00191	0.00192	0.00191
	(A * !B * Y)	-0.00256	-0.00257	-0.00256
	(!A * B * Y)	0.00187	0.00188	0.00187
	(!A * B * Y)	-0.00256	-0.00256	-0.00255
	(!A * !B * Y)	0.00191	0.00192	0.00191
	(!A * !B * Y)	-0.00256	-0.00257	-0.00256
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	0.00385	0.00390	0.00386
	(A * !B * Y)	-0.00269	-0.00272	-0.00270
	(!A * B * Y)	0.00380	0.00382	0.00379
	(!A * B * Y)	-0.00270	-0.00271	-0.00270
	(!A * !B * Y)	0.00387	0.00390	0.00386
	(!A * !B * Y)	-0.00270	-0.00272	-0.00270

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	-0.00100	-0.00104	-0.00104
	(A * !B * Y)	0.00130	0.00133	0.00131
	(!A * B * Y)	-0.00097	-0.00103	-0.00103
	(!A * B * Y)	0.00131	0.00131	0.00131
	(!A * !B * Y)	-0.00101	-0.00104	-0.00104
	(!A * !B * Y)	0.00130	0.00132	0.00131
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	-0.00183	-0.00192	-0.00191
	(A * !B * Y)	0.00256	0.00259	0.00256
	(!A * B * Y)	-0.00175	-0.00188	-0.00187
	(!A * B * Y)	0.00256	0.00257	0.00256
	(!A * !B * Y)	-0.00183	-0.00192	-0.00191
	(!A * !B * Y)	0.00256	0.00259	0.00256
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	-0.00371	-0.00389	-0.00386
	(A * !B * Y)	0.00270	0.00273	0.00271
	(!A * B * Y)	-0.00354	-0.00382	-0.00379
	(!A * B * Y)	0.00270	0.00272	0.00271
	(!A * !B * Y)	-0.00372	-0.00389	-0.00386
	(!A * !B * Y)	0.00270	0.00273	0.00271

SKY130_FD_SC_HS__NAND4BBx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT				OUTPUT
A_N	B_N	C	D	Y
0	x	0	x	1
0	x	1	0	1
0	0	1	1	0
x	1	1	1	1
1	x	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand4bb_1	14.38560
sky130_fd_sc_hs__nand4bb_2	22.37760
sky130_fd_sc_hs__nand4bb_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A_N	B_N	C	D	Y
sky130_fd_sc_hs__nand4bb_1	0.00215	0.00209	0.00278	0.00280	0.71486
sky130_fd_sc_hs__nand4bb_2	0.00246	0.00242	0.00522	0.00515	1.33874
sky130_fd_sc_hs__nand4bb_4	0.00343	0.00354	0.01014	0.01017	2.29386

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand4bb_1	0.00000	0.12972	0.24043
sky130_fd_sc_hs__nand4bb_2	0.00000	0.08091	0.20670
sky130_fd_sc_hs__nand4bb_4	0.00000	0.27355	0.48223

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)	0.10116	0.76539	7.10277
	B_N->Y (RR)	0.11622	0.78005	7.08435
	C->Y (FR)	0.08734	1.00133	11.51580
	D->Y (FR)	0.09751	1.01485	11.53870
sky130_fd_sc_hs__nand4bb_2	A_N->Y (RR)	0.09235	0.62895	6.50284
	B_N->Y (RR)	0.10755	0.62635	6.18694
	C->Y (FR)	0.07192	0.85690	11.03470
	D->Y (FR)	0.08223	0.87248	11.10860
sky130_fd_sc_hs__nand4bb_4	A_N->Y (RR)	0.11105	0.57791	5.99212
	B_N->Y (RR)	0.13047	0.60487	6.08348
	C->Y (FR)	0.06998	0.76528	10.55920
	D->Y (FR)	0.07979	0.77960	10.62100

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)	0.13790	0.91624	7.98099
	B_N->Y (FF)	0.15432	0.93858	8.01933
	C->Y (RF)	0.08704	0.79935	9.10804
	D->Y (RF)	0.09351	0.77402	8.67940
sky130_fd_sc_hs__nand4bb_2	A_N->Y (FF)	0.15815	0.93355	9.18291
	B_N->Y (FF)	0.18900	0.97324	9.26967
	C->Y (RF)	0.08929	0.72382	9.66006
	D->Y (RF)	0.09495	0.70284	9.23782
sky130_fd_sc_hs__nand4bb_4	A_N->Y (FF)	0.15712	0.82501	8.70568
	B_N->Y (FF)	0.18167	0.85624	8.75953
	C->Y (RF)	0.09255	0.62494	9.34479
	D->Y (RF)	0.09762	0.59614	8.82447

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	0.00500	0.00494	0.00879
	A_N	0.00320	0.00313	0.00702
	B_N	0.00545	0.00534	0.00915
	B_N	0.00371	0.00359	0.00744
	C	0.00083	0.00077	0.00105
	C	0.00385	0.00379	0.00407
	D	0.00120	0.00113	0.00142
	D	0.00477	0.00470	0.00499
sky130_fd_sc_hs__nand4bb_2	A_N	0.00705	0.00715	0.01066
	A_N	0.00511	0.00522	0.00889
	B_N	0.00868	0.00860	0.01200
	B_N	0.00682	0.00673	0.01046
	C	0.00133	0.00116	0.00179
	C	0.00682	0.00666	0.00726
	D	0.00231	0.00219	0.00272
	D	0.00906	0.00896	0.00952
sky130_fd_sc_hs__nand4bb_4	A_N	0.01168	0.01192	0.01788
	A_N	0.00918	0.00945	0.01565
	B_N	0.01429	0.01417	0.01995
	B_N	0.01171	0.01162	0.01744
	C	0.00216	0.00173	0.00366
	C	0.01301	0.01260	0.01462
	D	0.00376	0.00357	0.00521
	D	0.01717	0.01699	0.01868

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4bb_1	A_N	0.00422	0.00443	0.00894
	A_N	0.00603	0.00625	0.01068
	B_N	0.00518	0.00536	0.00988
	B_N	0.00693	0.00709	0.01158
	C	0.00601	0.00595	0.00607
	C	0.00298	0.00291	0.00299
	D	0.00672	0.00666	0.00683
	D	0.00308	0.00300	0.00308
sky130_fd_sc_hs__nand4bb_2	A_N	0.00715	0.00745	0.01141
	A_N	0.00908	0.00938	0.01328
	B_N	0.00897	0.00926	0.01317
	B_N	0.01083	0.01112	0.01498
	C	0.01059	0.01044	0.01068
	C	0.00507	0.00492	0.00513
	D	0.01200	0.01188	0.01215
	D	0.00504	0.00489	0.00508
sky130_fd_sc_hs__nand4bb_4	A_N	0.01442	0.01482	0.02252
	A_N	0.01690	0.01731	0.02500
	B_N	0.01745	0.01791	0.02569
	B_N	0.02002	0.02049	0.02799
	C	0.02080	0.02041	0.02125
	C	0.00990	0.00950	0.01011
	D	0.02369	0.02338	0.02410
	D	0.00987	0.00947	0.01009

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)	0.00357	0.00344	0.00733
	(B_N * Y)	0.00129	0.00116	0.00505
	(!B_N * C * !D * Y)	0.00391	0.00381	0.00767
	(!B_N * C * !D * Y)	0.00163	0.00152	0.00539
	(!B_N * !C * Y)	0.00391	0.00381	0.00767
	(!B_N * !C * Y)	0.00163	0.00152	0.00539
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.00532	0.00515	0.00859
	(B_N * Y)	0.00285	0.00265	0.00611
	(!B_N * C * !D * Y)	0.00574	0.00556	0.00900
	(!B_N * C * !D * Y)	0.00323	0.00305	0.00650
	(!B_N * !C * Y)	0.00574	0.00555	0.00900
	(!B_N * !C * Y)	0.00324	0.00305	0.00650
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.00871	0.00842	0.01436
	(B_N * Y)	0.00516	0.00485	0.01079
	(!B_N * C * !D * Y)	0.00928	0.00899	0.01491
	(!B_N * C * !D * Y)	0.00568	0.00537	0.01131
	(!B_N * !C * Y)	0.00927	0.00898	0.01491
	(!B_N * !C * Y)	0.00568	0.00538	0.01132

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)	0.00035	0.00055	0.00487
	(B_N * Y)	0.00263	0.00283	0.00715
	(!B_N * C * !D * Y)	0.00005	0.00023	0.00455
	(!B_N * C * !D * Y)	0.00240	0.00260	0.00689
	(!B_N * !C * Y)	0.00003	0.00021	0.00454
	(!B_N * !C * Y)	0.00232	0.00252	0.00683
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.00093	0.00093	0.00471
	(B_N * Y)	0.00341	0.00341	0.00719
	(!B_N * C * !D * Y)	0.00057	0.00057	0.00432
	(!B_N * C * !D * Y)	0.00322	0.00322	0.00693
	(!B_N * !C * Y)	0.00053	0.00054	0.00430
	(!B_N * !C * Y)	0.00306	0.00306	0.00682
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.00185	0.00192	0.00917
	(B_N * Y)	0.00541	0.00549	0.01273
	(!B_N * C * !D * Y)	0.00141	0.00148	0.00866
	(!B_N * C * !D * Y)	0.00533	0.00540	0.01252
	(!B_N * !C * Y)	0.00135	0.00141	0.00864
	(!B_N * !C * Y)	0.00501	0.00509	0.01228

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)	0.00351	0.00334	0.00704
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00131	0.00112	0.00484
	(!C * Y)	0.00358	0.00346	0.00725
	(!C * Y)	0.00131	0.00118	0.00496
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00512	0.00487	0.00808
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00271	0.00243	0.00565
	(!C * Y)	0.00525	0.00509	0.00839
	(!C * Y)	0.00270	0.00252	0.00583
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00856	0.00814	0.01356
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00488	0.00446	0.00989
	(!C * Y)	0.00893	0.00862	0.01424
	(!C * Y)	0.00498	0.00467	0.01028

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)	0.00088	0.00099	0.00539
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00309	0.00321	0.00761
	(!C * Y)	0.00049	0.00061	0.00503
	(!C * Y)	0.00276	0.00287	0.00729
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00202	0.00213	0.00578
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00444	0.00455	0.00820
	(!C * Y)	0.00128	0.00139	0.00506
	(!C * Y)	0.00381	0.00392	0.00760
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00370	0.00377	0.01100
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00736	0.00745	0.01467
	(!C * Y)	0.00221	0.00244	0.00956
	(!C * Y)	0.00609	0.00633	0.01344

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)**	0.00107	0.00108	0.00107
	(A_N * B_N * D * Y)	-0.00133	-0.00134	-0.00133
	(A_N * B_N * !D * Y)	0.00073	0.00073	0.00072
	(A_N * B_N * !D * Y)	-0.00134	-0.00134	-0.00133
	(A_N * !B_N * D * Y)	0.00092	0.00093	0.00092
	(A_N * !B_N * D * Y)	-0.00149	-0.00150	-0.00149
	(A_N * !B_N * !D * Y)	0.00054	0.00054	0.00054
	(A_N * !B_N * !D * Y)	-0.00160	-0.00160	-0.00159
	(!A_N * B_N * D * Y)	0.00107	0.00108	0.00107
	(!A_N * B_N * D * Y)	-0.00133	-0.00134	-0.00133
	(!A_N * B_N * !D * Y)	0.00071	0.00070	0.00070
	(!A_N * B_N * !D * Y)	-0.00134	-0.00134	-0.00133
	(!A_N * !B_N * !D * Y)	0.00045	0.00045	0.00046
	(!A_N * !B_N * !D * Y)	-0.00149	-0.00150	-0.00149
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	0.00202	0.00204	0.00202
	(A_N * B_N * D * Y)	-0.00260	-0.00261	-0.00260
	(A_N * B_N * !D * Y)	0.00128	0.00129	0.00128
	(A_N * B_N * !D * Y)	-0.00260	-0.00261	-0.00260
	(A_N * !B_N * D * Y)	0.00194	0.00196	0.00194
	(A_N * !B_N * D * Y)	-0.00270	-0.00272	-0.00268
	(A_N * !B_N * !D * Y)	0.00117	0.00118	0.00117
	(A_N * !B_N * !D * Y)	-0.00289	-0.00291	-0.00289
	(!A_N * B_N * D * Y)	0.00202	0.00204	0.00202
	(!A_N * B_N * D * Y)	-0.00260	-0.00262	-0.00260
	(!A_N * B_N * !D * Y)	0.00123	0.00124	0.00123
	(!A_N * B_N * !D * Y)	-0.00260	-0.00262	-0.00261
	(!A_N * !B_N * !D * Y)	0.00097	0.00098	0.00098
	(!A_N * !B_N * !D * Y)	-0.00268	-0.00270	-0.00269

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * D * Y)**	0.00403	0.00406	0.00404
	(A_N * B_N * D * Y)	-0.00507	-0.00510	-0.00508
	(A_N * B_N * !D * Y)	0.00253	0.00255	0.00253
	(A_N * B_N * !D * Y)	-0.00508	-0.00511	-0.00509
	(A_N * !B_N * D * Y)	0.00384	0.00387	0.00384
	(A_N * !B_N * D * Y)	-0.00536	-0.00537	-0.00529
	(A_N * !B_N * !D * Y)	0.00223	0.00227	0.00224
	(A_N * !B_N * !D * Y)	-0.00571	-0.00577	-0.00572
	(!A_N * B_N * D * Y)	0.00402	0.00408	0.00404
	(!A_N * B_N * D * Y)	-0.00508	-0.00512	-0.00509
	(!A_N * B_N * !D * Y)	0.00242	0.00245	0.00243
	(!A_N * B_N * !D * Y)	-0.00509	-0.00512	-0.00510
	(!A_N * !B_N * !D * Y)	0.00186	0.00188	0.00188
	(!A_N * !B_N * !D * Y)	-0.00531	-0.00534	-0.00533

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)**	-0.00105	-0.00108	-0.00107
	(A_N * B_N * D * Y)	0.00134	0.00135	0.00134
	(A_N * B_N * !D * Y)	-0.00073	-0.00073	-0.00072
	(A_N * B_N * !D * Y)	0.00134	0.00135	0.00134
	(A_N * !B_N * D * Y)	-0.00085	-0.00092	-0.00092
	(A_N * !B_N * D * Y)	0.00155	0.00151	0.00149
	(A_N * !B_N * !D * Y)	-0.00054	-0.00054	-0.00054
	(A_N * !B_N * !D * Y)	0.00163	0.00164	0.00164
	(!A_N * B_N * D * Y)	-0.00105	-0.00108	-0.00107
	(!A_N * B_N * D * Y)	0.00135	0.00135	0.00133
	(!A_N * B_N * !D * Y)	-0.00071	-0.00070	-0.00070
	(!A_N * B_N * !D * Y)	0.00136	0.00136	0.00134
	(!A_N * !B_N * !D * Y)	-0.00043	-0.00043	-0.00043
	(!A_N * !B_N * !D * Y)	0.00151	0.00152	0.00151
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	-0.00198	-0.00204	-0.00202
	(A_N * B_N * D * Y)	0.00260	0.00264	0.00261
	(A_N * B_N * !D * Y)	-0.00128	-0.00129	-0.00128
	(A_N * B_N * !D * Y)	0.00263	0.00262	0.00261
	(A_N * !B_N * D * Y)	-0.00183	-0.00196	-0.00194
	(A_N * !B_N * D * Y)	0.00282	0.00273	0.00268
	(A_N * !B_N * !D * Y)	-0.00117	-0.00118	-0.00117
	(A_N * !B_N * !D * Y)	0.00292	0.00299	0.00297
	(!A_N * B_N * D * Y)	-0.00197	-0.00204	-0.00202
	(!A_N * B_N * D * Y)	0.00261	0.00264	0.00261
	(!A_N * B_N * !D * Y)	-0.00123	-0.00124	-0.00123
	(!A_N * B_N * !D * Y)	0.00266	0.00265	0.00262
	(!A_N * !B_N * !D * Y)	-0.00093	-0.00093	-0.00093
	(!A_N * !B_N * !D * Y)	0.00273	0.00275	0.00273

sky130_fd_sc_hs__nand4bb_4	(A_N * B_N * D * Y)	-0.00394	-0.00406	-0.00404
	(A_N * B_N * D * Y)	0.00510	0.00517	0.00511
	(A_N * B_N * !D * Y)	-0.00253	-0.00255	-0.00253
	(A_N * B_N * !D * Y)	0.00515	0.00513	0.00512
	(A_N * !B_N * D * Y)	-0.00358	-0.00387	-0.00384
	(A_N * !B_N * D * Y)	0.00559	0.00538	0.00529
	(A_N * !B_N * !D * Y)	-0.00223	-0.00227	-0.00224
	(A_N * !B_N * !D * Y)	0.00581	0.00594	0.00590
	(!A_N * B_N * D * Y)	-0.00391	-0.00407	-0.00404
	(!A_N * B_N * D * Y)	0.00514	0.00517	0.00511
	(!A_N * B_N * !D * Y)	-0.00242	-0.00245	-0.00243
	(!A_N * B_N * !D * Y)	0.00523	0.00521	0.00514
	(!A_N * !B_N * !D * Y)	-0.00179	-0.00180	-0.00179
	(!A_N * !B_N * !D * Y)	0.00540	0.00543	0.00539

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)	0.00093	0.00094	0.00093
	(A_N * B_N * C * Y)	-0.00140	-0.00141	-0.00140
	(A_N * !C * Y)	0.00094	0.00095	0.00094
	(A_N * !C * Y)	-0.00140	-0.00141	-0.00140
	(A_N * !B_N * C * Y)	0.00091	0.00091	0.00091
	(A_N * !B_N * C * Y)	-0.00143	-0.00143	-0.00143
	(!A_N * B_N * C * Y)	0.00093	0.00094	0.00093
	(!A_N * B_N * C * Y)	-0.00140	-0.00141	-0.00140
	(!A_N * B_N * !C * Y)	0.00093	0.00095	0.00094
	(!A_N * B_N * !C * Y)	-0.00139	-0.00141	-0.00140
	(!A_N * !B_N * !C * Y)	0.00093	0.00094	0.00094
	(!A_N * !B_N * !C * Y)	-0.00140	-0.00141	-0.00140

sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	0.00194	0.00195	0.00194
	(A_N * B_N * C * Y)	-0.00254	-0.00254	-0.00254
	(A_N * !C * Y)	0.00197	0.00198	0.00196
	(A_N * !C * Y)	-0.00254	-0.00255	-0.00254
	(A_N * !B_N * C * Y)	0.00191	0.00193	0.00191
	(A_N * !B_N * C * Y)	-0.00261	-0.00262	-0.00260
	(!A_N * B_N * C * Y)	0.00193	0.00196	0.00194
	(!A_N * B_N * C * Y)	-0.00253	-0.00255	-0.00254
	(!A_N * B_N * !C * Y)	0.00196	0.00198	0.00196
	(!A_N * B_N * !C * Y)	-0.00254	-0.00255	-0.00254
	(!A_N * !B_N * !C * Y)	0.00197	0.00199	0.00196
	(!A_N * !B_N * !C * Y)	-0.00254	-0.00255	-0.00254
sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	0.00387	0.00389	0.00386
	(A_N * B_N * C * Y)	-0.00507	-0.00508	-0.00505
	(A_N * !C * Y)	0.00390	0.00395	0.00390
	(A_N * !C * Y)	-0.00505	-0.00508	-0.00505
	(A_N * !B_N * C * Y)	0.00382	0.00385	0.00381
	(A_N * !B_N * C * Y)	-0.00522	-0.00523	-0.00517
	(!A_N * B_N * C * Y)	0.00387	0.00389	0.00386
	(!A_N * B_N * C * Y)	-0.00507	-0.00508	-0.00505
	(!A_N * B_N * !C * Y)	0.00389	0.00394	0.00390
	(!A_N * B_N * !C * Y)	-0.00505	-0.00508	-0.00505
	(!A_N * !B_N * !C * Y)	0.00389	0.00392	0.00390
	(!A_N * !B_N * !C * Y)	-0.00505	-0.00507	-0.00505

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)**	-0.00088	-0.00094	-0.00093
	(A_N * B_N * C * Y)	0.00141	0.00142	0.00141
	(A_N * !C * Y)	-0.00091	-0.00094	-0.00094
	(A_N * !C * Y)	0.00141	0.00142	0.00141
	(A_N * !B_N * C * Y)	-0.00086	-0.00091	-0.00091
	(A_N * !B_N * C * Y)	0.00147	0.00144	0.00143
	(!A_N * B_N * C * Y)	-0.00088	-0.00094	-0.00093
	(!A_N * B_N * C * Y)	0.00140	0.00141	0.00141
	(!A_N * B_N * !C * Y)	-0.00091	-0.00094	-0.00094
	(!A_N * B_N * !C * Y)	0.00141	0.00142	0.00141
	(!A_N * !B_N * !C * Y)	-0.00091	-0.00094	-0.00094
	(!A_N * !B_N * !C * Y)	0.00142	0.00142	0.00141
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	-0.00183	-0.00195	-0.00194
	(A_N * B_N * C * Y)	0.00254	0.00256	0.00254
	(A_N * !C * Y)	-0.00189	-0.00198	-0.00196
	(A_N * !C * Y)	0.00254	0.00257	0.00254
	(A_N * !B_N * C * Y)	-0.00179	-0.00193	-0.00191
	(A_N * !B_N * C * Y)	0.00267	0.00262	0.00260
	(!A_N * B_N * C * Y)	-0.00183	-0.00196	-0.00194
	(!A_N * B_N * C * Y)	0.00254	0.00256	0.00254
	(!A_N * B_N * !C * Y)	-0.00189	-0.00198	-0.00196
	(!A_N * B_N * !C * Y)	0.00254	0.00257	0.00254
	(!A_N * !B_N * !C * Y)	-0.00188	-0.00197	-0.00196
	(!A_N * !B_N * !C * Y)	0.00255	0.00257	0.00254

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	-0.00365	-0.00389	-0.00386
	(A_N * B_N * C * Y)	0.00507	0.00510	0.00507
	(A_N * !C * Y)	-0.00375	-0.00393	-0.00390
	(A_N * !C * Y)	0.00505	0.00512	0.00507
	(A_N * !B_N * C * Y)	-0.00356	-0.00385	-0.00381
	(A_N * !B_N * C * Y)	0.00532	0.00523	0.00517
	(!A_N * B_N * C * Y)	-0.00365	-0.00389	-0.00386
	(!A_N * B_N * C * Y)	0.00507	0.00510	0.00507
	(!A_N * B_N * !C * Y)	-0.00375	-0.00393	-0.00390
	(!A_N * B_N * !C * Y)	0.00505	0.00512	0.00507
	(!A_N * !B_N * !C * Y)	-0.00375	-0.00392	-0.00390
	(!A_N * !B_N * !C * Y)	0.00511	0.00512	0.00507

SKY130_FD_SC_HS__NAND4Bx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage 1.44, Temp 25.00

Truth Table

INPUT				OUTPUT
A_N	B	C	D	Y
x	0	x	x	1
x	1	0	x	1
x	1	1	0	1
0	1	1	1	0
1	1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand4b_1	11.18880
sky130_fd_sc_hs__nand4b_2	19.18080
sky130_fd_sc_hs__nand4b_4	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A_N	B	C	D	Y
sky130_fd_sc_hs__nand4b_1	0.00211	0.00272	0.00272	0.00263	0.75295
sky130_fd_sc_hs__nand4b_2	0.00265	0.00537	0.00520	0.00520	1.35102
sky130_fd_sc_hs__nand4b_4	0.00369	0.00764	0.00779	0.00746	1.49753

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4b_1	0.00000	0.06856	0.12408
sky130_fd_sc_hs__nand4b_2	0.00000	0.04785	0.20108
sky130_fd_sc_hs__nand4b_4	0.00000	0.13936	0.25659

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)	0.09160	0.73351	6.82581
	B->Y (FR)	0.06992	0.99908	11.84560
	C->Y (FR)	0.08115	1.01084	11.85400
	D->Y (FR)	0.08563	1.00782	11.71470
sky130_fd_sc_hs__nand4b_2	A_N->Y (RR)	0.09064	0.60469	6.13385
	B->Y (FR)	0.06260	0.84481	11.06370
	C->Y (FR)	0.07416	0.86611	11.21040
	D->Y (FR)	0.08276	0.87559	11.16640
sky130_fd_sc_hs__nand4b_4	A_N->Y (RR)	0.11210	0.66719	6.97552
	B->Y (FR)	0.08637	0.87922	11.59100
	C->Y (FR)	0.10868	0.90400	11.61750
	D->Y (FR)	0.12868	0.93255	11.73850

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)	0.13414	0.92993	8.25611
	B->Y (RF)	0.06715	0.82773	9.82008
	C->Y (RF)	0.07631	0.80044	9.36160
	D->Y (RF)	0.07979	0.77255	8.93974
sky130_fd_sc_hs__nand4b_2	A_N->Y (FF)	0.14947	0.91856	9.14678
	B->Y (RF)	0.07345	0.76493	10.36650
	C->Y (RF)	0.08270	0.71851	9.66191
	D->Y (RF)	0.08900	0.69793	9.24879
sky130_fd_sc_hs__nand4b_4	A_N->Y (FF)	0.11646	0.67218	6.03350
	B->Y (RF)	0.06217	0.56347	7.54368
	C->Y (RF)	0.07225	0.52235	6.85909
	D->Y (RF)	0.07735	0.49427	6.32959

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	0.00489	0.00485	0.00865
	A_N	0.00298	0.00309	0.00746
	B	0.00041	0.00039	0.00067
	B	0.00333	0.00330	0.00367
	C	0.00083	0.00077	0.00105
	C	0.00423	0.00417	0.00452
	D	0.00112	0.00108	0.00135
	D	0.00507	0.00503	0.00534
sky130_fd_sc_hs__nand4b_2	A_N	0.00708	0.00717	0.01024
	A_N	0.00522	0.00533	0.00843
	B	0.00034	0.00017	0.00088
	B	0.00637	0.00620	0.00694
	C	0.00125	0.00109	0.00170
	C	0.00837	0.00822	0.00881
	D	0.00217	0.00200	0.00259
	D	0.01060	0.01044	0.01106
sky130_fd_sc_hs__nand4b_4	A_N	0.00907	0.00937	0.01546
	A_N	0.00635	0.00666	0.01276
	B	0.00042	-0.00007	0.00110
	B	0.00892	0.00805	0.00971
	C	0.00194	0.00137	0.00244
	C	0.01303	0.01214	0.01361
	D	0.00354	0.00313	0.00416
	D	0.01699	0.01606	0.01765

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4b_1	A_N	0.00384	0.00402	0.00842
	A_N	0.00576	0.00595	0.01033
	B	0.00452	0.00447	0.00457
	B	0.00160	0.00154	0.00163
	C	0.00518	0.00513	0.00523
	C	0.00172	0.00166	0.00174
	D	0.00579	0.00575	0.00584
	D	0.00170	0.00164	0.00173
sky130_fd_sc_hs__nand4b_2	A_N	0.00699	0.00722	0.01107
	A_N	0.00885	0.00908	0.01291
	B	0.00913	0.00899	0.00924
	B	0.00306	0.00291	0.00313
	C	0.01044	0.01030	0.01053
	C	0.00317	0.00303	0.00323
	D	0.01191	0.01179	0.01206
	D	0.00314	0.00299	0.00318
sky130_fd_sc_hs__nand4b_4	A_N	0.01061	0.01086	0.01897
	A_N	0.01331	0.01356	0.02125
	B	0.01414	0.01399	0.01429
	B	0.00556	0.00541	0.00573
	C	0.01702	0.01692	0.01776
	C	0.00561	0.00544	0.00573
	D	0.01974	0.01960	0.01987
	D	0.00565	0.00550	0.00578

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)	0.00385	0.00372	0.00753
	(B * C * !D * Y)	0.00148	0.00133	0.00515
	(B * !C * Y)	0.00385	0.00371	0.00752
	(B * !C * Y)	0.00148	0.00133	0.00515
	(!B * Y)	0.00383	0.00369	0.00751
	(!B * Y)	0.00148	0.00133	0.00515
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.00577	0.00556	0.00904
	(B * C * !D * Y)	0.00282	0.00260	0.00609
	(B * !C * Y)	0.00576	0.00556	0.00904
	(B * !C * Y)	0.00282	0.00260	0.00609
	(!B * Y)	0.00573	0.00553	0.00901
	(!B * Y)	0.00282	0.00260	0.00609
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.00686	0.00658	0.01317
	(B * C * !D * Y)	0.00272	0.00242	0.00904
	(B * !C * Y)	0.00685	0.00657	0.01317
	(B * !C * Y)	0.00272	0.00242	0.00904
	(!B * Y)	0.00679	0.00650	0.01311
	(!B * Y)	0.00273	0.00243	0.00905

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)	0.00036	0.00045	0.00483
	(B * C * !D * Y)	0.00283	0.00293	0.00728
	(B * !C * Y)	0.00036	0.00045	0.00483
	(B * !C * Y)	0.00279	0.00288	0.00725
	(!B * Y)	0.00036	0.00045	0.00484
	(!B * Y)	0.00272	0.00281	0.00720
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.00047	0.00051	0.00422
	(B * C * !D * Y)	0.00362	0.00367	0.00732
	(B * !C * Y)	0.00044	0.00048	0.00421
	(B * !C * Y)	0.00350	0.00355	0.00724
	(!B * Y)	0.00042	0.00046	0.00421
	(!B * Y)	0.00334	0.00339	0.00714
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.00103	0.00116	0.00873
	(B * C * !D * Y)	0.00558	0.00570	0.01317
	(B * !C * Y)	0.00096	0.00109	0.00870
	(B * !C * Y)	0.00534	0.00547	0.01302
	(!B * Y)	0.00094	0.00108	0.00873
	(!B * Y)	0.00505	0.00517	0.01281

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)**	0.00110	0.00111	0.00110
	(A_N * C * D * Y)	-0.00127	-0.00128	-0.00127
	(A_N * C * !D * Y)	0.00072	0.00072	0.00072
	(A_N * C * !D * Y)	-0.00127	-0.00127	-0.00127
	(A_N * !C * Y)	0.00072	0.00073	0.00072
	(A_N * !C * Y)	-0.00127	-0.00128	-0.00127
	(!A_N * C * !D * Y)	0.00042	0.00042	0.00042
	(!A_N * C * !D * Y)	-0.00145	-0.00146	-0.00147
	(!A_N * !C * Y)	0.00044	0.00044	0.00044
	(!A_N * !C * Y)	-0.00148	-0.00148	-0.00148
sky130_fd_sc_hs__nand4b_2	**(A_N * C * D * Y)**	0.00202	0.00205	0.00203
	(A_N * C * D * Y)	-0.00269	-0.00271	-0.00270
	(A_N * C * !D * Y)	0.00128	0.00127	0.00127
	(A_N * C * !D * Y)	-0.00272	-0.00271	-0.00272
	(A_N * !C * Y)	0.00129	0.00130	0.00129
	(A_N * !C * Y)	-0.00272	-0.00274	-0.00272
	(!A_N * C * !D * Y)	0.00088	0.00089	0.00090
	(!A_N * C * !D * Y)	-0.00282	-0.00285	-0.00288
	(!A_N * !C * Y)	0.00093	0.00094	0.00094
	(!A_N * !C * Y)	-0.00288	-0.00290	-0.00290
sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	0.00386	0.00392	0.00388
	(A_N * C * D * Y)	-0.00280	-0.00282	-0.00280
	(A_N * C * !D * Y)	0.00232	0.00230	0.00231
	(A_N * C * !D * Y)	-0.00285	-0.00283	-0.00283
	(A_N * !C * Y)	0.00232	0.00234	0.00233
	(A_N * !C * Y)	-0.00284	-0.00286	-0.00285
	(!A_N * C * !D * Y)	0.00165	0.00167	0.00168
	(!A_N * C * !D * Y)	-0.00296	-0.00299	-0.00307
	(!A_N * !C * Y)	0.00174	0.00176	0.00176
	(!A_N * !C * Y)	-0.00307	-0.00310	-0.00310

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)	-0.00105	-0.00111	-0.00110
	(A_N * C * D * Y)	0.00133	0.00129	0.00128
	(A_N * C * !D * Y)	-0.00072	-0.00072	-0.00072
	(A_N * C * !D * Y)	0.00131	0.00129	0.00128
	(A_N * !C * Y)	-0.00072	-0.00073	-0.00072
	(A_N * !C * Y)	0.00133	0.00133	0.00129
	(!A_N * C * !D * Y)	-0.00040	-0.00041	-0.00042
	(!A_N * C * !D * Y)	0.00150	0.00151	0.00149
	(!A_N * !C * Y)	-0.00041	-0.00042	-0.00042
	(!A_N * !C * Y)	0.00150	0.00151	0.00149
sky130_fd_sc_hs__nand4b_2	(A_N * C * D * Y)	-0.00189	-0.00204	-0.00203
	(A_N * C * D * Y)	0.00282	0.00272	0.00270
	(A_N * C * !D * Y)	-0.00128	-0.00127	-0.00127
	(A_N * C * !D * Y)	0.00276	0.00274	0.00272
	(A_N * !C * Y)	-0.00129	-0.00130	-0.00129
	(A_N * !C * Y)	0.00280	0.00282	0.00274
	(!A_N * C * !D * Y)	-0.00084	-0.00085	-0.00087
	(!A_N * C * !D * Y)	0.00295	0.00298	0.00293
	(!A_N * !C * Y)	-0.00088	-0.00088	-0.00090
	(!A_N * !C * Y)	0.00297	0.00298	0.00293

sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	-0.00357	-0.00389	-0.00388
	(A_N * C * D * Y)	0.00308	0.00284	0.00282
	(A_N * C * !D * Y)	-0.00232	-0.00230	-0.00231
	(A_N * C * !D * Y)	0.00296	0.00288	0.00283
	(A_N * !C * Y)	-0.00232	-0.00234	-0.00233
	(A_N * !C * Y)	0.00308	0.00306	0.00289
	(!A_N * C * !D * Y)	-0.00160	-0.00160	-0.00163
	(!A_N * C * !D * Y)	0.00323	0.00324	0.00315
	(!A_N * !C * Y)	-0.00165	-0.00165	-0.00168
	(!A_N * !C * Y)	0.00323	0.00324	0.00315

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)**	0.00096	0.00096	0.00096
	(A_N * B * D * Y)	-0.00127	-0.00127	-0.00127
	(A_N * B * !D * Y)	0.00057	0.00057	0.00057
	(A_N * B * !D * Y)	-0.00127	-0.00127	-0.00127
	(A_N * !B * D * Y)	0.00095	0.00097	0.00096
	(A_N * !B * D * Y)	-0.00126	-0.00128	-0.00127
	(A_N * !B * !D * Y)	0.00056	0.00056	0.00056
	(A_N * !B * !D * Y)	-0.00127	-0.00127	-0.00127
	(!A_N * B * !D * Y)	0.00042	0.00043	0.00043
	(!A_N * B * !D * Y)	-0.00131	-0.00132	-0.00131
	(!A_N * !B * D * Y)	0.00092	0.00092	0.00092
	(!A_N * !B * D * Y)	-0.00130	-0.00131	-0.00131
	(!A_N * !B * !D * Y)	0.00050	0.00050	0.00049
	(!A_N * !B * !D * Y)	-0.00132	-0.00132	-0.00131

sky130_fd_sc_hs__nand4b_2	**(A_N * B * D * Y)**	0.00191	0.00193	0.00192
	(A_N * B * D * Y)	-0.00258	-0.00260	-0.00258
	(A_N * B * !D * Y)	0.00115	0.00116	0.00115
	(A_N * B * !D * Y)	-0.00260	-0.00261	-0.00260
	(A_N * !B * D * Y)	0.00195	0.00196	0.00195
	(A_N * !B * D * Y)	-0.00258	-0.00260	-0.00258
	(A_N * !B * !D * Y)	0.00117	0.00116	0.00116
	(A_N * !B * !D * Y)	-0.00260	-0.00259	-0.00259
	(!A_N * B * !D * Y)	0.00095	0.00095	0.00097
	(!A_N * B * !D * Y)	-0.00257	-0.00257	-0.00256
	(!A_N * !B * D * Y)	0.00195	0.00195	0.00195
	(!A_N * !B * D * Y)	-0.00259	-0.00259	-0.00258
	(!A_N * !B * !D * Y)	0.00112	0.00112	0.00111
	(!A_N * !B * !D * Y)	-0.00261	-0.00260	-0.00259
sky130_fd_sc_hs__nand4b_4	**(A_N * B * D * Y)**	0.00386	0.00391	0.00387
	(A_N * B * D * Y)	-0.00279	-0.00280	-0.00279
	(A_N * B * !D * Y)	0.00224	0.00225	0.00223
	(A_N * B * !D * Y)	-0.00282	-0.00282	-0.00281
	(A_N * !B * D * Y)	0.00393	0.00397	0.00393
	(A_N * !B * D * Y)	-0.00279	-0.00280	-0.00278
	(A_N * !B * !D * Y)	0.00222	0.00222	0.00221
	(A_N * !B * !D * Y)	-0.00279	-0.00279	-0.00279
	(!A_N * B * !D * Y)	0.00185	0.00187	0.00187
	(!A_N * B * !D * Y)	-0.00276	-0.00279	-0.00275
	(!A_N * !B * D * Y)	0.00392	0.00396	0.00392
	(!A_N * !B * D * Y)	-0.00279	-0.00281	-0.00279
	(!A_N * !B * !D * Y)	0.00214	0.00214	0.00212
	(!A_N * !B * !D * Y)	-0.00281	-0.00281	-0.00280

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)	-0.00088	-0.00096	-0.00096
	(A_N * B * D * Y)	0.00127	0.00129	0.00127
	(A_N * B * !D * Y)	-0.00057	-0.00057	-0.00057
	(A_N * B * !D * Y)	0.00127	0.00127	0.00127
	(A_N * !B * D * Y)	-0.00093	-0.00097	-0.00096
	(A_N * !B * D * Y)	0.00128	0.00129	0.00127
	(A_N * !B * !D * Y)	-0.00056	-0.00056	-0.00056
	(A_N * !B * !D * Y)	0.00127	0.00128	0.00128
	(!A_N * B * !D * Y)	-0.00042	-0.00042	-0.00042
	(!A_N * B * !D * Y)	0.00132	0.00133	0.00132
	(!A_N * !B * D * Y)	-0.00088	-0.00092	-0.00092
	(!A_N * !B * D * Y)	0.00132	0.00133	0.00131
	(!A_N * !B * !D * Y)	-0.00050	-0.00050	-0.00049
	(!A_N * !B * !D * Y)	0.00134	0.00135	0.00132
sky130_fd_sc_hs__nand4b_2	(A_N * B * D * Y)	-0.00180	-0.00193	-0.00192
	(A_N * B * D * Y)	0.00261	0.00262	0.00259
	(A_N * B * !D * Y)	-0.00115	-0.00116	-0.00115
	(A_N * B * !D * Y)	0.00260	0.00261	0.00260
	(A_N * !B * D * Y)	-0.00186	-0.00196	-0.00195
	(A_N * !B * D * Y)	0.00258	0.00262	0.00259
	(A_N * !B * !D * Y)	-0.00117	-0.00116	-0.00116
	(A_N * !B * !D * Y)	0.00260	0.00261	0.00260
	(!A_N * B * !D * Y)	-0.00091	-0.00092	-0.00091
	(!A_N * B * !D * Y)	0.00261	0.00263	0.00260
	(!A_N * !B * D * Y)	-0.00185	-0.00195	-0.00195
	(!A_N * !B * D * Y)	0.00259	0.00262	0.00259
	(!A_N * !B * !D * Y)	-0.00112	-0.00112	-0.00111
	(!A_N * !B * !D * Y)	0.00263	0.00264	0.00261

sky130_fd_sc_hs__nand4b_4	(A_N * B * D * Y)	-0.00359	-0.00391	-0.00387
	(A_N * B * D * Y)	0.00283	0.00283	0.00280
	(A_N * B * !D * Y)	-0.00224	-0.00225	-0.00223
	(A_N * B * !D * Y)	0.00282	0.00283	0.00281
	(A_N * !B * D * Y)	-0.00376	-0.00397	-0.00393
	(A_N * !B * D * Y)	0.00279	0.00283	0.00280
	(A_N * !B * !D * Y)	-0.00222	-0.00222	-0.00221
	(A_N * !B * !D * Y)	0.00280	0.00281	0.00280
	(!A_N * B * !D * Y)	-0.00178	-0.00179	-0.00178
	(!A_N * B * !D * Y)	0.00284	0.00286	0.00282
	(!A_N * !B * D * Y)	-0.00372	-0.00396	-0.00392
	(!A_N * !B * D * Y)	0.00284	0.00283	0.00279
	(!A_N * !B * !D * Y)	-0.00214	-0.00214	-0.00212
	(!A_N * !B * !D * Y)	0.00290	0.00290	0.00282

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)	0.00095	0.00096	0.00095
	(A_N * B * C * Y)	-0.00124	-0.00124	-0.00124
	(A_N * !C * Y)	0.00097	0.00097	0.00097
	(A_N * !C * Y)	-0.00124	-0.00124	-0.00124
	(A_N * !B * C * Y)	0.00095	0.00096	0.00095
	(A_N * !B * C * Y)	-0.00124	-0.00124	-0.00124
	(!A_N * B * !C * Y)	0.00092	0.00094	0.00093
	(!A_N * B * !C * Y)	-0.00128	-0.00129	-0.00128
	(!A_N * !B * C * Y)	0.00092	0.00092	0.00091
	(!A_N * !B * C * Y)	-0.00128	-0.00128	-0.00128
	(!A_N * !B * !C * Y)	0.00092	0.00094	0.00093
	(!A_N * !B * !C * Y)	-0.00128	-0.00129	-0.00128

sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	0.00191	0.00193	0.00191
	(A_N * B * C * Y)	-0.00256	-0.00258	-0.00257
	(A_N * !C * Y)	0.00196	0.00198	0.00196
	(A_N * !C * Y)	-0.00256	-0.00258	-0.00256
	(A_N * !B * C * Y)	0.00192	0.00193	0.00192
	(A_N * !B * C * Y)	-0.00257	-0.00257	-0.00256
	(!A_N * B * !C * Y)	0.00196	0.00197	0.00196
	(!A_N * B * !C * Y)	-0.00256	-0.00257	-0.00256
	(!A_N * !B * C * Y)	0.00191	0.00193	0.00192
	(!A_N * !B * C * Y)	-0.00256	-0.00257	-0.00256
	(!A_N * !B * !C * Y)	0.00196	0.00197	0.00196
	(!A_N * !B * !C * Y)	-0.00256	-0.00258	-0.00256
sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	0.00379	0.00381	0.00380
	(A_N * B * C * Y)	-0.00256	-0.00256	-0.00256
	(A_N * !C * Y)	0.00388	0.00392	0.00388
	(A_N * !C * Y)	-0.00256	-0.00257	-0.00256
	(A_N * !B * C * Y)	0.00381	0.00384	0.00380
	(A_N * !B * C * Y)	-0.00257	-0.00257	-0.00256
	(!A_N * B * !C * Y)	0.00388	0.00392	0.00388
	(!A_N * B * !C * Y)	-0.00256	-0.00258	-0.00256
	(!A_N * !B * C * Y)	0.00377	0.00383	0.00380
	(!A_N * !B * C * Y)	-0.00255	-0.00257	-0.00256
	(!A_N * !B * !C * Y)	0.00388	0.00392	0.00388
	(!A_N * !B * !C * Y)	-0.00256	-0.00258	-0.00256

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)**	-0.00089	-0.00096	-0.00095
	(A_N * B * C * Y)	0.00125	0.00124	0.00125
	(A_N * !C * Y)	-0.00094	-0.00097	-0.00097
	(A_N * !C * Y)	0.00124	0.00126	0.00125
	(A_N * !B * C * Y)	-0.00089	-0.00096	-0.00095
	(A_N * !B * C * Y)	0.00124	0.00125	0.00125
	(!A_N * B * !C * Y)	-0.00089	-0.00093	-0.00093
	(!A_N * B * !C * Y)	0.00128	0.00130	0.00128
	(!A_N * !B * C * Y)	-0.00085	-0.00092	-0.00091
	(!A_N * !B * C * Y)	0.00128	0.00129	0.00128
	(!A_N * !B * !C * Y)	-0.00090	-0.00093	-0.00093
	(!A_N * !B * !C * Y)	0.00128	0.00129	0.00128
sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	-0.00178	-0.00193	-0.00191
	(A_N * B * C * Y)	0.00257	0.00259	0.00257
	(A_N * !C * Y)	-0.00188	-0.00197	-0.00196
	(A_N * !C * Y)	0.00256	0.00260	0.00257
	(A_N * !B * C * Y)	-0.00178	-0.00193	-0.00192
	(A_N * !B * C * Y)	0.00257	0.00259	0.00257
	(!A_N * B * !C * Y)	-0.00187	-0.00197	-0.00196
	(!A_N * B * !C * Y)	0.00256	0.00260	0.00257
	(!A_N * !B * C * Y)	-0.00179	-0.00193	-0.00192
	(!A_N * !B * C * Y)	0.00258	0.00259	0.00257
	(!A_N * !B * !C * Y)	-0.00188	-0.00197	-0.00196
	(!A_N * !B * !C * Y)	0.00256	0.00260	0.00257

sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	-0.00351	-0.00381	-0.00380
	(A_N * B * C * Y)	0.00256	0.00260	0.00257
	(A_N * !C * Y)	-0.00372	-0.00390	-0.00388
	(A_N * !C * Y)	0.00258	0.00260	0.00257
	(A_N * !B * C * Y)	-0.00353	-0.00382	-0.00380
	(A_N * !B * C * Y)	0.00258	0.00259	0.00257
	(!A_N * B * !C * Y)	-0.00371	-0.00390	-0.00388
	(!A_N * B * !C * Y)	0.00257	0.00260	0.00257
	(!A_N * !B * C * Y)	-0.00353	-0.00383	-0.00380
	(!A_N * !B * C * Y)	0.00258	0.00259	0.00257
	(!A_N * !B * !C * Y)	-0.00373	-0.00391	-0.00388
	(!A_N * !B * !C * Y)	0.00257	0.00260	0.00257

SKY130_FD_SC_HS__NAND4x

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT				OUTPUT
A	B	C	D	Y
0	x	x	x	1
1	0	x	x	1
1	1	0	x	1
1	1	1	0	1
1	1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand4_1	9.59040
sky130_fd_sc_hs__nand4_2	15.98400
sky130_fd_sc_hs__nand4_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D	Y
sky130_fd_sc_hs__nand4_1	0.00266	0.00281	0.00276	0.00276	0.75169
sky130_fd_sc_hs__nand4_2	0.00519	0.00523	0.00528	0.00511	1.33500
sky130_fd_sc_hs__nand4_4	0.00779	0.00759	0.00759	0.00779	1.46477

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4_1	0.00000	0.00740	0.09773
sky130_fd_sc_hs__nand4_2	0.00000	0.01480	0.19545
sky130_fd_sc_hs__nand4_4	0.00000	0.01738	0.19545

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)	0.05784	0.97293	11.64430
	B->Y (FR)	0.07352	1.00163	11.84340
	C->Y (FR)	0.08387	1.01378	11.85620
	D->Y (FR)	0.08919	1.01085	11.70460
sky130_fd_sc_hs__nand4_2	A->Y (FR)	0.04877	0.83524	11.09160
	B->Y (FR)	0.06307	0.84372	11.01260
	C->Y (FR)	0.07300	0.85698	11.04250
	D->Y (FR)	0.08161	0.87206	11.11250
sky130_fd_sc_hs__nand4_4	A->Y (FR)	0.06216	0.85562	11.45300
	B->Y (FR)	0.08955	0.87807	11.41570
	C->Y (FR)	0.11421	0.91736	11.66940
	D->Y (FR)	0.13309	0.93868	11.68290

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand4_1	A->Y (RF)	0.05229	0.82093	9.90570
	B->Y (RF)	0.06682	0.81938	9.69706
	C->Y (RF)	0.07487	0.79076	9.22886
	D->Y (RF)	0.07928	0.76306	8.80175
sky130_fd_sc_hs__nand4_2	A->Y (RF)	0.04877	0.75925	10.52870
	B->Y (RF)	0.06834	0.76279	10.33100
	C->Y (RF)	0.07794	0.71678	9.63326
	D->Y (RF)	0.08357	0.69390	9.20452
sky130_fd_sc_hs__nand4_4	A->Y (RF)	0.03788	0.56708	7.77238
	B->Y (RF)	0.05630	0.55793	7.43369
	C->Y (RF)	0.06652	0.51672	6.74450
	D->Y (RF)	0.07200	0.48799	6.21395

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	-0.00011	-0.00009	0.00020
	A	0.00316	0.00316	0.00353
	B	0.00042	0.00037	0.00065
	B	0.00430	0.00426	0.00462
	C	0.00085	0.00078	0.00107
	C	0.00530	0.00523	0.00559
	D	0.00112	0.00105	0.00133
	D	0.00620	0.00614	0.00646
sky130_fd_sc_hs__nand4_2	A	-0.00084	-0.00077	-0.00006
	A	0.00521	0.00528	0.00604
	B	0.00047	0.00033	0.00099
	B	0.00788	0.00774	0.00836
	C	0.00119	0.00102	0.00164
	C	0.00995	0.00979	0.01035
	D	0.00217	0.00205	0.00260
	D	0.01213	0.01202	0.01256
sky130_fd_sc_hs__nand4_4	A	-0.00166	-0.00167	-0.00054
	A	0.00722	0.00725	0.00841
	B	0.00060	0.00009	0.00123
	B	0.01206	0.01157	0.01275
	C	0.00213	0.00161	0.00269
	C	0.01613	0.01557	0.01673
	D	0.00378	0.00346	0.00438
	D	0.02052	0.01994	0.02114

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	0.00409	0.00393	0.00418
	A	0.00083	0.00077	0.00092
	B	0.00480	0.00468	0.00483
	B	0.00088	0.00081	0.00090
	C	0.00543	0.00537	0.00550
	C	0.00088	0.00081	0.00090
	D	0.00612	0.00606	0.00618
	D	0.00086	0.00079	0.00087
sky130_fd_sc_hs__nand4_2	A	0.00746	0.00739	0.00774
	A	0.00144	0.00134	0.00164
	B	0.00897	0.00884	0.00908
	B	0.00147	0.00132	0.00153
	C	0.01048	0.01034	0.01056
	C	0.00146	0.00132	0.00152
	D	0.01182	0.01170	0.01197
	D	0.00143	0.00128	0.00147
sky130_fd_sc_hs__nand4_4	A	0.01158	0.01145	0.01222
	A	0.00271	0.00252	0.00304
	B	0.01443	0.01431	0.01461
	B	0.00277	0.00260	0.00291
	C	0.01727	0.01719	0.01762
	C	0.00280	0.00263	0.00291
	D	0.02021	0.02009	0.02069
	D	0.00264	0.00248	0.00275

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)	0.00043	0.00043	0.00038
	(B * C * !D * Y)	-0.00138	-0.00139	-0.00148
	(B * !C * Y)	0.00042	0.00042	0.00038
	(B * !C * Y)	-0.00142	-0.00143	-0.00149
	(!B * Y)	0.00041	0.00041	0.00040
	(!B * Y)	-0.00146	-0.00147	-0.00149
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	0.00079	0.00079	0.00067
	(B * C * !D * Y)	-0.00270	-0.00273	-0.00296
	(B * !C * Y)	0.00073	0.00073	0.00066
	(B * !C * Y)	-0.00281	-0.00282	-0.00298
	(!B * Y)	0.00075	0.00076	0.00071
	(!B * Y)	-0.00291	-0.00294	-0.00300
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	0.00153	0.00153	0.00132
	(B * C * !D * Y)	-0.00309	-0.00312	-0.00355
	(B * !C * Y)	0.00143	0.00144	0.00130
	(B * !C * Y)	-0.00331	-0.00334	-0.00360
	(!B * Y)	0.00146	0.00146	0.00138
	(!B * Y)	-0.00350	-0.00352	-0.00363

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)	-0.00038	-0.00038	-0.00038
	(B * C * !D * Y)	0.00149	0.00150	0.00149
	(B * !C * Y)	-0.00038	-0.00038	-0.00038
	(B * !C * Y)	0.00149	0.00150	0.00149
	(!B * Y)	-0.00038	-0.00039	-0.00038
	(!B * Y)	0.00149	0.00150	0.00150
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	-0.00064	-0.00065	-0.00066
	(B * C * !D * Y)	0.00298	0.00302	0.00301
	(B * !C * Y)	-0.00066	-0.00066	-0.00066
	(B * !C * Y)	0.00301	0.00302	0.00300
	(!B * Y)	-0.00069	-0.00068	-0.00068
	(!B * Y)	0.00301	0.00302	0.00301
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	-0.00128	-0.00130	-0.00128
	(B * C * !D * Y)	0.00363	0.00368	0.00363
	(B * !C * Y)	-0.00129	-0.00131	-0.00129
	(B * !C * Y)	0.00362	0.00368	0.00363
	(!B * Y)	-0.00133	-0.00134	-0.00133
	(!B * Y)	0.00363	0.00366	0.00363

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)**	0.00043	0.00043	0.00043
	(A * C * !D * Y)	-0.00135	-0.00135	-0.00134
	(A * !C * Y)	0.00045	0.00046	0.00046
	(A * !C * Y)	-0.00135	-0.00135	-0.00134
	(!A * C * D * Y)	0.00093	0.00094	0.00093
	(!A * C * D * Y)	-0.00134	-0.00135	-0.00134
	(!A * C * !D * Y)	0.00053	0.00053	0.00052
	(!A * C * !D * Y)	-0.00135	-0.00135	-0.00135
	(!A * !C * Y)	0.00054	0.00053	0.00053
	(!A * !C * Y)	-0.00136	-0.00136	-0.00135
sky130_fd_sc_hs__nand4_2	**(A * C * !D * Y)**	0.00089	0.00090	0.00092
	(A * C * !D * Y)	-0.00255	-0.00257	-0.00255
	(A * !C * Y)	0.00091	0.00092	0.00093
	(A * !C * Y)	-0.00255	-0.00258	-0.00255
	(!A * C * D * Y)	0.00195	0.00198	0.00196
	(!A * C * D * Y)	-0.00257	-0.00258	-0.00257
	(!A * C * !D * Y)	0.00111	0.00112	0.00111
	(!A * C * !D * Y)	-0.00257	-0.00259	-0.00258
	(!A * !C * Y)	0.00106	0.00107	0.00107
	(!A * !C * Y)	-0.00258	-0.00259	-0.00258
sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	0.00172	0.00174	0.00176
	(A * C * !D * Y)	-0.00268	-0.00269	-0.00266
	(A * !C * Y)	0.00179	0.00178	0.00179
	(A * !C * Y)	-0.00270	-0.00270	-0.00267
	(!A * C * D * Y)	0.00385	0.00385	0.00387
	(!A * C * D * Y)	-0.00269	-0.00268	-0.00269
	(!A * C * !D * Y)	0.00213	0.00214	0.00212
	(!A * C * !D * Y)	-0.00272	-0.00273	-0.00271
	(!A * !C * Y)	0.00205	0.00205	0.00205
	(!A * !C * Y)	-0.00273	-0.00273	-0.00272

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)	-0.00042	-0.00042	-0.00043
	(A * C * !D * Y)	0.00138	0.00138	0.00135
	(A * !C * Y)	-0.00043	-0.00043	-0.00044
	(A * !C * Y)	0.00137	0.00138	0.00135
	(!A * C * D * Y)	-0.00086	-0.00094	-0.00093
	(!A * C * D * Y)	0.00140	0.00136	0.00135
	(!A * C * !D * Y)	-0.00053	-0.00053	-0.00052
	(!A * C * !D * Y)	0.00139	0.00136	0.00135
	(!A * !C * Y)	-0.00054	-0.00053	-0.00053
	(!A * !C * Y)	0.00140	0.00141	0.00136
sky130_fd_sc_hs__nand4_2	(A * C * !D * Y)	-0.00084	-0.00085	-0.00086
	(A * C * !D * Y)	0.00264	0.00265	0.00259
	(A * !C * Y)	-0.00086	-0.00086	-0.00089
	(A * !C * Y)	0.00264	0.00265	0.00259
	(!A * C * D * Y)	-0.00178	-0.00198	-0.00196
	(!A * C * D * Y)	0.00269	0.00258	0.00257
	(!A * C * !D * Y)	-0.00111	-0.00112	-0.00111
	(!A * C * !D * Y)	0.00262	0.00260	0.00258
	(!A * !C * Y)	-0.00106	-0.00107	-0.00107
	(!A * !C * Y)	0.00269	0.00269	0.00260

sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	-0.00163	-0.00164	-0.00167
	(A * C * !D * Y)	0.00283	0.00283	0.00273
	(A * !C * Y)	-0.00166	-0.00167	-0.00172
	(A * !C * Y)	0.00283	0.00283	0.00273
	(!A * C * D * Y)	-0.00347	-0.00385	-0.00387
	(!A * C * D * Y)	0.00299	0.00272	0.00270
	(!A * C * !D * Y)	-0.00213	-0.00214	-0.00212
	(!A * C * !D * Y)	0.00283	0.00276	0.00271
	(!A * !C * Y)	-0.00205	-0.00205	-0.00205
	(!A * !C * Y)	0.00294	0.00295	0.00277

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)**	0.00043	0.00043	0.00043
	(A * B * !D * Y)	-0.00132	-0.00133	-0.00132
	(A * !B * D * Y)	0.00093	0.00093	0.00093
	(A * !B * D * Y)	-0.00132	-0.00132	-0.00132
	(A * !B * !D * Y)	0.00051	0.00051	0.00050
	(A * !B * !D * Y)	-0.00133	-0.00133	-0.00133
	(!A * B * D * Y)	0.00091	0.00092	0.00091
	(!A * B * D * Y)	-0.00132	-0.00132	-0.00132
	(!A * B * !D * Y)	0.00051	0.00051	0.00050
	(!A * B * !D * Y)	-0.00132	-0.00133	-0.00132
	(!A * !B * D * Y)	0.00093	0.00093	0.00093
	(!A * !B * D * Y)	-0.00132	-0.00133	-0.00132
	(!A * !B * !D * Y)	0.00053	0.00052	0.00052
	(!A * !B * !D * Y)	-0.00132	-0.00133	-0.00133

sky130_fd_sc_hs__nand4_2	**(A * B * !D * Y)**	0.00097	0.00098	0.00097
	(A * B * !D * Y)	-0.00251	-0.00252	-0.00250
	(A * !B * D * Y)	0.00193	0.00197	0.00195
	(A * !B * D * Y)	-0.00255	-0.00258	-0.00256
	(A * !B * !D * Y)	0.00110	0.00110	0.00109
	(A * !B * !D * Y)	-0.00258	-0.00257	-0.00256
	(!A * B * D * Y)	0.00189	0.00192	0.00190
	(!A * B * D * Y)	-0.00256	-0.00258	-0.00256
	(!A * B * !D * Y)	0.00112	0.00112	0.00112
	(!A * B * !D * Y)	-0.00257	-0.00259	-0.00257
	(!A * !B * D * Y)	0.00193	0.00196	0.00194
	(!A * !B * D * Y)	-0.00255	-0.00258	-0.00256
	(!A * !B * !D * Y)	0.00114	0.00114	0.00113
	(!A * !B * !D * Y)	-0.00257	-0.00257	-0.00257
sky130_fd_sc_hs__nand4_4	**(A * B * !D * Y)**	0.00181	0.00181	0.00180
	(A * B * !D * Y)	-0.00255	-0.00256	-0.00253
	(A * !B * D * Y)	0.00375	0.00381	0.00377
	(A * !B * D * Y)	-0.00264	-0.00267	-0.00265
	(A * !B * !D * Y)	0.00205	0.00205	0.00204
	(A * !B * !D * Y)	-0.00266	-0.00267	-0.00266
	(!A * B * D * Y)	0.00369	0.00373	0.00369
	(!A * B * D * Y)	-0.00266	-0.00267	-0.00265
	(!A * B * !D * Y)	0.00206	0.00207	0.00206
	(!A * B * !D * Y)	-0.00267	-0.00268	-0.00267
	(!A * !B * D * Y)	0.00375	0.00381	0.00377
	(!A * !B * D * Y)	-0.00264	-0.00267	-0.00265
	(!A * !B * !D * Y)	0.00213	0.00213	0.00212
	(!A * !B * !D * Y)	-0.00266	-0.00266	-0.00266

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)	-0.00042	-0.00042	-0.00042
	(A * B * !D * Y)	0.00132	0.00133	0.00133
	(A * !B * D * Y)	-0.00089	-0.00093	-0.00093
	(A * !B * D * Y)	0.00133	0.00134	0.00132
	(A * !B * !D * Y)	-0.00051	-0.00051	-0.00050
	(A * !B * !D * Y)	0.00133	0.00134	0.00133
	(!A * B * D * Y)	-0.00083	-0.00091	-0.00091
	(!A * B * D * Y)	0.00132	0.00133	0.00132
	(!A * B * !D * Y)	-0.00051	-0.00051	-0.00050
	(!A * B * !D * Y)	0.00132	0.00133	0.00133
	(!A * !B * D * Y)	-0.00089	-0.00093	-0.00093
	(!A * !B * D * Y)	0.00133	0.00134	0.00132
	(!A * !B * !D * Y)	-0.00053	-0.00052	-0.00052
	(!A * !B * !D * Y)	0.00132	0.00133	0.00133
sky130_fd_sc_hs__nand4_2	(A * B * !D * Y)	-0.00090	-0.00091	-0.00090
	(A * B * !D * Y)	0.00259	0.00260	0.00258
	(A * !B * D * Y)	-0.00184	-0.00197	-0.00195
	(A * !B * D * Y)	0.00256	0.00260	0.00257
	(A * !B * !D * Y)	-0.00110	-0.00110	-0.00109
	(A * !B * !D * Y)	0.00258	0.00258	0.00257
	(!A * B * D * Y)	-0.00174	-0.00192	-0.00190
	(!A * B * D * Y)	0.00259	0.00260	0.00257
	(!A * B * !D * Y)	-0.00112	-0.00112	-0.00112
	(!A * B * !D * Y)	0.00257	0.00259	0.00257
	(!A * !B * D * Y)	-0.00185	-0.00196	-0.00194
	(!A * !B * D * Y)	0.00256	0.00260	0.00257
	(!A * !B * !D * Y)	-0.00114	-0.00114	-0.00113
	(!A * !B * !D * Y)	0.00257	0.00258	0.00257

sky130_fd_sc_hs__nand4_4	(A * B * !D * Y)	-0.00169	-0.00169	-0.00169
	(A * B * !D * Y)	0.00269	0.00269	0.00268
	(A * !B * D * Y)	-0.00356	-0.00381	-0.00377
	(A * !B * D * Y)	0.00266	0.00269	0.00266
	(A * !B * !D * Y)	-0.00205	-0.00205	-0.00204
	(A * !B * !D * Y)	0.00268	0.00268	0.00267
	(!A * B * D * Y)	-0.00332	-0.00373	-0.00369
	(!A * B * D * Y)	0.00269	0.00269	0.00266
	(!A * B * !D * Y)	-0.00206	-0.00207	-0.00206
	(!A * B * !D * Y)	0.00267	0.00268	0.00267
	(!A * !B * D * Y)	-0.00359	-0.00381	-0.00377
	(!A * !B * D * Y)	0.00266	0.00269	0.00266
	(!A * !B * !D * Y)	-0.00213	-0.00213	-0.00212
	(!A * !B * !D * Y)	0.00266	0.00267	0.00267

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)	0.00093	0.00094	0.00093
	(A * B * !C * Y)	-0.00137	-0.00138	-0.00137
	(A * !B * C * Y)	0.00092	0.00093	0.00092
	(A * !B * C * Y)	-0.00137	-0.00138	-0.00137
	(A * !B * !C * Y)	0.00093	0.00094	0.00093
	(A * !B * !C * Y)	-0.00137	-0.00138	-0.00137
	(!A * B * C * Y)	0.00091	0.00091	0.00091
	(!A * B * C * Y)	-0.00137	-0.00137	-0.00137
	(!A * !C * Y)	0.00093	0.00094	0.00093
	(!A * !C * Y)	-0.00137	-0.00138	-0.00137
	(!A * !B * C * Y)	0.00092	0.00093	0.00092
	(!A * !B * C * Y)	-0.00137	-0.00138	-0.00137

sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	0.00198	0.00198	0.00197
	(A * B * !C * Y)	-0.00253	-0.00254	-0.00253
	(A * !B * C * Y)	0.00190	0.00192	0.00190
	(A * !B * C * Y)	-0.00253	-0.00255	-0.00253
	(A * !B * !C * Y)	0.00198	0.00199	0.00198
	(A * !B * !C * Y)	-0.00253	-0.00254	-0.00253
	(!A * B * C * Y)	0.00189	0.00190	0.00189
	(!A * B * C * Y)	-0.00253	-0.00253	-0.00253
	(!A * !C * Y)	0.00198	0.00199	0.00197
	(!A * !C * Y)	-0.00253	-0.00254	-0.00253
	(!A * !B * C * Y)	0.00190	0.00192	0.00190
	(!A * !B * C * Y)	-0.00253	-0.00255	-0.00253
sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	0.00397	0.00399	0.00396
	(A * B * !C * Y)	-0.00271	-0.00272	-0.00271
	(A * !B * C * Y)	0.00383	0.00387	0.00383
	(A * !B * C * Y)	-0.00271	-0.00272	-0.00271
	(A * !B * !C * Y)	0.00397	0.00400	0.00396
	(A * !B * !C * Y)	-0.00271	-0.00273	-0.00271
	(!A * B * C * Y)	0.00381	0.00385	0.00381
	(!A * B * C * Y)	-0.00271	-0.00273	-0.00271
	(!A * !C * Y)	0.00393	0.00400	0.00396
	(!A * !C * Y)	-0.00270	-0.00273	-0.00271
	(!A * !B * C * Y)	0.00383	0.00387	0.00383
	(!A * !B * C * Y)	-0.00271	-0.00272	-0.00271

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)**	-0.00090	-0.00094	-0.00093
	(A * B * !C * Y)	0.00137	0.00140	0.00138
	(A * !B * C * Y)	-0.00086	-0.00093	-0.00092
	(A * !B * C * Y)	0.00137	0.00139	0.00138
	(A * !B * !C * Y)	-0.00090	-0.00094	-0.00093
	(A * !B * !C * Y)	0.00137	0.00140	0.00138
	(!A * B * C * Y)	-0.00085	-0.00091	-0.00091
	(!A * B * C * Y)	0.00139	0.00138	0.00138
	(!A * !C * Y)	-0.00090	-0.00094	-0.00093
	(!A * !C * Y)	0.00137	0.00140	0.00138
	(!A * !B * C * Y)	-0.00086	-0.00093	-0.00092
	(!A * !B * C * Y)	0.00137	0.00138	0.00138
sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	-0.00189	-0.00198	-0.00197
	(A * B * !C * Y)	0.00253	0.00256	0.00254
	(A * !B * C * Y)	-0.00178	-0.00192	-0.00190
	(A * !B * C * Y)	0.00254	0.00255	0.00254
	(A * !B * !C * Y)	-0.00190	-0.00199	-0.00198
	(A * !B * !C * Y)	0.00253	0.00256	0.00254
	(!A * B * C * Y)	-0.00175	-0.00190	-0.00189
	(!A * B * C * Y)	0.00253	0.00256	0.00254
	(!A * !C * Y)	-0.00190	-0.00199	-0.00197
	(!A * !C * Y)	0.00253	0.00256	0.00254
	(!A * !B * C * Y)	-0.00178	-0.00192	-0.00190
	(!A * !B * C * Y)	0.00254	0.00255	0.00254

sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	-0.00378	-0.00399	-0.00396
	(A * B * !C * Y)	0.00271	0.00274	0.00272
	(A * !B * C * Y)	-0.00357	-0.00387	-0.00383
	(A * !B * C * Y)	0.00272	0.00273	0.00272
	(A * !B * !C * Y)	-0.00380	-0.00399	-0.00396
	(A * !B * !C * Y)	0.00271	0.00274	0.00272
	(!A * B * C * Y)	-0.00351	-0.00385	-0.00381
	(!A * B * C * Y)	0.00271	0.00274	0.00272
	(!A * !C * Y)	-0.00380	-0.00399	-0.00396
	(!A * !C * Y)	0.00271	0.00274	0.00272
	(!A * !B * C * Y)	-0.00357	-0.00387	-0.00383
	(!A * !B * C * Y)	0.00272	0.00273	0.00272

SKY130_FD_SC_HS__NOR2Bx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT		OUTPUT
A	B_N	Y
x	0	0
0	1	1
1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor2b_1	7.99200
sky130_fd_sc_hs__nor2b_2	11.18880
sky130_fd_sc_hs__nor2b_4	17.58240

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B_N	Y
sky130_fd_sc_hs__nor2b_1	0.00265	0.00216	0.36963
sky130_fd_sc_hs__nor2b_2	0.00523	0.00250	0.68922
sky130_fd_sc_hs__nor2b_4	0.00863	0.00359	1.35719

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor2b_1	0.00000	0.07238	0.13121
sky130_fd_sc_hs__nor2b_2	0.00000	0.05550	0.08318
sky130_fd_sc_hs__nor2b_4	0.00000	0.16264	0.28512

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)	0.10686	1.19048	11.69570
	B_N->Y (RR)	0.11909	0.94951	7.24016
sky130_fd_sc_hs__nor2b_2	A->Y (FR)	0.10187	1.03874	11.69200
	B_N->Y (RR)	0.10399	0.80566	7.26797
sky130_fd_sc_hs__nor2b_4	A->Y (FR)	0.07933	0.87914	11.55710
	B_N->Y (RR)	0.09907	0.69638	7.47588

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2b_1	A->Y (RF)	0.02484	0.40784	4.12953
	B_N->Y (FF)	0.10048	0.53745	2.95241
sky130_fd_sc_hs__nor2b_2	A->Y (RF)	0.02259	0.35973	4.05347
	B_N->Y (FF)	0.11426	0.57106	3.23092
sky130_fd_sc_hs__nor2b_4	A->Y (RF)	0.03129	0.44786	5.81075
	B_N->Y (FF)	0.11415	0.58569	3.95806

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.00058	0.00052	0.00064
	A	0.00329	0.00324	0.00334
	B_N	0.00487	0.00477	0.00833
	B_N	0.00266	0.00256	0.00615
sky130_fd_sc_hs__nor2b_2	A	0.00122	0.00113	0.00138
	A	0.00664	0.00657	0.00682
	B_N	0.00704	0.00697	0.01046
	B_N	0.00487	0.00480	0.00833
sky130_fd_sc_hs__nor2b_4	A	0.00208	0.00199	0.00230
	A	0.01094	0.01089	0.01117
	B_N	0.01051	0.01051	0.01654
	B_N	0.00732	0.00732	0.01339

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.00326	0.00320	0.00346
	A	0.00058	0.00049	0.00072
	B_N	0.00259	0.00280	0.00716
	B_N	0.00480	0.00500	0.00936
sky130_fd_sc_hs__nor2b_2	A	0.00627	0.00606	0.00660
	A	0.00092	0.00066	0.00113
	B_N	0.00440	0.00486	0.00851
	B_N	0.00656	0.00698	0.01068
sky130_fd_sc_hs__nor2b_4	A	0.00990	0.00943	0.01145
	A	0.00109	0.00062	0.00121
	B_N	0.00642	0.00732	0.01498
	B_N	0.00961	0.01043	0.01795

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	0.00116	0.00104	0.00103
	(!B_N * !Y)	-0.00129	-0.00142	-0.00142
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	0.00234	0.00212	0.00210
	(!B_N * !Y)	-0.00233	-0.00258	-0.00260
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	0.00305	0.00260	0.00256
	(!B_N * !Y)	-0.00463	-0.00517	-0.00520

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	-0.00103	-0.00102	-0.00102
	(!B_N * !Y)	0.00143	0.00142	0.00143
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	-0.00209	-0.00211	-0.00209
	(!B_N * !Y)	0.00258	0.00261	0.00260
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	-0.00256	-0.00257	-0.00255
	(!B_N * !Y)	0.00517	0.00523	0.00520

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00301	0.00286	0.00666
	(A * !Y)	0.00061	0.00044	0.00425
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00396	0.00377	0.00714
	(A * !Y)	0.00126	0.00104	0.00443
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.00613	0.00582	0.01199
	(A * !Y)	0.00208	0.00176	0.00795

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00099	0.00120	0.00561
	(A * !Y)	0.00339	0.00360	0.00801
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00206	0.00218	0.00610
	(A * !Y)	0.00476	0.00488	0.00879
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.00248	0.00281	0.01037
	(A * !Y)	0.00649	0.00684	0.01438

SKY130_FD_SC_HS__NOR2x

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT		OUTPUT
A	B	Y
0	0	1
x	1	0
1	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor2_1	4.79520
sky130_fd_sc_hs__nor2_2	7.99200
sky130_fd_sc_hs__nor2_4	14.38560
sky130_fd_sc_hs__nor2_8	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	Y
sky130_fd_sc_hs__nor2_1	0.00267	0.00274	0.36466
sky130_fd_sc_hs__nor2_2	0.00422	0.00402	0.68877
sky130_fd_sc_hs__nor2_4	0.00806	0.00802	1.31224
sky130_fd_sc_hs__nor2_8	0.01570	0.01581	2.45064

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor2_1	0.00000	0.01122	0.02443
sky130_fd_sc_hs__nor2_2	0.00000	0.02034	0.04886
sky130_fd_sc_hs__nor2_4	0.00000	0.04067	0.09773
sky130_fd_sc_hs__nor2_8	0.00000	0.08134	0.19545

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)	0.10404	1.18082	11.59910
	B->Y (FR)	0.08415	1.14184	11.49700
sky130_fd_sc_hs__nor2_2	A->Y (FR)	0.08302	1.02373	11.69470
	B->Y (FR)	0.05263	0.97607	11.58250
sky130_fd_sc_hs__nor2_4	A->Y (FR)	0.08228	0.89179	11.58950
	B->Y (FR)	0.05204	0.85165	11.54100
sky130_fd_sc_hs__nor2_8	A->Y (FR)	0.07994	0.78545	11.46960
	B->Y (FR)	0.05565	0.76338	11.55240

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2_1	A->Y (RF)	0.02513	0.40586	4.09756
	B->Y (RF)	0.02272	0.39666	4.08301
sky130_fd_sc_hs__nor2_2	A->Y (RF)	0.03123	0.50047	5.72458
	B->Y (RF)	0.02492	0.48393	5.70895
sky130_fd_sc_hs__nor2_4	A->Y (RF)	0.03071	0.43976	5.63413
	B->Y (RF)	0.02412	0.41782	5.57324
sky130_fd_sc_hs__nor2_8	A->Y (RF)	0.02936	0.38599	5.47831
	B->Y (RF)	0.03083	0.36980	5.46545

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	-0.00031	-0.00037	-0.00025
	A	0.00326	0.00316	0.00332
	B	-0.00039	-0.00036	0.00020
	B	0.00259	0.00254	0.00321
sky130_fd_sc_hs__nor2_2	A	-0.00061	-0.00065	-0.00053
	A	0.00529	0.00526	0.00540
	B	-0.00047	-0.00041	0.00030
	B	0.00384	0.00390	0.00462
sky130_fd_sc_hs__nor2_4	A	0.00010	-0.00002	0.00027
	A	0.01152	0.01143	0.01169
	B	-0.00024	-0.00005	0.00132
	B	0.00848	0.00869	0.01007
sky130_fd_sc_hs__nor2_8	A	-0.00037	-0.00056	0.00010
	A	0.02211	0.02191	0.02260
	B	-0.00124	-0.00090	0.00227
	B	0.01604	0.01640	0.01957

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	0.00406	0.00398	0.00420
	A	0.00052	0.00042	0.00065
	B	0.00291	0.00290	0.00317
	B	-0.00007	-0.00009	0.00014
sky130_fd_sc_hs__nor2_2	A	0.00676	0.00653	0.00683
	A	0.00095	0.00071	0.00098
	B	0.00337	0.00347	0.00376
	B	-0.00094	-0.00091	-0.00057
sky130_fd_sc_hs__nor2_4	A	0.01287	0.01236	0.01365
	A	0.00162	0.00109	0.00169
	B	0.00669	0.00666	0.00751
	B	-0.00201	-0.00205	-0.00124
sky130_fd_sc_hs__nor2_8	A	0.02454	0.02351	0.02688
	A	0.00247	0.00137	0.00278
	B	0.01322	0.01315	0.01656
	B	-0.00404	-0.00420	-0.00224

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	0.00124	0.00112	0.00111
	(B * !Y)	-0.00110	-0.00123	-0.00124
sky130_fd_sc_hs__nor2_2	(B * !Y)	0.00164	0.00141	0.00139
	(B * !Y)	-0.00218	-0.00247	-0.00247
sky130_fd_sc_hs__nor2_4	(B * !Y)	0.00281	0.00229	0.00224
	(B * !Y)	-0.00434	-0.00498	-0.00499
sky130_fd_sc_hs__nor2_8	(B * !Y)	0.00540	0.00440	0.00432
	(B * !Y)	-0.00868	-0.00990	-0.00993

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	-0.00110	-0.00111	-0.00110
	(B * !Y)	0.00123	0.00125	0.00124
sky130_fd_sc_hs__nor2_2	(B * !Y)	-0.00139	-0.00140	-0.00139
	(B * !Y)	0.00248	0.00249	0.00247
sky130_fd_sc_hs__nor2_4	(B * !Y)	-0.00223	-0.00224	-0.00222
	(B * !Y)	0.00499	0.00502	0.00499
sky130_fd_sc_hs__nor2_8	(B * !Y)	-0.00429	-0.00432	-0.00428
	(B * !Y)	0.00985	0.00999	0.00993

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(A * !Y)	0.00125	0.00125	0.00125
	(A * !Y)	-0.00064	-0.00064	-0.00064
sky130_fd_sc_hs__nor2_2	(A * !Y)	0.00137	0.00138	0.00138
	(A * !Y)	-0.00129	-0.00130	-0.00130
sky130_fd_sc_hs__nor2_4	(A * !Y)	0.00278	0.00279	0.00279
	(A * !Y)	-0.00256	-0.00257	-0.00257
sky130_fd_sc_hs__nor2_8	(A * !Y)	0.00548	0.00549	0.00548
	(A * !Y)	-0.00509	-0.00509	-0.00509

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(A * !Y)	-0.00120	-0.00120	-0.00124
	(A * !Y)	0.00069	0.00068	0.00065
sky130_fd_sc_hs__nor2_2	(A * !Y)	-0.00123	-0.00123	-0.00136
	(A * !Y)	0.00145	0.00144	0.00134
sky130_fd_sc_hs__nor2_4	(A * !Y)	-0.00249	-0.00252	-0.00275
	(A * !Y)	0.00282	0.00282	0.00264
sky130_fd_sc_hs__nor2_8	(A * !Y)	-0.00496	-0.00501	-0.00542
	(A * !Y)	0.00555	0.00555	0.00522

SKY130_FD_SC_HS__NOR3Bx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT			OUTPUT
A	B	C_N	Y
0	x	0	0
0	0	1	1
x	1	1	0
1	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor3b_1	9.59040
sky130_fd_sc_hs__nor3b_2	15.98400
sky130_fd_sc_hs__nor3b_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C_N	Y
sky130_fd_sc_hs__nor3b_1	0.00262	0.00273	0.00209	0.24044
sky130_fd_sc_hs__nor3b_2	0.00512	0.00511	0.00249	0.44469
sky130_fd_sc_hs__nor3b_4	0.01028	0.01021	0.00351	0.79517

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor3b_1	0.00000	0.06881	0.13251
sky130_fd_sc_hs__nor3b_2	0.00000	0.04835	0.08576
sky130_fd_sc_hs__nor3b_4	0.00000	0.15256	0.29029

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)	0.20671	1.40311	11.40590
	B->Y (FR)	0.18921	1.39838	11.79590
	C_N->Y (RR)	0.17008	1.14218	7.46956
sky130_fd_sc_hs__nor3b_2	A->Y (FR)	0.19458	1.21088	11.28160
	B->Y (FR)	0.17386	1.20757	11.75950
	C_N->Y (RR)	0.13878	0.95061	7.42634
sky130_fd_sc_hs__nor3b_4	A->Y (FR)	0.19575	1.06032	11.05220
	B->Y (FR)	0.17589	1.05848	11.57710
	C_N->Y (RR)	0.16205	0.88469	7.74578

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3b_1	A->Y (RF)	0.02623	0.37255	3.29270
	B->Y (RF)	0.02793	0.37382	3.34836
	C_N->Y (FF)	0.10340	0.51264	2.56626
sky130_fd_sc_hs__nor3b_2	A->Y (RF)	0.02247	0.32294	3.15144
	B->Y (RF)	0.02317	0.31390	3.12471
	C_N->Y (FF)	0.11634	0.54707	2.84664
sky130_fd_sc_hs__nor3b_4	A->Y (RF)	0.02222	0.28963	3.07971
	B->Y (RF)	0.02293	0.27981	3.05715
	C_N->Y (FF)	0.12614	0.53709	2.67510

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.00119	0.00111	0.00118
	A	0.00452	0.00444	0.00446
	B	0.00107	0.00098	0.00112
	B	0.00395	0.00385	0.00399
	C_N	0.00520	0.00507	0.00865
	C_N	0.00334	0.00319	0.00679
sky130_fd_sc_hs__nor3b_2	A	0.00184	0.00170	0.00184
	A	0.00885	0.00871	0.00885
	B	0.00183	0.00169	0.00198
	B	0.00751	0.00737	0.00766
	C_N	0.00760	0.00747	0.01098
	C_N	0.00585	0.00572	0.00924
sky130_fd_sc_hs__nor3b_4	A	0.00342	0.00312	0.00348
	A	0.01749	0.01723	0.01760
	B	0.00352	0.00321	0.00386
	B	0.01504	0.01473	0.01536
	C_N	0.01364	0.01360	0.01931
	C_N	0.01159	0.01155	0.01731

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.00449	0.00439	0.00460
	A	0.00122	0.00111	0.00134
	B	0.00351	0.00344	0.00368
	B	0.00066	0.00056	0.00081
	C_N	0.00280	0.00302	0.00737
	C_N	0.00467	0.00488	0.00923
sky130_fd_sc_hs__nor3b_2	A	0.00904	0.00878	0.00925
	A	0.00220	0.00191	0.00241
	B	0.00663	0.00641	0.00695
	B	0.00100	0.00074	0.00130
	C_N	0.00487	0.00521	0.00898
	C_N	0.00662	0.00695	0.01072
sky130_fd_sc_hs__nor3b_4	A	0.01782	0.01722	0.01829
	A	0.00404	0.00345	0.00454
	B	0.01311	0.01261	0.01383
	B	0.00171	0.00117	0.00240
	C_N	0.01047	0.01107	0.01861
	C_N	0.01253	0.01310	0.02065

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)	0.00105	0.00104	0.00103
	(B * C_N * !Y)	-0.00116	-0.00120	-0.00121
	(B * !C_N * !Y)	0.00099	0.00099	0.00099
	(B * !C_N * !Y)	-0.00123	-0.00125	-0.00125
	(!B * !C_N * !Y)	0.00100	0.00100	0.00099
	(!B * !C_N * !Y)	-0.00114	-0.00121	-0.00121
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	0.00213	0.00210	0.00208
	(B * C_N * !Y)	-0.00241	-0.00251	-0.00250
	(B * !C_N * !Y)	0.00210	0.00209	0.00208
	(B * !C_N * !Y)	-0.00245	-0.00252	-0.00250
	(!B * !C_N * !Y)	0.00211	0.00211	0.00208
	(!B * !C_N * !Y)	-0.00230	-0.00243	-0.00242
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	0.00454	0.00447	0.00445
	(B * C_N * !Y)	-0.00460	-0.00480	-0.00479
	(B * !C_N * !Y)	0.00416	0.00416	0.00414
	(B * !C_N * !Y)	-0.00497	-0.00512	-0.00510
	(!B * !C_N * !Y)	0.00418	0.00416	0.00414
	(!B * !C_N * !Y)	-0.00470	-0.00497	-0.00495

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)	-0.00103	-0.00103	-0.00103
	(B * C_N * !Y)	0.00121	0.00120	0.00121
	(B * !C_N * !Y)	-0.00099	-0.00099	-0.00099
	(B * !C_N * !Y)	0.00125	0.00125	0.00125
	(!B * !C_N * !Y)	-0.00099	-0.00099	-0.00098
	(!B * !C_N * !Y)	0.00121	0.00121	0.00121
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	-0.00208	-0.00209	-0.00208
	(B * C_N * !Y)	0.00251	0.00252	0.00250
	(B * !C_N * !Y)	-0.00208	-0.00209	-0.00208
	(B * !C_N * !Y)	0.00250	0.00252	0.00250
	(!B * !C_N * !Y)	-0.00208	-0.00209	-0.00208
	(!B * !C_N * !Y)	0.00242	0.00243	0.00242
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	-0.00443	-0.00447	-0.00445
	(B * C_N * !Y)	0.00476	0.00482	0.00479
	(B * !C_N * !Y)	-0.00414	-0.00415	-0.00414
	(B * !C_N * !Y)	0.00511	0.00514	0.00510
	(!B * !C_N * !Y)	-0.00413	-0.00414	-0.00412
	(!B * !C_N * !Y)	0.00494	0.00497	0.00495

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)	0.00121	0.00121	0.00121
	(A * C_N * !Y)	-0.00070	-0.00070	-0.00071
	(A * !C_N * !Y)	0.00108	0.00109	0.00105
	(A * !C_N * !Y)	-0.00099	-0.00100	-0.00099
	(!A * !C_N * !Y)	0.00120	0.00105	0.00103
	(!A * !C_N * !Y)	-0.00121	-0.00137	-0.00137
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	0.00214	0.00215	0.00214
	(A * C_N * !Y)	-0.00149	-0.00149	-0.00149
	(A * !C_N * !Y)	0.00213	0.00214	0.00210
	(A * !C_N * !Y)	-0.00178	-0.00179	-0.00178
	(!A * !C_N * !Y)	0.00236	0.00209	0.00206
	(!A * !C_N * !Y)	-0.00225	-0.00258	-0.00257
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	0.00437	0.00436	0.00434
	(A * C_N * !Y)	-0.00297	-0.00295	-0.00296
	(A * !C_N * !Y)	0.00431	0.00435	0.00423
	(A * !C_N * !Y)	-0.00358	-0.00360	-0.00357
	(!A * !C_N * !Y)	0.00484	0.00422	0.00415
	(!A * !C_N * !Y)	-0.00439	-0.00514	-0.00515

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)	-0.00119	-0.00119	-0.00119
	(A * C_N * !Y)	0.00073	0.00072	0.00073
	(A * !C_N * !Y)	-0.00103	-0.00103	-0.00103
	(A * !C_N * !Y)	0.00099	0.00100	0.00099
	(!A * !C_N * !Y)	-0.00102	-0.00103	-0.00102
	(!A * !C_N * !Y)	0.00136	0.00137	0.00137
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	-0.00210	-0.00210	-0.00211
	(A * C_N * !Y)	0.00153	0.00152	0.00154
	(A * !C_N * !Y)	-0.00207	-0.00208	-0.00207
	(A * !C_N * !Y)	0.00178	0.00179	0.00178
	(!A * !C_N * !Y)	-0.00205	-0.00207	-0.00206
	(!A * !C_N * !Y)	0.00255	0.00258	0.00257
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	-0.00428	-0.00428	-0.00426
	(A * C_N * !Y)	0.00302	0.00302	0.00307
	(A * !C_N * !Y)	-0.00416	-0.00418	-0.00416
	(A * !C_N * !Y)	0.00358	0.00360	0.00357
	(!A * !C_N * !Y)	-0.00412	-0.00414	-0.00412
	(!A * !C_N * !Y)	0.00512	0.00516	0.00515

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00296	0.00282	0.00661
	(B * !Y)	0.00066	0.00050	0.00431
	(A * !B * !Y)	0.00303	0.00288	0.00666
	(A * !B * !Y)	0.00069	0.00053	0.00432
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00393	0.00374	0.00712
	(B * !Y)	0.00127	0.00106	0.00445
	(A * !B * !Y)	0.00409	0.00390	0.00724
	(A * !B * !Y)	0.00134	0.00113	0.00449
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.00637	0.00606	0.01159
	(B * !Y)	0.00235	0.00203	0.00758
	(A * !B * !Y)	0.00668	0.00636	0.01180
	(A * !B * !Y)	0.00248	0.00215	0.00764

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00102	0.00116	0.00564
	(B * !Y)	0.00332	0.00347	0.00794
	(A * !B * !Y)	0.00102	0.00116	0.00564
	(A * !B * !Y)	0.00333	0.00347	0.00795
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00204	0.00216	0.00608
	(B * !Y)	0.00469	0.00482	0.00873
	(A * !B * !Y)	0.00204	0.00215	0.00608
	(A * !B * !Y)	0.00470	0.00482	0.00874
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.00484	0.00496	0.01245
	(B * !Y)	0.00885	0.00895	0.01645
	(A * !B * !Y)	0.00484	0.00496	0.01245
	(A * !B * !Y)	0.00886	0.00897	0.01647

SKY130_FD_SC_HS__NOR3x

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT			OUTPUT
A	B	C	Y
0	0	0	1
0	x	1	0
x	1	x	0
1	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor3_1	6.39360
sky130_fd_sc_hs__nor3_2	11.18880
sky130_fd_sc_hs__nor3_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	Y
sky130_fd_sc_hs__nor3_1	0.00271	0.00294	0.00279	0.24221
sky130_fd_sc_hs__nor3_2	0.00418	0.00439	0.00407	0.46319
sky130_fd_sc_hs__nor3_4	0.00917	0.00904	0.00871	0.79464

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor3_1	0.00000	0.00765	0.02443
sky130_fd_sc_hs__nor3_2	0.00000	0.01371	0.04886
sky130_fd_sc_hs__nor3_4	0.00000	0.02743	0.09773

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)	0.21058	1.40355	11.40530
	B->Y (FR)	0.19588	1.40196	11.79760
	C->Y (FR)	0.14336	1.32142	11.51000
sky130_fd_sc_hs__nor3_2	A->Y (FR)	0.16381	1.17857	11.35340
	B->Y (FR)	0.14383	1.16734	11.72250
	C->Y (FR)	0.07609	1.07217	11.40230
sky130_fd_sc_hs__nor3_4	A->Y (FR)	0.17749	1.04677	11.01530
	B->Y (FR)	0.14932	1.02582	11.41310
	C->Y (FR)	0.08167	0.93820	11.18060

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3_1	A->Y (RF)	0.02711	0.37432	3.30389
	B->Y (RF)	0.02918	0.37393	3.34763
	C->Y (RF)	0.02581	0.36525	3.34141
sky130_fd_sc_hs__nor3_2	A->Y (RF)	0.03496	0.46464	4.69193
	B->Y (RF)	0.03510	0.45058	4.65189
	C->Y (RF)	0.02736	0.43545	4.63244
sky130_fd_sc_hs__nor3_4	A->Y (RF)	0.03032	0.40768	4.37835
	B->Y (RF)	0.03343	0.39808	4.40800
	C->Y (RF)	0.03337	0.38149	4.38483

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.00011	0.00001	0.00008
	A	0.00470	0.00460	0.00462
	B	0.00015	0.00003	0.00017
	B	0.00413	0.00403	0.00416
	C	0.00009	0.00007	0.00077
	C	0.00347	0.00344	0.00414
sky130_fd_sc_hs__nor3_2	A	0.00001	-0.00005	0.00001
	A	0.00735	0.00728	0.00735
	B	0.00021	0.00014	0.00027
	B	0.00633	0.00620	0.00639
	C	0.00018	0.00022	0.00104
	C	0.00474	0.00479	0.00501
sky130_fd_sc_hs__nor3_4	A	-0.00019	-0.00038	-0.00021
	A	0.01556	0.01542	0.01560
	B	-0.00017	-0.00039	-0.00001
	B	0.01256	0.01237	0.01274
	C	-0.00063	-0.00047	0.00146
	C	0.00968	0.00987	0.01180

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.00574	0.00564	0.00584
	A	0.00123	0.00111	0.00135
	B	0.00466	0.00457	0.00480
	B	0.00071	0.00060	0.00085
	C	0.00333	0.00335	0.00360
	C	-0.00004	-0.00003	0.00022
sky130_fd_sc_hs__nor3_2	A	0.00944	0.00917	0.00957
	A	0.00231	0.00205	0.00230
	B	0.00710	0.00690	0.00735
	B	0.00111	0.00087	0.00115
	C	0.00371	0.00377	0.00423
	C	-0.00085	-0.00081	-0.00045
sky130_fd_sc_hs__nor3_4	A	0.02012	0.01938	0.02002
	A	0.00479	0.00401	0.00458
	B	0.01467	0.01413	0.01500
	B	0.00207	0.00149	0.00228
	C	0.00851	0.00857	0.00980
	C	-0.00181	-0.00177	-0.00084

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	0.00114	0.00114	0.00114
	(B * C * !Y)	-0.00120	-0.00123	-0.00123
	(B * !C * !Y)	0.00114	0.00114	0.00114
	(B * !C * !Y)	-0.00119	-0.00122	-0.00123
	(!B * C * !Y)	0.00114	0.00115	0.00113
	(!B * C * !Y)	-0.00110	-0.00119	-0.00118
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	0.00133	0.00133	0.00133
	(B * C * !Y)	-0.00233	-0.00242	-0.00241
	(B * !C * !Y)	0.00134	0.00133	0.00133
	(B * !C * !Y)	-0.00230	-0.00242	-0.00241
	(!B * C * !Y)	0.00136	0.00134	0.00133
	(!B * C * !Y)	-0.00216	-0.00232	-0.00231
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	0.00253	0.00256	0.00254
	(B * C * !Y)	-0.00496	-0.00517	-0.00515
	(B * !C * !Y)	0.00256	0.00256	0.00254
	(B * !C * !Y)	-0.00489	-0.00519	-0.00515
	(!B * C * !Y)	0.00261	0.00256	0.00254
	(!B * C * !Y)	-0.00459	-0.00499	-0.00493

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	-0.00113	-0.00114	-0.00113
	(B * C * !Y)	0.00122	0.00123	0.00123
	(B * !C * !Y)	-0.00113	-0.00113	-0.00113
	(B * !C * !Y)	0.00123	0.00122	0.00123
	(!B * C * !Y)	-0.00113	-0.00114	-0.00113
	(!B * C * !Y)	0.00118	0.00119	0.00118
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	-0.00133	-0.00133	-0.00132
	(B * C * !Y)	0.00241	0.00242	0.00241
	(B * !C * !Y)	-0.00133	-0.00133	-0.00132
	(B * !C * !Y)	0.00241	0.00242	0.00241
	(!B * C * !Y)	-0.00133	-0.00133	-0.00133
	(!B * C * !Y)	0.00231	0.00232	0.00231
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	-0.00253	-0.00254	-0.00254
	(B * C * !Y)	0.00515	0.00517	0.00515
	(B * !C * !Y)	-0.00254	-0.00255	-0.00254
	(B * !C * !Y)	0.00515	0.00519	0.00515
	(!B * C * !Y)	-0.00253	-0.00255	-0.00253
	(!B * C * !Y)	0.00492	0.00499	0.00493

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	0.00123	0.00123	0.00119
	(A * C * !Y)	-0.00080	-0.00080	-0.00080
	(A * !C * !Y)	0.00117	0.00118	0.00117
	(A * !C * !Y)	-0.00069	-0.00069	-0.00069
	(!A * C * !Y)	0.00134	0.00119	0.00117
	(!A * C * !Y)	-0.00101	-0.00118	-0.00118
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	0.00127	0.00127	0.00120
	(A * C * !Y)	-0.00174	-0.00175	-0.00174
	(A * !C * !Y)	0.00119	0.00119	0.00117
	(A * !C * !Y)	-0.00153	-0.00153	-0.00154
	(!A * C * !Y)	0.00152	0.00119	0.00116
	(!A * C * !Y)	-0.00214	-0.00256	-0.00256
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	0.00284	0.00285	0.00276
	(A * C * !Y)	-0.00330	-0.00331	-0.00329
	(A * !C * !Y)	0.00274	0.00275	0.00274
	(A * !C * !Y)	-0.00280	-0.00282	-0.00282
	(!A * C * !Y)	0.00334	0.00274	0.00273
	(!A * C * !Y)	-0.00414	-0.00477	-0.00481

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	-0.00117	-0.00118	-0.00117
	(A * C * !Y)	0.00080	0.00080	0.00080
	(A * !C * !Y)	-0.00116	-0.00116	-0.00115
	(A * !C * !Y)	0.00071	0.00071	0.00072
	(!A * C * !Y)	-0.00116	-0.00117	-0.00116
	(!A * C * !Y)	0.00118	0.00119	0.00118
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	-0.00117	-0.00118	-0.00117
	(A * C * !Y)	0.00174	0.00175	0.00174
	(A * !C * !Y)	-0.00115	-0.00115	-0.00113
	(A * !C * !Y)	0.00159	0.00158	0.00159
	(!A * C * !Y)	-0.00115	-0.00116	-0.00115
	(!A * C * !Y)	0.00254	0.00256	0.00256
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	-0.00274	-0.00274	-0.00273
	(A * C * !Y)	0.00330	0.00331	0.00329
	(A * !C * !Y)	-0.00265	-0.00266	-0.00263
	(A * !C * !Y)	0.00290	0.00291	0.00293
	(!A * C * !Y)	-0.00272	-0.00272	-0.00271
	(!A * C * !Y)	0.00480	0.00481	0.00481

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	0.00123	0.00123	0.00123
	(B * !Y)	-0.00064	-0.00064	-0.00064
	(A * !B * !Y)	0.00123	0.00123	0.00123
	(A * !B * !Y)	-0.00064	-0.00064	-0.00064
sky130_fd_sc_hs__nor3_2	(B * !Y)	0.00137	0.00137	0.00137
	(B * !Y)	-0.00129	-0.00129	-0.00129
	(A * !B * !Y)	0.00138	0.00137	0.00137
	(A * !B * !Y)	-0.00130	-0.00129	-0.00128
sky130_fd_sc_hs__nor3_4	(B * !Y)	0.00307	0.00313	0.00308
	(B * !Y)	-0.00263	-0.00269	-0.00264
	(A * !B * !Y)	0.00307	0.00313	0.00309
	(A * !B * !Y)	-0.00262	-0.00268	-0.00264

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	-0.00118	-0.00118	-0.00122
	(B * !Y)	0.00069	0.00069	0.00066
	(A * !B * !Y)	-0.00112	-0.00111	-0.00121
	(A * !B * !Y)	0.00073	0.00072	0.00066
sky130_fd_sc_hs__nor3_2	(B * !Y)	-0.00121	-0.00121	-0.00135
	(B * !Y)	0.00143	0.00142	0.00132
	(A * !B * !Y)	-0.00107	-0.00107	-0.00132
	(A * !B * !Y)	0.00151	0.00150	0.00133
sky130_fd_sc_hs__nor3_4	(B * !Y)	-0.00280	-0.00282	-0.00305
	(B * !Y)	0.00288	0.00289	0.00272
	(A * !B * !Y)	-0.00247	-0.00249	-0.00298
	(A * !B * !Y)	0.00306	0.00306	0.00272

SKY130_FD_SC_HS__NOR4BBx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage 1.44, Temp 25.00

Truth Table

INPUT				OUTPUT
A	B	C_N	D_N	Y
0	x	0	x	0
0	x	1	0	0
0	0	1	1	1
x	1	1	1	0
1	x	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor4bb_1	15.98400
sky130_fd_sc_hs__nor4bb_2	23.97600
sky130_fd_sc_hs__nor4bb_4	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C_N	D_N	Y
sky130_fd_sc_hs__nor4bb_1	0.00275	0.00282	0.00223	0.00220	0.17435
sky130_fd_sc_hs__nor4bb_2	0.00512	0.00537	0.00258	0.00245	0.31738
sky130_fd_sc_hs__nor4bb_4	0.01010	0.01078	0.00356	0.00347	0.60936

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor4bb_1	0.00000	0.12724	0.25659
sky130_fd_sc_hs__nor4bb_2	0.00000	0.07595	0.15468
sky130_fd_sc_hs__nor4bb_4	0.00000	0.26362	0.54688

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)	0.34593	1.63020	11.09600
	B->Y (FR)	0.33013	1.61275	11.38260
	C_N->Y (RR)	0.32195	1.41070	7.64193
	D_N->Y (RR)	0.21510	1.28937	7.44113
sky130_fd_sc_hs__nor4bb_2	A->Y (FR)	0.34235	1.45561	11.14020
	B->Y (FR)	0.31902	1.41989	11.40300
	C_N->Y (RR)	0.30531	1.22981	7.75954
	D_N->Y (RR)	0.18491	1.09745	7.55425
sky130_fd_sc_hs__nor4bb_4	A->Y (FR)	0.34028	1.27549	11.09540
	B->Y (FR)	0.31768	1.24937	11.39400
	C_N->Y (RR)	0.30196	1.09519	8.07596
	D_N->Y (RR)	0.18825	0.97725	7.91479

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4bb_1	A->Y (RF)	0.02768	0.35382	2.78579
	B->Y (RF)	0.02833	0.34673	2.75338
	C_N->Y (FF)	0.12560	0.52976	2.45378
	D_N->Y (FF)	0.10721	0.49810	2.34163
sky130_fd_sc_hs__nor4bb_2	A->Y (RF)	0.02358	0.30715	2.63970
	B->Y (RF)	0.02471	0.30377	2.64283
	C_N->Y (FF)	0.13317	0.55805	2.75289
	D_N->Y (FF)	0.11720	0.53704	2.69424
sky130_fd_sc_hs__nor4bb_4	A->Y (RF)	0.02470	0.29235	2.75327
	B->Y (RF)	0.02519	0.27975	2.66844
	C_N->Y (FF)	0.13624	0.53230	2.50087
	D_N->Y (FF)	0.12768	0.52485	2.48719

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.00223	0.00213	0.00216
	A	0.00584	0.00572	0.00577
	B	0.00220	0.00209	0.00216
	B	0.00527	0.00515	0.00518
	C_N	0.00688	0.00669	0.01015
	C_N	0.00495	0.00477	0.00822
	D_N	0.00568	0.00550	0.00930
	D_N	0.00396	0.00378	0.00759
sky130_fd_sc_hs__nor4bb_2	A	0.00414	0.00397	0.00404
	A	0.01121	0.01105	0.01114
	B	0.00411	0.00390	0.00405
	B	0.01000	0.00981	0.00994
	C_N	0.01013	0.00996	0.01333
	C_N	0.00842	0.00824	0.01163
	D_N	0.00851	0.00834	0.01188
	D_N	0.00701	0.00684	0.01039
sky130_fd_sc_hs__nor4bb_4	A	0.00853	0.00813	0.00834
	A	0.02221	0.02182	0.02206
	B	0.00835	0.00797	0.00829
	B	0.02005	0.01967	0.02000
	C_N	0.01843	0.01816	0.02381
	C_N	0.01651	0.01624	0.02190
	D_N	0.01510	0.01498	0.02088
	D_N	0.01331	0.01319	0.01912

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.00535	0.00521	0.00544
	A	0.00181	0.00167	0.00191
	B	0.00435	0.00422	0.00448
	B	0.00131	0.00117	0.00143
	C_N	0.00414	0.00429	0.00846
	C_N	0.00607	0.00621	0.01038
	D_N	0.00298	0.00322	0.00750
	D_N	0.00469	0.00493	0.00921
sky130_fd_sc_hs__nor4bb_2	A	0.01066	0.01032	0.01075
	A	0.00381	0.00345	0.00391
	B	0.00807	0.00782	0.00836
	B	0.00222	0.00196	0.00251
	C_N	0.00750	0.00756	0.01127
	C_N	0.00921	0.00925	0.01297
	D_N	0.00514	0.00545	0.00939
	D_N	0.00664	0.00694	0.01088
sky130_fd_sc_hs__nor4bb_4	A	0.02042	0.01975	0.02072
	A	0.00716	0.00642	0.00752
	B	0.01624	0.01560	0.01679
	B	0.00467	0.00404	0.00525
	C_N	0.01375	0.01392	0.02096
	C_N	0.01566	0.01584	0.02287
	D_N	0.01062	0.01123	0.01879
	D_N	0.01239	0.01301	0.02056

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)**	0.00119	0.00118	0.00117
	(B * C_N * D_N * !Y)	-0.00117	-0.00121	-0.00121
	(B * !D_N * !Y)	0.00119	0.00118	0.00117
	(B * !D_N * !Y)	-0.00118	-0.00121	-0.00121
	(B * !C_N * D_N * !Y)	0.00109	0.00109	0.00108
	(B * !C_N * D_N * !Y)	-0.00127	-0.00130	-0.00130
	(!B * C_N * !D_N * !Y)	0.00124	0.00121	0.00119
	(!B * C_N * !D_N * !Y)	-0.00108	-0.00115	-0.00115
	(!B * !C_N * D_N * !Y)	0.00108	0.00109	0.00108
	(!B * !C_N * D_N * !Y)	-0.00119	-0.00126	-0.00126
	(!B * !C_N * !D_N * !Y)	0.00108	0.00109	0.00108
	(!B * !C_N * !D_N * !Y)	-0.00119	-0.00126	-0.00126
sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	0.00209	0.00208	0.00207
	(B * C_N * D_N * !Y)	-0.00239	-0.00251	-0.00249
	(B * !D_N * !Y)	0.00209	0.00208	0.00207
	(B * !D_N * !Y)	-0.00239	-0.00251	-0.00249
	(B * !C_N * D_N * !Y)	0.00206	0.00208	0.00206
	(B * !C_N * D_N * !Y)	-0.00241	-0.00251	-0.00249
	(!B * C_N * !D_N * !Y)	0.00222	0.00216	0.00211
	(!B * C_N * !D_N * !Y)	-0.00223	-0.00237	-0.00236
	(!B * !C_N * D_N * !Y)	0.00207	0.00206	0.00206
	(!B * !C_N * D_N * !Y)	-0.00227	-0.00241	-0.00240
	(!B * !C_N * !D_N * !Y)	0.00206	0.00206	0.00206
	(!B * !C_N * !D_N * !Y)	-0.00227	-0.00241	-0.00240

sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	0.00407	0.00404	0.00402
	(B * C_N * D_N * !Y)	-0.00461	-0.00483	-0.00482
	(B * !D_N * !Y)	0.00409	0.00405	0.00403
	(B * !D_N * !Y)	-0.00462	-0.00483	-0.00481
	(B * !C_N * D_N * !Y)	0.00400	0.00403	0.00401
	(B * !C_N * D_N * !Y)	-0.00469	-0.00485	-0.00483
	(!B * C_N * !D_N * !Y)	0.00434	0.00420	0.00409
	(!B * C_N * !D_N * !Y)	-0.00430	-0.00457	-0.00454
	(!B * !C_N * D_N * !Y)	0.00404	0.00403	0.00401
	(!B * !C_N * D_N * !Y)	-0.00441	-0.00466	-0.00464
	(!B * !C_N * !D_N * !Y)	0.00403	0.00402	0.00401
	(!B * !C_N * !D_N * !Y)	-0.00441	-0.00466	-0.00464

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)**	-0.00117	-0.00116	-0.00117
	(B * C_N * D_N * !Y)	0.00121	0.00121	0.00121
	(B * !D_N * !Y)	-0.00117	-0.00117	-0.00117
	(B * !D_N * !Y)	0.00121	0.00121	0.00121
	(B * !C_N * D_N * !Y)	-0.00108	-0.00108	-0.00108
	(B * !C_N * D_N * !Y)	0.00130	0.00130	0.00130
	(!B * C_N * !D_N * !Y)	-0.00121	-0.00121	-0.00119
	(!B * C_N * !D_N * !Y)	0.00116	0.00115	0.00115
	(!B * !C_N * D_N * !Y)	-0.00108	-0.00108	-0.00108
	(!B * !C_N * D_N * !Y)	0.00126	0.00126	0.00126
	(!B * !C_N * !D_N * !Y)	-0.00108	-0.00108	-0.00108
	(!B * !C_N * !D_N * !Y)	0.00126	0.00126	0.00126

sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	-0.00206	-0.00207	-0.00206
	(B * C_N * D_N * !Y)	0.00250	0.00251	0.00249
	(B * !D_N * !Y)	-0.00207	-0.00207	-0.00206
	(B * !D_N * !Y)	0.00249	0.00251	0.00249
	(B * !C_N * D_N * !Y)	-0.00206	-0.00207	-0.00206
	(B * !C_N * D_N * !Y)	0.00250	0.00251	0.00249
	(!B * C_N * !D_N * !Y)	-0.00215	-0.00216	-0.00211
	(!B * C_N * !D_N * !Y)	0.00235	0.00237	0.00236
	(!B * !C_N * D_N * !Y)	-0.00205	-0.00206	-0.00206
	(!B * !C_N * D_N * !Y)	0.00239	0.00241	0.00240
	(!B * !C_N * !D_N * !Y)	-0.00205	-0.00206	-0.00206
	(!B * !C_N * !D_N * !Y)	0.00239	0.00241	0.00240
sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	-0.00399	-0.00402	-0.00400
	(B * C_N * D_N * !Y)	0.00479	0.00485	0.00482
	(B * !D_N * !Y)	-0.00403	-0.00404	-0.00402
	(B * !D_N * !Y)	0.00482	0.00485	0.00481
	(B * !C_N * D_N * !Y)	-0.00400	-0.00401	-0.00400
	(B * !C_N * D_N * !Y)	0.00483	0.00486	0.00483
	(!B * C_N * !D_N * !Y)	-0.00419	-0.00420	-0.00409
	(!B * C_N * !D_N * !Y)	0.00453	0.00457	0.00454
	(!B * !C_N * D_N * !Y)	-0.00400	-0.00401	-0.00400
	(!B * !C_N * D_N * !Y)	0.00463	0.00466	0.00464
	(!B * !C_N * !D_N * !Y)	-0.00399	-0.00401	-0.00400
	(!B * !C_N * !D_N * !Y)	0.00462	0.00466	0.00464

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)**	0.00125	0.00126	0.00125
	(A * C_N * D_N * !Y)	-0.00070	-0.00070	-0.00070
	(A * C_N * !D_N * !Y)	0.00137	0.00143	0.00141
	(A * C_N * !D_N * !Y)	-0.00082	-0.00082	-0.00082
	(A * !C_N * D_N * !Y)	0.00114	0.00114	0.00113
	(A * !C_N * D_N * !Y)	-0.00096	-0.00096	-0.00096
	(A * !C_N * !D_N * !Y)	0.00113	0.00113	0.00113
	(A * !C_N * !D_N * !Y)	-0.00100	-0.00100	-0.00100
	(!A * C_N * !D_N * !Y)	0.00137	0.00130	0.00127
	(!A * C_N * !D_N * !Y)	-0.00105	-0.00114	-0.00114
	(!A * !C_N * D_N * !Y)	0.00116	0.00114	0.00113
	(!A * !C_N * D_N * !Y)	-0.00129	-0.00132	-0.00132
	(!A * !C_N * !D_N * !Y)	0.00114	0.00114	0.00113
	(!A * !C_N * !D_N * !Y)	-0.00131	-0.00132	-0.00131
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	0.00222	0.00223	0.00223
	(A * C_N * D_N * !Y)	-0.00155	-0.00155	-0.00155
	(A * C_N * !D_N * !Y)	0.00244	0.00256	0.00254
	(A * C_N * !D_N * !Y)	-0.00179	-0.00180	-0.00180
	(A * !C_N * D_N * !Y)	0.00220	0.00218	0.00217
	(A * !C_N * D_N * !Y)	-0.00189	-0.00190	-0.00189
	(A * !C_N * !D_N * !Y)	0.00216	0.00216	0.00216
	(A * !C_N * !D_N * !Y)	-0.00196	-0.00197	-0.00196
	(!A * C_N * !D_N * !Y)	0.00245	0.00232	0.00225
	(!A * C_N * !D_N * !Y)	-0.00232	-0.00245	-0.00245
	(!A * !C_N * D_N * !Y)	0.00223	0.00217	0.00215
	(!A * !C_N * D_N * !Y)	-0.00257	-0.00264	-0.00263
	(!A * !C_N * !D_N * !Y)	0.00218	0.00217	0.00215
	(!A * !C_N * !D_N * !Y)	-0.00261	-0.00264	-0.00263

sky130_fd_sc_hs__nor4bb_4	(A * C_N * D_N * !Y)	0.00429	0.00433	0.00431
	(A * C_N * D_N * !Y)	-0.00306	-0.00309	-0.00307
	(A * C_N * !D_N * !Y)	0.00483	0.00502	0.00496
	(A * C_N * !D_N * !Y)	-0.00349	-0.00356	-0.00351
	(A * !C_N * D_N * !Y)	0.00417	0.00421	0.00416
	(A * !C_N * D_N * !Y)	-0.00370	-0.00376	-0.00372
	(A * !C_N * !D_N * !Y)	0.00413	0.00417	0.00414
	(A * !C_N * !D_N * !Y)	-0.00390	-0.00395	-0.00391
	(!A * C_N * !D_N * !Y)	0.00485	0.00451	0.00436
	(!A * C_N * !D_N * !Y)	-0.00451	-0.00482	-0.00481
	(!A * !C_N * D_N * !Y)	0.00425	0.00417	0.00414
	(!A * !C_N * D_N * !Y)	-0.00505	-0.00522	-0.00520
	(!A * !C_N * !D_N * !Y)	0.00414	0.00416	0.00413
	(!A * !C_N * !D_N * !Y)	-0.00513	-0.00522	-0.00519

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)**	-0.00125	-0.00124	-0.00125
	(A * C_N * D_N * !Y)	0.00072	0.00071	0.00072
	(A * C_N * !D_N * !Y)	-0.00134	-0.00135	-0.00134
	(A * C_N * !D_N * !Y)	0.00082	0.00082	0.00082
	(A * !C_N * D_N * !Y)	-0.00112	-0.00113	-0.00113
	(A * !C_N * D_N * !Y)	0.00096	0.00096	0.00096
	(A * !C_N * !D_N * !Y)	-0.00113	-0.00113	-0.00113
	(A * !C_N * !D_N * !Y)	0.00100	0.00100	0.00100
	(!A * C_N * !D_N * !Y)	-0.00130	-0.00130	-0.00127
	(!A * C_N * !D_N * !Y)	0.00113	0.00114	0.00114
	(!A * !C_N * D_N * !Y)	-0.00112	-0.00112	-0.00112
	(!A * !C_N * D_N * !Y)	0.00131	0.00132	0.00132
	(!A * !C_N * !D_N * !Y)	-0.00112	-0.00113	-0.00112
	(!A * !C_N * !D_N * !Y)	0.00131	0.00132	0.00131
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	-0.00219	-0.00218	-0.00220
	(A * C_N * D_N * !Y)	0.00160	0.00159	0.00160
	(A * C_N * !D_N * !Y)	-0.00240	-0.00241	-0.00240
	(A * C_N * !D_N * !Y)	0.00179	0.00180	0.00180
	(A * !C_N * D_N * !Y)	-0.00215	-0.00216	-0.00215
	(A * !C_N * D_N * !Y)	0.00189	0.00190	0.00189
	(A * !C_N * !D_N * !Y)	-0.00215	-0.00215	-0.00215
	(A * !C_N * !D_N * !Y)	0.00196	0.00197	0.00196
	(!A * C_N * !D_N * !Y)	-0.00234	-0.00232	-0.00225
	(!A * C_N * !D_N * !Y)	0.00244	0.00245	0.00245
	(!A * !C_N * D_N * !Y)	-0.00214	-0.00215	-0.00215
	(!A * !C_N * D_N * !Y)	0.00262	0.00264	0.00263
	(!A * !C_N * !D_N * !Y)	-0.00214	-0.00215	-0.00215
	(!A * !C_N * !D_N * !Y)	0.00261	0.00264	0.00263

sky130_fd_sc_hs__nor4bb_4	(A * C_N * D_N * !Y)	-0.00426	-0.00428	-0.00428
	(A * C_N * D_N * !Y)	0.00313	0.00314	0.00313
	(A * C_N * !D_N * !Y)	-0.00468	-0.00475	-0.00469
	(A * C_N * !D_N * !Y)	0.00349	0.00356	0.00351
	(A * !C_N * D_N * !Y)	-0.00412	-0.00416	-0.00414
	(A * !C_N * D_N * !Y)	0.00370	0.00376	0.00372
	(A * !C_N * !D_N * !Y)	-0.00412	-0.00415	-0.00413
	(A * !C_N * !D_N * !Y)	0.00390	0.00395	0.00391
	(!A * C_N * !D_N * !Y)	-0.00456	-0.00451	-0.00436
	(!A * C_N * !D_N * !Y)	0.00480	0.00482	0.00481
	(!A * !C_N * D_N * !Y)	-0.00413	-0.00414	-0.00413
	(!A * !C_N * D_N * !Y)	0.00520	0.00522	0.00520
	(!A * !C_N * !D_N * !Y)	-0.00413	-0.00414	-0.00412
	(!A * !C_N * !D_N * !Y)	0.00520	0.00522	0.00519

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * !Y)	0.00339	0.00322	0.00683
	(B * !Y)	0.00090	0.00071	0.00433
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00346	0.00329	0.00686
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00091	0.00072	0.00431
sky130_fd_sc_hs__nor4bb_2	(B * !Y)	0.00391	0.00373	0.00706
	(B * !Y)	0.00122	0.00103	0.00438
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00410	0.00391	0.00718
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00128	0.00109	0.00439
sky130_fd_sc_hs__nor4bb_4	(B * !Y)	0.00627	0.00597	0.01171
	(B * !Y)	0.00245	0.00214	0.00790
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00651	0.00620	0.01185
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00248	0.00215	0.00785

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * !Y)	0.00134	0.00153	0.00581
	(B * !Y)	0.00383	0.00403	0.00832
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00134	0.00153	0.00581
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00384	0.00403	0.00832
sky130_fd_sc_hs__nor4bb_2	(B * !Y)	0.00243	0.00256	0.00641
	(B * !Y)	0.00512	0.00525	0.00909
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00243	0.00257	0.00641
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00513	0.00526	0.00909
sky130_fd_sc_hs__nor4bb_4	(B * !Y)	0.00435	0.00448	0.01197
	(B * !Y)	0.00813	0.00826	0.01576
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00437	0.00451	0.01199
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00817	0.00830	0.01578

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)	0.00303	0.00286	0.00659
	(B * C_N * !Y)	0.00076	0.00057	0.00432
	(A * !B * C_N * !Y)	0.00312	0.00295	0.00665
	(A * !B * C_N * !Y)	0.00081	0.00062	0.00435
	(!C_N * !Y)	0.00321	0.00305	0.00680
	(!C_N * !Y)	0.00095	0.00077	0.00453
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00383	0.00367	0.00701
	(B * C_N * !Y)	0.00136	0.00118	0.00453
	(A * !B * C_N * !Y)	0.00407	0.00391	0.00718
	(A * !B * C_N * !Y)	0.00151	0.00131	0.00462
	(!C_N * !Y)	0.00403	0.00386	0.00724
	(!C_N * !Y)	0.00158	0.00140	0.00478
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.00595	0.00564	0.01116
	(B * C_N * !Y)	0.00232	0.00200	0.00754
	(A * !B * C_N * !Y)	0.00633	0.00602	0.01144
	(A * !B * C_N * !Y)	0.00256	0.00223	0.00770
	(!C_N * !Y)	0.00624	0.00594	0.01155
	(!C_N * !Y)	0.00268	0.00236	0.00797

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)	0.00119	0.00140	0.00578
	(B * C_N * !Y)	0.00347	0.00368	0.00806
	(A * !B * C_N * !Y)	0.00119	0.00140	0.00578
	(A * !B * C_N * !Y)	0.00347	0.00368	0.00806
	(!C_N * !Y)	0.00095	0.00116	0.00555
	(!C_N * !Y)	0.00323	0.00344	0.00782
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00221	0.00233	0.00626
	(B * C_N * !Y)	0.00467	0.00480	0.00872
	(A * !B * C_N * !Y)	0.00221	0.00233	0.00626
	(A * !B * C_N * !Y)	0.00467	0.00481	0.00872
	(!C_N * !Y)	0.00192	0.00204	0.00597
	(!C_N * !Y)	0.00438	0.00451	0.00843
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.00515	0.00530	0.01282
	(B * C_N * !Y)	0.00873	0.00888	0.01641
	(A * !B * C_N * !Y)	0.00515	0.00530	0.01282
	(A * !B * C_N * !Y)	0.00874	0.00889	0.01641
	(!C_N * !Y)	0.00460	0.00475	0.01227
	(!C_N * !Y)	0.00818	0.00833	0.01586

SKY130_FD_SC_HS__NOR4Bx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT				OUTPUT
A	B	C	D_N	Y
0	0	x	0	0
0	0	0	1	1
0	x	1	1	0
x	1	x	x	0
1	x	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor4b_1	11.18880
sky130_fd_sc_hs__nor4b_2	19.18080
sky130_fd_sc_hs__nor4b_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D_N	Y
sky130_fd_sc_hs__nor4b_1	0.00265	0.00275	0.00274	0.00213	0.17533
sky130_fd_sc_hs__nor4b_2	0.00522	0.00529	0.00532	0.00249	0.31132
sky130_fd_sc_hs__nor4b_4	0.01023	0.01029	0.01046	0.00375	0.58283

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor4b_1	0.00000	0.06608	0.13672
sky130_fd_sc_hs__nor4b_2	0.00000	0.04289	0.09419
sky130_fd_sc_hs__nor4b_4	0.00000	0.14164	0.30715

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)	0.33298	1.61949	11.11630
	B->Y (FR)	0.31561	1.60042	11.40310
	C->Y (FR)	0.26655	1.55965	11.68880
	D_N->Y (RR)	0.22175	1.29581	7.46870
sky130_fd_sc_hs__nor4b_2	A->Y (FR)	0.34427	1.44644	10.99060
	B->Y (FR)	0.32042	1.41219	11.25290
	C->Y (FR)	0.26861	1.37266	11.65250
	D_N->Y (RR)	0.18730	1.08836	7.40517
sky130_fd_sc_hs__nor4b_4	A->Y (FR)	0.33730	1.26549	10.84200
	B->Y (FR)	0.31398	1.23432	11.13790
	C->Y (FR)	0.25842	1.19081	11.54290
	D_N->Y (RR)	0.19680	0.97341	7.70994

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4b_1	A->Y (RF)	0.02793	0.35907	2.84138
	B->Y (RF)	0.02909	0.35471	2.82904
	C->Y (RF)	0.02932	0.34763	2.81313
	D_N->Y (FF)	0.10748	0.50173	2.38293
sky130_fd_sc_hs__nor4b_2	A->Y (RF)	0.02372	0.30549	2.60706
	B->Y (RF)	0.02476	0.30209	2.61082
	C->Y (RF)	0.02682	0.29819	2.62984
	D_N->Y (FF)	0.12100	0.53851	2.67131
sky130_fd_sc_hs__nor4b_4	A->Y (RF)	0.02394	0.28089	2.61150
	B->Y (RF)	0.02437	0.27296	2.58220
	C->Y (RF)	0.02458	0.25703	2.50366
	D_N->Y (FF)	0.12445	0.51583	2.44124

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.00132	0.00122	0.00126
	A	0.00549	0.00539	0.00542
	B	0.00132	0.00120	0.00128
	B	0.00491	0.00480	0.00483
	C	0.00117	0.00106	0.00122
	C	0.00430	0.00420	0.00435
	D_N	0.00545	0.00529	0.00891
	D_N	0.00374	0.00357	0.00721
sky130_fd_sc_hs__nor4b_2	A	0.00243	0.00225	0.00232
	A	0.01143	0.01125	0.01135
	B	0.00246	0.00225	0.00240
	B	0.01013	0.00994	0.01008
	C	0.00238	0.00216	0.00250
	C	0.00884	0.00863	0.00896
	D_N	0.00825	0.00805	0.01154
	D_N	0.00714	0.00694	0.01044
sky130_fd_sc_hs__nor4b_4	A	0.00480	0.00439	0.00460
	A	0.02250	0.02216	0.02239
	B	0.00480	0.00438	0.00472
	B	0.01993	0.01952	0.01987
	C	0.00458	0.00420	0.00493
	C	0.01736	0.01696	0.01773
	D_N	0.01450	0.01424	0.02028
	D_N	0.01367	0.01339	0.01947

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.00599	0.00586	0.00607
	A	0.00194	0.00179	0.00204
	B	0.00493	0.00483	0.00508
	B	0.00141	0.00128	0.00155
	C	0.00385	0.00379	0.00409
	C	0.00073	0.00067	0.00096
	D_N	0.00316	0.00342	0.00774
	D_N	0.00487	0.00513	0.00944
sky130_fd_sc_hs__nor4b_2	A	0.01240	0.01206	0.01247
	A	0.00375	0.00338	0.00384
	B	0.00980	0.00955	0.01006
	B	0.00227	0.00199	0.00255
	C	0.00743	0.00728	0.00788
	C	0.00102	0.00084	0.00146
	D_N	0.00569	0.00596	0.00977
	D_N	0.00680	0.00706	0.01087
sky130_fd_sc_hs__nor4b_4	A	0.02410	0.02347	0.02430
	A	0.00704	0.00630	0.00732
	B	0.01915	0.01858	0.01968
	B	0.00432	0.00372	0.00489
	C	0.01437	0.01398	0.01530
	C	0.00166	0.00122	0.00262
	D_N	0.01138	0.01199	0.01940
	D_N	0.01221	0.01282	0.02021

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)**	0.00105	0.00105	0.00104
	(B * C * D_N * !Y)	-0.00118	-0.00121	-0.00121
	(B * !D_N * !Y)	0.00100	0.00101	0.00100
	(B * !D_N * !Y)	-0.00122	-0.00125	-0.00125
	(B * !C * D_N * !Y)	0.00105	0.00105	0.00104
	(B * !C * D_N * !Y)	-0.00117	-0.00120	-0.00121
	(!B * C * D_N * !Y)	0.00104	0.00106	0.00104
	(!B * C * D_N * !Y)	-0.00109	-0.00117	-0.00116
	(!B * C * !D_N * !Y)	0.00100	0.00101	0.00100
	(!B * C * !D_N * !Y)	-0.00113	-0.00121	-0.00120
	(!B * !C * !D_N * !Y)	0.00100	0.00101	0.00100
	(!B * !C * !D_N * !Y)	-0.00112	-0.00118	-0.00119
sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	0.00210	0.00212	0.00210
	(B * C * D_N * !Y)	-0.00243	-0.00253	-0.00252
	(B * !D_N * !Y)	0.00210	0.00212	0.00210
	(B * !D_N * !Y)	-0.00244	-0.00253	-0.00252
	(B * !C * D_N * !Y)	0.00211	0.00212	0.00210
	(B * !C * D_N * !Y)	-0.00242	-0.00253	-0.00252
	(!B * C * D_N * !Y)	0.00211	0.00213	0.00210
	(!B * C * D_N * !Y)	-0.00227	-0.00243	-0.00241
	(!B * C * !D_N * !Y)	0.00210	0.00213	0.00210
	(!B * C * !D_N * !Y)	-0.00227	-0.00243	-0.00241
	(!B * !C * !D_N * !Y)	0.00212	0.00213	0.00210
	(!B * !C * !D_N * !Y)	-0.00226	-0.00238	-0.00238

sky130_fd_sc_hs__nor4b_4	(B * C * D_N * !Y)	0.00411	0.00413	0.00411
	(B * C * D_N * !Y)	-0.00481	-0.00499	-0.00496
	(B * !D_N * !Y)	0.00411	0.00413	0.00410
	(B * !D_N * !Y)	-0.00481	-0.00499	-0.00496
	(B * !C * D_N * !Y)	0.00412	0.00414	0.00411
	(B * !C * D_N * !Y)	-0.00477	-0.00499	-0.00496
	(!B * C * D_N * !Y)	0.00412	0.00412	0.00411
	(!B * C * D_N * !Y)	-0.00448	-0.00478	-0.00476
	(!B * C * !D_N * !Y)	0.00413	0.00411	0.00410
	(!B * C * !D_N * !Y)	-0.00450	-0.00478	-0.00476
	(!B * !C * !D_N * !Y)	0.00415	0.00416	0.00411
	(!B * !C * !D_N * !Y)	-0.00446	-0.00470	-0.00470

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)	-0.00104	-0.00104	-0.00104
	(B * C * D_N * !Y)	0.00121	0.00121	0.00121
	(B * !D_N * !Y)	-0.00100	-0.00100	-0.00100
	(B * !D_N * !Y)	0.00125	0.00125	0.00125
	(B * !C * D_N * !Y)	-0.00104	-0.00104	-0.00104
	(B * !C * D_N * !Y)	0.00121	0.00120	0.00121
	(!B * C * D_N * !Y)	-0.00104	-0.00104	-0.00104
	(!B * C * D_N * !Y)	0.00116	0.00117	0.00116
	(!B * C * !D_N * !Y)	-0.00100	-0.00100	-0.00100
	(!B * C * !D_N * !Y)	0.00120	0.00121	0.00120
	(!B * !C * !D_N * !Y)	-0.00100	-0.00100	-0.00100
	(!B * !C * !D_N * !Y)	0.00119	0.00118	0.00119

sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	-0.00210	-0.00211	-0.00210
	(B * C * D_N * !Y)	0.00252	0.00253	0.00252
	(B * !D_N * !Y)	-0.00210	-0.00211	-0.00210
	(B * !D_N * !Y)	0.00252	0.00253	0.00252
	(B * !C * D_N * !Y)	-0.00210	-0.00211	-0.00210
	(B * !C * D_N * !Y)	0.00252	0.00253	0.00252
	(!B * C * D_N * !Y)	-0.00209	-0.00210	-0.00210
	(!B * C * D_N * !Y)	0.00240	0.00243	0.00241
	(!B * C * !D_N * !Y)	-0.00209	-0.00210	-0.00210
	(!B * C * !D_N * !Y)	0.00241	0.00243	0.00241
	(!B * !C * !D_N * !Y)	-0.00210	-0.00210	-0.00210
	(!B * !C * !D_N * !Y)	0.00237	0.00238	0.00238
sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	-0.00410	-0.00411	-0.00409
	(B * C * D_N * !Y)	0.00497	0.00500	0.00496
	(B * !D_N * !Y)	-0.00410	-0.00411	-0.00410
	(B * !D_N * !Y)	0.00497	0.00500	0.00496
	(B * !C * D_N * !Y)	-0.00410	-0.00411	-0.00409
	(B * !C * D_N * !Y)	0.00497	0.00500	0.00496
	(!B * C * D_N * !Y)	-0.00409	-0.00411	-0.00409
	(!B * C * D_N * !Y)	0.00475	0.00478	0.00476
	(!B * C * !D_N * !Y)	-0.00409	-0.00411	-0.00410
	(!B * C * !D_N * !Y)	0.00475	0.00478	0.00476
	(!B * !C * !D_N * !Y)	-0.00410	-0.00410	-0.00410
	(!B * !C * !D_N * !Y)	0.00469	0.00470	0.00470

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)**	0.00108	0.00109	0.00108
	(A * C * D_N * !Y)	-0.00082	-0.00083	-0.00082
	(A * C * !D_N * !Y)	0.00102	0.00103	0.00103
	(A * C * !D_N * !Y)	-0.00090	-0.00090	-0.00090
	(A * !C * D_N * !Y)	0.00107	0.00107	0.00107
	(A * !C * D_N * !Y)	-0.00070	-0.00071	-0.00070
	(A * !C * !D_N * !Y)	0.00103	0.00104	0.00103
	(A * !C * !D_N * !Y)	-0.00087	-0.00087	-0.00086
	(!A * C * D_N * !Y)	0.00110	0.00108	0.00107
	(!A * C * D_N * !Y)	-0.00114	-0.00120	-0.00119
	(!A * C * !D_N * !Y)	0.00103	0.00104	0.00103
	(!A * C * !D_N * !Y)	-0.00121	-0.00124	-0.00123
	(!A * !C * !D_N * !Y)	0.00104	0.00104	0.00103
	(!A * !C * !D_N * !Y)	-0.00110	-0.00118	-0.00118
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	0.00218	0.00217	0.00215
	(A * C * D_N * !Y)	-0.00178	-0.00179	-0.00178
	(A * C * !D_N * !Y)	0.00216	0.00216	0.00215
	(A * C * !D_N * !Y)	-0.00185	-0.00186	-0.00185
	(A * !C * D_N * !Y)	0.00214	0.00215	0.00214
	(A * !C * D_N * !Y)	-0.00152	-0.00153	-0.00153
	(A * !C * !D_N * !Y)	0.00217	0.00220	0.00216
	(A * !C * !D_N * !Y)	-0.00177	-0.00178	-0.00177
	(!A * C * D_N * !Y)	0.00218	0.00216	0.00214
	(!A * C * D_N * !Y)	-0.00240	-0.00253	-0.00253
	(!A * C * !D_N * !Y)	0.00214	0.00216	0.00214
	(!A * C * !D_N * !Y)	-0.00245	-0.00253	-0.00253
	(!A * !C * !D_N * !Y)	0.00217	0.00217	0.00214
	(!A * !C * !D_N * !Y)	-0.00229	-0.00242	-0.00241

sky130_fd_sc_hs__nor4b_4	**(A * C * D_N * !Y)**	0.00424	0.00423	0.00420
	(A * C * D_N * !Y)	-0.00349	-0.00350	-0.00349
	(A * C * !D_N * !Y)	0.00423	0.00420	0.00419
	(A * C * !D_N * !Y)	-0.00362	-0.00364	-0.00362
	(A * !C * D_N * !Y)	0.00417	0.00419	0.00418
	(A * !C * D_N * !Y)	-0.00299	-0.00300	-0.00300
	(A * !C * !D_N * !Y)	0.00422	0.00428	0.00421
	(A * !C * !D_N * !Y)	-0.00346	-0.00348	-0.00346
	(!A * C * D_N * !Y)	0.00429	0.00422	0.00418
	(!A * C * D_N * !Y)	-0.00476	-0.00503	-0.00501
	(!A * C * !D_N * !Y)	0.00418	0.00422	0.00418
	(!A * C * !D_N * !Y)	-0.00487	-0.00503	-0.00500
	(!A * !C * !D_N * !Y)	0.00425	0.00423	0.00418
	(!A * !C * !D_N * !Y)	-0.00452	-0.00481	-0.00477

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)**	-0.00107	-0.00107	-0.00107
	(A * C * D_N * !Y)	0.00082	0.00083	0.00082
	(A * C * !D_N * !Y)	-0.00102	-0.00103	-0.00103
	(A * C * !D_N * !Y)	0.00090	0.00090	0.00090
	(A * !C * D_N * !Y)	-0.00106	-0.00106	-0.00106
	(A * !C * D_N * !Y)	0.00072	0.00072	0.00072
	(A * !C * !D_N * !Y)	-0.00103	-0.00103	-0.00103
	(A * !C * !D_N * !Y)	0.00087	0.00087	0.00086
	(!A * C * D_N * !Y)	-0.00106	-0.00107	-0.00106
	(!A * C * D_N * !Y)	0.00119	0.00120	0.00119
	(!A * C * !D_N * !Y)	-0.00102	-0.00103	-0.00103
	(!A * C * !D_N * !Y)	0.00122	0.00124	0.00123
	(!A * !C * !D_N * !Y)	-0.00102	-0.00103	-0.00102
	(!A * !C * !D_N * !Y)	0.00117	0.00118	0.00118
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	-0.00214	-0.00215	-0.00214
	(A * C * D_N * !Y)	0.00178	0.00179	0.00178
	(A * C * !D_N * !Y)	-0.00214	-0.00214	-0.00214
	(A * C * !D_N * !Y)	0.00185	0.00186	0.00185
	(A * !C * D_N * !Y)	-0.00212	-0.00211	-0.00210
	(A * !C * D_N * !Y)	0.00158	0.00157	0.00158
	(A * !C * !D_N * !Y)	-0.00215	-0.00216	-0.00215
	(A * !C * !D_N * !Y)	0.00177	0.00178	0.00177
	(!A * C * D_N * !Y)	-0.00213	-0.00214	-0.00213
	(!A * C * D_N * !Y)	0.00251	0.00253	0.00253
	(!A * C * !D_N * !Y)	-0.00213	-0.00214	-0.00214
	(!A * C * !D_N * !Y)	0.00251	0.00253	0.00253
	(!A * !C * !D_N * !Y)	-0.00214	-0.00215	-0.00214
	(!A * !C * !D_N * !Y)	0.00240	0.00242	0.00241

sky130_fd_sc_hs__nor4b_4	(A * C * D_N * !Y)	-0.00417	-0.00418	-0.00417
	(A * C * D_N * !Y)	0.00349	0.00350	0.00349
	(A * C * !D_N * !Y)	-0.00417	-0.00418	-0.00417
	(A * C * !D_N * !Y)	0.00362	0.00364	0.00362
	(A * !C * D_N * !Y)	-0.00412	-0.00414	-0.00412
	(A * !C * D_N * !Y)	0.00305	0.00306	0.00308
	(A * !C * !D_N * !Y)	-0.00419	-0.00420	-0.00419
	(A * !C * !D_N * !Y)	0.00346	0.00348	0.00346
	(!A * C * D_N * !Y)	-0.00416	-0.00418	-0.00416
	(!A * C * D_N * !Y)	0.00498	0.00503	0.00501
	(!A * C * !D_N * !Y)	-0.00416	-0.00418	-0.00417
	(!A * C * !D_N * !Y)	0.00498	0.00503	0.00500
	(!A * !C * !D_N * !Y)	-0.00417	-0.00420	-0.00417
	(!A * !C * !D_N * !Y)	0.00475	0.00481	0.00477

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)	0.00121	0.00122	0.00122
	(B * D_N * !Y)	-0.00070	-0.00070	-0.00070
	(B * !D_N * !Y)	0.00104	0.00105	0.00103
	(B * !D_N * !Y)	-0.00100	-0.00101	-0.00100
	(A * !B * D_N * !Y)	0.00121	0.00122	0.00122
	(A * !B * D_N * !Y)	-0.00070	-0.00070	-0.00070
	(A * !B * !D_N * !Y)	0.00107	0.00104	0.00103
	(A * !B * !D_N * !Y)	-0.00103	-0.00103	-0.00102
	(!A * !B * !D_N * !Y)	0.00119	0.00104	0.00103
	(!A * !B * !D_N * !Y)	-0.00120	-0.00137	-0.00138

sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	0.00231	0.00231	0.00231
	(B * D_N * !Y)	-0.00144	-0.00144	-0.00144
	(B * !D_N * !Y)	0.00220	0.00223	0.00221
	(B * !D_N * !Y)	-0.00179	-0.00180	-0.00179
	(A * !B * D_N * !Y)	0.00232	0.00231	0.00231
	(A * !B * D_N * !Y)	-0.00145	-0.00144	-0.00144
	(A * !B * !D_N * !Y)	0.00224	0.00223	0.00219
	(A * !B * !D_N * !Y)	-0.00186	-0.00186	-0.00185
	(!A * !B * !D_N * !Y)	0.00249	0.00219	0.00217
	(!A * !B * !D_N * !Y)	-0.00221	-0.00254	-0.00255
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	0.00452	0.00455	0.00453
	(B * D_N * !Y)	-0.00285	-0.00288	-0.00287
	(B * !D_N * !Y)	0.00446	0.00450	0.00445
	(B * !D_N * !Y)	-0.00342	-0.00345	-0.00343
	(A * !B * D_N * !Y)	0.00453	0.00456	0.00453
	(A * !B * D_N * !Y)	-0.00284	-0.00286	-0.00285
	(A * !B * !D_N * !Y)	0.00460	0.00452	0.00442
	(A * !B * !D_N * !Y)	-0.00353	-0.00356	-0.00352
	(!A * !B * !D_N * !Y)	0.00511	0.00446	0.00440
	(!A * !B * !D_N * !Y)	-0.00423	-0.00493	-0.00495

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)**	-0.00120	-0.00120	-0.00120
	(B * D_N * !Y)	0.00073	0.00072	0.00073
	(B * !D_N * !Y)	-0.00103	-0.00103	-0.00103
	(B * !D_N * !Y)	0.00100	0.00101	0.00100
	(A * !B * D_N * !Y)	-0.00114	-0.00114	-0.00119
	(A * !B * D_N * !Y)	0.00075	0.00074	0.00072
	(A * !B * !D_N * !Y)	-0.00103	-0.00104	-0.00103
	(A * !B * !D_N * !Y)	0.00103	0.00103	0.00102
	(!A * !B * !D_N * !Y)	-0.00102	-0.00103	-0.00102
	(!A * !B * !D_N * !Y)	0.00137	0.00138	0.00138
sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	-0.00227	-0.00227	-0.00228
	(B * D_N * !Y)	0.00149	0.00148	0.00149
	(B * !D_N * !Y)	-0.00218	-0.00220	-0.00219
	(B * !D_N * !Y)	0.00179	0.00180	0.00179
	(A * !B * D_N * !Y)	-0.00209	-0.00212	-0.00224
	(A * !B * D_N * !Y)	0.00154	0.00155	0.00149
	(A * !B * !D_N * !Y)	-0.00219	-0.00220	-0.00219
	(A * !B * !D_N * !Y)	0.00186	0.00186	0.00185
	(!A * !B * !D_N * !Y)	-0.00217	-0.00218	-0.00217
	(!A * !B * !D_N * !Y)	0.00253	0.00255	0.00255
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	-0.00446	-0.00446	-0.00446
	(B * D_N * !Y)	0.00296	0.00296	0.00297
	(B * !D_N * !Y)	-0.00442	-0.00444	-0.00442
	(B * !D_N * !Y)	0.00342	0.00345	0.00343
	(A * !B * D_N * !Y)	-0.00413	-0.00417	-0.00441
	(A * !B * D_N * !Y)	0.00306	0.00306	0.00294
	(A * !B * !D_N * !Y)	-0.00442	-0.00445	-0.00442
	(A * !B * !D_N * !Y)	0.00353	0.00356	0.00352
	(!A * !B * !D_N * !Y)	-0.00438	-0.00441	-0.00438
	(!A * !B * !D_N * !Y)	0.00492	0.00496	0.00495

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00306	0.00291	0.00667
	(C * !Y)	0.00067	0.00051	0.00428
	(B * !C * !Y)	0.00314	0.00298	0.00672
	(B * !C * !Y)	0.00071	0.00054	0.00430
	(A * !B * !C * !Y)	0.00322	0.00307	0.00678
	(A * !B * !C * !Y)	0.00075	0.00059	0.00433
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00397	0.00378	0.00715
	(C * !Y)	0.00125	0.00104	0.00443
	(B * !C * !Y)	0.00414	0.00394	0.00727
	(B * !C * !Y)	0.00134	0.00113	0.00448
	(A * !B * !C * !Y)	0.00437	0.00417	0.00744
	(A * !B * !C * !Y)	0.00148	0.00126	0.00458
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.00611	0.00577	0.01150
	(C * !Y)	0.00209	0.00174	0.00749
	(B * !C * !Y)	0.00645	0.00610	0.01173
	(B * !C * !Y)	0.00227	0.00192	0.00760
	(A * !B * !C * !Y)	0.00689	0.00653	0.01204
	(A * !B * !C * !Y)	0.00253	0.00217	0.00777

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00100	0.00122	0.00561
	(C * !Y)	0.00339	0.00361	0.00799
	(B * !C * !Y)	0.00100	0.00122	0.00560
	(B * !C * !Y)	0.00340	0.00361	0.00799
	(A * !B * !C * !Y)	0.00100	0.00121	0.00560
	(A * !B * !C * !Y)	0.00340	0.00361	0.00799
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00204	0.00215	0.00607
	(C * !Y)	0.00474	0.00487	0.00878
	(B * !C * !Y)	0.00204	0.00215	0.00607
	(B * !C * !Y)	0.00475	0.00487	0.00878
	(A * !B * !C * !Y)	0.00204	0.00215	0.00607
	(A * !B * !C * !Y)	0.00475	0.00487	0.00878
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.00425	0.00436	0.01194
	(C * !Y)	0.00823	0.00836	0.01593
	(B * !C * !Y)	0.00424	0.00435	0.01194
	(B * !C * !Y)	0.00824	0.00836	0.01594
	(A * !B * !C * !Y)	0.00424	0.00435	0.01194
	(A * !B * !C * !Y)	0.00824	0.00836	0.01594

SKY130_FD_SC_HS__NOR4x

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT				OUTPUT
A	B	C	D	Y
0	0	0	0	1
0	0	x	1	0
0	x	1	x	0
x	1	x	x	0
1	x	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor4_1	9.59040
sky130_fd_sc_hs__nor4_2	14.38560
sky130_fd_sc_hs__nor4_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D	Y
sky130_fd_sc_hs__nor4_1	0.00259	0.00276	0.00275	0.00279	0.17674
sky130_fd_sc_hs__nor4_2	0.00400	0.00461	0.00457	0.00427	0.33013
sky130_fd_sc_hs__nor4_4	0.00790	0.00827	0.00806	0.00821	0.60356

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor4_1	0.00000	0.00492	0.02443
sky130_fd_sc_hs__nor4_2	0.00000	0.00878	0.04886
sky130_fd_sc_hs__nor4_4	0.00000	0.01757	0.09773

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)	0.32552	1.61197	11.12450
	B->Y (FR)	0.31051	1.59520	11.41310
	C->Y (FR)	0.26151	1.55382	11.70200
	D->Y (FR)	0.18072	1.44183	11.30140
sky130_fd_sc_hs__nor4_2	A->Y (FR)	0.27210	1.37152	11.09730
	B->Y (FR)	0.25005	1.34465	11.35400
	C->Y (FR)	0.18887	1.28749	11.63320
	D->Y (FR)	0.09568	1.16142	11.18980
sky130_fd_sc_hs__nor4_4	A->Y (FR)	0.29613	1.22892	10.91680
	B->Y (FR)	0.27464	1.20117	11.22320
	C->Y (FR)	0.21864	1.15497	11.58640
	D->Y (FR)	0.11582	1.02223	11.19890

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4_1	A->Y (RF)	0.02680	0.35217	2.79394
	B->Y (RF)	0.02904	0.35513	2.84187
	C->Y (RF)	0.02951	0.34905	2.83321
	D->Y (RF)	0.02631	0.33372	2.80029
sky130_fd_sc_hs__nor4_2	A->Y (RF)	0.03395	0.43724	3.95703
	B->Y (RF)	0.03802	0.44248	4.02400
	C->Y (RF)	0.03821	0.42827	3.99654
	D->Y (RF)	0.03071	0.40032	3.88004
sky130_fd_sc_hs__nor4_4	A->Y (RF)	0.03501	0.39368	3.77944
	B->Y (RF)	0.03724	0.38632	3.78479
	C->Y (RF)	0.03853	0.37800	3.81775
	D->Y (RF)	0.03052	0.35410	3.78092

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.00028	0.00018	0.00022
	A	0.00547	0.00538	0.00542
	B	0.00037	0.00026	0.00033
	B	0.00493	0.00483	0.00486
	C	0.00036	0.00025	0.00041
	C	0.00430	0.00419	0.00435
	D	0.00030	0.00026	0.00104
	D	0.00371	0.00368	0.00446
sky130_fd_sc_hs__nor4_2	A	0.00033	0.00023	0.00027
	A	0.00902	0.00896	0.00900
	B	0.00009	-0.00002	0.00007
	B	0.00801	0.00792	0.00792
	C	0.00028	0.00015	0.00032
	C	0.00667	0.00655	0.00672
	D	0.00008	0.00004	0.00109
	D	0.00518	0.00516	0.00621
sky130_fd_sc_hs__nor4_4	A	0.00261	0.00241	0.00250
	A	0.02039	0.02019	0.02035
	B	0.00268	0.00243	0.00260
	B	0.01800	0.01776	0.01793
	C	0.00275	0.00249	0.00286
	C	0.01533	0.01505	0.01549
	D	0.00255	0.00250	0.00450
	D	0.01262	0.01243	0.01459

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.00689	0.00677	0.00697
	A	0.00185	0.00171	0.00196
	B	0.00581	0.00568	0.00592
	B	0.00133	0.00120	0.00146
	C	0.00456	0.00450	0.00478
	C	0.00066	0.00059	0.00088
	D	0.00328	0.00334	0.00361
	D	-0.00013	-0.00009	0.00019
sky130_fd_sc_hs__nor4_2	A	0.01193	0.01162	0.01180
	A	0.00359	0.00327	0.00350
	B	0.01003	0.00976	0.00998
	B	0.00232	0.00203	0.00232
	C	0.00706	0.00689	0.00727
	C	0.00073	0.00056	0.00091
	D	0.00423	0.00428	0.00474
	D	-0.00087	-0.00085	-0.00040
sky130_fd_sc_hs__nor4_4	A	0.02407	0.02340	0.02385
	A	0.00704	0.00635	0.00688
	B	0.01917	0.01858	0.01915
	B	0.00423	0.00364	0.00430
	C	0.01413	0.01373	0.01448
	C	0.00171	0.00127	0.00208
	D	0.00833	0.00838	0.00931
	D	-0.00172	-0.00171	-0.00079

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	0.00108	0.00108	0.00107
	(B * D * !Y)	-0.00121	-0.00124	-0.00124
	(B * C * !D * !Y)	0.00108	0.00108	0.00107
	(B * C * !D * !Y)	-0.00121	-0.00124	-0.00124
	(B * !C * !D * !Y)	0.00108	0.00108	0.00107
	(B * !C * !D * !Y)	-0.00120	-0.00124	-0.00124
	(!B * C * D * !Y)	0.00107	0.00109	0.00107
	(!B * C * D * !Y)	-0.00112	-0.00120	-0.00119
	(!B * C * !D * !Y)	0.00107	0.00109	0.00107
	(!B * C * !D * !Y)	-0.00112	-0.00120	-0.00119
	(!B * !C * D * !Y)	0.00108	0.00109	0.00107
	(!B * !C * D * !Y)	-0.00111	-0.00117	-0.00117
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00107	0.00108	0.00107
	(B * D * !Y)	-0.00232	-0.00241	-0.00240
	(B * C * !D * !Y)	0.00107	0.00108	0.00107
	(B * C * !D * !Y)	-0.00232	-0.00241	-0.00240
	(B * !C * !D * !Y)	0.00107	0.00108	0.00107
	(B * !C * !D * !Y)	-0.00229	-0.00241	-0.00240
	(!B * C * D * !Y)	0.00108	0.00108	0.00107
	(!B * C * D * !Y)	-0.00216	-0.00230	-0.00229
	(!B * C * !D * !Y)	0.00108	0.00108	0.00107
	(!B * C * !D * !Y)	-0.00215	-0.00230	-0.00229
	(!B * !C * D * !Y)	0.00108	0.00109	0.00107
	(!B * !C * D * !Y)	-0.00211	-0.00225	-0.00225

sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00224	0.00224	0.00223
	(B * D * !Y)	-0.00477	-0.00494	-0.00492
	(B * C * !D * !Y)	0.00224	0.00224	0.00223
	(B * C * !D * !Y)	-0.00477	-0.00494	-0.00492
	(B * !C * !D * !Y)	0.00224	0.00224	0.00223
	(B * !C * !D * !Y)	-0.00473	-0.00494	-0.00492
	(!B * C * D * !Y)	0.00224	0.00225	0.00223
	(!B * C * D * !Y)	-0.00443	-0.00474	-0.00471
	(!B * C * !D * !Y)	0.00224	0.00225	0.00223
	(!B * C * !D * !Y)	-0.00443	-0.00474	-0.00471
	(!B * !C * D * !Y)	0.00226	0.00227	0.00224
	(!B * !C * D * !Y)	-0.00437	-0.00465	-0.00463

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00107	-0.00108	-0.00107
	(B * D * !Y)	0.00123	0.00125	0.00124
	(B * C * !D * !Y)	-0.00107	-0.00107	-0.00107
	(B * C * !D * !Y)	0.00123	0.00124	0.00124
	(B * !C * !D * !Y)	-0.00107	-0.00108	-0.00107
	(B * !C * !D * !Y)	0.00124	0.00125	0.00124
	(!B * C * D * !Y)	-0.00107	-0.00108	-0.00107
	(!B * C * D * !Y)	0.00119	0.00120	0.00119
	(!B * C * !D * !Y)	-0.00107	-0.00108	-0.00107
	(!B * C * !D * !Y)	0.00119	0.00120	0.00119
	(!B * !C * D * !Y)	-0.00107	-0.00107	-0.00107
	(!B * !C * D * !Y)	0.00117	0.00117	0.00117

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00107	-0.00107	-0.00107
	(B * D * !Y)	0.00240	0.00242	0.00240
	(B * C * !D * !Y)	-0.00107	-0.00107	-0.00107
	(B * C * !D * !Y)	0.00240	0.00242	0.00240
	(B * !C * !D * !Y)	-0.00107	-0.00107	-0.00107
	(B * !C * !D * !Y)	0.00240	0.00242	0.00240
	(!B * C * D * !Y)	-0.00107	-0.00108	-0.00107
	(!B * C * D * !Y)	0.00230	0.00230	0.00229
	(!B * C * !D * !Y)	-0.00107	-0.00108	-0.00107
	(!B * C * !D * !Y)	0.00227	0.00230	0.00229
	(!B * !C * D * !Y)	-0.00107	-0.00107	-0.00107
	(!B * !C * D * !Y)	0.00224	0.00225	0.00225
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00223	-0.00224	-0.00223
	(B * D * !Y)	0.00492	0.00495	0.00492
	(B * C * !D * !Y)	-0.00223	-0.00224	-0.00223
	(B * C * !D * !Y)	0.00492	0.00495	0.00492
	(B * !C * !D * !Y)	-0.00223	-0.00224	-0.00223
	(B * !C * !D * !Y)	0.00492	0.00495	0.00492
	(!B * C * D * !Y)	-0.00223	-0.00224	-0.00223
	(!B * C * D * !Y)	0.00471	0.00474	0.00471
	(!B * C * !D * !Y)	-0.00223	-0.00224	-0.00223
	(!B * C * !D * !Y)	0.00471	0.00474	0.00471
	(!B * !C * D * !Y)	-0.00223	-0.00224	-0.00223
	(!B * !C * D * !Y)	0.00463	0.00465	0.00463

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)**	0.00103	0.00103	0.00103
	(A * C * D * !Y)	-0.00090	-0.00091	-0.00090
	(A * C * !D * !Y)	0.00103	0.00104	0.00103
	(A * C * !D * !Y)	-0.00087	-0.00087	-0.00087
	(A * !C * D * !Y)	0.00103	0.00104	0.00103
	(A * !C * D * !Y)	-0.00086	-0.00086	-0.00086
	(A * !C * !D * !Y)	0.00103	0.00103	0.00103
	(A * !C * !D * !Y)	-0.00075	-0.00075	-0.00075
	(!A * C * D * !Y)	0.00104	0.00104	0.00103
	(!A * C * D * !Y)	-0.00121	-0.00124	-0.00124
	(!A * C * !D * !Y)	0.00105	0.00104	0.00103
	(!A * C * !D * !Y)	-0.00119	-0.00125	-0.00124
	(!A * !C * D * !Y)	0.00104	0.00104	0.00103
	(!A * !C * D * !Y)	-0.00109	-0.00118	-0.00118
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	0.00138	0.00137	0.00137
	(A * C * D * !Y)	-0.00185	-0.00186	-0.00184
	(A * C * !D * !Y)	0.00138	0.00137	0.00137
	(A * C * !D * !Y)	-0.00177	-0.00177	-0.00176
	(A * !C * D * !Y)	0.00135	0.00137	0.00135
	(A * !C * D * !Y)	-0.00175	-0.00175	-0.00174
	(A * !C * !D * !Y)	0.00135	0.00135	0.00135
	(A * !C * !D * !Y)	-0.00153	-0.00153	-0.00153
	(!A * C * D * !Y)	0.00137	0.00136	0.00135
	(!A * C * D * !Y)	-0.00243	-0.00252	-0.00251
	(!A * C * !D * !Y)	0.00136	0.00136	0.00135
	(!A * C * !D * !Y)	-0.00237	-0.00252	-0.00251
	(!A * !C * D * !Y)	0.00138	0.00136	0.00134
	(!A * !C * D * !Y)	-0.00221	-0.00241	-0.00238

sky130_fd_sc_hs__nor4_4	**(A * C * D * !Y)**	0.00232	0.00232	0.00232
	(A * C * D * !Y)	-0.00365	-0.00368	-0.00366
	(A * C * !D * !Y)	0.00233	0.00232	0.00232
	(A * C * !D * !Y)	-0.00352	-0.00354	-0.00353
	(A * !C * D * !Y)	0.00232	0.00237	0.00233
	(A * !C * D * !Y)	-0.00345	-0.00347	-0.00346
	(A * !C * !D * !Y)	0.00231	0.00231	0.00231
	(A * !C * !D * !Y)	-0.00305	-0.00305	-0.00305
	(!A * C * D * !Y)	0.00234	0.00233	0.00231
	(!A * C * D * !Y)	-0.00494	-0.00508	-0.00506
	(!A * C * !D * !Y)	0.00238	0.00233	0.00231
	(!A * C * !D * !Y)	-0.00485	-0.00507	-0.00507
	(!A * !C * D * !Y)	0.00237	0.00234	0.00231
	(!A * !C * D * !Y)	-0.00448	-0.00481	-0.00480

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)**	-0.00103	-0.00103	-0.00103
	(A * C * D * !Y)	0.00090	0.00091	0.00090
	(A * C * !D * !Y)	-0.00103	-0.00103	-0.00103
	(A * C * !D * !Y)	0.00087	0.00087	0.00087
	(A * !C * D * !Y)	-0.00103	-0.00103	-0.00103
	(A * !C * D * !Y)	0.00086	0.00086	0.00086
	(A * !C * !D * !Y)	-0.00103	-0.00103	-0.00103
	(A * !C * !D * !Y)	0.00077	0.00076	0.00077
	(!A * C * D * !Y)	-0.00102	-0.00103	-0.00103
	(!A * C * D * !Y)	0.00123	0.00124	0.00124
	(!A * C * !D * !Y)	-0.00103	-0.00103	-0.00103
	(!A * C * !D * !Y)	0.00124	0.00125	0.00124
	(!A * !C * D * !Y)	-0.00103	-0.00103	-0.00103
	(!A * !C * D * !Y)	0.00118	0.00118	0.00118
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	-0.00136	-0.00136	-0.00136
	(A * C * D * !Y)	0.00185	0.00186	0.00184
	(A * C * !D * !Y)	-0.00136	-0.00136	-0.00136
	(A * C * !D * !Y)	0.00177	0.00177	0.00176
	(A * !C * D * !Y)	-0.00135	-0.00135	-0.00135
	(A * !C * D * !Y)	0.00175	0.00175	0.00174
	(A * !C * !D * !Y)	-0.00134	-0.00135	-0.00135
	(A * !C * !D * !Y)	0.00155	0.00156	0.00155
	(!A * C * D * !Y)	-0.00135	-0.00135	-0.00135
	(!A * C * D * !Y)	0.00250	0.00252	0.00251
	(!A * C * !D * !Y)	-0.00135	-0.00135	-0.00135
	(!A * C * !D * !Y)	0.00250	0.00252	0.00251
	(!A * !C * D * !Y)	-0.00134	-0.00135	-0.00134
	(!A * !C * D * !Y)	0.00238	0.00241	0.00238

sky130_fd_sc_hs__nor4_4	(A * C * D * !Y)	-0.00230	-0.00231	-0.00231
	(A * C * D * !Y)	0.00365	0.00368	0.00366
	(A * C * !D * !Y)	-0.00230	-0.00231	-0.00231
	(A * C * !D * !Y)	0.00352	0.00354	0.00353
	(A * !C * D * !Y)	-0.00231	-0.00233	-0.00232
	(A * !C * D * !Y)	0.00345	0.00347	0.00346
	(A * !C * !D * !Y)	-0.00228	-0.00228	-0.00227
	(A * !C * !D * !Y)	0.00312	0.00310	0.00312
	(!A * C * D * !Y)	-0.00232	-0.00231	-0.00231
	(!A * C * D * !Y)	0.00510	0.00508	0.00506
	(!A * C * !D * !Y)	-0.00231	-0.00231	-0.00231
	(!A * C * !D * !Y)	0.00509	0.00507	0.00507
	(!A * !C * D * !Y)	-0.00232	-0.00232	-0.00231
	(!A * !C * D * !Y)	0.00481	0.00481	0.00480

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(B * D * !Y)	0.00106	0.00106	0.00105
	(B * D * !Y)	-0.00082	-0.00083	-0.00082
	(B * !D * !Y)	0.00105	0.00105	0.00105
	(B * !D * !Y)	-0.00071	-0.00071	-0.00071
	(A * !B * D * !Y)	0.00110	0.00106	0.00105
	(A * !B * D * !Y)	-0.00085	-0.00085	-0.00084
	(A * !B * !D * !Y)	0.00105	0.00105	0.00105
	(A * !B * !D * !Y)	-0.00070	-0.00071	-0.00071
	(!A * !B * D * !Y)	0.00121	0.00106	0.00105
	(!A * !B * D * !Y)	-0.00101	-0.00120	-0.00120

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00137	0.00136	0.00135
	(B * D * !Y)	-0.00167	-0.00168	-0.00168
	(B * !D * !Y)	0.00134	0.00134	0.00134
	(B * !D * !Y)	-0.00145	-0.00144	-0.00145
	(A * !B * D * !Y)	0.00144	0.00136	0.00134
	(A * !B * D * !Y)	-0.00172	-0.00173	-0.00171
	(A * !B * !D * !Y)	0.00135	0.00135	0.00134
	(A * !B * !D * !Y)	-0.00144	-0.00144	-0.00144
	(!A * !B * D * !Y)	0.00166	0.00134	0.00133
	(!A * !B * D * !Y)	-0.00209	-0.00245	-0.00246
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00230	0.00230	0.00225
	(B * D * !Y)	-0.00334	-0.00336	-0.00335
	(B * !D * !Y)	0.00223	0.00224	0.00222
	(B * !D * !Y)	-0.00293	-0.00295	-0.00296
	(A * !B * D * !Y)	0.00243	0.00229	0.00223
	(A * !B * D * !Y)	-0.00345	-0.00349	-0.00345
	(A * !B * !D * !Y)	0.00227	0.00225	0.00223
	(A * !B * !D * !Y)	-0.00296	-0.00293	-0.00295
	(!A * !B * D * !Y)	0.00298	0.00226	0.00221
	(!A * !B * D * !Y)	-0.00412	-0.00493	-0.00495

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

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

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00104	-0.00105	-0.00105
	(B * D * !Y)	0.00082	0.00083	0.00082
	(B * !D * !Y)	-0.00104	-0.00103	-0.00103
	(B * !D * !Y)	0.00073	0.00073	0.00074
	(A * !B * D * !Y)	-0.00105	-0.00105	-0.00104
	(A * !B * D * !Y)	0.00085	0.00085	0.00084
	(A * !B * !D * !Y)	-0.00099	-0.00099	-0.00102
	(A * !B * !D * !Y)	0.00075	0.00075	0.00073
	(!A * !B * D * !Y)	-0.00104	-0.00104	-0.00104
	(!A * !B * D * !Y)	0.00119	0.00120	0.00120
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00134	-0.00134	-0.00134
	(B * D * !Y)	0.00167	0.00168	0.00168
	(B * !D * !Y)	-0.00131	-0.00130	-0.00129
	(B * !D * !Y)	0.00150	0.00149	0.00150
	(A * !B * D * !Y)	-0.00134	-0.00134	-0.00133
	(A * !B * D * !Y)	0.00172	0.00173	0.00171
	(A * !B * !D * !Y)	-0.00118	-0.00119	-0.00129
	(A * !B * !D * !Y)	0.00156	0.00155	0.00148
	(!A * !B * D * !Y)	-0.00131	-0.00132	-0.00131
	(!A * !B * D * !Y)	0.00244	0.00246	0.00246
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00222	-0.00224	-0.00223
	(B * D * !Y)	0.00334	0.00336	0.00335
	(B * !D * !Y)	-0.00219	-0.00218	-0.00216
	(B * !D * !Y)	0.00304	0.00302	0.00305
	(A * !B * D * !Y)	-0.00223	-0.00225	-0.00223
	(A * !B * D * !Y)	0.00345	0.00349	0.00345
	(A * !B * !D * !Y)	-0.00200	-0.00201	-0.00212
	(A * !B * !D * !Y)	0.00310	0.00308	0.00302
	(!A * !B * D * !Y)	-0.00221	-0.00221	-0.00219
	(!A * !B * D * !Y)	0.00494	0.00495	0.00495

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	0.00121	0.00122	0.00121
	(C * !Y)	-0.00065	-0.00065	-0.00065
	(B * !C * !Y)	0.00121	0.00121	0.00121
	(B * !C * !Y)	-0.00065	-0.00065	-0.00065
	(A * !B * !C * !Y)	0.00121	0.00122	0.00121
	(A * !B * !C * !Y)	-0.00065	-0.00065	-0.00065
sky130_fd_sc_hs__nor4_2	(C * !Y)	0.00147	0.00149	0.00148
	(C * !Y)	-0.00128	-0.00130	-0.00129
	(B * !C * !Y)	0.00148	0.00149	0.00148
	(B * !C * !Y)	-0.00128	-0.00129	-0.00128
	(A * !B * !C * !Y)	0.00148	0.00149	0.00148
	(A * !B * !C * !Y)	-0.00128	-0.00129	-0.00128
sky130_fd_sc_hs__nor4_4	(C * !Y)	0.00279	0.00279	0.00279
	(C * !Y)	-0.00259	-0.00257	-0.00257
	(B * !C * !Y)	0.00279	0.00279	0.00279
	(B * !C * !Y)	-0.00258	-0.00257	-0.00257
	(A * !B * !C * !Y)	0.00278	0.00281	0.00279
	(A * !B * !C * !Y)	-0.00257	-0.00258	-0.00257

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	-0.00116	-0.00116	-0.00121
	(C * !Y)	0.00070	0.00070	0.00067
	(B * !C * !Y)	-0.00109	-0.00109	-0.00119
	(B * !C * !Y)	0.00075	0.00074	0.00067
	(A * !B * !C * !Y)	-0.00100	-0.00100	-0.00117
	(A * !B * !C * !Y)	0.00080	0.00080	0.00068
sky130_fd_sc_hs__nor4_2	(C * !Y)	-0.00137	-0.00138	-0.00147
	(C * !Y)	0.00140	0.00140	0.00132
	(B * !C * !Y)	-0.00118	-0.00120	-0.00143
	(B * !C * !Y)	0.00150	0.00150	0.00133
	(A * !B * !C * !Y)	-0.00098	-0.00101	-0.00137
	(A * !B * !C * !Y)	0.00162	0.00162	0.00136
sky130_fd_sc_hs__nor4_4	(C * !Y)	-0.00253	-0.00253	-0.00276
	(C * !Y)	0.00282	0.00280	0.00264
	(B * !C * !Y)	-0.00222	-0.00223	-0.00269
	(B * !C * !Y)	0.00300	0.00298	0.00266
	(A * !B * !C * !Y)	-0.00178	-0.00180	-0.00257
	(A * !B * !C * !Y)	0.00327	0.00324	0.00273

SKY130_FD_SC_HS__O2111AIx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o2111ai_1	11.18880
sky130_fd_sc_hs__o2111ai_2	19.18080
sky130_fd_sc_hs__o2111ai_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	C1	D1	Y
sky130_fd_sc_hs__o2111ai_1	0.00261	0.00273	0.00265	0.00282	0.00275	0.36983
sky130_fd_sc_hs__o2111ai_2	0.00505	0.00511	0.00530	0.00516	0.00514	0.68126
sky130_fd_sc_hs__o2111ai_4	0.01007	0.01021	0.00775	0.00782	0.00775	1.20081

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2111ai_1	0.00000	0.00966	0.09773
sky130_fd_sc_hs__o2111ai_2	0.00000	0.01932	0.19545
sky130_fd_sc_hs__o2111ai_4	0.00000	0.02490	0.24432

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)	0.21473	1.30916	11.82730
	A2->Y (FR)	0.19622	1.27038	11.72480
	B1->Y (FR)	0.08121	0.82541	8.37405
	C1->Y (FR)	0.07151	0.81488	8.37045
	D1->Y (FR)	0.05955	0.80118	8.35351
sky130_fd_sc_hs__o2111ai_2	A1->Y (FR)	0.21559	1.16178	11.76100
	A2->Y (FR)	0.18674	1.11466	11.66730
	B1->Y (FR)	0.07552	0.74364	8.20779
	C1->Y (FR)	0.06481	0.73053	8.18947
	D1->Y (FR)	0.04918	0.71394	8.15891
sky130_fd_sc_hs__o2111ai_4	A1->Y (FR)	0.22151	1.04414	11.57130
	A2->Y (FR)	0.18838	0.99601	11.52200
	B1->Y (FR)	0.13229	0.91701	10.94310
	C1->Y (FR)	0.10124	0.86080	10.52580
	D1->Y (FR)	0.07516	0.85779	10.87090

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111ai_1	A1->Y (RF)	0.09768	0.63114	5.60192
	A2->Y (RF)	0.08304	0.60481	5.49852
	B1->Y (RF)	0.09063	0.65841	6.10698
	C1->Y (RF)	0.08200	0.68528	6.55861
	D1->Y (RF)	0.06908	0.68900	6.76193
sky130_fd_sc_hs__o2111ai_2	A1->Y (RF)	0.10632	0.58242	5.76674
	A2->Y (RF)	0.08676	0.55224	5.66393
	B1->Y (RF)	0.09844	0.60598	6.26400
	C1->Y (RF)	0.08765	0.65036	6.96237
	D1->Y (RF)	0.06678	0.64773	7.17007
sky130_fd_sc_hs__o2111ai_4	A1->Y (RF)	0.09995	0.49266	5.40207
	A2->Y (RF)	0.08672	0.47940	5.51344
	B1->Y (RF)	0.07446	0.50942	6.16101
	C1->Y (RF)	0.06378	0.54748	6.81177
	D1->Y (RF)	0.04259	0.54954	7.10403

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111ai_1	A1	0.00157	0.00146	0.00154
	A1	0.00733	0.00722	0.00728
	A2	0.00161	0.00152	0.00197
	A2	0.00672	0.00662	0.00707
	B1	0.00086	0.00080	0.00130
	B1	0.00578	0.00571	0.00617
	C1	0.00042	0.00036	0.00085
	C1	0.00481	0.00474	0.00521
	D1	0.00007	0.00003	0.00054
	D1	0.00382	0.00369	0.00428
sky130_fd_sc_hs__o2111ai_2	A1	0.00253	0.00228	0.00242
	A1	0.01408	0.01381	0.01395
	A2	0.00255	0.00233	0.00326
	A2	0.01272	0.01251	0.01339
	B1	0.00109	0.00098	0.00196
	B1	0.01123	0.01099	0.01197
	C1	0.00036	0.00020	0.00122
	C1	0.00910	0.00892	0.00993
	D1	-0.00101	-0.00105	0.00007
	D1	0.00641	0.00639	0.00752

sky130_fd_sc_hs__o2111ai_4	**A1**	0.00447	0.00389	0.00427
	A1	0.02705	0.02651	0.02676
	A2	0.00435	0.00407	0.00587
	A2	0.02453	0.02418	0.02589
	B1	0.00191	0.00142	0.00268
	B1	0.01913	0.01857	0.01975
	C1	0.00051	-0.00010	0.00124
	C1	0.01516	0.01460	0.01594
	D1	-0.00174	-0.00190	-0.00059
	D1	0.01019	0.01009	0.00944

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111ai_1	**A1**	0.00744	0.00735	0.00749
	A1	0.00150	0.00140	0.00148
	A2	0.00625	0.00619	0.00648
	A2	0.00092	0.00085	0.00094
	B1	0.00656	0.00646	0.00711
	B1	0.00158	0.00148	0.00157
	C1	0.00597	0.00588	0.00613
	C1	0.00158	0.00148	0.00158
	D1	0.00525	0.00516	0.00586
	D1	0.00155	0.00144	0.00164

sky130_fd_sc_hs__o2111ai_2	**A1**	0.01532	0.01509	0.01544
	A1	0.00338	0.00311	0.00328
	A2	0.01229	0.01218	0.01237
	A2	0.00165	0.00151	0.00174
	B1	0.01361	0.01341	0.01399
	B1	0.00339	0.00315	0.00334
	C1	0.01216	0.01194	0.01216
	C1	0.00343	0.00321	0.00342
	D1	0.01067	0.01048	0.01104
	D1	0.00335	0.00318	0.00356
sky130_fd_sc_hs__o2111ai_4	**A1**	0.02929	0.02866	0.02916
	A1	0.00592	0.00530	0.00569
	A2	0.02330	0.02293	0.02373
	A2	0.00222	0.00187	0.00245
	B1	0.02498	0.02477	0.02504
	B1	0.00750	0.00730	0.00750
	C1	0.02228	0.02208	0.02260
	C1	0.00756	0.00736	0.00759
	D1	0.01928	0.01907	0.01974
	D1	0.00752	0.00728	0.00773

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)**	0.00121	0.00109	0.00108
	(A2 * B1 * C1 * D1 * !Y)	-0.00110	-0.00124	-0.00124
	(A2 * B1 * C1 * !D1 * Y)	0.00108	0.00108	0.00107
	(A2 * B1 * C1 * !D1 * Y)	-0.00122	-0.00124	-0.00124
	(A2 * B1 * !C1 * Y)	0.00108	0.00108	0.00107
	(A2 * B1 * !C1 * Y)	-0.00122	-0.00124	-0.00124
	(A2 * !B1 * Y)	0.00108	0.00108	0.00107
	(A2 * !B1 * Y)	-0.00122	-0.00124	-0.00124
	(!A2 * B1 * C1 * !D1 * Y)	0.00099	0.00100	0.00099
	(!A2 * B1 * C1 * !D1 * Y)	-0.00126	-0.00127	-0.00126
	(!A2 * B1 * !C1 * D1 * Y)	0.00100	0.00100	0.00099
	(!A2 * B1 * !C1 * D1 * Y)	-0.00126	-0.00127	-0.00126
	(!A2 * B1 * !C1 * !D1 * Y)	0.00100	0.00100	0.00099
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00126	-0.00126	-0.00126
	(!A2 * !B1 * C1 * D1 * Y)	0.00100	0.00102	0.00101
	(!A2 * !B1 * C1 * D1 * Y)	-0.00126	-0.00127	-0.00126
	(!A2 * !B1 * !D1 * Y)	0.00101	0.00102	0.00102
	(!A2 * !B1 * !D1 * Y)	-0.00126	-0.00127	-0.00126
	(!A2 * !B1 * !C1 * D1 * Y)	0.00101	0.00101	0.00101
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00126	-0.00127	-0.00126

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	0.00233	0.00210	0.00208
	(A2 * B1 * C1 * D1 * !Y)	-0.00220	-0.00249	-0.00250
	(A2 * B1 * C1 * !D1 * Y)	0.00207	0.00208	0.00208
	(A2 * B1 * C1 * !D1 * Y)	-0.00244	-0.00251	-0.00250
	(A2 * B1 * !C1 * Y)	0.00207	0.00208	0.00208
	(A2 * B1 * !C1 * Y)	-0.00244	-0.00251	-0.00250
	(A2 * !B1 * Y)	0.00207	0.00208	0.00208
	(A2 * !B1 * Y)	-0.00244	-0.00251	-0.00250
	(!A2 * B1 * C1 * !D1 * Y)	0.00190	0.00191	0.00189
	(!A2 * B1 * C1 * !D1 * Y)	-0.00256	-0.00257	-0.00255
	(!A2 * B1 * !C1 * D1 * Y)	0.00192	0.00191	0.00191
	(!A2 * B1 * !C1 * D1 * Y)	-0.00256	-0.00255	-0.00255
	(!A2 * B1 * !C1 * !D1 * Y)	0.00192	0.00193	0.00191
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00256	-0.00257	-0.00255
	(!A2 * !B1 * C1 * D1 * Y)	0.00194	0.00195	0.00194
	(!A2 * !B1 * C1 * D1 * Y)	-0.00255	-0.00256	-0.00255
	(!A2 * !B1 * !D1 * Y)	0.00194	0.00195	0.00194
	(!A2 * !B1 * !D1 * Y)	-0.00255	-0.00256	-0.00255
	(!A2 * !B1 * !C1 * D1 * Y)	0.00194	0.00195	0.00194
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00255	-0.00256	-0.00255

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	0.00464	0.00427	0.00423
	(A2 * B1 * C1 * D1 * !Y)	-0.00431	-0.00483	-0.00484
	(A2 * B1 * C1 * !D1 * Y)	0.00405	0.00408	0.00406
	(A2 * B1 * C1 * !D1 * Y)	-0.00488	-0.00503	-0.00501
	(A2 * B1 * !C1 * Y)	0.00405	0.00408	0.00406
	(A2 * B1 * !C1 * Y)	-0.00488	-0.00503	-0.00501
	(A2 * !B1 * Y)	0.00406	0.00408	0.00406
	(A2 * !B1 * Y)	-0.00490	-0.00503	-0.00501
	(!A2 * B1 * C1 * !D1 * Y)	0.00370	0.00369	0.00368
	(!A2 * B1 * C1 * !D1 * Y)	-0.00509	-0.00509	-0.00508
	(!A2 * B1 * !C1 * D1 * Y)	0.00372	0.00373	0.00370
	(!A2 * B1 * !C1 * D1 * Y)	-0.00509	-0.00510	-0.00508
	(!A2 * B1 * !C1 * !D1 * Y)	0.00372	0.00373	0.00370
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00509	-0.00511	-0.00508
	(!A2 * !B1 * C1 * D1 * Y)	0.00378	0.00382	0.00379
	(!A2 * !B1 * C1 * D1 * Y)	-0.00507	-0.00511	-0.00508
	(!A2 * !B1 * !D1 * Y)	0.00377	0.00382	0.00378
	(!A2 * !B1 * !D1 * Y)	-0.00507	-0.00511	-0.00508
	(!A2 * !B1 * !C1 * D1 * Y)	0.00378	0.00381	0.00379
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00507	-0.00510	-0.00508

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)**	-0.00107	-0.00108	-0.00107
	(A2 * B1 * C1 * D1 * !Y)	0.00124	0.00125	0.00124
	(A2 * B1 * C1 * !D1 * Y)	-0.00107	-0.00107	-0.00107
	(A2 * B1 * C1 * !D1 * Y)	0.00124	0.00124	0.00124
	(A2 * B1 * !C1 * Y)	-0.00107	-0.00107	-0.00107
	(A2 * B1 * !C1 * Y)	0.00124	0.00124	0.00124
	(A2 * !B1 * Y)	-0.00107	-0.00107	-0.00107
	(A2 * !B1 * Y)	0.00124	0.00124	0.00124
	(!A2 * B1 * C1 * !D1 * Y)	-0.00091	-0.00100	-0.00099
	(!A2 * B1 * C1 * !D1 * Y)	0.00126	0.00127	0.00126
	(!A2 * B1 * !C1 * D1 * Y)	-0.00093	-0.00100	-0.00099
	(!A2 * B1 * !C1 * D1 * Y)	0.00126	0.00127	0.00126
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00093	-0.00100	-0.00099
	(!A2 * B1 * !C1 * !D1 * Y)	0.00126	0.00127	0.00126
	(!A2 * !B1 * C1 * D1 * Y)	-0.00097	-0.00102	-0.00101
	(!A2 * !B1 * C1 * D1 * Y)	0.00127	0.00127	0.00126
	(!A2 * !B1 * !D1 * Y)	-0.00097	-0.00102	-0.00102
	(!A2 * !B1 * !D1 * Y)	0.00127	0.00127	0.00126
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00097	-0.00101	-0.00101
	(!A2 * !B1 * !C1 * D1 * Y)	0.00127	0.00127	0.00126

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	-0.00208	-0.00208	-0.00207
	(A2 * B1 * C1 * D1 * !Y)	0.00250	0.00250	0.00250
	(A2 * B1 * C1 * !D1 * Y)	-0.00207	-0.00208	-0.00207
	(A2 * B1 * C1 * !D1 * Y)	0.00250	0.00251	0.00250
	(A2 * B1 * !C1 * Y)	-0.00207	-0.00208	-0.00207
	(A2 * B1 * !C1 * Y)	0.00250	0.00251	0.00250
	(A2 * !B1 * Y)	-0.00207	-0.00208	-0.00207
	(A2 * !B1 * Y)	0.00250	0.00251	0.00250
	(!A2 * B1 * C1 * !D1 * Y)	-0.00175	-0.00191	-0.00189
	(!A2 * B1 * C1 * !D1 * Y)	0.00256	0.00257	0.00256
	(!A2 * B1 * !C1 * D1 * Y)	-0.00177	-0.00191	-0.00191
	(!A2 * B1 * !C1 * D1 * Y)	0.00256	0.00258	0.00256
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00177	-0.00193	-0.00191
	(!A2 * B1 * !C1 * !D1 * Y)	0.00256	0.00258	0.00256
	(!A2 * !B1 * C1 * D1 * Y)	-0.00185	-0.00195	-0.00194
	(!A2 * !B1 * C1 * D1 * Y)	0.00257	0.00258	0.00256
	(!A2 * !B1 * !D1 * Y)	-0.00185	-0.00195	-0.00194
	(!A2 * !B1 * !D1 * Y)	0.00257	0.00258	0.00256
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00185	-0.00195	-0.00194
	(!A2 * !B1 * !C1 * D1 * Y)	0.00257	0.00258	0.00256

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	-0.00424	-0.00424	-0.00423
	(A2 * B1 * C1 * D1 * !Y)	0.00484	0.00485	0.00484
	(A2 * B1 * C1 * !D1 * Y)	-0.00405	-0.00406	-0.00405
	(A2 * B1 * C1 * !D1 * Y)	0.00502	0.00503	0.00501
	(A2 * B1 * !C1 * Y)	-0.00405	-0.00407	-0.00405
	(A2 * B1 * !C1 * Y)	0.00502	0.00505	0.00501
	(A2 * !B1 * Y)	-0.00406	-0.00407	-0.00405
	(A2 * !B1 * Y)	0.00503	0.00504	0.00501
	(!A2 * B1 * C1 * !D1 * Y)	-0.00337	-0.00369	-0.00368
	(!A2 * B1 * C1 * !D1 * Y)	0.00509	0.00512	0.00510
	(!A2 * B1 * !C1 * D1 * Y)	-0.00344	-0.00373	-0.00370
	(!A2 * B1 * !C1 * D1 * Y)	0.00509	0.00512	0.00510
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00344	-0.00373	-0.00370
	(!A2 * B1 * !C1 * !D1 * Y)	0.00509	0.00512	0.00510
	(!A2 * !B1 * C1 * D1 * Y)	-0.00358	-0.00381	-0.00379
	(!A2 * !B1 * C1 * D1 * Y)	0.00507	0.00511	0.00510
	(!A2 * !B1 * !D1 * Y)	-0.00358	-0.00382	-0.00378
	(!A2 * !B1 * !D1 * Y)	0.00507	0.00513	0.00510
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00358	-0.00381	-0.00379
	(!A2 * !B1 * !C1 * D1 * Y)	0.00507	0.00513	0.00510

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)**	0.00118	0.00117	0.00117
	(A1 * B1 * C1 * D1 * !Y)	-0.00065	-0.00064	-0.00064
	(A1 * B1 * C1 * !D1 * Y)	0.00104	0.00106	0.00105
	(A1 * B1 * C1 * !D1 * Y)	-0.00120	-0.00123	-0.00122
	(A1 * B1 * !C1 * D1 * Y)	0.00104	0.00106	0.00105
	(A1 * B1 * !C1 * D1 * Y)	-0.00120	-0.00123	-0.00122
	(A1 * B1 * !C1 * !D1 * Y)	0.00105	0.00105	0.00105
	(A1 * B1 * !C1 * !D1 * Y)	-0.00120	-0.00122	-0.00122
	(A1 * !B1 * C1 * D1 * Y)	0.00104	0.00106	0.00105
	(A1 * !B1 * C1 * D1 * Y)	-0.00120	-0.00123	-0.00122
	(A1 * !B1 * !D1 * Y)	0.00104	0.00105	0.00105
	(A1 * !B1 * !D1 * Y)	-0.00120	-0.00122	-0.00122
	(A1 * !B1 * !C1 * D1 * Y)	0.00104	0.00105	0.00105
	(A1 * !B1 * !C1 * D1 * Y)	-0.00120	-0.00122	-0.00122
	(!A1 * B1 * C1 * !D1 * Y)	0.00095	0.00097	0.00096
	(!A1 * B1 * C1 * !D1 * Y)	-0.00124	-0.00125	-0.00124
	(!A1 * B1 * !C1 * D1 * Y)	0.00097	0.00097	0.00097
	(!A1 * B1 * !C1 * D1 * Y)	-0.00125	-0.00125	-0.00124
	(!A1 * B1 * !C1 * !D1 * Y)	0.00096	0.00096	0.00096
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00125	-0.00125	-0.00124
	(!A1 * !B1 * C1 * D1 * Y)	0.00098	0.00099	0.00098
	(!A1 * !B1 * C1 * D1 * Y)	-0.00124	-0.00125	-0.00124
	(!A1 * !B1 * !D1 * Y)	0.00099	0.00099	0.00098
	(!A1 * !B1 * !D1 * Y)	-0.00125	-0.00125	-0.00124
	(!A1 * !B1 * !C1 * D1 * Y)	0.00098	0.00098	0.00098
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00125	-0.00125	-0.00124

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	0.00226	0.00228	0.00227
	(A1 * B1 * C1 * D1 * !Y)	-0.00130	-0.00130	-0.00130
	(A1 * B1 * C1 * !D1 * Y)	0.00203	0.00205	0.00203
	(A1 * B1 * C1 * !D1 * Y)	-0.00240	-0.00247	-0.00246
	(A1 * B1 * !C1 * D1 * Y)	0.00203	0.00205	0.00203
	(A1 * B1 * !C1 * D1 * Y)	-0.00240	-0.00247	-0.00246
	(A1 * B1 * !C1 * !D1 * Y)	0.00203	0.00205	0.00203
	(A1 * B1 * !C1 * !D1 * Y)	-0.00240	-0.00248	-0.00247
	(A1 * !B1 * C1 * D1 * Y)	0.00203	0.00205	0.00203
	(A1 * !B1 * C1 * D1 * Y)	-0.00240	-0.00247	-0.00246
	(A1 * !B1 * !D1 * Y)	0.00203	0.00205	0.00203
	(A1 * !B1 * !D1 * Y)	-0.00240	-0.00248	-0.00247
	(A1 * !B1 * !C1 * D1 * Y)	0.00203	0.00205	0.00203
	(A1 * !B1 * !C1 * D1 * Y)	-0.00240	-0.00248	-0.00247
	(!A1 * B1 * C1 * !D1 * Y)	0.00184	0.00185	0.00185
	(!A1 * B1 * C1 * !D1 * Y)	-0.00251	-0.00252	-0.00251
	(!A1 * B1 * !C1 * D1 * Y)	0.00186	0.00187	0.00186
	(!A1 * B1 * !C1 * D1 * Y)	-0.00251	-0.00252	-0.00251
	(!A1 * B1 * !C1 * !D1 * Y)	0.00186	0.00188	0.00186
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00252	-0.00252	-0.00251
	(!A1 * !B1 * C1 * D1 * Y)	0.00189	0.00191	0.00190
	(!A1 * !B1 * C1 * D1 * Y)	-0.00251	-0.00253	-0.00251
	(!A1 * !B1 * !D1 * Y)	0.00190	0.00191	0.00190
	(!A1 * !B1 * !D1 * Y)	-0.00252	-0.00253	-0.00251
	(!A1 * !B1 * !C1 * D1 * Y)	0.00190	0.00191	0.00190
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00252	-0.00253	-0.00251

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	0.00468	0.00470	0.00468
	(A1 * B1 * C1 * D1 * !Y)	-0.00260	-0.00261	-0.00259
	(A1 * B1 * C1 * !D1 * Y)	0.00413	0.00418	0.00413
	(A1 * B1 * C1 * !D1 * Y)	-0.00488	-0.00499	-0.00498
	(A1 * B1 * !C1 * D1 * Y)	0.00413	0.00418	0.00413
	(A1 * B1 * !C1 * D1 * Y)	-0.00488	-0.00499	-0.00499
	(A1 * B1 * !C1 * !D1 * Y)	0.00413	0.00417	0.00413
	(A1 * B1 * !C1 * !D1 * Y)	-0.00488	-0.00501	-0.00500
	(A1 * !B1 * C1 * D1 * Y)	0.00412	0.00418	0.00413
	(A1 * !B1 * C1 * D1 * Y)	-0.00487	-0.00499	-0.00498
	(A1 * !B1 * !D1 * Y)	0.00412	0.00417	0.00413
	(A1 * !B1 * !D1 * Y)	-0.00487	-0.00501	-0.00500
	(A1 * !B1 * !C1 * D1 * Y)	0.00412	0.00417	0.00413
	(A1 * !B1 * !C1 * D1 * Y)	-0.00487	-0.00501	-0.00500
	(!A1 * B1 * C1 * !D1 * Y)	0.00373	0.00374	0.00374
	(!A1 * B1 * C1 * !D1 * Y)	-0.00507	-0.00508	-0.00508
	(!A1 * B1 * !C1 * D1 * Y)	0.00377	0.00378	0.00377
	(!A1 * B1 * !C1 * D1 * Y)	-0.00507	-0.00509	-0.00508
	(!A1 * B1 * !C1 * !D1 * Y)	0.00382	0.00383	0.00381
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00508	-0.00509	-0.00508
	(!A1 * !B1 * C1 * D1 * Y)	0.00385	0.00388	0.00384
	(!A1 * !B1 * C1 * D1 * Y)	-0.00507	-0.00511	-0.00508
	(!A1 * !B1 * !D1 * Y)	0.00385	0.00384	0.00384
	(!A1 * !B1 * !D1 * Y)	-0.00507	-0.00508	-0.00508
	(!A1 * !B1 * !C1 * D1 * Y)	0.00385	0.00384	0.00384
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00507	-0.00508	-0.00508

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)**	-0.00112	-0.00112	-0.00116
	(A1 * B1 * C1 * D1 * !Y)	0.00069	0.00068	0.00065
	(A1 * B1 * C1 * !D1 * Y)	-0.00104	-0.00105	-0.00105
	(A1 * B1 * C1 * !D1 * Y)	0.00122	0.00123	0.00122
	(A1 * B1 * !C1 * D1 * Y)	-0.00104	-0.00105	-0.00105
	(A1 * B1 * !C1 * D1 * Y)	0.00123	0.00123	0.00122
	(A1 * B1 * !C1 * !D1 * Y)	-0.00105	-0.00104	-0.00105
	(A1 * B1 * !C1 * !D1 * Y)	0.00123	0.00122	0.00122
	(A1 * !B1 * C1 * D1 * Y)	-0.00104	-0.00105	-0.00105
	(A1 * !B1 * C1 * D1 * Y)	0.00122	0.00123	0.00122
	(A1 * !B1 * !D1 * Y)	-0.00104	-0.00104	-0.00105
	(A1 * !B1 * !D1 * Y)	0.00122	0.00122	0.00122
	(A1 * !B1 * !C1 * D1 * Y)	-0.00104	-0.00104	-0.00104
	(A1 * !B1 * !C1 * D1 * Y)	0.00122	0.00122	0.00122
	(!A1 * B1 * C1 * !D1 * Y)	-0.00088	-0.00097	-0.00096
	(!A1 * B1 * C1 * !D1 * Y)	0.00125	0.00125	0.00125
	(!A1 * B1 * !C1 * D1 * Y)	-0.00090	-0.00097	-0.00097
	(!A1 * B1 * !C1 * D1 * Y)	0.00125	0.00125	0.00125
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00090	-0.00096	-0.00096
	(!A1 * B1 * !C1 * !D1 * Y)	0.00125	0.00125	0.00125
	(!A1 * !B1 * C1 * D1 * Y)	-0.00094	-0.00099	-0.00098
	(!A1 * !B1 * C1 * D1 * Y)	0.00125	0.00125	0.00125
	(!A1 * !B1 * !D1 * Y)	-0.00094	-0.00099	-0.00098
	(!A1 * !B1 * !D1 * Y)	0.00125	0.00125	0.00125
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00094	-0.00098	-0.00098
	(!A1 * !B1 * !C1 * D1 * Y)	0.00125	0.00125	0.00125

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	-0.00212	-0.00213	-0.00225
	(A1 * B1 * C1 * D1 * !Y)	0.00145	0.00144	0.00134
	(A1 * B1 * C1 * !D1 * Y)	-0.00203	-0.00203	-0.00203
	(A1 * B1 * C1 * !D1 * Y)	0.00247	0.00247	0.00246
	(A1 * B1 * !C1 * D1 * Y)	-0.00202	-0.00203	-0.00203
	(A1 * B1 * !C1 * D1 * Y)	0.00245	0.00247	0.00246
	(A1 * B1 * !C1 * !D1 * Y)	-0.00202	-0.00203	-0.00203
	(A1 * B1 * !C1 * !D1 * Y)	0.00245	0.00248	0.00247
	(A1 * !B1 * C1 * D1 * Y)	-0.00202	-0.00203	-0.00203
	(A1 * !B1 * C1 * D1 * Y)	0.00245	0.00247	0.00246
	(A1 * !B1 * !D1 * Y)	-0.00202	-0.00203	-0.00203
	(A1 * !B1 * !D1 * Y)	0.00246	0.00248	0.00247
	(A1 * !B1 * !C1 * D1 * Y)	-0.00202	-0.00203	-0.00203
	(A1 * !B1 * !C1 * D1 * Y)	0.00246	0.00248	0.00247
	(!A1 * B1 * C1 * !D1 * Y)	-0.00170	-0.00185	-0.00185
	(!A1 * B1 * C1 * !D1 * Y)	0.00252	0.00253	0.00252
	(!A1 * B1 * !C1 * D1 * Y)	-0.00172	-0.00187	-0.00186
	(!A1 * B1 * !C1 * D1 * Y)	0.00252	0.00254	0.00252
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00172	-0.00188	-0.00186
	(!A1 * B1 * !C1 * !D1 * Y)	0.00252	0.00254	0.00252
	(!A1 * !B1 * C1 * D1 * Y)	-0.00180	-0.00191	-0.00190
	(!A1 * !B1 * C1 * D1 * Y)	0.00253	0.00253	0.00252
	(!A1 * !B1 * !D1 * Y)	-0.00181	-0.00191	-0.00190
	(!A1 * !B1 * !D1 * Y)	0.00253	0.00254	0.00252
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00181	-0.00191	-0.00190
	(!A1 * !B1 * !C1 * D1 * Y)	0.00253	0.00254	0.00252

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	-0.00436	-0.00437	-0.00464
	(A1 * B1 * C1 * D1 * !Y)	0.00291	0.00289	0.00268
	(A1 * B1 * C1 * !D1 * Y)	-0.00413	-0.00413	-0.00412
	(A1 * B1 * C1 * !D1 * Y)	0.00499	0.00499	0.00498
	(A1 * B1 * !C1 * D1 * Y)	-0.00413	-0.00413	-0.00412
	(A1 * B1 * !C1 * D1 * Y)	0.00499	0.00499	0.00499
	(A1 * B1 * !C1 * !D1 * Y)	-0.00413	-0.00413	-0.00412
	(A1 * B1 * !C1 * !D1 * Y)	0.00500	0.00501	0.00500
	(A1 * !B1 * C1 * D1 * Y)	-0.00412	-0.00413	-0.00412
	(A1 * !B1 * C1 * D1 * Y)	0.00500	0.00499	0.00498
	(A1 * !B1 * !D1 * Y)	-0.00410	-0.00413	-0.00412
	(A1 * !B1 * !D1 * Y)	0.00496	0.00501	0.00500
	(A1 * !B1 * !C1 * D1 * Y)	-0.00410	-0.00413	-0.00412
	(A1 * !B1 * !C1 * D1 * Y)	0.00496	0.00501	0.00500
	(!A1 * B1 * C1 * !D1 * Y)	-0.00345	-0.00374	-0.00374
	(!A1 * B1 * C1 * !D1 * Y)	0.00508	0.00511	0.00509
	(!A1 * B1 * !C1 * D1 * Y)	-0.00350	-0.00378	-0.00377
	(!A1 * B1 * !C1 * D1 * Y)	0.00507	0.00512	0.00509
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00350	-0.00383	-0.00381
	(!A1 * B1 * !C1 * !D1 * Y)	0.00508	0.00511	0.00509
	(!A1 * !B1 * C1 * D1 * Y)	-0.00364	-0.00388	-0.00384
	(!A1 * !B1 * C1 * D1 * Y)	0.00507	0.00513	0.00509
	(!A1 * !B1 * !D1 * Y)	-0.00364	-0.00384	-0.00384
	(!A1 * !B1 * !D1 * Y)	0.00507	0.00510	0.00509
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00365	-0.00384	-0.00384
	(!A1 * !B1 * !C1 * D1 * Y)	0.00507	0.00510	0.00509

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)**	0.00093	0.00094	0.00093
	(A2 * C1 * !D1 * Y)	-0.00126	-0.00126	-0.00126
	(A2 * !C1 * D1 * Y)	0.00096	0.00097	0.00096
	(A2 * !C1 * D1 * Y)	-0.00126	-0.00127	-0.00126
	(A2 * !C1 * !D1 * Y)	0.00096	0.00097	0.00096
	(A2 * !C1 * !D1 * Y)	-0.00126	-0.00127	-0.00126
	(A1 * !A2 * C1 * !D1 * Y)	0.00092	0.00093	0.00092
	(A1 * !A2 * C1 * !D1 * Y)	-0.00125	-0.00126	-0.00126
	(A1 * !A2 * !C1 * D1 * Y)	0.00096	0.00096	0.00096
	(A1 * !A2 * !C1 * D1 * Y)	-0.00126	-0.00126	-0.00126
	(A1 * !A2 * !C1 * !D1 * Y)	0.00096	0.00096	0.00096
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00126	-0.00126	-0.00126
	(!A1 * !A2 * C1 * D1 * Y)	0.00048	0.00048	0.00049
	(!A1 * !A2 * C1 * D1 * Y)	-0.00122	-0.00123	-0.00122
	(!A1 * !A2 * C1 * !D1 * Y)	0.00055	0.00055	0.00055
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00126	-0.00126	-0.00126
	(!A1 * !A2 * !C1 * D1 * Y)	0.00058	0.00058	0.00058
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00126	-0.00126	-0.00126
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00059	0.00059	0.00059
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00126	-0.00126	-0.00126

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	0.00198	0.00199	0.00198
	(A2 * C1 * !D1 * Y)	-0.00262	-0.00262	-0.00261
	(A2 * !C1 * D1 * Y)	0.00203	0.00205	0.00203
	(A2 * !C1 * D1 * Y)	-0.00261	-0.00263	-0.00261
	(A2 * !C1 * !D1 * Y)	0.00203	0.00205	0.00203
	(A2 * !C1 * !D1 * Y)	-0.00261	-0.00263	-0.00261
	(A1 * !A2 * C1 * !D1 * Y)	0.00196	0.00199	0.00198
	(A1 * !A2 * C1 * !D1 * Y)	-0.00260	-0.00262	-0.00261
	(A1 * !A2 * !C1 * D1 * Y)	0.00202	0.00204	0.00203
	(A1 * !A2 * !C1 * D1 * Y)	-0.00261	-0.00262	-0.00261
	(A1 * !A2 * !C1 * !D1 * Y)	0.00202	0.00205	0.00203
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00261	-0.00263	-0.00261
	(!A1 * !A2 * C1 * D1 * Y)	0.00102	0.00102	0.00104
	(!A1 * !A2 * C1 * D1 * Y)	-0.00253	-0.00254	-0.00252
	(!A1 * !A2 * C1 * !D1 * Y)	0.00117	0.00118	0.00117
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00261	-0.00263	-0.00261
	(!A1 * !A2 * !C1 * D1 * Y)	0.00120	0.00121	0.00120
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00261	-0.00263	-0.00261
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00122	0.00124	0.00123
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00261	-0.00262	-0.00261

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	0.00379	0.00382	0.00380
	(A2 * C1 * !D1 * Y)	-0.00273	-0.00274	-0.00273
	(A2 * !C1 * D1 * Y)	0.00390	0.00393	0.00390
	(A2 * !C1 * D1 * Y)	-0.00273	-0.00274	-0.00273
	(A2 * !C1 * !D1 * Y)	0.00390	0.00392	0.00389
	(A2 * !C1 * !D1 * Y)	-0.00273	-0.00274	-0.00273
	(A1 * !A2 * C1 * !D1 * Y)	0.00379	0.00382	0.00380
	(A1 * !A2 * C1 * !D1 * Y)	-0.00273	-0.00274	-0.00273
	(A1 * !A2 * !C1 * D1 * Y)	0.00388	0.00390	0.00389
	(A1 * !A2 * !C1 * D1 * Y)	-0.00272	-0.00273	-0.00273
	(A1 * !A2 * !C1 * !D1 * Y)	0.00388	0.00390	0.00389
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00272	-0.00274	-0.00273
	(!A1 * !A2 * C1 * D1 * Y)	0.00189	0.00189	0.00191
	(!A1 * !A2 * C1 * D1 * Y)	-0.00260	-0.00260	-0.00257
	(!A1 * !A2 * C1 * !D1 * Y)	0.00216	0.00217	0.00215
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00275	-0.00276	-0.00275
	(!A1 * !A2 * !C1 * D1 * Y)	0.00223	0.00223	0.00221
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00274	-0.00275	-0.00273
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00228	0.00229	0.00227
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00274	-0.00275	-0.00273

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)**	-0.00086	-0.00094	-0.00093
	(A2 * C1 * !D1 * Y)	0.00126	0.00127	0.00126
	(A2 * !C1 * D1 * Y)	-0.00092	-0.00096	-0.00096
	(A2 * !C1 * D1 * Y)	0.00126	0.00127	0.00126
	(A2 * !C1 * !D1 * Y)	-0.00092	-0.00096	-0.00096
	(A2 * !C1 * !D1 * Y)	0.00126	0.00127	0.00126
	(A1 * !A2 * C1 * !D1 * Y)	-0.00084	-0.00093	-0.00092
	(A1 * !A2 * C1 * !D1 * Y)	0.00126	0.00127	0.00126
	(A1 * !A2 * !C1 * D1 * Y)	-0.00091	-0.00096	-0.00096
	(A1 * !A2 * !C1 * D1 * Y)	0.00127	0.00128	0.00126
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00092	-0.00096	-0.00096
	(A1 * !A2 * !C1 * !D1 * Y)	0.00127	0.00128	0.00126
	(!A1 * !A2 * C1 * D1 * Y)	-0.00045	-0.00045	-0.00045
	(!A1 * !A2 * C1 * D1 * Y)	0.00126	0.00127	0.00127
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00055	-0.00055	-0.00055
	(!A1 * !A2 * C1 * !D1 * Y)	0.00127	0.00126	0.00126
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00058	-0.00058	-0.00058
	(!A1 * !A2 * !C1 * D1 * Y)	0.00126	0.00126	0.00126
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00059	-0.00059	-0.00059
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00126	0.00126	0.00126

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	-0.00185	-0.00199	-0.00198
	(A2 * C1 * !D1 * Y)	0.00263	0.00264	0.00262
	(A2 * !C1 * D1 * Y)	-0.00194	-0.00205	-0.00203
	(A2 * !C1 * D1 * Y)	0.00261	0.00265	0.00262
	(A2 * !C1 * !D1 * Y)	-0.00195	-0.00205	-0.00203
	(A2 * !C1 * !D1 * Y)	0.00261	0.00265	0.00262
	(A1 * !A2 * C1 * !D1 * Y)	-0.00182	-0.00199	-0.00198
	(A1 * !A2 * C1 * !D1 * Y)	0.00263	0.00264	0.00262
	(A1 * !A2 * !C1 * D1 * Y)	-0.00193	-0.00204	-0.00203
	(A1 * !A2 * !C1 * D1 * Y)	0.00261	0.00265	0.00262
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00194	-0.00205	-0.00203
	(A1 * !A2 * !C1 * !D1 * Y)	0.00261	0.00265	0.00262
	(!A1 * !A2 * C1 * D1 * Y)	-0.00097	-0.00097	-0.00096
	(!A1 * !A2 * C1 * D1 * Y)	0.00264	0.00264	0.00262
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00117	-0.00118	-0.00117
	(!A1 * !A2 * C1 * !D1 * Y)	0.00261	0.00263	0.00262
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00120	-0.00121	-0.00120
	(!A1 * !A2 * !C1 * D1 * Y)	0.00263	0.00263	0.00262
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00122	-0.00124	-0.00123
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00263	0.00263	0.00262

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	-0.00349	-0.00382	-0.00380
	(A2 * C1 * !D1 * Y)	0.00275	0.00277	0.00274
	(A2 * !C1 * D1 * Y)	-0.00372	-0.00393	-0.00390
	(A2 * !C1 * D1 * Y)	0.00274	0.00277	0.00274
	(A2 * !C1 * !D1 * Y)	-0.00374	-0.00392	-0.00389
	(A2 * !C1 * !D1 * Y)	0.00274	0.00277	0.00274
	(A1 * !A2 * C1 * !D1 * Y)	-0.00345	-0.00382	-0.00380
	(A1 * !A2 * C1 * !D1 * Y)	0.00276	0.00277	0.00274
	(A1 * !A2 * !C1 * D1 * Y)	-0.00369	-0.00390	-0.00389
	(A1 * !A2 * !C1 * D1 * Y)	0.00274	0.00277	0.00274
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00372	-0.00390	-0.00389
	(A1 * !A2 * !C1 * !D1 * Y)	0.00274	0.00277	0.00274
	(!A1 * !A2 * C1 * D1 * Y)	-0.00179	-0.00177	-0.00177
	(!A1 * !A2 * C1 * D1 * Y)	0.00277	0.00277	0.00275
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00216	-0.00217	-0.00215
	(!A1 * !A2 * C1 * !D1 * Y)	0.00275	0.00277	0.00275
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00223	-0.00223	-0.00221
	(!A1 * !A2 * !C1 * D1 * Y)	0.00275	0.00276	0.00274
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00228	-0.00229	-0.00227
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00274	0.00275	0.00274

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)**	0.00098	0.00098	0.00098
	(A2 * B1 * !D1 * Y)	-0.00130	-0.00130	-0.00130
	(A2 * !B1 * D1 * Y)	0.00048	0.00049	0.00048
	(A2 * !B1 * D1 * Y)	-0.00130	-0.00130	-0.00129
	(A2 * !B1 * !D1 * Y)	0.00055	0.00055	0.00055
	(A2 * !B1 * !D1 * Y)	-0.00131	-0.00131	-0.00130
	(A1 * !A2 * B1 * !D1 * Y)	0.00098	0.00099	0.00098
	(A1 * !A2 * B1 * !D1 * Y)	-0.00130	-0.00131	-0.00130
	(!A2 * !B1 * D1 * Y)	0.00048	0.00049	0.00048
	(!A2 * !B1 * D1 * Y)	-0.00130	-0.00131	-0.00129
	(!A2 * !B1 * !D1 * Y)	0.00055	0.00055	0.00055
	(!A2 * !B1 * !D1 * Y)	-0.00131	-0.00131	-0.00130
	(!A1 * !A2 * B1 * D1 * Y)	0.00047	0.00047	0.00046
	(!A1 * !A2 * B1 * D1 * Y)	-0.00130	-0.00131	-0.00129
	(!A1 * !A2 * B1 * !D1 * Y)	0.00057	0.00057	0.00057
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00130	-0.00130	-0.00130

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	0.00193	0.00194	0.00193
	(A2 * B1 * !D1 * Y)	-0.00255	-0.00256	-0.00254
	(A2 * !B1 * D1 * Y)	0.00097	0.00097	0.00097
	(A2 * !B1 * D1 * Y)	-0.00254	-0.00255	-0.00252
	(A2 * !B1 * !D1 * Y)	0.00112	0.00113	0.00112
	(A2 * !B1 * !D1 * Y)	-0.00254	-0.00256	-0.00255
	(A1 * !A2 * B1 * !D1 * Y)	0.00193	0.00194	0.00193
	(A1 * !A2 * B1 * !D1 * Y)	-0.00255	-0.00256	-0.00254
	(!A2 * !B1 * D1 * Y)	0.00096	0.00097	0.00097
	(!A2 * !B1 * D1 * Y)	-0.00253	-0.00255	-0.00252
	(!A2 * !B1 * !D1 * Y)	0.00112	0.00113	0.00112
	(!A2 * !B1 * !D1 * Y)	-0.00254	-0.00256	-0.00255
	(!A1 * !A2 * B1 * D1 * Y)	0.00091	0.00092	0.00093
	(!A1 * !A2 * B1 * D1 * Y)	-0.00253	-0.00255	-0.00252
	(!A1 * !A2 * B1 * !D1 * Y)	0.00114	0.00115	0.00114
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00255	-0.00256	-0.00255

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * !D1 * Y)**	0.00382	0.00385	0.00384
	(A2 * B1 * !D1 * Y)	-0.00268	-0.00270	-0.00269
	(A2 * !B1 * D1 * Y)	0.00181	0.00182	0.00182
	(A2 * !B1 * D1 * Y)	-0.00269	-0.00270	-0.00267
	(A2 * !B1 * !D1 * Y)	0.00209	0.00209	0.00208
	(A2 * !B1 * !D1 * Y)	-0.00273	-0.00273	-0.00272
	(A1 * !A2 * B1 * !D1 * Y)	0.00381	0.00385	0.00383
	(A1 * !A2 * B1 * !D1 * Y)	-0.00268	-0.00270	-0.00269
	(!A2 * !B1 * D1 * Y)	0.00182	0.00182	0.00182
	(!A2 * !B1 * D1 * Y)	-0.00269	-0.00269	-0.00267
	(!A2 * !B1 * !D1 * Y)	0.00209	0.00209	0.00208
	(!A2 * !B1 * !D1 * Y)	-0.00273	-0.00273	-0.00272
	(!A1 * !A2 * B1 * D1 * Y)	0.00174	0.00175	0.00176
	(!A1 * !A2 * B1 * D1 * Y)	-0.00269	-0.00269	-0.00267
	(!A1 * !A2 * B1 * !D1 * Y)	0.00216	0.00218	0.00216
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00271	-0.00273	-0.00271

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)**	-0.00091	-0.00098	-0.00098
	(A2 * B1 * !D1 * Y)	0.00137	0.00132	0.00131
	(A2 * !B1 * D1 * Y)	-0.00046	-0.00046	-0.00047
	(A2 * !B1 * D1 * Y)	0.00133	0.00133	0.00131
	(A2 * !B1 * !D1 * Y)	-0.00055	-0.00055	-0.00055
	(A2 * !B1 * !D1 * Y)	0.00137	0.00137	0.00132
	(A1 * !A2 * B1 * !D1 * Y)	-0.00090	-0.00099	-0.00098
	(A1 * !A2 * B1 * !D1 * Y)	0.00137	0.00132	0.00131
	(!A2 * !B1 * D1 * Y)	-0.00046	-0.00046	-0.00047
	(!A2 * !B1 * D1 * Y)	0.00133	0.00133	0.00131
	(!A2 * !B1 * !D1 * Y)	-0.00055	-0.00055	-0.00055
	(!A2 * !B1 * !D1 * Y)	0.00137	0.00137	0.00132
	(!A1 * !A2 * B1 * D1 * Y)	-0.00044	-0.00044	-0.00044
	(!A1 * !A2 * B1 * D1 * Y)	0.00133	0.00134	0.00131
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00057	-0.00057	-0.00057
	(!A1 * !A2 * B1 * !D1 * Y)	0.00136	0.00132	0.00131

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	-0.00175	-0.00194	-0.00193
	(A2 * B1 * !D1 * Y)	0.00267	0.00258	0.00255
	(A2 * !B1 * D1 * Y)	-0.00090	-0.00090	-0.00093
	(A2 * !B1 * D1 * Y)	0.00262	0.00263	0.00257
	(A2 * !B1 * !D1 * Y)	-0.00112	-0.00113	-0.00112
	(A2 * !B1 * !D1 * Y)	0.00266	0.00265	0.00257
	(A1 * !A2 * B1 * !D1 * Y)	-0.00174	-0.00194	-0.00193
	(A1 * !A2 * B1 * !D1 * Y)	0.00268	0.00256	0.00255
	(!A2 * !B1 * D1 * Y)	-0.00090	-0.00090	-0.00093
	(!A2 * !B1 * D1 * Y)	0.00262	0.00263	0.00257
	(!A2 * !B1 * !D1 * Y)	-0.00112	-0.00113	-0.00112
	(!A2 * !B1 * !D1 * Y)	0.00266	0.00265	0.00257
	(!A1 * !A2 * B1 * D1 * Y)	-0.00087	-0.00088	-0.00090
	(!A1 * !A2 * B1 * D1 * Y)	0.00262	0.00263	0.00257
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00114	-0.00115	-0.00114
	(!A1 * !A2 * B1 * !D1 * Y)	0.00263	0.00259	0.00255

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * !D1 * Y)**	-0.00342	-0.00385	-0.00384
	(A2 * B1 * !D1 * Y)	0.00297	0.00272	0.00270
	(A2 * !B1 * D1 * Y)	-0.00169	-0.00170	-0.00174
	(A2 * !B1 * D1 * Y)	0.00285	0.00286	0.00274
	(A2 * !B1 * !D1 * Y)	-0.00209	-0.00209	-0.00208
	(A2 * !B1 * !D1 * Y)	0.00299	0.00296	0.00277
	(A1 * !A2 * B1 * !D1 * Y)	-0.00342	-0.00385	-0.00383
	(A1 * !A2 * B1 * !D1 * Y)	0.00301	0.00271	0.00270
	(!A2 * !B1 * D1 * Y)	-0.00169	-0.00169	-0.00174
	(!A2 * !B1 * D1 * Y)	0.00285	0.00286	0.00274
	(!A2 * !B1 * !D1 * Y)	-0.00209	-0.00209	-0.00208
	(!A2 * !B1 * !D1 * Y)	0.00299	0.00296	0.00277
	(!A1 * !A2 * B1 * D1 * Y)	-0.00164	-0.00165	-0.00169
	(!A1 * !A2 * B1 * D1 * Y)	0.00285	0.00285	0.00274
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00216	-0.00218	-0.00216
	(!A1 * !A2 * B1 * !D1 * Y)	0.00295	0.00279	0.00271

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111ai_1	**(A2 * !C1 * Y)**	0.00036	0.00036	0.00035
	(A2 * !C1 * Y)	-0.00151	-0.00152	-0.00153
	(A2 * !B1 * C1 * Y)	0.00037	0.00037	0.00034
	(A2 * !B1 * C1 * Y)	-0.00147	-0.00148	-0.00153
	(!A2 * !C1 * Y)	0.00036	0.00036	0.00035
	(!A2 * !C1 * Y)	-0.00150	-0.00152	-0.00153
	(!A2 * !B1 * C1 * Y)	0.00037	0.00037	0.00034
	(!A2 * !B1 * C1 * Y)	-0.00146	-0.00148	-0.00153
	(!A1 * !A2 * B1 * C1 * Y)	0.00042	0.00042	0.00035
	(!A1 * !A2 * B1 * C1 * Y)	-0.00139	-0.00140	-0.00151

sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	0.00082	0.00083	0.00078
	(A2 * !C1 * Y)	-0.00286	-0.00289	-0.00295
	(A2 * !B1 * C1 * Y)	0.00083	0.00083	0.00075
	(A2 * !B1 * C1 * Y)	-0.00276	-0.00277	-0.00293
	(!A2 * !C1 * Y)	0.00082	0.00083	0.00078
	(!A2 * !C1 * Y)	-0.00286	-0.00289	-0.00295
	(!A2 * !B1 * C1 * Y)	0.00083	0.00084	0.00075
	(!A2 * !B1 * C1 * Y)	-0.00276	-0.00280	-0.00293
	(!A1 * !A2 * B1 * C1 * Y)	0.00089	0.00090	0.00076
	(!A1 * !A2 * B1 * C1 * Y)	-0.00261	-0.00265	-0.00290
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	0.00147	0.00147	0.00139
	(A2 * !C1 * Y)	-0.00343	-0.00346	-0.00357
	(A2 * !B1 * C1 * Y)	0.00149	0.00149	0.00135
	(A2 * !B1 * C1 * Y)	-0.00325	-0.00328	-0.00354
	(!A2 * !C1 * Y)	0.00146	0.00147	0.00139
	(!A2 * !C1 * Y)	-0.00341	-0.00345	-0.00357
	(!A2 * !B1 * C1 * Y)	0.00148	0.00149	0.00135
	(!A2 * !B1 * C1 * Y)	-0.00323	-0.00327	-0.00354
	(!A1 * !A2 * B1 * C1 * Y)	0.00162	0.00161	0.00137
	(!A1 * !A2 * B1 * C1 * Y)	-0.00295	-0.00298	-0.00347

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

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

sky130_fd_sc_hs__o2111ai_1	**(A2 * !C1 * Y)**	-0.00034	-0.00034	-0.00034
	(A2 * !C1 * Y)	0.00153	0.00154	0.00153
	(A2 * !B1 * C1 * Y)	-0.00033	-0.00033	-0.00033
	(A2 * !B1 * C1 * Y)	0.00153	0.00154	0.00153
	(!A2 * !C1 * Y)	-0.00034	-0.00034	-0.00034
	(!A2 * !C1 * Y)	0.00153	0.00154	0.00153
	(!A2 * !B1 * C1 * Y)	-0.00033	-0.00033	-0.00033
	(!A2 * !B1 * C1 * Y)	0.00153	0.00154	0.00153
	(!A1 * !A2 * B1 * C1 * Y)	-0.00033	-0.00033	-0.00033
	(!A1 * !A2 * B1 * C1 * Y)	0.00153	0.00154	0.00153
sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	-0.00076	-0.00076	-0.00076
	(A2 * !C1 * Y)	0.00297	0.00297	0.00296
	(A2 * !B1 * C1 * Y)	-0.00074	-0.00074	-0.00073
	(A2 * !B1 * C1 * Y)	0.00296	0.00297	0.00295
	(!A2 * !C1 * Y)	-0.00076	-0.00076	-0.00076
	(!A2 * !C1 * Y)	0.00297	0.00297	0.00296
	(!A2 * !B1 * C1 * Y)	-0.00074	-0.00074	-0.00073
	(!A2 * !B1 * C1 * Y)	0.00297	0.00297	0.00295
	(!A1 * !A2 * B1 * C1 * Y)	-0.00073	-0.00074	-0.00073
	(!A1 * !A2 * B1 * C1 * Y)	0.00294	0.00297	0.00295
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	-0.00135	-0.00136	-0.00135
	(A2 * !C1 * Y)	0.00357	0.00360	0.00358
	(A2 * !B1 * C1 * Y)	-0.00132	-0.00133	-0.00131
	(A2 * !B1 * C1 * Y)	0.00356	0.00360	0.00357
	(!A2 * !C1 * Y)	-0.00136	-0.00135	-0.00135
	(!A2 * !C1 * Y)	0.00359	0.00359	0.00358
	(!A2 * !B1 * C1 * Y)	-0.00133	-0.00132	-0.00131
	(!A2 * !B1 * C1 * Y)	0.00358	0.00358	0.00357
	(!A1 * !A2 * B1 * C1 * Y)	-0.00132	-0.00132	-0.00130
	(!A1 * !A2 * B1 * C1 * Y)	0.00358	0.00359	0.00357

SKY130_FD_SC_HS__O2111Ax

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o2111a_1	12.78720
sky130_fd_sc_hs__o2111a_2	15.98400
sky130_fd_sc_hs__o2111a_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	C1	D1	X
sky130_fd_sc_hs__o2111a_1	0.00251	0.00258	0.00239	0.00260	0.00262	0.75596
sky130_fd_sc_hs__o2111a_2	0.00254	0.00255	0.00251	0.00261	0.00271	1.55775
sky130_fd_sc_hs__o2111a_4	0.00485	0.00524	0.00444	0.00458	0.00463	2.89750

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2111a_1	0.00000	0.06060	0.42429
sky130_fd_sc_hs__o2111a_2	0.00000	0.06644	0.25036
sky130_fd_sc_hs__o2111a_4	0.00000	0.16628	0.85701

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)	0.17629	0.86582	7.31418
	A2->X (RR)	0.15841	0.84055	7.25206
	B1->X (RR)	0.16842	0.87338	7.36555
	C1->X (RR)	0.16074	0.87786	7.35793
	D1->X (RR)	0.14886	0.85807	7.22012
sky130_fd_sc_hs__o2111a_2	A1->X (RR)	0.19399	0.78674	7.51430
	A2->X (RR)	0.17590	0.76289	7.45744
	B1->X (RR)	0.18699	0.79939	7.56070
	C1->X (RR)	0.17867	0.80920	7.57116
	D1->X (RR)	0.16565	0.79498	7.45338
sky130_fd_sc_hs__o2111a_4	A1->X (RR)	0.22149	0.72575	7.47048
	A2->X (RR)	0.20534	0.71328	7.43995
	B1->X (RR)	0.21374	0.74714	7.58022
	C1->X (RR)	0.20494	0.77447	7.64794
	D1->X (RR)	0.18482	0.75180	7.52692

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111a_1	A1->X (FF)	0.29534	0.88944	5.23227
	A2->X (FF)	0.27669	0.85589	4.90489
	B1->X (FF)	0.15444	0.72934	4.58374
	C1->X (FF)	0.13998	0.70338	4.49371
	D1->X (FF)	0.11816	0.66507	4.39078
sky130_fd_sc_hs__o2111a_2	A1->X (FF)	0.34905	0.94152	5.63917
	A2->X (FF)	0.32993	0.90600	5.33489
	B1->X (FF)	0.15672	0.72861	4.95247
	C1->X (FF)	0.14502	0.70793	4.86862
	D1->X (FF)	0.12557	0.67616	4.76024
sky130_fd_sc_hs__o2111a_4	A1->X (FF)	0.39800	0.95554	5.67586
	A2->X (FF)	0.38127	0.93058	5.47033
	B1->X (FF)	0.19850	0.74609	4.99519
	C1->X (FF)	0.18359	0.72198	4.90570
	D1->X (FF)	0.15981	0.68807	4.78852

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111a_1	A1	0.00914	0.00919	0.00992
	A1	0.00341	0.00347	0.00427
	A2	0.00804	0.00801	0.00963
	A2	0.00290	0.00288	0.00454
	B1	0.00821	0.00824	0.01059
	B1	0.00361	0.00364	0.00601
	C1	0.00762	0.00763	0.01019
	C1	0.00360	0.00361	0.00620
	D1	0.00700	0.00697	0.00979
	D1	0.00359	0.00356	0.00642
sky130_fd_sc_hs__o2111a_2	A1	0.01109	0.01138	0.01213
	A1	0.00536	0.00566	0.00642
	A2	0.00995	0.01019	0.01162
	A2	0.00486	0.00510	0.00656
	B1	0.01018	0.01040	0.01200
	B1	0.00545	0.00567	0.00748
	C1	0.00954	0.00972	0.01154
	C1	0.00544	0.00562	0.00764
	D1	0.00896	0.00908	0.01146
	D1	0.00477	0.00494	0.00766

sky130_fd_sc_hs__o2111a_4	**A1**	0.02279	0.02313	0.02445
	A1	0.01113	0.01147	0.01285
	A2	0.02082	0.02117	0.02356
	A2	0.01009	0.01044	0.01311
	B1	0.02095	0.02125	0.02511
	B1	0.01151	0.01182	0.01606
	C1	0.01966	0.01993	0.02401
	C1	0.01150	0.01177	0.01622
	D1	0.01822	0.01845	0.02424
	D1	0.01145	0.01169	0.01751

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**A1**	0.00345	0.00351	0.00472
	A1	0.00894	0.00902	0.01016
	A2	0.00351	0.00369	0.00705
	A2	0.00839	0.00857	0.01163
	B1	0.00287	0.00305	0.00777
	B1	0.00737	0.00752	0.01187
	C1	0.00253	0.00271	0.00731
	C1	0.00653	0.00667	0.01107
	D1	0.00216	0.00228	0.00693
	D1	0.00559	0.00571	0.01012

sky130_fd_sc_hs__o2111a_2	**A1**	0.00511	0.00526	0.00748
	A1	0.01060	0.01092	0.01206
	A2	0.00519	0.00546	0.00952
	A2	0.01002	0.01044	0.01346
	B1	0.00448	0.00486	0.00842
	B1	0.00914	0.00946	0.01296
	C1	0.00418	0.00448	0.00812
	C1	0.00826	0.00854	0.01208
	D1	0.00372	0.00396	0.00807
	D1	0.00727	0.00750	0.01111
sky130_fd_sc_hs__o2111a_4	**A1**	0.01000	0.01025	0.01269
	A1	0.02116	0.02159	0.02375
	A2	0.01008	0.00969	0.01724
	A2	0.02026	0.02064	0.02639
	B1	0.00878	0.00962	0.01876
	B1	0.01810	0.01883	0.02713
	C1	0.00819	0.00886	0.01790
	C1	0.01626	0.01693	0.02529
	D1	0.00694	0.00779	0.01654
	D1	0.01375	0.01454	0.02310

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)**	0.00122	0.00110	0.00108
	(A2 * B1 * C1 * D1 * X)	-0.00099	-0.00112	-0.00114
	(A2 * B1 * C1 * !D1 * !X)	0.00108	0.00108	0.00108
	(A2 * B1 * C1 * !D1 * !X)	-0.00112	-0.00113	-0.00114
	(A2 * B1 * !C1 * !X)	0.00108	0.00108	0.00108
	(A2 * B1 * !C1 * !X)	-0.00112	-0.00114	-0.00114
	(A2 * !B1 * !X)	0.00108	0.00108	0.00108
	(A2 * !B1 * !X)	-0.00112	-0.00114	-0.00114
	(!A2 * B1 * C1 * !D1 * !X)	0.00098	0.00098	0.00098
	(!A2 * B1 * C1 * !D1 * !X)	-0.00115	-0.00115	-0.00115
	(!A2 * B1 * !C1 * D1 * !X)	0.00099	0.00100	0.00099
	(!A2 * B1 * !C1 * D1 * !X)	-0.00116	-0.00116	-0.00115
	(!A2 * B1 * !C1 * !D1 * !X)	0.00100	0.00100	0.00100
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00116	-0.00116	-0.00115
	(!A2 * !B1 * C1 * D1 * !X)	0.00101	0.00102	0.00101
	(!A2 * !B1 * C1 * D1 * !X)	-0.00115	-0.00116	-0.00115
	(!A2 * !B1 * !D1 * !X)	0.00101	0.00103	0.00102
	(!A2 * !B1 * !D1 * !X)	-0.00115	-0.00116	-0.00115
	(!A2 * !B1 * !C1 * D1 * !X)	0.00102	0.00103	0.00102
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00115	-0.00116	-0.00115

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	0.00126	0.00114	0.00112
	(A2 * B1 * C1 * D1 * X)	-0.00098	-0.00112	-0.00113
	(A2 * B1 * C1 * !D1 * !X)	0.00112	0.00113	0.00112
	(A2 * B1 * C1 * !D1 * !X)	-0.00111	-0.00112	-0.00113
	(A2 * B1 * !C1 * !X)	0.00112	0.00113	0.00112
	(A2 * B1 * !C1 * !X)	-0.00111	-0.00112	-0.00113
	(A2 * !B1 * !X)	0.00112	0.00113	0.00112
	(A2 * !B1 * !X)	-0.00111	-0.00112	-0.00113
	(!A2 * B1 * C1 * !D1 * !X)	0.00104	0.00105	0.00104
	(!A2 * B1 * C1 * !D1 * !X)	-0.00114	-0.00115	-0.00114
	(!A2 * B1 * !C1 * D1 * !X)	0.00105	0.00105	0.00104
	(!A2 * B1 * !C1 * D1 * !X)	-0.00114	-0.00115	-0.00114
	(!A2 * B1 * !C1 * !D1 * !X)	0.00105	0.00105	0.00104
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00114	-0.00114	-0.00114
	(!A2 * !B1 * C1 * D1 * !X)	0.00106	0.00107	0.00106
	(!A2 * !B1 * C1 * D1 * !X)	-0.00114	-0.00115	-0.00114
	(!A2 * !B1 * !D1 * !X)	0.00106	0.00108	0.00106
	(!A2 * !B1 * !D1 * !X)	-0.00114	-0.00115	-0.00114
	(!A2 * !B1 * !C1 * D1 * !X)	0.00106	0.00108	0.00106
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00114	-0.00115	-0.00114

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	0.00244	0.00220	0.00217
	(A2 * B1 * C1 * D1 * X)	-0.00192	-0.00220	-0.00222
	(A2 * B1 * C1 * !D1 * !X)	0.00200	0.00201	0.00200
	(A2 * B1 * C1 * !D1 * !X)	-0.00234	-0.00239	-0.00238
	(A2 * B1 * !C1 * !X)	0.00200	0.00201	0.00200
	(A2 * B1 * !C1 * !X)	-0.00234	-0.00239	-0.00238
	(A2 * !B1 * !X)	0.00200	0.00201	0.00200
	(A2 * !B1 * !X)	-0.00234	-0.00239	-0.00238
	(!A2 * B1 * C1 * !D1 * !X)	0.00184	0.00185	0.00183
	(!A2 * B1 * C1 * !D1 * !X)	-0.00242	-0.00243	-0.00241
	(!A2 * B1 * !C1 * D1 * !X)	0.00185	0.00186	0.00184
	(!A2 * B1 * !C1 * D1 * !X)	-0.00242	-0.00243	-0.00242
	(!A2 * B1 * !C1 * !D1 * !X)	0.00185	0.00185	0.00184
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00242	-0.00242	-0.00242
	(!A2 * !B1 * C1 * D1 * !X)	0.00187	0.00189	0.00188
	(!A2 * !B1 * C1 * D1 * !X)	-0.00241	-0.00242	-0.00242
	(!A2 * !B1 * !D1 * !X)	0.00187	0.00189	0.00188
	(!A2 * !B1 * !D1 * !X)	-0.00241	-0.00242	-0.00242
	(!A2 * !B1 * !C1 * D1 * !X)	0.00187	0.00189	0.00188
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00241	-0.00242	-0.00242

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)**	-0.00107	-0.00108	-0.00107
	(A2 * B1 * C1 * D1 * X)	0.00114	0.00115	0.00115
	(A2 * B1 * C1 * !D1 * !X)	-0.00107	-0.00107	-0.00108
	(A2 * B1 * C1 * !D1 * !X)	0.00113	0.00113	0.00114
	(A2 * B1 * !C1 * !X)	-0.00108	-0.00108	-0.00108
	(A2 * B1 * !C1 * !X)	0.00114	0.00114	0.00114
	(A2 * !B1 * !X)	-0.00108	-0.00108	-0.00108
	(A2 * !B1 * !X)	0.00114	0.00115	0.00114
	(!A2 * B1 * C1 * !D1 * !X)	-0.00091	-0.00098	-0.00098
	(!A2 * B1 * C1 * !D1 * !X)	0.00116	0.00116	0.00116
	(!A2 * B1 * !C1 * D1 * !X)	-0.00093	-0.00100	-0.00099
	(!A2 * B1 * !C1 * D1 * !X)	0.00116	0.00116	0.00116
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00093	-0.00100	-0.00100
	(!A2 * B1 * !C1 * !D1 * !X)	0.00116	0.00116	0.00116
	(!A2 * !B1 * C1 * D1 * !X)	-0.00097	-0.00102	-0.00101
	(!A2 * !B1 * C1 * D1 * !X)	0.00115	0.00116	0.00116
	(!A2 * !B1 * !D1 * !X)	-0.00097	-0.00102	-0.00102
	(!A2 * !B1 * !D1 * !X)	0.00115	0.00116	0.00116
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00097	-0.00102	-0.00102
	(!A2 * !B1 * !C1 * D1 * !X)	0.00115	0.00116	0.00116

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	-0.00111	-0.00112	-0.00111
	(A2 * B1 * C1 * D1 * X)	0.00113	0.00114	0.00113
	(A2 * B1 * C1 * !D1 * !X)	-0.00112	-0.00111	-0.00112
	(A2 * B1 * C1 * !D1 * !X)	0.00112	0.00112	0.00113
	(A2 * B1 * !C1 * !X)	-0.00112	-0.00111	-0.00112
	(A2 * B1 * !C1 * !X)	0.00112	0.00112	0.00113
	(A2 * !B1 * !X)	-0.00112	-0.00111	-0.00112
	(A2 * !B1 * !X)	0.00113	0.00112	0.00113
	(!A2 * B1 * C1 * !D1 * !X)	-0.00096	-0.00105	-0.00104
	(!A2 * B1 * C1 * !D1 * !X)	0.00115	0.00115	0.00115
	(!A2 * B1 * !C1 * D1 * !X)	-0.00098	-0.00105	-0.00104
	(!A2 * B1 * !C1 * D1 * !X)	0.00115	0.00115	0.00115
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00098	-0.00105	-0.00104
	(!A2 * B1 * !C1 * !D1 * !X)	0.00115	0.00115	0.00115
	(!A2 * !B1 * C1 * D1 * !X)	-0.00102	-0.00107	-0.00106
	(!A2 * !B1 * C1 * D1 * !X)	0.00115	0.00115	0.00115
	(!A2 * !B1 * !D1 * !X)	-0.00102	-0.00107	-0.00106
	(!A2 * !B1 * !D1 * !X)	0.00115	0.00115	0.00115
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00102	-0.00107	-0.00106
	(!A2 * !B1 * !C1 * D1 * !X)	0.00115	0.00115	0.00115

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	-0.00214	-0.00215	-0.00214
	(A2 * B1 * C1 * D1 * X)	0.00220	0.00223	0.00223
	(A2 * B1 * C1 * !D1 * !X)	-0.00199	-0.00200	-0.00199
	(A2 * B1 * C1 * !D1 * !X)	0.00238	0.00240	0.00238
	(A2 * B1 * !C1 * !X)	-0.00199	-0.00200	-0.00199
	(A2 * B1 * !C1 * !X)	0.00238	0.00240	0.00238
	(A2 * !B1 * !X)	-0.00198	-0.00200	-0.00199
	(A2 * !B1 * !X)	0.00236	0.00240	0.00238
	(!A2 * B1 * C1 * !D1 * !X)	-0.00171	-0.00185	-0.00183
	(!A2 * B1 * C1 * !D1 * !X)	0.00242	0.00244	0.00242
	(!A2 * B1 * !C1 * D1 * !X)	-0.00172	-0.00186	-0.00184
	(!A2 * B1 * !C1 * D1 * !X)	0.00242	0.00244	0.00242
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00172	-0.00185	-0.00184
	(!A2 * B1 * !C1 * !D1 * !X)	0.00242	0.00244	0.00242
	(!A2 * !B1 * C1 * D1 * !X)	-0.00179	-0.00189	-0.00188
	(!A2 * !B1 * C1 * D1 * !X)	0.00242	0.00244	0.00242
	(!A2 * !B1 * !D1 * !X)	-0.00179	-0.00189	-0.00188
	(!A2 * !B1 * !D1 * !X)	0.00242	0.00244	0.00242
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00179	-0.00189	-0.00188
	(!A2 * !B1 * !C1 * D1 * !X)	0.00242	0.00244	0.00242

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)**	0.00112	0.00113	0.00113
	(A1 * B1 * C1 * D1 * X)	-0.00060	-0.00060	-0.00060
	(A1 * B1 * C1 * !D1 * !X)	0.00102	0.00104	0.00103
	(A1 * B1 * C1 * !D1 * !X)	-0.00110	-0.00112	-0.00111
	(A1 * B1 * !C1 * D1 * !X)	0.00102	0.00104	0.00103
	(A1 * B1 * !C1 * D1 * !X)	-0.00110	-0.00112	-0.00111
	(A1 * B1 * !C1 * !D1 * !X)	0.00102	0.00103	0.00102
	(A1 * B1 * !C1 * !D1 * !X)	-0.00110	-0.00111	-0.00112
	(A1 * !B1 * C1 * D1 * !X)	0.00102	0.00104	0.00103
	(A1 * !B1 * C1 * D1 * !X)	-0.00110	-0.00112	-0.00111
	(A1 * !B1 * !D1 * !X)	0.00102	0.00103	0.00102
	(A1 * !B1 * !D1 * !X)	-0.00110	-0.00111	-0.00112
	(A1 * !B1 * !C1 * D1 * !X)	0.00102	0.00103	0.00102
	(A1 * !B1 * !C1 * D1 * !X)	-0.00110	-0.00111	-0.00112
	(!A1 * B1 * C1 * !D1 * !X)	0.00093	0.00094	0.00093
	(!A1 * B1 * C1 * !D1 * !X)	-0.00113	-0.00114	-0.00113
	(!A1 * B1 * !C1 * D1 * !X)	0.00094	0.00094	0.00094
	(!A1 * B1 * !C1 * D1 * !X)	-0.00113	-0.00114	-0.00113
	(!A1 * B1 * !C1 * !D1 * !X)	0.00094	0.00095	0.00094
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00113	-0.00114	-0.00113
	(!A1 * !B1 * C1 * D1 * !X)	0.00096	0.00097	0.00096
	(!A1 * !B1 * C1 * D1 * !X)	-0.00113	-0.00114	-0.00113
	(!A1 * !B1 * !D1 * !X)	0.00096	0.00097	0.00096
	(!A1 * !B1 * !D1 * !X)	-0.00113	-0.00114	-0.00113
	(!A1 * !B1 * !C1 * D1 * !X)	0.00096	0.00097	0.00096
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00113	-0.00114	-0.00113

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	0.00113	0.00112	0.00112
	(A1 * B1 * C1 * D1 * X)	-0.00059	-0.00059	-0.00058
	(A1 * B1 * C1 * !D1 * !X)	0.00103	0.00104	0.00103
	(A1 * B1 * C1 * !D1 * !X)	-0.00107	-0.00108	-0.00109
	(A1 * B1 * !C1 * D1 * !X)	0.00103	0.00104	0.00103
	(A1 * B1 * !C1 * D1 * !X)	-0.00107	-0.00108	-0.00109
	(A1 * B1 * !C1 * !D1 * !X)	0.00103	0.00104	0.00103
	(A1 * B1 * !C1 * !D1 * !X)	-0.00107	-0.00109	-0.00109
	(A1 * !B1 * C1 * D1 * !X)	0.00103	0.00104	0.00103
	(A1 * !B1 * C1 * D1 * !X)	-0.00107	-0.00109	-0.00109
	(A1 * !B1 * !D1 * !X)	0.00103	0.00104	0.00103
	(A1 * !B1 * !D1 * !X)	-0.00107	-0.00109	-0.00109
	(A1 * !B1 * !C1 * D1 * !X)	0.00103	0.00104	0.00103
	(A1 * !B1 * !C1 * D1 * !X)	-0.00107	-0.00109	-0.00109
	(!A1 * B1 * C1 * !D1 * !X)	0.00094	0.00096	0.00094
	(!A1 * B1 * C1 * !D1 * !X)	-0.00111	-0.00111	-0.00111
	(!A1 * B1 * !C1 * D1 * !X)	0.00096	0.00096	0.00095
	(!A1 * B1 * !C1 * D1 * !X)	-0.00111	-0.00111	-0.00111
	(!A1 * B1 * !C1 * !D1 * !X)	0.00096	0.00097	0.00096
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00111	-0.00112	-0.00111
	(!A1 * !B1 * C1 * D1 * !X)	0.00098	0.00098	0.00097
	(!A1 * !B1 * C1 * D1 * !X)	-0.00111	-0.00111	-0.00111
	(!A1 * !B1 * !D1 * !X)	0.00098	0.00098	0.00097
	(!A1 * !B1 * !D1 * !X)	-0.00111	-0.00111	-0.00111
	(!A1 * !B1 * !C1 * D1 * !X)	0.00098	0.00098	0.00097
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00111	-0.00111	-0.00111

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	0.00246	0.00248	0.00247
	(A1 * B1 * C1 * D1 * X)	-0.00119	-0.00120	-0.00120
	(A1 * B1 * C1 * !D1 * !X)	0.00210	0.00212	0.00210
	(A1 * B1 * C1 * !D1 * !X)	-0.00235	-0.00239	-0.00239
	(A1 * B1 * !C1 * D1 * !X)	0.00210	0.00212	0.00210
	(A1 * B1 * !C1 * D1 * !X)	-0.00235	-0.00239	-0.00239
	(A1 * B1 * !C1 * !D1 * !X)	0.00209	0.00212	0.00210
	(A1 * B1 * !C1 * !D1 * !X)	-0.00235	-0.00240	-0.00239
	(A1 * !B1 * C1 * D1 * !X)	0.00210	0.00212	0.00210
	(A1 * !B1 * C1 * D1 * !X)	-0.00235	-0.00240	-0.00239
	(A1 * !B1 * !D1 * !X)	0.00210	0.00212	0.00210
	(A1 * !B1 * !D1 * !X)	-0.00235	-0.00240	-0.00239
	(A1 * !B1 * !C1 * D1 * !X)	0.00210	0.00212	0.00210
	(A1 * !B1 * !C1 * D1 * !X)	-0.00235	-0.00240	-0.00239
	(!A1 * B1 * C1 * !D1 * !X)	0.00190	0.00191	0.00189
	(!A1 * B1 * C1 * !D1 * !X)	-0.00243	-0.00245	-0.00243
	(!A1 * B1 * !C1 * D1 * !X)	0.00191	0.00191	0.00190
	(!A1 * B1 * !C1 * D1 * !X)	-0.00244	-0.00244	-0.00243
	(!A1 * B1 * !C1 * !D1 * !X)	0.00191	0.00192	0.00190
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00244	-0.00244	-0.00243
	(!A1 * !B1 * C1 * D1 * !X)	0.00193	0.00197	0.00195
	(!A1 * !B1 * C1 * D1 * !X)	-0.00242	-0.00245	-0.00243
	(!A1 * !B1 * !D1 * !X)	0.00194	0.00197	0.00196
	(!A1 * !B1 * !D1 * !X)	-0.00242	-0.00245	-0.00243
	(!A1 * !B1 * !C1 * D1 * !X)	0.00193	0.00195	0.00195
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00242	-0.00244	-0.00243

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)**	-0.00108	-0.00108	-0.00111
	(A1 * B1 * C1 * D1 * X)	0.00065	0.00065	0.00062
	(A1 * B1 * C1 * !D1 * !X)	-0.00102	-0.00103	-0.00102
	(A1 * B1 * C1 * !D1 * !X)	0.00112	0.00112	0.00111
	(A1 * B1 * !C1 * D1 * !X)	-0.00102	-0.00103	-0.00102
	(A1 * B1 * !C1 * D1 * !X)	0.00112	0.00112	0.00111
	(A1 * B1 * !C1 * !D1 * !X)	-0.00102	-0.00102	-0.00102
	(A1 * B1 * !C1 * !D1 * !X)	0.00112	0.00111	0.00112
	(A1 * !B1 * C1 * D1 * !X)	-0.00102	-0.00103	-0.00102
	(A1 * !B1 * C1 * D1 * !X)	0.00112	0.00112	0.00111
	(A1 * !B1 * !D1 * !X)	-0.00102	-0.00102	-0.00102
	(A1 * !B1 * !D1 * !X)	0.00112	0.00111	0.00112
	(A1 * !B1 * !C1 * D1 * !X)	-0.00102	-0.00102	-0.00102
	(A1 * !B1 * !C1 * D1 * !X)	0.00112	0.00111	0.00112
	(!A1 * B1 * C1 * !D1 * !X)	-0.00085	-0.00094	-0.00093
	(!A1 * B1 * C1 * !D1 * !X)	0.00113	0.00114	0.00114
	(!A1 * B1 * !C1 * D1 * !X)	-0.00088	-0.00094	-0.00094
	(!A1 * B1 * !C1 * D1 * !X)	0.00113	0.00114	0.00114
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00088	-0.00095	-0.00094
	(!A1 * B1 * !C1 * !D1 * !X)	0.00113	0.00114	0.00114
	(!A1 * !B1 * C1 * D1 * !X)	-0.00091	-0.00097	-0.00096
	(!A1 * !B1 * C1 * D1 * !X)	0.00113	0.00114	0.00114
	(!A1 * !B1 * !D1 * !X)	-0.00092	-0.00097	-0.00096
	(!A1 * !B1 * !D1 * !X)	0.00113	0.00114	0.00114
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00092	-0.00097	-0.00096
	(!A1 * !B1 * !C1 * D1 * !X)	0.00113	0.00114	0.00114

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	-0.00108	-0.00108	-0.00111
	(A1 * B1 * C1 * D1 * X)	0.00063	0.00063	0.00060
	(A1 * B1 * C1 * !D1 * !X)	-0.00103	-0.00102	-0.00103
	(A1 * B1 * C1 * !D1 * !X)	0.00109	0.00108	0.00109
	(A1 * B1 * !C1 * D1 * !X)	-0.00103	-0.00102	-0.00103
	(A1 * B1 * !C1 * D1 * !X)	0.00109	0.00108	0.00109
	(A1 * B1 * !C1 * !D1 * !X)	-0.00103	-0.00103	-0.00103
	(A1 * B1 * !C1 * !D1 * !X)	0.00109	0.00109	0.00109
	(A1 * !B1 * C1 * D1 * !X)	-0.00103	-0.00103	-0.00103
	(A1 * !B1 * C1 * D1 * !X)	0.00109	0.00109	0.00109
	(A1 * !B1 * !D1 * !X)	-0.00103	-0.00103	-0.00103
	(A1 * !B1 * !D1 * !X)	0.00109	0.00109	0.00109
	(A1 * !B1 * !C1 * D1 * !X)	-0.00103	-0.00103	-0.00103
	(A1 * !B1 * !C1 * D1 * !X)	0.00109	0.00109	0.00109
	(!A1 * B1 * C1 * !D1 * !X)	-0.00088	-0.00096	-0.00094
	(!A1 * B1 * C1 * !D1 * !X)	0.00112	0.00111	0.00111
	(!A1 * B1 * !C1 * D1 * !X)	-0.00089	-0.00096	-0.00095
	(!A1 * B1 * !C1 * D1 * !X)	0.00111	0.00112	0.00111
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00089	-0.00097	-0.00096
	(!A1 * B1 * !C1 * !D1 * !X)	0.00111	0.00112	0.00111
	(!A1 * !B1 * C1 * D1 * !X)	-0.00093	-0.00098	-0.00097
	(!A1 * !B1 * C1 * D1 * !X)	0.00111	0.00112	0.00111
	(!A1 * !B1 * !D1 * !X)	-0.00093	-0.00098	-0.00097
	(!A1 * !B1 * !D1 * !X)	0.00111	0.00112	0.00111
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00093	-0.00098	-0.00097
	(!A1 * !B1 * !C1 * D1 * !X)	0.00111	0.00112	0.00111

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	-0.00236	-0.00236	-0.00245
	(A1 * B1 * C1 * D1 * X)	0.00131	0.00130	0.00123
	(A1 * B1 * C1 * !D1 * !X)	-0.00210	-0.00210	-0.00209
	(A1 * B1 * C1 * !D1 * !X)	0.00240	0.00239	0.00239
	(A1 * B1 * !C1 * D1 * !X)	-0.00210	-0.00210	-0.00209
	(A1 * B1 * !C1 * D1 * !X)	0.00240	0.00239	0.00239
	(A1 * B1 * !C1 * !D1 * !X)	-0.00209	-0.00210	-0.00209
	(A1 * B1 * !C1 * !D1 * !X)	0.00239	0.00240	0.00239
	(A1 * !B1 * C1 * D1 * !X)	-0.00210	-0.00211	-0.00209
	(A1 * !B1 * C1 * D1 * !X)	0.00239	0.00240	0.00239
	(A1 * !B1 * !D1 * !X)	-0.00210	-0.00210	-0.00209
	(A1 * !B1 * !D1 * !X)	0.00240	0.00240	0.00239
	(A1 * !B1 * !C1 * D1 * !X)	-0.00210	-0.00210	-0.00209
	(A1 * !B1 * !C1 * D1 * !X)	0.00240	0.00240	0.00239
	(!A1 * B1 * C1 * !D1 * !X)	-0.00173	-0.00191	-0.00189
	(!A1 * B1 * C1 * !D1 * !X)	0.00243	0.00245	0.00244
	(!A1 * B1 * !C1 * D1 * !X)	-0.00176	-0.00191	-0.00190
	(!A1 * B1 * !C1 * D1 * !X)	0.00244	0.00244	0.00244
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00176	-0.00192	-0.00190
	(!A1 * B1 * !C1 * !D1 * !X)	0.00244	0.00245	0.00244
	(!A1 * !B1 * C1 * D1 * !X)	-0.00185	-0.00197	-0.00195
	(!A1 * !B1 * C1 * D1 * !X)	0.00243	0.00245	0.00244
	(!A1 * !B1 * !D1 * !X)	-0.00185	-0.00197	-0.00196
	(!A1 * !B1 * !D1 * !X)	0.00243	0.00245	0.00244
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00185	-0.00195	-0.00195
	(!A1 * !B1 * !C1 * D1 * !X)	0.00243	0.00245	0.00244

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)**	0.00090	0.00090	0.00090
	(A2 * C1 * !D1 * !X)	-0.00099	-0.00099	-0.00099
	(A2 * !C1 * D1 * !X)	0.00093	0.00094	0.00093
	(A2 * !C1 * D1 * !X)	-0.00099	-0.00100	-0.00099
	(A2 * !C1 * !D1 * !X)	0.00093	0.00094	0.00093
	(A2 * !C1 * !D1 * !X)	-0.00099	-0.00100	-0.00099
	(A1 * !A2 * C1 * !D1 * !X)	0.00090	0.00090	0.00090
	(A1 * !A2 * C1 * !D1 * !X)	-0.00099	-0.00099	-0.00099
	(A1 * !A2 * !C1 * D1 * !X)	0.00093	0.00094	0.00093
	(A1 * !A2 * !C1 * D1 * !X)	-0.00099	-0.00100	-0.00099
	(A1 * !A2 * !C1 * !D1 * !X)	0.00093	0.00094	0.00093
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00099	-0.00100	-0.00099
	(!A1 * !A2 * C1 * D1 * !X)	0.00047	0.00047	0.00047
	(!A1 * !A2 * C1 * D1 * !X)	-0.00096	-0.00097	-0.00096
	(!A1 * !A2 * C1 * !D1 * !X)	0.00053	0.00053	0.00053
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00100	-0.00100	-0.00099
	(!A1 * !A2 * !C1 * D1 * !X)	0.00056	0.00055	0.00055
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00100	-0.00100	-0.00099
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00056	0.00057	0.00056
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00099	-0.00100	-0.00099

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	0.00093	0.00094	0.00094
	(A2 * C1 * !D1 * !X)	-0.00113	-0.00114	-0.00114
	(A2 * !C1 * D1 * !X)	0.00095	0.00097	0.00096
	(A2 * !C1 * D1 * !X)	-0.00114	-0.00114	-0.00114
	(A2 * !C1 * !D1 * !X)	0.00095	0.00097	0.00096
	(A2 * !C1 * !D1 * !X)	-0.00114	-0.00114	-0.00114
	(A1 * !A2 * C1 * !D1 * !X)	0.00093	0.00094	0.00093
	(A1 * !A2 * C1 * !D1 * !X)	-0.00113	-0.00114	-0.00114
	(A1 * !A2 * !C1 * D1 * !X)	0.00095	0.00096	0.00096
	(A1 * !A2 * !C1 * D1 * !X)	-0.00113	-0.00114	-0.00114
	(A1 * !A2 * !C1 * !D1 * !X)	0.00095	0.00097	0.00096
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00113	-0.00114	-0.00114
	(!A1 * !A2 * C1 * D1 * !X)	0.00050	0.00050	0.00050
	(!A1 * !A2 * C1 * D1 * !X)	-0.00111	-0.00110	-0.00110
	(!A1 * !A2 * C1 * !D1 * !X)	0.00057	0.00057	0.00057
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00114	-0.00114	-0.00114
	(!A1 * !A2 * !C1 * D1 * !X)	0.00059	0.00059	0.00058
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00114	-0.00114	-0.00114
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00059	0.00060	0.00060
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00113	-0.00114	-0.00114

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	0.00184	0.00186	0.00184
	(A2 * C1 * !D1 * !X)	-0.00197	-0.00197	-0.00196
	(A2 * !C1 * D1 * !X)	0.00188	0.00189	0.00188
	(A2 * !C1 * D1 * !X)	-0.00196	-0.00197	-0.00196
	(A2 * !C1 * !D1 * !X)	0.00188	0.00190	0.00188
	(A2 * !C1 * !D1 * !X)	-0.00196	-0.00197	-0.00196
	(A1 * !A2 * C1 * !D1 * !X)	0.00183	0.00185	0.00184
	(A1 * !A2 * C1 * !D1 * !X)	-0.00196	-0.00197	-0.00196
	(A1 * !A2 * !C1 * D1 * !X)	0.00188	0.00190	0.00188
	(A1 * !A2 * !C1 * D1 * !X)	-0.00196	-0.00197	-0.00196
	(A1 * !A2 * !C1 * !D1 * !X)	0.00188	0.00190	0.00188
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00196	-0.00197	-0.00196
	(!A1 * !A2 * C1 * D1 * !X)	0.00092	0.00094	0.00093
	(!A1 * !A2 * C1 * D1 * !X)	-0.00189	-0.00190	-0.00187
	(!A1 * !A2 * C1 * !D1 * !X)	0.00107	0.00108	0.00107
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00196	-0.00198	-0.00197
	(!A1 * !A2 * !C1 * D1 * !X)	0.00107	0.00108	0.00107
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00196	-0.00198	-0.00196
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00110	0.00111	0.00110
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00196	-0.00197	-0.00197

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)**	-0.00084	-0.00090	-0.00090
	(A2 * C1 * !D1 * !X)	0.00100	0.00100	0.00100
	(A2 * !C1 * D1 * !X)	-0.00089	-0.00094	-0.00093
	(A2 * !C1 * D1 * !X)	0.00100	0.00101	0.00100
	(A2 * !C1 * !D1 * !X)	-0.00090	-0.00094	-0.00093
	(A2 * !C1 * !D1 * !X)	0.00100	0.00101	0.00100
	(A1 * !A2 * C1 * !D1 * !X)	-0.00082	-0.00090	-0.00090
	(A1 * !A2 * C1 * !D1 * !X)	0.00100	0.00101	0.00100
	(A1 * !A2 * !C1 * D1 * !X)	-0.00089	-0.00094	-0.00093
	(A1 * !A2 * !C1 * D1 * !X)	0.00100	0.00101	0.00100
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00090	-0.00094	-0.00093
	(A1 * !A2 * !C1 * !D1 * !X)	0.00100	0.00101	0.00100
	(!A1 * !A2 * C1 * D1 * !X)	-0.00042	-0.00043	-0.00043
	(!A1 * !A2 * C1 * D1 * !X)	0.00101	0.00101	0.00100
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00053	-0.00053	-0.00053
	(!A1 * !A2 * C1 * !D1 * !X)	0.00100	0.00100	0.00099
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00056	-0.00055	-0.00055
	(!A1 * !A2 * !C1 * D1 * !X)	0.00100	0.00100	0.00100
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00056	-0.00057	-0.00056
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00100	0.00100	0.00100

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	-0.00087	-0.00094	-0.00094
	(A2 * C1 * !D1 * !X)	0.00113	0.00115	0.00114
	(A2 * !C1 * D1 * !X)	-0.00092	-0.00096	-0.00096
	(A2 * !C1 * D1 * !X)	0.00114	0.00115	0.00114
	(A2 * !C1 * !D1 * !X)	-0.00092	-0.00096	-0.00096
	(A2 * !C1 * !D1 * !X)	0.00114	0.00115	0.00114
	(A1 * !A2 * C1 * !D1 * !X)	-0.00085	-0.00094	-0.00093
	(A1 * !A2 * C1 * !D1 * !X)	0.00114	0.00115	0.00114
	(A1 * !A2 * !C1 * D1 * !X)	-0.00092	-0.00096	-0.00096
	(A1 * !A2 * !C1 * D1 * !X)	0.00114	0.00115	0.00114
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00092	-0.00096	-0.00096
	(A1 * !A2 * !C1 * !D1 * !X)	0.00115	0.00115	0.00114
	(!A1 * !A2 * C1 * D1 * !X)	-0.00045	-0.00046	-0.00046
	(!A1 * !A2 * C1 * D1 * !X)	0.00114	0.00115	0.00114
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00057	-0.00057	-0.00057
	(!A1 * !A2 * C1 * !D1 * !X)	0.00114	0.00114	0.00114
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00059	-0.00059	-0.00058
	(!A1 * !A2 * !C1 * D1 * !X)	0.00114	0.00114	0.00114
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00059	-0.00060	-0.00060
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00114	0.00115	0.00114

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	-0.00171	-0.00186	-0.00184
	(A2 * C1 * !D1 * !X)	0.00198	0.00198	0.00197
	(A2 * !C1 * D1 * !X)	-0.00180	-0.00189	-0.00188
	(A2 * !C1 * D1 * !X)	0.00196	0.00199	0.00197
	(A2 * !C1 * !D1 * !X)	-0.00180	-0.00190	-0.00188
	(A2 * !C1 * !D1 * !X)	0.00196	0.00199	0.00197
	(A1 * !A2 * C1 * !D1 * !X)	-0.00168	-0.00185	-0.00184
	(A1 * !A2 * C1 * !D1 * !X)	0.00198	0.00198	0.00197
	(A1 * !A2 * !C1 * D1 * !X)	-0.00179	-0.00190	-0.00188
	(A1 * !A2 * !C1 * D1 * !X)	0.00197	0.00199	0.00197
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00180	-0.00190	-0.00188
	(A1 * !A2 * !C1 * !D1 * !X)	0.00197	0.00199	0.00197
	(!A1 * !A2 * C1 * D1 * !X)	-0.00085	-0.00085	-0.00085
	(!A1 * !A2 * C1 * D1 * !X)	0.00197	0.00198	0.00197
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00107	-0.00108	-0.00107
	(!A1 * !A2 * C1 * !D1 * !X)	0.00197	0.00198	0.00197
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00107	-0.00108	-0.00107
	(!A1 * !A2 * !C1 * D1 * !X)	0.00198	0.00198	0.00197
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00110	-0.00111	-0.00110
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00199	0.00198	0.00197

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)**	0.00093	0.00093	0.00093
	(A2 * B1 * !D1 * !X)	-0.00105	-0.00105	-0.00105
	(A2 * !B1 * D1 * !X)	0.00043	0.00043	0.00043
	(A2 * !B1 * D1 * !X)	-0.00105	-0.00106	-0.00105
	(A2 * !B1 * !D1 * !X)	0.00049	0.00049	0.00048
	(A2 * !B1 * !D1 * !X)	-0.00107	-0.00106	-0.00106
	(A1 * !A2 * B1 * !D1 * !X)	0.00093	0.00094	0.00093
	(A1 * !A2 * B1 * !D1 * !X)	-0.00106	-0.00106	-0.00105
	(!A2 * !B1 * D1 * !X)	0.00043	0.00043	0.00043
	(!A2 * !B1 * D1 * !X)	-0.00106	-0.00106	-0.00105
	(!A2 * !B1 * !D1 * !X)	0.00049	0.00049	0.00048
	(!A2 * !B1 * !D1 * !X)	-0.00106	-0.00106	-0.00106
	(!A1 * !A2 * B1 * D1 * !X)	0.00044	0.00044	0.00043
	(!A1 * !A2 * B1 * D1 * !X)	-0.00106	-0.00106	-0.00105
	(!A1 * !A2 * B1 * !D1 * !X)	0.00054	0.00054	0.00054
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00105	-0.00106	-0.00106

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	0.00094	0.00095	0.00094
	(A2 * B1 * !D1 * !X)	-0.00118	-0.00118	-0.00118
	(A2 * !B1 * D1 * !X)	0.00045	0.00046	0.00046
	(A2 * !B1 * D1 * !X)	-0.00117	-0.00118	-0.00117
	(A2 * !B1 * !D1 * !X)	0.00053	0.00053	0.00052
	(A2 * !B1 * !D1 * !X)	-0.00118	-0.00118	-0.00118
	(A1 * !A2 * B1 * !D1 * !X)	0.00094	0.00095	0.00094
	(A1 * !A2 * B1 * !D1 * !X)	-0.00117	-0.00118	-0.00118
	(!A2 * !B1 * D1 * !X)	0.00045	0.00046	0.00046
	(!A2 * !B1 * D1 * !X)	-0.00118	-0.00118	-0.00117
	(!A2 * !B1 * !D1 * !X)	0.00053	0.00053	0.00052
	(!A2 * !B1 * !D1 * !X)	-0.00118	-0.00118	-0.00118
	(!A1 * !A2 * B1 * D1 * !X)	0.00045	0.00046	0.00046
	(!A1 * !A2 * B1 * D1 * !X)	-0.00118	-0.00118	-0.00117
	(!A1 * !A2 * B1 * !D1 * !X)	0.00057	0.00057	0.00057
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00118	-0.00118	-0.00118

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	0.00194	0.00196	0.00194
	(A2 * B1 * !D1 * !X)	-0.00202	-0.00202	-0.00201
	(A2 * !B1 * D1 * !X)	0.00094	0.00094	0.00095
	(A2 * !B1 * D1 * !X)	-0.00201	-0.00201	-0.00199
	(A2 * !B1 * !D1 * !X)	0.00109	0.00110	0.00109
	(A2 * !B1 * !D1 * !X)	-0.00202	-0.00203	-0.00202
	(A1 * !A2 * B1 * !D1 * !X)	0.00193	0.00196	0.00194
	(A1 * !A2 * B1 * !D1 * !X)	-0.00200	-0.00202	-0.00201
	(!A2 * !B1 * D1 * !X)	0.00094	0.00094	0.00095
	(!A2 * !B1 * D1 * !X)	-0.00201	-0.00201	-0.00199
	(!A2 * !B1 * !D1 * !X)	0.00109	0.00110	0.00109
	(!A2 * !B1 * !D1 * !X)	-0.00202	-0.00203	-0.00202
	(!A1 * !A2 * B1 * D1 * !X)	0.00090	0.00090	0.00092
	(!A1 * !A2 * B1 * D1 * !X)	-0.00201	-0.00202	-0.00199
	(!A1 * !A2 * B1 * !D1 * !X)	0.00114	0.00114	0.00113
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00203	-0.00202	-0.00202

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)**	-0.00086	-0.00093	-0.00093
	(A2 * B1 * !D1 * !X)	0.00111	0.00107	0.00106
	(A2 * !B1 * D1 * !X)	-0.00040	-0.00041	-0.00041
	(A2 * !B1 * D1 * !X)	0.00108	0.00108	0.00106
	(A2 * !B1 * !D1 * !X)	-0.00049	-0.00049	-0.00048
	(A2 * !B1 * !D1 * !X)	0.00112	0.00112	0.00107
	(A1 * !A2 * B1 * !D1 * !X)	-0.00085	-0.00094	-0.00093
	(A1 * !A2 * B1 * !D1 * !X)	0.00111	0.00107	0.00106
	(!A2 * !B1 * D1 * !X)	-0.00041	-0.00041	-0.00041
	(!A2 * !B1 * D1 * !X)	0.00108	0.00108	0.00106
	(!A2 * !B1 * !D1 * !X)	-0.00049	-0.00049	-0.00048
	(!A2 * !B1 * !D1 * !X)	0.00112	0.00112	0.00107
	(!A1 * !A2 * B1 * D1 * !X)	-0.00040	-0.00040	-0.00040
	(!A1 * !A2 * B1 * D1 * !X)	0.00108	0.00109	0.00106
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00054	-0.00054	-0.00054
	(!A1 * !A2 * B1 * !D1 * !X)	0.00112	0.00108	0.00106

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	-0.00088	-0.00095	-0.00094
	(A2 * B1 * !D1 * !X)	0.00123	0.00120	0.00118
	(A2 * !B1 * D1 * !X)	-0.00042	-0.00043	-0.00044
	(A2 * !B1 * D1 * !X)	0.00121	0.00121	0.00119
	(A2 * !B1 * !D1 * !X)	-0.00053	-0.00053	-0.00052
	(A2 * !B1 * !D1 * !X)	0.00123	0.00124	0.00119
	(A1 * !A2 * B1 * !D1 * !X)	-0.00087	-0.00095	-0.00094
	(A1 * !A2 * B1 * !D1 * !X)	0.00123	0.00120	0.00118
	(!A2 * !B1 * D1 * !X)	-0.00042	-0.00043	-0.00044
	(!A2 * !B1 * D1 * !X)	0.00120	0.00121	0.00119
	(!A2 * !B1 * !D1 * !X)	-0.00053	-0.00053	-0.00052
	(!A2 * !B1 * !D1 * !X)	0.00123	0.00124	0.00119
	(!A1 * !A2 * B1 * D1 * !X)	-0.00042	-0.00042	-0.00043
	(!A1 * !A2 * B1 * D1 * !X)	0.00121	0.00121	0.00119
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00057	-0.00057	-0.00057
	(!A1 * !A2 * B1 * !D1 * !X)	0.00122	0.00119	0.00118

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	-0.00178	-0.00196	-0.00194
	(A2 * B1 * !D1 * !X)	0.00211	0.00204	0.00202
	(A2 * !B1 * D1 * !X)	-0.00088	-0.00089	-0.00091
	(A2 * !B1 * D1 * !X)	0.00208	0.00209	0.00203
	(A2 * !B1 * !D1 * !X)	-0.00109	-0.00110	-0.00109
	(A2 * !B1 * !D1 * !X)	0.00211	0.00213	0.00204
	(A1 * !A2 * B1 * !D1 * !X)	-0.00176	-0.00196	-0.00194
	(A1 * !A2 * B1 * !D1 * !X)	0.00213	0.00202	0.00202
	(!A2 * !B1 * D1 * !X)	-0.00088	-0.00089	-0.00091
	(!A2 * !B1 * D1 * !X)	0.00207	0.00208	0.00203
	(!A2 * !B1 * !D1 * !X)	-0.00109	-0.00110	-0.00109
	(!A2 * !B1 * !D1 * !X)	0.00211	0.00213	0.00204
	(!A1 * !A2 * B1 * D1 * !X)	-0.00085	-0.00086	-0.00088
	(!A1 * !A2 * B1 * D1 * !X)	0.00208	0.00209	0.00203
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00114	-0.00114	-0.00113
	(!A1 * !A2 * B1 * !D1 * !X)	0.00209	0.00205	0.00202

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	0.00037	0.00037	0.00036
	(A2 * !C1 * !X)	-0.00127	-0.00128	-0.00130
	(A2 * !B1 * C1 * !X)	0.00037	0.00038	0.00035
	(A2 * !B1 * C1 * !X)	-0.00124	-0.00125	-0.00130
	(!A2 * !C1 * !X)	0.00037	0.00037	0.00036
	(!A2 * !C1 * !X)	-0.00128	-0.00128	-0.00130
	(!A2 * !B1 * C1 * !X)	0.00037	0.00037	0.00035
	(!A2 * !B1 * C1 * !X)	-0.00124	-0.00125	-0.00130
	(!A1 * !A2 * B1 * C1 * !X)	0.00042	0.00042	0.00037
	(!A1 * !A2 * B1 * C1 * !X)	-0.00116	-0.00117	-0.00128

sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	0.00039	0.00039	0.00037
	(A2 * !C1 * !X)	-0.00142	-0.00143	-0.00145
	(A2 * !B1 * C1 * !X)	0.00039	0.00039	0.00036
	(A2 * !B1 * C1 * !X)	-0.00138	-0.00139	-0.00145
	(!A2 * !C1 * !X)	0.00039	0.00039	0.00037
	(!A2 * !C1 * !X)	-0.00143	-0.00143	-0.00145
	(!A2 * !B1 * C1 * !X)	0.00039	0.00039	0.00036
	(!A2 * !B1 * C1 * !X)	-0.00138	-0.00139	-0.00145
	(!A1 * !A2 * B1 * C1 * !X)	0.00044	0.00044	0.00037
	(!A1 * !A2 * B1 * C1 * !X)	-0.00130	-0.00131	-0.00143
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	0.00081	0.00082	0.00077
	(A2 * !C1 * !X)	-0.00234	-0.00237	-0.00243
	(A2 * !B1 * C1 * !X)	0.00080	0.00081	0.00072
	(A2 * !B1 * C1 * !X)	-0.00227	-0.00228	-0.00242
	(!A2 * !C1 * !X)	0.00081	0.00082	0.00077
	(!A2 * !C1 * !X)	-0.00234	-0.00237	-0.00243
	(!A2 * !B1 * C1 * !X)	0.00080	0.00080	0.00072
	(!A2 * !B1 * C1 * !X)	-0.00225	-0.00228	-0.00242
	(!A1 * !A2 * B1 * C1 * !X)	0.00086	0.00087	0.00073
	(!A1 * !A2 * B1 * C1 * !X)	-0.00210	-0.00213	-0.00239

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

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

sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	-0.00035	-0.00035	-0.00035
	(A2 * !C1 * !X)	0.00130	0.00131	0.00130
	(A2 * !B1 * C1 * !X)	-0.00034	-0.00035	-0.00034
	(A2 * !B1 * C1 * !X)	0.00130	0.00131	0.00130
	(!A2 * !C1 * !X)	-0.00035	-0.00035	-0.00035
	(!A2 * !C1 * !X)	0.00130	0.00131	0.00130
	(!A2 * !B1 * C1 * !X)	-0.00034	-0.00035	-0.00034
	(!A2 * !B1 * C1 * !X)	0.00130	0.00131	0.00130
	(!A1 * !A2 * B1 * C1 * !X)	-0.00034	-0.00035	-0.00034
	(!A1 * !A2 * B1 * C1 * !X)	0.00130	0.00131	0.00130
sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	-0.00036	-0.00036	-0.00036
	(A2 * !C1 * !X)	0.00145	0.00146	0.00146
	(A2 * !B1 * C1 * !X)	-0.00035	-0.00036	-0.00035
	(A2 * !B1 * C1 * !X)	0.00145	0.00146	0.00146
	(!A2 * !C1 * !X)	-0.00036	-0.00036	-0.00036
	(!A2 * !C1 * !X)	0.00145	0.00146	0.00146
	(!A2 * !B1 * C1 * !X)	-0.00035	-0.00036	-0.00035
	(!A2 * !B1 * C1 * !X)	0.00145	0.00146	0.00146
	(!A1 * !A2 * B1 * C1 * !X)	-0.00035	-0.00035	-0.00035
	(!A1 * !A2 * B1 * C1 * !X)	0.00145	0.00146	0.00146
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	-0.00075	-0.00075	-0.00074
	(A2 * !C1 * !X)	0.00245	0.00245	0.00244
	(A2 * !B1 * C1 * !X)	-0.00071	-0.00072	-0.00071
	(A2 * !B1 * C1 * !X)	0.00243	0.00245	0.00244
	(!A2 * !C1 * !X)	-0.00075	-0.00074	-0.00074
	(!A2 * !C1 * !X)	0.00245	0.00245	0.00244
	(!A2 * !B1 * C1 * !X)	-0.00071	-0.00072	-0.00071
	(!A2 * !B1 * C1 * !X)	0.00243	0.00245	0.00244
	(!A1 * !A2 * B1 * C1 * !X)	-0.00070	-0.00071	-0.00071
	(!A1 * !A2 * B1 * C1 * !X)	0.00242	0.00245	0.00244

SKY130_FD_SC_HS__O211AIx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o211ai_1	9.59040
sky130_fd_sc_hs__o211ai_2	15.98400
sky130_fd_sc_hs__o211ai_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	C1	Y
sky130_fd_sc_hs__o211ai_1	0.00262	0.00274	0.00278	0.00271	0.36575
sky130_fd_sc_hs__o211ai_2	0.00508	0.00523	0.00523	0.00510	0.68372
sky130_fd_sc_hs__o211ai_4	0.01001	0.01032	0.00745	0.00768	1.26991

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o211ai_1	0.00000	0.01361	0.07330
sky130_fd_sc_hs__o211ai_2	0.00000	0.02721	0.14659
sky130_fd_sc_hs__o211ai_4	0.00000	0.03610	0.19545

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)	0.19242	1.27793	11.72720
	A2->Y (FR)	0.17354	1.23868	11.62300
	B1->Y (FR)	0.07352	0.82159	8.40335
	C1->Y (FR)	0.05973	0.80546	8.38899
sky130_fd_sc_hs__o211ai_2	A1->Y (FR)	0.17907	1.12255	11.75320
	A2->Y (FR)	0.15106	1.07504	11.65530
	B1->Y (FR)	0.06069	0.72431	8.19625
	C1->Y (FR)	0.04390	0.70714	8.14071
sky130_fd_sc_hs__o211ai_4	A1->Y (FR)	0.16777	0.97767	11.51460
	A2->Y (FR)	0.14133	0.93874	11.49450
	B1->Y (FR)	0.08889	0.86381	10.84770
	C1->Y (FR)	0.05745	0.82695	10.71440

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211ai_1	A1->Y (RF)	0.07325	0.55475	5.10520
	A2->Y (RF)	0.06213	0.53313	5.02248
	B1->Y (RF)	0.06672	0.59782	5.74010
	C1->Y (RF)	0.05619	0.61110	6.00791
sky130_fd_sc_hs__o211ai_2	A1->Y (RF)	0.06876	0.48244	5.01696
	A2->Y (RF)	0.05768	0.46629	5.00678
	B1->Y (RF)	0.06286	0.54406	5.87280
	C1->Y (RF)	0.04815	0.55185	6.16049
sky130_fd_sc_hs__o211ai_4	A1->Y (RF)	0.06890	0.43748	5.13558
	A2->Y (RF)	0.05397	0.40998	5.00581
	B1->Y (RF)	0.05740	0.48623	5.94850
	C1->Y (RF)	0.04424	0.51493	6.49266

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.00121	0.00110	0.00119
	A1	0.00623	0.00612	0.00620
	A2	0.00123	0.00116	0.00165
	A2	0.00562	0.00552	0.00603
	B1	0.00049	0.00043	0.00098
	B1	0.00476	0.00468	0.00521
	C1	0.00003	-0.00001	0.00054
	C1	0.00363	0.00346	0.00412
sky130_fd_sc_hs__o211ai_2	A1	0.00145	0.00125	0.00143
	A1	0.01159	0.01139	0.01152
	A2	0.00146	0.00134	0.00232
	A2	0.01024	0.01013	0.01108
	B1	0.00037	0.00030	0.00137
	B1	0.00896	0.00858	0.00988
	C1	-0.00102	-0.00104	0.00018
	C1	0.00614	0.00613	0.00736
sky130_fd_sc_hs__o211ai_4	A1	0.00280	0.00234	0.00272
	A1	0.02252	0.02203	0.02238
	A2	0.00279	0.00250	0.00444
	A2	0.01988	0.01959	0.02151
	B1	0.00032	-0.00000	0.00130
	B1	0.01435	0.01390	0.01335
	C1	-0.00206	-0.00217	-0.00072
	C1	0.00935	0.00920	0.01001

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.00667	0.00658	0.00666
	A1	0.00153	0.00144	0.00154
	A2	0.00547	0.00543	0.00562
	A2	0.00094	0.00087	0.00098
	B1	0.00586	0.00575	0.00592
	B1	0.00160	0.00149	0.00160
	C1	0.00514	0.00505	0.00551
	C1	0.00159	0.00148	0.00169
sky130_fd_sc_hs__o211ai_2	A1	0.01295	0.01274	0.01308
	A1	0.00260	0.00233	0.00253
	A2	0.00993	0.00985	0.01023
	A2	0.00084	0.00072	0.00099
	B1	0.01114	0.01092	0.01149
	B1	0.00259	0.00238	0.00261
	C1	0.00956	0.00943	0.00979
	C1	0.00253	0.00238	0.00278
sky130_fd_sc_hs__o211ai_4	A1	0.02367	0.02310	0.02428
	A1	0.00349	0.00294	0.00338
	A2	0.01780	0.01756	0.02001
	A2	0.00008	-0.00022	0.00044
	B1	0.01912	0.01902	0.01932
	B1	0.00519	0.00502	0.00527
	C1	0.01632	0.01616	0.01769
	C1	0.00516	0.00495	0.00541

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)**	0.00121	0.00109	0.00108
	(A2 * B1 * C1 * !Y)	-0.00109	-0.00123	-0.00124
	(A2 * B1 * !C1 * Y)	0.00108	0.00108	0.00108
	(A2 * B1 * !C1 * Y)	-0.00121	-0.00123	-0.00123
	(A2 * !B1 * Y)	0.00108	0.00108	0.00108
	(A2 * !B1 * Y)	-0.00121	-0.00123	-0.00123
	(!A2 * B1 * !C1 * Y)	0.00099	0.00100	0.00099
	(!A2 * B1 * !C1 * Y)	-0.00125	-0.00125	-0.00125
	(!A2 * !B1 * C1 * Y)	0.00101	0.00102	0.00101
	(!A2 * !B1 * C1 * Y)	-0.00125	-0.00126	-0.00125
	(!A2 * !B1 * !C1 * Y)	0.00101	0.00102	0.00101
	(!A2 * !B1 * !C1 * Y)	-0.00125	-0.00126	-0.00125
sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	0.00238	0.00214	0.00211
	(A2 * B1 * C1 * !Y)	-0.00220	-0.00251	-0.00251
	(A2 * B1 * !C1 * Y)	0.00211	0.00212	0.00211
	(A2 * B1 * !C1 * Y)	-0.00245	-0.00253	-0.00252
	(A2 * !B1 * Y)	0.00211	0.00212	0.00211
	(A2 * !B1 * Y)	-0.00245	-0.00253	-0.00252
	(!A2 * B1 * !C1 * Y)	0.00195	0.00197	0.00195
	(!A2 * B1 * !C1 * Y)	-0.00256	-0.00259	-0.00257
	(!A2 * !B1 * C1 * Y)	0.00197	0.00199	0.00197
	(!A2 * !B1 * C1 * Y)	-0.00257	-0.00258	-0.00257
	(!A2 * !B1 * !C1 * Y)	0.00197	0.00199	0.00197
	(!A2 * !B1 * !C1 * Y)	-0.00257	-0.00258	-0.00257

sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	0.00468	0.00419	0.00413
	(A2 * B1 * C1 * !Y)	-0.00436	-0.00498	-0.00499
	(A2 * B1 * !C1 * Y)	0.00413	0.00415	0.00412
	(A2 * B1 * !C1 * Y)	-0.00487	-0.00502	-0.00499
	(A2 * !B1 * Y)	0.00413	0.00415	0.00412
	(A2 * !B1 * Y)	-0.00487	-0.00502	-0.00499
	(!A2 * B1 * !C1 * Y)	0.00377	0.00379	0.00376
	(!A2 * B1 * !C1 * Y)	-0.00510	-0.00512	-0.00510
	(!A2 * !B1 * C1 * Y)	0.00383	0.00386	0.00384
	(!A2 * !B1 * C1 * Y)	-0.00509	-0.00511	-0.00510
	(!A2 * !B1 * !C1 * Y)	0.00383	0.00387	0.00384
	(!A2 * !B1 * !C1 * Y)	-0.00509	-0.00512	-0.00510

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)**	-0.00107	-0.00108	-0.00107
	(A2 * B1 * C1 * !Y)	0.00124	0.00124	0.00124
	(A2 * B1 * !C1 * Y)	-0.00108	-0.00108	-0.00108
	(A2 * B1 * !C1 * Y)	0.00123	0.00123	0.00123
	(A2 * !B1 * Y)	-0.00108	-0.00108	-0.00108
	(A2 * !B1 * Y)	0.00123	0.00123	0.00123
	(!A2 * B1 * !C1 * Y)	-0.00093	-0.00100	-0.00099
	(!A2 * B1 * !C1 * Y)	0.00125	0.00126	0.00125
	(!A2 * !B1 * C1 * Y)	-0.00097	-0.00102	-0.00101
	(!A2 * !B1 * C1 * Y)	0.00125	0.00126	0.00125
	(!A2 * !B1 * !C1 * Y)	-0.00097	-0.00102	-0.00101
	(!A2 * !B1 * !C1 * Y)	0.00125	0.00126	0.00125

sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	-0.00212	-0.00211	-0.00210
	(A2 * B1 * C1 * !Y)	0.00253	0.00252	0.00251
	(A2 * B1 * !C1 * Y)	-0.00211	-0.00211	-0.00210
	(A2 * B1 * !C1 * Y)	0.00254	0.00253	0.00252
	(A2 * !B1 * Y)	-0.00211	-0.00211	-0.00210
	(A2 * !B1 * Y)	0.00252	0.00253	0.00252
	(!A2 * B1 * !C1 * Y)	-0.00183	-0.00197	-0.00195
	(!A2 * B1 * !C1 * Y)	0.00256	0.00259	0.00258
	(!A2 * !B1 * C1 * Y)	-0.00188	-0.00199	-0.00197
	(!A2 * !B1 * C1 * Y)	0.00257	0.00259	0.00258
	(!A2 * !B1 * !C1 * Y)	-0.00188	-0.00199	-0.00197
	(!A2 * !B1 * !C1 * Y)	0.00257	0.00259	0.00258
sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	-0.00412	-0.00413	-0.00410
	(A2 * B1 * C1 * !Y)	0.00499	0.00502	0.00499
	(A2 * B1 * !C1 * Y)	-0.00412	-0.00413	-0.00412
	(A2 * B1 * !C1 * Y)	0.00499	0.00502	0.00499
	(A2 * !B1 * Y)	-0.00409	-0.00413	-0.00412
	(A2 * !B1 * Y)	0.00494	0.00502	0.00499
	(!A2 * B1 * !C1 * Y)	-0.00350	-0.00379	-0.00376
	(!A2 * B1 * !C1 * Y)	0.00510	0.00515	0.00511
	(!A2 * !B1 * C1 * Y)	-0.00364	-0.00386	-0.00384
	(!A2 * !B1 * C1 * Y)	0.00510	0.00515	0.00511
	(!A2 * !B1 * !C1 * Y)	-0.00364	-0.00387	-0.00384
	(!A2 * !B1 * !C1 * Y)	0.00510	0.00515	0.00511

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)**	0.00116	0.00116	0.00116
	(A1 * B1 * C1 * !Y)	-0.00067	-0.00066	-0.00066
	(A1 * B1 * !C1 * Y)	0.00105	0.00106	0.00105
	(A1 * B1 * !C1 * Y)	-0.00121	-0.00124	-0.00123
	(A1 * !B1 * C1 * Y)	0.00105	0.00106	0.00105
	(A1 * !B1 * C1 * Y)	-0.00122	-0.00124	-0.00124
	(A1 * !B1 * !C1 * Y)	0.00105	0.00106	0.00105
	(A1 * !B1 * !C1 * Y)	-0.00121	-0.00124	-0.00124
	(!A1 * B1 * !C1 * Y)	0.00098	0.00098	0.00097
	(!A1 * B1 * !C1 * Y)	-0.00126	-0.00126	-0.00126
	(!A1 * !B1 * C1 * Y)	0.00099	0.00100	0.00099
	(!A1 * !B1 * C1 * Y)	-0.00125	-0.00126	-0.00126
	(!A1 * !B1 * !C1 * Y)	0.00099	0.00099	0.00099
	(!A1 * !B1 * !C1 * Y)	-0.00125	-0.00126	-0.00126
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	0.00239	0.00240	0.00239
	(A1 * B1 * C1 * !Y)	-0.00129	-0.00129	-0.00129
	(A1 * B1 * !C1 * Y)	0.00212	0.00213	0.00211
	(A1 * B1 * !C1 * Y)	-0.00243	-0.00249	-0.00249
	(A1 * !B1 * C1 * Y)	0.00213	0.00213	0.00211
	(A1 * !B1 * C1 * Y)	-0.00243	-0.00249	-0.00249
	(A1 * !B1 * !C1 * Y)	0.00213	0.00213	0.00211
	(A1 * !B1 * !C1 * Y)	-0.00244	-0.00250	-0.00249
	(!A1 * B1 * !C1 * Y)	0.00196	0.00195	0.00194
	(!A1 * B1 * !C1 * Y)	-0.00254	-0.00255	-0.00254
	(!A1 * !B1 * C1 * Y)	0.00197	0.00199	0.00197
	(!A1 * !B1 * C1 * Y)	-0.00254	-0.00256	-0.00254
	(!A1 * !B1 * !C1 * Y)	0.00196	0.00197	0.00197
	(!A1 * !B1 * !C1 * Y)	-0.00254	-0.00255	-0.00254

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	0.00466	0.00468	0.00467
	(A1 * B1 * C1 * !Y)	-0.00260	-0.00261	-0.00260
	(A1 * B1 * !C1 * Y)	0.00413	0.00414	0.00412
	(A1 * B1 * !C1 * Y)	-0.00488	-0.00500	-0.00499
	(A1 * !B1 * C1 * Y)	0.00410	0.00414	0.00412
	(A1 * !B1 * C1 * Y)	-0.00486	-0.00500	-0.00499
	(A1 * !B1 * !C1 * Y)	0.00411	0.00416	0.00412
	(A1 * !B1 * !C1 * Y)	-0.00487	-0.00502	-0.00500
	(!A1 * B1 * !C1 * Y)	0.00376	0.00377	0.00375
	(!A1 * B1 * !C1 * Y)	-0.00512	-0.00513	-0.00511
	(!A1 * !B1 * C1 * Y)	0.00383	0.00384	0.00384
	(!A1 * !B1 * C1 * Y)	-0.00510	-0.00511	-0.00511
	(!A1 * !B1 * !C1 * Y)	0.00382	0.00383	0.00383
	(!A1 * !B1 * !C1 * Y)	-0.00510	-0.00511	-0.00511

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)**	-0.00111	-0.00111	-0.00115
	(A1 * B1 * C1 * !Y)	0.00071	0.00071	0.00068
	(A1 * B1 * !C1 * Y)	-0.00105	-0.00105	-0.00105
	(A1 * B1 * !C1 * Y)	0.00124	0.00124	0.00123
	(A1 * !B1 * C1 * Y)	-0.00105	-0.00105	-0.00105
	(A1 * !B1 * C1 * Y)	0.00124	0.00124	0.00124
	(A1 * !B1 * !C1 * Y)	-0.00105	-0.00105	-0.00105
	(A1 * !B1 * !C1 * Y)	0.00124	0.00124	0.00124
	(!A1 * B1 * !C1 * Y)	-0.00090	-0.00098	-0.00097
	(!A1 * B1 * !C1 * Y)	0.00126	0.00127	0.00126
	(!A1 * !B1 * C1 * Y)	-0.00094	-0.00099	-0.00099
	(!A1 * !B1 * C1 * Y)	0.00125	0.00127	0.00126
	(!A1 * !B1 * !C1 * Y)	-0.00094	-0.00099	-0.00099
	(!A1 * !B1 * !C1 * Y)	0.00125	0.00127	0.00126
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	-0.00223	-0.00224	-0.00237
	(A1 * B1 * C1 * !Y)	0.00143	0.00142	0.00132
	(A1 * B1 * !C1 * Y)	-0.00211	-0.00211	-0.00211
	(A1 * B1 * !C1 * Y)	0.00249	0.00249	0.00249
	(A1 * !B1 * C1 * Y)	-0.00211	-0.00211	-0.00211
	(A1 * !B1 * C1 * Y)	0.00249	0.00249	0.00249
	(A1 * !B1 * !C1 * Y)	-0.00211	-0.00211	-0.00211
	(A1 * !B1 * !C1 * Y)	0.00248	0.00250	0.00249
	(!A1 * B1 * !C1 * Y)	-0.00182	-0.00195	-0.00194
	(!A1 * B1 * !C1 * Y)	0.00254	0.00255	0.00255
	(!A1 * !B1 * C1 * Y)	-0.00187	-0.00198	-0.00197
	(!A1 * !B1 * C1 * Y)	0.00254	0.00256	0.00255
	(!A1 * !B1 * !C1 * Y)	-0.00187	-0.00197	-0.00197
	(!A1 * !B1 * !C1 * Y)	0.00254	0.00256	0.00255

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	-0.00438	-0.00440	-0.00463
	(A1 * B1 * C1 * !Y)	0.00287	0.00285	0.00267
	(A1 * B1 * !C1 * Y)	-0.00412	-0.00412	-0.00411
	(A1 * B1 * !C1 * Y)	0.00499	0.00500	0.00499
	(A1 * !B1 * C1 * Y)	-0.00410	-0.00412	-0.00411
	(A1 * !B1 * C1 * Y)	0.00496	0.00500	0.00499
	(A1 * !B1 * !C1 * Y)	-0.00411	-0.00413	-0.00411
	(A1 * !B1 * !C1 * Y)	0.00499	0.00502	0.00500
	(!A1 * B1 * !C1 * Y)	-0.00349	-0.00377	-0.00375
	(!A1 * B1 * !C1 * Y)	0.00512	0.00515	0.00513
	(!A1 * !B1 * C1 * Y)	-0.00362	-0.00384	-0.00384
	(!A1 * !B1 * C1 * Y)	0.00510	0.00516	0.00513
	(!A1 * !B1 * !C1 * Y)	-0.00362	-0.00383	-0.00383
	(!A1 * !B1 * !C1 * Y)	0.00510	0.00515	0.00513

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	0.00096	0.00097	0.00097
	(A2 * !C1 * Y)	-0.00132	-0.00132	-0.00132
	(A1 * !A2 * !C1 * Y)	0.00097	0.00097	0.00097
	(A1 * !A2 * !C1 * Y)	-0.00132	-0.00132	-0.00132
	(!A1 * !A2 * C1 * Y)	0.00049	0.00049	0.00049
	(!A1 * !A2 * C1 * Y)	-0.00132	-0.00133	-0.00131
	(!A1 * !A2 * !C1 * Y)	0.00059	0.00059	0.00059
	(!A1 * !A2 * !C1 * Y)	-0.00133	-0.00133	-0.00132
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	0.00193	0.00194	0.00194
	(A2 * !C1 * Y)	-0.00259	-0.00259	-0.00259
	(A1 * !A2 * !C1 * Y)	0.00192	0.00195	0.00194
	(A1 * !A2 * !C1 * Y)	-0.00257	-0.00260	-0.00259
	(!A1 * !A2 * C1 * Y)	0.00091	0.00092	0.00094
	(!A1 * !A2 * C1 * Y)	-0.00258	-0.00260	-0.00257
	(!A1 * !A2 * !C1 * Y)	0.00112	0.00113	0.00112
	(!A1 * !A2 * !C1 * Y)	-0.00260	-0.00261	-0.00260
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	0.00383	0.00388	0.00383
	(A2 * !C1 * Y)	-0.00260	-0.00261	-0.00259
	(A1 * !A2 * !C1 * Y)	0.00381	0.00385	0.00384
	(A1 * !A2 * !C1 * Y)	-0.00259	-0.00260	-0.00259
	(!A1 * !A2 * C1 * Y)	0.00178	0.00179	0.00181
	(!A1 * !A2 * C1 * Y)	-0.00259	-0.00259	-0.00256
	(!A1 * !A2 * !C1 * Y)	0.00218	0.00218	0.00216
	(!A1 * !A2 * !C1 * Y)	-0.00263	-0.00263	-0.00262

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	-0.00091	-0.00097	-0.00097
	(A2 * !C1 * Y)	0.00136	0.00134	0.00133
	(A1 * !A2 * !C1 * Y)	-0.00090	-0.00097	-0.00097
	(A1 * !A2 * !C1 * Y)	0.00137	0.00134	0.00132
	(!A1 * !A2 * C1 * Y)	-0.00045	-0.00045	-0.00046
	(!A1 * !A2 * C1 * Y)	0.00135	0.00136	0.00133
	(!A1 * !A2 * !C1 * Y)	-0.00059	-0.00059	-0.00059
	(!A1 * !A2 * !C1 * Y)	0.00139	0.00137	0.00133
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	-0.00181	-0.00194	-0.00194
	(A2 * !C1 * Y)	0.00265	0.00263	0.00260
	(A1 * !A2 * !C1 * Y)	-0.00179	-0.00195	-0.00194
	(A1 * !A2 * !C1 * Y)	0.00269	0.00263	0.00260
	(!A1 * !A2 * C1 * Y)	-0.00086	-0.00086	-0.00089
	(!A1 * !A2 * C1 * Y)	0.00269	0.00269	0.00262
	(!A1 * !A2 * !C1 * Y)	-0.00112	-0.00113	-0.00112
	(!A1 * !A2 * !C1 * Y)	0.00274	0.00271	0.00262
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	-0.00358	-0.00388	-0.00383
	(A2 * !C1 * Y)	0.00272	0.00264	0.00261
	(A1 * !A2 * !C1 * Y)	-0.00351	-0.00385	-0.00384
	(A1 * !A2 * !C1 * Y)	0.00279	0.00264	0.00261
	(!A1 * !A2 * C1 * Y)	-0.00167	-0.00167	-0.00172
	(!A1 * !A2 * C1 * Y)	0.00274	0.00275	0.00264
	(!A1 * !A2 * !C1 * Y)	-0.00218	-0.00218	-0.00216
	(!A1 * !A2 * !C1 * Y)	0.00288	0.00282	0.00266

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	0.00038	0.00038	0.00036
	(A2 * !B1 * Y)	-0.00149	-0.00150	-0.00152
	(!A2 * !B1 * Y)	0.00038	0.00038	0.00036
	(!A2 * !B1 * Y)	-0.00148	-0.00149	-0.00152
	(!A1 * !A2 * B1 * Y)	0.00041	0.00041	0.00036
	(!A1 * !A2 * B1 * Y)	-0.00142	-0.00143	-0.00151
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	0.00080	0.00081	0.00075
	(A2 * !B1 * Y)	-0.00287	-0.00290	-0.00296
	(!A2 * !B1 * Y)	0.00080	0.00081	0.00075
	(!A2 * !B1 * Y)	-0.00287	-0.00290	-0.00296
	(!A1 * !A2 * B1 * Y)	0.00081	0.00081	0.00071
	(!A1 * !A2 * B1 * Y)	-0.00274	-0.00277	-0.00293
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	0.00153	0.00153	0.00144
	(A2 * !B1 * Y)	-0.00336	-0.00338	-0.00350
	(!A2 * !B1 * Y)	0.00152	0.00153	0.00144
	(!A2 * !B1 * Y)	-0.00334	-0.00338	-0.00350
	(!A1 * !A2 * B1 * Y)	0.00154	0.00156	0.00137
	(!A1 * !A2 * B1 * Y)	-0.00306	-0.00311	-0.00345

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	-0.00035	-0.00035	-0.00035
	(A2 * !B1 * Y)	0.00151	0.00153	0.00152
	(!A2 * !B1 * Y)	-0.00036	-0.00035	-0.00035
	(!A2 * !B1 * Y)	0.00152	0.00153	0.00152
	(!A1 * !A2 * B1 * Y)	-0.00035	-0.00035	-0.00034
	(!A1 * !A2 * B1 * Y)	0.00152	0.00153	0.00152
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	-0.00073	-0.00073	-0.00073
	(A2 * !B1 * Y)	0.00298	0.00298	0.00297
	(!A2 * !B1 * Y)	-0.00073	-0.00073	-0.00073
	(!A2 * !B1 * Y)	0.00298	0.00298	0.00297
	(!A1 * !A2 * B1 * Y)	-0.00070	-0.00071	-0.00070
	(!A1 * !A2 * B1 * Y)	0.00295	0.00299	0.00297
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	-0.00141	-0.00141	-0.00139
	(A2 * !B1 * Y)	0.00352	0.00353	0.00351
	(!A2 * !B1 * Y)	-0.00141	-0.00140	-0.00139
	(!A2 * !B1 * Y)	0.00352	0.00352	0.00351
	(!A1 * !A2 * B1 * Y)	-0.00136	-0.00135	-0.00134
	(!A1 * !A2 * B1 * Y)	0.00352	0.00352	0.00350

SKY130_FD_SC_HS__O211Ax

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o211a_1	14.38560
sky130_fd_sc_hs__o211a_2	12.78720
sky130_fd_sc_hs__o211a_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	C1	X
sky130_fd_sc_hs__o211a_1	0.00253	0.00273	0.00251	0.00247	0.79449
sky130_fd_sc_hs__o211a_2	0.00269	0.00268	0.00268	0.00262	1.54864
sky130_fd_sc_hs__o211a_4	0.00486	0.00464	0.00481	0.00424	2.88409

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o211a_1	0.00000	0.05149	0.18566
sky130_fd_sc_hs__o211a_2	0.00000	0.07154	0.18988
sky130_fd_sc_hs__o211a_4	0.00000	0.18879	0.61728

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)	0.15812	0.84395	7.26585
	A2->X (RR)	0.14192	0.81973	7.20177
	B1->X (RR)	0.14949	0.85162	7.29579
	C1->X (RR)	0.13964	0.83694	7.17718
sky130_fd_sc_hs__o211a_2	A1->X (RR)	0.15973	0.74484	7.36855
	A2->X (RR)	0.14056	0.71969	7.30417
	B1->X (RR)	0.15235	0.76595	7.43315
	C1->X (RR)	0.14229	0.75706	7.33397
sky130_fd_sc_hs__o211a_4	A1->X (RR)	0.15870	0.66713	7.38724
	A2->X (RR)	0.14884	0.64547	7.32390
	B1->X (RR)	0.14964	0.67802	7.43777
	C1->X (RR)	0.13786	0.66272	7.33310

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211a_1	A1->X (FF)	0.27077	0.86467	5.22570
	A2->X (FF)	0.25096	0.83053	4.91076
	B1->X (FF)	0.11999	0.68548	4.62101
	C1->X (FF)	0.10773	0.66054	4.54663
sky130_fd_sc_hs__o211a_2	A1->X (FF)	0.31928	0.90246	5.49382
	A2->X (FF)	0.29823	0.86892	5.19568
	B1->X (FF)	0.14386	0.70566	4.85340
	C1->X (FF)	0.12980	0.68160	4.76408
sky130_fd_sc_hs__o211a_4	A1->X (FF)	0.29482	0.83896	5.34480
	A2->X (FF)	0.27126	0.80005	5.02151
	B1->X (FF)	0.14607	0.66490	4.70021
	C1->X (FF)	0.14396	0.65824	4.66938

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.00848	0.00849	0.00933
	A1	0.00356	0.00357	0.00447
	A2	0.00764	0.00760	0.00924
	A2	0.00307	0.00302	0.00472
	B1	0.00766	0.00761	0.00969
	B1	0.00360	0.00356	0.00568
	C1	0.00706	0.00702	0.00999
	C1	0.00358	0.00355	0.00657
sky130_fd_sc_hs__o211a_2	A1	0.01032	0.01056	0.01141
	A1	0.00515	0.00539	0.00630
	A2	0.00918	0.00937	0.01085
	A2	0.00460	0.00478	0.00637
	B1	0.00948	0.00966	0.01155
	B1	0.00521	0.00538	0.00732
	C1	0.00881	0.00897	0.01166
	C1	0.00518	0.00535	0.00812
sky130_fd_sc_hs__o211a_4	A1	0.01910	0.01962	0.02159
	A1	0.00975	0.01028	0.01236
	A2	0.01659	0.01701	0.02057
	A2	0.00858	0.00901	0.01274
	B1	0.01769	0.01810	0.02274
	B1	0.01011	0.01051	0.01523
	C1	0.01605	0.01643	0.02332
	C1	0.01014	0.01053	0.01758

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.00330	0.00330	0.00481
	A1	0.00808	0.00809	0.00921
	A2	0.00305	0.00313	0.00639
	A2	0.00747	0.00758	0.01061
	B1	0.00267	0.00276	0.00670
	B1	0.00673	0.00680	0.01036
	C1	0.00237	0.00247	0.00651
	C1	0.00588	0.00594	0.00969
sky130_fd_sc_hs__o211a_2	A1	0.00474	0.00481	0.00721
	A1	0.00977	0.00994	0.01112
	A2	0.00472	0.00496	0.00877
	A2	0.00914	0.00948	0.01258
	B1	0.00417	0.00451	0.00852
	B1	0.00845	0.00875	0.01234
	C1	0.00384	0.00415	0.00830
	C1	0.00749	0.00778	0.01150
sky130_fd_sc_hs__o211a_4	A1	0.00889	0.00935	0.01292
	A1	0.01797	0.01869	0.02107
	A2	0.00916	0.00989	0.01634
	A2	0.01687	0.01772	0.02392
	B1	0.00749	0.00846	0.01707
	B1	0.01508	0.01592	0.02445
	C1	0.00731	0.00814	0.01788
	C1	0.01328	0.01408	0.02305

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)**	0.00118	0.00106	0.00104
	(A2 * B1 * C1 * X)	-0.00099	-0.00112	-0.00113
	(A2 * B1 * !C1 * !X)	0.00092	0.00092	0.00092
	(A2 * B1 * !C1 * !X)	-0.00123	-0.00125	-0.00125
	(A2 * !B1 * !X)	0.00092	0.00092	0.00092
	(A2 * !B1 * !X)	-0.00123	-0.00125	-0.00125
	(!A2 * B1 * !C1 * !X)	0.00085	0.00086	0.00085
	(!A2 * B1 * !C1 * !X)	-0.00127	-0.00127	-0.00127
	(!A2 * !B1 * C1 * !X)	0.00087	0.00087	0.00087
	(!A2 * !B1 * C1 * !X)	-0.00127	-0.00128	-0.00127
	(!A2 * !B1 * !C1 * !X)	0.00087	0.00087	0.00087
	(!A2 * !B1 * !C1 * !X)	-0.00127	-0.00127	-0.00127
sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	0.00129	0.00118	0.00117
	(A2 * B1 * C1 * X)	-0.00095	-0.00109	-0.00110
	(A2 * B1 * !C1 * !X)	0.00100	0.00101	0.00100
	(A2 * B1 * !C1 * !X)	-0.00124	-0.00125	-0.00126
	(A2 * !B1 * !X)	0.00100	0.00101	0.00100
	(A2 * !B1 * !X)	-0.00124	-0.00125	-0.00126
	(!A2 * B1 * !C1 * !X)	0.00093	0.00093	0.00093
	(!A2 * B1 * !C1 * !X)	-0.00128	-0.00128	-0.00128
	(!A2 * !B1 * C1 * !X)	0.00095	0.00095	0.00095
	(!A2 * !B1 * C1 * !X)	-0.00128	-0.00128	-0.00128
	(!A2 * !B1 * !C1 * !X)	0.00094	0.00095	0.00094
	(!A2 * !B1 * !C1 * !X)	-0.00128	-0.00128	-0.00128

sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	0.00232	0.00210	0.00207
	(A2 * B1 * C1 * X)	-0.00197	-0.00224	-0.00226
	(A2 * B1 * !C1 * !X)	0.00203	0.00205	0.00204
	(A2 * B1 * !C1 * !X)	-0.00223	-0.00229	-0.00228
	(A2 * !B1 * !X)	0.00203	0.00205	0.00204
	(A2 * !B1 * !X)	-0.00223	-0.00229	-0.00228
	(!A2 * B1 * !C1 * !X)	0.00190	0.00191	0.00190
	(!A2 * B1 * !C1 * !X)	-0.00232	-0.00232	-0.00232
	(!A2 * !B1 * C1 * !X)	0.00192	0.00194	0.00193
	(!A2 * !B1 * C1 * !X)	-0.00231	-0.00232	-0.00232
	(!A2 * !B1 * !C1 * !X)	0.00193	0.00195	0.00194
	(!A2 * !B1 * !C1 * !X)	-0.00231	-0.00232	-0.00232

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)**	-0.00103	-0.00104	-0.00103
	(A2 * B1 * C1 * X)	0.00113	0.00114	0.00114
	(A2 * B1 * !C1 * !X)	-0.00092	-0.00092	-0.00092
	(A2 * B1 * !C1 * !X)	0.00125	0.00125	0.00125
	(A2 * !B1 * !X)	-0.00092	-0.00092	-0.00092
	(A2 * !B1 * !X)	0.00125	0.00126	0.00125
	(!A2 * B1 * !C1 * !X)	-0.00079	-0.00086	-0.00085
	(!A2 * B1 * !C1 * !X)	0.00128	0.00128	0.00127
	(!A2 * !B1 * C1 * !X)	-0.00083	-0.00087	-0.00087
	(!A2 * !B1 * C1 * !X)	0.00128	0.00128	0.00128
	(!A2 * !B1 * !C1 * !X)	-0.00083	-0.00087	-0.00087
	(!A2 * !B1 * !C1 * !X)	0.00128	0.00128	0.00128

sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	-0.00116	-0.00116	-0.00116
	(A2 * B1 * C1 * X)	0.00110	0.00111	0.00110
	(A2 * B1 * !C1 * !X)	-0.00100	-0.00100	-0.00100
	(A2 * B1 * !C1 * !X)	0.00126	0.00125	0.00126
	(A2 * !B1 * !X)	-0.00100	-0.00100	-0.00100
	(A2 * !B1 * !X)	0.00126	0.00125	0.00126
	(!A2 * B1 * !C1 * !X)	-0.00086	-0.00093	-0.00093
	(!A2 * B1 * !C1 * !X)	0.00128	0.00129	0.00128
	(!A2 * !B1 * C1 * !X)	-0.00090	-0.00095	-0.00095
	(!A2 * !B1 * C1 * !X)	0.00128	0.00129	0.00128
	(!A2 * !B1 * !C1 * !X)	-0.00090	-0.00095	-0.00094
	(!A2 * !B1 * !C1 * !X)	0.00128	0.00129	0.00128
sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	-0.00205	-0.00206	-0.00205
	(A2 * B1 * C1 * X)	0.00224	0.00227	0.00226
	(A2 * B1 * !C1 * !X)	-0.00202	-0.00204	-0.00203
	(A2 * B1 * !C1 * !X)	0.00226	0.00230	0.00228
	(A2 * !B1 * !X)	-0.00202	-0.00204	-0.00203
	(A2 * !B1 * !X)	0.00226	0.00229	0.00228
	(!A2 * B1 * !C1 * !X)	-0.00179	-0.00191	-0.00190
	(!A2 * B1 * !C1 * !X)	0.00233	0.00235	0.00232
	(!A2 * !B1 * C1 * !X)	-0.00186	-0.00194	-0.00193
	(!A2 * !B1 * C1 * !X)	0.00233	0.00232	0.00232
	(!A2 * !B1 * !C1 * !X)	-0.00186	-0.00194	-0.00194
	(!A2 * !B1 * !C1 * !X)	0.00233	0.00232	0.00232

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)**	0.00134	0.00134	0.00134
	(A1 * B1 * C1 * X)	-0.00059	-0.00059	-0.00059
	(A1 * B1 * !C1 * !X)	0.00121	0.00120	0.00120
	(A1 * B1 * !C1 * !X)	-0.00112	-0.00114	-0.00114
	(A1 * !B1 * C1 * !X)	0.00121	0.00120	0.00120
	(A1 * !B1 * C1 * !X)	-0.00112	-0.00114	-0.00114
	(A1 * !B1 * !C1 * !X)	0.00121	0.00121	0.00120
	(A1 * !B1 * !C1 * !X)	-0.00113	-0.00115	-0.00114
	(!A1 * B1 * !C1 * !X)	0.00112	0.00112	0.00112
	(!A1 * B1 * !C1 * !X)	-0.00116	-0.00116	-0.00116
	(!A1 * !B1 * C1 * !X)	0.00114	0.00115	0.00114
	(!A1 * !B1 * C1 * !X)	-0.00116	-0.00116	-0.00116
	(!A1 * !B1 * !C1 * !X)	0.00114	0.00115	0.00114
	(!A1 * !B1 * !C1 * !X)	-0.00116	-0.00117	-0.00116
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	0.00119	0.00118	0.00118
	(A1 * B1 * C1 * X)	-0.00060	-0.00059	-0.00059
	(A1 * B1 * !C1 * !X)	0.00098	0.00100	0.00099
	(A1 * B1 * !C1 * !X)	-0.00117	-0.00120	-0.00119
	(A1 * !B1 * C1 * !X)	0.00099	0.00100	0.00099
	(A1 * !B1 * C1 * !X)	-0.00117	-0.00120	-0.00119
	(A1 * !B1 * !C1 * !X)	0.00099	0.00099	0.00099
	(A1 * !B1 * !C1 * !X)	-0.00117	-0.00120	-0.00119
	(!A1 * B1 * !C1 * !X)	0.00091	0.00092	0.00091
	(!A1 * B1 * !C1 * !X)	-0.00121	-0.00121	-0.00121
	(!A1 * !B1 * C1 * !X)	0.00092	0.00094	0.00093
	(!A1 * !B1 * C1 * !X)	-0.00121	-0.00122	-0.00121
	(!A1 * !B1 * !C1 * !X)	0.00093	0.00094	0.00093
	(!A1 * !B1 * !C1 * !X)	-0.00121	-0.00122	-0.00121

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	0.00199	0.00199	0.00199
	(A1 * B1 * C1 * X)	-0.00120	-0.00120	-0.00120
	(A1 * B1 * !C1 * !X)	0.00173	0.00176	0.00174
	(A1 * B1 * !C1 * !X)	-0.00224	-0.00228	-0.00228
	(A1 * !B1 * C1 * !X)	0.00173	0.00176	0.00174
	(A1 * !B1 * C1 * !X)	-0.00224	-0.00228	-0.00228
	(A1 * !B1 * !C1 * !X)	0.00173	0.00175	0.00174
	(A1 * !B1 * !C1 * !X)	-0.00224	-0.00229	-0.00228
	(!A1 * B1 * !C1 * !X)	0.00159	0.00160	0.00159
	(!A1 * B1 * !C1 * !X)	-0.00233	-0.00234	-0.00233
	(!A1 * !B1 * C1 * !X)	0.00162	0.00164	0.00163
	(!A1 * !B1 * C1 * !X)	-0.00232	-0.00233	-0.00233
	(!A1 * !B1 * !C1 * !X)	0.00162	0.00163	0.00162
	(!A1 * !B1 * !C1 * !X)	-0.00232	-0.00234	-0.00233

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)**	-0.00129	-0.00130	-0.00133
	(A1 * B1 * C1 * X)	0.00064	0.00063	0.00061
	(A1 * B1 * !C1 * !X)	-0.00120	-0.00120	-0.00120
	(A1 * B1 * !C1 * !X)	0.00114	0.00114	0.00114
	(A1 * !B1 * C1 * !X)	-0.00120	-0.00120	-0.00120
	(A1 * !B1 * C1 * !X)	0.00114	0.00114	0.00114
	(A1 * !B1 * !C1 * !X)	-0.00119	-0.00121	-0.00120
	(A1 * !B1 * !C1 * !X)	0.00113	0.00115	0.00114
	(!A1 * B1 * !C1 * !X)	-0.00107	-0.00112	-0.00112
	(!A1 * B1 * !C1 * !X)	0.00117	0.00117	0.00116
	(!A1 * !B1 * C1 * !X)	-0.00111	-0.00115	-0.00114
	(!A1 * !B1 * C1 * !X)	0.00117	0.00117	0.00116
	(!A1 * !B1 * !C1 * !X)	-0.00111	-0.00115	-0.00114
	(!A1 * !B1 * !C1 * !X)	0.00117	0.00117	0.00116
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	-0.00113	-0.00113	-0.00117
	(A1 * B1 * C1 * X)	0.00064	0.00063	0.00060
	(A1 * B1 * !C1 * !X)	-0.00098	-0.00099	-0.00098
	(A1 * B1 * !C1 * !X)	0.00119	0.00120	0.00119
	(A1 * !B1 * C1 * !X)	-0.00099	-0.00099	-0.00098
	(A1 * !B1 * C1 * !X)	0.00119	0.00120	0.00119
	(A1 * !B1 * !C1 * !X)	-0.00099	-0.00099	-0.00098
	(A1 * !B1 * !C1 * !X)	0.00119	0.00120	0.00119
	(!A1 * B1 * !C1 * !X)	-0.00085	-0.00092	-0.00091
	(!A1 * B1 * !C1 * !X)	0.00121	0.00122	0.00121
	(!A1 * !B1 * C1 * !X)	-0.00089	-0.00094	-0.00093
	(!A1 * !B1 * C1 * !X)	0.00123	0.00122	0.00122
	(!A1 * !B1 * !C1 * !X)	-0.00089	-0.00094	-0.00093
	(!A1 * !B1 * !C1 * !X)	0.00123	0.00122	0.00122

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	-0.00188	-0.00188	-0.00197
	(A1 * B1 * C1 * X)	0.00131	0.00130	0.00124
	(A1 * B1 * !C1 * !X)	-0.00173	-0.00174	-0.00173
	(A1 * B1 * !C1 * !X)	0.00229	0.00228	0.00228
	(A1 * !B1 * C1 * !X)	-0.00173	-0.00174	-0.00173
	(A1 * !B1 * C1 * !X)	0.00228	0.00228	0.00228
	(A1 * !B1 * !C1 * !X)	-0.00173	-0.00174	-0.00173
	(A1 * !B1 * !C1 * !X)	0.00228	0.00229	0.00228
	(!A1 * B1 * !C1 * !X)	-0.00148	-0.00160	-0.00159
	(!A1 * B1 * !C1 * !X)	0.00233	0.00234	0.00234
	(!A1 * !B1 * C1 * !X)	-0.00155	-0.00164	-0.00163
	(!A1 * !B1 * C1 * !X)	0.00234	0.00235	0.00234
	(!A1 * !B1 * !C1 * !X)	-0.00155	-0.00163	-0.00162
	(!A1 * !B1 * !C1 * !X)	0.00234	0.00235	0.00234

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	0.00079	0.00080	0.00079
	(A2 * !C1 * !X)	-0.00129	-0.00131	-0.00130
	(A1 * !A2 * !C1 * !X)	0.00079	0.00080	0.00079
	(A1 * !A2 * !C1 * !X)	-0.00130	-0.00131	-0.00130
	(!A1 * !A2 * C1 * !X)	0.00039	0.00040	0.00039
	(!A1 * !A2 * C1 * !X)	-0.00131	-0.00132	-0.00130
	(!A1 * !A2 * !C1 * !X)	0.00049	0.00049	0.00049
	(!A1 * !A2 * !C1 * !X)	-0.00131	-0.00132	-0.00132
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	0.00092	0.00093	0.00092
	(A2 * !C1 * !X)	-0.00122	-0.00122	-0.00122
	(A1 * !A2 * !C1 * !X)	0.00091	0.00093	0.00092
	(A1 * !A2 * !C1 * !X)	-0.00122	-0.00123	-0.00122
	(!A1 * !A2 * C1 * !X)	0.00045	0.00045	0.00044
	(!A1 * !A2 * C1 * !X)	-0.00124	-0.00124	-0.00123
	(!A1 * !A2 * !C1 * !X)	0.00054	0.00054	0.00054
	(!A1 * !A2 * !C1 * !X)	-0.00125	-0.00124	-0.00124
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	0.00201	0.00203	0.00201
	(A2 * !C1 * !X)	-0.00208	-0.00209	-0.00208
	(A1 * !A2 * !C1 * !X)	0.00200	0.00203	0.00201
	(A1 * !A2 * !C1 * !X)	-0.00208	-0.00209	-0.00208
	(!A1 * !A2 * C1 * !X)	0.00116	0.00117	0.00115
	(!A1 * !A2 * C1 * !X)	-0.00208	-0.00209	-0.00208
	(!A1 * !A2 * !C1 * !X)	0.00133	0.00133	0.00133
	(!A1 * !A2 * !C1 * !X)	-0.00210	-0.00211	-0.00210

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	-0.00074	-0.00080	-0.00079
	(A2 * !C1 * !X)	0.00134	0.00132	0.00130
	(A1 * !A2 * !C1 * !X)	-0.00073	-0.00080	-0.00079
	(A1 * !A2 * !C1 * !X)	0.00135	0.00132	0.00130
	(!A1 * !A2 * C1 * !X)	-0.00036	-0.00036	-0.00037
	(!A1 * !A2 * C1 * !X)	0.00133	0.00134	0.00132
	(!A1 * !A2 * !C1 * !X)	-0.00049	-0.00049	-0.00049
	(!A1 * !A2 * !C1 * !X)	0.00137	0.00135	0.00132
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	-0.00086	-0.00092	-0.00092
	(A2 * !C1 * !X)	0.00127	0.00124	0.00123
	(A1 * !A2 * !C1 * !X)	-0.00085	-0.00093	-0.00092
	(A1 * !A2 * !C1 * !X)	0.00128	0.00124	0.00123
	(!A1 * !A2 * C1 * !X)	-0.00041	-0.00041	-0.00042
	(!A1 * !A2 * C1 * !X)	0.00126	0.00127	0.00124
	(!A1 * !A2 * !C1 * !X)	-0.00054	-0.00054	-0.00054
	(!A1 * !A2 * !C1 * !X)	0.00132	0.00130	0.00126
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	-0.00191	-0.00202	-0.00201
	(A2 * !C1 * !X)	0.00216	0.00210	0.00209
	(A1 * !A2 * !C1 * !X)	-0.00190	-0.00202	-0.00201
	(A1 * !A2 * !C1 * !X)	0.00217	0.00210	0.00209
	(!A1 * !A2 * C1 * !X)	-0.00110	-0.00111	-0.00111
	(!A1 * !A2 * C1 * !X)	0.00216	0.00219	0.00211
	(!A1 * !A2 * !C1 * !X)	-0.00133	-0.00133	-0.00133
	(!A1 * !A2 * !C1 * !X)	0.00223	0.00223	0.00212

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	0.00031	0.00031	0.00030
	(A2 * !B1 * !X)	-0.00142	-0.00143	-0.00144
	(!A2 * !B1 * !X)	0.00031	0.00031	0.00030
	(!A2 * !B1 * !X)	-0.00142	-0.00143	-0.00144
	(!A1 * !A2 * B1 * !X)	0.00035	0.00035	0.00031
	(!A1 * !A2 * B1 * !X)	-0.00135	-0.00136	-0.00143
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	0.00039	0.00039	0.00037
	(A2 * !B1 * !X)	-0.00136	-0.00137	-0.00139
	(!A2 * !B1 * !X)	0.00039	0.00039	0.00037
	(!A2 * !B1 * !X)	-0.00137	-0.00137	-0.00139
	(!A1 * !A2 * B1 * !X)	0.00042	0.00043	0.00038
	(!A1 * !A2 * B1 * !X)	-0.00130	-0.00131	-0.00139
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	0.00057	0.00058	0.00055
	(A2 * !B1 * !X)	-0.00230	-0.00231	-0.00235
	(!A2 * !B1 * !X)	0.00058	0.00058	0.00055
	(!A2 * !B1 * !X)	-0.00230	-0.00231	-0.00235
	(!A1 * !A2 * B1 * !X)	0.00063	0.00064	0.00055
	(!A1 * !A2 * B1 * !X)	-0.00215	-0.00218	-0.00233

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	-0.00029	-0.00029	-0.00029
	(A2 * !B1 * !X)	0.00144	0.00145	0.00144
	(!A2 * !B1 * !X)	-0.00029	-0.00029	-0.00029
	(!A2 * !B1 * !X)	0.00144	0.00145	0.00144
	(!A1 * !A2 * B1 * !X)	-0.00029	-0.00029	-0.00028
	(!A1 * !A2 * B1 * !X)	0.00144	0.00145	0.00144
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	-0.00036	-0.00037	-0.00036
	(A2 * !B1 * !X)	0.00139	0.00140	0.00139
	(!A2 * !B1 * !X)	-0.00036	-0.00037	-0.00036
	(!A2 * !B1 * !X)	0.00139	0.00140	0.00139
	(!A1 * !A2 * B1 * !X)	-0.00036	-0.00036	-0.00036
	(!A1 * !A2 * B1 * !X)	0.00139	0.00140	0.00139
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	-0.00053	-0.00053	-0.00053
	(A2 * !B1 * !X)	0.00235	0.00237	0.00236
	(!A2 * !B1 * !X)	-0.00053	-0.00054	-0.00053
	(!A2 * !B1 * !X)	0.00235	0.00237	0.00236
	(!A1 * !A2 * B1 * !X)	-0.00052	-0.00052	-0.00051
	(!A1 * !A2 * B1 * !X)	0.00235	0.00236	0.00236

SKY130_FD_SC_HS__O21AIx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o21ai_1	7.99200
sky130_fd_sc_hs__o21ai_2	11.18880
sky130_fd_sc_hs__o21ai_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1	Y
sky130_fd_sc_hs__o21ai_1	0.00275	0.00283	0.00276	0.36997
sky130_fd_sc_hs__o21ai_2	0.00556	0.00515	0.00509	0.70509
sky130_fd_sc_hs__o21ai_4	0.00983	0.01018	0.00760	1.26129

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21ai_1	0.00000	0.01630	0.04886
sky130_fd_sc_hs__o21ai_2	0.00000	0.03259	0.09773
sky130_fd_sc_hs__o21ai_4	0.00000	0.04685	0.14659

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)	0.15371	1.24031	11.76020
	A2->Y (FR)	0.13395	1.20214	11.65920
	B1->Y (FR)	0.05133	0.79278	8.34004
sky130_fd_sc_hs__o21ai_2	A1->Y (FR)	0.13425	1.06165	11.65100
	A2->Y (FR)	0.10747	1.01724	11.53570
	B1->Y (FR)	0.03870	0.71297	8.30693
sky130_fd_sc_hs__o21ai_4	A1->Y (FR)	0.13119	0.93732	11.51790
	A2->Y (FR)	0.10551	0.90812	11.56680
	B1->Y (FR)	0.05420	0.85405	11.21000

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ai_1	A1->Y (RF)	0.04768	0.48891	4.74047
	A2->Y (RF)	0.04060	0.47379	4.68805
	B1->Y (RF)	0.03993	0.52947	5.26383
sky130_fd_sc_hs__o21ai_2	A1->Y (RF)	0.03991	0.42300	4.64156
	A2->Y (RF)	0.03521	0.41316	4.66005
	B1->Y (RF)	0.02623	0.44609	5.23969
sky130_fd_sc_hs__o21ai_4	A1->Y (RF)	0.03884	0.37478	4.54973
	A2->Y (RF)	0.03362	0.36046	4.54032
	B1->Y (RF)	0.02236	0.38673	5.13387

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.00049	0.00038	0.00048
	A1	0.00500	0.00488	0.00498
	A2	0.00053	0.00048	0.00099
	A2	0.00436	0.00430	0.00482
	B1	-0.00021	-0.00019	0.00039
	B1	0.00350	0.00341	0.00404
sky130_fd_sc_hs__o21ai_2	A1	0.00057	0.00034	0.00056
	A1	0.00916	0.00894	0.00912
	A2	0.00058	0.00055	0.00158
	A2	0.00765	0.00763	0.00862
	B1	-0.00121	-0.00116	0.00012
	B1	0.00556	0.00562	0.00687
sky130_fd_sc_hs__o21ai_4	A1	0.00086	0.00044	0.00093
	A1	0.01750	0.01688	0.01756
	A2	0.00066	0.00061	0.00272
	A2	0.01484	0.01478	0.01685
	B1	-0.00227	-0.00214	-0.00069
	B1	0.00871	0.00878	0.01024

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.00543	0.00535	0.00550
	A1	0.00088	0.00078	0.00089
	A2	0.00419	0.00414	0.00441
	A2	0.00029	0.00023	0.00036
	B1	0.00449	0.00439	0.00471
	B1	0.00085	0.00075	0.00097
sky130_fd_sc_hs__o21ai_2	A1	0.01006	0.00983	0.01005
	A1	0.00139	0.00113	0.00138
	A2	0.00716	0.00707	0.00755
	A2	-0.00009	-0.00017	0.00014
	B1	0.00803	0.00791	0.00842
	B1	0.00135	0.00124	0.00168
sky130_fd_sc_hs__o21ai_4	A1	0.01896	0.01848	0.01905
	A1	0.00219	0.00168	0.00225
	A2	0.01343	0.01328	0.01409
	A2	-0.00104	-0.00124	-0.00043
	B1	0.01456	0.01442	0.01563
	B1	0.00387	0.00369	0.00419

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	0.00132	0.00121	0.00119
	(A2 * B1 * !Y)	-0.00108	-0.00121	-0.00122
	(A2 * !B1 * Y)	0.00110	0.00110	0.00110
	(A2 * !B1 * Y)	-0.00129	-0.00131	-0.00131
	(!A2 * !B1 * Y)	0.00103	0.00104	0.00103
	(!A2 * !B1 * Y)	-0.00133	-0.00134	-0.00133
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	0.00249	0.00225	0.00222
	(A2 * B1 * !Y)	-0.00217	-0.00246	-0.00247
	(A2 * !B1 * Y)	0.00210	0.00211	0.00209
	(A2 * !B1 * Y)	-0.00254	-0.00260	-0.00259
	(!A2 * !B1 * Y)	0.00196	0.00198	0.00196
	(!A2 * !B1 * Y)	-0.00263	-0.00265	-0.00263
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	0.00458	0.00412	0.00406
	(A2 * B1 * !Y)	-0.00433	-0.00491	-0.00492
	(A2 * !B1 * Y)	0.00405	0.00407	0.00405
	(A2 * !B1 * Y)	-0.00481	-0.00496	-0.00493
	(!A2 * !B1 * Y)	0.00377	0.00382	0.00378
	(!A2 * !B1 * Y)	-0.00503	-0.00506	-0.00503

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	-0.00119	-0.00119	-0.00118
	(A2 * B1 * !Y)	0.00121	0.00123	0.00122
	(A2 * !B1 * Y)	-0.00110	-0.00110	-0.00110
	(A2 * !B1 * Y)	0.00131	0.00131	0.00131
	(!A2 * !B1 * Y)	-0.00099	-0.00104	-0.00103
	(!A2 * !B1 * Y)	0.00135	0.00134	0.00133
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	-0.00222	-0.00223	-0.00221
	(A2 * B1 * !Y)	0.00247	0.00249	0.00247
	(A2 * !B1 * Y)	-0.00208	-0.00210	-0.00209
	(A2 * !B1 * Y)	0.00258	0.00261	0.00259
	(!A2 * !B1 * Y)	-0.00188	-0.00198	-0.00196
	(!A2 * !B1 * Y)	0.00267	0.00266	0.00264
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	-0.00406	-0.00407	-0.00405
	(A2 * B1 * !Y)	0.00491	0.00494	0.00492
	(A2 * !B1 * Y)	-0.00402	-0.00405	-0.00404
	(A2 * !B1 * Y)	0.00489	0.00497	0.00493
	(!A2 * !B1 * Y)	-0.00359	-0.00382	-0.00378
	(!A2 * !B1 * Y)	0.00507	0.00509	0.00505

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	0.00123	0.00123	0.00122
	(A1 * B1 * !Y)	-0.00064	-0.00064	-0.00064
	(A1 * !B1 * Y)	0.00100	0.00100	0.00099
	(A1 * !B1 * Y)	-0.00132	-0.00134	-0.00133
	(!A1 * !B1 * Y)	0.00093	0.00094	0.00093
	(!A1 * !B1 * Y)	-0.00136	-0.00136	-0.00136
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	0.00221	0.00222	0.00221
	(A1 * B1 * !Y)	-0.00128	-0.00129	-0.00128
	(A1 * !B1 * Y)	0.00203	0.00205	0.00203
	(A1 * !B1 * Y)	-0.00234	-0.00240	-0.00239
	(!A1 * !B1 * Y)	0.00190	0.00191	0.00190
	(!A1 * !B1 * Y)	-0.00244	-0.00245	-0.00244
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	0.00467	0.00470	0.00468
	(A1 * B1 * !Y)	-0.00260	-0.00261	-0.00259
	(A1 * !B1 * Y)	0.00409	0.00414	0.00411
	(A1 * !B1 * Y)	-0.00486	-0.00501	-0.00499
	(!A1 * !B1 * Y)	0.00385	0.00389	0.00386
	(!A1 * !B1 * Y)	-0.00512	-0.00515	-0.00512

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	-0.00118	-0.00118	-0.00122
	(A1 * B1 * !Y)	0.00068	0.00068	0.00065
	(A1 * !B1 * Y)	-0.00099	-0.00100	-0.00099
	(A1 * !B1 * Y)	0.00133	0.00134	0.00133
	(!A1 * !B1 * Y)	-0.00090	-0.00094	-0.00093
	(!A1 * !B1 * Y)	0.00137	0.00136	0.00136
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	-0.00209	-0.00210	-0.00220
	(A1 * B1 * !Y)	0.00140	0.00139	0.00132
	(A1 * !B1 * Y)	-0.00202	-0.00203	-0.00203
	(A1 * !B1 * Y)	0.00239	0.00240	0.00239
	(!A1 * !B1 * Y)	-0.00180	-0.00191	-0.00190
	(!A1 * !B1 * Y)	0.00245	0.00246	0.00245
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	-0.00438	-0.00441	-0.00464
	(A1 * B1 * !Y)	0.00283	0.00284	0.00266
	(A1 * !B1 * Y)	-0.00409	-0.00411	-0.00410
	(A1 * !B1 * Y)	0.00500	0.00501	0.00499
	(!A1 * !B1 * Y)	-0.00363	-0.00388	-0.00386
	(!A1 * !B1 * Y)	0.00516	0.00516	0.00514

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	0.00041	0.00041	0.00038
	(!A1 * !A2 * Y)	-0.00153	-0.00153	-0.00157
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	0.00083	0.00084	0.00077
	(!A1 * !A2 * Y)	-0.00279	-0.00281	-0.00290
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	0.00146	0.00146	0.00135
	(!A1 * !A2 * Y)	-0.00324	-0.00328	-0.00346

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	-0.00037	-0.00037	-0.00037
	(!A1 * !A2 * Y)	0.00158	0.00159	0.00158
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	-0.00074	-0.00075	-0.00074
	(!A1 * !A2 * Y)	0.00290	0.00294	0.00291
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	-0.00132	-0.00131	-0.00130
	(!A1 * !A2 * Y)	0.00348	0.00349	0.00347

SKY130_FD_SC_HS__O21Ax

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o21a_1	9.59040
sky130_fd_sc_hs__o21a_2	12.78720
sky130_fd_sc_hs__o21a_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1	X
sky130_fd_sc_hs__o21a_1	0.00236	0.00239	0.00237	0.77483
sky130_fd_sc_hs__o21a_2	0.00257	0.00254	0.00264	1.51846
sky130_fd_sc_hs__o21a_4	0.00491	0.00455	0.00438	2.93337

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21a_1	0.00000	0.07598	0.18456
sky130_fd_sc_hs__o21a_2	0.00000	0.06978	0.12939
sky130_fd_sc_hs__o21a_4	0.00000	0.18566	0.37755

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)	0.10789	0.78274	7.06025
	A2->X (RR)	0.09658	0.75602	6.99330
	B1->X (RR)	0.10041	0.76856	7.00104
sky130_fd_sc_hs__o21a_2	A1->X (RR)	0.11164	0.69375	7.21780
	A2->X (RR)	0.10148	0.67363	7.16084
	B1->X (RR)	0.10416	0.68896	7.13857
sky130_fd_sc_hs__o21a_4	A1->X (RR)	0.11612	0.61695	7.26802
	A2->X (RR)	0.10823	0.59467	7.20572
	B1->X (RR)	0.10476	0.60578	7.20277

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21a_1	A1->X (FF)	0.21270	0.77832	4.85338
	A2->X (FF)	0.19112	0.73561	4.53480
	B1->X (FF)	0.10106	0.62888	4.33333
sky130_fd_sc_hs__o21a_2	A1->X (FF)	0.27574	0.84076	5.21656
	A2->X (FF)	0.25627	0.80778	4.91353
	B1->X (FF)	0.11690	0.65092	4.59086
sky130_fd_sc_hs__o21a_4	A1->X (FF)	0.26406	0.79839	5.20876
	A2->X (FF)	0.23807	0.75688	4.89498
	B1->X (FF)	0.12653	0.63186	4.61748

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.00672	0.00674	0.00795
	A1	0.00287	0.00289	0.00413
	A2	0.00551	0.00547	0.00786
	A2	0.00226	0.00222	0.00461
	B1	0.00600	0.00598	0.00947
	B1	0.00304	0.00304	0.00655
sky130_fd_sc_hs__o21a_2	A1	0.00882	0.00908	0.01019
	A1	0.00462	0.00490	0.00611
	A2	0.00767	0.00786	0.00990
	A2	0.00414	0.00433	0.00648
	B1	0.00795	0.00808	0.01068
	B1	0.00469	0.00484	0.00752
sky130_fd_sc_hs__o21a_4	A1	0.01701	0.01748	0.01990
	A1	0.00912	0.00961	0.01233
	A2	0.01441	0.01477	0.01907
	A2	0.00792	0.00828	0.01279
	B1	0.01515	0.01551	0.02201
	B1	0.00940	0.00980	0.01648

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.00271	0.00279	0.00418
	A1	0.00650	0.00657	0.00786
	A2	0.00273	0.00303	0.00630
	A2	0.00591	0.00620	0.00944
	B1	0.00212	0.00235	0.00727
	B1	0.00512	0.00529	0.01001
sky130_fd_sc_hs__o21a_2	A1	0.00446	0.00478	0.00644
	A1	0.00857	0.00888	0.01021
	A2	0.00453	0.00502	0.00870
	A2	0.00797	0.00846	0.01171
	B1	0.00384	0.00413	0.00843
	B1	0.00711	0.00738	0.01115
sky130_fd_sc_hs__o21a_4	A1	0.00817	0.00870	0.01284
	A1	0.01595	0.01660	0.01918
	A2	0.00841	0.00919	0.01661
	A2	0.01476	0.01551	0.02216
	B1	0.00724	0.00798	0.01704
	B1	0.01302	0.01375	0.02278

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	0.00107	0.00096	0.00095
	(A2 * B1 * X)	-0.00101	-0.00114	-0.00115
	(A2 * !B1 * !X)	0.00095	0.00095	0.00095
	(A2 * !B1 * !X)	-0.00112	-0.00115	-0.00114
	(!A2 * !B1 * !X)	0.00089	0.00090	0.00089
	(!A2 * !B1 * !X)	-0.00115	-0.00116	-0.00116
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	0.00127	0.00115	0.00114
	(A2 * B1 * X)	-0.00098	-0.00112	-0.00113
	(A2 * !B1 * !X)	0.00114	0.00114	0.00114
	(A2 * !B1 * !X)	-0.00111	-0.00112	-0.00113
	(!A2 * !B1 * !X)	0.00107	0.00109	0.00108
	(!A2 * !B1 * !X)	-0.00114	-0.00115	-0.00114
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	0.00235	0.00214	0.00211
	(A2 * B1 * X)	-0.00192	-0.00219	-0.00220
	(A2 * !B1 * !X)	0.00205	0.00207	0.00206
	(A2 * !B1 * !X)	-0.00220	-0.00226	-0.00225
	(!A2 * !B1 * !X)	0.00194	0.00196	0.00195
	(!A2 * !B1 * !X)	-0.00228	-0.00229	-0.00229

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	-0.00094	-0.00095	-0.00094
	(A2 * B1 * X)	0.00115	0.00116	0.00115
	(A2 * !B1 * !X)	-0.00095	-0.00095	-0.00095
	(A2 * !B1 * !X)	0.00115	0.00115	0.00114
	(!A2 * !B1 * !X)	-0.00085	-0.00090	-0.00089
	(!A2 * !B1 * !X)	0.00118	0.00117	0.00116
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	-0.00113	-0.00113	-0.00112
	(A2 * B1 * X)	0.00113	0.00114	0.00113
	(A2 * !B1 * !X)	-0.00113	-0.00113	-0.00113
	(A2 * !B1 * !X)	0.00113	0.00112	0.00113
	(!A2 * !B1 * !X)	-0.00102	-0.00108	-0.00108
	(!A2 * !B1 * !X)	0.00116	0.00115	0.00115
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	-0.00210	-0.00211	-0.00210
	(A2 * B1 * X)	0.00218	0.00221	0.00220
	(A2 * !B1 * !X)	-0.00204	-0.00206	-0.00205
	(A2 * !B1 * !X)	0.00224	0.00227	0.00225
	(!A2 * !B1 * !X)	-0.00186	-0.00196	-0.00195
	(!A2 * !B1 * !X)	0.00232	0.00229	0.00230

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	0.00098	0.00098	0.00097
	(A1 * B1 * X)	-0.00063	-0.00062	-0.00062
	(A1 * !B1 * !X)	0.00091	0.00091	0.00090
	(A1 * !B1 * !X)	-0.00110	-0.00111	-0.00111
	(!A1 * !B1 * !X)	0.00084	0.00085	0.00084
	(!A1 * !B1 * !X)	-0.00112	-0.00113	-0.00113
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	0.00112	0.00112	0.00112
	(A1 * B1 * X)	-0.00059	-0.00059	-0.00059
	(A1 * !B1 * !X)	0.00102	0.00103	0.00102
	(A1 * !B1 * !X)	-0.00108	-0.00109	-0.00109
	(!A1 * !B1 * !X)	0.00096	0.00097	0.00096
	(!A1 * !B1 * !X)	-0.00111	-0.00112	-0.00111
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	0.00194	0.00195	0.00194
	(A1 * B1 * X)	-0.00118	-0.00119	-0.00118
	(A1 * !B1 * !X)	0.00172	0.00174	0.00172
	(A1 * !B1 * !X)	-0.00218	-0.00224	-0.00223
	(!A1 * !B1 * !X)	0.00160	0.00162	0.00161
	(!A1 * !B1 * !X)	-0.00226	-0.00229	-0.00228

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	-0.00092	-0.00092	-0.00097
	(A1 * B1 * X)	0.00067	0.00067	0.00064
	(A1 * !B1 * !X)	-0.00090	-0.00090	-0.00090
	(A1 * !B1 * !X)	0.00111	0.00111	0.00111
	(!A1 * !B1 * !X)	-0.00081	-0.00085	-0.00084
	(!A1 * !B1 * !X)	0.00114	0.00113	0.00113
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	-0.00107	-0.00107	-0.00111
	(A1 * B1 * X)	0.00063	0.00062	0.00060
	(A1 * !B1 * !X)	-0.00102	-0.00102	-0.00102
	(A1 * !B1 * !X)	0.00109	0.00109	0.00109
	(!A1 * !B1 * !X)	-0.00092	-0.00097	-0.00096
	(!A1 * !B1 * !X)	0.00112	0.00112	0.00112
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	-0.00183	-0.00183	-0.00193
	(A1 * B1 * X)	0.00129	0.00128	0.00122
	(A1 * !B1 * !X)	-0.00171	-0.00173	-0.00172
	(A1 * !B1 * !X)	0.00222	0.00224	0.00223
	(!A1 * !B1 * !X)	-0.00153	-0.00162	-0.00161
	(!A1 * !B1 * !X)	0.00230	0.00229	0.00228

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	0.00038	0.00038	0.00035
	(!A1 * !A2 * !X)	-0.00121	-0.00122	-0.00126
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	0.00042	0.00042	0.00038
	(!A1 * !A2 * !X)	-0.00137	-0.00138	-0.00142
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	0.00064	0.00065	0.00059
	(!A1 * !A2 * !X)	-0.00233	-0.00235	-0.00243

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	-0.00034	-0.00034	-0.00034
	(!A1 * !A2 * !X)	0.00126	0.00127	0.00126
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	-0.00037	-0.00037	-0.00037
	(!A1 * !A2 * !X)	0.00143	0.00144	0.00143
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	-0.00056	-0.00056	-0.00056
	(!A1 * !A2 * !X)	0.00243	0.00245	0.00244

SKY130_FD_SC_HS__O21BAIx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o21bai_1	9.59040
sky130_fd_sc_hs__o21bai_2	14.38560
sky130_fd_sc_hs__o21bai_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1_N	Y
sky130_fd_sc_hs__o21bai_1	0.00261	0.00291	0.00228	0.36891
sky130_fd_sc_hs__o21bai_2	0.00553	0.00509	0.00251	0.70892
sky130_fd_sc_hs__o21bai_4	0.00994	0.01012	0.00341	1.29556

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21bai_1	0.00000	0.07746	0.12408
sky130_fd_sc_hs__o21bai_2	0.00000	0.06564	0.10335
sky130_fd_sc_hs__o21bai_4	0.00000	0.16883	0.25659

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)	0.14412	1.23168	11.74120
	A2->Y (FR)	0.12639	1.19118	11.64270
	B1_N->Y (RR)	0.08179	0.53890	3.40011
sky130_fd_sc_hs__o21bai_2	A1->Y (FR)	0.13167	1.05862	11.64660
	A2->Y (FR)	0.10606	1.01623	11.53570
	B1_N->Y (RR)	0.08036	0.49125	3.45692
sky130_fd_sc_hs__o21bai_4	A1->Y (FR)	0.13368	0.94172	11.58200
	A2->Y (FR)	0.10670	0.90618	11.56510
	B1_N->Y (RR)	0.10808	0.67709	6.85836

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21bai_1	A1->Y (RF)	0.04815	0.48917	4.75628
	A2->Y (RF)	0.04135	0.47558	4.71259
	B1_N->Y (FF)	0.11638	0.61595	3.65914
sky130_fd_sc_hs__o21bai_2	A1->Y (RF)	0.04460	0.42553	4.66045
	A2->Y (RF)	0.03912	0.41631	4.68004
	B1_N->Y (FF)	0.12349	0.63814	4.07067
sky130_fd_sc_hs__o21bai_4	A1->Y (RF)	0.05215	0.38835	4.69808
	A2->Y (RF)	0.04050	0.36859	4.62279
	B1_N->Y (FF)	0.11706	0.56359	3.83310

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.00045	0.00036	0.00046
	A1	0.00394	0.00384	0.00395
	A2	0.00044	0.00039	0.00091
	A2	0.00345	0.00330	0.00392
	B1_N	0.00474	0.00465	0.00804
	B1_N	0.00320	0.00311	0.00661
sky130_fd_sc_hs__o21bai_2	A1	0.00054	0.00032	0.00055
	A1	0.00753	0.00734	0.00753
	A2	0.00057	0.00048	0.00158
	A2	0.00595	0.00586	0.00697
	B1_N	0.00658	0.00664	0.00970
	B1_N	0.00543	0.00549	0.00870
sky130_fd_sc_hs__o21bai_4	A1	0.00099	0.00060	0.00107
	A1	0.01462	0.01412	0.01471
	A2	0.00087	0.00064	0.00295
	A2	0.01190	0.01165	0.01393
	B1_N	0.00879	0.00907	0.01566
	B1_N	0.00838	0.00868	0.01528

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.00503	0.00496	0.00517
	A1	0.00153	0.00144	0.00155
	A2	0.00386	0.00382	0.00409
	A2	0.00081	0.00077	0.00089
	B1_N	0.00389	0.00411	0.00839
	B1_N	0.00552	0.00571	0.00998
sky130_fd_sc_hs__o21bai_2	A1	0.01001	0.00978	0.01035
	A1	0.00298	0.00274	0.00298
	A2	0.00714	0.00706	0.00753
	A2	0.00166	0.00158	0.00189
	B1_N	0.00758	0.00784	0.01152
	B1_N	0.00878	0.00898	0.01266
sky130_fd_sc_hs__o21bai_4	A1	0.01995	0.01942	0.02037
	A1	0.00628	0.00577	0.00631
	A2	0.01423	0.01404	0.01509
	A2	0.00304	0.00282	0.00360
	B1_N	0.01514	0.01535	0.02312
	B1_N	0.01571	0.01589	0.02355

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)	0.00107	0.00108	0.00107
	(A2 * B1_N * Y)	-0.00121	-0.00123	-0.00123
	(A2 * !B1_N * !Y)	0.00120	0.00108	0.00107
	(A2 * !B1_N * !Y)	-0.00110	-0.00123	-0.00124
	(!A2 * B1_N * Y)	0.00102	0.00103	0.00102
	(!A2 * B1_N * Y)	-0.00125	-0.00126	-0.00125
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	0.00220	0.00221	0.00220
	(A2 * B1_N * Y)	-0.00252	-0.00258	-0.00257
	(A2 * !B1_N * !Y)	0.00250	0.00226	0.00223
	(A2 * !B1_N * !Y)	-0.00224	-0.00253	-0.00254
	(!A2 * B1_N * Y)	0.00210	0.00213	0.00211
	(!A2 * B1_N * Y)	-0.00261	-0.00263	-0.00261
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	0.00408	0.00412	0.00411
	(A2 * B1_N * Y)	-0.00484	-0.00500	-0.00498
	(A2 * !B1_N * !Y)	0.00463	0.00416	0.00412
	(A2 * !B1_N * !Y)	-0.00433	-0.00496	-0.00498
	(!A2 * B1_N * Y)	0.00395	0.00398	0.00394
	(!A2 * B1_N * Y)	-0.00509	-0.00511	-0.00508

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)	-0.00107	-0.00107	-0.00107
	(A2 * B1_N * Y)	0.00123	0.00123	0.00123
	(A2 * !B1_N * !Y)	-0.00107	-0.00107	-0.00106
	(A2 * !B1_N * !Y)	0.00123	0.00124	0.00124
	(!A2 * B1_N * Y)	-0.00099	-0.00103	-0.00102
	(!A2 * B1_N * Y)	0.00127	0.00127	0.00126
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	-0.00218	-0.00220	-0.00219
	(A2 * B1_N * Y)	0.00256	0.00259	0.00257
	(A2 * !B1_N * !Y)	-0.00222	-0.00223	-0.00222
	(A2 * !B1_N * !Y)	0.00253	0.00256	0.00254
	(!A2 * B1_N * Y)	-0.00205	-0.00212	-0.00211
	(!A2 * B1_N * Y)	0.00265	0.00263	0.00262
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	-0.00408	-0.00410	-0.00409
	(A2 * B1_N * Y)	0.00499	0.00501	0.00498
	(A2 * !B1_N * !Y)	-0.00411	-0.00411	-0.00410
	(A2 * !B1_N * !Y)	0.00498	0.00499	0.00498
	(!A2 * B1_N * Y)	-0.00377	-0.00395	-0.00394
	(!A2 * B1_N * Y)	0.00512	0.00514	0.00510

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)	0.00111	0.00111	0.00110
	(A1 * B1_N * Y)	-0.00133	-0.00135	-0.00134
	(A1 * !B1_N * !Y)	0.00124	0.00125	0.00125
	(A1 * !B1_N * !Y)	-0.00072	-0.00073	-0.00072
	(!A1 * B1_N * Y)	0.00104	0.00106	0.00105
	(!A1 * B1_N * Y)	-0.00137	-0.00138	-0.00137
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	0.00200	0.00202	0.00200
	(A1 * B1_N * Y)	-0.00234	-0.00241	-0.00240
	(A1 * !B1_N * !Y)	0.00219	0.00219	0.00219
	(A1 * !B1_N * !Y)	-0.00128	-0.00128	-0.00128
	(!A1 * B1_N * Y)	0.00192	0.00194	0.00193
	(!A1 * B1_N * Y)	-0.00244	-0.00246	-0.00245
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	0.00406	0.00409	0.00407
	(A1 * B1_N * Y)	-0.00486	-0.00500	-0.00498
	(A1 * !B1_N * !Y)	0.00462	0.00461	0.00460
	(A1 * !B1_N * !Y)	-0.00265	-0.00262	-0.00261
	(!A1 * B1_N * Y)	0.00392	0.00393	0.00390
	(!A1 * B1_N * Y)	-0.00512	-0.00512	-0.00510

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	-0.00110	-0.00109
	(A1 * B1_N * Y)	0.00134	0.00135	0.00134
	(A1 * !B1_N * !Y)	-0.00119	-0.00120	-0.00124
	(A1 * !B1_N * !Y)	0.00077	0.00077	0.00074
	(!A1 * B1_N * Y)	-0.00101	-0.00106	-0.00105
	(!A1 * B1_N * Y)	0.00137	0.00138	0.00137
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	-0.00199	-0.00201	-0.00200
	(A1 * B1_N * Y)	0.00239	0.00241	0.00240
	(A1 * !B1_N * !Y)	-0.00206	-0.00208	-0.00217
	(A1 * !B1_N * !Y)	0.00138	0.00139	0.00131
	(!A1 * B1_N * Y)	-0.00187	-0.00193	-0.00193
	(!A1 * B1_N * Y)	0.00247	0.00247	0.00246
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	-0.00405	-0.00407	-0.00406
	(A1 * B1_N * Y)	0.00496	0.00500	0.00498
	(A1 * !B1_N * !Y)	-0.00431	-0.00434	-0.00456
	(A1 * !B1_N * !Y)	0.00286	0.00286	0.00268
	(!A1 * B1_N * Y)	-0.00374	-0.00392	-0.00390
	(!A1 * B1_N * Y)	0.00513	0.00515	0.00512

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)	0.00387	0.00372	0.00758
	(!A1 * !A2 * Y)	0.00140	0.00123	0.00511
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.00561	0.00542	0.00889
	(!A1 * !A2 * Y)	0.00281	0.00260	0.00608
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.00676	0.00651	0.01310
	(!A1 * !A2 * Y)	0.00293	0.00266	0.00926

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	(!A1 * !A2 * Y)	0.00017	0.00036	0.00468
	(!A1 * !A2 * Y)	0.00267	0.00286	0.00717
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.00057	0.00066	0.00438
	(!A1 * !A2 * Y)	0.00342	0.00352	0.00721
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.00109	0.00126	0.00890
	(!A1 * !A2 * Y)	0.00501	0.00518	0.01278

SKY130_FD_SC_HS__O21BAx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o21ba_1	12.78720
sky130_fd_sc_hs__o21ba_2	12.78720
sky130_fd_sc_hs__o21ba_4	20.77920

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1_N	X
sky130_fd_sc_hs__o21ba_1	0.00239	0.00254	0.00208	0.70947
sky130_fd_sc_hs__o21ba_2	0.00249	0.00261	0.00222	1.40373
sky130_fd_sc_hs__o21ba_4	0.00498	0.00474	0.00268	2.63940

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21ba_1	0.00000	0.11487	0.14992
sky130_fd_sc_hs__o21ba_2	0.00000	0.13094	0.17294
sky130_fd_sc_hs__o21ba_4	0.00000	0.19998	0.38177

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)	0.12117	0.81604	7.13236
	A2->X (RR)	0.11006	0.79189	7.07036
	B1_N->X (FR)	0.19497	1.02518	8.51090
sky130_fd_sc_hs__o21ba_2	A1->X (RR)	0.11934	0.69912	7.09340
	A2->X (RR)	0.10712	0.67744	7.02920
	B1_N->X (FR)	0.19881	0.91105	8.42050
sky130_fd_sc_hs__o21ba_4	A1->X (RR)	0.12599	0.62941	7.18503
	A2->X (RR)	0.11896	0.60754	7.12039
	B1_N->X (FR)	0.21251	0.88724	8.90499

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ba_1	A1->X (FF)	0.22258	0.78630	4.73532
	A2->X (FF)	0.20476	0.75027	4.42911
	B1_N->X (RF)	0.13666	0.45784	2.27277
sky130_fd_sc_hs__o21ba_2	A1->X (FF)	0.27114	0.83450	5.11490
	A2->X (FF)	0.25222	0.80139	4.81197
	B1_N->X (RF)	0.15471	0.46321	2.44023
sky130_fd_sc_hs__o21ba_4	A1->X (FF)	0.26339	0.79258	4.97978
	A2->X (FF)	0.23762	0.75117	4.66797
	B1_N->X (RF)	0.16167	0.44771	2.29213

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.00711	0.00714	0.00833
	A1	0.00391	0.00393	0.00516
	A2	0.00608	0.00601	0.00830
	A2	0.00332	0.00326	0.00558
	B1_N	0.00636	0.00654	0.01100
	B1_N	0.00784	0.00804	0.01252
sky130_fd_sc_hs__o21ba_2	A1	0.00876	0.00903	0.01015
	A1	0.00546	0.00574	0.00694
	A2	0.00767	0.00787	0.00993
	A2	0.00484	0.00504	0.00710
	B1_N	0.00784	0.00837	0.01256
	B1_N	0.00877	0.00930	0.01495
sky130_fd_sc_hs__o21ba_4	A1	0.01696	0.01737	0.01983
	A1	0.01040	0.01083	0.01349
	A2	0.01438	0.01474	0.01904
	A2	0.00921	0.00962	0.01403
	B1_N	0.01479	0.01555	0.01922
	B1_N	0.01621	0.01699	0.02084

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.00270	0.00279	0.00456
	A1	0.00587	0.00597	0.00728
	A2	0.00269	0.00297	0.00622
	A2	0.00540	0.00568	0.00890
	B1_N	0.00699	0.00679	0.01035
	B1_N	0.00553	0.00531	0.00885
sky130_fd_sc_hs__o21ba_2	A1	0.00416	0.00449	0.00612
	A1	0.00743	0.00774	0.00906
	A2	0.00419	0.00463	0.00850
	A2	0.00696	0.00739	0.01069
	B1_N	0.00885	0.00876	0.01213
	B1_N	0.00724	0.00712	0.01042
sky130_fd_sc_hs__o21ba_4	A1	0.00790	0.00858	0.01116
	A1	0.01440	0.01507	0.01762
	A2	0.00815	0.00903	0.01679
	A2	0.01320	0.01408	0.02061
	B1_N	0.01465	0.01502	0.01820
	B1_N	0.01326	0.01363	0.01663

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)	0.00095	0.00095	0.00094
	(A2 * B1_N * !X)	-0.00113	-0.00115	-0.00115
	(A2 * !B1_N * X)	0.00108	0.00096	0.00094
	(A2 * !B1_N * X)	-0.00101	-0.00115	-0.00116
	(!A2 * B1_N * !X)	0.00091	0.00091	0.00091
	(!A2 * B1_N * !X)	-0.00117	-0.00117	-0.00117
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	0.00107	0.00108	0.00107
	(A2 * B1_N * !X)	-0.00111	-0.00113	-0.00113
	(A2 * !B1_N * X)	0.00120	0.00109	0.00107
	(A2 * !B1_N * X)	-0.00098	-0.00112	-0.00113
	(!A2 * B1_N * !X)	0.00102	0.00103	0.00103
	(!A2 * B1_N * !X)	-0.00114	-0.00115	-0.00114
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	0.00210	0.00211	0.00210
	(A2 * B1_N * !X)	-0.00224	-0.00230	-0.00229
	(A2 * !B1_N * X)	0.00236	0.00214	0.00211
	(A2 * !B1_N * X)	-0.00200	-0.00227	-0.00229
	(!A2 * B1_N * !X)	0.00201	0.00203	0.00202
	(!A2 * B1_N * !X)	-0.00233	-0.00234	-0.00233

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)	-0.00094	-0.00094	-0.00094
	(A2 * B1_N * !X)	0.00116	0.00115	0.00115
	(A2 * !B1_N * X)	-0.00094	-0.00094	-0.00093
	(A2 * !B1_N * X)	0.00116	0.00117	0.00116
	(!A2 * B1_N * !X)	-0.00087	-0.00091	-0.00091
	(!A2 * B1_N * !X)	0.00119	0.00118	0.00117
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	-0.00107	-0.00107	-0.00107
	(A2 * B1_N * !X)	0.00113	0.00114	0.00113
	(A2 * !B1_N * X)	-0.00107	-0.00107	-0.00106
	(A2 * !B1_N * X)	0.00113	0.00114	0.00113
	(!A2 * B1_N * !X)	-0.00098	-0.00103	-0.00103
	(!A2 * B1_N * !X)	0.00115	0.00116	0.00115
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	-0.00208	-0.00210	-0.00209
	(A2 * B1_N * !X)	0.00227	0.00230	0.00229
	(A2 * !B1_N * X)	-0.00209	-0.00211	-0.00210
	(A2 * !B1_N * X)	0.00226	0.00229	0.00229
	(!A2 * B1_N * !X)	-0.00195	-0.00202	-0.00202
	(!A2 * B1_N * !X)	0.00236	0.00234	0.00234

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)	0.00101	0.00100	0.00099
	(A1 * B1_N * !X)	-0.00115	-0.00115	-0.00116
	(A1 * !B1_N * X)	0.00105	0.00105	0.00105
	(A1 * !B1_N * X)	-0.00070	-0.00069	-0.00069
	(!A1 * B1_N * !X)	0.00096	0.00097	0.00096
	(!A1 * B1_N * !X)	-0.00117	-0.00118	-0.00118
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	0.00110	0.00111	0.00110
	(A1 * B1_N * !X)	-0.00112	-0.00114	-0.00114
	(A1 * !B1_N * X)	0.00118	0.00118	0.00117
	(A1 * !B1_N * X)	-0.00066	-0.00065	-0.00065
	(!A1 * B1_N * !X)	0.00105	0.00106	0.00105
	(!A1 * B1_N * !X)	-0.00115	-0.00116	-0.00116
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	0.00177	0.00177	0.00178
	(A1 * B1_N * !X)	-0.00225	-0.00230	-0.00229
	(A1 * !B1_N * X)	0.00199	0.00200	0.00199
	(A1 * !B1_N * X)	-0.00125	-0.00125	-0.00125
	(!A1 * B1_N * !X)	0.00168	0.00170	0.00168
	(!A1 * B1_N * !X)	-0.00235	-0.00237	-0.00235

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)	-0.00100	-0.00099	-0.00099
	(A1 * B1_N * !X)	0.00117	0.00115	0.00116
	(A1 * !B1_N * X)	-0.00100	-0.00100	-0.00104
	(A1 * !B1_N * X)	0.00074	0.00073	0.00071
	(!A1 * B1_N * !X)	-0.00092	-0.00096	-0.00096
	(!A1 * B1_N * !X)	0.00119	0.00119	0.00118
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	-0.00110	-0.00110	-0.00109
	(A1 * B1_N * !X)	0.00114	0.00114	0.00114
	(A1 * !B1_N * X)	-0.00113	-0.00113	-0.00117
	(A1 * !B1_N * X)	0.00069	0.00069	0.00066
	(!A1 * B1_N * !X)	-0.00101	-0.00106	-0.00105
	(!A1 * B1_N * !X)	0.00116	0.00117	0.00116
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	-0.00177	-0.00177	-0.00177
	(A1 * B1_N * !X)	0.00229	0.00230	0.00229
	(A1 * !B1_N * X)	-0.00188	-0.00189	-0.00198
	(A1 * !B1_N * X)	0.00136	0.00135	0.00128
	(!A1 * B1_N * !X)	-0.00160	-0.00170	-0.00168
	(!A1 * B1_N * !X)	0.00237	0.00237	0.00236

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)	0.00357	0.00344	0.00734
	(!A1 * !A2 * !X)	0.00128	0.00114	0.00505
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00391	0.00375	0.00757
	(!A1 * !A2 * !X)	0.00149	0.00133	0.00515
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.00546	0.00525	0.00821
	(!A1 * !A2 * !X)	0.00249	0.00226	0.00524

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)	0.00024	0.00036	0.00476
	(!A1 * !A2 * !X)	0.00255	0.00268	0.00707
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00019	0.00039	0.00466
	(!A1 * !A2 * !X)	0.00263	0.00283	0.00709
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.00038	0.00046	0.00368
	(!A1 * !A2 * !X)	0.00339	0.00347	0.00668

SKY130_FD_SC_HS__O221AIx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o221ai_1	12.78720
sky130_fd_sc_hs__o221ai_2	19.18080
sky130_fd_sc_hs__o221ai_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	B2	C1	Y
sky130_fd_sc_hs__o221ai_1	0.00270	0.00286	0.00282	0.00274	0.00279	0.37256
sky130_fd_sc_hs__o221ai_2	0.00553	0.00506	0.00581	0.00506	0.00512	0.70078
sky130_fd_sc_hs__o221ai_4	0.01051	0.01003	0.01065	0.01001	0.01020	1.31579

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221ai_1	0.00000	0.01644	0.07330
sky130_fd_sc_hs__o221ai_2	0.00000	0.03288	0.14659
sky130_fd_sc_hs__o221ai_4	0.00000	0.06576	0.29318

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)	0.22218	1.32149	11.90530
	A2->Y (FR)	0.20189	1.27907	11.80020
	B1->Y (FR)	0.16647	1.24945	11.77370
	B2->Y (FR)	0.14506	1.20626	11.66990
	C1->Y (FR)	0.05618	0.79733	8.33399
sky130_fd_sc_hs__o221ai_2	A1->Y (FR)	0.19894	1.13262	11.69860
	A2->Y (FR)	0.17364	1.08997	11.58920
	B1->Y (FR)	0.15005	1.07246	11.61560
	B2->Y (FR)	0.12300	1.02885	11.49980
	C1->Y (FR)	0.04384	0.71059	8.20472
sky130_fd_sc_hs__o221ai_4	A1->Y (FR)	0.18843	0.99247	11.47190
	A2->Y (FR)	0.16436	0.95309	11.42430
	B1->Y (FR)	0.14797	0.95430	11.64610
	B2->Y (FR)	0.12073	0.91613	11.59110
	C1->Y (FR)	0.04349	0.65245	8.21412

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221ai_1	A1->Y (RF)	0.09190	0.58754	5.20417
	A2->Y (RF)	0.08148	0.57190	5.17000
	B1->Y (RF)	0.08272	0.62729	5.87863
	B2->Y (RF)	0.07034	0.60527	5.77941
	C1->Y (RF)	0.06859	0.65019	6.31141
sky130_fd_sc_hs__o221ai_2	A1->Y (RF)	0.07357	0.49721	5.14180
	A2->Y (RF)	0.06423	0.48630	5.17469
	B1->Y (RF)	0.06394	0.53759	5.82583
	B2->Y (RF)	0.05477	0.53744	5.99974
	C1->Y (RF)	0.03652	0.54965	6.39551
sky130_fd_sc_hs__o221ai_4	A1->Y (RF)	0.07869	0.45345	5.25160
	A2->Y (RF)	0.06679	0.43704	5.26357
	B1->Y (RF)	0.06993	0.50393	6.08844
	B2->Y (RF)	0.05728	0.48731	6.12916
	C1->Y (RF)	0.03919	0.50903	6.71834

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221ai_1	A1	0.00164	0.00151	0.00157
	A1	0.00775	0.00763	0.00770
	A2	0.00170	0.00159	0.00207
	A2	0.00718	0.00690	0.00754
	B1	0.00057	0.00042	0.00051
	B1	0.00585	0.00569	0.00578
	B2	0.00058	0.00051	0.00100
	B2	0.00514	0.00496	0.00552
	C1	-0.00031	-0.00033	0.00021
	C1	0.00421	0.00419	0.00467
sky130_fd_sc_hs__o221ai_2	A1	0.00263	0.00233	0.00250
	A1	0.01442	0.01415	0.01426
	A2	0.00267	0.00247	0.00348
	A2	0.01291	0.01274	0.01369
	B1	0.00067	0.00034	0.00056
	B1	0.01098	0.01065	0.01082
	B2	0.00077	0.00059	0.00161
	B2	0.00946	0.00928	0.01027
	C1	-0.00114	-0.00115	0.00007
	C1	0.00731	0.00732	0.00848

sky130_fd_sc_hs__o221ai_4	**A1**	0.00444	0.00386	0.00424
	A1	0.02776	0.02724	0.02754
	A2	0.00457	0.00418	0.00604
	A2	0.02495	0.02433	0.02637
	B1	0.00100	0.00034	0.00095
	B1	0.02123	0.02054	0.02110
	B2	0.00100	0.00059	0.00296
	B2	0.01841	0.01796	0.02024
	C1	-0.00215	-0.00200	0.00126
	C1	0.01470	0.01478	0.01803

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221ai_1	**A1**	0.00847	0.00837	0.00859
	A1	0.00207	0.00198	0.00204
	A2	0.00717	0.00711	0.00729
	A2	0.00137	0.00130	0.00137
	B1	0.00736	0.00728	0.00739
	B1	0.00210	0.00199	0.00207
	B2	0.00610	0.00603	0.00616
	B2	0.00154	0.00147	0.00156
	C1	0.00656	0.00643	0.00670
	C1	0.00213	0.00202	0.00219

sky130_fd_sc_hs__o221ai_2	**A1**	0.01593	0.01576	0.01579
	A1	0.00361	0.00335	0.00351
	A2	0.01313	0.01305	0.01417
	A2	0.00229	0.00216	0.00235
	B1	0.01397	0.01377	0.01403
	B1	0.00367	0.00340	0.00359
	B2	0.01103	0.01092	0.01128
	B2	0.00227	0.00215	0.00237
	C1	0.01193	0.01178	0.01219
	C1	0.00364	0.00348	0.00385
sky130_fd_sc_hs__o221ai_4	**A1**	0.03152	0.03108	0.03158
	A1	0.00717	0.00667	0.00705
	A2	0.02603	0.02573	0.02648
	A2	0.00450	0.00411	0.00464
	B1	0.02744	0.02697	0.02786
	B1	0.00725	0.00671	0.00726
	B2	0.02209	0.02177	0.02297
	B2	0.00462	0.00424	0.00492
	C1	0.02361	0.02325	0.02506
	C1	0.00715	0.00679	0.00794

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)**	0.00125	0.00115	0.00114
	(A2 * B2 * C1 * !Y)	-0.00112	-0.00125	-0.00126
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00114	0.00115	0.00114
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00123	-0.00126	-0.00126
	(A2 * B1 * !B2 * C1 * !Y)	0.00125	0.00115	0.00114
	(A2 * B1 * !B2 * C1 * !Y)	-0.00112	-0.00125	-0.00126
	(A2 * !B1 * !B2 * Y)	0.00114	0.00115	0.00114
	(A2 * !B1 * !B2 * Y)	-0.00123	-0.00126	-0.00126
	(!A2 * B2 * !C1 * Y)	0.00104	0.00105	0.00104
	(!A2 * B2 * !C1 * Y)	-0.00127	-0.00128	-0.00127
	(!A2 * B1 * !B2 * !C1 * Y)	0.00106	0.00106	0.00106
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00127	-0.00127	-0.00127
	(!A2 * !B1 * !B2 * C1 * Y)	0.00107	0.00108	0.00107
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00128	-0.00128	-0.00127
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00107	0.00108	0.00107
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00128	-0.00128	-0.00127

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.00246	0.00221	0.00218
	(A2 * B2 * C1 * !Y)	-0.00220	-0.00249	-0.00250
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00211	0.00211	0.00210
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00253	-0.00259	-0.00258
	(A2 * B1 * !B2 * C1 * !Y)	0.00246	0.00221	0.00218
	(A2 * B1 * !B2 * C1 * !Y)	-0.00220	-0.00249	-0.00250
	(A2 * !B1 * !B2 * Y)	0.00211	0.00211	0.00210
	(A2 * !B1 * !B2 * Y)	-0.00253	-0.00259	-0.00258
	(!A2 * B2 * !C1 * Y)	0.00190	0.00192	0.00190
	(!A2 * B2 * !C1 * Y)	-0.00262	-0.00264	-0.00262
	(!A2 * B1 * !B2 * !C1 * Y)	0.00193	0.00195	0.00192
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00262	-0.00264	-0.00262
	(!A2 * !B1 * !B2 * C1 * Y)	0.00195	0.00196	0.00196
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00262	-0.00262	-0.00262
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00195	0.00196	0.00196
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00262	-0.00262	-0.00262

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.00482	0.00436	0.00430
	(A2 * B2 * C1 * !Y)	-0.00427	-0.00490	-0.00492
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00423	0.00428	0.00425
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00482	-0.00498	-0.00495
	(A2 * B1 * !B2 * C1 * !Y)	0.00482	0.00436	0.00430
	(A2 * B1 * !B2 * C1 * !Y)	-0.00427	-0.00490	-0.00492
	(A2 * !B1 * !B2 * Y)	0.00423	0.00428	0.00425
	(A2 * !B1 * !B2 * Y)	-0.00483	-0.00494	-0.00495
	(!A2 * B2 * !C1 * Y)	0.00384	0.00388	0.00384
	(!A2 * B2 * !C1 * Y)	-0.00505	-0.00509	-0.00505
	(!A2 * B1 * !B2 * !C1 * Y)	0.00389	0.00392	0.00388
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00506	-0.00509	-0.00505
	(!A2 * !B1 * !B2 * C1 * Y)	0.00394	0.00398	0.00395
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00504	-0.00507	-0.00505
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00394	0.00397	0.00395
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00504	-0.00506	-0.00505

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)**	-0.00113	-0.00114	-0.00113
	(A2 * B2 * C1 * !Y)	0.00125	0.00127	0.00126
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00113	-0.00114	-0.00114
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00125	0.00127	0.00126
	(A2 * B1 * !B2 * C1 * !Y)	-0.00113	-0.00114	-0.00113
	(A2 * B1 * !B2 * C1 * !Y)	0.00125	0.00127	0.00126
	(A2 * !B1 * !B2 * Y)	-0.00114	-0.00114	-0.00114
	(A2 * !B1 * !B2 * Y)	0.00126	0.00127	0.00126
	(!A2 * B2 * !C1 * Y)	-0.00097	-0.00105	-0.00104
	(!A2 * B2 * !C1 * Y)	0.00129	0.00128	0.00128
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00099	-0.00106	-0.00106
	(!A2 * B1 * !B2 * !C1 * Y)	0.00129	0.00128	0.00128
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00101	-0.00108	-0.00107
	(!A2 * !B1 * !B2 * C1 * Y)	0.00128	0.00128	0.00128
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00101	-0.00108	-0.00107
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00128	0.00128	0.00128

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00218	-0.00218	-0.00217
	(A2 * B2 * C1 * !Y)	0.00250	0.00251	0.00250
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00210	-0.00211	-0.00210
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00258	0.00260	0.00258
	(A2 * B1 * !B2 * C1 * !Y)	-0.00218	-0.00218	-0.00217
	(A2 * B1 * !B2 * C1 * !Y)	0.00250	0.00251	0.00250
	(A2 * !B1 * !B2 * Y)	-0.00209	-0.00211	-0.00210
	(A2 * !B1 * !B2 * Y)	0.00256	0.00260	0.00258
	(!A2 * B2 * !C1 * Y)	-0.00175	-0.00192	-0.00190
	(!A2 * B2 * !C1 * Y)	0.00262	0.00264	0.00263
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00179	-0.00195	-0.00192
	(!A2 * B1 * !B2 * !C1 * Y)	0.00262	0.00264	0.00263
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00187	-0.00196	-0.00196
	(!A2 * !B1 * !B2 * C1 * Y)	0.00264	0.00265	0.00263
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00187	-0.00196	-0.00196
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00264	0.00265	0.00263

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	-0.00429	-0.00430	-0.00427
	(A2 * B2 * C1 * !Y)	0.00492	0.00496	0.00492
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00423	-0.00426	-0.00424
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00496	0.00499	0.00495
	(A2 * B1 * !B2 * C1 * !Y)	-0.00429	-0.00430	-0.00427
	(A2 * B1 * !B2 * C1 * !Y)	0.00492	0.00496	0.00492
	(A2 * !B1 * !B2 * Y)	-0.00423	-0.00424	-0.00424
	(A2 * !B1 * !B2 * Y)	0.00494	0.00494	0.00495
	(!A2 * B2 * !C1 * Y)	-0.00353	-0.00388	-0.00384
	(!A2 * B2 * !C1 * Y)	0.00505	0.00510	0.00507
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00361	-0.00392	-0.00388
	(!A2 * B1 * !B2 * !C1 * Y)	0.00506	0.00509	0.00507
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00374	-0.00398	-0.00395
	(!A2 * !B1 * !B2 * C1 * Y)	0.00505	0.00509	0.00507
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00375	-0.00397	-0.00395
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00505	0.00509	0.00507

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)**	0.00121	0.00120	0.00120
	(A1 * B2 * C1 * !Y)	-0.00071	-0.00071	-0.00071
	(A1 * B2 * !C1 * Y)	0.00103	0.00104	0.00103
	(A1 * B2 * !C1 * Y)	-0.00131	-0.00135	-0.00134
	(A1 * B1 * !B2 * C1 * !Y)	0.00119	0.00120	0.00120
	(A1 * B1 * !B2 * C1 * !Y)	-0.00070	-0.00071	-0.00071
	(A1 * B1 * !B2 * !C1 * Y)	0.00103	0.00104	0.00103
	(A1 * B1 * !B2 * !C1 * Y)	-0.00132	-0.00135	-0.00134
	(A1 * !B1 * !B2 * C1 * Y)	0.00103	0.00104	0.00103
	(A1 * !B1 * !B2 * C1 * Y)	-0.00131	-0.00134	-0.00134
	(A1 * !B1 * !B2 * !C1 * Y)	0.00103	0.00104	0.00103
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00131	-0.00134	-0.00134
	(!A1 * B2 * !C1 * Y)	0.00094	0.00095	0.00094
	(!A1 * B2 * !C1 * Y)	-0.00136	-0.00137	-0.00136
	(!A1 * B1 * !B2 * !C1 * Y)	0.00095	0.00096	0.00095
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00136	-0.00137	-0.00136
	(!A1 * !B1 * !B2 * C1 * Y)	0.00096	0.00096	0.00096
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00136	-0.00136	-0.00136
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00096	0.00097	0.00096
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00137	-0.00137	-0.00136

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	0.00217	0.00218	0.00218
	(A1 * B2 * C1 * !Y)	-0.00127	-0.00128	-0.00128
	(A1 * B2 * !C1 * Y)	0.00199	0.00198	0.00199
	(A1 * B2 * !C1 * Y)	-0.00235	-0.00239	-0.00239
	(A1 * B1 * !B2 * C1 * !Y)	0.00217	0.00218	0.00218
	(A1 * B1 * !B2 * C1 * !Y)	-0.00127	-0.00128	-0.00128
	(A1 * B1 * !B2 * !C1 * Y)	0.00200	0.00200	0.00199
	(A1 * B1 * !B2 * !C1 * Y)	-0.00235	-0.00240	-0.00239
	(A1 * !B1 * !B2 * C1 * Y)	0.00199	0.00200	0.00199
	(A1 * !B1 * !B2 * C1 * Y)	-0.00234	-0.00239	-0.00238
	(A1 * !B1 * !B2 * !C1 * Y)	0.00200	0.00201	0.00199
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00235	-0.00240	-0.00239
	(!A1 * B2 * !C1 * Y)	0.00181	0.00182	0.00181
	(!A1 * B2 * !C1 * Y)	-0.00244	-0.00245	-0.00244
	(!A1 * B1 * !B2 * !C1 * Y)	0.00183	0.00185	0.00183
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00244	-0.00246	-0.00244
	(!A1 * !B1 * !B2 * C1 * Y)	0.00187	0.00187	0.00187
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00245	-0.00244	-0.00244
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00187	0.00188	0.00187
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00245	-0.00245	-0.00244

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	0.00440	0.00442	0.00441
	(A1 * B2 * C1 * !Y)	-0.00255	-0.00256	-0.00255
	(A1 * B2 * !C1 * Y)	0.00387	0.00388	0.00388
	(A1 * B2 * !C1 * Y)	-0.00481	-0.00494	-0.00492
	(A1 * B1 * !B2 * C1 * !Y)	0.00439	0.00443	0.00441
	(A1 * B1 * !B2 * C1 * !Y)	-0.00255	-0.00256	-0.00255
	(A1 * B1 * !B2 * !C1 * Y)	0.00389	0.00391	0.00388
	(A1 * B1 * !B2 * !C1 * Y)	-0.00483	-0.00493	-0.00492
	(A1 * !B1 * !B2 * C1 * Y)	0.00389	0.00390	0.00389
	(A1 * !B1 * !B2 * C1 * Y)	-0.00483	-0.00492	-0.00491
	(A1 * !B1 * !B2 * !C1 * Y)	0.00389	0.00392	0.00388
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00483	-0.00493	-0.00492
	(!A1 * B2 * !C1 * Y)	0.00353	0.00355	0.00353
	(!A1 * B2 * !C1 * Y)	-0.00502	-0.00504	-0.00503
	(!A1 * B1 * !B2 * !C1 * Y)	0.00357	0.00357	0.00356
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00503	-0.00503	-0.00503
	(!A1 * !B1 * !B2 * C1 * Y)	0.00364	0.00365	0.00363
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00504	-0.00504	-0.00503
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00364	0.00364	0.00363
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00504	-0.00504	-0.00503

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)**	-0.00114	-0.00115	-0.00119
	(A1 * B2 * C1 * !Y)	0.00076	0.00076	0.00072
	(A1 * B2 * !C1 * Y)	-0.00103	-0.00104	-0.00103
	(A1 * B2 * !C1 * Y)	0.00134	0.00135	0.00134
	(A1 * B1 * !B2 * C1 * !Y)	-0.00114	-0.00115	-0.00119
	(A1 * B1 * !B2 * C1 * !Y)	0.00076	0.00076	0.00072
	(A1 * B1 * !B2 * !C1 * Y)	-0.00103	-0.00104	-0.00103
	(A1 * B1 * !B2 * !C1 * Y)	0.00135	0.00135	0.00134
	(A1 * !B1 * !B2 * C1 * Y)	-0.00103	-0.00104	-0.00103
	(A1 * !B1 * !B2 * C1 * Y)	0.00134	0.00134	0.00134
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00103	-0.00103	-0.00103
	(A1 * !B1 * !B2 * !C1 * Y)	0.00134	0.00134	0.00134
	(!A1 * B2 * !C1 * Y)	-0.00088	-0.00095	-0.00094
	(!A1 * B2 * !C1 * Y)	0.00137	0.00137	0.00137
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00089	-0.00096	-0.00095
	(!A1 * B1 * !B2 * !C1 * Y)	0.00136	0.00137	0.00137
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00092	-0.00096	-0.00096
	(!A1 * !B1 * !B2 * C1 * Y)	0.00137	0.00137	0.00137
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00092	-0.00097	-0.00096
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00137	0.00137	0.00137

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	-0.00206	-0.00207	-0.00216
	(A1 * B2 * C1 * !Y)	0.00139	0.00138	0.00131
	(A1 * B2 * !C1 * Y)	-0.00198	-0.00198	-0.00199
	(A1 * B2 * !C1 * Y)	0.00237	0.00240	0.00239
	(A1 * B1 * !B2 * C1 * !Y)	-0.00206	-0.00207	-0.00216
	(A1 * B1 * !B2 * C1 * !Y)	0.00139	0.00138	0.00131
	(A1 * B1 * !B2 * !C1 * Y)	-0.00198	-0.00200	-0.00199
	(A1 * B1 * !B2 * !C1 * Y)	0.00238	0.00240	0.00239
	(A1 * !B1 * !B2 * C1 * Y)	-0.00198	-0.00199	-0.00199
	(A1 * !B1 * !B2 * C1 * Y)	0.00238	0.00239	0.00238
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00198	-0.00199	-0.00199
	(A1 * !B1 * !B2 * !C1 * Y)	0.00238	0.00240	0.00239
	(!A1 * B2 * !C1 * Y)	-0.00167	-0.00182	-0.00181
	(!A1 * B2 * !C1 * Y)	0.00244	0.00246	0.00245
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00170	-0.00185	-0.00183
	(!A1 * B1 * !B2 * !C1 * Y)	0.00244	0.00246	0.00245
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00177	-0.00187	-0.00187
	(!A1 * !B1 * !B2 * C1 * Y)	0.00245	0.00246	0.00245
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00178	-0.00188	-0.00187
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00245	0.00246	0.00245

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	-0.00416	-0.00418	-0.00437
	(A1 * B2 * C1 * !Y)	0.00277	0.00276	0.00261
	(A1 * B2 * !C1 * Y)	-0.00385	-0.00388	-0.00387
	(A1 * B2 * !C1 * Y)	0.00488	0.00494	0.00492
	(A1 * B1 * !B2 * C1 * !Y)	-0.00416	-0.00418	-0.00437
	(A1 * B1 * !B2 * C1 * !Y)	0.00277	0.00276	0.00261
	(A1 * B1 * !B2 * !C1 * Y)	-0.00386	-0.00389	-0.00387
	(A1 * B1 * !B2 * !C1 * Y)	0.00489	0.00493	0.00492
	(A1 * !B1 * !B2 * C1 * Y)	-0.00388	-0.00389	-0.00387
	(A1 * !B1 * !B2 * C1 * Y)	0.00492	0.00492	0.00491
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00387	-0.00388	-0.00387
	(A1 * !B1 * !B2 * !C1 * Y)	0.00491	0.00493	0.00492
	(!A1 * B2 * !C1 * Y)	-0.00326	-0.00355	-0.00353
	(!A1 * B2 * !C1 * Y)	0.00502	0.00505	0.00504
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00332	-0.00357	-0.00356
	(!A1 * B1 * !B2 * !C1 * Y)	0.00503	0.00505	0.00504
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00346	-0.00365	-0.00363
	(!A1 * !B1 * !B2 * C1 * Y)	0.00505	0.00507	0.00504
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00346	-0.00364	-0.00363
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00505	0.00507	0.00504

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)**	0.00132	0.00121	0.00119
	(A2 * B2 * C1 * !Y)	-0.00109	-0.00122	-0.00123
	(A2 * !B2 * !C1 * Y)	0.00103	0.00103	0.00103
	(A2 * !B2 * !C1 * Y)	-0.00136	-0.00136	-0.00135
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00108	0.00109	0.00108
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00131	-0.00134	-0.00133
	(A1 * !A2 * B2 * C1 * !Y)	0.00132	0.00121	0.00119
	(A1 * !A2 * B2 * C1 * !Y)	-0.00109	-0.00122	-0.00123
	(A1 * !A2 * !B2 * !C1 * Y)	0.00104	0.00104	0.00103
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00136	-0.00136	-0.00135
	(!A1 * !A2 * B2 * C1 * Y)	0.00051	0.00052	0.00051
	(!A1 * !A2 * B2 * C1 * Y)	-0.00132	-0.00134	-0.00134
	(!A1 * !A2 * B2 * !C1 * Y)	0.00063	0.00064	0.00063
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00132	-0.00134	-0.00134
	(!A1 * !A2 * !B2 * C1 * Y)	0.00053	0.00054	0.00054
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00135	-0.00136	-0.00134
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00067	0.00067	0.00067
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00136	-0.00137	-0.00136

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.00259	0.00236	0.00234
	(A2 * B2 * C1 * !Y)	-0.00214	-0.00242	-0.00243
	(A2 * !B2 * !C1 * Y)	0.00197	0.00199	0.00198
	(A2 * !B2 * !C1 * Y)	-0.00267	-0.00269	-0.00268
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00212	0.00213	0.00211
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00260	-0.00266	-0.00264
	(A1 * !A2 * B2 * C1 * !Y)	0.00259	0.00236	0.00234
	(A1 * !A2 * B2 * C1 * !Y)	-0.00214	-0.00242	-0.00243
	(A1 * !A2 * !B2 * !C1 * Y)	0.00197	0.00200	0.00198
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00267	-0.00270	-0.00268
	(!A1 * !A2 * B2 * C1 * Y)	0.00094	0.00094	0.00094
	(!A1 * !A2 * B2 * C1 * Y)	-0.00260	-0.00266	-0.00266
	(!A1 * !A2 * B2 * !C1 * Y)	0.00117	0.00117	0.00116
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00260	-0.00266	-0.00264
	(!A1 * !A2 * !B2 * C1 * Y)	0.00098	0.00100	0.00099
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00267	-0.00269	-0.00265
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00123	0.00124	0.00123
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00268	-0.00270	-0.00269

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.00490	0.00442	0.00438
	(A2 * B2 * C1 * !Y)	-0.00421	-0.00480	-0.00482
	(A2 * !B2 * !C1 * Y)	0.00382	0.00388	0.00385
	(A2 * !B2 * !C1 * Y)	-0.00516	-0.00520	-0.00518
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00409	0.00411	0.00410
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00499	-0.00512	-0.00509
	(A1 * !A2 * B2 * C1 * !Y)	0.00490	0.00442	0.00438
	(A1 * !A2 * B2 * C1 * !Y)	-0.00421	-0.00480	-0.00482
	(A1 * !A2 * !B2 * !C1 * Y)	0.00381	0.00387	0.00384
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00516	-0.00521	-0.00518
	(!A1 * !A2 * B2 * C1 * Y)	0.00175	0.00176	0.00175
	(!A1 * !A2 * B2 * C1 * Y)	-0.00499	-0.00512	-0.00512
	(!A1 * !A2 * B2 * !C1 * Y)	0.00218	0.00218	0.00217
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00500	-0.00512	-0.00509
	(!A1 * !A2 * !B2 * C1 * Y)	0.00185	0.00187	0.00186
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00517	-0.00520	-0.00513
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00231	0.00232	0.00230
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00521	-0.00523	-0.00519

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)**	-0.00119	-0.00119	-0.00119
	(A2 * B2 * C1 * !Y)	0.00122	0.00123	0.00123
	(A2 * !B2 * !C1 * Y)	-0.00098	-0.00103	-0.00103
	(A2 * !B2 * !C1 * Y)	0.00137	0.00136	0.00136
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00108	-0.00108	-0.00108
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00133	0.00134	0.00133
	(A1 * !A2 * B2 * C1 * !Y)	-0.00119	-0.00119	-0.00119
	(A1 * !A2 * B2 * C1 * !Y)	0.00122	0.00123	0.00123
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00097	-0.00104	-0.00103
	(A1 * !A2 * !B2 * !C1 * Y)	0.00136	0.00137	0.00136
	(!A1 * !A2 * B2 * C1 * Y)	-0.00050	-0.00050	-0.00051
	(!A1 * !A2 * B2 * C1 * Y)	0.00135	0.00136	0.00134
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00063	-0.00064	-0.00063
	(!A1 * !A2 * B2 * !C1 * Y)	0.00134	0.00134	0.00134
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00051	-0.00051	-0.00052
	(!A1 * !A2 * !B2 * C1 * Y)	0.00139	0.00138	0.00136
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00067	-0.00067	-0.00067
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00138	0.00137	0.00136

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00233	-0.00234	-0.00233
	(A2 * B2 * C1 * !Y)	0.00243	0.00244	0.00243
	(A2 * !B2 * !C1 * Y)	-0.00186	-0.00199	-0.00198
	(A2 * !B2 * !C1 * Y)	0.00273	0.00271	0.00269
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00212	-0.00212	-0.00211
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00265	0.00266	0.00264
	(A1 * !A2 * B2 * C1 * !Y)	-0.00233	-0.00234	-0.00233
	(A1 * !A2 * B2 * C1 * !Y)	0.00243	0.00244	0.00243
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00184	-0.00200	-0.00198
	(A1 * !A2 * !B2 * !C1 * Y)	0.00273	0.00272	0.00269
	(!A1 * !A2 * B2 * C1 * Y)	-0.00091	-0.00092	-0.00093
	(!A1 * !A2 * B2 * C1 * Y)	0.00272	0.00274	0.00266
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00117	-0.00117	-0.00116
	(!A1 * !A2 * B2 * !C1 * Y)	0.00265	0.00268	0.00264
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00091	-0.00091	-0.00094
	(!A1 * !A2 * !B2 * C1 * Y)	0.00278	0.00278	0.00271
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00123	-0.00124	-0.00123
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00275	0.00273	0.00269

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	-0.00435	-0.00439	-0.00436
	(A2 * B2 * C1 * !Y)	0.00477	0.00484	0.00482
	(A2 * !B2 * !C1 * Y)	-0.00354	-0.00388	-0.00385
	(A2 * !B2 * !C1 * Y)	0.00525	0.00525	0.00519
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00409	-0.00410	-0.00409
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00510	0.00512	0.00509
	(A1 * !A2 * B2 * C1 * !Y)	-0.00438	-0.00438	-0.00436
	(A1 * !A2 * B2 * C1 * !Y)	0.00482	0.00484	0.00482
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00350	-0.00387	-0.00384
	(A1 * !A2 * !B2 * !C1 * Y)	0.00527	0.00525	0.00519
	(!A1 * !A2 * B2 * C1 * Y)	-0.00170	-0.00172	-0.00174
	(!A1 * !A2 * B2 * C1 * Y)	0.00522	0.00527	0.00512
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00218	-0.00218	-0.00217
	(!A1 * !A2 * B2 * !C1 * Y)	0.00512	0.00512	0.00509
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00171	-0.00172	-0.00176
	(!A1 * !A2 * !B2 * C1 * Y)	0.00535	0.00537	0.00523
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00231	-0.00232	-0.00230
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00532	0.00531	0.00520

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)**	0.00118	0.00118	0.00117
	(A2 * B1 * C1 * !Y)	-0.00065	-0.00065	-0.00064
	(A2 * B1 * !C1 * Y)	0.00103	0.00104	0.00103
	(A2 * B1 * !C1 * Y)	-0.00123	-0.00125	-0.00125
	(A2 * !B1 * !C1 * Y)	0.00098	0.00099	0.00098
	(A2 * !B1 * !C1 * Y)	-0.00127	-0.00128	-0.00127
	(A1 * !A2 * B1 * C1 * !Y)	0.00118	0.00118	0.00117
	(A1 * !A2 * B1 * C1 * !Y)	-0.00065	-0.00064	-0.00064
	(A1 * !A2 * B1 * !C1 * Y)	0.00103	0.00104	0.00103
	(A1 * !A2 * B1 * !C1 * Y)	-0.00123	-0.00126	-0.00125
	(A1 * !A2 * !B1 * !C1 * Y)	0.00098	0.00099	0.00098
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00127	-0.00128	-0.00127
	(!A1 * !A2 * B1 * C1 * Y)	0.00047	0.00047	0.00047
	(!A1 * !A2 * B1 * C1 * Y)	-0.00123	-0.00126	-0.00125
	(!A1 * !A2 * B1 * !C1 * Y)	0.00059	0.00059	0.00059
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00123	-0.00125	-0.00125
	(!A1 * !A2 * !B1 * C1 * Y)	0.00049	0.00050	0.00050
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00127	-0.00128	-0.00126
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00062	0.00063	0.00062
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00127	-0.00129	-0.00128

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	0.00216	0.00217	0.00217
	(A2 * B1 * C1 * !Y)	-0.00127	-0.00128	-0.00127
	(A2 * B1 * !C1 * Y)	0.00197	0.00199	0.00197
	(A2 * B1 * !C1 * Y)	-0.00235	-0.00241	-0.00239
	(A2 * !B1 * !C1 * Y)	0.00186	0.00187	0.00186
	(A2 * !B1 * !C1 * Y)	-0.00244	-0.00245	-0.00244
	(A1 * !A2 * B1 * C1 * !Y)	0.00216	0.00217	0.00217
	(A1 * !A2 * B1 * C1 * !Y)	-0.00127	-0.00128	-0.00127
	(A1 * !A2 * B1 * !C1 * Y)	0.00197	0.00198	0.00197
	(A1 * !A2 * B1 * !C1 * Y)	-0.00235	-0.00240	-0.00239
	(A1 * !A2 * !B1 * !C1 * Y)	0.00186	0.00187	0.00186
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00244	-0.00245	-0.00244
	(!A1 * !A2 * B1 * C1 * Y)	0.00084	0.00085	0.00084
	(!A1 * !A2 * B1 * C1 * Y)	-0.00234	-0.00241	-0.00239
	(!A1 * !A2 * B1 * !C1 * Y)	0.00108	0.00108	0.00107
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00236	-0.00241	-0.00239
	(!A1 * !A2 * !B1 * C1 * Y)	0.00089	0.00090	0.00090
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00242	-0.00243	-0.00241
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00113	0.00115	0.00113
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00244	-0.00246	-0.00244

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	0.00444	0.00443	0.00442
	(A2 * B1 * C1 * !Y)	-0.00258	-0.00255	-0.00254
	(A2 * B1 * !C1 * Y)	0.00399	0.00404	0.00400
	(A2 * B1 * !C1 * Y)	-0.00471	-0.00485	-0.00482
	(A2 * !B1 * !C1 * Y)	0.00374	0.00377	0.00374
	(A2 * !B1 * !C1 * Y)	-0.00493	-0.00494	-0.00492
	(A1 * !A2 * B1 * C1 * !Y)	0.00440	0.00444	0.00442
	(A1 * !A2 * B1 * C1 * !Y)	-0.00253	-0.00256	-0.00254
	(A1 * !A2 * B1 * !C1 * Y)	0.00399	0.00401	0.00400
	(A1 * !A2 * B1 * !C1 * Y)	-0.00472	-0.00483	-0.00482
	(A1 * !A2 * !B1 * !C1 * Y)	0.00374	0.00377	0.00374
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00493	-0.00494	-0.00492
	(!A1 * !A2 * B1 * C1 * Y)	0.00168	0.00169	0.00169
	(!A1 * !A2 * B1 * C1 * Y)	-0.00472	-0.00485	-0.00483
	(!A1 * !A2 * B1 * !C1 * Y)	0.00211	0.00213	0.00211
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00473	-0.00485	-0.00482
	(!A1 * !A2 * !B1 * C1 * Y)	0.00178	0.00179	0.00180
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00489	-0.00490	-0.00487
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00223	0.00226	0.00223
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00493	-0.00497	-0.00493

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)**	-0.00112	-0.00113	-0.00117
	(A2 * B1 * C1 * !Y)	0.00069	0.00069	0.00066
	(A2 * B1 * !C1 * Y)	-0.00103	-0.00103	-0.00103
	(A2 * B1 * !C1 * Y)	0.00125	0.00125	0.00125
	(A2 * !B1 * !C1 * Y)	-0.00094	-0.00099	-0.00098
	(A2 * !B1 * !C1 * Y)	0.00128	0.00129	0.00127
	(A1 * !A2 * B1 * C1 * !Y)	-0.00112	-0.00113	-0.00117
	(A1 * !A2 * B1 * C1 * !Y)	0.00069	0.00069	0.00066
	(A1 * !A2 * B1 * !C1 * Y)	-0.00103	-0.00103	-0.00103
	(A1 * !A2 * B1 * !C1 * Y)	0.00125	0.00126	0.00125
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00093	-0.00099	-0.00098
	(A1 * !A2 * !B1 * !C1 * Y)	0.00129	0.00129	0.00127
	(!A1 * !A2 * B1 * C1 * Y)	-0.00047	-0.00046	-0.00047
	(!A1 * !A2 * B1 * C1 * Y)	0.00127	0.00127	0.00125
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00059	-0.00059	-0.00059
	(!A1 * !A2 * B1 * !C1 * Y)	0.00126	0.00125	0.00125
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00047	-0.00047	-0.00047
	(!A1 * !A2 * !B1 * C1 * Y)	0.00130	0.00129	0.00128
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00062	-0.00063	-0.00062
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00129	0.00129	0.00128

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	-0.00205	-0.00207	-0.00215
	(A2 * B1 * C1 * !Y)	0.00138	0.00138	0.00130
	(A2 * B1 * !C1 * Y)	-0.00196	-0.00198	-0.00197
	(A2 * B1 * !C1 * Y)	0.00238	0.00241	0.00239
	(A2 * !B1 * !C1 * Y)	-0.00173	-0.00187	-0.00186
	(A2 * !B1 * !C1 * Y)	0.00247	0.00247	0.00245
	(A1 * !A2 * B1 * C1 * !Y)	-0.00205	-0.00207	-0.00215
	(A1 * !A2 * B1 * C1 * !Y)	0.00138	0.00138	0.00130
	(A1 * !A2 * B1 * !C1 * Y)	-0.00196	-0.00197	-0.00197
	(A1 * !A2 * B1 * !C1 * Y)	0.00238	0.00240	0.00239
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00171	-0.00187	-0.00186
	(A1 * !A2 * !B1 * !C1 * Y)	0.00248	0.00247	0.00245
	(!A1 * !A2 * B1 * C1 * Y)	-0.00083	-0.00083	-0.00084
	(!A1 * !A2 * B1 * C1 * Y)	0.00243	0.00244	0.00239
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00108	-0.00108	-0.00107
	(!A1 * !A2 * B1 * !C1 * Y)	0.00239	0.00241	0.00239
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00084	-0.00083	-0.00085
	(!A1 * !A2 * !B1 * C1 * Y)	0.00250	0.00250	0.00246
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00113	-0.00115	-0.00113
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00246	0.00248	0.00245

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	-0.00419	-0.00422	-0.00439
	(A2 * B1 * C1 * !Y)	0.00276	0.00276	0.00260
	(A2 * B1 * !C1 * Y)	-0.00398	-0.00401	-0.00399
	(A2 * B1 * !C1 * Y)	0.00480	0.00485	0.00482
	(A2 * !B1 * !C1 * Y)	-0.00347	-0.00377	-0.00374
	(A2 * !B1 * !C1 * Y)	0.00501	0.00498	0.00493
	(A1 * !A2 * B1 * C1 * !Y)	-0.00419	-0.00422	-0.00439
	(A1 * !A2 * B1 * C1 * !Y)	0.00276	0.00276	0.00260
	(A1 * !A2 * B1 * !C1 * Y)	-0.00399	-0.00400	-0.00399
	(A1 * !A2 * B1 * !C1 * Y)	0.00483	0.00483	0.00482
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00343	-0.00377	-0.00374
	(A1 * !A2 * !B1 * !C1 * Y)	0.00503	0.00498	0.00493
	(!A1 * !A2 * B1 * C1 * Y)	-0.00164	-0.00165	-0.00168
	(!A1 * !A2 * B1 * C1 * Y)	0.00490	0.00493	0.00483
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00211	-0.00213	-0.00211
	(!A1 * !A2 * B1 * !C1 * Y)	0.00485	0.00485	0.00482
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00167	-0.00166	-0.00170
	(!A1 * !A2 * !B1 * C1 * Y)	0.00508	0.00507	0.00496
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00223	-0.00226	-0.00223
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00505	0.00500	0.00494

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)	0.00046	0.00046	0.00043
	(A2 * !B1 * !B2 * Y)	-0.00154	-0.00155	-0.00159
	(!A2 * !B1 * !B2 * Y)	0.00046	0.00046	0.00043
	(!A2 * !B1 * !B2 * Y)	-0.00153	-0.00154	-0.00159
	(!A1 * !A2 * B2 * Y)	0.00049	0.00049	0.00041
	(!A1 * !A2 * B2 * Y)	-0.00142	-0.00143	-0.00157
	(!A1 * !A2 * B1 * !B2 * Y)	0.00049	0.00050	0.00042
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00143	-0.00144	-0.00157
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	0.00084	0.00084	0.00078
	(A2 * !B1 * !B2 * Y)	-0.00283	-0.00286	-0.00295
	(!A2 * !B1 * !B2 * Y)	0.00084	0.00084	0.00078
	(!A2 * !B1 * !B2 * Y)	-0.00283	-0.00286	-0.00295
	(!A1 * !A2 * B2 * Y)	0.00090	0.00090	0.00076
	(!A1 * !A2 * B2 * Y)	-0.00262	-0.00266	-0.00292
	(!A1 * !A2 * B1 * !B2 * Y)	0.00090	0.00091	0.00077
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00266	-0.00269	-0.00292
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	0.00145	0.00146	0.00135
	(A2 * !B1 * !B2 * Y)	-0.00577	-0.00583	-0.00599
	(!A2 * !B1 * !B2 * Y)	0.00145	0.00146	0.00135
	(!A2 * !B1 * !B2 * Y)	-0.00578	-0.00583	-0.00599
	(!A1 * !A2 * B2 * Y)	0.00157	0.00157	0.00132
	(!A1 * !A2 * B2 * Y)	-0.00537	-0.00544	-0.00592
	(!A1 * !A2 * B1 * !B2 * Y)	0.00157	0.00158	0.00134
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00545	-0.00551	-0.00593

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)	-0.00042	-0.00042	-0.00041
	(A2 * !B1 * !B2 * Y)	0.00160	0.00161	0.00159
	(!A2 * !B1 * !B2 * Y)	-0.00042	-0.00041	-0.00041
	(!A2 * !B1 * !B2 * Y)	0.00160	0.00160	0.00160
	(!A1 * !A2 * B2 * Y)	-0.00040	-0.00040	-0.00040
	(!A1 * !A2 * B2 * Y)	0.00160	0.00162	0.00159
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00040	-0.00040	-0.00040
	(!A1 * !A2 * B1 * !B2 * Y)	0.00160	0.00160	0.00160
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	-0.00075	-0.00076	-0.00075
	(A2 * !B1 * !B2 * Y)	0.00295	0.00299	0.00297
	(!A2 * !B1 * !B2 * Y)	-0.00075	-0.00075	-0.00075
	(!A2 * !B1 * !B2 * Y)	0.00295	0.00298	0.00297
	(!A1 * !A2 * B2 * Y)	-0.00072	-0.00073	-0.00072
	(!A1 * !A2 * B2 * Y)	0.00296	0.00299	0.00297
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00073	-0.00074	-0.00073
	(!A1 * !A2 * B1 * !B2 * Y)	0.00295	0.00298	0.00297
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	-0.00131	-0.00131	-0.00130
	(A2 * !B1 * !B2 * Y)	0.00602	0.00605	0.00601
	(!A2 * !B1 * !B2 * Y)	-0.00130	-0.00131	-0.00130
	(!A2 * !B1 * !B2 * Y)	0.00598	0.00603	0.00601
	(!A1 * !A2 * B2 * Y)	-0.00125	-0.00126	-0.00124
	(!A1 * !A2 * B2 * Y)	0.00599	0.00605	0.00601
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00126	-0.00127	-0.00126
	(!A1 * !A2 * B1 * !B2 * Y)	0.00598	0.00603	0.00601

SKY130_FD_SC_HS__O221Ax

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o221a_1	14.38560
sky130_fd_sc_hs__o221a_2	15.98400
sky130_fd_sc_hs__o221a_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	B2	C1	X
sky130_fd_sc_hs__o221a_1	0.00249	0.00247	0.00242	0.00259	0.00255	0.76556
sky130_fd_sc_hs__o221a_2	0.00265	0.00260	0.00260	0.00271	0.00266	1.51827
sky130_fd_sc_hs__o221a_4	0.00496	0.00449	0.00528	0.00450	0.00458	2.89889

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221a_1	0.00000	0.05549	0.18566
sky130_fd_sc_hs__o221a_2	0.00000	0.07347	0.18988
sky130_fd_sc_hs__o221a_4	0.00000	0.14847	0.37975

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)	0.17878	0.89094	7.51740
	A2->X (RR)	0.16908	0.87667	7.46181
	B1->X (RR)	0.16884	0.90687	7.52346
	B2->X (RR)	0.15998	0.88393	7.45122
	C1->X (RR)	0.15375	0.88154	7.39214
sky130_fd_sc_hs__o221a_2	A1->X (RR)	0.17535	0.77429	7.48136
	A2->X (RR)	0.16660	0.76218	7.43325
	B1->X (RR)	0.16575	0.79548	7.51075
	B2->X (RR)	0.16050	0.77857	7.45141
	C1->X (RR)	0.15155	0.77907	7.40407
sky130_fd_sc_hs__o221a_4	A1->X (RR)	0.18601	0.70402	7.50500
	A2->X (RR)	0.17722	0.69338	7.46026
	B1->X (RR)	0.17748	0.72658	7.53787
	B2->X (RR)	0.16753	0.70292	7.46692
	C1->X (RR)	0.15879	0.70605	7.42175

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221a_1	A1->X (FF)	0.29447	0.91735	5.33442
	A2->X (FF)	0.27304	0.88057	5.05190
	B1->X (FF)	0.25148	0.86067	5.13759
	B2->X (FF)	0.23153	0.82608	4.86561
	C1->X (FF)	0.10969	0.68085	4.58385
sky130_fd_sc_hs__o221a_2	A1->X (FF)	0.34983	0.95716	5.61618
	A2->X (FF)	0.32591	0.91891	5.34308
	B1->X (FF)	0.29702	0.89354	5.42388
	B2->X (FF)	0.27767	0.86175	5.16064
	C1->X (FF)	0.12814	0.69269	4.79650
sky130_fd_sc_hs__o221a_4	A1->X (FF)	0.31222	0.88016	5.51530
	A2->X (FF)	0.28680	0.83982	5.23047
	B1->X (FF)	0.27883	0.83757	5.36164
	B2->X (FF)	0.25186	0.79743	5.09001
	C1->X (FF)	0.11925	0.64529	4.77462

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221a_1	A1	0.01000	0.00987	0.01039
	A1	0.00430	0.00416	0.00469
	A2	0.00891	0.00888	0.00997
	A2	0.00378	0.00376	0.00488
	B1	0.00896	0.00888	0.00976
	B1	0.00428	0.00419	0.00509
	B2	0.00797	0.00783	0.00950
	B2	0.00368	0.00354	0.00523
	C1	0.00835	0.00823	0.01084
	C1	0.00430	0.00418	0.00682
sky130_fd_sc_hs__o221a_2	A1	0.01210	0.01216	0.01267
	A1	0.00598	0.00605	0.00661
	A2	0.01090	0.01112	0.01218
	A2	0.00538	0.00560	0.00671
	B1	0.01096	0.01105	0.01191
	B1	0.00596	0.00605	0.00694
	B2	0.00997	0.01004	0.01156
	B2	0.00544	0.00551	0.00717
	C1	0.01023	0.01027	0.01263
	C1	0.00599	0.00604	0.00844

sky130_fd_sc_hs__o221a_4	**A1**	0.02247	0.02280	0.02421
	A1	0.01131	0.01165	0.01311
	A2	0.01977	0.02016	0.02275
	A2	0.01006	0.01048	0.01312
	B1	0.02083	0.02111	0.02313
	B1	0.01128	0.01167	0.01360
	B2	0.01803	0.01830	0.02164
	B2	0.01010	0.01038	0.01378
	C1	0.01885	0.01909	0.02423
	C1	0.01130	0.01154	0.01677

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221a_1	**A1**	0.00359	0.00351	0.00495
	A1	0.00911	0.00905	0.01007
	A2	0.00368	0.00378	0.00679
	A2	0.00851	0.00861	0.01143
	B1	0.00306	0.00304	0.00459
	B1	0.00771	0.00771	0.00888
	B2	0.00296	0.00303	0.00652
	B2	0.00718	0.00727	0.01036
	C1	0.00229	0.00238	0.00651
	C1	0.00638	0.00646	0.01005

sky130_fd_sc_hs__o221a_2	**A1**	0.00506	0.00514	0.00738
	A1	0.01098	0.01110	0.01215
	A2	0.00511	0.00532	0.00977
	A2	0.01041	0.01063	0.01356
	B1	0.00441	0.00459	0.00706
	B1	0.00938	0.00959	0.01085
	B2	0.00432	0.00463	0.00825
	B2	0.00883	0.00909	0.01231
	C1	0.00369	0.00404	0.00820
	C1	0.00797	0.00826	0.01189
sky130_fd_sc_hs__o221a_4	**A1**	0.00948	0.00990	0.01342
	A1	0.02031	0.02073	0.02293
	A2	0.01000	0.01042	0.01773
	A2	0.01906	0.01970	0.02570
	B1	0.00824	0.00852	0.01321
	B1	0.01775	0.01821	0.02068
	B2	0.00860	0.00926	0.01755
	B2	0.01645	0.01711	0.02350
	C1	0.00732	0.00826	0.01629
	C1	0.01499	0.01568	0.02295

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

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

sky130_fd_sc_hs__o221a_1	**(A2 * B2 * C1 * X)**	0.00114	0.00102	0.00101
	(A2 * B2 * C1 * X)	-0.00096	-0.00110	-0.00111
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00087	0.00088	0.00087
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00122	-0.00124	-0.00124
	(A2 * B1 * !B2 * C1 * X)	0.00114	0.00102	0.00101
	(A2 * B1 * !B2 * C1 * X)	-0.00096	-0.00110	-0.00111
	(A2 * !B1 * !B2 * !X)	0.00087	0.00088	0.00087
	(A2 * !B1 * !B2 * !X)	-0.00122	-0.00124	-0.00124
	(!A2 * B2 * !C1 * !X)	0.00080	0.00081	0.00080
	(!A2 * B2 * !C1 * !X)	-0.00126	-0.00126	-0.00126
	(!A2 * B1 * !B2 * !C1 * !X)	0.00081	0.00082	0.00081
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00126	-0.00126	-0.00126
	(!A2 * !B1 * !B2 * C1 * !X)	0.00081	0.00082	0.00081
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00126	-0.00126	-0.00126
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00081	0.00081	0.00081
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00126	-0.00126	-0.00126

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00129	0.00117	0.00116
	(A2 * B2 * C1 * X)	-0.00096	-0.00109	-0.00110
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00101	0.00101	0.00101
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00123	-0.00125	-0.00125
	(A2 * B1 * !B2 * C1 * X)	0.00129	0.00117	0.00116
	(A2 * B1 * !B2 * C1 * X)	-0.00096	-0.00109	-0.00110
	(A2 * !B1 * !B2 * !X)	0.00101	0.00101	0.00101
	(A2 * !B1 * !B2 * !X)	-0.00123	-0.00125	-0.00125
	(!A2 * B2 * !C1 * !X)	0.00093	0.00094	0.00093
	(!A2 * B2 * !C1 * !X)	-0.00126	-0.00127	-0.00126
	(!A2 * B1 * !B2 * !C1 * !X)	0.00094	0.00094	0.00093
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00127	-0.00127	-0.00126
	(!A2 * !B1 * !B2 * C1 * !X)	0.00095	0.00095	0.00094
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00127	-0.00127	-0.00126
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00095	0.00094	0.00094
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00127	-0.00126	-0.00126

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00237	0.00216	0.00213
	(A2 * B2 * C1 * X)	-0.00190	-0.00217	-0.00219
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00195	0.00196	0.00195
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00231	-0.00236	-0.00236
	(A2 * B1 * !B2 * C1 * X)	0.00237	0.00216	0.00213
	(A2 * B1 * !B2 * C1 * X)	-0.00190	-0.00217	-0.00219
	(A2 * !B1 * !B2 * !X)	0.00195	0.00196	0.00195
	(A2 * !B1 * !B2 * !X)	-0.00231	-0.00236	-0.00236
	(!A2 * B2 * !C1 * !X)	0.00180	0.00182	0.00181
	(!A2 * B2 * !C1 * !X)	-0.00239	-0.00240	-0.00239
	(!A2 * B1 * !B2 * !C1 * !X)	0.00182	0.00183	0.00182
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00239	-0.00239	-0.00239
	(!A2 * !B1 * !B2 * C1 * !X)	0.00183	0.00185	0.00184
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00238	-0.00240	-0.00239
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00184	0.00185	0.00185
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00238	-0.00239	-0.00239

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)**	-0.00100	-0.00101	-0.00100
	(A2 * B2 * C1 * X)	0.00110	0.00112	0.00111
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00087	-0.00087	-0.00087
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00123	0.00124	0.00124
	(A2 * B1 * !B2 * C1 * X)	-0.00100	-0.00101	-0.00100
	(A2 * B1 * !B2 * C1 * X)	0.00110	0.00112	0.00111
	(A2 * !B1 * !B2 * !X)	-0.00087	-0.00087	-0.00087
	(A2 * !B1 * !B2 * !X)	0.00124	0.00124	0.00124
	(!A2 * B2 * !C1 * !X)	-0.00074	-0.00081	-0.00080
	(!A2 * B2 * !C1 * !X)	0.00126	0.00126	0.00126
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00075	-0.00082	-0.00081
	(!A2 * B1 * !B2 * !C1 * !X)	0.00126	0.00126	0.00126
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00077	-0.00082	-0.00081
	(!A2 * !B1 * !B2 * C1 * !X)	0.00126	0.00127	0.00126
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00077	-0.00081	-0.00081
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00126	0.00127	0.00126

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	-0.00116	-0.00116	-0.00115
	(A2 * B2 * C1 * X)	0.00110	0.00111	0.00110
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00101	-0.00101	-0.00101
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00125	0.00126	0.00125
	(A2 * B1 * !B2 * C1 * X)	-0.00116	-0.00116	-0.00115
	(A2 * B1 * !B2 * C1 * X)	0.00110	0.00111	0.00110
	(A2 * !B1 * !B2 * !X)	-0.00101	-0.00101	-0.00101
	(A2 * !B1 * !B2 * !X)	0.00125	0.00126	0.00125
	(!A2 * B2 * !C1 * !X)	-0.00086	-0.00094	-0.00093
	(!A2 * B2 * !C1 * !X)	0.00128	0.00127	0.00127
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00087	-0.00094	-0.00093
	(!A2 * B1 * !B2 * !C1 * !X)	0.00127	0.00127	0.00127
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00090	-0.00095	-0.00094
	(!A2 * !B1 * !B2 * C1 * !X)	0.00127	0.00127	0.00127
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00090	-0.00094	-0.00094
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00127	0.00127	0.00127

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	-0.00211	-0.00213	-0.00211
	(A2 * B2 * C1 * X)	0.00217	0.00219	0.00219
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00194	-0.00196	-0.00195
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00234	0.00237	0.00236
	(A2 * B1 * !B2 * C1 * X)	-0.00211	-0.00213	-0.00211
	(A2 * B1 * !B2 * C1 * X)	0.00217	0.00219	0.00219
	(A2 * !B1 * !B2 * !X)	-0.00194	-0.00196	-0.00195
	(A2 * !B1 * !B2 * !X)	0.00234	0.00237	0.00236
	(!A2 * B2 * !C1 * !X)	-0.00169	-0.00182	-0.00181
	(!A2 * B2 * !C1 * !X)	0.00240	0.00243	0.00240
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00172	-0.00183	-0.00182
	(!A2 * B1 * !B2 * !C1 * !X)	0.00241	0.00243	0.00240
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00175	-0.00185	-0.00184
	(!A2 * !B1 * !B2 * C1 * !X)	0.00240	0.00243	0.00240
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00175	-0.00185	-0.00185
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00240	0.00243	0.00240

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)**	0.00104	0.00103	0.00103
	(A1 * B2 * C1 * X)	-0.00060	-0.00060	-0.00060
	(A1 * B2 * !C1 * !X)	0.00091	0.00091	0.00090
	(A1 * B2 * !C1 * !X)	-0.00114	-0.00115	-0.00114
	(A1 * B1 * !B2 * C1 * X)	0.00104	0.00103	0.00103
	(A1 * B1 * !B2 * C1 * X)	-0.00060	-0.00060	-0.00060
	(A1 * B1 * !B2 * !C1 * !X)	0.00089	0.00090	0.00090
	(A1 * B1 * !B2 * !C1 * !X)	-0.00112	-0.00115	-0.00114
	(A1 * !B1 * !B2 * C1 * !X)	0.00091	0.00090	0.00090
	(A1 * !B1 * !B2 * C1 * !X)	-0.00114	-0.00114	-0.00114
	(A1 * !B1 * !B2 * !C1 * !X)	0.00091	0.00090	0.00090
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00114	-0.00114	-0.00114
	(!A1 * B2 * !C1 * !X)	0.00081	0.00082	0.00081
	(!A1 * B2 * !C1 * !X)	-0.00116	-0.00117	-0.00116
	(!A1 * B1 * !B2 * !C1 * !X)	0.00082	0.00083	0.00082
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00116	-0.00117	-0.00116
	(!A1 * !B1 * !B2 * C1 * !X)	0.00082	0.00083	0.00083
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00116	-0.00116	-0.00116
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00083	0.00084	0.00083
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00117	-0.00117	-0.00116

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	0.00117	0.00117	0.00117
	(A1 * B2 * C1 * X)	-0.00060	-0.00059	-0.00059
	(A1 * B2 * !C1 * !X)	0.00104	0.00104	0.00103
	(A1 * B2 * !C1 * !X)	-0.00113	-0.00114	-0.00114
	(A1 * B1 * !B2 * C1 * X)	0.00117	0.00117	0.00117
	(A1 * B1 * !B2 * C1 * X)	-0.00060	-0.00059	-0.00059
	(A1 * B1 * !B2 * !C1 * !X)	0.00102	0.00104	0.00103
	(A1 * B1 * !B2 * !C1 * !X)	-0.00111	-0.00114	-0.00114
	(A1 * !B1 * !B2 * C1 * !X)	0.00104	0.00104	0.00103
	(A1 * !B1 * !B2 * C1 * !X)	-0.00113	-0.00114	-0.00114
	(A1 * !B1 * !B2 * !C1 * !X)	0.00104	0.00104	0.00103
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00113	-0.00114	-0.00114
	(!A1 * B2 * !C1 * !X)	0.00093	0.00094	0.00093
	(!A1 * B2 * !C1 * !X)	-0.00115	-0.00116	-0.00116
	(!A1 * B1 * !B2 * !C1 * !X)	0.00094	0.00096	0.00095
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00115	-0.00116	-0.00116
	(!A1 * !B1 * !B2 * C1 * !X)	0.00095	0.00096	0.00096
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00115	-0.00116	-0.00115
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00095	0.00096	0.00096
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00115	-0.00116	-0.00115

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	0.00189	0.00190	0.00190
	(A1 * B2 * C1 * X)	-0.00118	-0.00118	-0.00118
	(A1 * B2 * !C1 * !X)	0.00167	0.00169	0.00168
	(A1 * B2 * !C1 * !X)	-0.00218	-0.00223	-0.00223
	(A1 * B1 * !B2 * C1 * X)	0.00189	0.00190	0.00190
	(A1 * B1 * !B2 * C1 * X)	-0.00118	-0.00118	-0.00118
	(A1 * B1 * !B2 * !C1 * !X)	0.00167	0.00169	0.00168
	(A1 * B1 * !B2 * !C1 * !X)	-0.00218	-0.00223	-0.00223
	(A1 * !B1 * !B2 * C1 * !X)	0.00167	0.00169	0.00168
	(A1 * !B1 * !B2 * C1 * !X)	-0.00218	-0.00223	-0.00222
	(A1 * !B1 * !B2 * !C1 * !X)	0.00167	0.00169	0.00168
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00218	-0.00223	-0.00223
	(!A1 * B2 * !C1 * !X)	0.00151	0.00152	0.00152
	(!A1 * B2 * !C1 * !X)	-0.00227	-0.00227	-0.00227
	(!A1 * B1 * !B2 * !C1 * !X)	0.00153	0.00154	0.00153
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00227	-0.00228	-0.00227
	(!A1 * !B1 * !B2 * C1 * !X)	0.00155	0.00155	0.00155
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00228	-0.00228	-0.00227
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00153	0.00156	0.00155
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00226	-0.00228	-0.00227

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)**	-0.00099	-0.00099	-0.00102
	(A1 * B2 * C1 * X)	0.00064	0.00064	0.00061
	(A1 * B2 * !C1 * !X)	-0.00090	-0.00090	-0.00089
	(A1 * B2 * !C1 * !X)	0.00115	0.00115	0.00114
	(A1 * B1 * !B2 * C1 * X)	-0.00099	-0.00099	-0.00102
	(A1 * B1 * !B2 * C1 * X)	0.00064	0.00064	0.00061
	(A1 * B1 * !B2 * !C1 * !X)	-0.00089	-0.00090	-0.00089
	(A1 * B1 * !B2 * !C1 * !X)	0.00115	0.00115	0.00114
	(A1 * !B1 * !B2 * C1 * !X)	-0.00090	-0.00090	-0.00089
	(A1 * !B1 * !B2 * C1 * !X)	0.00115	0.00114	0.00114
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00090	-0.00089	-0.00089
	(A1 * !B1 * !B2 * !C1 * !X)	0.00114	0.00114	0.00114
	(!A1 * B2 * !C1 * !X)	-0.00075	-0.00082	-0.00081
	(!A1 * B2 * !C1 * !X)	0.00117	0.00117	0.00117
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00077	-0.00083	-0.00082
	(!A1 * B1 * !B2 * !C1 * !X)	0.00117	0.00117	0.00117
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00078	-0.00083	-0.00083
	(!A1 * !B1 * !B2 * C1 * !X)	0.00117	0.00117	0.00117
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00078	-0.00084	-0.00083
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00117	0.00117	0.00117

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	-0.00111	-0.00111	-0.00116
	(A1 * B2 * C1 * X)	0.00064	0.00063	0.00060
	(A1 * B2 * !C1 * !X)	-0.00103	-0.00103	-0.00103
	(A1 * B2 * !C1 * !X)	0.00114	0.00114	0.00114
	(A1 * B1 * !B2 * C1 * X)	-0.00111	-0.00111	-0.00116
	(A1 * B1 * !B2 * C1 * X)	0.00064	0.00064	0.00060
	(A1 * B1 * !B2 * !C1 * !X)	-0.00102	-0.00103	-0.00103
	(A1 * B1 * !B2 * !C1 * !X)	0.00114	0.00114	0.00114
	(A1 * !B1 * !B2 * C1 * !X)	-0.00103	-0.00103	-0.00103
	(A1 * !B1 * !B2 * C1 * !X)	0.00114	0.00114	0.00114
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00103	-0.00103	-0.00103
	(A1 * !B1 * !B2 * !C1 * !X)	0.00114	0.00114	0.00114
	(!A1 * B2 * !C1 * !X)	-0.00086	-0.00094	-0.00093
	(!A1 * B2 * !C1 * !X)	0.00116	0.00116	0.00116
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00088	-0.00096	-0.00095
	(!A1 * B1 * !B2 * !C1 * !X)	0.00116	0.00116	0.00116
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00091	-0.00096	-0.00096
	(!A1 * !B1 * !B2 * C1 * !X)	0.00116	0.00116	0.00116
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00091	-0.00096	-0.00096
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00116	0.00116	0.00116

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	-0.00179	-0.00180	-0.00188
	(A1 * B2 * C1 * X)	0.00128	0.00128	0.00121
	(A1 * B2 * !C1 * !X)	-0.00167	-0.00168	-0.00167
	(A1 * B2 * !C1 * !X)	0.00223	0.00223	0.00223
	(A1 * B1 * !B2 * C1 * X)	-0.00179	-0.00180	-0.00188
	(A1 * B1 * !B2 * C1 * X)	0.00128	0.00128	0.00121
	(A1 * B1 * !B2 * !C1 * !X)	-0.00167	-0.00168	-0.00167
	(A1 * B1 * !B2 * !C1 * !X)	0.00223	0.00223	0.00223
	(A1 * !B1 * !B2 * C1 * !X)	-0.00167	-0.00168	-0.00167
	(A1 * !B1 * !B2 * C1 * !X)	0.00222	0.00223	0.00222
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00167	-0.00168	-0.00167
	(A1 * !B1 * !B2 * !C1 * !X)	0.00223	0.00223	0.00223
	(!A1 * B2 * !C1 * !X)	-0.00138	-0.00152	-0.00152
	(!A1 * B2 * !C1 * !X)	0.00227	0.00229	0.00228
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00141	-0.00154	-0.00153
	(!A1 * B1 * !B2 * !C1 * !X)	0.00227	0.00228	0.00228
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00146	-0.00155	-0.00155
	(!A1 * !B1 * !B2 * C1 * !X)	0.00228	0.00228	0.00228
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00147	-0.00156	-0.00155
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00228	0.00228	0.00228

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)**	0.00106	0.00095	0.00094
	(A2 * B2 * C1 * X)	-0.00099	-0.00112	-0.00113
	(A2 * !B2 * !C1 * !X)	0.00085	0.00085	0.00085
	(A2 * !B2 * !C1 * !X)	-0.00119	-0.00119	-0.00119
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00089	0.00089	0.00089
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00115	-0.00118	-0.00117
	(A1 * !A2 * B2 * C1 * X)	0.00106	0.00095	0.00094
	(A1 * !A2 * B2 * C1 * X)	-0.00099	-0.00112	-0.00113
	(A1 * !A2 * !B2 * !C1 * !X)	0.00085	0.00085	0.00085
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00119	-0.00119	-0.00119
	(!A1 * !A2 * B2 * C1 * !X)	0.00040	0.00041	0.00041
	(!A1 * !A2 * B2 * C1 * !X)	-0.00115	-0.00118	-0.00118
	(!A1 * !A2 * B2 * !C1 * !X)	0.00050	0.00050	0.00050
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00115	-0.00118	-0.00118
	(!A1 * !A2 * !B2 * C1 * !X)	0.00041	0.00042	0.00043
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00118	-0.00119	-0.00117
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00053	0.00053	0.00053
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00119	-0.00120	-0.00119

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00123	0.00111	0.00110
	(A2 * B2 * C1 * X)	-0.00096	-0.00110	-0.00111
	(A2 * !B2 * !C1 * !X)	0.00096	0.00097	0.00096
	(A2 * !B2 * !C1 * !X)	-0.00121	-0.00120	-0.00120
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00102	0.00102	0.00102
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00116	-0.00118	-0.00118
	(A1 * !A2 * B2 * C1 * X)	0.00123	0.00111	0.00110
	(A1 * !A2 * B2 * C1 * X)	-0.00096	-0.00110	-0.00111
	(A1 * !A2 * !B2 * !C1 * !X)	0.00096	0.00097	0.00096
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00121	-0.00120	-0.00120
	(!A1 * !A2 * B2 * C1 * !X)	0.00045	0.00045	0.00045
	(!A1 * !A2 * B2 * C1 * !X)	-0.00117	-0.00119	-0.00119
	(!A1 * !A2 * B2 * !C1 * !X)	0.00056	0.00056	0.00056
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00117	-0.00119	-0.00119
	(!A1 * !A2 * !B2 * C1 * !X)	0.00047	0.00047	0.00048
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00120	-0.00120	-0.00119
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00059	0.00059	0.00059
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00121	-0.00122	-0.00121

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00259	0.00238	0.00236
	(A2 * B2 * C1 * X)	-0.00192	-0.00218	-0.00220
	(A2 * !B2 * !C1 * !X)	0.00210	0.00212	0.00211
	(A2 * !B2 * !C1 * !X)	-0.00238	-0.00239	-0.00238
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00219	0.00221	0.00220
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00230	-0.00236	-0.00235
	(A1 * !A2 * B2 * C1 * X)	0.00259	0.00238	0.00236
	(A1 * !A2 * B2 * C1 * X)	-0.00192	-0.00218	-0.00220
	(A1 * !A2 * !B2 * !C1 * !X)	0.00211	0.00211	0.00211
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00239	-0.00239	-0.00238
	(!A1 * !A2 * B2 * C1 * !X)	0.00115	0.00115	0.00115
	(!A1 * !A2 * B2 * C1 * !X)	-0.00231	-0.00237	-0.00237
	(!A1 * !A2 * B2 * !C1 * !X)	0.00133	0.00134	0.00133
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00232	-0.00237	-0.00236
	(!A1 * !A2 * !B2 * C1 * !X)	0.00117	0.00118	0.00120
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00239	-0.00239	-0.00237
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00139	0.00139	0.00139
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00241	-0.00240	-0.00240

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)**	-0.00094	-0.00094	-0.00093
	(A2 * B2 * C1 * X)	0.00113	0.00114	0.00113
	(A2 * !B2 * !C1 * !X)	-0.00081	-0.00085	-0.00085
	(A2 * !B2 * !C1 * !X)	0.00121	0.00120	0.00119
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00089	-0.00089	-0.00089
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00118	0.00118	0.00117
	(A1 * !A2 * B2 * C1 * X)	-0.00094	-0.00094	-0.00093
	(A1 * !A2 * B2 * C1 * X)	0.00113	0.00114	0.00113
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00080	-0.00085	-0.00085
	(A1 * !A2 * !B2 * !C1 * !X)	0.00121	0.00120	0.00119
	(!A1 * !A2 * B2 * C1 * !X)	-0.00040	-0.00040	-0.00040
	(!A1 * !A2 * B2 * C1 * !X)	0.00120	0.00121	0.00118
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00050	-0.00050	-0.00050
	(!A1 * !A2 * B2 * !C1 * !X)	0.00117	0.00119	0.00118
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00040	-0.00040	-0.00041
	(!A1 * !A2 * !B2 * C1 * !X)	0.00121	0.00121	0.00120
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00053	-0.00053	-0.00053
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00121	0.00120	0.00119

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	-0.00109	-0.00110	-0.00109
	(A2 * B2 * C1 * X)	0.00111	0.00112	0.00111
	(A2 * !B2 * !C1 * !X)	-0.00091	-0.00097	-0.00096
	(A2 * !B2 * !C1 * !X)	0.00122	0.00121	0.00121
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00101	-0.00102	-0.00102
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00118	0.00119	0.00118
	(A1 * !A2 * B2 * C1 * X)	-0.00109	-0.00109	-0.00109
	(A1 * !A2 * B2 * C1 * X)	0.00110	0.00111	0.00111
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00090	-0.00097	-0.00096
	(A1 * !A2 * !B2 * !C1 * !X)	0.00122	0.00122	0.00120
	(!A1 * !A2 * B2 * C1 * !X)	-0.00044	-0.00045	-0.00045
	(!A1 * !A2 * B2 * C1 * !X)	0.00120	0.00122	0.00119
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00056	-0.00056	-0.00056
	(!A1 * !A2 * B2 * !C1 * !X)	0.00119	0.00121	0.00119
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00045	-0.00045	-0.00045
	(!A1 * !A2 * !B2 * C1 * !X)	0.00123	0.00123	0.00121
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00059	-0.00059	-0.00059
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00123	0.00122	0.00121

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	-0.00234	-0.00236	-0.00234
	(A2 * B2 * C1 * X)	0.00218	0.00221	0.00220
	(A2 * !B2 * !C1 * !X)	-0.00201	-0.00212	-0.00211
	(A2 * !B2 * !C1 * !X)	0.00242	0.00242	0.00239
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00218	-0.00220	-0.00219
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00233	0.00236	0.00235
	(A1 * !A2 * B2 * C1 * X)	-0.00234	-0.00236	-0.00234
	(A1 * !A2 * B2 * C1 * X)	0.00218	0.00221	0.00220
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00199	-0.00211	-0.00211
	(A1 * !A2 * !B2 * !C1 * !X)	0.00242	0.00242	0.00239
	(!A1 * !A2 * B2 * C1 * !X)	-0.00111	-0.00112	-0.00114
	(!A1 * !A2 * B2 * C1 * !X)	0.00241	0.00243	0.00237
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00133	-0.00134	-0.00133
	(!A1 * !A2 * B2 * !C1 * !X)	0.00236	0.00239	0.00236
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00114	-0.00115	-0.00115
	(!A1 * !A2 * !B2 * C1 * !X)	0.00245	0.00248	0.00241
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00139	-0.00139	-0.00139
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00245	0.00248	0.00241

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)**	0.00116	0.00116	0.00116
	(A2 * B1 * C1 * X)	-0.00062	-0.00061	-0.00061
	(A2 * B1 * !C1 * !X)	0.00100	0.00101	0.00100
	(A2 * B1 * !C1 * !X)	-0.00117	-0.00118	-0.00118
	(A2 * !B1 * !C1 * !X)	0.00095	0.00096	0.00095
	(A2 * !B1 * !C1 * !X)	-0.00119	-0.00120	-0.00119
	(A1 * !A2 * B1 * C1 * X)	0.00115	0.00116	0.00116
	(A1 * !A2 * B1 * C1 * X)	-0.00061	-0.00061	-0.00061
	(A1 * !A2 * B1 * !C1 * !X)	0.00099	0.00100	0.00100
	(A1 * !A2 * B1 * !C1 * !X)	-0.00116	-0.00118	-0.00118
	(A1 * !A2 * !B1 * !C1 * !X)	0.00095	0.00096	0.00095
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00119	-0.00120	-0.00119
	(!A1 * !A2 * B1 * C1 * !X)	0.00048	0.00047	0.00047
	(!A1 * !A2 * B1 * C1 * !X)	-0.00117	-0.00119	-0.00118
	(!A1 * !A2 * B1 * !C1 * !X)	0.00058	0.00057	0.00057
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00117	-0.00119	-0.00118
	(!A1 * !A2 * !B1 * C1 * !X)	0.00048	0.00049	0.00050
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00120	-0.00120	-0.00118
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00059	0.00060	0.00060
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00119	-0.00121	-0.00120

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	0.00126	0.00125	0.00125
	(A2 * B1 * C1 * X)	-0.00060	-0.00059	-0.00059
	(A2 * B1 * !C1 * !X)	0.00109	0.00110	0.00110
	(A2 * B1 * !C1 * !X)	-0.00114	-0.00115	-0.00115
	(A2 * !B1 * !C1 * !X)	0.00104	0.00105	0.00104
	(A2 * !B1 * !C1 * !X)	-0.00118	-0.00118	-0.00118
	(A1 * !A2 * B1 * C1 * X)	0.00124	0.00125	0.00125
	(A1 * !A2 * B1 * C1 * X)	-0.00059	-0.00060	-0.00059
	(A1 * !A2 * B1 * !C1 * !X)	0.00109	0.00110	0.00110
	(A1 * !A2 * B1 * !C1 * !X)	-0.00114	-0.00116	-0.00115
	(A1 * !A2 * !B1 * !C1 * !X)	0.00104	0.00105	0.00104
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00118	-0.00118	-0.00118
	(!A1 * !A2 * B1 * C1 * !X)	0.00050	0.00050	0.00049
	(!A1 * !A2 * B1 * C1 * !X)	-0.00115	-0.00117	-0.00116
	(!A1 * !A2 * B1 * !C1 * !X)	0.00061	0.00061	0.00060
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00116	-0.00117	-0.00116
	(!A1 * !A2 * !B1 * C1 * !X)	0.00051	0.00052	0.00052
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00117	-0.00118	-0.00116
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00063	0.00064	0.00063
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00118	-0.00119	-0.00119

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	0.00196	0.00197	0.00197
	(A2 * B1 * C1 * X)	-0.00119	-0.00119	-0.00119
	(A2 * B1 * !C1 * !X)	0.00171	0.00173	0.00171
	(A2 * B1 * !C1 * !X)	-0.00222	-0.00227	-0.00226
	(A2 * !B1 * !C1 * !X)	0.00163	0.00163	0.00162
	(A2 * !B1 * !C1 * !X)	-0.00232	-0.00231	-0.00231
	(A1 * !A2 * B1 * C1 * X)	0.00196	0.00197	0.00197
	(A1 * !A2 * B1 * C1 * X)	-0.00119	-0.00119	-0.00119
	(A1 * !A2 * B1 * !C1 * !X)	0.00171	0.00173	0.00171
	(A1 * !A2 * B1 * !C1 * !X)	-0.00222	-0.00227	-0.00226
	(A1 * !A2 * !B1 * !C1 * !X)	0.00163	0.00163	0.00162
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00232	-0.00232	-0.00231
	(!A1 * !A2 * B1 * C1 * !X)	0.00072	0.00072	0.00072
	(!A1 * !A2 * B1 * C1 * !X)	-0.00223	-0.00229	-0.00227
	(!A1 * !A2 * B1 * !C1 * !X)	0.00090	0.00091	0.00090
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00224	-0.00230	-0.00228
	(!A1 * !A2 * !B1 * C1 * !X)	0.00073	0.00074	0.00077
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00230	-0.00230	-0.00229
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00095	0.00096	0.00095
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00232	-0.00234	-0.00233

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)**	-0.00111	-0.00111	-0.00115
	(A2 * B1 * C1 * X)	0.00066	0.00066	0.00062
	(A2 * B1 * !C1 * !X)	-0.00100	-0.00100	-0.00099
	(A2 * B1 * !C1 * !X)	0.00118	0.00118	0.00118
	(A2 * !B1 * !C1 * !X)	-0.00091	-0.00096	-0.00095
	(A2 * !B1 * !C1 * !X)	0.00121	0.00121	0.00120
	(A1 * !A2 * B1 * C1 * X)	-0.00111	-0.00111	-0.00115
	(A1 * !A2 * B1 * C1 * X)	0.00066	0.00066	0.00062
	(A1 * !A2 * B1 * !C1 * !X)	-0.00099	-0.00100	-0.00099
	(A1 * !A2 * B1 * !C1 * !X)	0.00118	0.00118	0.00118
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00090	-0.00096	-0.00095
	(A1 * !A2 * !B1 * !C1 * !X)	0.00121	0.00121	0.00120
	(!A1 * !A2 * B1 * C1 * !X)	-0.00046	-0.00046	-0.00047
	(!A1 * !A2 * B1 * C1 * !X)	0.00120	0.00121	0.00118
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00058	-0.00057	-0.00057
	(!A1 * !A2 * B1 * !C1 * !X)	0.00119	0.00119	0.00118
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00047	-0.00047	-0.00048
	(!A1 * !A2 * !B1 * C1 * !X)	0.00122	0.00122	0.00120
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00059	-0.00060	-0.00060
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00122	0.00121	0.00120

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	-0.00120	-0.00121	-0.00124
	(A2 * B1 * C1 * X)	0.00064	0.00063	0.00060
	(A2 * B1 * !C1 * !X)	-0.00109	-0.00109	-0.00109
	(A2 * B1 * !C1 * !X)	0.00116	0.00115	0.00115
	(A2 * !B1 * !C1 * !X)	-0.00099	-0.00105	-0.00104
	(A2 * !B1 * !C1 * !X)	0.00119	0.00118	0.00118
	(A1 * !A2 * B1 * C1 * X)	-0.00120	-0.00121	-0.00124
	(A1 * !A2 * B1 * C1 * X)	0.00064	0.00063	0.00060
	(A1 * !A2 * B1 * !C1 * !X)	-0.00109	-0.00110	-0.00109
	(A1 * !A2 * B1 * !C1 * !X)	0.00116	0.00116	0.00115
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00098	-0.00105	-0.00104
	(A1 * !A2 * !B1 * !C1 * !X)	0.00120	0.00119	0.00118
	(!A1 * !A2 * B1 * C1 * !X)	-0.00048	-0.00048	-0.00049
	(!A1 * !A2 * B1 * C1 * !X)	0.00119	0.00119	0.00116
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00061	-0.00061	-0.00060
	(!A1 * !A2 * B1 * !C1 * !X)	0.00117	0.00117	0.00116
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00049	-0.00049	-0.00050
	(!A1 * !A2 * !B1 * C1 * !X)	0.00121	0.00120	0.00119
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00063	-0.00064	-0.00063
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00121	0.00120	0.00119

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	-0.00185	-0.00187	-0.00195
	(A2 * B1 * C1 * X)	0.00127	0.00129	0.00122
	(A2 * B1 * !C1 * !X)	-0.00171	-0.00172	-0.00171
	(A2 * B1 * !C1 * !X)	0.00226	0.00227	0.00226
	(A2 * !B1 * !C1 * !X)	-0.00154	-0.00163	-0.00162
	(A2 * !B1 * !C1 * !X)	0.00234	0.00233	0.00232
	(A1 * !A2 * B1 * C1 * X)	-0.00186	-0.00187	-0.00195
	(A1 * !A2 * B1 * C1 * X)	0.00129	0.00129	0.00122
	(A1 * !A2 * B1 * !C1 * !X)	-0.00171	-0.00172	-0.00171
	(A1 * !A2 * B1 * !C1 * !X)	0.00226	0.00227	0.00226
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00152	-0.00163	-0.00162
	(A1 * !A2 * !B1 * !C1 * !X)	0.00234	0.00234	0.00232
	(!A1 * !A2 * B1 * C1 * !X)	-0.00071	-0.00071	-0.00071
	(!A1 * !A2 * B1 * C1 * !X)	0.00231	0.00230	0.00227
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00090	-0.00091	-0.00090
	(!A1 * !A2 * B1 * !C1 * !X)	0.00229	0.00230	0.00228
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00072	-0.00072	-0.00073
	(!A1 * !A2 * !B1 * C1 * !X)	0.00236	0.00236	0.00233
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00095	-0.00096	-0.00095
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00234	0.00236	0.00233

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)	0.00041	0.00041	0.00038
	(A2 * !B1 * !B2 * !X)	-0.00139	-0.00140	-0.00144
	(!A2 * !B1 * !B2 * !X)	0.00041	0.00041	0.00038
	(!A2 * !B1 * !B2 * !X)	-0.00139	-0.00140	-0.00144
	(!A1 * !A2 * B2 * !X)	0.00041	0.00041	0.00035
	(!A1 * !A2 * B2 * !X)	-0.00130	-0.00131	-0.00143
	(!A1 * !A2 * B1 * !B2 * !X)	0.00042	0.00042	0.00036
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00132	-0.00133	-0.00143
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	0.00047	0.00047	0.00044
	(A2 * !B1 * !B2 * !X)	-0.00140	-0.00140	-0.00145
	(!A2 * !B1 * !B2 * !X)	0.00047	0.00047	0.00044
	(!A2 * !B1 * !B2 * !X)	-0.00140	-0.00140	-0.00145
	(!A1 * !A2 * B2 * !X)	0.00049	0.00049	0.00042
	(!A1 * !A2 * B2 * !X)	-0.00129	-0.00130	-0.00143
	(!A1 * !A2 * B1 * !B2 * !X)	0.00049	0.00049	0.00043
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00131	-0.00132	-0.00143
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	0.00070	0.00070	0.00063
	(A2 * !B1 * !B2 * !X)	-0.00262	-0.00263	-0.00272
	(!A2 * !B1 * !B2 * !X)	0.00070	0.00070	0.00063
	(!A2 * !B1 * !B2 * !X)	-0.00262	-0.00263	-0.00272
	(!A1 * !A2 * B2 * !X)	0.00071	0.00071	0.00059
	(!A1 * !A2 * B2 * !X)	-0.00245	-0.00247	-0.00269
	(!A1 * !A2 * B1 * !B2 * !X)	0.00071	0.00071	0.00060
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00248	-0.00250	-0.00269

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)	-0.00036	-0.00036	-0.00036
	(A2 * !B1 * !B2 * !X)	0.00144	0.00145	0.00145
	(!A2 * !B1 * !B2 * !X)	-0.00036	-0.00036	-0.00036
	(!A2 * !B1 * !B2 * !X)	0.00144	0.00145	0.00145
	(!A1 * !A2 * B2 * !X)	-0.00035	-0.00035	-0.00035
	(!A1 * !A2 * B2 * !X)	0.00144	0.00145	0.00145
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00035	-0.00035	-0.00035
	(!A1 * !A2 * B1 * !B2 * !X)	0.00144	0.00145	0.00145
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	-0.00042	-0.00043	-0.00042
	(A2 * !B1 * !B2 * !X)	0.00145	0.00146	0.00146
	(!A2 * !B1 * !B2 * !X)	-0.00042	-0.00043	-0.00042
	(!A2 * !B1 * !B2 * !X)	0.00145	0.00146	0.00145
	(!A1 * !A2 * B2 * !X)	-0.00042	-0.00041	-0.00041
	(!A1 * !A2 * B2 * !X)	0.00146	0.00146	0.00145
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00041	-0.00042	-0.00041
	(!A1 * !A2 * B1 * !B2 * !X)	0.00145	0.00146	0.00145
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	-0.00061	-0.00061	-0.00060
	(A2 * !B1 * !B2 * !X)	0.00273	0.00274	0.00273
	(!A2 * !B1 * !B2 * !X)	-0.00061	-0.00061	-0.00060
	(!A2 * !B1 * !B2 * !X)	0.00273	0.00274	0.00273
	(!A1 * !A2 * B2 * !X)	-0.00059	-0.00058	-0.00058
	(!A1 * !A2 * B2 * !X)	0.00274	0.00274	0.00273
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00059	-0.00059	-0.00059
	(!A1 * !A2 * B1 * !B2 * !X)	0.00274	0.00274	0.00273

SKY130_FD_SC_HS__O22AIx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o22ai_1	9.59040
sky130_fd_sc_hs__o22ai_2	15.98400
sky130_fd_sc_hs__o22ai_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	B2	Y
sky130_fd_sc_hs__o22ai_1	0.00270	0.00267	0.00276	0.00283	0.37511
sky130_fd_sc_hs__o22ai_2	0.00509	0.00525	0.00525	0.00517	0.67727
sky130_fd_sc_hs__o22ai_4	0.01049	0.01001	0.01091	0.01022	1.24566

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o22ai_1	0.00000	0.01663	0.04886
sky130_fd_sc_hs__o22ai_2	0.00000	0.03326	0.09773
sky130_fd_sc_hs__o22ai_4	0.00000	0.06651	0.19545

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)	0.18561	1.27970	11.89530
	A2->Y (FR)	0.16259	1.23652	11.78970
	B1->Y (FR)	0.11894	1.20956	11.82900
	B2->Y (FR)	0.09875	1.16832	11.72490
sky130_fd_sc_hs__o22ai_2	A1->Y (FR)	0.18245	1.11819	11.69010
	A2->Y (FR)	0.15407	1.07024	11.59130
	B1->Y (FR)	0.11222	1.04338	11.58660
	B2->Y (FR)	0.08088	0.99575	11.48720
sky130_fd_sc_hs__o22ai_4	A1->Y (FR)	0.17264	0.96618	11.29470
	A2->Y (FR)	0.14672	0.93179	11.29470
	B1->Y (FR)	0.10645	0.90383	11.31810
	B2->Y (FR)	0.07902	0.86651	11.27100

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22ai_1	A1->Y (RF)	0.05886	0.51353	4.84760
	A2->Y (RF)	0.05142	0.50114	4.82416
	B1->Y (RF)	0.04732	0.54740	5.35707
	B2->Y (RF)	0.04048	0.52949	5.30280
sky130_fd_sc_hs__o22ai_2	A1->Y (RF)	0.05903	0.46106	4.76437
	A2->Y (RF)	0.04971	0.44580	4.72691
	B1->Y (RF)	0.04654	0.49183	5.33939
	B2->Y (RF)	0.03683	0.46954	5.25090
sky130_fd_sc_hs__o22ai_4	A1->Y (RF)	0.04714	0.38361	4.52776
	A2->Y (RF)	0.04006	0.36696	4.49920
	B1->Y (RF)	0.03532	0.41448	5.16926
	B2->Y (RF)	0.03650	0.42796	5.34510

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.00119	0.00105	0.00114
	A1	0.00640	0.00629	0.00638
	A2	0.00125	0.00117	0.00169
	A2	0.00571	0.00560	0.00615
	B1	-0.00009	-0.00020	-0.00009
	B1	0.00429	0.00417	0.00430
	B2	-0.00006	-0.00009	0.00045
	B2	0.00363	0.00350	0.00412
sky130_fd_sc_hs__o22ai_2	A1	0.00213	0.00185	0.00204
	A1	0.01253	0.01228	0.01242
	A2	0.00210	0.00192	0.00299
	A2	0.01118	0.01105	0.01203
	B1	-0.00037	-0.00055	-0.00032
	B1	0.00841	0.00823	0.00843
	B2	-0.00048	-0.00051	0.00070
	B2	0.00686	0.00681	0.00797
sky130_fd_sc_hs__o22ai_4	A1	0.00327	0.00274	0.00327
	A1	0.02380	0.02329	0.02378
	A2	0.00325	0.00308	0.00543
	A2	0.02088	0.02073	0.02291
	B1	-0.00096	-0.00135	-0.00069
	B1	0.01648	0.01605	0.01671
	B2	-0.00092	-0.00105	0.00165
	B2	0.01365	0.01348	0.01607

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.00692	0.00688	0.00691
	A1	0.00150	0.00141	0.00150
	A2	0.00557	0.00551	0.00567
	A2	0.00087	0.00081	0.00091
	B1	0.00583	0.00572	0.00617
	B1	0.00153	0.00142	0.00160
	B2	0.00460	0.00457	0.00497
	B2	0.00097	0.00091	0.00109
sky130_fd_sc_hs__o22ai_2	A1	0.01417	0.01394	0.01424
	A1	0.00344	0.00320	0.00336
	A2	0.01132	0.01122	0.01139
	A2	0.00180	0.00167	0.00190
	B1	0.01199	0.01177	0.01207
	B1	0.00345	0.00318	0.00355
	B2	0.00891	0.00882	0.00939
	B2	0.00173	0.00161	0.00204
sky130_fd_sc_hs__o22ai_4	A1	0.02675	0.02620	0.02687
	A1	0.00556	0.00503	0.00550
	A2	0.02131	0.02095	0.02186
	A2	0.00288	0.00252	0.00315
	B1	0.02270	0.02216	0.02346
	B1	0.00563	0.00506	0.00595
	B2	0.01729	0.01700	0.01806
	B2	0.00296	0.00265	0.00372

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00125	0.00114	0.00113
	(A2 * B2 * !Y)	-0.00113	-0.00126	-0.00127
	(A2 * B1 * !B2 * !Y)	0.00125	0.00114	0.00113
	(A2 * B1 * !B2 * !Y)	-0.00113	-0.00126	-0.00127
	(A2 * !B1 * !B2 * Y)	0.00113	0.00113	0.00113
	(A2 * !B1 * !B2 * Y)	-0.00124	-0.00127	-0.00126
	(!A2 * !B1 * !B2 * Y)	0.00106	0.00107	0.00106
	(!A2 * !B1 * !B2 * Y)	-0.00128	-0.00129	-0.00128
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00234	0.00212	0.00210
	(A2 * B2 * !Y)	-0.00220	-0.00249	-0.00250
	(A2 * B1 * !B2 * !Y)	0.00234	0.00212	0.00210
	(A2 * B1 * !B2 * !Y)	-0.00220	-0.00249	-0.00250
	(A2 * !B1 * !B2 * Y)	0.00208	0.00210	0.00209
	(A2 * !B1 * !B2 * Y)	-0.00243	-0.00252	-0.00250
	(!A2 * !B1 * !B2 * Y)	0.00196	0.00197	0.00196
	(!A2 * !B1 * !B2 * Y)	-0.00256	-0.00256	-0.00255
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.00477	0.00427	0.00421
	(A2 * B2 * !Y)	-0.00428	-0.00490	-0.00493
	(A2 * B1 * !B2 * !Y)	0.00478	0.00427	0.00421
	(A2 * B1 * !B2 * !Y)	-0.00428	-0.00490	-0.00493
	(A2 * !B1 * !B2 * Y)	0.00408	0.00411	0.00409
	(A2 * !B1 * !B2 * Y)	-0.00493	-0.00506	-0.00504
	(!A2 * !B1 * !B2 * Y)	0.00383	0.00388	0.00384
	(!A2 * !B1 * !B2 * Y)	-0.00514	-0.00518	-0.00515

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00112	-0.00113	-0.00112
	(A2 * B2 * !Y)	0.00126	0.00128	0.00127
	(A2 * B1 * !B2 * !Y)	-0.00112	-0.00113	-0.00112
	(A2 * B1 * !B2 * !Y)	0.00126	0.00128	0.00127
	(A2 * !B1 * !B2 * Y)	-0.00113	-0.00113	-0.00113
	(A2 * !B1 * !B2 * Y)	0.00127	0.00127	0.00126
	(!A2 * !B1 * !B2 * Y)	-0.00101	-0.00107	-0.00106
	(!A2 * !B1 * !B2 * Y)	0.00129	0.00129	0.00128
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00210	-0.00210	-0.00209
	(A2 * B2 * !Y)	0.00249	0.00251	0.00250
	(A2 * B1 * !B2 * !Y)	-0.00210	-0.00210	-0.00209
	(A2 * B1 * !B2 * !Y)	0.00249	0.00251	0.00250
	(A2 * !B1 * !B2 * Y)	-0.00208	-0.00209	-0.00208
	(A2 * !B1 * !B2 * Y)	0.00251	0.00252	0.00250
	(!A2 * !B1 * !B2 * Y)	-0.00186	-0.00197	-0.00196
	(!A2 * !B1 * !B2 * Y)	0.00258	0.00258	0.00256
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00418	-0.00421	-0.00419
	(A2 * B2 * !Y)	0.00489	0.00496	0.00493
	(A2 * B1 * !B2 * !Y)	-0.00418	-0.00421	-0.00419
	(A2 * B1 * !B2 * !Y)	0.00489	0.00496	0.00493
	(A2 * !B1 * !B2 * Y)	-0.00408	-0.00410	-0.00408
	(A2 * !B1 * !B2 * Y)	0.00504	0.00507	0.00504
	(!A2 * !B1 * !B2 * Y)	-0.00360	-0.00385	-0.00384
	(!A2 * !B1 * !B2 * Y)	0.00516	0.00522	0.00517

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	0.00112	0.00112	0.00111
	(A1 * B2 * !Y)	-0.00066	-0.00066	-0.00066
	(A1 * B1 * !B2 * !Y)	0.00112	0.00112	0.00111
	(A1 * B1 * !B2 * !Y)	-0.00066	-0.00066	-0.00066
	(A1 * !B1 * !B2 * Y)	0.00102	0.00103	0.00103
	(A1 * !B1 * !B2 * Y)	-0.00118	-0.00121	-0.00121
	(!A1 * !B1 * !B2 * Y)	0.00096	0.00097	0.00096
	(!A1 * !B1 * !B2 * Y)	-0.00123	-0.00123	-0.00123
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	0.00239	0.00239	0.00239
	(A1 * B2 * !Y)	-0.00131	-0.00130	-0.00130
	(A1 * B1 * !B2 * !Y)	0.00239	0.00240	0.00239
	(A1 * B1 * !B2 * !Y)	-0.00131	-0.00130	-0.00130
	(A1 * !B1 * !B2 * Y)	0.00207	0.00208	0.00208
	(A1 * !B1 * !B2 * Y)	-0.00245	-0.00253	-0.00252
	(!A1 * !B1 * !B2 * Y)	0.00195	0.00197	0.00195
	(!A1 * !B1 * !B2 * Y)	-0.00258	-0.00259	-0.00258
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	0.00438	0.00440	0.00439
	(A1 * B2 * !Y)	-0.00253	-0.00254	-0.00253
	(A1 * B1 * !B2 * !Y)	0.00438	0.00440	0.00439
	(A1 * B1 * !B2 * !Y)	-0.00253	-0.00254	-0.00253
	(A1 * !B1 * !B2 * Y)	0.00403	0.00404	0.00402
	(A1 * !B1 * !B2 * Y)	-0.00467	-0.00475	-0.00474
	(!A1 * !B1 * !B2 * Y)	0.00378	0.00379	0.00376
	(!A1 * !B1 * !B2 * Y)	-0.00489	-0.00489	-0.00487

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	-0.00106	-0.00106	-0.00111
	(A1 * B2 * !Y)	0.00071	0.00070	0.00067
	(A1 * B1 * !B2 * !Y)	-0.00106	-0.00106	-0.00111
	(A1 * B1 * !B2 * !Y)	0.00071	0.00071	0.00067
	(A1 * !B1 * !B2 * Y)	-0.00102	-0.00103	-0.00102
	(A1 * !B1 * !B2 * Y)	0.00121	0.00121	0.00121
	(!A1 * !B1 * !B2 * Y)	-0.00091	-0.00097	-0.00096
	(!A1 * !B1 * !B2 * Y)	0.00123	0.00124	0.00123
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	-0.00223	-0.00224	-0.00237
	(A1 * B2 * !Y)	0.00144	0.00143	0.00134
	(A1 * B1 * !B2 * !Y)	-0.00223	-0.00224	-0.00237
	(A1 * B1 * !B2 * !Y)	0.00144	0.00144	0.00133
	(A1 * !B1 * !B2 * Y)	-0.00207	-0.00208	-0.00208
	(A1 * !B1 * !B2 * Y)	0.00252	0.00253	0.00252
	(!A1 * !B1 * !B2 * Y)	-0.00185	-0.00197	-0.00195
	(!A1 * !B1 * !B2 * Y)	0.00260	0.00261	0.00259
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	-0.00415	-0.00417	-0.00436
	(A1 * B2 * !Y)	0.00274	0.00273	0.00259
	(A1 * B1 * !B2 * !Y)	-0.00416	-0.00418	-0.00436
	(A1 * B1 * !B2 * !Y)	0.00274	0.00274	0.00259
	(A1 * !B1 * !B2 * Y)	-0.00400	-0.00402	-0.00401
	(A1 * !B1 * !B2 * Y)	0.00472	0.00475	0.00474
	(!A1 * !B1 * !B2 * Y)	-0.00355	-0.00379	-0.00376
	(!A1 * !B1 * !B2 * Y)	0.00491	0.00492	0.00489

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00130	0.00118	0.00117
	(A2 * B2 * !Y)	-0.00110	-0.00123	-0.00124
	(A1 * !A2 * B2 * !Y)	0.00130	0.00118	0.00117
	(A1 * !A2 * B2 * !Y)	-0.00110	-0.00123	-0.00124
	(!A1 * !A2 * B2 * Y)	0.00043	0.00043	0.00042
	(!A1 * !A2 * B2 * Y)	-0.00149	-0.00151	-0.00151
	(!A1 * !A2 * !B2 * Y)	0.00049	0.00049	0.00045
	(!A1 * !A2 * !B2 * Y)	-0.00144	-0.00146	-0.00152
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00235	0.00211	0.00208
	(A2 * B2 * !Y)	-0.00222	-0.00253	-0.00253
	(A1 * !A2 * B2 * !Y)	0.00234	0.00211	0.00208
	(A1 * !A2 * B2 * !Y)	-0.00222	-0.00253	-0.00253
	(!A1 * !A2 * B2 * Y)	0.00071	0.00072	0.00071
	(!A1 * !A2 * B2 * Y)	-0.00291	-0.00300	-0.00298
	(!A1 * !A2 * !B2 * Y)	0.00084	0.00085	0.00075
	(!A1 * !A2 * !B2 * Y)	-0.00287	-0.00290	-0.00303
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.00498	0.00450	0.00445
	(A2 * B2 * !Y)	-0.00420	-0.00479	-0.00480
	(A1 * !A2 * B2 * !Y)	0.00498	0.00450	0.00445
	(A1 * !A2 * B2 * !Y)	-0.00420	-0.00479	-0.00480
	(!A1 * !A2 * B2 * Y)	0.00134	0.00135	0.00134
	(!A1 * !A2 * B2 * Y)	-0.00595	-0.00610	-0.00607
	(!A1 * !A2 * !B2 * Y)	0.00156	0.00157	0.00142
	(!A1 * !A2 * !B2 * Y)	-0.00586	-0.00593	-0.00614

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00116	-0.00117	-0.00116
	(A2 * B2 * !Y)	0.00123	0.00124	0.00124
	(A1 * !A2 * B2 * !Y)	-0.00116	-0.00117	-0.00116
	(A1 * !A2 * B2 * !Y)	0.00123	0.00125	0.00124
	(!A1 * !A2 * B2 * Y)	-0.00042	-0.00043	-0.00042
	(!A1 * !A2 * B2 * Y)	0.00150	0.00152	0.00151
	(!A1 * !A2 * !B2 * Y)	-0.00043	-0.00043	-0.00043
	(!A1 * !A2 * !B2 * Y)	0.00153	0.00154	0.00153
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00208	-0.00208	-0.00207
	(A2 * B2 * !Y)	0.00253	0.00254	0.00253
	(A1 * !A2 * B2 * !Y)	-0.00208	-0.00208	-0.00207
	(A1 * !A2 * B2 * !Y)	0.00254	0.00255	0.00253
	(!A1 * !A2 * B2 * Y)	-0.00071	-0.00071	-0.00071
	(!A1 * !A2 * B2 * Y)	0.00299	0.00300	0.00298
	(!A1 * !A2 * !B2 * Y)	-0.00072	-0.00072	-0.00072
	(!A1 * !A2 * !B2 * Y)	0.00304	0.00306	0.00305
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00445	-0.00446	-0.00444
	(A2 * B2 * !Y)	0.00480	0.00482	0.00480
	(A1 * !A2 * B2 * !Y)	-0.00445	-0.00446	-0.00444
	(A1 * !A2 * B2 * !Y)	0.00480	0.00482	0.00480
	(!A1 * !A2 * B2 * Y)	-0.00134	-0.00135	-0.00134
	(!A1 * !A2 * B2 * Y)	0.00608	0.00614	0.00607
	(!A1 * !A2 * !B2 * Y)	-0.00138	-0.00137	-0.00136
	(!A1 * !A2 * !B2 * Y)	0.00619	0.00620	0.00617

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	0.00120	0.00121	0.00120
	(A2 * B1 * !Y)	-0.00063	-0.00064	-0.00063
	(A1 * !A2 * B1 * !Y)	0.00120	0.00120	0.00120
	(A1 * !A2 * B1 * !Y)	-0.00063	-0.00064	-0.00063
	(!A1 * !A2 * B1 * Y)	0.00035	0.00035	0.00035
	(!A1 * !A2 * B1 * Y)	-0.00148	-0.00150	-0.00149
	(!A1 * !A2 * !B1 * Y)	0.00042	0.00041	0.00037
	(!A1 * !A2 * !B1 * Y)	-0.00143	-0.00143	-0.00151
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	0.00227	0.00229	0.00228
	(A2 * B1 * !Y)	-0.00130	-0.00131	-0.00130
	(A1 * !A2 * B1 * !Y)	0.00229	0.00229	0.00228
	(A1 * !A2 * B1 * !Y)	-0.00132	-0.00131	-0.00130
	(!A1 * !A2 * B1 * Y)	0.00067	0.00068	0.00067
	(!A1 * !A2 * B1 * Y)	-0.00286	-0.00293	-0.00292
	(!A1 * !A2 * !B1 * Y)	0.00081	0.00080	0.00072
	(!A1 * !A2 * !B1 * Y)	-0.00283	-0.00284	-0.00298
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	0.00446	0.00446	0.00445
	(A2 * B1 * !Y)	-0.00258	-0.00256	-0.00255
	(A1 * !A2 * B1 * !Y)	0.00444	0.00446	0.00445
	(A1 * !A2 * B1 * !Y)	-0.00256	-0.00257	-0.00255
	(!A1 * !A2 * B1 * Y)	0.00126	0.00127	0.00127
	(!A1 * !A2 * B1 * Y)	-0.00563	-0.00576	-0.00573
	(!A1 * !A2 * !B1 * Y)	0.00148	0.00148	0.00134
	(!A1 * !A2 * !B1 * Y)	-0.00555	-0.00558	-0.00584

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	-0.00115	-0.00116	-0.00120
	(A2 * B1 * !Y)	0.00067	0.00068	0.00065
	(A1 * !A2 * B1 * !Y)	-0.00116	-0.00116	-0.00119
	(A1 * !A2 * B1 * !Y)	0.00068	0.00068	0.00065
	(!A1 * !A2 * B1 * Y)	-0.00035	-0.00035	-0.00035
	(!A1 * !A2 * B1 * Y)	0.00150	0.00150	0.00149
	(!A1 * !A2 * !B1 * Y)	-0.00036	-0.00036	-0.00035
	(!A1 * !A2 * !B1 * Y)	0.00152	0.00153	0.00152
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	-0.00212	-0.00214	-0.00226
	(A2 * B1 * !Y)	0.00144	0.00144	0.00134
	(A1 * !A2 * B1 * !Y)	-0.00212	-0.00215	-0.00226
	(A1 * !A2 * B1 * !Y)	0.00143	0.00144	0.00134
	(!A1 * !A2 * B1 * Y)	-0.00067	-0.00068	-0.00067
	(!A1 * !A2 * B1 * Y)	0.00293	0.00293	0.00292
	(!A1 * !A2 * !B1 * Y)	-0.00068	-0.00069	-0.00068
	(!A1 * !A2 * !B1 * Y)	0.00298	0.00301	0.00300
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	-0.00420	-0.00425	-0.00442
	(A2 * B1 * !Y)	0.00275	0.00277	0.00261
	(A1 * !A2 * B1 * !Y)	-0.00420	-0.00425	-0.00442
	(A1 * !A2 * B1 * !Y)	0.00274	0.00277	0.00261
	(!A1 * !A2 * B1 * Y)	-0.00126	-0.00127	-0.00127
	(!A1 * !A2 * B1 * Y)	0.00575	0.00576	0.00573
	(!A1 * !A2 * !B1 * Y)	-0.00128	-0.00130	-0.00128
	(!A1 * !A2 * !B1 * Y)	0.00584	0.00590	0.00587

SKY130_FD_SC_HS__O22Ax

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o22a_1	12.78720
sky130_fd_sc_hs__o22a_2	12.78720
sky130_fd_sc_hs__o22a_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	B2	X
sky130_fd_sc_hs__o22a_1	0.00233	0.00244	0.00252	0.00270	0.79574
sky130_fd_sc_hs__o22a_2	0.00250	0.00256	0.00267	0.00265	1.53485
sky130_fd_sc_hs__o22a_4	0.00488	0.00453	0.00503	0.00476	2.89130

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o22a_1	0.00000	0.04938	0.12518
sky130_fd_sc_hs__o22a_2	0.00000	0.06153	0.12939
sky130_fd_sc_hs__o22a_4	0.00000	0.12488	0.25878

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)	0.12350	0.81209	7.19152
	A2->X (RR)	0.11512	0.79077	7.12725
	B1->X (RR)	0.11342	0.79937	7.02337
	B2->X (RR)	0.10423	0.77196	6.97051
sky130_fd_sc_hs__o22a_2	A1->X (RR)	0.12569	0.71935	7.31634
	A2->X (RR)	0.11686	0.70186	7.25872
	B1->X (RR)	0.11564	0.71712	7.19123
	B2->X (RR)	0.10534	0.69007	7.12708
sky130_fd_sc_hs__o22a_4	A1->X (RR)	0.13180	0.64981	7.36347
	A2->X (RR)	0.12706	0.63150	7.30133
	B1->X (RR)	0.12044	0.64174	7.22647
	B2->X (RR)	0.11696	0.63256	7.20390

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22a_1	A1->X (FF)	0.23350	0.83756	5.13547
	A2->X (FF)	0.21400	0.80195	4.85649
	B1->X (FF)	0.18374	0.76679	4.88814
	B2->X (FF)	0.16327	0.73029	4.66548
sky130_fd_sc_hs__o22a_2	A1->X (FF)	0.29198	0.88797	5.43727
	A2->X (FF)	0.27112	0.85326	5.17089
	B1->X (FF)	0.23647	0.81660	5.19856
	B2->X (FF)	0.21435	0.78300	4.94935
sky130_fd_sc_hs__o22a_4	A1->X (FF)	0.27905	0.84177	5.38181
	A2->X (FF)	0.25337	0.80063	5.10851
	B1->X (FF)	0.23373	0.78327	5.19108
	B2->X (FF)	0.20970	0.74255	4.93548

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.00824	0.00826	0.00927
	A1	0.00342	0.00345	0.00452
	A2	0.00713	0.00708	0.00903
	A2	0.00286	0.00281	0.00480
	B1	0.00728	0.00727	0.00912
	B1	0.00338	0.00337	0.00525
	B2	0.00649	0.00644	0.00928
	B2	0.00293	0.00288	0.00573
sky130_fd_sc_hs__o22a_2	A1	0.01026	0.01054	0.01150
	A1	0.00521	0.00549	0.00655
	A2	0.00909	0.00932	0.01106
	A2	0.00463	0.00486	0.00672
	B1	0.00923	0.00940	0.01112
	B1	0.00524	0.00542	0.00725
	B2	0.00810	0.00824	0.01071
	B2	0.00470	0.00485	0.00740
sky130_fd_sc_hs__o22a_4	A1	0.02034	0.02081	0.02297
	A1	0.01072	0.01120	0.01349
	A2	0.01765	0.01808	0.02176
	A2	0.00940	0.00985	0.01372
	B1	0.01852	0.01891	0.02270
	B1	0.01072	0.01111	0.01511
	B2	0.01589	0.01618	0.02144
	B2	0.00944	0.00973	0.01519

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.00293	0.00297	0.00446
	A1	0.00767	0.00774	0.00897
	A2	0.00293	0.00315	0.00657
	A2	0.00711	0.00731	0.01050
	B1	0.00221	0.00218	0.00397
	B1	0.00616	0.00610	0.00760
	B2	0.00184	0.00198	0.00591
	B2	0.00545	0.00556	0.00910
sky130_fd_sc_hs__o22a_2	A1	0.00461	0.00493	0.00727
	A1	0.00958	0.00989	0.01116
	A2	0.00465	0.00509	0.00914
	A2	0.00900	0.00943	0.01263
	B1	0.00369	0.00384	0.00579
	B1	0.00772	0.00790	0.00930
	B2	0.00365	0.00392	0.00785
	B2	0.00710	0.00742	0.01085
sky130_fd_sc_hs__o22a_4	A1	0.00893	0.00954	0.01333
	A1	0.01818	0.01885	0.02133
	A2	0.00899	0.00986	0.01629
	A2	0.01707	0.01796	0.02433
	B1	0.00737	0.00785	0.01235
	B1	0.01528	0.01578	0.01852
	B2	0.00769	0.00834	0.01638
	B2	0.01420	0.01489	0.02160

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00104	0.00093	0.00092
	(A2 * B2 * X)	-0.00102	-0.00115	-0.00116
	(A2 * B1 * !B2 * X)	0.00104	0.00093	0.00092
	(A2 * B1 * !B2 * X)	-0.00102	-0.00115	-0.00116
	(A2 * !B1 * !B2 * !X)	0.00091	0.00092	0.00091
	(A2 * !B1 * !B2 * !X)	-0.00114	-0.00116	-0.00116
	(!A2 * !B1 * !B2 * !X)	0.00085	0.00085	0.00085
	(!A2 * !B1 * !B2 * !X)	-0.00118	-0.00118	-0.00118
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00120	0.00109	0.00108
	(A2 * B2 * X)	-0.00101	-0.00114	-0.00115
	(A2 * B1 * !B2 * X)	0.00120	0.00109	0.00108
	(A2 * B1 * !B2 * X)	-0.00101	-0.00114	-0.00115
	(A2 * !B1 * !B2 * !X)	0.00108	0.00108	0.00108
	(A2 * !B1 * !B2 * !X)	-0.00112	-0.00114	-0.00114
	(!A2 * !B1 * !B2 * !X)	0.00102	0.00101	0.00102
	(!A2 * !B1 * !B2 * !X)	-0.00116	-0.00116	-0.00116
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00230	0.00208	0.00206
	(A2 * B2 * X)	-0.00193	-0.00220	-0.00221
	(A2 * B1 * !B2 * X)	0.00230	0.00208	0.00206
	(A2 * B1 * !B2 * X)	-0.00193	-0.00220	-0.00221
	(A2 * !B1 * !B2 * !X)	0.00200	0.00201	0.00200
	(A2 * !B1 * !B2 * !X)	-0.00221	-0.00227	-0.00226
	(!A2 * !B1 * !B2 * !X)	0.00189	0.00189	0.00189
	(!A2 * !B1 * !B2 * !X)	-0.00231	-0.00231	-0.00230

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00091	-0.00091	-0.00091
	(A2 * B2 * X)	0.00116	0.00117	0.00116
	(A2 * B1 * !B2 * X)	-0.00091	-0.00091	-0.00091
	(A2 * B1 * !B2 * X)	0.00116	0.00117	0.00116
	(A2 * !B1 * !B2 * !X)	-0.00091	-0.00092	-0.00091
	(A2 * !B1 * !B2 * !X)	0.00116	0.00117	0.00116
	(!A2 * !B1 * !B2 * !X)	-0.00080	-0.00085	-0.00085
	(!A2 * !B1 * !B2 * !X)	0.00119	0.00119	0.00118
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00107	-0.00107	-0.00107
	(A2 * B2 * X)	0.00114	0.00115	0.00115
	(A2 * B1 * !B2 * X)	-0.00107	-0.00107	-0.00107
	(A2 * B1 * !B2 * X)	0.00115	0.00115	0.00115
	(A2 * !B1 * !B2 * !X)	-0.00108	-0.00108	-0.00107
	(A2 * !B1 * !B2 * !X)	0.00115	0.00115	0.00114
	(!A2 * !B1 * !B2 * !X)	-0.00097	-0.00101	-0.00102
	(!A2 * !B1 * !B2 * !X)	0.00117	0.00117	0.00116
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00204	-0.00206	-0.00204
	(A2 * B2 * X)	0.00219	0.00222	0.00221
	(A2 * B1 * !B2 * X)	-0.00204	-0.00206	-0.00204
	(A2 * B1 * !B2 * X)	0.00219	0.00222	0.00221
	(A2 * !B1 * !B2 * !X)	-0.00199	-0.00201	-0.00200
	(A2 * !B1 * !B2 * !X)	0.00225	0.00228	0.00226
	(!A2 * !B1 * !B2 * !X)	-0.00179	-0.00189	-0.00189
	(!A2 * !B1 * !B2 * !X)	0.00233	0.00234	0.00231

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	0.00102	0.00102	0.00102
	(A1 * B2 * X)	-0.00061	-0.00061	-0.00061
	(A1 * B1 * !B2 * X)	0.00101	0.00102	0.00102
	(A1 * B1 * !B2 * X)	-0.00060	-0.00061	-0.00061
	(A1 * !B1 * !B2 * !X)	0.00089	0.00089	0.00088
	(A1 * !B1 * !B2 * !X)	-0.00114	-0.00115	-0.00115
	(!A1 * !B1 * !B2 * !X)	0.00083	0.00083	0.00082
	(!A1 * !B1 * !B2 * !X)	-0.00118	-0.00118	-0.00117
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	0.00111	0.00111	0.00111
	(A1 * B2 * X)	-0.00062	-0.00062	-0.00061
	(A1 * B1 * !B2 * X)	0.00110	0.00111	0.00111
	(A1 * B1 * !B2 * X)	-0.00061	-0.00062	-0.00061
	(A1 * !B1 * !B2 * !X)	0.00103	0.00104	0.00103
	(A1 * !B1 * !B2 * !X)	-0.00108	-0.00110	-0.00110
	(!A1 * !B1 * !B2 * !X)	0.00097	0.00097	0.00097
	(!A1 * !B1 * !B2 * !X)	-0.00112	-0.00112	-0.00112
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	0.00191	0.00192	0.00192
	(A1 * B2 * X)	-0.00121	-0.00122	-0.00121
	(A1 * B1 * !B2 * X)	0.00192	0.00192	0.00192
	(A1 * B1 * !B2 * X)	-0.00121	-0.00121	-0.00121
	(A1 * !B1 * !B2 * !X)	0.00170	0.00172	0.00171
	(A1 * !B1 * !B2 * !X)	-0.00221	-0.00225	-0.00225
	(!A1 * !B1 * !B2 * !X)	0.00160	0.00161	0.00159
	(!A1 * !B1 * !B2 * !X)	-0.00231	-0.00231	-0.00230

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	-0.00097	-0.00097	-0.00101
	(A1 * B2 * X)	0.00065	0.00065	0.00062
	(A1 * B1 * !B2 * X)	-0.00097	-0.00097	-0.00101
	(A1 * B1 * !B2 * X)	0.00066	0.00065	0.00062
	(A1 * !B1 * !B2 * !X)	-0.00088	-0.00089	-0.00088
	(A1 * !B1 * !B2 * !X)	0.00115	0.00115	0.00115
	(!A1 * !B1 * !B2 * !X)	-0.00077	-0.00083	-0.00082
	(!A1 * !B1 * !B2 * !X)	0.00118	0.00118	0.00118
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	-0.00106	-0.00106	-0.00110
	(A1 * B2 * X)	0.00066	0.00066	0.00063
	(A1 * B1 * !B2 * X)	-0.00106	-0.00106	-0.00110
	(A1 * B1 * !B2 * X)	0.00066	0.00066	0.00063
	(A1 * !B1 * !B2 * !X)	-0.00103	-0.00103	-0.00103
	(A1 * !B1 * !B2 * !X)	0.00110	0.00110	0.00110
	(!A1 * !B1 * !B2 * !X)	-0.00092	-0.00097	-0.00097
	(!A1 * !B1 * !B2 * !X)	0.00113	0.00113	0.00112
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	-0.00181	-0.00181	-0.00191
	(A1 * B2 * X)	0.00131	0.00131	0.00124
	(A1 * B1 * !B2 * X)	-0.00181	-0.00181	-0.00190
	(A1 * B1 * !B2 * X)	0.00132	0.00131	0.00124
	(A1 * !B1 * !B2 * !X)	-0.00170	-0.00171	-0.00170
	(A1 * !B1 * !B2 * !X)	0.00224	0.00225	0.00225
	(!A1 * !B1 * !B2 * !X)	-0.00149	-0.00160	-0.00159
	(!A1 * !B1 * !B2 * !X)	0.00233	0.00232	0.00231

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00111	0.00099	0.00098
	(A2 * B2 * X)	-0.00104	-0.00117	-0.00118
	(A1 * !A2 * B2 * X)	0.00111	0.00099	0.00098
	(A1 * !A2 * B2 * X)	-0.00104	-0.00117	-0.00118
	(!A1 * !A2 * B2 * !X)	0.00029	0.00029	0.00029
	(!A1 * !A2 * B2 * !X)	-0.00145	-0.00147	-0.00147
	(!A1 * !A2 * !B2 * !X)	0.00034	0.00034	0.00031
	(!A1 * !A2 * !B2 * !X)	-0.00141	-0.00143	-0.00148
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00126	0.00115	0.00113
	(A2 * B2 * X)	-0.00096	-0.00110	-0.00111
	(A1 * !A2 * B2 * X)	0.00126	0.00115	0.00113
	(A1 * !A2 * B2 * X)	-0.00096	-0.00110	-0.00111
	(!A1 * !A2 * B2 * !X)	0.00035	0.00036	0.00035
	(!A1 * !A2 * B2 * !X)	-0.00141	-0.00143	-0.00143
	(!A1 * !A2 * !B2 * !X)	0.00042	0.00042	0.00037
	(!A1 * !A2 * !B2 * !X)	-0.00136	-0.00138	-0.00144
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00241	0.00219	0.00216
	(A2 * B2 * X)	-0.00192	-0.00219	-0.00220
	(A1 * !A2 * B2 * X)	0.00241	0.00219	0.00217
	(A1 * !A2 * B2 * X)	-0.00191	-0.00219	-0.00220
	(!A1 * !A2 * B2 * !X)	0.00091	0.00091	0.00091
	(!A1 * !A2 * B2 * !X)	-0.00259	-0.00265	-0.00264
	(!A1 * !A2 * !B2 * !X)	0.00100	0.00100	0.00094
	(!A1 * !A2 * !B2 * !X)	-0.00255	-0.00256	-0.00268

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00097	-0.00097	-0.00097
	(A2 * B2 * X)	0.00117	0.00119	0.00118
	(A1 * !A2 * B2 * X)	-0.00097	-0.00097	-0.00097
	(A1 * !A2 * B2 * X)	0.00118	0.00119	0.00119
	(!A1 * !A2 * B2 * !X)	-0.00029	-0.00029	-0.00029
	(!A1 * !A2 * B2 * !X)	0.00147	0.00147	0.00147
	(!A1 * !A2 * !B2 * !X)	-0.00030	-0.00030	-0.00030
	(!A1 * !A2 * !B2 * !X)	0.00149	0.00149	0.00149
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00112	-0.00113	-0.00112
	(A2 * B2 * X)	0.00110	0.00112	0.00111
	(A1 * !A2 * B2 * X)	-0.00112	-0.00113	-0.00112
	(A1 * !A2 * B2 * X)	0.00110	0.00111	0.00111
	(!A1 * !A2 * B2 * !X)	-0.00035	-0.00035	-0.00035
	(!A1 * !A2 * B2 * !X)	0.00143	0.00143	0.00143
	(!A1 * !A2 * !B2 * !X)	-0.00036	-0.00036	-0.00036
	(!A1 * !A2 * !B2 * !X)	0.00145	0.00145	0.00145
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00215	-0.00216	-0.00215
	(A2 * B2 * X)	0.00218	0.00221	0.00220
	(A1 * !A2 * B2 * X)	-0.00215	-0.00215	-0.00215
	(A1 * !A2 * B2 * X)	0.00218	0.00219	0.00220
	(!A1 * !A2 * B2 * !X)	-0.00091	-0.00091	-0.00091
	(!A1 * !A2 * B2 * !X)	0.00265	0.00268	0.00264
	(!A1 * !A2 * !B2 * !X)	-0.00091	-0.00093	-0.00091
	(!A1 * !A2 * !B2 * !X)	0.00268	0.00273	0.00269

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	0.00132	0.00133	0.00132
	(A2 * B1 * X)	-0.00059	-0.00059	-0.00059
	(A1 * !A2 * B1 * X)	0.00132	0.00133	0.00132
	(A1 * !A2 * B1 * X)	-0.00059	-0.00060	-0.00059
	(!A1 * !A2 * B1 * !X)	0.00059	0.00059	0.00059
	(!A1 * !A2 * B1 * !X)	-0.00129	-0.00131	-0.00130
	(!A1 * !A2 * !B1 * !X)	0.00064	0.00064	0.00061
	(!A1 * !A2 * !B1 * !X)	-0.00125	-0.00126	-0.00132
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	0.00115	0.00114	0.00114
	(A2 * B1 * X)	-0.00061	-0.00060	-0.00060
	(A1 * !A2 * B1 * X)	0.00113	0.00114	0.00114
	(A1 * !A2 * B1 * X)	-0.00059	-0.00060	-0.00060
	(!A1 * !A2 * B1 * !X)	0.00035	0.00035	0.00034
	(!A1 * !A2 * B1 * !X)	-0.00134	-0.00135	-0.00135
	(!A1 * !A2 * !B1 * !X)	0.00041	0.00041	0.00036
	(!A1 * !A2 * !B1 * !X)	-0.00129	-0.00129	-0.00136
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	0.00202	0.00203	0.00203
	(A2 * B1 * X)	-0.00120	-0.00121	-0.00120
	(A1 * !A2 * B1 * X)	0.00202	0.00204	0.00203
	(A1 * !A2 * B1 * X)	-0.00120	-0.00121	-0.00120
	(!A1 * !A2 * B1 * !X)	0.00055	0.00055	0.00055
	(!A1 * !A2 * B1 * !X)	-0.00264	-0.00270	-0.00268
	(!A1 * !A2 * !B1 * !X)	0.00064	0.00064	0.00058
	(!A1 * !A2 * !B1 * !X)	-0.00262	-0.00262	-0.00273

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	-0.00128	-0.00129	-0.00132
	(A2 * B1 * X)	0.00063	0.00063	0.00060
	(A1 * !A2 * B1 * X)	-0.00128	-0.00129	-0.00132
	(A1 * !A2 * B1 * X)	0.00063	0.00063	0.00060
	(!A1 * !A2 * B1 * !X)	-0.00059	-0.00058	-0.00059
	(!A1 * !A2 * B1 * !X)	0.00131	0.00131	0.00130
	(!A1 * !A2 * !B1 * !X)	-0.00059	-0.00060	-0.00059
	(!A1 * !A2 * !B1 * !X)	0.00132	0.00134	0.00133
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	-0.00110	-0.00110	-0.00113
	(A2 * B1 * X)	0.00064	0.00064	0.00061
	(A1 * !A2 * B1 * X)	-0.00110	-0.00110	-0.00113
	(A1 * !A2 * B1 * X)	0.00064	0.00064	0.00061
	(!A1 * !A2 * B1 * !X)	-0.00034	-0.00035	-0.00034
	(!A1 * !A2 * B1 * !X)	0.00134	0.00135	0.00135
	(!A1 * !A2 * !B1 * !X)	-0.00035	-0.00035	-0.00035
	(!A1 * !A2 * !B1 * !X)	0.00138	0.00137	0.00137
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	-0.00192	-0.00193	-0.00202
	(A2 * B1 * X)	0.00131	0.00130	0.00123
	(A1 * !A2 * B1 * X)	-0.00192	-0.00193	-0.00202
	(A1 * !A2 * B1 * X)	0.00131	0.00131	0.00123
	(!A1 * !A2 * B1 * !X)	-0.00054	-0.00055	-0.00055
	(!A1 * !A2 * B1 * !X)	0.00269	0.00270	0.00268
	(!A1 * !A2 * !B1 * !X)	-0.00056	-0.00056	-0.00055
	(!A1 * !A2 * !B1 * !X)	0.00275	0.00275	0.00275

SKY130_FD_SC_HS__O2BB2AIx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o2bb2ai_1	11.18880
sky130_fd_sc_hs__o2bb2ai_2	19.18080
sky130_fd_sc_hs__o2bb2ai_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1_N	A2_N	B1	B2	Y
sky130_fd_sc_hs__o2bb2ai_1	0.00219	0.00238	0.00264	0.00281	0.37711
sky130_fd_sc_hs__o2bb2ai_2	0.00498	0.00438	0.00538	0.00500	0.72836
sky130_fd_sc_hs__o2bb2ai_4	0.01022	0.01032	0.01001	0.01032	1.29435

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2bb2ai_1	0.00000	0.08536	0.24395
sky130_fd_sc_hs__o2bb2ai_2	0.00000	0.17072	0.48789
sky130_fd_sc_hs__o2bb2ai_4	0.00000	0.14812	0.21231

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)	0.09662	0.56733	3.52785
	A2_N->Y (RR)	0.09304	0.55384	3.41863
	B1->Y (FR)	0.14345	1.23962	11.88840
	B2->Y (FR)	0.12440	1.19648	11.78570
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (RR)	0.08633	0.47731	3.42706
	A2_N->Y (RR)	0.08034	0.45858	3.33847
	B1->Y (FR)	0.12769	1.05273	11.69210
	B2->Y (FR)	0.10302	1.01081	11.58250
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (RR)	0.09334	0.42331	3.18426
	A2_N->Y (RR)	0.08715	0.41301	3.08565
	B1->Y (FR)	0.13558	0.94256	11.57640
	B2->Y (FR)	0.10937	0.90719	11.56000

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)	0.13611	0.66606	3.92638
	A2_N->Y (FF)	0.12198	0.63134	3.84083
	B1->Y (RF)	0.04886	0.49624	4.84389
	B2->Y (RF)	0.04103	0.48082	4.79137
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (FF)	0.11822	0.60059	3.85495
	A2_N->Y (FF)	0.11034	0.57472	3.79579
	B1->Y (RF)	0.04290	0.42702	4.72210
	B2->Y (RF)	0.03732	0.41708	4.73517
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (FF)	0.12531	0.60292	4.20822
	A2_N->Y (FF)	0.10834	0.56080	4.06657
	B1->Y (RF)	0.04815	0.38785	4.70158
	B2->Y (RF)	0.03791	0.36755	4.61623

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	0.00548	0.00552	0.00900
	A1_N	0.00321	0.00324	0.00682
	A2_N	0.00495	0.00493	0.00882
	A2_N	0.00321	0.00319	0.00716
	B1	0.00041	0.00031	0.00041
	B1	0.00386	0.00376	0.00387
	B2	0.00041	0.00036	0.00088
	B2	0.00331	0.00318	0.00379
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.01011	0.01008	0.01661
	A1_N	0.00513	0.00511	0.01183
	A2_N	0.00867	0.00870	0.01768
	A2_N	0.00534	0.00536	0.01461
	B1	0.00058	0.00037	0.00059
	B1	0.00747	0.00729	0.00750
	B2	0.00060	0.00060	0.00159
	B2	0.00590	0.00592	0.00691
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.02212	0.02207	0.03101
	A1_N	0.01122	0.01118	0.02020
	A2_N	0.01912	0.01892	0.03094
	A2_N	0.01118	0.01100	0.02302
	B1	0.00085	0.00044	0.00090
	B1	0.01460	0.01408	0.01465
	B2	0.00074	0.00066	0.00276
	B2	0.01192	0.01186	0.01390

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	A1_N	0.00415	0.00432	0.00897
	A1_N	0.00641	0.00658	0.01116
	A2_N	0.00389	0.00401	0.00878
	A2_N	0.00566	0.00578	0.01055
	B1	0.00505	0.00496	0.00508
	B1	0.00158	0.00149	0.00161
	B2	0.00385	0.00381	0.00394
	B2	0.00090	0.00086	0.00098
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.00758	0.00793	0.01704
	A1_N	0.01253	0.01285	0.02186
	A2_N	0.00710	0.00742	0.01707
	A2_N	0.01047	0.01077	0.02044
	B1	0.00983	0.00961	0.01007
	B1	0.00292	0.00268	0.00293
	B2	0.00699	0.00692	0.00722
	B2	0.00158	0.00150	0.00182
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.01648	0.01642	0.02939
	A1_N	0.02729	0.02719	0.04006
	A2_N	0.01468	0.01470	0.02862
	A2_N	0.02282	0.02276	0.03638
	B1	0.02038	0.01990	0.02080
	B1	0.00658	0.00605	0.00661
	B2	0.01467	0.01445	0.01523
	B2	0.00329	0.00303	0.00382

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)	0.00463	0.00450	0.00815
	(A2_N * !B1 * !B2 * Y)	0.00160	0.00146	0.00512
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00088	0.00090	0.00089
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00099	-0.00100	-0.00099
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.00905	0.00870	0.01611
	(A2_N * !B1 * !B2 * Y)	0.00253	0.00216	0.00958
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00172	0.00173	0.00173
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00239	-0.00240	-0.00240
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.01983	0.01901	0.02842
	(A2_N * !B1 * !B2 * Y)	0.00578	0.00492	0.01436
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00388	0.00388	0.00389
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00507	-0.00508	-0.00508

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)	0.00040	0.00049	0.00508
	(A2_N * !B1 * !B2 * Y)	0.00346	0.00356	0.00812
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00083	-0.00089	-0.00089
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00103	0.00101	0.00099
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.00064	0.00086	0.00991
	(A2_N * !B1 * !B2 * Y)	0.00723	0.00745	0.01643
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00164	-0.00173	-0.00173
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00247	0.00243	0.00240
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.00161	0.00146	0.01404
	(A2_N * !B1 * !B2 * Y)	0.01576	0.01564	0.02807
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00366	-0.00388	-0.00389
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00520	0.00516	0.00510

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)	0.00416	0.00403	0.00853
	(A1_N * !B1 * !B2 * Y)	0.00161	0.00146	0.00597
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00033	0.00033	0.00032
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00123	-0.00124	-0.00125
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	0.00771	0.00748	0.01652
	(A1_N * !B1 * !B2 * Y)	0.00275	0.00250	0.01157
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00063	0.00063	0.00060
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00230	-0.00232	-0.00235
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	0.01711	0.01641	0.02868
	(A1_N * !B1 * !B2 * Y)	0.00572	0.00497	0.01726
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00144	0.00145	0.00136
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00586	-0.00592	-0.00602

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)	0.00014	0.00020	0.00511
	(A1_N * !B1 * !B2 * Y)	0.00272	0.00278	0.00768
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00031	-0.00032	-0.00031
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00125	0.00126	0.00125
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	0.00010	0.00025	0.00995
	(A1_N * !B1 * !B2 * Y)	0.00509	0.00524	0.01495
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00059	-0.00059	-0.00058
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00237	0.00237	0.00236
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	-0.00025	-0.00049	0.01323
	(A1_N * !B1 * !B2 * Y)	0.01126	0.01098	0.02466
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00131	-0.00133	-0.00131
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00600	0.00608	0.00604

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)	0.00108	0.00108	0.00108
	(A1_N * A2_N * B2 * Y)	-0.00123	-0.00126	-0.00126
	(A1_N * A2_N * !B2 * Y)	0.00103	0.00104	0.00104
	(A1_N * A2_N * !B2 * Y)	-0.00127	-0.00127	-0.00127
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00121	0.00109	0.00108
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00112	-0.00125	-0.00125
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	0.00214	0.00215	0.00214
	(A1_N * A2_N * B2 * Y)	-0.00251	-0.00257	-0.00256
	(A1_N * A2_N * !B2 * Y)	0.00206	0.00207	0.00206
	(A1_N * A2_N * !B2 * Y)	-0.00260	-0.00261	-0.00260
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00243	0.00219	0.00217
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00225	-0.00253	-0.00254
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	0.00414	0.00416	0.00413
	(A1_N * A2_N * B2 * Y)	-0.00487	-0.00501	-0.00498
	(A1_N * A2_N * !B2 * Y)	0.00394	0.00397	0.00395
	(A1_N * A2_N * !B2 * Y)	-0.00508	-0.00510	-0.00509
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00472	0.00419	0.00413
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00437	-0.00498	-0.00500

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)	-0.00107	-0.00107	-0.00107
	(A1_N * A2_N * B2 * Y)	0.00126	0.00126	0.00126
	(A1_N * A2_N * !B2 * Y)	-0.00099	-0.00103	-0.00104
	(A1_N * A2_N * !B2 * Y)	0.00128	0.00129	0.00128
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00107	-0.00108	-0.00107
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00125	0.00126	0.00125
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	-0.00212	-0.00214	-0.00213
	(A1_N * A2_N * B2 * Y)	0.00255	0.00259	0.00256
	(A1_N * A2_N * !B2 * Y)	-0.00198	-0.00206	-0.00206
	(A1_N * A2_N * !B2 * Y)	0.00261	0.00263	0.00262
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00216	-0.00217	-0.00215
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00254	0.00255	0.00254
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	-0.00410	-0.00414	-0.00412
	(A1_N * A2_N * B2 * Y)	0.00495	0.00502	0.00498
	(A1_N * A2_N * !B2 * Y)	-0.00378	-0.00397	-0.00395
	(A1_N * A2_N * !B2 * Y)	0.00513	0.00515	0.00511
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00412	-0.00413	-0.00410
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00499	0.00502	0.00500

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)	0.00113	0.00113	0.00112
	(A1_N * A2_N * B1 * Y)	-0.00125	-0.00127	-0.00126
	(A1_N * A2_N * !B1 * Y)	0.00107	0.00108	0.00107
	(A1_N * A2_N * !B1 * Y)	-0.00128	-0.00129	-0.00128
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00120	0.00120	0.00120
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00072	-0.00072	-0.00072
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	0.00199	0.00201	0.00199
	(A1_N * A2_N * B1 * Y)	-0.00232	-0.00240	-0.00238
	(A1_N * A2_N * !B1 * Y)	0.00191	0.00193	0.00192
	(A1_N * A2_N * !B1 * Y)	-0.00242	-0.00244	-0.00243
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00217	0.00217	0.00217
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00127	-0.00128	-0.00127
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	0.00412	0.00417	0.00413
	(A1_N * A2_N * B1 * Y)	-0.00490	-0.00505	-0.00502
	(A1_N * A2_N * !B1 * Y)	0.00392	0.00398	0.00394
	(A1_N * A2_N * !B1 * Y)	-0.00512	-0.00516	-0.00513
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00468	0.00470	0.00469
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00261	-0.00262	-0.00261

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)	-0.00111	-0.00112	-0.00111
	(A1_N * A2_N * B1 * Y)	0.00126	0.00127	0.00126
	(A1_N * A2_N * !B1 * Y)	-0.00103	-0.00108	-0.00107
	(A1_N * A2_N * !B1 * Y)	0.00129	0.00130	0.00129
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00115	-0.00115	-0.00119
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00077	0.00076	0.00073
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	-0.00198	-0.00199	-0.00198
	(A1_N * A2_N * B1 * Y)	0.00237	0.00240	0.00238
	(A1_N * A2_N * !B1 * Y)	-0.00184	-0.00192	-0.00192
	(A1_N * A2_N * !B1 * Y)	0.00243	0.00245	0.00244
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00203	-0.00206	-0.00215
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00137	0.00138	0.00130
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	-0.00411	-0.00414	-0.00412
	(A1_N * A2_N * B1 * Y)	0.00500	0.00505	0.00502
	(A1_N * A2_N * !B1 * Y)	-0.00377	-0.00396	-0.00394
	(A1_N * A2_N * !B1 * Y)	0.00516	0.00517	0.00515
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00440	-0.00444	-0.00465
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00284	0.00285	0.00268

SKY130_FD_SC_HS__O2BB2Ax

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o2bb2a_1	14.38560
sky130_fd_sc_hs__o2bb2a_2	14.38560
sky130_fd_sc_hs__o2bb2a_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1_N	A2_N	B1	B2	X
sky130_fd_sc_hs__o2bb2a_1	0.00218	0.00233	0.00234	0.00254	0.77023
sky130_fd_sc_hs__o2bb2a_2	0.00219	0.00242	0.00250	0.00260	1.45224
sky130_fd_sc_hs__o2bb2a_4	0.00217	0.00235	0.00467	0.00462	2.92453

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2bb2a_1	0.00000	0.16214	0.26979
sky130_fd_sc_hs__o2bb2a_2	0.00000	0.14115	0.29281
sky130_fd_sc_hs__o2bb2a_4	0.00000	0.28774	0.38318

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)	0.19645	1.02233	8.58759
	A2_N->X (FR)	0.18261	0.98675	8.47102
	B1->X (RR)	0.11635	0.79192	7.08613
	B2->X (RR)	0.10559	0.76830	7.02669
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (FR)	0.21336	0.94167	8.66582
	A2_N->X (FR)	0.19741	0.90627	8.54806
	B1->X (RR)	0.12078	0.70263	7.20499
	B2->X (RR)	0.10886	0.68234	7.14815
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (FR)	0.24853	0.91323	8.89305
	A2_N->X (FR)	0.23356	0.88366	8.78262
	B1->X (RR)	0.13646	0.63655	7.30956
	B2->X (RR)	0.12135	0.60868	7.22785

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)	0.15414	0.48793	2.43183
	A2_N->X (RF)	0.15086	0.47439	2.34457
	B1->X (FF)	0.22170	0.79326	4.91684
	B2->X (FF)	0.20454	0.75713	4.60607
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (RF)	0.17890	0.48805	2.41212
	A2_N->X (RF)	0.17589	0.47579	2.32274
	B1->X (FF)	0.28200	0.84994	5.17580
	B2->X (FF)	0.26335	0.81741	4.87760
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (RF)	0.19712	0.51682	2.73557
	A2_N->X (RF)	0.19389	0.51073	2.65149
	B1->X (FF)	0.28349	0.82419	5.26563
	B2->X (FF)	0.25320	0.77786	4.95350

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	0.00610	0.00633	0.01113
	A1_N	0.00827	0.00851	0.01329
	A2_N	0.00581	0.00605	0.01107
	A2_N	0.00744	0.00767	0.01271
	B1	0.00684	0.00687	0.00806
	B1	0.00362	0.00365	0.00488
	B2	0.00584	0.00577	0.00807
	B2	0.00303	0.00297	0.00530
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.00828	0.00874	0.01343
	A1_N	0.01050	0.01098	0.01572
	A2_N	0.00788	0.00837	0.01331
	A2_N	0.00960	0.01008	0.01513
	B1	0.00908	0.00933	0.01043
	B1	0.00563	0.00589	0.00710
	B2	0.00802	0.00822	0.01021
	B2	0.00505	0.00525	0.00732
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.01591	0.01683	0.02170
	A1_N	0.01731	0.01825	0.02333
	A2_N	0.01559	0.01644	0.02149
	A2_N	0.01645	0.01731	0.02256
	B1	0.01771	0.01818	0.02054
	B1	0.01123	0.01170	0.01424
	B2	0.01483	0.01523	0.01944
	B2	0.00955	0.00998	0.01437

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	A1_N	0.00775	0.00764	0.01123
	A1_N	0.00556	0.00540	0.00899
	A2_N	0.00716	0.00701	0.01156
	A2_N	0.00556	0.00542	0.00990
	B1	0.00287	0.00294	0.00456
	B1	0.00605	0.00614	0.00745
	B2	0.00286	0.00312	0.00664
	B2	0.00561	0.00587	0.00909
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.00968	0.00985	0.01325
	A1_N	0.00744	0.00757	0.01091
	A2_N	0.00913	0.00927	0.01354
	A2_N	0.00743	0.00756	0.01177
	B1	0.00451	0.00481	0.00642
	B1	0.00791	0.00821	0.00953
	B2	0.00450	0.00495	0.00878
	B2	0.00742	0.00793	0.01115
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.01463	0.01537	0.01883
	A1_N	0.01333	0.01403	0.01709
	A2_N	0.01413	0.01477	0.01921
	A2_N	0.01333	0.01395	0.01808
	B1	0.00844	0.00913	0.01306
	B1	0.01492	0.01557	0.01791
	B2	0.00849	0.00897	0.01583
	B2	0.01367	0.01450	0.02092

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)	0.00417	0.00405	0.00783
	(A2_N * !B1 * !B2 * !X)	0.00117	0.00104	0.00482
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00093	0.00094	0.00093
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00096	-0.00097	-0.00096
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00441	0.00428	0.00796
	(A2_N * !B1 * !B2 * !X)	0.00132	0.00118	0.00487
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00098	0.00099	0.00098
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00094	-0.00094	-0.00094
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.00523	0.00509	0.00847
	(A2_N * !B1 * !B2 * !X)	0.00214	0.00199	0.00538
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00097	0.00099	0.00098
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00092	-0.00092	-0.00092

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)	0.00040	0.00051	0.00516
	(A2_N * !B1 * !B2 * !X)	0.00343	0.00355	0.00816
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00088	-0.00093	-0.00093
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00100	0.00098	0.00097
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00041	0.00051	0.00509
	(A2_N * !B1 * !B2 * !X)	0.00353	0.00364	0.00818
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00094	-0.00099	-0.00098
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00098	0.00095	0.00094
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.00081	0.00088	0.00531
	(A2_N * !B1 * !B2 * !X)	0.00394	0.00401	0.00840
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00092	-0.00098	-0.00098
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00096	0.00094	0.00093

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)	0.00373	0.00362	0.00824
	(A1_N * !B1 * !B2 * !X)	0.00127	0.00114	0.00577
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00031	0.00031	0.00030
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00121	-0.00122	-0.00123
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	0.00403	0.00389	0.00840
	(A1_N * !B1 * !B2 * !X)	0.00142	0.00128	0.00580
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00037	0.00037	0.00035
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00123	-0.00124	-0.00125
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.00482	0.00466	0.00885
	(A1_N * !B1 * !B2 * !X)	0.00226	0.00209	0.00629
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00033	0.00033	0.00032
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00120	-0.00121	-0.00122

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)	0.00009	0.00018	0.00518
	(A1_N * !B1 * !B2 * !X)	0.00258	0.00266	0.00766
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00029	-0.00029	-0.00029
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00123	0.00124	0.00124
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	0.00008	0.00013	0.00504
	(A1_N * !B1 * !B2 * !X)	0.00270	0.00276	0.00766
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00035	-0.00035	-0.00034
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00125	0.00127	0.00126
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.00052	0.00053	0.00521
	(A1_N * !B1 * !B2 * !X)	0.00312	0.00313	0.00780
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00032	-0.00031	-0.00031
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00124	0.00123	0.00123

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)	0.00094	0.00094	0.00094
	(A1_N * A2_N * B2 * !X)	-0.00111	-0.00112	-0.00113
	(A1_N * A2_N * !B2 * !X)	0.00090	0.00091	0.00090
	(A1_N * A2_N * !B2 * !X)	-0.00113	-0.00114	-0.00114
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00108	0.00096	0.00094
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00098	-0.00111	-0.00113
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	0.00106	0.00107	0.00106
	(A1_N * A2_N * B2 * !X)	-0.00114	-0.00115	-0.00116
	(A1_N * A2_N * !B2 * !X)	0.00101	0.00103	0.00102
	(A1_N * A2_N * !B2 * !X)	-0.00116	-0.00117	-0.00117
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00119	0.00107	0.00106
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00101	-0.00115	-0.00116
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	0.00189	0.00190	0.00190
	(A1_N * A2_N * B2 * !X)	-0.00224	-0.00231	-0.00230
	(A1_N * A2_N * !B2 * !X)	0.00180	0.00182	0.00181
	(A1_N * A2_N * !B2 * !X)	-0.00234	-0.00236	-0.00235
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00219	0.00193	0.00190
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00198	-0.00228	-0.00231

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)	-0.00093	-0.00094	-0.00093
	(A1_N * A2_N * B2 * !X)	0.00113	0.00114	0.00113
	(A1_N * A2_N * !B2 * !X)	-0.00087	-0.00090	-0.00090
	(A1_N * A2_N * !B2 * !X)	0.00116	0.00115	0.00115
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00093	-0.00094	-0.00093
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00112	0.00114	0.00113
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	-0.00106	-0.00105	-0.00105
	(A1_N * A2_N * B2 * !X)	0.00116	0.00115	0.00116
	(A1_N * A2_N * !B2 * !X)	-0.00098	-0.00102	-0.00102
	(A1_N * A2_N * !B2 * !X)	0.00118	0.00118	0.00118
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00105	-0.00106	-0.00105
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00116	0.00117	0.00116
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	-0.00189	-0.00189	-0.00189
	(A1_N * A2_N * B2 * !X)	0.00231	0.00232	0.00230
	(A1_N * A2_N * !B2 * !X)	-0.00174	-0.00182	-0.00181
	(A1_N * A2_N * !B2 * !X)	0.00240	0.00238	0.00236
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00190	-0.00190	-0.00188
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00232	0.00231	0.00231

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)	0.00100	0.00102	0.00101
	(A1_N * A2_N * B1 * !X)	-0.00113	-0.00115	-0.00115
	(A1_N * A2_N * !B1 * !X)	0.00097	0.00097	0.00096
	(A1_N * A2_N * !B1 * !X)	-0.00116	-0.00117	-0.00116
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00108	0.00108	0.00108
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00067	-0.00066	-0.00066
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	0.00114	0.00115	0.00114
	(A1_N * A2_N * B1 * !X)	-0.00110	-0.00112	-0.00112
	(A1_N * A2_N * !B1 * !X)	0.00109	0.00111	0.00110
	(A1_N * A2_N * !B1 * !X)	-0.00113	-0.00114	-0.00113
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00113	0.00114	0.00114
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00071	-0.00071	-0.00071
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	0.00183	0.00185	0.00183
	(A1_N * A2_N * B1 * !X)	-0.00222	-0.00229	-0.00228
	(A1_N * A2_N * !B1 * !X)	0.00176	0.00177	0.00175
	(A1_N * A2_N * !B1 * !X)	-0.00234	-0.00234	-0.00233
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00200	0.00201	0.00201
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00128	-0.00129	-0.00129

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)	-0.00100	-0.00101	-0.00100
	(A1_N * A2_N * B1 * !X)	0.00115	0.00115	0.00115
	(A1_N * A2_N * !B1 * !X)	-0.00092	-0.00097	-0.00096
	(A1_N * A2_N * !B1 * !X)	0.00117	0.00118	0.00117
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00103	-0.00103	-0.00107
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00071	0.00070	0.00068
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	-0.00114	-0.00114	-0.00113
	(A1_N * A2_N * B1 * !X)	0.00112	0.00113	0.00112
	(A1_N * A2_N * !B1 * !X)	-0.00106	-0.00110	-0.00110
	(A1_N * A2_N * !B1 * !X)	0.00115	0.00114	0.00114
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00109	-0.00109	-0.00113
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00075	0.00075	0.00072
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	-0.00183	-0.00183	-0.00182
	(A1_N * A2_N * B1 * !X)	0.00229	0.00229	0.00228
	(A1_N * A2_N * !B1 * !X)	-0.00169	-0.00176	-0.00175
	(A1_N * A2_N * !B1 * !X)	0.00237	0.00235	0.00234
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00186	-0.00187	-0.00199
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00143	0.00142	0.00132

SKY130_FD_SC_HS__O311AIx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o311ai_1	11.18880
sky130_fd_sc_hs__o311ai_2	19.18080
sky130_fd_sc_hs__o311ai_4	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	C1	Y
sky130_fd_sc_hs__o311ai_1	0.00257	0.00271	0.00264	0.00274	0.00281	0.24014
sky130_fd_sc_hs__o311ai_2	0.00500	0.00514	0.00523	0.00523	0.00532	0.42894
sky130_fd_sc_hs__o311ai_4	0.00985	0.00990	0.01042	0.00796	0.00753	0.81817

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311ai_1	0.00000	0.01446	0.07330
sky130_fd_sc_hs__o311ai_2	0.00000	0.02892	0.14659
sky130_fd_sc_hs__o311ai_4	0.00000	0.03646	0.19545

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)	0.31801	1.51372	11.45950
	A2->Y (FR)	0.30286	1.51202	11.84840
	A3->Y (FR)	0.25070	1.42816	11.55640
	B1->Y (FR)	0.06708	0.73694	7.10793
	C1->Y (FR)	0.05562	0.72462	7.09111
sky130_fd_sc_hs__o311ai_2	A1->Y (FR)	0.34038	1.36566	11.33200
	A2->Y (FR)	0.31398	1.34443	11.70660
	A3->Y (FR)	0.26001	1.26725	11.52020
	B1->Y (FR)	0.06666	0.67922	6.99750
	C1->Y (FR)	0.05254	0.66404	6.99376
sky130_fd_sc_hs__o311ai_4	A1->Y (FR)	0.30416	1.17158	11.14030
	A2->Y (FR)	0.28471	1.16537	11.63120
	A3->Y (FR)	0.22342	1.07981	11.36640
	B1->Y (FR)	0.09154	0.77767	8.76624
	C1->Y (FR)	0.06334	0.75640	8.80959

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311ai_1	A1->Y (RF)	0.07300	0.49162	3.95785
	A2->Y (RF)	0.07324	0.49057	4.00445
	A3->Y (RF)	0.06040	0.46972	3.95572
	B1->Y (RF)	0.06376	0.52717	4.56097
	C1->Y (RF)	0.05479	0.53902	4.74635
sky130_fd_sc_hs__o311ai_2	A1->Y (RF)	0.08249	0.46351	3.98038
	A2->Y (RF)	0.07782	0.44722	3.94397
	A3->Y (RF)	0.06540	0.42713	3.90000
	B1->Y (RF)	0.07244	0.49866	4.57504
	C1->Y (RF)	0.06095	0.52972	5.02980
sky130_fd_sc_hs__o311ai_4	A1->Y (RF)	0.08059	0.40912	3.91462
	A2->Y (RF)	0.07485	0.39330	3.88747
	A3->Y (RF)	0.05967	0.36883	3.83382
	B1->Y (RF)	0.07079	0.48556	5.00671
	C1->Y (RF)	0.05456	0.49746	5.31688

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	A1	0.00094	0.00083	0.00088
	A1	0.00675	0.00665	0.00667
	A2	0.00101	0.00087	0.00098
	A2	0.00619	0.00606	0.00616
	A3	0.00099	0.00091	0.00153
	A3	0.00552	0.00544	0.00604
	B1	0.00013	0.00009	0.00085
	B1	0.00507	0.00500	0.00571
	C1	-0.00030	-0.00034	0.00042
	C1	0.00408	0.00397	0.00476
sky130_fd_sc_hs__o311ai_2	A1	0.00221	0.00193	0.00203
	A1	0.01398	0.01373	0.01377
	A2	0.00223	0.00194	0.00218
	A2	0.01270	0.01242	0.01262
	A3	0.00221	0.00193	0.00323
	A3	0.01140	0.01108	0.01237
	B1	0.00033	0.00020	0.00182
	B1	0.01033	0.01013	0.01165
	C1	-0.00061	-0.00075	0.00089
	C1	0.00807	0.00796	0.00950

sky130_fd_sc_hs__o311ai_4	**A1**	0.00319	0.00278	0.00299
	A1	0.02623	0.02580	0.02601
	A2	0.00331	0.00282	0.00328
	A2	0.02372	0.02311	0.02362
	A3	0.00332	0.00290	0.00519
	A3	0.02134	0.02091	0.02199
	B1	0.00040	-0.00015	0.00162
	B1	0.01768	0.01701	0.01881
	C1	-0.00163	-0.00189	-0.00005
	C1	0.01273	0.01250	0.01435

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311ai_1	**A1**	0.00795	0.00787	0.00794
	A1	0.00206	0.00194	0.00203
	A2	0.00684	0.00677	0.00687
	A2	0.00153	0.00143	0.00152
	A3	0.00549	0.00548	0.00564
	A3	0.00080	0.00076	0.00088
	B1	0.00703	0.00692	0.00700
	B1	0.00216	0.00204	0.00216
	C1	0.00640	0.00629	0.00656
	C1	0.00214	0.00201	0.00225

sky130_fd_sc_hs__o311ai_2	**A1**	0.01627	0.01600	0.01618
	A1	0.00435	0.00404	0.00419
	A2	0.01349	0.01330	0.01351
	A2	0.00272	0.00251	0.00273
	A3	0.01092	0.01082	0.01114
	A3	0.00137	0.00125	0.00153
	B1	0.01419	0.01397	0.01422
	B1	0.00441	0.00414	0.00438
	C1	0.01282	0.01263	0.01311
	C1	0.00438	0.00415	0.00459
sky130_fd_sc_hs__o311ai_4	**A1**	0.02966	0.02908	0.02946
	A1	0.00633	0.00577	0.00618
	A2	0.02485	0.02427	0.02496
	A2	0.00394	0.00337	0.00389
	A3	0.01905	0.01880	0.01982
	A3	0.00036	0.00009	0.00083
	B1	0.02499	0.02476	0.02489
	B1	0.00809	0.00786	0.00806
	C1	0.02197	0.02177	0.02282
	C1	0.00811	0.00786	0.00833

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)**	0.00106	0.00106	0.00106
	(A2 * B1 * !C1 * Y)	-0.00123	-0.00125	-0.00125
	(A2 * A3 * B1 * C1 * !Y)	0.00106	0.00107	0.00106
	(A2 * A3 * B1 * C1 * !Y)	-0.00122	-0.00125	-0.00125
	(A2 * !B1 * Y)	0.00106	0.00106	0.00106
	(A2 * !B1 * Y)	-0.00123	-0.00125	-0.00125
	(A2 * !A3 * B1 * C1 * !Y)	0.00106	0.00107	0.00106
	(A2 * !A3 * B1 * C1 * !Y)	-0.00121	-0.00125	-0.00125
	(!A2 * A3 * B1 * C1 * !Y)	0.00107	0.00107	0.00106
	(!A2 * A3 * B1 * C1 * !Y)	-0.00113	-0.00121	-0.00120
	(!A2 * A3 * B1 * !C1 * Y)	0.00106	0.00107	0.00106
	(!A2 * A3 * B1 * !C1 * Y)	-0.00114	-0.00121	-0.00120
	(!A2 * A3 * !B1 * Y)	0.00106	0.00107	0.00106
	(!A2 * A3 * !B1 * Y)	-0.00114	-0.00121	-0.00120
	(!A2 * !A3 * B1 * !C1 * Y)	0.00098	0.00098	0.00098
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00127	-0.00127	-0.00127
	(!A2 * !A3 * !B1 * C1 * Y)	0.00099	0.00100	0.00100
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00127	-0.00128	-0.00127
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00099	0.00100	0.00099
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00127	-0.00127	-0.00127

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	0.00206	0.00207	0.00207
	(A2 * B1 * !C1 * Y)	-0.00240	-0.00249	-0.00248
	(A2 * A3 * B1 * C1 * !Y)	0.00208	0.00208	0.00207
	(A2 * A3 * B1 * C1 * !Y)	-0.00238	-0.00249	-0.00248
	(A2 * !B1 * Y)	0.00206	0.00207	0.00207
	(A2 * !B1 * Y)	-0.00240	-0.00249	-0.00248
	(A2 * !A3 * B1 * C1 * !Y)	0.00208	0.00208	0.00207
	(A2 * !A3 * B1 * C1 * !Y)	-0.00236	-0.00249	-0.00248
	(!A2 * A3 * B1 * C1 * !Y)	0.00210	0.00208	0.00207
	(!A2 * A3 * B1 * C1 * !Y)	-0.00222	-0.00239	-0.00238
	(!A2 * A3 * B1 * !C1 * Y)	0.00206	0.00207	0.00207
	(!A2 * A3 * B1 * !C1 * Y)	-0.00224	-0.00240	-0.00238
	(!A2 * A3 * !B1 * Y)	0.00206	0.00207	0.00207
	(!A2 * A3 * !B1 * Y)	-0.00224	-0.00240	-0.00238
	(!A2 * !A3 * B1 * !C1 * Y)	0.00189	0.00192	0.00190
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00254	-0.00256	-0.00254
	(!A2 * !A3 * !B1 * C1 * Y)	0.00193	0.00194	0.00192
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00255	-0.00256	-0.00254
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00193	0.00194	0.00192
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00255	-0.00255	-0.00254

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	0.00415	0.00416	0.00413
	(A2 * B1 * !C1 * Y)	-0.00482	-0.00497	-0.00495
	(A2 * A3 * B1 * C1 * !Y)	0.00416	0.00416	0.00413
	(A2 * A3 * B1 * C1 * !Y)	-0.00481	-0.00497	-0.00495
	(A2 * !B1 * Y)	0.00415	0.00416	0.00413
	(A2 * !B1 * Y)	-0.00482	-0.00497	-0.00495
	(A2 * !A3 * B1 * C1 * !Y)	0.00417	0.00416	0.00414
	(A2 * !A3 * B1 * C1 * !Y)	-0.00477	-0.00494	-0.00495
	(!A2 * A3 * B1 * C1 * !Y)	0.00416	0.00415	0.00414
	(!A2 * A3 * B1 * C1 * !Y)	-0.00445	-0.00479	-0.00476
	(!A2 * A3 * B1 * !C1 * Y)	0.00412	0.00414	0.00413
	(!A2 * A3 * B1 * !C1 * Y)	-0.00449	-0.00479	-0.00476
	(!A2 * A3 * !B1 * Y)	0.00412	0.00414	0.00413
	(!A2 * A3 * !B1 * Y)	-0.00449	-0.00479	-0.00476
	(!A2 * !A3 * B1 * !C1 * Y)	0.00378	0.00383	0.00379
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00507	-0.00511	-0.00509
	(!A2 * !A3 * !B1 * C1 * Y)	0.00384	0.00389	0.00385
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00508	-0.00511	-0.00509
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00384	0.00387	0.00385
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00508	-0.00510	-0.00509

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)**	-0.00106	-0.00106	-0.00106
	(A2 * B1 * !C1 * Y)	0.00125	0.00125	0.00125
	(A2 * A3 * B1 * C1 * !Y)	-0.00105	-0.00106	-0.00106
	(A2 * A3 * B1 * C1 * !Y)	0.00125	0.00125	0.00125
	(A2 * !B1 * Y)	-0.00106	-0.00106	-0.00106
	(A2 * !B1 * Y)	0.00125	0.00125	0.00125
	(A2 * !A3 * B1 * C1 * !Y)	-0.00106	-0.00106	-0.00106
	(A2 * !A3 * B1 * C1 * !Y)	0.00125	0.00126	0.00125
	(!A2 * A3 * B1 * C1 * !Y)	-0.00106	-0.00106	-0.00106
	(!A2 * A3 * B1 * C1 * !Y)	0.00121	0.00121	0.00120
	(!A2 * A3 * B1 * !C1 * Y)	-0.00106	-0.00106	-0.00106
	(!A2 * A3 * B1 * !C1 * Y)	0.00121	0.00121	0.00120
	(!A2 * A3 * !B1 * Y)	-0.00106	-0.00106	-0.00106
	(!A2 * A3 * !B1 * Y)	0.00120	0.00121	0.00120
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00092	-0.00098	-0.00098
	(!A2 * !A3 * B1 * !C1 * Y)	0.00128	0.00128	0.00127
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00095	-0.00100	-0.00100
	(!A2 * !A3 * !B1 * C1 * Y)	0.00128	0.00128	0.00128
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00095	-0.00100	-0.00099
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00128	0.00128	0.00128

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	-0.00206	-0.00207	-0.00206
	(A2 * B1 * !C1 * Y)	0.00248	0.00249	0.00248
	(A2 * A3 * B1 * C1 * !Y)	-0.00207	-0.00207	-0.00207
	(A2 * A3 * B1 * C1 * !Y)	0.00248	0.00249	0.00248
	(A2 * !B1 * Y)	-0.00206	-0.00207	-0.00206
	(A2 * !B1 * Y)	0.00249	0.00249	0.00248
	(A2 * !A3 * B1 * C1 * !Y)	-0.00207	-0.00207	-0.00207
	(A2 * !A3 * B1 * C1 * !Y)	0.00248	0.00249	0.00248
	(!A2 * A3 * B1 * C1 * !Y)	-0.00206	-0.00207	-0.00207
	(!A2 * A3 * B1 * C1 * !Y)	0.00236	0.00239	0.00238
	(!A2 * A3 * B1 * !C1 * Y)	-0.00206	-0.00207	-0.00206
	(!A2 * A3 * B1 * !C1 * Y)	0.00237	0.00240	0.00238
	(!A2 * A3 * !B1 * Y)	-0.00206	-0.00207	-0.00206
	(!A2 * A3 * !B1 * Y)	0.00238	0.00240	0.00238
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00175	-0.00192	-0.00190
	(!A2 * !A3 * B1 * !C1 * Y)	0.00255	0.00257	0.00255
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00181	-0.00194	-0.00192
	(!A2 * !A3 * !B1 * C1 * Y)	0.00256	0.00257	0.00255
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00182	-0.00194	-0.00192
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00256	0.00255	0.00255

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	-0.00414	-0.00414	-0.00413
	(A2 * B1 * !C1 * Y)	0.00496	0.00497	0.00495
	(A2 * A3 * B1 * C1 * !Y)	-0.00413	-0.00414	-0.00413
	(A2 * A3 * B1 * C1 * !Y)	0.00496	0.00497	0.00495
	(A2 * !B1 * Y)	-0.00414	-0.00414	-0.00413
	(A2 * !B1 * Y)	0.00496	0.00497	0.00495
	(A2 * !A3 * B1 * C1 * !Y)	-0.00411	-0.00412	-0.00413
	(A2 * !A3 * B1 * C1 * !Y)	0.00491	0.00494	0.00495
	(!A2 * A3 * B1 * C1 * !Y)	-0.00412	-0.00414	-0.00413
	(!A2 * A3 * B1 * C1 * !Y)	0.00475	0.00479	0.00476
	(!A2 * A3 * B1 * !C1 * Y)	-0.00412	-0.00414	-0.00412
	(!A2 * A3 * B1 * !C1 * Y)	0.00475	0.00479	0.00476
	(!A2 * A3 * !B1 * Y)	-0.00412	-0.00414	-0.00412
	(!A2 * A3 * !B1 * Y)	0.00475	0.00479	0.00476
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00355	-0.00383	-0.00379
	(!A2 * !A3 * B1 * !C1 * Y)	0.00511	0.00513	0.00510
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00364	-0.00387	-0.00385
	(!A2 * !A3 * !B1 * C1 * Y)	0.00509	0.00512	0.00510
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00364	-0.00387	-0.00385
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00508	0.00512	0.00510

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)**	0.00111	0.00111	0.00107
	(A1 * A3 * B1 * C1 * !Y)	-0.00084	-0.00084	-0.00084
	(A1 * A3 * B1 * !C1 * Y)	0.00101	0.00101	0.00101
	(A1 * A3 * B1 * !C1 * Y)	-0.00095	-0.00095	-0.00095
	(A1 * A3 * !B1 * Y)	0.00101	0.00101	0.00101
	(A1 * A3 * !B1 * Y)	-0.00095	-0.00095	-0.00095
	(A1 * !A3 * B1 * C1 * !Y)	0.00107	0.00106	0.00106
	(A1 * !A3 * B1 * C1 * !Y)	-0.00074	-0.00073	-0.00073
	(A1 * !A3 * B1 * !C1 * Y)	0.00101	0.00101	0.00101
	(A1 * !A3 * B1 * !C1 * Y)	-0.00126	-0.00127	-0.00127
	(A1 * !A3 * !B1 * C1 * Y)	0.00101	0.00101	0.00101
	(A1 * !A3 * !B1 * C1 * Y)	-0.00126	-0.00127	-0.00127
	(A1 * !A3 * !B1 * !C1 * Y)	0.00101	0.00101	0.00101
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00126	-0.00127	-0.00127
	(!A1 * A3 * B1 * C1 * !Y)	0.00123	0.00107	0.00105
	(!A1 * A3 * B1 * C1 * !Y)	-0.00104	-0.00123	-0.00123
	(!A1 * A3 * B1 * !C1 * Y)	0.00101	0.00102	0.00101
	(!A1 * A3 * B1 * !C1 * Y)	-0.00125	-0.00127	-0.00127
	(!A1 * A3 * !B1 * Y)	0.00101	0.00102	0.00101
	(!A1 * A3 * !B1 * Y)	-0.00125	-0.00127	-0.00127
	(!A1 * !A3 * B1 * !C1 * Y)	0.00092	0.00093	0.00093
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00129	-0.00130	-0.00129
	(!A1 * !A3 * !B1 * C1 * Y)	0.00094	0.00094	0.00094
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00130	-0.00130	-0.00129
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00094	0.00094	0.00094
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00130	-0.00130	-0.00129

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00220	0.00219	0.00214
	(A1 * A3 * B1 * C1 * !Y)	-0.00175	-0.00176	-0.00175
	(A1 * A3 * B1 * !C1 * Y)	0.00208	0.00208	0.00208
	(A1 * A3 * B1 * !C1 * Y)	-0.00190	-0.00191	-0.00190
	(A1 * A3 * !B1 * Y)	0.00208	0.00208	0.00208
	(A1 * A3 * !B1 * Y)	-0.00190	-0.00191	-0.00190
	(A1 * !A3 * B1 * C1 * !Y)	0.00210	0.00211	0.00210
	(A1 * !A3 * B1 * C1 * !Y)	-0.00151	-0.00152	-0.00152
	(A1 * !A3 * B1 * !C1 * Y)	0.00207	0.00210	0.00208
	(A1 * !A3 * B1 * !C1 * Y)	-0.00244	-0.00250	-0.00251
	(A1 * !A3 * !B1 * C1 * Y)	0.00207	0.00210	0.00208
	(A1 * !A3 * !B1 * C1 * Y)	-0.00244	-0.00252	-0.00251
	(A1 * !A3 * !B1 * !C1 * Y)	0.00207	0.00208	0.00208
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00244	-0.00252	-0.00251
	(!A1 * A3 * B1 * C1 * !Y)	0.00243	0.00212	0.00209
	(!A1 * A3 * B1 * C1 * !Y)	-0.00219	-0.00254	-0.00254
	(!A1 * A3 * B1 * !C1 * Y)	0.00210	0.00210	0.00208
	(!A1 * A3 * B1 * !C1 * Y)	-0.00251	-0.00255	-0.00254
	(!A1 * A3 * !B1 * Y)	0.00210	0.00210	0.00208
	(!A1 * A3 * !B1 * Y)	-0.00251	-0.00255	-0.00254
	(!A1 * !A3 * B1 * !C1 * Y)	0.00189	0.00190	0.00190
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00259	-0.00259	-0.00259
	(!A1 * !A3 * !B1 * C1 * Y)	0.00193	0.00193	0.00192
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00260	-0.00259	-0.00259
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00193	0.00193	0.00192
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00260	-0.00260	-0.00259

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	0.00430	0.00432	0.00422
	(A1 * A3 * B1 * C1 * !Y)	-0.00334	-0.00337	-0.00336
	(A1 * A3 * B1 * !C1 * Y)	0.00409	0.00410	0.00409
	(A1 * A3 * B1 * !C1 * Y)	-0.00371	-0.00373	-0.00371
	(A1 * A3 * !B1 * Y)	0.00412	0.00410	0.00409
	(A1 * A3 * !B1 * Y)	-0.00371	-0.00373	-0.00371
	(A1 * !A3 * B1 * C1 * !Y)	0.00415	0.00417	0.00415
	(A1 * !A3 * B1 * C1 * !Y)	-0.00292	-0.00293	-0.00293
	(A1 * !A3 * B1 * !C1 * Y)	0.00408	0.00410	0.00408
	(A1 * !A3 * B1 * !C1 * Y)	-0.00484	-0.00494	-0.00492
	(A1 * !A3 * !B1 * C1 * Y)	0.00408	0.00410	0.00408
	(A1 * !A3 * !B1 * C1 * Y)	-0.00484	-0.00494	-0.00492
	(A1 * !A3 * !B1 * !C1 * Y)	0.00409	0.00410	0.00408
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00484	-0.00495	-0.00493
	(!A1 * A3 * B1 * C1 * !Y)	0.00480	0.00420	0.00414
	(!A1 * A3 * B1 * C1 * !Y)	-0.00419	-0.00495	-0.00494
	(!A1 * A3 * B1 * !C1 * Y)	0.00409	0.00412	0.00408
	(!A1 * A3 * B1 * !C1 * Y)	-0.00489	-0.00502	-0.00499
	(!A1 * A3 * !B1 * Y)	0.00409	0.00412	0.00408
	(!A1 * A3 * !B1 * Y)	-0.00489	-0.00502	-0.00499
	(!A1 * !A3 * B1 * !C1 * Y)	0.00373	0.00375	0.00372
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00511	-0.00512	-0.00510
	(!A1 * !A3 * !B1 * C1 * Y)	0.00378	0.00382	0.00378
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00511	-0.00512	-0.00510
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00378	0.00381	0.00378
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00511	-0.00512	-0.00510

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)**	-0.00105	-0.00106	-0.00105
	(A1 * A3 * B1 * C1 * !Y)	0.00084	0.00084	0.00084
	(A1 * A3 * B1 * !C1 * Y)	-0.00100	-0.00101	-0.00100
	(A1 * A3 * B1 * !C1 * Y)	0.00095	0.00095	0.00095
	(A1 * A3 * !B1 * Y)	-0.00100	-0.00101	-0.00100
	(A1 * A3 * !B1 * Y)	0.00095	0.00095	0.00095
	(A1 * !A3 * B1 * C1 * !Y)	-0.00104	-0.00104	-0.00103
	(A1 * !A3 * B1 * C1 * !Y)	0.00075	0.00075	0.00076
	(A1 * !A3 * B1 * !C1 * Y)	-0.00101	-0.00101	-0.00101
	(A1 * !A3 * B1 * !C1 * Y)	0.00127	0.00127	0.00127
	(A1 * !A3 * !B1 * C1 * Y)	-0.00100	-0.00101	-0.00101
	(A1 * !A3 * !B1 * C1 * Y)	0.00126	0.00127	0.00127
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00100	-0.00101	-0.00101
	(A1 * !A3 * !B1 * !C1 * Y)	0.00126	0.00127	0.00127
	(!A1 * A3 * B1 * C1 * !Y)	-0.00104	-0.00105	-0.00104
	(!A1 * A3 * B1 * C1 * !Y)	0.00122	0.00123	0.00123
	(!A1 * A3 * B1 * !C1 * Y)	-0.00101	-0.00101	-0.00100
	(!A1 * A3 * B1 * !C1 * Y)	0.00127	0.00127	0.00127
	(!A1 * A3 * !B1 * Y)	-0.00100	-0.00101	-0.00100
	(!A1 * A3 * !B1 * Y)	0.00126	0.00127	0.00127
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00086	-0.00093	-0.00093
	(!A1 * !A3 * B1 * !C1 * Y)	0.00129	0.00130	0.00130
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00089	-0.00094	-0.00094
	(!A1 * !A3 * !B1 * C1 * Y)	0.00130	0.00130	0.00130
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00089	-0.00094	-0.00094
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00130	0.00130	0.00130

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00211	-0.00211	-0.00211
	(A1 * A3 * B1 * C1 * !Y)	0.00175	0.00176	0.00175
	(A1 * A3 * B1 * !C1 * Y)	-0.00207	-0.00208	-0.00208
	(A1 * A3 * B1 * !C1 * Y)	0.00190	0.00191	0.00190
	(A1 * A3 * !B1 * Y)	-0.00208	-0.00208	-0.00208
	(A1 * A3 * !B1 * Y)	0.00190	0.00191	0.00190
	(A1 * !A3 * B1 * C1 * !Y)	-0.00206	-0.00206	-0.00205
	(A1 * !A3 * B1 * C1 * !Y)	0.00158	0.00157	0.00158
	(A1 * !A3 * B1 * !C1 * Y)	-0.00207	-0.00208	-0.00208
	(A1 * !A3 * B1 * !C1 * Y)	0.00251	0.00250	0.00251
	(A1 * !A3 * !B1 * C1 * Y)	-0.00207	-0.00209	-0.00208
	(A1 * !A3 * !B1 * C1 * Y)	0.00249	0.00252	0.00251
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00207	-0.00208	-0.00208
	(A1 * !A3 * !B1 * !C1 * Y)	0.00250	0.00252	0.00251
	(!A1 * A3 * B1 * C1 * !Y)	-0.00208	-0.00209	-0.00208
	(!A1 * A3 * B1 * C1 * !Y)	0.00252	0.00254	0.00254
	(!A1 * A3 * B1 * !C1 * Y)	-0.00209	-0.00209	-0.00208
	(!A1 * A3 * B1 * !C1 * Y)	0.00255	0.00255	0.00254
	(!A1 * A3 * !B1 * Y)	-0.00207	-0.00209	-0.00208
	(!A1 * A3 * !B1 * Y)	0.00253	0.00255	0.00254
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00175	-0.00190	-0.00190
	(!A1 * !A3 * B1 * !C1 * Y)	0.00259	0.00261	0.00260
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00182	-0.00193	-0.00192
	(!A1 * !A3 * !B1 * C1 * Y)	0.00261	0.00261	0.00260
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00182	-0.00193	-0.00192
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00261	0.00261	0.00260

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00414	-0.00416	-0.00416
	(A1 * A3 * B1 * C1 * !Y)	0.00334	0.00337	0.00336
	(A1 * A3 * B1 * !C1 * Y)	-0.00407	-0.00409	-0.00408
	(A1 * A3 * B1 * !C1 * Y)	0.00371	0.00373	0.00371
	(A1 * A3 * !B1 * Y)	-0.00408	-0.00409	-0.00408
	(A1 * A3 * !B1 * Y)	0.00371	0.00373	0.00371
	(A1 * !A3 * B1 * C1 * !Y)	-0.00409	-0.00409	-0.00405
	(A1 * !A3 * B1 * C1 * !Y)	0.00301	0.00300	0.00304
	(A1 * !A3 * B1 * !C1 * Y)	-0.00408	-0.00409	-0.00408
	(A1 * !A3 * B1 * !C1 * Y)	0.00494	0.00494	0.00492
	(A1 * !A3 * !B1 * C1 * Y)	-0.00407	-0.00409	-0.00408
	(A1 * !A3 * !B1 * C1 * Y)	0.00490	0.00494	0.00492
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00407	-0.00409	-0.00408
	(A1 * !A3 * !B1 * !C1 * Y)	0.00491	0.00495	0.00493
	(!A1 * A3 * B1 * C1 * !Y)	-0.00411	-0.00414	-0.00412
	(!A1 * A3 * B1 * C1 * !Y)	0.00491	0.00495	0.00494
	(!A1 * A3 * B1 * !C1 * Y)	-0.00405	-0.00408	-0.00407
	(!A1 * A3 * B1 * !C1 * Y)	0.00496	0.00502	0.00499
	(!A1 * A3 * !B1 * Y)	-0.00406	-0.00408	-0.00407
	(!A1 * A3 * !B1 * Y)	0.00498	0.00502	0.00499
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00347	-0.00375	-0.00372
	(!A1 * !A3 * B1 * !C1 * Y)	0.00511	0.00512	0.00511
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00359	-0.00382	-0.00378
	(!A1 * !A3 * !B1 * C1 * Y)	0.00513	0.00512	0.00511
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00360	-0.00381	-0.00378
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00513	0.00512	0.00511

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)**	0.00114	0.00113	0.00113
	(A2 * B1 * C1 * !Y)	-0.00064	-0.00064	-0.00064
	(A2 * B1 * !C1 * Y)	0.00102	0.00104	0.00103
	(A2 * B1 * !C1 * Y)	-0.00117	-0.00121	-0.00121
	(A2 * !B1 * C1 * Y)	0.00102	0.00104	0.00103
	(A2 * !B1 * C1 * Y)	-0.00117	-0.00121	-0.00121
	(A2 * !B1 * !C1 * Y)	0.00104	0.00103	0.00103
	(A2 * !B1 * !C1 * Y)	-0.00118	-0.00121	-0.00121
	(A1 * !A2 * B1 * C1 * !Y)	0.00114	0.00113	0.00113
	(A1 * !A2 * B1 * C1 * !Y)	-0.00064	-0.00064	-0.00064
	(A1 * !A2 * B1 * !C1 * Y)	0.00103	0.00103	0.00103
	(A1 * !A2 * B1 * !C1 * Y)	-0.00107	-0.00115	-0.00114
	(A1 * !A2 * !B1 * C1 * Y)	0.00103	0.00103	0.00103
	(A1 * !A2 * !B1 * C1 * Y)	-0.00108	-0.00115	-0.00114
	(A1 * !A2 * !B1 * !C1 * Y)	0.00103	0.00103	0.00103
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00108	-0.00116	-0.00115
	(!A1 * !A2 * B1 * !C1 * Y)	0.00095	0.00095	0.00095
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00123	-0.00123	-0.00123
	(!A1 * !A2 * !B1 * C1 * Y)	0.00096	0.00096	0.00096
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00123	-0.00123	-0.00123
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00097	0.00097	0.00096
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00123	-0.00123	-0.00123

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	0.00233	0.00234	0.00233
	(A2 * B1 * C1 * !Y)	-0.00131	-0.00131	-0.00131
	(A2 * B1 * !C1 * Y)	0.00205	0.00205	0.00205
	(A2 * B1 * !C1 * Y)	-0.00244	-0.00252	-0.00251
	(A2 * !B1 * C1 * Y)	0.00205	0.00208	0.00205
	(A2 * !B1 * C1 * Y)	-0.00245	-0.00253	-0.00251
	(A2 * !B1 * !C1 * Y)	0.00205	0.00207	0.00205
	(A2 * !B1 * !C1 * Y)	-0.00245	-0.00253	-0.00252
	(A1 * !A2 * B1 * C1 * !Y)	0.00233	0.00234	0.00233
	(A1 * !A2 * B1 * C1 * !Y)	-0.00131	-0.00132	-0.00131
	(A1 * !A2 * B1 * !C1 * Y)	0.00205	0.00207	0.00205
	(A1 * !A2 * B1 * !C1 * Y)	-0.00227	-0.00238	-0.00239
	(A1 * !A2 * !B1 * C1 * Y)	0.00205	0.00207	0.00205
	(A1 * !A2 * !B1 * C1 * Y)	-0.00227	-0.00237	-0.00239
	(A1 * !A2 * !B1 * !C1 * Y)	0.00206	0.00207	0.00205
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00229	-0.00242	-0.00240
	(!A1 * !A2 * B1 * !C1 * Y)	0.00188	0.00189	0.00188
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00256	-0.00257	-0.00256
	(!A1 * !A2 * !B1 * C1 * Y)	0.00192	0.00192	0.00191
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00257	-0.00257	-0.00256
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00192	0.00192	0.00191
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00257	-0.00257	-0.00256

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	0.00473	0.00476	0.00474
	(A2 * B1 * C1 * !Y)	-0.00261	-0.00262	-0.00261
	(A2 * B1 * !C1 * Y)	0.00398	0.00396	0.00394
	(A2 * B1 * !C1 * Y)	-0.00514	-0.00527	-0.00525
	(A2 * !B1 * C1 * Y)	0.00398	0.00396	0.00394
	(A2 * !B1 * C1 * Y)	-0.00514	-0.00526	-0.00525
	(A2 * !B1 * !C1 * Y)	0.00392	0.00398	0.00394
	(A2 * !B1 * !C1 * Y)	-0.00509	-0.00528	-0.00526
	(A1 * !A2 * B1 * C1 * !Y)	0.00474	0.00476	0.00474
	(A1 * !A2 * B1 * C1 * !Y)	-0.00261	-0.00262	-0.00260
	(A1 * !A2 * B1 * !C1 * Y)	0.00393	0.00398	0.00394
	(A1 * !A2 * B1 * !C1 * Y)	-0.00468	-0.00493	-0.00491
	(A1 * !A2 * !B1 * C1 * Y)	0.00393	0.00398	0.00394
	(A1 * !A2 * !B1 * C1 * Y)	-0.00468	-0.00493	-0.00492
	(A1 * !A2 * !B1 * !C1 * Y)	0.00393	0.00398	0.00394
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00470	-0.00500	-0.00497
	(!A1 * !A2 * B1 * !C1 * Y)	0.00360	0.00364	0.00362
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00536	-0.00539	-0.00537
	(!A1 * !A2 * !B1 * C1 * Y)	0.00367	0.00368	0.00367
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00538	-0.00538	-0.00537
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00368	0.00367	0.00367
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00538	-0.00538	-0.00537

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)**	-0.00107	-0.00108	-0.00112
	(A2 * B1 * C1 * !Y)	0.00069	0.00069	0.00065
	(A2 * B1 * !C1 * Y)	-0.00102	-0.00103	-0.00103
	(A2 * B1 * !C1 * Y)	0.00121	0.00121	0.00121
	(A2 * !B1 * C1 * Y)	-0.00102	-0.00103	-0.00103
	(A2 * !B1 * C1 * Y)	0.00121	0.00121	0.00121
	(A2 * !B1 * !C1 * Y)	-0.00103	-0.00103	-0.00103
	(A2 * !B1 * !C1 * Y)	0.00121	0.00121	0.00121
	(A1 * !A2 * B1 * C1 * !Y)	-0.00101	-0.00101	-0.00111
	(A1 * !A2 * B1 * C1 * !Y)	0.00072	0.00072	0.00065
	(A1 * !A2 * B1 * !C1 * Y)	-0.00103	-0.00103	-0.00103
	(A1 * !A2 * B1 * !C1 * Y)	0.00114	0.00115	0.00114
	(A1 * !A2 * !B1 * C1 * Y)	-0.00103	-0.00103	-0.00103
	(A1 * !A2 * !B1 * C1 * Y)	0.00115	0.00115	0.00114
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00103	-0.00103	-0.00103
	(A1 * !A2 * !B1 * !C1 * Y)	0.00115	0.00116	0.00115
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00088	-0.00095	-0.00095
	(!A1 * !A2 * B1 * !C1 * Y)	0.00124	0.00124	0.00123
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00091	-0.00096	-0.00096
	(!A1 * !A2 * !B1 * C1 * Y)	0.00123	0.00124	0.00123
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00091	-0.00097	-0.00096
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00123	0.00124	0.00123

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	-0.00221	-0.00222	-0.00231
	(A2 * B1 * C1 * !Y)	0.00143	0.00142	0.00134
	(A2 * B1 * !C1 * Y)	-0.00205	-0.00205	-0.00205
	(A2 * B1 * !C1 * Y)	0.00251	0.00253	0.00251
	(A2 * !B1 * C1 * Y)	-0.00205	-0.00206	-0.00205
	(A2 * !B1 * C1 * Y)	0.00251	0.00253	0.00251
	(A2 * !B1 * !C1 * Y)	-0.00205	-0.00206	-0.00205
	(A2 * !B1 * !C1 * Y)	0.00252	0.00253	0.00252
	(A1 * !A2 * B1 * C1 * !Y)	-0.00202	-0.00203	-0.00227
	(A1 * !A2 * B1 * C1 * !Y)	0.00154	0.00154	0.00136
	(A1 * !A2 * B1 * !C1 * Y)	-0.00205	-0.00205	-0.00205
	(A1 * !A2 * B1 * !C1 * Y)	0.00238	0.00238	0.00239
	(A1 * !A2 * !B1 * C1 * Y)	-0.00205	-0.00204	-0.00205
	(A1 * !A2 * !B1 * C1 * Y)	0.00238	0.00237	0.00239
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00205	-0.00206	-0.00205
	(A1 * !A2 * !B1 * !C1 * Y)	0.00240	0.00242	0.00240
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00173	-0.00189	-0.00188
	(!A1 * !A2 * B1 * !C1 * Y)	0.00257	0.00258	0.00257
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00180	-0.00192	-0.00191
	(!A1 * !A2 * !B1 * C1 * Y)	0.00258	0.00257	0.00257
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00180	-0.00192	-0.00191
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00258	0.00258	0.00257

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	-0.00445	-0.00448	-0.00470
	(A2 * B1 * C1 * !Y)	0.00287	0.00287	0.00268
	(A2 * B1 * !C1 * Y)	-0.00394	-0.00395	-0.00393
	(A2 * B1 * !C1 * Y)	0.00525	0.00527	0.00525
	(A2 * !B1 * C1 * Y)	-0.00394	-0.00394	-0.00393
	(A2 * !B1 * C1 * Y)	0.00526	0.00526	0.00525
	(A2 * !B1 * !C1 * Y)	-0.00392	-0.00394	-0.00393
	(A2 * !B1 * !C1 * Y)	0.00527	0.00528	0.00526
	(A1 * !A2 * B1 * C1 * !Y)	-0.00415	-0.00418	-0.00464
	(A1 * !A2 * B1 * C1 * !Y)	0.00304	0.00303	0.00269
	(A1 * !A2 * B1 * !C1 * Y)	-0.00393	-0.00395	-0.00393
	(A1 * !A2 * B1 * !C1 * Y)	0.00492	0.00493	0.00491
	(A1 * !A2 * !B1 * C1 * Y)	-0.00393	-0.00395	-0.00393
	(A1 * !A2 * !B1 * C1 * Y)	0.00490	0.00493	0.00492
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00392	-0.00395	-0.00393
	(A1 * !A2 * !B1 * !C1 * Y)	0.00495	0.00500	0.00497
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00337	-0.00364	-0.00362
	(!A1 * !A2 * B1 * !C1 * Y)	0.00538	0.00541	0.00538
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00348	-0.00368	-0.00367
	(!A1 * !A2 * !B1 * C1 * Y)	0.00539	0.00542	0.00538
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00348	-0.00367	-0.00367
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00539	0.00541	0.00538

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

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

sky130_fd_sc_hs__o311ai_1	**(A3 * !C1 * Y)**	0.00095	0.00095	0.00096
	(A3 * !C1 * Y)	-0.00131	-0.00131	-0.00131
	(A2 * !A3 * !C1 * Y)	0.00095	0.00096	0.00096
	(A2 * !A3 * !C1 * Y)	-0.00131	-0.00132	-0.00131
	(A1 * !A2 * !A3 * !C1 * Y)	0.00096	0.00097	0.00096
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00132	-0.00132	-0.00131
	(!A1 * !A2 * !A3 * C1 * Y)	0.00046	0.00046	0.00046
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00132	-0.00133	-0.00131
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00057	0.00057	0.00057
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00132	-0.00133	-0.00132
sky130_fd_sc_hs__o311ai_2	**(A3 * !C1 * Y)**	0.00199	0.00201	0.00199
	(A3 * !C1 * Y)	-0.00259	-0.00259	-0.00258
	(A2 * !A3 * !C1 * Y)	0.00199	0.00200	0.00199
	(A2 * !A3 * !C1 * Y)	-0.00258	-0.00258	-0.00258
	(A1 * !A2 * !A3 * !C1 * Y)	0.00198	0.00201	0.00199
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00258	-0.00260	-0.00258
	(!A1 * !A2 * !A3 * C1 * Y)	0.00095	0.00097	0.00097
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00258	-0.00260	-0.00257
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00119	0.00120	0.00118
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00261	-0.00262	-0.00260
sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	0.00370	0.00375	0.00372
	(A3 * !C1 * Y)	-0.00296	-0.00298	-0.00296
	(A2 * !A3 * !C1 * Y)	0.00370	0.00374	0.00372
	(A2 * !A3 * !C1 * Y)	-0.00296	-0.00297	-0.00296
	(A1 * !A2 * !A3 * !C1 * Y)	0.00370	0.00372	0.00372
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00296	-0.00297	-0.00296
	(!A1 * !A2 * !A3 * C1 * Y)	0.00173	0.00175	0.00175
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00299	-0.00300	-0.00297
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00216	0.00217	0.00215
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00304	-0.00306	-0.00304

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !C1 * Y)	-0.00090	-0.00095	-0.00096
	(A3 * !C1 * Y)	0.00135	0.00133	0.00132
	(A2 * !A3 * !C1 * Y)	-0.00090	-0.00096	-0.00096
	(A2 * !A3 * !C1 * Y)	0.00135	0.00133	0.00132
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00089	-0.00096	-0.00096
	(A1 * !A2 * !A3 * !C1 * Y)	0.00137	0.00133	0.00132
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00043	-0.00043	-0.00044
	(!A1 * !A2 * !A3 * C1 * Y)	0.00135	0.00136	0.00133
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00057	-0.00057	-0.00057
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00140	0.00137	0.00133
sky130_fd_sc_hs__o311ai_2	(A3 * !C1 * Y)	-0.00188	-0.00201	-0.00199
	(A3 * !C1 * Y)	0.00263	0.00262	0.00259
	(A2 * !A3 * !C1 * Y)	-0.00186	-0.00200	-0.00199
	(A2 * !A3 * !C1 * Y)	0.00264	0.00262	0.00259
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00184	-0.00201	-0.00199
	(A1 * !A2 * !A3 * !C1 * Y)	0.00266	0.00262	0.00259
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00091	-0.00090	-0.00092
	(!A1 * !A2 * !A3 * C1 * Y)	0.00268	0.00267	0.00262
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00119	-0.00120	-0.00118
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00275	0.00269	0.00262

sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	-0.00343	-0.00375	-0.00372
	(A3 * !C1 * Y)	0.00312	0.00301	0.00297
	(A2 * !A3 * !C1 * Y)	-0.00340	-0.00374	-0.00372
	(A2 * !A3 * !C1 * Y)	0.00316	0.00301	0.00297
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00336	-0.00372	-0.00372
	(A1 * !A2 * !A3 * !C1 * Y)	0.00322	0.00297	0.00297
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00162	-0.00162	-0.00166
	(!A1 * !A2 * !A3 * C1 * Y)	0.00316	0.00315	0.00304
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00216	-0.00217	-0.00215
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00330	0.00320	0.00306

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	0.00041	0.00041	0.00039
	(A3 * !B1 * Y)	-0.00154	-0.00155	-0.00156
	(A2 * !A3 * !B1 * Y)	0.00040	0.00041	0.00039
	(A2 * !A3 * !B1 * Y)	-0.00153	-0.00155	-0.00156
	(!A2 * !A3 * !B1 * Y)	0.00041	0.00041	0.00039
	(!A2 * !A3 * !B1 * Y)	-0.00154	-0.00155	-0.00156
	(!A1 * !A2 * !A3 * B1 * Y)	0.00044	0.00044	0.00039
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00146	-0.00147	-0.00155
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	0.00080	0.00080	0.00076
	(A3 * !B1 * Y)	-0.00301	-0.00303	-0.00308
	(A2 * !A3 * !B1 * Y)	0.00079	0.00080	0.00076
	(A2 * !A3 * !B1 * Y)	-0.00300	-0.00303	-0.00308
	(!A2 * !A3 * !B1 * Y)	0.00079	0.00080	0.00076
	(!A2 * !A3 * !B1 * Y)	-0.00299	-0.00303	-0.00308
	(!A1 * !A2 * !A3 * B1 * Y)	0.00084	0.00084	0.00074
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00281	-0.00282	-0.00305
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	0.00148	0.00149	0.00141
	(A3 * !B1 * Y)	-0.00333	-0.00336	-0.00347
	(A2 * !A3 * !B1 * Y)	0.00147	0.00148	0.00141
	(A2 * !A3 * !B1 * Y)	-0.00332	-0.00336	-0.00347
	(!A2 * !A3 * !B1 * Y)	0.00147	0.00148	0.00141
	(!A2 * !A3 * !B1 * Y)	-0.00332	-0.00335	-0.00347
	(!A1 * !A2 * !A3 * B1 * Y)	0.00157	0.00158	0.00138
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00298	-0.00302	-0.00340

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	-0.00038	-0.00039	-0.00038
	(A3 * !B1 * Y)	0.00156	0.00158	0.00157
	(A2 * !A3 * !B1 * Y)	-0.00039	-0.00039	-0.00038
	(A2 * !A3 * !B1 * Y)	0.00157	0.00158	0.00157
	(!A2 * !A3 * !B1 * Y)	-0.00039	-0.00038	-0.00038
	(!A2 * !A3 * !B1 * Y)	0.00157	0.00157	0.00157
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00038	-0.00038	-0.00037
	(!A1 * !A2 * !A3 * B1 * Y)	0.00157	0.00157	0.00157
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	-0.00074	-0.00074	-0.00073
	(A3 * !B1 * Y)	0.00309	0.00310	0.00308
	(A2 * !A3 * !B1 * Y)	-0.00074	-0.00074	-0.00073
	(A2 * !A3 * !B1 * Y)	0.00309	0.00310	0.00308
	(!A2 * !A3 * !B1 * Y)	-0.00074	-0.00074	-0.00073
	(!A2 * !A3 * !B1 * Y)	0.00309	0.00309	0.00308
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00072	-0.00072	-0.00071
	(!A1 * !A2 * !A3 * B1 * Y)	0.00309	0.00310	0.00308
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	-0.00138	-0.00137	-0.00136
	(A3 * !B1 * Y)	0.00348	0.00350	0.00347
	(A2 * !A3 * !B1 * Y)	-0.00138	-0.00137	-0.00136
	(A2 * !A3 * !B1 * Y)	0.00349	0.00349	0.00347
	(!A2 * !A3 * !B1 * Y)	-0.00138	-0.00137	-0.00136
	(!A2 * !A3 * !B1 * Y)	0.00349	0.00348	0.00347
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00134	-0.00133	-0.00132
	(!A1 * !A2 * !A3 * B1 * Y)	0.00348	0.00348	0.00346

SKY130_FD_SC_HS__O311Ax

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o311a_1	14.38560
sky130_fd_sc_hs__o311a_2	14.38560
sky130_fd_sc_hs__o311a_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	C1	X
sky130_fd_sc_hs__o311a_1	0.00247	0.00294	0.00254	0.00249	0.00255	0.77514
sky130_fd_sc_hs__o311a_2	0.00274	0.00274	0.00274	0.00271	0.00269	1.53256
sky130_fd_sc_hs__o311a_4	0.00452	0.00497	0.00459	0.00559	0.00482	2.97430

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311a_1	0.00000	0.05284	0.18566
sky130_fd_sc_hs__o311a_2	0.00000	0.07025	0.15382
sky130_fd_sc_hs__o311a_4	0.00000	0.14570	0.37975

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)	0.16903	0.87452	7.40046
	A2->X (RR)	0.16500	0.86817	7.34703
	A3->X (RR)	0.15061	0.84002	7.24720
	B1->X (RR)	0.15694	0.87951	7.41315
	C1->X (RR)	0.14911	0.86963	7.29357
sky130_fd_sc_hs__o311a_2	A1->X (RR)	0.17255	0.76777	7.45528
	A2->X (RR)	0.16449	0.75352	7.38420
	A3->X (RR)	0.14410	0.72781	7.30516
	B1->X (RR)	0.16442	0.79218	7.52826
	C1->X (RR)	0.15490	0.78590	7.42667
sky130_fd_sc_hs__o311a_4	A1->X (RR)	0.18466	0.70454	7.49665
	A2->X (RR)	0.17313	0.68532	7.42371
	A3->X (RR)	0.15782	0.66482	7.35274
	B1->X (RR)	0.17739	0.73050	7.57167
	C1->X (RR)	0.16277	0.71380	7.44321

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311a_1	A1->X (FF)	0.46812	1.07363	5.48677
	A2->X (FF)	0.45260	1.06699	5.56894
	A3->X (FF)	0.37804	0.96929	5.18315
	B1->X (FF)	0.12017	0.70148	4.70760
	C1->X (FF)	0.10930	0.67909	4.63889
sky130_fd_sc_hs__o311a_2	A1->X (FF)	0.48492	1.08083	5.79021
	A2->X (FF)	0.46000	1.07007	5.89734
	A3->X (FF)	0.41554	1.00445	5.59215
	B1->X (FF)	0.14685	0.72347	5.01815
	C1->X (FF)	0.13304	0.69961	4.92889
sky130_fd_sc_hs__o311a_4	A1->X (FF)	0.55683	1.12629	5.83322
	A2->X (FF)	0.53471	1.10982	5.94079
	A3->X (FF)	0.45920	1.00504	5.56419
	B1->X (FF)	0.13499	0.66385	4.94041
	C1->X (FF)	0.11973	0.63773	4.85691

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	A1	0.01023	0.01010	0.01061
	A1	0.00460	0.00447	0.00500
	A2	0.00924	0.00916	0.00978
	A2	0.00401	0.00394	0.00459
	A3	0.00755	0.00751	0.00882
	A3	0.00303	0.00300	0.00435
	B1	0.00932	0.00922	0.01095
	B1	0.00463	0.00453	0.00629
	C1	0.00880	0.00869	0.01126
	C1	0.00460	0.00451	0.00712
sky130_fd_sc_hs__o311a_2	A1	0.01196	0.01191	0.01235
	A1	0.00588	0.00582	0.00631
	A2	0.01067	0.01089	0.01158
	A2	0.00520	0.00543	0.00618
	A3	0.00946	0.00965	0.01074
	A3	0.00461	0.00486	0.00599
	B1	0.01099	0.01099	0.01245
	B1	0.00602	0.00601	0.00749
	C1	0.01037	0.01035	0.01255
	C1	0.00601	0.00598	0.00823

sky130_fd_sc_hs__o311a_4	**A1**	0.02271	0.02314	0.02464
	A1	0.01213	0.01258	0.01416
	A2	0.02068	0.02116	0.02276
	A2	0.01090	0.01138	0.01308
	A3	0.01741	0.01787	0.02090
	A3	0.00885	0.00933	0.01251
	B1	0.02142	0.02172	0.02490
	B1	0.01211	0.01241	0.01598
	C1	0.01977	0.02007	0.02525
	C1	0.01213	0.01244	0.01770

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311a_1	**A1**	0.00342	0.00331	0.00383
	A1	0.00896	0.00890	0.00934
	A2	0.00347	0.00330	0.00482
	A2	0.00855	0.00847	0.00931
	A3	0.00345	0.00347	0.00627
	A3	0.00780	0.00791	0.01056
	B1	0.00240	0.00253	0.00631
	B1	0.00714	0.00724	0.01071
	C1	0.00212	0.00222	0.00647
	C1	0.00638	0.00645	0.01005

sky130_fd_sc_hs__o311a_2	**A1**	0.00485	0.00493	0.00605
	A1	0.01083	0.01096	0.01147
	A2	0.00491	0.00495	0.00648
	A2	0.01021	0.01036	0.01129
	A3	0.00493	0.00511	0.00776
	A3	0.00960	0.00978	0.01216
	B1	0.00427	0.00456	0.00847
	B1	0.00927	0.00955	0.01308
	C1	0.00388	0.00417	0.00833
	C1	0.00833	0.00859	0.01217
sky130_fd_sc_hs__o311a_4	**A1**	0.01019	0.01063	0.01290
	A1	0.02052	0.02099	0.02217
	A2	0.01008	0.01041	0.01430
	A2	0.01956	0.01995	0.02190
	A3	0.01021	0.01066	0.01631
	A3	0.01842	0.01884	0.02443
	B1	0.00839	0.00896	0.01836
	B1	0.01770	0.01817	0.02509
	C1	0.00757	0.00840	0.01667
	C1	0.01534	0.01604	0.02335

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)**	0.00093	0.00093	0.00093
	(A2 * B1 * !C1 * !X)	-0.00122	-0.00124	-0.00124
	(A2 * A3 * B1 * C1 * X)	0.00109	0.00109	0.00109
	(A2 * A3 * B1 * C1 * X)	-0.00106	-0.00109	-0.00109
	(A2 * !B1 * !X)	0.00093	0.00093	0.00093
	(A2 * !B1 * !X)	-0.00122	-0.00124	-0.00124
	(A2 * !A3 * B1 * C1 * X)	0.00109	0.00109	0.00109
	(A2 * !A3 * B1 * C1 * X)	-0.00105	-0.00109	-0.00109
	(!A2 * A3 * B1 * C1 * X)	0.00110	0.00110	0.00109
	(!A2 * A3 * B1 * C1 * X)	-0.00099	-0.00105	-0.00105
	(!A2 * A3 * B1 * !C1 * !X)	0.00093	0.00094	0.00093
	(!A2 * A3 * B1 * !C1 * !X)	-0.00115	-0.00121	-0.00120
	(!A2 * A3 * !B1 * !X)	0.00093	0.00094	0.00093
	(!A2 * A3 * !B1 * !X)	-0.00115	-0.00121	-0.00120
	(!A2 * !A3 * B1 * !C1 * !X)	0.00088	0.00089	0.00088
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00126	-0.00126	-0.00126
	(!A2 * !A3 * !B1 * C1 * !X)	0.00090	0.00090	0.00090
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00126	-0.00126	-0.00126
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00090	0.00090	0.00090
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00126	-0.00126	-0.00126

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	0.00099	0.00099	0.00099
	(A2 * B1 * !C1 * !X)	-0.00133	-0.00137	-0.00136
	(A2 * A3 * B1 * C1 * X)	0.00112	0.00112	0.00112
	(A2 * A3 * B1 * C1 * X)	-0.00120	-0.00123	-0.00123
	(A2 * !B1 * !X)	0.00099	0.00099	0.00099
	(A2 * !B1 * !X)	-0.00133	-0.00137	-0.00136
	(A2 * !A3 * B1 * C1 * X)	0.00112	0.00112	0.00112
	(A2 * !A3 * B1 * C1 * X)	-0.00119	-0.00123	-0.00123
	(!A2 * A3 * B1 * C1 * X)	0.00113	0.00113	0.00112
	(!A2 * A3 * B1 * C1 * X)	-0.00111	-0.00119	-0.00118
	(!A2 * A3 * B1 * !C1 * !X)	0.00099	0.00100	0.00099
	(!A2 * A3 * B1 * !C1 * !X)	-0.00124	-0.00132	-0.00131
	(!A2 * A3 * !B1 * !X)	0.00099	0.00100	0.00099
	(!A2 * A3 * !B1 * !X)	-0.00124	-0.00132	-0.00131
	(!A2 * !A3 * B1 * !C1 * !X)	0.00091	0.00091	0.00091
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00139	-0.00139	-0.00139
	(!A2 * !A3 * !B1 * C1 * !X)	0.00093	0.00093	0.00092
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00139	-0.00139	-0.00139
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00093	0.00093	0.00092
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00139	-0.00139	-0.00139

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	0.00169	0.00170	0.00169
	(A2 * B1 * !C1 * !X)	-0.00222	-0.00228	-0.00227
	(A2 * A3 * B1 * C1 * X)	0.00169	0.00170	0.00169
	(A2 * A3 * B1 * C1 * X)	-0.00221	-0.00228	-0.00228
	(A2 * !B1 * !X)	0.00169	0.00170	0.00169
	(A2 * !B1 * !X)	-0.00222	-0.00228	-0.00227
	(A2 * !A3 * B1 * C1 * X)	0.00170	0.00170	0.00169
	(A2 * !A3 * B1 * C1 * X)	-0.00219	-0.00228	-0.00228
	(!A2 * A3 * B1 * C1 * X)	0.00172	0.00171	0.00169
	(!A2 * A3 * B1 * C1 * X)	-0.00204	-0.00220	-0.00219
	(!A2 * A3 * B1 * !C1 * !X)	0.00169	0.00170	0.00169
	(!A2 * A3 * B1 * !C1 * !X)	-0.00206	-0.00219	-0.00218
	(!A2 * A3 * !B1 * !X)	0.00169	0.00170	0.00169
	(!A2 * A3 * !B1 * !X)	-0.00206	-0.00219	-0.00219
	(!A2 * !A3 * B1 * !C1 * !X)	0.00157	0.00158	0.00157
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00232	-0.00233	-0.00232
	(!A2 * !A3 * !B1 * C1 * !X)	0.00160	0.00160	0.00159
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00233	-0.00233	-0.00232
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00160	0.00159	0.00159
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00233	-0.00232	-0.00232

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)**	-0.00092	-0.00093	-0.00093
	(A2 * B1 * !C1 * !X)	0.00123	0.00125	0.00124
	(A2 * A3 * B1 * C1 * X)	-0.00108	-0.00109	-0.00108
	(A2 * A3 * B1 * C1 * X)	0.00108	0.00110	0.00109
	(A2 * !B1 * !X)	-0.00092	-0.00093	-0.00093
	(A2 * !B1 * !X)	0.00123	0.00125	0.00124
	(A2 * !A3 * B1 * C1 * X)	-0.00108	-0.00109	-0.00108
	(A2 * !A3 * B1 * C1 * X)	0.00108	0.00110	0.00109
	(!A2 * A3 * B1 * C1 * X)	-0.00108	-0.00108	-0.00108
	(!A2 * A3 * B1 * C1 * X)	0.00105	0.00105	0.00105
	(!A2 * A3 * B1 * !C1 * !X)	-0.00093	-0.00093	-0.00093
	(!A2 * A3 * B1 * !C1 * !X)	0.00120	0.00121	0.00120
	(!A2 * A3 * !B1 * !X)	-0.00093	-0.00093	-0.00093
	(!A2 * A3 * !B1 * !X)	0.00120	0.00121	0.00120
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00084	-0.00089	-0.00088
	(!A2 * !A3 * B1 * !C1 * !X)	0.00126	0.00126	0.00126
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00087	-0.00090	-0.00090
	(!A2 * !A3 * !B1 * C1 * !X)	0.00126	0.00126	0.00126
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00086	-0.00090	-0.00090
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00126	0.00126	0.00126

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	-0.00099	-0.00099	-0.00099
	(A2 * B1 * !C1 * !X)	0.00137	0.00137	0.00136
	(A2 * A3 * B1 * C1 * X)	-0.00112	-0.00112	-0.00112
	(A2 * A3 * B1 * C1 * X)	0.00124	0.00124	0.00123
	(A2 * !B1 * !X)	-0.00099	-0.00099	-0.00099
	(A2 * !B1 * !X)	0.00137	0.00137	0.00136
	(A2 * !A3 * B1 * C1 * X)	-0.00112	-0.00112	-0.00112
	(A2 * !A3 * B1 * C1 * X)	0.00124	0.00124	0.00123
	(!A2 * A3 * B1 * C1 * X)	-0.00112	-0.00112	-0.00111
	(!A2 * A3 * B1 * C1 * X)	0.00119	0.00119	0.00118
	(!A2 * A3 * B1 * !C1 * !X)	-0.00099	-0.00099	-0.00099
	(!A2 * A3 * B1 * !C1 * !X)	0.00132	0.00132	0.00131
	(!A2 * A3 * !B1 * !X)	-0.00099	-0.00099	-0.00099
	(!A2 * A3 * !B1 * !X)	0.00131	0.00132	0.00131
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00085	-0.00091	-0.00091
	(!A2 * !A3 * B1 * !C1 * !X)	0.00139	0.00139	0.00139
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00088	-0.00093	-0.00092
	(!A2 * !A3 * !B1 * C1 * !X)	0.00140	0.00140	0.00139
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00088	-0.00093	-0.00092
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00140	0.00140	0.00139

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	-0.00169	-0.00169	-0.00169
	(A2 * B1 * !C1 * !X)	0.00228	0.00229	0.00227
	(A2 * A3 * B1 * C1 * X)	-0.00169	-0.00169	-0.00169
	(A2 * A3 * B1 * C1 * X)	0.00228	0.00229	0.00228
	(A2 * !B1 * !X)	-0.00169	-0.00169	-0.00169
	(A2 * !B1 * !X)	0.00228	0.00229	0.00227
	(A2 * !A3 * B1 * C1 * X)	-0.00169	-0.00169	-0.00168
	(A2 * !A3 * B1 * C1 * X)	0.00228	0.00229	0.00228
	(!A2 * A3 * B1 * C1 * X)	-0.00168	-0.00169	-0.00168
	(!A2 * A3 * B1 * C1 * X)	0.00220	0.00220	0.00219
	(!A2 * A3 * B1 * !C1 * !X)	-0.00169	-0.00169	-0.00169
	(!A2 * A3 * B1 * !C1 * !X)	0.00219	0.00219	0.00218
	(!A2 * A3 * !B1 * !X)	-0.00168	-0.00169	-0.00169
	(!A2 * A3 * !B1 * !X)	0.00217	0.00219	0.00219
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00147	-0.00158	-0.00157
	(!A2 * !A3 * B1 * !C1 * !X)	0.00232	0.00233	0.00233
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00151	-0.00160	-0.00159
	(!A2 * !A3 * !B1 * C1 * !X)	0.00233	0.00234	0.00233
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00152	-0.00159	-0.00159
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00233	0.00234	0.00233

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)**	0.00115	0.00116	0.00114
	(A1 * A3 * B1 * C1 * X)	-0.00081	-0.00081	-0.00081
	(A1 * A3 * B1 * !C1 * !X)	0.00093	0.00093	0.00093
	(A1 * A3 * B1 * !C1 * !X)	-0.00106	-0.00107	-0.00107
	(A1 * A3 * !B1 * !X)	0.00093	0.00093	0.00093
	(A1 * A3 * !B1 * !X)	-0.00106	-0.00107	-0.00107
	(A1 * !A3 * B1 * C1 * X)	0.00113	0.00112	0.00112
	(A1 * !A3 * B1 * C1 * X)	-0.00070	-0.00069	-0.00070
	(A1 * !A3 * B1 * !C1 * !X)	0.00094	0.00094	0.00093
	(A1 * !A3 * B1 * !C1 * !X)	-0.00131	-0.00132	-0.00132
	(A1 * !A3 * !B1 * C1 * !X)	0.00094	0.00093	0.00093
	(A1 * !A3 * !B1 * C1 * !X)	-0.00131	-0.00132	-0.00132
	(A1 * !A3 * !B1 * !C1 * !X)	0.00094	0.00094	0.00093
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00131	-0.00132	-0.00132
	(!A1 * A3 * B1 * C1 * X)	0.00127	0.00113	0.00112
	(!A1 * A3 * B1 * C1 * X)	-0.00097	-0.00113	-0.00114
	(!A1 * A3 * B1 * !C1 * !X)	0.00094	0.00094	0.00093
	(!A1 * A3 * B1 * !C1 * !X)	-0.00130	-0.00132	-0.00132
	(!A1 * A3 * !B1 * !X)	0.00094	0.00094	0.00093
	(!A1 * A3 * !B1 * !X)	-0.00130	-0.00132	-0.00132
	(!A1 * !A3 * B1 * !C1 * !X)	0.00087	0.00089	0.00088
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00133	-0.00134	-0.00134
	(!A1 * !A3 * !B1 * C1 * !X)	0.00089	0.00090	0.00089
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00133	-0.00134	-0.00134
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00089	0.00090	0.00089
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00133	-0.00134	-0.00134

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	0.00109	0.00109	0.00105
	(A1 * A3 * B1 * C1 * X)	-0.00088	-0.00088	-0.00088
	(A1 * A3 * B1 * !C1 * !X)	0.00099	0.00099	0.00099
	(A1 * A3 * B1 * !C1 * !X)	-0.00097	-0.00098	-0.00097
	(A1 * A3 * !B1 * !X)	0.00099	0.00099	0.00099
	(A1 * A3 * !B1 * !X)	-0.00098	-0.00098	-0.00097
	(A1 * !A3 * B1 * C1 * X)	0.00104	0.00104	0.00103
	(A1 * !A3 * B1 * C1 * X)	-0.00077	-0.00076	-0.00077
	(A1 * !A3 * B1 * !C1 * !X)	0.00100	0.00100	0.00099
	(A1 * !A3 * B1 * !C1 * !X)	-0.00128	-0.00130	-0.00129
	(A1 * !A3 * !B1 * C1 * !X)	0.00100	0.00100	0.00099
	(A1 * !A3 * !B1 * C1 * !X)	-0.00128	-0.00130	-0.00129
	(A1 * !A3 * !B1 * !C1 * !X)	0.00100	0.00099	0.00099
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00128	-0.00130	-0.00129
	(!A1 * A3 * B1 * C1 * X)	0.00121	0.00105	0.00103
	(!A1 * A3 * B1 * C1 * X)	-0.00108	-0.00126	-0.00126
	(!A1 * A3 * B1 * !C1 * !X)	0.00100	0.00100	0.00099
	(!A1 * A3 * B1 * !C1 * !X)	-0.00128	-0.00131	-0.00130
	(!A1 * A3 * !B1 * !X)	0.00100	0.00100	0.00099
	(!A1 * A3 * !B1 * !X)	-0.00128	-0.00131	-0.00130
	(!A1 * !A3 * B1 * !C1 * !X)	0.00091	0.00091	0.00091
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00132	-0.00133	-0.00132
	(!A1 * !A3 * !B1 * C1 * !X)	0.00093	0.00093	0.00093
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00133	-0.00133	-0.00133
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00093	0.00093	0.00092
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00133	-0.00133	-0.00133

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	0.00199	0.00203	0.00197
	(A1 * A3 * B1 * C1 * X)	-0.00163	-0.00164	-0.00163
	(A1 * A3 * B1 * !C1 * !X)	0.00197	0.00196	0.00195
	(A1 * A3 * B1 * !C1 * !X)	-0.00176	-0.00177	-0.00176
	(A1 * A3 * !B1 * !X)	0.00197	0.00196	0.00195
	(A1 * A3 * !B1 * !X)	-0.00176	-0.00177	-0.00176
	(A1 * !A3 * B1 * C1 * X)	0.00195	0.00196	0.00195
	(A1 * !A3 * B1 * C1 * X)	-0.00139	-0.00140	-0.00140
	(A1 * !A3 * B1 * !C1 * !X)	0.00195	0.00196	0.00195
	(A1 * !A3 * B1 * !C1 * !X)	-0.00222	-0.00227	-0.00226
	(A1 * !A3 * !B1 * C1 * !X)	0.00195	0.00196	0.00195
	(A1 * !A3 * !B1 * C1 * !X)	-0.00222	-0.00227	-0.00226
	(A1 * !A3 * !B1 * !C1 * !X)	0.00195	0.00196	0.00195
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00222	-0.00227	-0.00226
	(!A1 * A3 * B1 * C1 * X)	0.00225	0.00198	0.00195
	(!A1 * A3 * B1 * C1 * X)	-0.00195	-0.00227	-0.00227
	(!A1 * A3 * B1 * !C1 * !X)	0.00196	0.00197	0.00195
	(!A1 * A3 * B1 * !C1 * !X)	-0.00222	-0.00227	-0.00226
	(!A1 * A3 * !B1 * !X)	0.00197	0.00197	0.00195
	(!A1 * A3 * !B1 * !X)	-0.00222	-0.00227	-0.00226
	(!A1 * !A3 * B1 * !C1 * !X)	0.00179	0.00179	0.00179
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00230	-0.00230	-0.00230
	(!A1 * !A3 * !B1 * C1 * !X)	0.00181	0.00182	0.00182
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00230	-0.00230	-0.00230
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00182	0.00181	0.00182
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00230	-0.00230	-0.00230

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)**	-0.00111	-0.00112	-0.00112
	(A1 * A3 * B1 * C1 * X)	0.00081	0.00081	0.00081
	(A1 * A3 * B1 * !C1 * !X)	-0.00092	-0.00093	-0.00093
	(A1 * A3 * B1 * !C1 * !X)	0.00106	0.00107	0.00107
	(A1 * A3 * !B1 * !X)	-0.00093	-0.00093	-0.00093
	(A1 * A3 * !B1 * !X)	0.00106	0.00107	0.00107
	(A1 * !A3 * B1 * C1 * X)	-0.00111	-0.00111	-0.00109
	(A1 * !A3 * B1 * C1 * X)	0.00072	0.00072	0.00072
	(A1 * !A3 * B1 * !C1 * !X)	-0.00093	-0.00093	-0.00093
	(A1 * !A3 * B1 * !C1 * !X)	0.00132	0.00132	0.00132
	(A1 * !A3 * !B1 * C1 * !X)	-0.00093	-0.00093	-0.00093
	(A1 * !A3 * !B1 * C1 * !X)	0.00132	0.00132	0.00132
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00093	-0.00093	-0.00093
	(A1 * !A3 * !B1 * !C1 * !X)	0.00132	0.00132	0.00132
	(!A1 * A3 * B1 * C1 * X)	-0.00111	-0.00111	-0.00111
	(!A1 * A3 * B1 * C1 * X)	0.00114	0.00114	0.00114
	(!A1 * A3 * B1 * !C1 * !X)	-0.00093	-0.00093	-0.00093
	(!A1 * A3 * B1 * !C1 * !X)	0.00132	0.00132	0.00132
	(!A1 * A3 * !B1 * !X)	-0.00093	-0.00093	-0.00093
	(!A1 * A3 * !B1 * !X)	0.00132	0.00132	0.00132
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00082	-0.00088	-0.00088
	(!A1 * !A3 * B1 * !C1 * !X)	0.00134	0.00134	0.00134
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00086	-0.00090	-0.00089
	(!A1 * !A3 * !B1 * C1 * !X)	0.00134	0.00135	0.00134
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00086	-0.00090	-0.00089
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00134	0.00134	0.00134

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	-0.00103	-0.00103	-0.00103
	(A1 * A3 * B1 * C1 * X)	0.00088	0.00088	0.00088
	(A1 * A3 * B1 * !C1 * !X)	-0.00099	-0.00099	-0.00099
	(A1 * A3 * B1 * !C1 * !X)	0.00097	0.00098	0.00097
	(A1 * A3 * !B1 * !X)	-0.00099	-0.00099	-0.00099
	(A1 * A3 * !B1 * !X)	0.00098	0.00098	0.00097
	(A1 * !A3 * B1 * C1 * X)	-0.00102	-0.00102	-0.00101
	(A1 * !A3 * B1 * C1 * X)	0.00079	0.00079	0.00079
	(A1 * !A3 * B1 * !C1 * !X)	-0.00099	-0.00099	-0.00099
	(A1 * !A3 * B1 * !C1 * !X)	0.00130	0.00130	0.00129
	(A1 * !A3 * !B1 * C1 * !X)	-0.00099	-0.00099	-0.00099
	(A1 * !A3 * !B1 * C1 * !X)	0.00129	0.00130	0.00129
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00099	-0.00099	-0.00099
	(A1 * !A3 * !B1 * !C1 * !X)	0.00129	0.00130	0.00129
	(!A1 * A3 * B1 * C1 * X)	-0.00102	-0.00102	-0.00102
	(!A1 * A3 * B1 * C1 * X)	0.00125	0.00126	0.00126
	(!A1 * A3 * B1 * !C1 * !X)	-0.00099	-0.00099	-0.00099
	(!A1 * A3 * B1 * !C1 * !X)	0.00130	0.00131	0.00130
	(!A1 * A3 * !B1 * !X)	-0.00099	-0.00099	-0.00099
	(!A1 * A3 * !B1 * !X)	0.00129	0.00131	0.00130
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00084	-0.00091	-0.00091
	(!A1 * !A3 * B1 * !C1 * !X)	0.00132	0.00133	0.00133
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00088	-0.00093	-0.00093
	(!A1 * !A3 * !B1 * C1 * !X)	0.00133	0.00133	0.00133
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00088	-0.00093	-0.00092
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00133	0.00133	0.00133

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	-0.00194	-0.00195	-0.00194
	(A1 * A3 * B1 * C1 * X)	0.00163	0.00164	0.00163
	(A1 * A3 * B1 * !C1 * !X)	-0.00194	-0.00195	-0.00194
	(A1 * A3 * B1 * !C1 * !X)	0.00176	0.00177	0.00176
	(A1 * A3 * !B1 * !X)	-0.00194	-0.00195	-0.00194
	(A1 * A3 * !B1 * !X)	0.00176	0.00177	0.00176
	(A1 * !A3 * B1 * C1 * X)	-0.00192	-0.00191	-0.00190
	(A1 * !A3 * B1 * C1 * X)	0.00144	0.00144	0.00146
	(A1 * !A3 * B1 * !C1 * !X)	-0.00195	-0.00195	-0.00194
	(A1 * !A3 * B1 * !C1 * !X)	0.00227	0.00227	0.00226
	(A1 * !A3 * !B1 * C1 * !X)	-0.00194	-0.00195	-0.00194
	(A1 * !A3 * !B1 * C1 * !X)	0.00225	0.00227	0.00226
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00194	-0.00195	-0.00194
	(A1 * !A3 * !B1 * !C1 * !X)	0.00225	0.00227	0.00226
	(!A1 * A3 * B1 * C1 * X)	-0.00194	-0.00194	-0.00193
	(!A1 * A3 * B1 * C1 * X)	0.00227	0.00227	0.00227
	(!A1 * A3 * B1 * !C1 * !X)	-0.00195	-0.00195	-0.00194
	(!A1 * A3 * B1 * !C1 * !X)	0.00226	0.00227	0.00226
	(!A1 * A3 * !B1 * !X)	-0.00193	-0.00195	-0.00194
	(!A1 * A3 * !B1 * !X)	0.00224	0.00227	0.00226
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00167	-0.00179	-0.00179
	(!A1 * !A3 * B1 * !C1 * !X)	0.00231	0.00231	0.00231
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00173	-0.00182	-0.00182
	(!A1 * !A3 * !B1 * C1 * !X)	0.00231	0.00232	0.00231
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00173	-0.00181	-0.00182
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00231	0.00232	0.00231

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)**	0.00104	0.00104	0.00104
	(A2 * B1 * C1 * X)	-0.00064	-0.00064	-0.00064
	(A2 * B1 * !C1 * !X)	0.00092	0.00093	0.00092
	(A2 * B1 * !C1 * !X)	-0.00113	-0.00116	-0.00116
	(A2 * !B1 * C1 * !X)	0.00092	0.00093	0.00092
	(A2 * !B1 * C1 * !X)	-0.00113	-0.00117	-0.00116
	(A2 * !B1 * !C1 * !X)	0.00092	0.00093	0.00092
	(A2 * !B1 * !C1 * !X)	-0.00114	-0.00117	-0.00116
	(A1 * !A2 * B1 * C1 * X)	0.00104	0.00104	0.00104
	(A1 * !A2 * B1 * C1 * X)	-0.00064	-0.00064	-0.00064
	(A1 * !A2 * B1 * !C1 * !X)	0.00092	0.00092	0.00092
	(A1 * !A2 * B1 * !C1 * !X)	-0.00106	-0.00111	-0.00111
	(A1 * !A2 * !B1 * C1 * !X)	0.00092	0.00092	0.00092
	(A1 * !A2 * !B1 * C1 * !X)	-0.00106	-0.00111	-0.00111
	(A1 * !A2 * !B1 * !C1 * !X)	0.00092	0.00093	0.00092
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00106	-0.00112	-0.00112
	(!A1 * !A2 * B1 * !C1 * !X)	0.00086	0.00086	0.00086
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00118	-0.00118	-0.00118
	(!A1 * !A2 * !B1 * C1 * !X)	0.00088	0.00089	0.00088
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00118	-0.00118	-0.00118
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00088	0.00089	0.00088
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00118	-0.00119	-0.00118

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	0.00115	0.00114	0.00114
	(A2 * B1 * C1 * X)	-0.00065	-0.00064	-0.00064
	(A2 * B1 * !C1 * !X)	0.00099	0.00100	0.00099
	(A2 * B1 * !C1 * !X)	-0.00123	-0.00126	-0.00126
	(A2 * !B1 * C1 * !X)	0.00099	0.00100	0.00099
	(A2 * !B1 * C1 * !X)	-0.00123	-0.00127	-0.00126
	(A2 * !B1 * !C1 * !X)	0.00099	0.00100	0.00099
	(A2 * !B1 * !C1 * !X)	-0.00123	-0.00126	-0.00126
	(A1 * !A2 * B1 * C1 * X)	0.00115	0.00115	0.00114
	(A1 * !A2 * B1 * C1 * X)	-0.00065	-0.00064	-0.00064
	(A1 * !A2 * B1 * !C1 * !X)	0.00099	0.00100	0.00099
	(A1 * !A2 * B1 * !C1 * !X)	-0.00113	-0.00120	-0.00120
	(A1 * !A2 * !B1 * C1 * !X)	0.00099	0.00100	0.00099
	(A1 * !A2 * !B1 * C1 * !X)	-0.00113	-0.00120	-0.00120
	(A1 * !A2 * !B1 * !C1 * !X)	0.00099	0.00100	0.00099
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00114	-0.00121	-0.00120
	(!A1 * !A2 * B1 * !C1 * !X)	0.00091	0.00092	0.00091
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00128	-0.00129	-0.00129
	(!A1 * !A2 * !B1 * C1 * !X)	0.00094	0.00094	0.00093
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00129	-0.00130	-0.00129
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00094	0.00094	0.00094
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00129	-0.00129	-0.00129

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	0.00197	0.00198	0.00197
	(A2 * B1 * C1 * X)	-0.00125	-0.00126	-0.00126
	(A2 * B1 * !C1 * !X)	0.00172	0.00174	0.00172
	(A2 * B1 * !C1 * !X)	-0.00226	-0.00234	-0.00233
	(A2 * !B1 * C1 * !X)	0.00172	0.00174	0.00172
	(A2 * !B1 * C1 * !X)	-0.00226	-0.00233	-0.00233
	(A2 * !B1 * !C1 * !X)	0.00172	0.00174	0.00172
	(A2 * !B1 * !C1 * !X)	-0.00226	-0.00233	-0.00233
	(A1 * !A2 * B1 * C1 * X)	0.00197	0.00198	0.00197
	(A1 * !A2 * B1 * C1 * X)	-0.00125	-0.00126	-0.00126
	(A1 * !A2 * B1 * !C1 * !X)	0.00172	0.00173	0.00172
	(A1 * !A2 * B1 * !C1 * !X)	-0.00212	-0.00224	-0.00221
	(A1 * !A2 * !B1 * C1 * !X)	0.00172	0.00173	0.00172
	(A1 * !A2 * !B1 * C1 * !X)	-0.00212	-0.00224	-0.00221
	(A1 * !A2 * !B1 * !C1 * !X)	0.00172	0.00173	0.00172
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00212	-0.00223	-0.00223
	(!A1 * !A2 * B1 * !C1 * !X)	0.00159	0.00160	0.00159
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00237	-0.00237	-0.00237
	(!A1 * !A2 * !B1 * C1 * !X)	0.00162	0.00162	0.00162
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00237	-0.00237	-0.00237
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00162	0.00161	0.00162
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00237	-0.00236	-0.00237

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)**	-0.00096	-0.00096	-0.00102
	(A2 * B1 * C1 * X)	0.00071	0.00071	0.00066
	(A2 * B1 * !C1 * !X)	-0.00092	-0.00092	-0.00092
	(A2 * B1 * !C1 * !X)	0.00116	0.00116	0.00116
	(A2 * !B1 * C1 * !X)	-0.00092	-0.00092	-0.00092
	(A2 * !B1 * C1 * !X)	0.00117	0.00117	0.00116
	(A2 * !B1 * !C1 * !X)	-0.00092	-0.00092	-0.00092
	(A2 * !B1 * !C1 * !X)	0.00116	0.00117	0.00116
	(A1 * !A2 * B1 * C1 * X)	-0.00089	-0.00090	-0.00101
	(A1 * !A2 * B1 * C1 * X)	0.00075	0.00075	0.00066
	(A1 * !A2 * B1 * !C1 * !X)	-0.00092	-0.00092	-0.00092
	(A1 * !A2 * B1 * !C1 * !X)	0.00111	0.00111	0.00111
	(A1 * !A2 * !B1 * C1 * !X)	-0.00091	-0.00092	-0.00092
	(A1 * !A2 * !B1 * C1 * !X)	0.00110	0.00111	0.00111
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00091	-0.00092	-0.00092
	(A1 * !A2 * !B1 * !C1 * !X)	0.00111	0.00112	0.00112
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00081	-0.00086	-0.00086
	(!A1 * !A2 * B1 * !C1 * !X)	0.00118	0.00119	0.00118
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00085	-0.00089	-0.00088
	(!A1 * !A2 * !B1 * C1 * !X)	0.00118	0.00119	0.00118
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00085	-0.00089	-0.00088
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00118	0.00119	0.00118

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	-0.00109	-0.00109	-0.00114
	(A2 * B1 * C1 * X)	0.00069	0.00069	0.00066
	(A2 * B1 * !C1 * !X)	-0.00099	-0.00100	-0.00099
	(A2 * B1 * !C1 * !X)	0.00126	0.00126	0.00126
	(A2 * !B1 * C1 * !X)	-0.00099	-0.00100	-0.00099
	(A2 * !B1 * C1 * !X)	0.00126	0.00127	0.00126
	(A2 * !B1 * !C1 * !X)	-0.00099	-0.00099	-0.00099
	(A2 * !B1 * !C1 * !X)	0.00126	0.00126	0.00126
	(A1 * !A2 * B1 * C1 * X)	-0.00102	-0.00102	-0.00112
	(A1 * !A2 * B1 * C1 * X)	0.00073	0.00073	0.00066
	(A1 * !A2 * B1 * !C1 * !X)	-0.00099	-0.00100	-0.00099
	(A1 * !A2 * B1 * !C1 * !X)	0.00120	0.00120	0.00120
	(A1 * !A2 * !B1 * C1 * !X)	-0.00099	-0.00100	-0.00099
	(A1 * !A2 * !B1 * C1 * !X)	0.00120	0.00120	0.00120
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00099	-0.00099	-0.00099
	(A1 * !A2 * !B1 * !C1 * !X)	0.00121	0.00121	0.00120
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00084	-0.00092	-0.00091
	(!A1 * !A2 * B1 * !C1 * !X)	0.00129	0.00129	0.00129
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00088	-0.00094	-0.00093
	(!A1 * !A2 * !B1 * C1 * !X)	0.00130	0.00130	0.00129
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00088	-0.00094	-0.00094
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00130	0.00130	0.00129

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	-0.00181	-0.00182	-0.00195
	(A2 * B1 * C1 * X)	0.00142	0.00141	0.00130
	(A2 * B1 * !C1 * !X)	-0.00172	-0.00173	-0.00172
	(A2 * B1 * !C1 * !X)	0.00234	0.00234	0.00233
	(A2 * !B1 * C1 * !X)	-0.00171	-0.00172	-0.00172
	(A2 * !B1 * C1 * !X)	0.00231	0.00233	0.00233
	(A2 * !B1 * !C1 * !X)	-0.00171	-0.00172	-0.00172
	(A2 * !B1 * !C1 * !X)	0.00232	0.00233	0.00233
	(A1 * !A2 * B1 * C1 * X)	-0.00168	-0.00169	-0.00192
	(A1 * !A2 * B1 * C1 * X)	0.00149	0.00148	0.00131
	(A1 * !A2 * B1 * !C1 * !X)	-0.00171	-0.00173	-0.00172
	(A1 * !A2 * B1 * !C1 * !X)	0.00220	0.00224	0.00221
	(A1 * !A2 * !B1 * C1 * !X)	-0.00171	-0.00173	-0.00172
	(A1 * !A2 * !B1 * C1 * !X)	0.00221	0.00224	0.00221
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00171	-0.00172	-0.00172
	(A1 * !A2 * !B1 * !C1 * !X)	0.00222	0.00223	0.00223
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00147	-0.00160	-0.00159
	(!A1 * !A2 * B1 * !C1 * !X)	0.00237	0.00238	0.00238
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00154	-0.00162	-0.00162
	(!A1 * !A2 * !B1 * C1 * !X)	0.00238	0.00239	0.00238
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00154	-0.00161	-0.00162
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00238	0.00239	0.00238

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

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

sky130_fd_sc_hs__o311a_1	**(A3 * !C1 * !X)**	0.00083	0.00084	0.00083
	(A3 * !C1 * !X)	-0.00120	-0.00120	-0.00120
	(A2 * !A3 * !C1 * !X)	0.00083	0.00084	0.00083
	(A2 * !A3 * !C1 * !X)	-0.00120	-0.00121	-0.00120
	(A1 * !A2 * !A3 * !C1 * !X)	0.00083	0.00083	0.00083
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00120	-0.00120	-0.00120
	(!A1 * !A2 * !A3 * C1 * !X)	0.00047	0.00047	0.00044
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00121	-0.00121	-0.00120
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00056	0.00057	0.00056
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00120	-0.00121	-0.00120
sky130_fd_sc_hs__o311a_2	**(A3 * !C1 * !X)**	0.00092	0.00093	0.00093
	(A3 * !C1 * !X)	-0.00124	-0.00125	-0.00125
	(A2 * !A3 * !C1 * !X)	0.00092	0.00093	0.00093
	(A2 * !A3 * !C1 * !X)	-0.00124	-0.00125	-0.00125
	(A1 * !A2 * !A3 * !C1 * !X)	0.00092	0.00093	0.00092
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00125	-0.00125	-0.00125
	(!A1 * !A2 * !A3 * C1 * !X)	0.00044	0.00044	0.00043
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00127	-0.00127	-0.00126
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00053	0.00054	0.00054
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00127	-0.00128	-0.00127
sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	0.00182	0.00184	0.00183
	(A3 * !C1 * !X)	-0.00268	-0.00270	-0.00268
	(A2 * !A3 * !C1 * !X)	0.00182	0.00184	0.00183
	(A2 * !A3 * !C1 * !X)	-0.00268	-0.00270	-0.00268
	(A1 * !A2 * !A3 * !C1 * !X)	0.00182	0.00184	0.00183
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00268	-0.00270	-0.00268
	(!A1 * !A2 * !A3 * C1 * !X)	0.00097	0.00099	0.00098
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00268	-0.00270	-0.00268
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00119	0.00120	0.00119
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00270	-0.00272	-0.00270

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !C1 * !X)	-0.00078	-0.00083	-0.00083
	(A3 * !C1 * !X)	0.00125	0.00122	0.00121
	(A2 * !A3 * !C1 * !X)	-0.00078	-0.00084	-0.00083
	(A2 * !A3 * !C1 * !X)	0.00125	0.00123	0.00121
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00077	-0.00083	-0.00083
	(A1 * !A2 * !A3 * !C1 * !X)	0.00126	0.00122	0.00121
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00041	-0.00041	-0.00042
	(!A1 * !A2 * !A3 * C1 * !X)	0.00123	0.00123	0.00121
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00056	-0.00057	-0.00056
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00127	0.00124	0.00121
sky130_fd_sc_hs__o311a_2	(A3 * !C1 * !X)	-0.00087	-0.00093	-0.00093
	(A3 * !C1 * !X)	0.00129	0.00127	0.00125
	(A2 * !A3 * !C1 * !X)	-0.00086	-0.00093	-0.00093
	(A2 * !A3 * !C1 * !X)	0.00129	0.00127	0.00125
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00086	-0.00093	-0.00092
	(A1 * !A2 * !A3 * !C1 * !X)	0.00131	0.00127	0.00125
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00040	-0.00040	-0.00041
	(!A1 * !A2 * !A3 * C1 * !X)	0.00129	0.00129	0.00127
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00053	-0.00054	-0.00054
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00136	0.00132	0.00129

sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	-0.00172	-0.00184	-0.00183
	(A3 * !C1 * !X)	0.00274	0.00272	0.00269
	(A2 * !A3 * !C1 * !X)	-0.00170	-0.00184	-0.00183
	(A2 * !A3 * !C1 * !X)	0.00275	0.00272	0.00269
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00169	-0.00184	-0.00183
	(A1 * !A2 * !A3 * !C1 * !X)	0.00277	0.00272	0.00269
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00092	-0.00091	-0.00093
	(!A1 * !A2 * !A3 * C1 * !X)	0.00278	0.00277	0.00272
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00119	-0.00120	-0.00119
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00280	0.00279	0.00272

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	0.00036	0.00036	0.00035
	(A3 * !B1 * !X)	-0.00140	-0.00141	-0.00142
	(A2 * !A3 * !B1 * !X)	0.00036	0.00036	0.00035
	(A2 * !A3 * !B1 * !X)	-0.00140	-0.00141	-0.00142
	(!A2 * !A3 * !B1 * !X)	0.00036	0.00036	0.00035
	(!A2 * !A3 * !B1 * !X)	-0.00140	-0.00141	-0.00142
	(!A1 * !A2 * !A3 * B1 * !X)	0.00044	0.00044	0.00037
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00131	-0.00131	-0.00141
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	0.00040	0.00041	0.00039
	(A3 * !B1 * !X)	-0.00142	-0.00142	-0.00144
	(A2 * !A3 * !B1 * !X)	0.00040	0.00040	0.00039
	(A2 * !A3 * !B1 * !X)	-0.00142	-0.00142	-0.00144
	(!A2 * !A3 * !B1 * !X)	0.00040	0.00040	0.00039
	(!A2 * !A3 * !B1 * !X)	-0.00142	-0.00142	-0.00144
	(!A1 * !A2 * !A3 * B1 * !X)	0.00044	0.00044	0.00039
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00134	-0.00135	-0.00144
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	0.00073	0.00074	0.00070
	(A3 * !B1 * !X)	-0.00263	-0.00266	-0.00271
	(A2 * !A3 * !B1 * !X)	0.00074	0.00074	0.00070
	(A2 * !A3 * !B1 * !X)	-0.00265	-0.00266	-0.00271
	(!A2 * !A3 * !B1 * !X)	0.00074	0.00074	0.00070
	(!A2 * !A3 * !B1 * !X)	-0.00265	-0.00266	-0.00271
	(!A1 * !A2 * !A3 * B1 * !X)	0.00079	0.00080	0.00069
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00246	-0.00249	-0.00268

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	-0.00034	-0.00034	-0.00034
	(A3 * !B1 * !X)	0.00142	0.00143	0.00143
	(A2 * !A3 * !B1 * !X)	-0.00034	-0.00034	-0.00034
	(A2 * !A3 * !B1 * !X)	0.00142	0.00143	0.00143
	(!A2 * !A3 * !B1 * !X)	-0.00034	-0.00034	-0.00034
	(!A2 * !A3 * !B1 * !X)	0.00142	0.00143	0.00143
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00034	-0.00034	-0.00033
	(!A1 * !A2 * !A3 * B1 * !X)	0.00142	0.00143	0.00142
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	-0.00038	-0.00038	-0.00038
	(A3 * !B1 * !X)	0.00144	0.00145	0.00145
	(A2 * !A3 * !B1 * !X)	-0.00038	-0.00038	-0.00038
	(A2 * !A3 * !B1 * !X)	0.00144	0.00145	0.00145
	(!A2 * !A3 * !B1 * !X)	-0.00038	-0.00038	-0.00038
	(!A2 * !A3 * !B1 * !X)	0.00144	0.00145	0.00145
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00037	-0.00038	-0.00037
	(!A1 * !A2 * !A3 * B1 * !X)	0.00144	0.00145	0.00144
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	-0.00069	-0.00068	-0.00068
	(A3 * !B1 * !X)	0.00273	0.00273	0.00272
	(A2 * !A3 * !B1 * !X)	-0.00069	-0.00068	-0.00068
	(A2 * !A3 * !B1 * !X)	0.00273	0.00273	0.00272
	(!A2 * !A3 * !B1 * !X)	-0.00069	-0.00068	-0.00068
	(!A2 * !A3 * !B1 * !X)	0.00273	0.00273	0.00272
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00066	-0.00065	-0.00064
	(!A1 * !A2 * !A3 * B1 * !X)	0.00272	0.00273	0.00272

SKY130_FD_SC_HS__O31AIx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o31ai_1	9.59040
sky130_fd_sc_hs__o31ai_2	15.98400
sky130_fd_sc_hs__o31ai_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	A3	B1	Y
sky130_fd_sc_hs__o31ai_1	0.00254	0.00299	0.00293	0.00265	0.23913
sky130_fd_sc_hs__o31ai_2	0.00518	0.00508	0.00537	0.00529	0.42889
sky130_fd_sc_hs__o31ai_4	0.00995	0.00997	0.01043	0.00779	0.81670

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o31ai_1	0.00000	0.01629	0.04886
sky130_fd_sc_hs__o31ai_2	0.00000	0.03258	0.09773
sky130_fd_sc_hs__o31ai_4	0.00000	0.04377	0.14659

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)	0.26718	1.45658	11.37290
	A2->Y (FR)	0.25823	1.45969	11.76480
	A3->Y (FR)	0.20719	1.37738	11.47510
	B1->Y (FR)	0.05123	0.71832	7.06305
sky130_fd_sc_hs__o31ai_2	A1->Y (FR)	0.27865	1.29861	11.25660
	A2->Y (FR)	0.25088	1.27695	11.62880
	A3->Y (FR)	0.19839	1.20399	11.44830
	B1->Y (FR)	0.04524	0.65918	7.00454
sky130_fd_sc_hs__o31ai_4	A1->Y (FR)	0.25754	1.13022	11.21010
	A2->Y (FR)	0.23266	1.11387	11.64360
	A3->Y (FR)	0.17570	1.04037	11.48930
	B1->Y (FR)	0.05826	0.75557	8.84953

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31ai_1	A1->Y (RF)	0.04870	0.44036	3.73810
	A2->Y (RF)	0.05028	0.43399	3.72360
	A3->Y (RF)	0.04207	0.41809	3.68613
	B1->Y (RF)	0.04086	0.47629	4.14075
sky130_fd_sc_hs__o31ai_2	A1->Y (RF)	0.04979	0.40595	3.72840
	A2->Y (RF)	0.04900	0.39385	3.69976
	A3->Y (RF)	0.04212	0.37899	3.67281
	B1->Y (RF)	0.03804	0.43404	4.17499
sky130_fd_sc_hs__o31ai_4	A1->Y (RF)	0.04992	0.36409	3.69732
	A2->Y (RF)	0.04779	0.34887	3.65068
	A3->Y (RF)	0.03779	0.32465	3.55182
	B1->Y (RF)	0.03756	0.42255	4.56831

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.00054	0.00044	0.00050
	A1	0.00572	0.00563	0.00568
	A2	0.00058	0.00042	0.00054
	A2	0.00536	0.00521	0.00532
	A3	0.00056	0.00047	0.00111
	A3	0.00467	0.00458	0.00521
	B1	-0.00023	-0.00021	0.00059
	B1	0.00409	0.00404	0.00485
sky130_fd_sc_hs__o31ai_2	A1	0.00107	0.00079	0.00090
	A1	0.01153	0.01126	0.01135
	A2	0.00111	0.00082	0.00109
	A2	0.01011	0.00984	0.01009
	A3	0.00103	0.00078	0.00219
	A3	0.00887	0.00862	0.00999
	B1	-0.00109	-0.00099	0.00068
	B1	0.00739	0.00740	0.00900
sky130_fd_sc_hs__o31ai_4	A1	0.00163	0.00115	0.00142
	A1	0.02188	0.02144	0.02168
	A2	0.00166	0.00113	0.00170
	A2	0.01927	0.01877	0.01929
	A3	0.00152	0.00110	0.00390
	A3	0.01669	0.01628	0.01900
	B1	-0.00203	-0.00213	-0.00013
	B1	0.01204	0.01186	0.01381

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.00684	0.00673	0.00686
	A1	0.00165	0.00153	0.00164
	A2	0.00588	0.00577	0.00588
	A2	0.00104	0.00093	0.00104
	A3	0.00454	0.00450	0.00466
	A3	0.00033	0.00029	0.00043
	B1	0.00585	0.00576	0.00605
	B1	0.00165	0.00153	0.00179
sky130_fd_sc_hs__o31ai_2	A1	0.01403	0.01374	0.01395
	A1	0.00355	0.00325	0.00346
	A2	0.01118	0.01098	0.01129
	A2	0.00200	0.00181	0.00209
	A3	0.00864	0.00855	0.00895
	A3	0.00058	0.00048	0.00083
	B1	0.01176	0.01150	0.01215
	B1	0.00360	0.00334	0.00388
sky130_fd_sc_hs__o31ai_4	A1	0.02596	0.02539	0.02591
	A1	0.00568	0.00505	0.00555
	A2	0.02059	0.02010	0.02090
	A2	0.00270	0.00222	0.00287
	A3	0.01529	0.01510	0.01611
	A3	-0.00028	-0.00051	0.00038
	B1	0.02089	0.02073	0.02133
	B1	0.00741	0.00723	0.00766

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)**	0.00106	0.00107	0.00106
	(A2 * A3 * B1 * !Y)	-0.00119	-0.00122	-0.00122
	(A2 * !B1 * Y)	0.00106	0.00106	0.00106
	(A2 * !B1 * Y)	-0.00119	-0.00122	-0.00122
	(A2 * !A3 * B1 * !Y)	0.00107	0.00107	0.00106
	(A2 * !A3 * B1 * !Y)	-0.00118	-0.00121	-0.00122
	(!A2 * A3 * B1 * !Y)	0.00107	0.00107	0.00106
	(!A2 * A3 * B1 * !Y)	-0.00110	-0.00118	-0.00117
	(!A2 * A3 * !B1 * Y)	0.00106	0.00107	0.00106
	(!A2 * A3 * !B1 * Y)	-0.00110	-0.00118	-0.00117
	(!A2 * !A3 * !B1 * Y)	0.00100	0.00100	0.00100
	(!A2 * !A3 * !B1 * Y)	-0.00124	-0.00124	-0.00124
sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	0.00214	0.00215	0.00214
	(A2 * A3 * B1 * !Y)	-0.00242	-0.00251	-0.00251
	(A2 * !B1 * Y)	0.00213	0.00214	0.00214
	(A2 * !B1 * Y)	-0.00243	-0.00253	-0.00252
	(A2 * !A3 * B1 * !Y)	0.00215	0.00215	0.00214
	(A2 * !A3 * B1 * !Y)	-0.00240	-0.00252	-0.00251
	(!A2 * A3 * B1 * !Y)	0.00217	0.00215	0.00214
	(!A2 * A3 * B1 * !Y)	-0.00224	-0.00242	-0.00241
	(!A2 * A3 * !B1 * Y)	0.00213	0.00214	0.00214
	(!A2 * A3 * !B1 * Y)	-0.00227	-0.00242	-0.00241
	(!A2 * !A3 * !B1 * Y)	0.00199	0.00199	0.00198
	(!A2 * !A3 * !B1 * Y)	-0.00259	-0.00259	-0.00258

sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	0.00412	0.00414	0.00412
	(A2 * A3 * B1 * !Y)	-0.00479	-0.00500	-0.00497
	(A2 * !B1 * Y)	0.00410	0.00413	0.00412
	(A2 * !B1 * Y)	-0.00481	-0.00501	-0.00498
	(A2 * !A3 * B1 * !Y)	0.00413	0.00414	0.00412
	(A2 * !A3 * B1 * !Y)	-0.00474	-0.00499	-0.00497
	(!A2 * A3 * B1 * !Y)	0.00418	0.00415	0.00412
	(!A2 * A3 * B1 * !Y)	-0.00446	-0.00478	-0.00477
	(!A2 * A3 * !B1 * Y)	0.00412	0.00414	0.00412
	(!A2 * A3 * !B1 * Y)	-0.00451	-0.00478	-0.00477
	(!A2 * !A3 * !B1 * Y)	0.00383	0.00388	0.00384
	(!A2 * !A3 * !B1 * Y)	-0.00510	-0.00513	-0.00511

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)**	-0.00105	-0.00106	-0.00106
	(A2 * A3 * B1 * !Y)	0.00121	0.00122	0.00122
	(A2 * !B1 * Y)	-0.00105	-0.00106	-0.00106
	(A2 * !B1 * Y)	0.00121	0.00122	0.00122
	(A2 * !A3 * B1 * !Y)	-0.00106	-0.00106	-0.00106
	(A2 * !A3 * B1 * !Y)	0.00121	0.00121	0.00122
	(!A2 * A3 * B1 * !Y)	-0.00106	-0.00106	-0.00106
	(!A2 * A3 * B1 * !Y)	0.00117	0.00118	0.00117
	(!A2 * A3 * !B1 * Y)	-0.00106	-0.00106	-0.00106
	(!A2 * A3 * !B1 * Y)	0.00117	0.00118	0.00117
	(!A2 * !A3 * !B1 * Y)	-0.00095	-0.00100	-0.00100
	(!A2 * !A3 * !B1 * Y)	0.00125	0.00124	0.00124

sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	-0.00214	-0.00214	-0.00214
	(A2 * A3 * B1 * !Y)	0.00251	0.00251	0.00251
	(A2 * !B1 * Y)	-0.00213	-0.00214	-0.00213
	(A2 * !B1 * Y)	0.00252	0.00253	0.00252
	(A2 * !A3 * B1 * !Y)	-0.00214	-0.00214	-0.00214
	(A2 * !A3 * B1 * !Y)	0.00251	0.00253	0.00251
	(!A2 * A3 * B1 * !Y)	-0.00213	-0.00214	-0.00213
	(!A2 * A3 * B1 * !Y)	0.00240	0.00242	0.00241
	(!A2 * A3 * !B1 * Y)	-0.00213	-0.00214	-0.00213
	(!A2 * A3 * !B1 * Y)	0.00240	0.00242	0.00241
	(!A2 * !A3 * !B1 * Y)	-0.00187	-0.00199	-0.00198
	(!A2 * !A3 * !B1 * Y)	0.00261	0.00260	0.00259
sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	-0.00412	-0.00413	-0.00412
	(A2 * A3 * B1 * !Y)	0.00498	0.00500	0.00497
	(A2 * !B1 * Y)	-0.00410	-0.00412	-0.00411
	(A2 * !B1 * Y)	0.00499	0.00501	0.00498
	(A2 * !A3 * B1 * !Y)	-0.00412	-0.00413	-0.00411
	(A2 * !A3 * B1 * !Y)	0.00498	0.00500	0.00497
	(!A2 * A3 * B1 * !Y)	-0.00411	-0.00412	-0.00411
	(!A2 * A3 * B1 * !Y)	0.00476	0.00478	0.00477
	(!A2 * A3 * !B1 * Y)	-0.00411	-0.00411	-0.00411
	(!A2 * A3 * !B1 * Y)	0.00477	0.00478	0.00477
	(!A2 * !A3 * !B1 * Y)	-0.00359	-0.00386	-0.00384
	(!A2 * !A3 * !B1 * Y)	0.00511	0.00517	0.00512

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)**	0.00126	0.00126	0.00123
	(A1 * A3 * B1 * !Y)	-0.00088	-0.00088	-0.00088
	(A1 * A3 * !B1 * Y)	0.00105	0.00105	0.00105
	(A1 * A3 * !B1 * Y)	-0.00110	-0.00111	-0.00110
	(A1 * !A3 * B1 * !Y)	0.00122	0.00121	0.00121
	(A1 * !A3 * B1 * !Y)	-0.00078	-0.00077	-0.00077
	(A1 * !A3 * !B1 * Y)	0.00106	0.00105	0.00105
	(A1 * !A3 * !B1 * Y)	-0.00140	-0.00141	-0.00141
	(!A1 * A3 * B1 * !Y)	0.00138	0.00122	0.00121
	(!A1 * A3 * B1 * !Y)	-0.00109	-0.00127	-0.00127
	(!A1 * A3 * !B1 * Y)	0.00106	0.00106	0.00105
	(!A1 * A3 * !B1 * Y)	-0.00140	-0.00142	-0.00142
	(!A1 * !A3 * !B1 * Y)	0.00098	0.00098	0.00097
	(!A1 * !A3 * !B1 * Y)	-0.00145	-0.00145	-0.00144
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	0.00222	0.00220	0.00214
	(A1 * A3 * B1 * !Y)	-0.00171	-0.00173	-0.00172
	(A1 * A3 * !B1 * Y)	0.00208	0.00208	0.00207
	(A1 * A3 * !B1 * Y)	-0.00188	-0.00190	-0.00188
	(A1 * !A3 * B1 * !Y)	0.00211	0.00212	0.00211
	(A1 * !A3 * B1 * !Y)	-0.00148	-0.00148	-0.00148
	(A1 * !A3 * !B1 * Y)	0.00206	0.00208	0.00207
	(A1 * !A3 * !B1 * Y)	-0.00242	-0.00250	-0.00249
	(!A1 * A3 * B1 * !Y)	0.00241	0.00213	0.00210
	(!A1 * A3 * B1 * !Y)	-0.00213	-0.00250	-0.00250
	(!A1 * A3 * !B1 * Y)	0.00206	0.00209	0.00207
	(!A1 * A3 * !B1 * Y)	-0.00246	-0.00253	-0.00252
	(!A1 * !A3 * !B1 * Y)	0.00193	0.00194	0.00193
	(!A1 * !A3 * !B1 * Y)	-0.00257	-0.00258	-0.00257

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	0.00435	0.00437	0.00425
	(A1 * A3 * B1 * !Y)	-0.00342	-0.00344	-0.00342
	(A1 * A3 * !B1 * Y)	0.00413	0.00412	0.00409
	(A1 * A3 * !B1 * Y)	-0.00378	-0.00379	-0.00376
	(A1 * !A3 * B1 * !Y)	0.00420	0.00422	0.00418
	(A1 * !A3 * B1 * !Y)	-0.00296	-0.00297	-0.00296
	(A1 * !A3 * !B1 * Y)	0.00410	0.00411	0.00409
	(A1 * !A3 * !B1 * Y)	-0.00489	-0.00499	-0.00497
	(!A1 * A3 * B1 * !Y)	0.00484	0.00424	0.00416
	(!A1 * A3 * B1 * !Y)	-0.00421	-0.00499	-0.00498
	(!A1 * A3 * !B1 * Y)	0.00410	0.00414	0.00409
	(!A1 * A3 * !B1 * Y)	-0.00494	-0.00506	-0.00503
	(!A1 * !A3 * !B1 * Y)	0.00380	0.00386	0.00382
	(!A1 * !A3 * !B1 * Y)	-0.00512	-0.00517	-0.00514

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)**	-0.00121	-0.00121	-0.00121
	(A1 * A3 * B1 * !Y)	0.00088	0.00088	0.00088
	(A1 * A3 * !B1 * Y)	-0.00105	-0.00105	-0.00105
	(A1 * A3 * !B1 * Y)	0.00110	0.00111	0.00110
	(A1 * !A3 * B1 * !Y)	-0.00120	-0.00119	-0.00119
	(A1 * !A3 * B1 * !Y)	0.00079	0.00079	0.00080
	(A1 * !A3 * !B1 * Y)	-0.00105	-0.00105	-0.00105
	(A1 * !A3 * !B1 * Y)	0.00142	0.00141	0.00141
	(!A1 * A3 * B1 * !Y)	-0.00121	-0.00121	-0.00120
	(!A1 * A3 * B1 * !Y)	0.00127	0.00127	0.00127
	(!A1 * A3 * !B1 * Y)	-0.00104	-0.00105	-0.00105
	(!A1 * A3 * !B1 * Y)	0.00141	0.00142	0.00142
	(!A1 * !A3 * !B1 * Y)	-0.00092	-0.00098	-0.00097
	(!A1 * !A3 * !B1 * Y)	0.00145	0.00146	0.00145
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	-0.00211	-0.00212	-0.00211
	(A1 * A3 * B1 * !Y)	0.00171	0.00173	0.00172
	(A1 * A3 * !B1 * Y)	-0.00206	-0.00207	-0.00206
	(A1 * A3 * !B1 * Y)	0.00188	0.00190	0.00188
	(A1 * !A3 * B1 * !Y)	-0.00206	-0.00207	-0.00206
	(A1 * !A3 * B1 * !Y)	0.00154	0.00154	0.00154
	(A1 * !A3 * !B1 * Y)	-0.00206	-0.00207	-0.00206
	(A1 * !A3 * !B1 * Y)	0.00248	0.00250	0.00249
	(!A1 * A3 * B1 * !Y)	-0.00209	-0.00210	-0.00209
	(!A1 * A3 * B1 * !Y)	0.00248	0.00250	0.00250
	(!A1 * A3 * !B1 * Y)	-0.00206	-0.00207	-0.00206
	(!A1 * A3 * !B1 * Y)	0.00251	0.00253	0.00252
	(!A1 * !A3 * !B1 * Y)	-0.00182	-0.00194	-0.00193
	(!A1 * !A3 * !B1 * Y)	0.00259	0.00259	0.00257

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	-0.00418	-0.00421	-0.00419
	(A1 * A3 * B1 * !Y)	0.00342	0.00344	0.00342
	(A1 * A3 * !B1 * Y)	-0.00410	-0.00411	-0.00408
	(A1 * A3 * !B1 * Y)	0.00378	0.00379	0.00376
	(A1 * !A3 * B1 * !Y)	-0.00408	-0.00412	-0.00408
	(A1 * !A3 * B1 * !Y)	0.00303	0.00307	0.00308
	(A1 * !A3 * !B1 * Y)	-0.00407	-0.00410	-0.00408
	(A1 * !A3 * !B1 * Y)	0.00496	0.00499	0.00497
	(!A1 * A3 * B1 * !Y)	-0.00415	-0.00416	-0.00413
	(!A1 * A3 * B1 * !Y)	0.00497	0.00499	0.00498
	(!A1 * A3 * !B1 * Y)	-0.00409	-0.00410	-0.00408
	(!A1 * A3 * !B1 * Y)	0.00503	0.00506	0.00503
	(!A1 * !A3 * !B1 * Y)	-0.00359	-0.00384	-0.00382
	(!A1 * !A3 * !B1 * Y)	0.00519	0.00519	0.00515

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	0.00129	0.00129	0.00129
	(A2 * B1 * !Y)	-0.00065	-0.00065	-0.00065
	(A2 * !B1 * Y)	0.00102	0.00102	0.00101
	(A2 * !B1 * Y)	-0.00138	-0.00141	-0.00140
	(A1 * !A2 * B1 * !Y)	0.00129	0.00130	0.00129
	(A1 * !A2 * B1 * !Y)	-0.00064	-0.00065	-0.00065
	(A1 * !A2 * !B1 * Y)	0.00100	0.00101	0.00101
	(A1 * !A2 * !B1 * Y)	-0.00126	-0.00135	-0.00134
	(!A1 * !A2 * !B1 * Y)	0.00095	0.00094	0.00095
	(!A1 * !A2 * !B1 * Y)	-0.00143	-0.00142	-0.00143

sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	0.00242	0.00243	0.00242
	(A2 * B1 * !Y)	-0.00130	-0.00130	-0.00130
	(A2 * !B1 * Y)	0.00202	0.00204	0.00202
	(A2 * !B1 * Y)	-0.00255	-0.00263	-0.00262
	(A1 * !A2 * B1 * !Y)	0.00242	0.00242	0.00242
	(A1 * !A2 * B1 * !Y)	-0.00130	-0.00130	-0.00129
	(A1 * !A2 * !B1 * Y)	0.00201	0.00204	0.00202
	(A1 * !A2 * !B1 * Y)	-0.00237	-0.00250	-0.00249
	(!A1 * !A2 * !B1 * Y)	0.00190	0.00189	0.00190
	(!A1 * !A2 * !B1 * Y)	-0.00268	-0.00267	-0.00268
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	0.00471	0.00475	0.00473
	(A2 * B1 * !Y)	-0.00257	-0.00259	-0.00257
	(A2 * !B1 * Y)	0.00395	0.00398	0.00396
	(A2 * !B1 * Y)	-0.00504	-0.00521	-0.00519
	(A1 * !A2 * B1 * !Y)	0.00471	0.00476	0.00473
	(A1 * !A2 * B1 * !Y)	-0.00256	-0.00258	-0.00257
	(A1 * !A2 * !B1 * Y)	0.00396	0.00400	0.00396
	(A1 * !A2 * !B1 * Y)	-0.00466	-0.00489	-0.00488
	(!A1 * !A2 * !B1 * Y)	0.00374	0.00376	0.00372
	(!A1 * !A2 * !B1 * Y)	-0.00533	-0.00534	-0.00531

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

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

sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	-0.00124	-0.00124	-0.00129
	(A2 * B1 * !Y)	0.00071	0.00070	0.00067
	(A2 * !B1 * Y)	-0.00101	-0.00101	-0.00100
	(A2 * !B1 * Y)	0.00141	0.00141	0.00140
	(A1 * !A2 * B1 * !Y)	-0.00117	-0.00118	-0.00127
	(A1 * !A2 * B1 * !Y)	0.00074	0.00074	0.00067
	(A1 * !A2 * !B1 * Y)	-0.00100	-0.00101	-0.00100
	(A1 * !A2 * !B1 * Y)	0.00134	0.00135	0.00134
	(!A1 * !A2 * !B1 * Y)	-0.00089	-0.00094	-0.00095
	(!A1 * !A2 * !B1 * Y)	0.00143	0.00144	0.00143
sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	-0.00229	-0.00231	-0.00240
	(A2 * B1 * !Y)	0.00140	0.00141	0.00133
	(A2 * !B1 * Y)	-0.00201	-0.00202	-0.00201
	(A2 * !B1 * Y)	0.00261	0.00263	0.00262
	(A1 * !A2 * B1 * !Y)	-0.00211	-0.00213	-0.00236
	(A1 * !A2 * B1 * !Y)	0.00151	0.00151	0.00134
	(A1 * !A2 * !B1 * Y)	-0.00201	-0.00202	-0.00201
	(A1 * !A2 * !B1 * Y)	0.00248	0.00250	0.00249
	(!A1 * !A2 * !B1 * Y)	-0.00178	-0.00189	-0.00190
	(!A1 * !A2 * !B1 * Y)	0.00270	0.00270	0.00268
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	-0.00448	-0.00452	-0.00470
	(A2 * B1 * !Y)	0.00280	0.00280	0.00264
	(A2 * !B1 * Y)	-0.00394	-0.00396	-0.00395
	(A2 * !B1 * Y)	0.00517	0.00521	0.00519
	(A1 * !A2 * B1 * !Y)	-0.00413	-0.00417	-0.00462
	(A1 * !A2 * B1 * !Y)	0.00300	0.00300	0.00266
	(A1 * !A2 * !B1 * Y)	-0.00395	-0.00396	-0.00395
	(A1 * !A2 * !B1 * Y)	0.00487	0.00489	0.00488
	(!A1 * !A2 * !B1 * Y)	-0.00352	-0.00375	-0.00372
	(!A1 * !A2 * !B1 * Y)	0.00535	0.00537	0.00532

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)	0.00042	0.00042	0.00039
	(!A1 * !A2 * !A3 * Y)	-0.00144	-0.00145	-0.00150
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	0.00083	0.00084	0.00076
	(!A1 * !A2 * !A3 * Y)	-0.00285	-0.00288	-0.00300
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	0.00149	0.00149	0.00135
	(!A1 * !A2 * !A3 * Y)	-0.00329	-0.00333	-0.00356

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)	-0.00038	-0.00038	-0.00038
	(!A1 * !A2 * !A3 * Y)	0.00151	0.00152	0.00151
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	-0.00073	-0.00073	-0.00073
	(!A1 * !A2 * !A3 * Y)	0.00303	0.00304	0.00302
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	-0.00131	-0.00131	-0.00130
	(!A1 * !A2 * !A3 * Y)	0.00360	0.00361	0.00359

SKY130_FD_SC_HS__O31Ax

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o31a_1	11.18880
sky130_fd_sc_hs__o31a_2	12.78720
sky130_fd_sc_hs__o31a_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	A3	B1	X
sky130_fd_sc_hs__o31a_1	0.00251	0.00245	0.00246	0.00227	0.76095
sky130_fd_sc_hs__o31a_2	0.00265	0.00258	0.00260	0.00272	1.36790
sky130_fd_sc_hs__o31a_4	0.00452	0.00484	0.00481	0.00478	2.93474

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o31a_1	0.00000	0.07838	0.18456
sky130_fd_sc_hs__o31a_2	0.00000	0.06717	0.12939
sky130_fd_sc_hs__o31a_4	0.00000	0.13596	0.25878

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)	0.11845	0.81902	7.25959
	A2->X (RR)	0.11571	0.80762	7.18418
	A3->X (RR)	0.10375	0.78183	7.10427
	B1->X (RR)	0.10797	0.80492	7.19419
sky130_fd_sc_hs__o31a_2	A1->X (RR)	0.12245	0.72770	7.23739
	A2->X (RR)	0.12037	0.71857	7.17911
	A3->X (RR)	0.10807	0.69733	7.10451
	B1->X (RR)	0.11310	0.72590	7.16857
sky130_fd_sc_hs__o31a_4	A1->X (RR)	0.12846	0.64576	7.42677
	A2->X (RR)	0.12365	0.63105	7.35118
	A3->X (RR)	0.11158	0.61038	7.28228
	B1->X (RR)	0.11787	0.64545	7.35663

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31a_1	A1->X (FF)	0.36717	0.94347	5.13112
	A2->X (FF)	0.34426	0.93314	5.18334
	A3->X (FF)	0.29624	0.86342	4.82879
	B1->X (FF)	0.11070	0.66337	4.47000
sky130_fd_sc_hs__o31a_2	A1->X (FF)	0.47113	1.04198	5.32316
	A2->X (FF)	0.44762	1.03284	5.42909
	A3->X (FF)	0.39904	0.95672	5.08079
	B1->X (FF)	0.12095	0.65968	4.50726
sky130_fd_sc_hs__o31a_4	A1->X (FF)	0.46621	1.01545	5.54613
	A2->X (FF)	0.44342	0.99984	5.62292
	A3->X (FF)	0.37871	0.90804	5.26323
	B1->X (FF)	0.11278	0.62035	4.75521

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.00826	0.00814	0.00890
	A1	0.00357	0.00345	0.00426
	A2	0.00719	0.00716	0.00808
	A2	0.00308	0.00305	0.00403
	A3	0.00604	0.00598	0.00763
	A3	0.00243	0.00237	0.00406
	B1	0.00728	0.00721	0.01079
	B1	0.00371	0.00365	0.00728
sky130_fd_sc_hs__o31a_2	A1	0.01040	0.01048	0.01112
	A1	0.00542	0.00557	0.00616
	A2	0.00927	0.00948	0.01028
	A2	0.00490	0.00512	0.00603
	A3	0.00815	0.00833	0.00957
	A3	0.00424	0.00443	0.00575
	B1	0.00940	0.00945	0.01206
	B1	0.00539	0.00551	0.00815
sky130_fd_sc_hs__o31a_4	A1	0.01978	0.02023	0.02215
	A1	0.01068	0.01115	0.01317
	A2	0.01788	0.01833	0.02045
	A2	0.00951	0.00997	0.01221
	A3	0.01482	0.01524	0.01904
	A3	0.00775	0.00821	0.01219
	B1	0.01795	0.01828	0.02365
	B1	0.01063	0.01098	0.01648

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.00281	0.00269	0.00347
	A1	0.00745	0.00738	0.00807
	A2	0.00282	0.00275	0.00394
	A2	0.00685	0.00684	0.00794
	A3	0.00281	0.00298	0.00601
	A3	0.00632	0.00648	0.00929
	B1	0.00219	0.00240	0.00743
	B1	0.00580	0.00601	0.01057
sky130_fd_sc_hs__o31a_2	A1	0.00450	0.00441	0.00517
	A1	0.00941	0.00942	0.01006
	A2	0.00453	0.00443	0.00637
	A2	0.00879	0.00887	0.00991
	A3	0.00450	0.00429	0.00784
	A3	0.00828	0.00850	0.01122
	B1	0.00365	0.00395	0.00821
	B1	0.00771	0.00801	0.01177
sky130_fd_sc_hs__o31a_4	A1	0.00898	0.00934	0.01251
	A1	0.01800	0.01850	0.01984
	A2	0.00861	0.00885	0.01153
	A2	0.01685	0.01736	0.01953
	A3	0.00891	0.00947	0.01693
	A3	0.01575	0.01633	0.02217
	B1	0.00721	0.00805	0.01670
	B1	0.01476	0.01541	0.02287

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)**	0.00102	0.00102	0.00102
	(A2 * A3 * B1 * X)	-0.00106	-0.00109	-0.00108
	(A2 * !B1 * !X)	0.00087	0.00087	0.00087
	(A2 * !B1 * !X)	-0.00121	-0.00124	-0.00123
	(A2 * !A3 * B1 * X)	0.00103	0.00102	0.00102
	(A2 * !A3 * B1 * X)	-0.00104	-0.00109	-0.00109
	(!A2 * A3 * B1 * X)	0.00103	0.00103	0.00102
	(!A2 * A3 * B1 * X)	-0.00097	-0.00105	-0.00104
	(!A2 * A3 * !B1 * !X)	0.00087	0.00088	0.00087
	(!A2 * A3 * !B1 * !X)	-0.00113	-0.00120	-0.00119
	(!A2 * !A3 * !B1 * !X)	0.00082	0.00083	0.00082
	(!A2 * !A3 * !B1 * !X)	-0.00125	-0.00126	-0.00125
sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	0.00113	0.00113	0.00112
	(A2 * A3 * B1 * X)	-0.00111	-0.00114	-0.00113
	(A2 * !B1 * !X)	0.00104	0.00105	0.00104
	(A2 * !B1 * !X)	-0.00119	-0.00122	-0.00121
	(A2 * !A3 * B1 * X)	0.00113	0.00113	0.00112
	(A2 * !A3 * B1 * X)	-0.00109	-0.00114	-0.00113
	(!A2 * A3 * B1 * X)	0.00114	0.00114	0.00112
	(!A2 * A3 * B1 * X)	-0.00101	-0.00110	-0.00109
	(!A2 * A3 * !B1 * !X)	0.00104	0.00105	0.00104
	(!A2 * A3 * !B1 * !X)	-0.00111	-0.00118	-0.00117
	(!A2 * !A3 * !B1 * !X)	0.00097	0.00099	0.00098
	(!A2 * !A3 * !B1 * !X)	-0.00122	-0.00124	-0.00123

sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	0.00172	0.00172	0.00171
	(A2 * A3 * B1 * X)	-0.00220	-0.00227	-0.00226
	(A2 * !B1 * !X)	0.00171	0.00172	0.00171
	(A2 * !B1 * !X)	-0.00221	-0.00228	-0.00227
	(A2 * !A3 * B1 * X)	0.00174	0.00172	0.00171
	(A2 * !A3 * B1 * X)	-0.00214	-0.00226	-0.00226
	(!A2 * A3 * B1 * X)	0.00175	0.00172	0.00171
	(!A2 * A3 * B1 * X)	-0.00200	-0.00218	-0.00217
	(!A2 * A3 * !B1 * !X)	0.00171	0.00172	0.00171
	(!A2 * A3 * !B1 * !X)	-0.00203	-0.00218	-0.00217
	(!A2 * !A3 * !B1 * !X)	0.00158	0.00160	0.00159
	(!A2 * !A3 * !B1 * !X)	-0.00232	-0.00233	-0.00233

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)**	-0.00101	-0.00102	-0.00102
	(A2 * A3 * B1 * X)	0.00108	0.00109	0.00108
	(A2 * !B1 * !X)	-0.00087	-0.00087	-0.00087
	(A2 * !B1 * !X)	0.00123	0.00124	0.00123
	(A2 * !A3 * B1 * X)	-0.00101	-0.00102	-0.00102
	(A2 * !A3 * B1 * X)	0.00108	0.00109	0.00109
	(!A2 * A3 * B1 * X)	-0.00101	-0.00102	-0.00101
	(!A2 * A3 * B1 * X)	0.00105	0.00105	0.00104
	(!A2 * A3 * !B1 * !X)	-0.00087	-0.00087	-0.00087
	(!A2 * A3 * !B1 * !X)	0.00119	0.00120	0.00119
	(!A2 * !A3 * !B1 * !X)	-0.00077	-0.00083	-0.00082
	(!A2 * !A3 * !B1 * !X)	0.00126	0.00126	0.00125

sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	-0.00112	-0.00112	-0.00112
	(A2 * A3 * B1 * X)	0.00113	0.00114	0.00113
	(A2 * !B1 * !X)	-0.00104	-0.00104	-0.00104
	(A2 * !B1 * !X)	0.00122	0.00122	0.00121
	(A2 * !A3 * B1 * X)	-0.00112	-0.00112	-0.00112
	(A2 * !A3 * B1 * X)	0.00114	0.00114	0.00113
	(!A2 * A3 * B1 * X)	-0.00112	-0.00112	-0.00112
	(!A2 * A3 * B1 * X)	0.00110	0.00110	0.00109
	(!A2 * A3 * !B1 * !X)	-0.00104	-0.00104	-0.00104
	(!A2 * A3 * !B1 * !X)	0.00117	0.00118	0.00117
	(!A2 * !A3 * !B1 * !X)	-0.00094	-0.00099	-0.00098
	(!A2 * !A3 * !B1 * !X)	0.00124	0.00124	0.00123
sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	-0.00171	-0.00171	-0.00170
	(A2 * A3 * B1 * X)	0.00226	0.00229	0.00226
	(A2 * !B1 * !X)	-0.00171	-0.00171	-0.00170
	(A2 * !B1 * !X)	0.00227	0.00229	0.00227
	(A2 * !A3 * B1 * X)	-0.00171	-0.00171	-0.00170
	(A2 * !A3 * B1 * X)	0.00226	0.00227	0.00226
	(!A2 * A3 * B1 * X)	-0.00170	-0.00171	-0.00170
	(!A2 * A3 * B1 * X)	0.00215	0.00218	0.00217
	(!A2 * A3 * !B1 * !X)	-0.00170	-0.00171	-0.00170
	(!A2 * A3 * !B1 * !X)	0.00216	0.00218	0.00217
	(!A2 * !A3 * !B1 * !X)	-0.00151	-0.00160	-0.00159
	(!A2 * !A3 * !B1 * !X)	0.00235	0.00235	0.00234

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)**	0.00101	0.00102	0.00098
	(A1 * A3 * B1 * X)	-0.00073	-0.00074	-0.00073
	(A1 * A3 * !B1 * !X)	0.00090	0.00090	0.00090
	(A1 * A3 * !B1 * !X)	-0.00083	-0.00084	-0.00083
	(A1 * !A3 * B1 * X)	0.00096	0.00095	0.00095
	(A1 * !A3 * B1 * X)	-0.00064	-0.00063	-0.00064
	(A1 * !A3 * !B1 * !X)	0.00090	0.00091	0.00090
	(A1 * !A3 * !B1 * !X)	-0.00110	-0.00111	-0.00111
	(!A1 * A3 * B1 * X)	0.00112	0.00096	0.00094
	(!A1 * A3 * B1 * X)	-0.00089	-0.00107	-0.00108
	(!A1 * A3 * !B1 * !X)	0.00090	0.00091	0.00090
	(!A1 * A3 * !B1 * !X)	-0.00110	-0.00112	-0.00111
	(!A1 * !A3 * !B1 * !X)	0.00084	0.00084	0.00084
	(!A1 * !A3 * !B1 * !X)	-0.00113	-0.00113	-0.00113
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	0.00111	0.00112	0.00108
	(A1 * A3 * B1 * X)	-0.00075	-0.00076	-0.00075
	(A1 * A3 * !B1 * !X)	0.00100	0.00100	0.00100
	(A1 * A3 * !B1 * !X)	-0.00085	-0.00085	-0.00085
	(A1 * !A3 * B1 * X)	0.00104	0.00105	0.00105
	(A1 * !A3 * B1 * X)	-0.00065	-0.00065	-0.00066
	(A1 * !A3 * !B1 * !X)	0.00101	0.00101	0.00100
	(A1 * !A3 * !B1 * !X)	-0.00111	-0.00113	-0.00112
	(!A1 * A3 * B1 * X)	0.00122	0.00106	0.00104
	(!A1 * A3 * B1 * X)	-0.00091	-0.00109	-0.00109
	(!A1 * A3 * !B1 * !X)	0.00101	0.00101	0.00100
	(!A1 * A3 * !B1 * !X)	-0.00111	-0.00113	-0.00113
	(!A1 * !A3 * !B1 * !X)	0.00094	0.00095	0.00094
	(!A1 * !A3 * !B1 * !X)	-0.00115	-0.00115	-0.00114

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	0.00213	0.00218	0.00208
	(A1 * A3 * B1 * X)	-0.00155	-0.00156	-0.00155
	(A1 * A3 * !B1 * !X)	0.00203	0.00206	0.00203
	(A1 * A3 * !B1 * !X)	-0.00168	-0.00168	-0.00168
	(A1 * !A3 * B1 * X)	0.00204	0.00208	0.00204
	(A1 * !A3 * B1 * X)	-0.00135	-0.00138	-0.00136
	(A1 * !A3 * !B1 * !X)	0.00202	0.00204	0.00203
	(A1 * !A3 * !B1 * !X)	-0.00221	-0.00226	-0.00225
	(!A1 * A3 * B1 * X)	0.00235	0.00206	0.00204
	(!A1 * A3 * B1 * X)	-0.00188	-0.00223	-0.00224
	(!A1 * A3 * !B1 * !X)	0.00203	0.00204	0.00203
	(!A1 * A3 * !B1 * !X)	-0.00216	-0.00224	-0.00223
	(!A1 * !A3 * !B1 * !X)	0.00192	0.00191	0.00192
	(!A1 * !A3 * !B1 * !X)	-0.00231	-0.00230	-0.00230

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)**	-0.00094	-0.00095	-0.00094
	(A1 * A3 * B1 * X)	0.00073	0.00074	0.00073
	(A1 * A3 * !B1 * !X)	-0.00089	-0.00090	-0.00090
	(A1 * A3 * !B1 * !X)	0.00083	0.00084	0.00083
	(A1 * !A3 * B1 * X)	-0.00093	-0.00093	-0.00092
	(A1 * !A3 * B1 * X)	0.00065	0.00065	0.00066
	(A1 * !A3 * !B1 * !X)	-0.00090	-0.00090	-0.00090
	(A1 * !A3 * !B1 * !X)	0.00111	0.00111	0.00111
	(!A1 * A3 * B1 * X)	-0.00094	-0.00094	-0.00093
	(!A1 * A3 * B1 * X)	0.00108	0.00108	0.00108
	(!A1 * A3 * !B1 * !X)	-0.00089	-0.00090	-0.00090
	(!A1 * A3 * !B1 * !X)	0.00110	0.00112	0.00111
	(!A1 * !A3 * !B1 * !X)	-0.00079	-0.00084	-0.00084
	(!A1 * !A3 * !B1 * !X)	0.00114	0.00114	0.00113
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	-0.00104	-0.00105	-0.00104
	(A1 * A3 * B1 * X)	0.00075	0.00076	0.00075
	(A1 * A3 * !B1 * !X)	-0.00100	-0.00100	-0.00100
	(A1 * A3 * !B1 * !X)	0.00085	0.00085	0.00085
	(A1 * !A3 * B1 * X)	-0.00103	-0.00103	-0.00102
	(A1 * !A3 * B1 * X)	0.00067	0.00067	0.00068
	(A1 * !A3 * !B1 * !X)	-0.00100	-0.00101	-0.00100
	(A1 * !A3 * !B1 * !X)	0.00112	0.00113	0.00112
	(!A1 * A3 * B1 * X)	-0.00103	-0.00104	-0.00103
	(!A1 * A3 * B1 * X)	0.00109	0.00110	0.00109
	(!A1 * A3 * !B1 * !X)	-0.00100	-0.00100	-0.00100
	(!A1 * A3 * !B1 * !X)	0.00112	0.00113	0.00113
	(!A1 * !A3 * !B1 * !X)	-0.00090	-0.00095	-0.00094
	(!A1 * !A3 * !B1 * !X)	0.00115	0.00115	0.00115

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	-0.00204	-0.00204	-0.00204
	(A1 * A3 * B1 * X)	0.00155	0.00156	0.00155
	(A1 * A3 * !B1 * !X)	-0.00203	-0.00203	-0.00203
	(A1 * A3 * !B1 * !X)	0.00168	0.00168	0.00168
	(A1 * !A3 * B1 * X)	-0.00201	-0.00202	-0.00199
	(A1 * !A3 * B1 * X)	0.00141	0.00142	0.00141
	(A1 * !A3 * !B1 * !X)	-0.00202	-0.00204	-0.00203
	(A1 * !A3 * !B1 * !X)	0.00225	0.00226	0.00225
	(!A1 * A3 * B1 * X)	-0.00203	-0.00203	-0.00202
	(!A1 * A3 * B1 * X)	0.00223	0.00224	0.00224
	(!A1 * A3 * !B1 * !X)	-0.00203	-0.00203	-0.00203
	(!A1 * A3 * !B1 * !X)	0.00223	0.00224	0.00223
	(!A1 * !A3 * !B1 * !X)	-0.00183	-0.00191	-0.00192
	(!A1 * !A3 * !B1 * !X)	0.00232	0.00233	0.00231

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	0.00102	0.00102	0.00102
	(A2 * B1 * X)	-0.00060	-0.00059	-0.00059
	(A2 * !B1 * !X)	0.00090	0.00090	0.00089
	(A2 * !B1 * !X)	-0.00111	-0.00113	-0.00113
	(A1 * !A2 * B1 * X)	0.00102	0.00102	0.00102
	(A1 * !A2 * B1 * X)	-0.00060	-0.00059	-0.00059
	(A1 * !A2 * !B1 * !X)	0.00088	0.00089	0.00089
	(A1 * !A2 * !B1 * !X)	-0.00101	-0.00108	-0.00107
	(!A1 * !A2 * !B1 * !X)	0.00083	0.00083	0.00083
	(!A1 * !A2 * !B1 * !X)	-0.00115	-0.00115	-0.00115

sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	0.00119	0.00118	0.00118
	(A2 * B1 * X)	-0.00060	-0.00059	-0.00059
	(A2 * !B1 * !X)	0.00103	0.00104	0.00103
	(A2 * !B1 * !X)	-0.00112	-0.00115	-0.00115
	(A1 * !A2 * B1 * X)	0.00119	0.00118	0.00118
	(A1 * !A2 * B1 * X)	-0.00059	-0.00059	-0.00059
	(A1 * !A2 * !B1 * !X)	0.00103	0.00104	0.00103
	(A1 * !A2 * !B1 * !X)	-0.00104	-0.00110	-0.00109
	(!A1 * !A2 * !B1 * !X)	0.00098	0.00097	0.00097
	(!A1 * !A2 * !B1 * !X)	-0.00117	-0.00116	-0.00117
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	0.00203	0.00202	0.00202
	(A2 * B1 * X)	-0.00132	-0.00131	-0.00131
	(A2 * !B1 * !X)	0.00182	0.00185	0.00183
	(A2 * !B1 * !X)	-0.00225	-0.00234	-0.00234
	(A1 * !A2 * B1 * X)	0.00202	0.00202	0.00202
	(A1 * !A2 * B1 * X)	-0.00130	-0.00131	-0.00130
	(A1 * !A2 * !B1 * !X)	0.00183	0.00184	0.00183
	(A1 * !A2 * !B1 * !X)	-0.00209	-0.00223	-0.00222
	(!A1 * !A2 * !B1 * !X)	0.00170	0.00170	0.00170
	(!A1 * !A2 * !B1 * !X)	-0.00243	-0.00243	-0.00243

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

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

sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	-0.00097	-0.00097	-0.00101
	(A2 * B1 * X)	0.00064	0.00063	0.00061
	(A2 * !B1 * !X)	-0.00089	-0.00089	-0.00089
	(A2 * !B1 * !X)	0.00113	0.00113	0.00113
	(A1 * !A2 * B1 * X)	-0.00091	-0.00091	-0.00100
	(A1 * !A2 * B1 * X)	0.00067	0.00067	0.00061
	(A1 * !A2 * !B1 * !X)	-0.00088	-0.00089	-0.00089
	(A1 * !A2 * !B1 * !X)	0.00107	0.00108	0.00107
	(!A1 * !A2 * !B1 * !X)	-0.00079	-0.00083	-0.00083
	(!A1 * !A2 * !B1 * !X)	0.00116	0.00116	0.00115
sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	-0.00113	-0.00113	-0.00117
	(A2 * B1 * X)	0.00064	0.00064	0.00060
	(A2 * !B1 * !X)	-0.00103	-0.00103	-0.00103
	(A2 * !B1 * !X)	0.00115	0.00115	0.00115
	(A1 * !A2 * B1 * X)	-0.00107	-0.00107	-0.00116
	(A1 * !A2 * B1 * X)	0.00067	0.00067	0.00061
	(A1 * !A2 * !B1 * !X)	-0.00103	-0.00104	-0.00103
	(A1 * !A2 * !B1 * !X)	0.00110	0.00110	0.00109
	(!A1 * !A2 * !B1 * !X)	-0.00092	-0.00097	-0.00097
	(!A1 * !A2 * !B1 * !X)	0.00117	0.00117	0.00117
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	-0.00188	-0.00188	-0.00200
	(A2 * B1 * X)	0.00143	0.00142	0.00134
	(A2 * !B1 * !X)	-0.00182	-0.00183	-0.00183
	(A2 * !B1 * !X)	0.00234	0.00234	0.00234
	(A1 * !A2 * B1 * X)	-0.00176	-0.00176	-0.00197
	(A1 * !A2 * B1 * X)	0.00150	0.00150	0.00135
	(A1 * !A2 * !B1 * !X)	-0.00181	-0.00184	-0.00183
	(A1 * !A2 * !B1 * !X)	0.00220	0.00223	0.00222
	(!A1 * !A2 * !B1 * !X)	-0.00159	-0.00170	-0.00170
	(!A1 * !A2 * !B1 * !X)	0.00245	0.00245	0.00243

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)	0.00036	0.00036	0.00032
	(!A1 * !A2 * !A3 * !X)	-0.00115	-0.00115	-0.00120
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	0.00046	0.00046	0.00042
	(!A1 * !A2 * !A3 * !X)	-0.00143	-0.00144	-0.00149
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	0.00068	0.00069	0.00061
	(!A1 * !A2 * !A3 * !X)	-0.00267	-0.00271	-0.00282

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)	-0.00031	-0.00031	-0.00031
	(!A1 * !A2 * !A3 * !X)	0.00121	0.00121	0.00121
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	-0.00040	-0.00041	-0.00040
	(!A1 * !A2 * !A3 * !X)	0.00150	0.00151	0.00150
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	-0.00059	-0.00059	-0.00058
	(!A1 * !A2 * !A3 * !X)	0.00285	0.00284	0.00284

SKY130_FD_SC_HS__O32AIx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o32ai_1	11.18880
sky130_fd_sc_hs__o32ai_2	20.77920
sky130_fd_sc_hs__o32ai_4	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	B2	Y
sky130_fd_sc_hs__o32ai_1	0.00254	0.00281	0.00274	0.00270	0.00281	0.23922
sky130_fd_sc_hs__o32ai_2	0.00538	0.00503	0.00548	0.00518	0.00526	0.43518
sky130_fd_sc_hs__o32ai_4	0.01013	0.01018	0.01034	0.01059	0.01027	0.81430

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32ai_1	0.00000	0.01538	0.04886
sky130_fd_sc_hs__o32ai_2	0.00000	0.03076	0.09773
sky130_fd_sc_hs__o32ai_4	0.00000	0.06151	0.19545

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)	0.31783	1.50957	11.43680
	A2->Y (FR)	0.30032	1.50398	11.82260
	A3->Y (FR)	0.24782	1.42066	11.53220
	B1->Y (FR)	0.11760	1.03495	9.20126
	B2->Y (FR)	0.09775	0.99925	9.14229
sky130_fd_sc_hs__o32ai_2	A1->Y (FR)	0.32898	1.33925	11.27350
	A2->Y (FR)	0.30737	1.33418	11.75150
	A3->Y (FR)	0.24441	1.24147	11.45890
	B1->Y (FR)	0.12073	0.94410	9.33978
	B2->Y (FR)	0.08813	0.89583	9.25973
sky130_fd_sc_hs__o32ai_4	A1->Y (FR)	0.32614	1.18987	11.15950
	A2->Y (FR)	0.30517	1.18370	11.65180
	A3->Y (FR)	0.24138	1.09501	11.39740
	B1->Y (FR)	0.11501	0.83084	9.17811
	B2->Y (FR)	0.08360	0.79247	9.17503

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32ai_1	A1->Y (RF)	0.05930	0.45746	3.76514
	A2->Y (RF)	0.06062	0.45902	3.82202
	A3->Y (RF)	0.05238	0.44549	3.79580
	B1->Y (RF)	0.04720	0.48439	4.19819
	B2->Y (RF)	0.04044	0.46586	4.15180
sky130_fd_sc_hs__o32ai_2	A1->Y (RF)	0.06021	0.41297	3.64996
	A2->Y (RF)	0.06197	0.41893	3.76835
	A3->Y (RF)	0.05195	0.40235	3.73232
	B1->Y (RF)	0.04704	0.43711	4.17724
	B2->Y (RF)	0.03893	0.42420	4.19551
sky130_fd_sc_hs__o32ai_4	A1->Y (RF)	0.06317	0.38449	3.75576
	A2->Y (RF)	0.05906	0.36853	3.70370
	A3->Y (RF)	0.04752	0.34592	3.63998
	B1->Y (RF)	0.05953	0.45432	4.58464
	B2->Y (RF)	0.04990	0.45269	4.74659

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	A1	0.00123	0.00110	0.00115
	A1	0.00711	0.00701	0.00698
	A2	0.00131	0.00116	0.00127
	A2	0.00661	0.00648	0.00658
	A3	0.00129	0.00121	0.00187
	A3	0.00590	0.00582	0.00645
	B1	-0.00010	-0.00021	-0.00005
	B1	0.00487	0.00475	0.00491
	B2	-0.00008	-0.00009	0.00064
	B2	0.00424	0.00420	0.00492
sky130_fd_sc_hs__o32ai_2	A1	0.00219	0.00190	0.00199
	A1	0.01459	0.01432	0.01439
	A2	0.00234	0.00202	0.00225
	A2	0.01309	0.01280	0.01299
	A3	0.00225	0.00193	0.00335
	A3	0.01193	0.01163	0.01298
	B1	-0.00038	-0.00057	-0.00024
	B1	0.00971	0.00948	0.00980
	B2	-0.00052	-0.00054	0.00098
	B2	0.00841	0.00836	0.00983

sky130_fd_sc_hs__o32ai_4	**A1**	0.00438	0.00384	0.00413
	A1	0.02872	0.02817	0.02848
	A2	0.00444	0.00385	0.00448
	A2	0.02611	0.02533	0.02610
	A3	0.00444	0.00386	0.00699
	A3	0.02345	0.02292	0.02481
	B1	-0.00085	-0.00131	-0.00059
	B1	0.01963	0.01908	0.01985
	B2	-0.00095	-0.00115	0.00182
	B2	0.01686	0.01643	0.01941

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**A1**	0.00828	0.00817	0.00822
	A1	0.00223	0.00211	0.00219
	A2	0.00706	0.00699	0.00704
	A2	0.00155	0.00146	0.00155
	A3	0.00572	0.00569	0.00580
	A3	0.00087	0.00084	0.00094
	B1	0.00708	0.00697	0.00720
	B1	0.00226	0.00215	0.00236
	B2	0.00587	0.00581	0.00605
	B2	0.00168	0.00160	0.00180

sky130_fd_sc_hs__o32ai_2	**A1**	0.01732	0.01704	0.01718
	A1	0.00465	0.00440	0.00452
	A2	0.01474	0.01451	0.01470
	A2	0.00358	0.00335	0.00351
	A3	0.01192	0.01184	0.01212
	A3	0.00176	0.00167	0.00192
	B1	0.01459	0.01431	0.01477
	B1	0.00486	0.00458	0.00499
	B2	0.01183	0.01174	0.01229
	B2	0.00320	0.00307	0.00352
sky130_fd_sc_hs__o32ai_4	**A1**	0.03373	0.03318	0.03372
	A1	0.00887	0.00832	0.00880
	A2	0.02880	0.02829	0.02880
	A2	0.00637	0.00585	0.00647
	A3	0.02305	0.02276	0.02364
	A3	0.00312	0.00285	0.00364
	B1	0.02887	0.02823	0.02905
	B1	0.00911	0.00849	0.00941
	B2	0.02339	0.02304	0.02438
	B2	0.00618	0.00581	0.00679

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)**	0.00108	0.00108	0.00108
	(A2 * A3 * B2 * !Y)	-0.00121	-0.00124	-0.00124
	(A2 * A3 * B1 * !B2 * !Y)	0.00108	0.00108	0.00108
	(A2 * A3 * B1 * !B2 * !Y)	-0.00121	-0.00124	-0.00124
	(A2 * !B1 * !B2 * Y)	0.00108	0.00108	0.00108
	(A2 * !B1 * !B2 * Y)	-0.00121	-0.00124	-0.00124
	(A2 * !A3 * B2 * !Y)	0.00108	0.00108	0.00108
	(A2 * !A3 * B2 * !Y)	-0.00120	-0.00124	-0.00124
	(A2 * !A3 * B1 * !B2 * !Y)	0.00108	0.00108	0.00108
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00120	-0.00124	-0.00124
	(!A2 * A3 * B2 * !Y)	0.00108	0.00109	0.00108
	(!A2 * A3 * B2 * !Y)	-0.00112	-0.00120	-0.00119
	(!A2 * A3 * B1 * !B2 * !Y)	0.00108	0.00109	0.00108
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00112	-0.00120	-0.00119
	(!A2 * A3 * !B1 * !B2 * Y)	0.00108	0.00109	0.00108
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00112	-0.00120	-0.00119
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00102	0.00103	0.00102
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00126	-0.00126	-0.00125

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	0.00224	0.00224	0.00223
	(A2 * A3 * B2 * !Y)	-0.00251	-0.00259	-0.00257
	(A2 * A3 * B1 * !B2 * !Y)	0.00224	0.00224	0.00223
	(A2 * A3 * B1 * !B2 * !Y)	-0.00250	-0.00259	-0.00257
	(A2 * !B1 * !B2 * Y)	0.00223	0.00224	0.00223
	(A2 * !B1 * !B2 * Y)	-0.00251	-0.00259	-0.00258
	(A2 * !A3 * B2 * !Y)	0.00225	0.00224	0.00223
	(A2 * !A3 * B2 * !Y)	-0.00248	-0.00259	-0.00258
	(A2 * !A3 * B1 * !B2 * !Y)	0.00225	0.00224	0.00223
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00248	-0.00259	-0.00258
	(!A2 * A3 * B2 * !Y)	0.00226	0.00223	0.00223
	(!A2 * A3 * B2 * !Y)	-0.00234	-0.00249	-0.00248
	(!A2 * A3 * B1 * !B2 * !Y)	0.00226	0.00223	0.00223
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00233	-0.00249	-0.00248
	(!A2 * A3 * !B1 * !B2 * Y)	0.00223	0.00222	0.00223
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00236	-0.00250	-0.00248
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00207	0.00208	0.00207
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00266	-0.00266	-0.00265

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	0.00421	0.00422	0.00419
	(A2 * A3 * B2 * !Y)	-0.00486	-0.00504	-0.00500
	(A2 * A3 * B1 * !B2 * !Y)	0.00421	0.00422	0.00419
	(A2 * A3 * B1 * !B2 * !Y)	-0.00486	-0.00503	-0.00500
	(A2 * !B1 * !B2 * Y)	0.00420	0.00422	0.00419
	(A2 * !B1 * !B2 * Y)	-0.00487	-0.00504	-0.00500
	(A2 * !A3 * B2 * !Y)	0.00422	0.00422	0.00419
	(A2 * !A3 * B2 * !Y)	-0.00482	-0.00503	-0.00501
	(A2 * !A3 * B1 * !B2 * !Y)	0.00422	0.00422	0.00419
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00482	-0.00503	-0.00501
	(!A2 * A3 * B2 * !Y)	0.00424	0.00421	0.00419
	(!A2 * A3 * B2 * !Y)	-0.00453	-0.00484	-0.00481
	(!A2 * A3 * B1 * !B2 * !Y)	0.00424	0.00421	0.00419
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00453	-0.00484	-0.00481
	(!A2 * A3 * !B1 * !B2 * Y)	0.00420	0.00420	0.00419
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00457	-0.00485	-0.00482
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00387	0.00392	0.00389
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00513	-0.00518	-0.00515

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)**	-0.00107	-0.00108	-0.00108
	(A2 * A3 * B2 * !Y)	0.00123	0.00125	0.00124
	(A2 * A3 * B1 * !B2 * !Y)	-0.00107	-0.00108	-0.00108
	(A2 * A3 * B1 * !B2 * !Y)	0.00123	0.00125	0.00124
	(A2 * !B1 * !B2 * Y)	-0.00107	-0.00108	-0.00108
	(A2 * !B1 * !B2 * Y)	0.00123	0.00125	0.00124
	(A2 * !A3 * B2 * !Y)	-0.00107	-0.00108	-0.00108
	(A2 * !A3 * B2 * !Y)	0.00123	0.00125	0.00124
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00107	-0.00108	-0.00108
	(A2 * !A3 * B1 * !B2 * !Y)	0.00123	0.00125	0.00124
	(!A2 * A3 * B2 * !Y)	-0.00108	-0.00108	-0.00107
	(!A2 * A3 * B2 * !Y)	0.00119	0.00120	0.00119
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00108	-0.00108	-0.00107
	(!A2 * A3 * B1 * !B2 * !Y)	0.00119	0.00120	0.00119
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00108	-0.00108	-0.00108
	(!A2 * A3 * !B1 * !B2 * Y)	0.00119	0.00120	0.00119
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00097	-0.00103	-0.00102
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00126	0.00126	0.00126

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	-0.00221	-0.00223	-0.00222
	(A2 * A3 * B2 * !Y)	0.00255	0.00259	0.00257
	(A2 * A3 * B1 * !B2 * !Y)	-0.00221	-0.00223	-0.00222
	(A2 * A3 * B1 * !B2 * !Y)	0.00256	0.00259	0.00257
	(A2 * !B1 * !B2 * Y)	-0.00223	-0.00223	-0.00222
	(A2 * !B1 * !B2 * Y)	0.00258	0.00260	0.00258
	(A2 * !A3 * B2 * !Y)	-0.00222	-0.00223	-0.00222
	(A2 * !A3 * B2 * !Y)	0.00256	0.00259	0.00258
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00221	-0.00223	-0.00222
	(A2 * !A3 * B1 * !B2 * !Y)	0.00256	0.00260	0.00258
	(!A2 * A3 * B2 * !Y)	-0.00223	-0.00223	-0.00223
	(!A2 * A3 * B2 * !Y)	0.00249	0.00249	0.00248
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00223	-0.00223	-0.00223
	(!A2 * A3 * B1 * !B2 * !Y)	0.00248	0.00249	0.00248
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00222	-0.00222	-0.00222
	(!A2 * A3 * !B1 * !B2 * Y)	0.00248	0.00250	0.00248
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00194	-0.00208	-0.00207
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00267	0.00267	0.00266

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	-0.00419	-0.00420	-0.00418
	(A2 * A3 * B2 * !Y)	0.00501	0.00504	0.00500
	(A2 * A3 * B1 * !B2 * !Y)	-0.00419	-0.00420	-0.00418
	(A2 * A3 * B1 * !B2 * !Y)	0.00501	0.00504	0.00500
	(A2 * !B1 * !B2 * Y)	-0.00419	-0.00420	-0.00418
	(A2 * !B1 * !B2 * Y)	0.00501	0.00504	0.00500
	(A2 * !A3 * B2 * !Y)	-0.00419	-0.00420	-0.00418
	(A2 * !A3 * B2 * !Y)	0.00501	0.00505	0.00501
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00419	-0.00420	-0.00418
	(A2 * !A3 * B1 * !B2 * !Y)	0.00501	0.00505	0.00501
	(!A2 * A3 * B2 * !Y)	-0.00419	-0.00420	-0.00418
	(!A2 * A3 * B2 * !Y)	0.00481	0.00484	0.00481
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00419	-0.00420	-0.00418
	(!A2 * A3 * B1 * !B2 * !Y)	0.00481	0.00484	0.00481
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00418	-0.00419	-0.00418
	(!A2 * A3 * !B1 * !B2 * Y)	0.00482	0.00485	0.00482
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00367	-0.00392	-0.00389
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00517	0.00519	0.00516

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)**	0.00110	0.00110	0.00106
	(A1 * A3 * B2 * !Y)	-0.00090	-0.00091	-0.00091
	(A1 * A3 * B1 * !B2 * !Y)	0.00110	0.00110	0.00106
	(A1 * A3 * B1 * !B2 * !Y)	-0.00090	-0.00091	-0.00091
	(A1 * A3 * !B1 * !B2 * Y)	0.00104	0.00104	0.00104
	(A1 * A3 * !B1 * !B2 * Y)	-0.00098	-0.00098	-0.00098
	(A1 * !A3 * B2 * !Y)	0.00106	0.00106	0.00105
	(A1 * !A3 * B2 * !Y)	-0.00080	-0.00079	-0.00079
	(A1 * !A3 * B1 * !B2 * !Y)	0.00106	0.00106	0.00105
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00080	-0.00079	-0.00079
	(A1 * !A3 * !B1 * !B2 * Y)	0.00105	0.00105	0.00104
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00128	-0.00129	-0.00129
	(!A1 * A3 * B2 * !Y)	0.00122	0.00107	0.00105
	(!A1 * A3 * B2 * !Y)	-0.00111	-0.00129	-0.00129
	(!A1 * A3 * B1 * !B2 * !Y)	0.00122	0.00107	0.00105
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00111	-0.00129	-0.00129
	(!A1 * A3 * !B1 * !B2 * Y)	0.00105	0.00105	0.00104
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00127	-0.00130	-0.00129
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00097	0.00098	0.00097
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00131	-0.00132	-0.00132

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	0.00211	0.00215	0.00210
	(A1 * A3 * B2 * !Y)	-0.00168	-0.00169	-0.00168
	(A1 * A3 * B1 * !B2 * !Y)	0.00211	0.00215	0.00210
	(A1 * A3 * B1 * !B2 * !Y)	-0.00168	-0.00169	-0.00168
	(A1 * A3 * !B1 * !B2 * Y)	0.00205	0.00205	0.00203
	(A1 * A3 * !B1 * !B2 * Y)	-0.00188	-0.00189	-0.00187
	(A1 * !A3 * B2 * !Y)	0.00206	0.00207	0.00207
	(A1 * !A3 * B2 * !Y)	-0.00146	-0.00147	-0.00147
	(A1 * !A3 * B1 * !B2 * !Y)	0.00206	0.00207	0.00207
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00146	-0.00147	-0.00147
	(A1 * !A3 * !B1 * !B2 * Y)	0.00203	0.00204	0.00203
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00241	-0.00246	-0.00245
	(!A1 * A3 * B2 * !Y)	0.00236	0.00209	0.00206
	(!A1 * A3 * B2 * !Y)	-0.00211	-0.00247	-0.00247
	(!A1 * A3 * B1 * !B2 * !Y)	0.00236	0.00209	0.00206
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00211	-0.00247	-0.00247
	(!A1 * A3 * !B1 * !B2 * Y)	0.00202	0.00205	0.00203
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00243	-0.00250	-0.00249
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00190	0.00191	0.00190
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00254	-0.00255	-0.00254

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	0.00438	0.00440	0.00430
	(A1 * A3 * B2 * !Y)	-0.00343	-0.00344	-0.00342
	(A1 * A3 * B1 * !B2 * !Y)	0.00438	0.00440	0.00430
	(A1 * A3 * B1 * !B2 * !Y)	-0.00340	-0.00344	-0.00342
	(A1 * A3 * !B1 * !B2 * Y)	0.00419	0.00419	0.00419
	(A1 * A3 * !B1 * !B2 * Y)	-0.00374	-0.00376	-0.00374
	(A1 * !A3 * B2 * !Y)	0.00423	0.00425	0.00423
	(A1 * !A3 * B2 * !Y)	-0.00299	-0.00300	-0.00300
	(A1 * !A3 * B1 * !B2 * !Y)	0.00423	0.00425	0.00423
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00298	-0.00300	-0.00300
	(A1 * !A3 * !B1 * !B2 * Y)	0.00418	0.00421	0.00419
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00488	-0.00497	-0.00496
	(!A1 * A3 * B2 * !Y)	0.00491	0.00428	0.00423
	(!A1 * A3 * B2 * !Y)	-0.00432	-0.00504	-0.00504
	(!A1 * A3 * B1 * !B2 * !Y)	0.00491	0.00428	0.00423
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00432	-0.00504	-0.00504
	(!A1 * A3 * !B1 * !B2 * Y)	0.00422	0.00423	0.00419
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00497	-0.00508	-0.00506
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00389	0.00392	0.00389
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00516	-0.00518	-0.00516

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)**	-0.00104	-0.00105	-0.00105
	(A1 * A3 * B2 * !Y)	0.00090	0.00091	0.00091
	(A1 * A3 * B1 * !B2 * !Y)	-0.00104	-0.00105	-0.00105
	(A1 * A3 * B1 * !B2 * !Y)	0.00090	0.00091	0.00091
	(A1 * A3 * !B1 * !B2 * Y)	-0.00104	-0.00104	-0.00104
	(A1 * A3 * !B1 * !B2 * Y)	0.00098	0.00098	0.00098
	(A1 * !A3 * B2 * !Y)	-0.00104	-0.00104	-0.00103
	(A1 * !A3 * B2 * !Y)	0.00081	0.00081	0.00082
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00104	-0.00104	-0.00103
	(A1 * !A3 * B1 * !B2 * !Y)	0.00081	0.00081	0.00082
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00103	-0.00104	-0.00104
	(A1 * !A3 * !B1 * !B2 * Y)	0.00128	0.00129	0.00129
	(!A1 * A3 * B2 * !Y)	-0.00105	-0.00105	-0.00104
	(!A1 * A3 * B2 * !Y)	0.00129	0.00129	0.00129
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00105	-0.00105	-0.00104
	(!A1 * A3 * B1 * !B2 * !Y)	0.00129	0.00129	0.00129
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00104	-0.00104	-0.00104
	(!A1 * A3 * !B1 * !B2 * Y)	0.00129	0.00130	0.00129
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00091	-0.00098	-0.00097
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00132	0.00133	0.00132

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	-0.00207	-0.00208	-0.00207
	(A1 * A3 * B2 * !Y)	0.00168	0.00169	0.00168
	(A1 * A3 * B1 * !B2 * !Y)	-0.00206	-0.00208	-0.00207
	(A1 * A3 * B1 * !B2 * !Y)	0.00168	0.00169	0.00168
	(A1 * A3 * !B1 * !B2 * Y)	-0.00203	-0.00204	-0.00203
	(A1 * A3 * !B1 * !B2 * Y)	0.00188	0.00189	0.00187
	(A1 * !A3 * B2 * !Y)	-0.00203	-0.00203	-0.00201
	(A1 * !A3 * B2 * !Y)	0.00150	0.00150	0.00152
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00203	-0.00203	-0.00201
	(A1 * !A3 * B1 * !B2 * !Y)	0.00150	0.00150	0.00152
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00202	-0.00203	-0.00203
	(A1 * !A3 * !B1 * !B2 * Y)	0.00245	0.00246	0.00245
	(!A1 * A3 * B2 * !Y)	-0.00205	-0.00206	-0.00205
	(!A1 * A3 * B2 * !Y)	0.00245	0.00247	0.00247
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00205	-0.00206	-0.00205
	(!A1 * A3 * B1 * !B2 * !Y)	0.00245	0.00247	0.00247
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00202	-0.00203	-0.00203
	(!A1 * A3 * !B1 * !B2 * Y)	0.00248	0.00250	0.00249
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00177	-0.00191	-0.00190
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00256	0.00256	0.00254

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	-0.00424	-0.00425	-0.00424
	(A1 * A3 * B2 * !Y)	0.00343	0.00344	0.00342
	(A1 * A3 * B1 * !B2 * !Y)	-0.00422	-0.00425	-0.00424
	(A1 * A3 * B1 * !B2 * !Y)	0.00340	0.00344	0.00342
	(A1 * A3 * !B1 * !B2 * Y)	-0.00418	-0.00419	-0.00418
	(A1 * A3 * !B1 * !B2 * Y)	0.00374	0.00376	0.00374
	(A1 * !A3 * B2 * !Y)	-0.00417	-0.00416	-0.00414
	(A1 * !A3 * B2 * !Y)	0.00307	0.00306	0.00310
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00417	-0.00416	-0.00414
	(A1 * !A3 * B1 * !B2 * !Y)	0.00307	0.00307	0.00310
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00418	-0.00419	-0.00418
	(A1 * !A3 * !B1 * !B2 * Y)	0.00496	0.00497	0.00496
	(!A1 * A3 * B2 * !Y)	-0.00420	-0.00422	-0.00420
	(!A1 * A3 * B2 * !Y)	0.00499	0.00504	0.00504
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00420	-0.00422	-0.00420
	(!A1 * A3 * B1 * !B2 * !Y)	0.00500	0.00504	0.00504
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00417	-0.00420	-0.00418
	(!A1 * A3 * !B1 * !B2 * Y)	0.00504	0.00508	0.00506
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00365	-0.00392	-0.00389
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00519	0.00519	0.00517

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

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

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	0.00113	0.00113	0.00112
	(A2 * B2 * !Y)	-0.00066	-0.00066	-0.00066
	(A2 * B1 * !B2 * !Y)	0.00113	0.00113	0.00113
	(A2 * B1 * !B2 * !Y)	-0.00066	-0.00066	-0.00066
	(A2 * !B1 * !B2 * Y)	0.00104	0.00103	0.00103
	(A2 * !B1 * !B2 * Y)	-0.00119	-0.00122	-0.00121
	(A1 * !A2 * B2 * !Y)	0.00113	0.00113	0.00113
	(A1 * !A2 * B2 * !Y)	-0.00066	-0.00066	-0.00066
	(A1 * !A2 * B1 * !B2 * !Y)	0.00113	0.00113	0.00113
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00066	-0.00066	-0.00066
	(A1 * !A2 * !B1 * !B2 * Y)	0.00103	0.00104	0.00103
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00108	-0.00114	-0.00114
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00096	0.00097	0.00096
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00124	-0.00124	-0.00124
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	0.00247	0.00249	0.00247
	(A2 * B2 * !Y)	-0.00131	-0.00131	-0.00130
	(A2 * B1 * !B2 * !Y)	0.00247	0.00249	0.00247
	(A2 * B1 * !B2 * !Y)	-0.00131	-0.00131	-0.00130
	(A2 * !B1 * !B2 * Y)	0.00202	0.00203	0.00202
	(A2 * !B1 * !B2 * Y)	-0.00260	-0.00267	-0.00267
	(A1 * !A2 * B2 * !Y)	0.00247	0.00249	0.00247
	(A1 * !A2 * B2 * !Y)	-0.00130	-0.00131	-0.00130
	(A1 * !A2 * B1 * !B2 * !Y)	0.00247	0.00248	0.00247
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00130	-0.00130	-0.00130
	(A1 * !A2 * !B1 * !B2 * Y)	0.00202	0.00203	0.00202
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00240	-0.00251	-0.00251
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00189	0.00191	0.00190
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00273	-0.00274	-0.00273

sky130_fd_sc_hs__o32ai_4	**(A2 * B2 * !Y)**	0.00467	0.00469	0.00468
	(A2 * B2 * !Y)	-0.00258	-0.00258	-0.00257
	(A2 * B1 * !B2 * !Y)	0.00467	0.00471	0.00468
	(A2 * B1 * !B2 * !Y)	-0.00258	-0.00259	-0.00257
	(A2 * !B1 * !B2 * Y)	0.00393	0.00397	0.00394
	(A2 * !B1 * !B2 * Y)	-0.00501	-0.00517	-0.00515
	(A1 * !A2 * B2 * !Y)	0.00467	0.00469	0.00468
	(A1 * !A2 * B2 * !Y)	-0.00257	-0.00258	-0.00257
	(A1 * !A2 * B1 * !B2 * !Y)	0.00467	0.00470	0.00468
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00257	-0.00258	-0.00257
	(A1 * !A2 * !B1 * !B2 * Y)	0.00393	0.00396	0.00394
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00461	-0.00483	-0.00481
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00370	0.00370	0.00369
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00528	-0.00527	-0.00527

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

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

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	-0.00107	-0.00107	-0.00112
	(A2 * B2 * !Y)	0.00071	0.00071	0.00067
	(A2 * B1 * !B2 * !Y)	-0.00107	-0.00107	-0.00112
	(A2 * B1 * !B2 * !Y)	0.00071	0.00071	0.00067
	(A2 * !B1 * !B2 * Y)	-0.00103	-0.00103	-0.00103
	(A2 * !B1 * !B2 * Y)	0.00122	0.00122	0.00121
	(A1 * !A2 * B2 * !Y)	-0.00100	-0.00100	-0.00110
	(A1 * !A2 * B2 * !Y)	0.00075	0.00075	0.00068
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00100	-0.00100	-0.00110
	(A1 * !A2 * B1 * !B2 * !Y)	0.00075	0.00075	0.00068
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00103	-0.00103	-0.00103
	(A1 * !A2 * !B1 * !B2 * Y)	0.00114	0.00114	0.00114
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00091	-0.00097	-0.00096
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00124	0.00124	0.00124
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	-0.00231	-0.00233	-0.00245
	(A2 * B2 * !Y)	0.00144	0.00145	0.00134
	(A2 * B1 * !B2 * !Y)	-0.00231	-0.00233	-0.00245
	(A2 * B1 * !B2 * !Y)	0.00144	0.00145	0.00134
	(A2 * !B1 * !B2 * Y)	-0.00201	-0.00202	-0.00202
	(A2 * !B1 * !B2 * Y)	0.00266	0.00267	0.00267
	(A1 * !A2 * B2 * !Y)	-0.00215	-0.00218	-0.00242
	(A1 * !A2 * B2 * !Y)	0.00152	0.00153	0.00135
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00215	-0.00218	-0.00242
	(A1 * !A2 * B1 * !B2 * !Y)	0.00152	0.00153	0.00135
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00201	-0.00202	-0.00202
	(A1 * !A2 * !B1 * !B2 * Y)	0.00250	0.00251	0.00251
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00178	-0.00191	-0.00190
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00274	0.00275	0.00273

sky130_fd_sc_hs__o32ai_4	(A2 * B2 * !Y)	-0.00440	-0.00443	-0.00465
	(A2 * B2 * !Y)	0.00284	0.00283	0.00265
	(A2 * B1 * !B2 * !Y)	-0.00438	-0.00443	-0.00465
	(A2 * B1 * !B2 * !Y)	0.00282	0.00283	0.00265
	(A2 * !B1 * !B2 * Y)	-0.00393	-0.00395	-0.00393
	(A2 * !B1 * !B2 * Y)	0.00514	0.00517	0.00515
	(A1 * !A2 * B2 * !Y)	-0.00409	-0.00412	-0.00458
	(A1 * !A2 * B2 * !Y)	0.00301	0.00299	0.00265
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00407	-0.00412	-0.00458
	(A1 * !A2 * B1 * !B2 * !Y)	0.00298	0.00300	0.00265
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00392	-0.00395	-0.00393
	(A1 * !A2 * !B1 * !B2 * Y)	0.00480	0.00483	0.00481
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00347	-0.00370	-0.00369
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00529	0.00531	0.00528

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	(A3 * B2 * !Y)	0.00128	0.00116	0.00115
	(A3 * B2 * !Y)	-0.00108	-0.00121	-0.00122
	(A2 * !A3 * B2 * !Y)	0.00128	0.00116	0.00115
	(A2 * !A3 * B2 * !Y)	-0.00108	-0.00121	-0.00122
	(A1 * !A2 * !A3 * B2 * !Y)	0.00128	0.00116	0.00115
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00108	-0.00121	-0.00122
	(!A1 * !A2 * !A3 * B2 * Y)	0.00041	0.00041	0.00041
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00146	-0.00148	-0.00148
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00048	0.00048	0.00043
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00140	-0.00141	-0.00149

sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	0.00231	0.00210	0.00208
	(A3 * B2 * !Y)	-0.00213	-0.00241	-0.00241
	(A2 * !A3 * B2 * !Y)	0.00231	0.00210	0.00208
	(A2 * !A3 * B2 * !Y)	-0.00213	-0.00241	-0.00241
	(A1 * !A2 * !A3 * B2 * !Y)	0.00231	0.00210	0.00208
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00213	-0.00241	-0.00241
	(!A1 * !A2 * !A3 * B2 * Y)	0.00065	0.00066	0.00065
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00286	-0.00293	-0.00293
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00079	0.00080	0.00069
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00275	-0.00280	-0.00296
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	0.00489	0.00441	0.00437
	(A3 * B2 * !Y)	-0.00424	-0.00484	-0.00484
	(A2 * !A3 * B2 * !Y)	0.00489	0.00441	0.00437
	(A2 * !A3 * B2 * !Y)	-0.00424	-0.00484	-0.00484
	(A1 * !A2 * !A3 * B2 * !Y)	0.00489	0.00441	0.00437
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00424	-0.00484	-0.00485
	(!A1 * !A2 * !A3 * B2 * Y)	0.00131	0.00132	0.00131
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00595	-0.00611	-0.00608
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00159	0.00158	0.00139
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00577	-0.00579	-0.00614

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

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

sky130_fd_sc_hs__o32ai_1	**(A3 * B2 * !Y)**	-0.00114	-0.00115	-0.00114
	(A3 * B2 * !Y)	0.00121	0.00122	0.00122
	(A2 * !A3 * B2 * !Y)	-0.00114	-0.00115	-0.00114
	(A2 * !A3 * B2 * !Y)	0.00121	0.00122	0.00122
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00114	-0.00114	-0.00114
	(A1 * !A2 * !A3 * B2 * !Y)	0.00121	0.00121	0.00122
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00041	-0.00041	-0.00041
	(!A1 * !A2 * !A3 * B2 * Y)	0.00148	0.00148	0.00148
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00042	-0.00042	-0.00041
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00150	0.00150	0.00150
sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	-0.00208	-0.00208	-0.00208
	(A3 * B2 * !Y)	0.00240	0.00242	0.00241
	(A2 * !A3 * B2 * !Y)	-0.00208	-0.00209	-0.00208
	(A2 * !A3 * B2 * !Y)	0.00241	0.00242	0.00241
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00208	-0.00208	-0.00208
	(A1 * !A2 * !A3 * B2 * !Y)	0.00241	0.00241	0.00241
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00065	-0.00065	-0.00065
	(!A1 * !A2 * !A3 * B2 * Y)	0.00294	0.00293	0.00293
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00066	-0.00066	-0.00066
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00298	0.00299	0.00298
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	-0.00437	-0.00438	-0.00436
	(A3 * B2 * !Y)	0.00484	0.00487	0.00484
	(A2 * !A3 * B2 * !Y)	-0.00438	-0.00438	-0.00436
	(A2 * !A3 * B2 * !Y)	0.00486	0.00487	0.00484
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00438	-0.00437	-0.00436
	(A1 * !A2 * !A3 * B2 * !Y)	0.00486	0.00485	0.00485
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00131	-0.00132	-0.00131
	(!A1 * !A2 * !A3 * B2 * Y)	0.00610	0.00611	0.00608
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00134	-0.00133	-0.00132
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00620	0.00620	0.00618

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	(A3 * B1 * !Y)	0.00120	0.00120	0.00120
	(A3 * B1 * !Y)	-0.00064	-0.00064	-0.00064
	(A2 * !A3 * B1 * !Y)	0.00120	0.00121	0.00120
	(A2 * !A3 * B1 * !Y)	-0.00064	-0.00064	-0.00064
	(A1 * !A2 * !A3 * B1 * !Y)	0.00120	0.00120	0.00120
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00064	-0.00064	-0.00064
	(!A1 * !A2 * !A3 * B1 * Y)	0.00035	0.00035	0.00035
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00148	-0.00150	-0.00149
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00042	0.00041	0.00037
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00142	-0.00143	-0.00151
sky130_fd_sc_hs__o32ai_2	(A3 * B1 * !Y)	0.00236	0.00236	0.00235
	(A3 * B1 * !Y)	-0.00133	-0.00132	-0.00131
	(A2 * !A3 * B1 * !Y)	0.00234	0.00235	0.00235
	(A2 * !A3 * B1 * !Y)	-0.00132	-0.00132	-0.00131
	(A1 * !A2 * !A3 * B1 * !Y)	0.00234	0.00236	0.00235
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00132	-0.00132	-0.00131
	(!A1 * !A2 * !A3 * B1 * Y)	0.00070	0.00069	0.00069
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00294	-0.00298	-0.00296
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00083	0.00083	0.00073
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00283	-0.00284	-0.00301

sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	0.00461	0.00462	0.00460
	(A3 * B1 * !Y)	-0.00263	-0.00261	-0.00260
	(A2 * !A3 * B1 * !Y)	0.00460	0.00462	0.00460
	(A2 * !A3 * B1 * !Y)	-0.00261	-0.00262	-0.00260
	(A1 * !A2 * !A3 * B1 * !Y)	0.00459	0.00463	0.00460
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00261	-0.00262	-0.00260
	(!A1 * !A2 * !A3 * B1 * Y)	0.00132	0.00132	0.00132
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00577	-0.00589	-0.00587
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00159	0.00159	0.00140
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00560	-0.00565	-0.00598

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**(A3 * B1 * !Y)**	-0.00115	-0.00116	-0.00119
	(A3 * B1 * !Y)	0.00068	0.00068	0.00065
	(A2 * !A3 * B1 * !Y)	-0.00115	-0.00116	-0.00119
	(A2 * !A3 * B1 * !Y)	0.00068	0.00068	0.00065
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00116	-0.00116	-0.00119
	(A1 * !A2 * !A3 * B1 * !Y)	0.00069	0.00068	0.00065
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00035	-0.00035	-0.00035
	(!A1 * !A2 * !A3 * B1 * Y)	0.00148	0.00150	0.00149
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00035	-0.00035	-0.00035
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00152	0.00153	0.00152

sky130_fd_sc_hs__o32ai_2	**(A3 * B1 * !Y)**	-0.00220	-0.00222	-0.00233
	(A3 * B1 * !Y)	0.00145	0.00145	0.00135
	(A2 * !A3 * B1 * !Y)	-0.00219	-0.00222	-0.00233
	(A2 * !A3 * B1 * !Y)	0.00144	0.00145	0.00135
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00220	-0.00222	-0.00233
	(A1 * !A2 * !A3 * B1 * !Y)	0.00145	0.00145	0.00135
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00069	-0.00069	-0.00069
	(!A1 * !A2 * !A3 * B1 * Y)	0.00296	0.00298	0.00296
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00070	-0.00070	-0.00069
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00304	0.00305	0.00303
sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	-0.00433	-0.00438	-0.00457
	(A3 * B1 * !Y)	0.00283	0.00285	0.00267
	(A2 * !A3 * B1 * !Y)	-0.00434	-0.00438	-0.00457
	(A2 * !A3 * B1 * !Y)	0.00285	0.00285	0.00267
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00434	-0.00438	-0.00457
	(A1 * !A2 * !A3 * B1 * !Y)	0.00285	0.00285	0.00267
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00132	-0.00132	-0.00132
	(!A1 * !A2 * !A3 * B1 * Y)	0.00587	0.00589	0.00587
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00135	-0.00134	-0.00133
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00604	0.00604	0.00602

SKY130_FD_SC_HS__O32Ax

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o32a_1	12.78720
sky130_fd_sc_hs__o32a_2	15.98400
sky130_fd_sc_hs__o32a_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	B2	X
sky130_fd_sc_hs__o32a_1	0.00253	0.00247	0.00245	0.00248	0.00252	0.75944
sky130_fd_sc_hs__o32a_2	0.00266	0.00261	0.00266	0.00286	0.00267	1.49698
sky130_fd_sc_hs__o32a_4	0.00453	0.00486	0.00455	0.00614	0.00483	2.91217

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32a_1	0.00000	0.04431	0.12518
sky130_fd_sc_hs__o32a_2	0.00000	0.05458	0.12939
sky130_fd_sc_hs__o32a_4	0.00000	0.11094	0.25878

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)	0.13486	0.85150	7.34226
	A2->X (RR)	0.13168	0.83978	7.27881
	A3->X (RR)	0.12105	0.81802	7.20348
	B1->X (RR)	0.12201	0.83463	7.16697
	B2->X (RR)	0.11231	0.80871	7.11341
sky130_fd_sc_hs__o32a_2	A1->X (RR)	0.13778	0.74831	7.41526
	A2->X (RR)	0.13590	0.74219	7.36952
	A3->X (RR)	0.12628	0.72554	7.30797
	B1->X (RR)	0.12549	0.74660	7.29630
	B2->X (RR)	0.11576	0.72393	7.23971
sky130_fd_sc_hs__o32a_4	A1->X (RR)	0.15399	0.68910	7.50376
	A2->X (RR)	0.14593	0.67224	7.43103
	A3->X (RR)	0.13156	0.64719	7.34717
	B1->X (RR)	0.14331	0.69277	7.38623
	B2->X (RR)	0.12710	0.65990	7.30389

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32a_1	A1->X (FF)	0.40039	1.02066	5.34234
	A2->X (FF)	0.37706	1.01018	5.42677
	A3->X (FF)	0.32839	0.93951	5.10979
	B1->X (FF)	0.19694	0.79993	4.93696
	B2->X (FF)	0.17467	0.76074	4.74173
sky130_fd_sc_hs__o32a_2	A1->X (FF)	0.50945	1.12593	5.73669
	A2->X (FF)	0.48696	1.11970	5.87336
	A3->X (FF)	0.43975	1.04296	5.55903
	B1->X (FF)	0.26263	0.85686	5.32044
	B2->X (FF)	0.23818	0.82254	5.09124
sky130_fd_sc_hs__o32a_4	A1->X (FF)	0.50159	1.08621	5.75316
	A2->X (FF)	0.47740	1.06871	5.85030
	A3->X (FF)	0.40535	0.97161	5.52884
	B1->X (FF)	0.24288	0.79775	5.31191
	B2->X (FF)	0.21239	0.75172	5.08815

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	A1	0.00992	0.00979	0.01038
	A1	0.00426	0.00426	0.00478
	A2	0.00883	0.00883	0.00958
	A2	0.00378	0.00379	0.00459
	A3	0.00767	0.00766	0.00897
	A3	0.00312	0.00311	0.00448
	B1	0.00883	0.00874	0.01039
	B1	0.00424	0.00414	0.00585
	B2	0.00763	0.00752	0.01016
	B2	0.00364	0.00353	0.00621
sky130_fd_sc_hs__o32a_2	A1	0.01205	0.01212	0.01267
	A1	0.00598	0.00606	0.00667
	A2	0.01096	0.01119	0.01190
	A2	0.00549	0.00572	0.00650
	A3	0.00981	0.01003	0.01121
	A3	0.00482	0.00512	0.00633
	B1	0.01091	0.01096	0.01248
	B1	0.00584	0.00591	0.00755
	B2	0.00962	0.00967	0.01198
	B2	0.00536	0.00542	0.00785

sky130_fd_sc_hs__o32a_4	**A1**	0.02339	0.02385	0.02550
	A1	0.01231	0.01280	0.01451
	A2	0.02121	0.02165	0.02343
	A2	0.01103	0.01148	0.01350
	A3	0.01809	0.01858	0.02179
	A3	0.00933	0.00984	0.01321
	B1	0.02179	0.02203	0.02542
	B1	0.01199	0.01226	0.01577
	B2	0.01879	0.01912	0.02391
	B2	0.01090	0.01124	0.01622

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**A1**	0.00312	0.00304	0.00401
	A1	0.00871	0.00862	0.00927
	A2	0.00326	0.00323	0.00469
	A2	0.00811	0.00807	0.00913
	A3	0.00324	0.00338	0.00643
	A3	0.00756	0.00770	0.01044
	B1	0.00217	0.00215	0.00394
	B1	0.00682	0.00683	0.00820
	B2	0.00217	0.00232	0.00637
	B2	0.00623	0.00635	0.00977

sky130_fd_sc_hs__o32a_2	**A1**	0.00527	0.00528	0.00654
	A1	0.01125	0.01132	0.01197
	A2	0.00545	0.00547	0.00659
	A2	0.01067	0.01076	0.01181
	A3	0.00548	0.00543	0.00925
	A3	0.01015	0.01040	0.01315
	B1	0.00410	0.00422	0.00647
	B1	0.00922	0.00939	0.01074
	B2	0.00414	0.00446	0.00854
	B2	0.00847	0.00878	0.01217
sky130_fd_sc_hs__o32a_4	**A1**	0.00967	0.01013	0.01235
	A1	0.02070	0.02117	0.02244
	A2	0.00964	0.00995	0.01486
	A2	0.01970	0.02014	0.02225
	A3	0.00965	0.00967	0.01736
	A3	0.01820	0.01884	0.02456
	B1	0.00749	0.00789	0.01235
	B1	0.01754	0.01789	0.02057
	B2	0.00756	0.00823	0.01617
	B2	0.01561	0.01633	0.02301

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)**	0.00104	0.00104	0.00103
	(A2 * A3 * B2 * X)	-0.00107	-0.00110	-0.00109
	(A2 * A3 * B1 * !B2 * X)	0.00104	0.00104	0.00103
	(A2 * A3 * B1 * !B2 * X)	-0.00107	-0.00110	-0.00109
	(A2 * !B1 * !B2 * !X)	0.00088	0.00089	0.00088
	(A2 * !B1 * !B2 * !X)	-0.00122	-0.00125	-0.00125
	(A2 * !A3 * B2 * X)	0.00104	0.00104	0.00103
	(A2 * !A3 * B2 * X)	-0.00105	-0.00110	-0.00110
	(A2 * !A3 * B1 * !B2 * X)	0.00104	0.00104	0.00103
	(A2 * !A3 * B1 * !B2 * X)	-0.00105	-0.00110	-0.00110
	(!A2 * A3 * B2 * X)	0.00105	0.00105	0.00103
	(!A2 * A3 * B2 * X)	-0.00098	-0.00106	-0.00105
	(!A2 * A3 * B1 * !B2 * X)	0.00105	0.00105	0.00103
	(!A2 * A3 * B1 * !B2 * X)	-0.00098	-0.00106	-0.00105
	(!A2 * A3 * !B1 * !B2 * !X)	0.00088	0.00089	0.00088
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00114	-0.00121	-0.00120
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00083	0.00084	0.00083
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00126	-0.00127	-0.00126

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	0.00116	0.00116	0.00115
	(A2 * A3 * B2 * X)	-0.00107	-0.00110	-0.00109
	(A2 * A3 * B1 * !B2 * X)	0.00116	0.00116	0.00115
	(A2 * A3 * B1 * !B2 * X)	-0.00107	-0.00110	-0.00109
	(A2 * !B1 * !B2 * !X)	0.00101	0.00101	0.00101
	(A2 * !B1 * !B2 * !X)	-0.00122	-0.00124	-0.00124
	(A2 * !A3 * B2 * X)	0.00117	0.00116	0.00115
	(A2 * !A3 * B2 * X)	-0.00105	-0.00110	-0.00110
	(A2 * !A3 * B1 * !B2 * X)	0.00117	0.00116	0.00115
	(A2 * !A3 * B1 * !B2 * X)	-0.00105	-0.00110	-0.00110
	(!A2 * A3 * B2 * X)	0.00117	0.00117	0.00115
	(!A2 * A3 * B2 * X)	-0.00098	-0.00106	-0.00105
	(!A2 * A3 * B1 * !B2 * X)	0.00117	0.00117	0.00115
	(!A2 * A3 * B1 * !B2 * X)	-0.00098	-0.00106	-0.00106
	(!A2 * A3 * !B1 * !B2 * !X)	0.00101	0.00102	0.00101
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00113	-0.00121	-0.00120
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00095	0.00095	0.00095
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00126	-0.00126	-0.00126

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	0.00177	0.00178	0.00178
	(A2 * A3 * B2 * X)	-0.00213	-0.00222	-0.00221
	(A2 * A3 * B1 * !B2 * X)	0.00177	0.00178	0.00178
	(A2 * A3 * B1 * !B2 * X)	-0.00213	-0.00222	-0.00221
	(A2 * !B1 * !B2 * !X)	0.00177	0.00178	0.00178
	(A2 * !B1 * !B2 * !X)	-0.00213	-0.00222	-0.00221
	(A2 * !A3 * B2 * X)	0.00177	0.00178	0.00178
	(A2 * !A3 * B2 * X)	-0.00210	-0.00222	-0.00221
	(A2 * !A3 * B1 * !B2 * X)	0.00177	0.00178	0.00178
	(A2 * !A3 * B1 * !B2 * X)	-0.00210	-0.00222	-0.00221
	(!A2 * A3 * B2 * X)	0.00181	0.00179	0.00178
	(!A2 * A3 * B2 * X)	-0.00198	-0.00214	-0.00213
	(!A2 * A3 * B1 * !B2 * X)	0.00181	0.00179	0.00178
	(!A2 * A3 * B1 * !B2 * X)	-0.00198	-0.00214	-0.00213
	(!A2 * A3 * !B1 * !B2 * !X)	0.00179	0.00179	0.00178
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00200	-0.00213	-0.00212
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00167	0.00167	0.00166
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00227	-0.00227	-0.00227

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)**	-0.00103	-0.00104	-0.00103
	(A2 * A3 * B2 * X)	0.00109	0.00110	0.00109
	(A2 * A3 * B1 * !B2 * X)	-0.00103	-0.00104	-0.00103
	(A2 * A3 * B1 * !B2 * X)	0.00109	0.00110	0.00109
	(A2 * !B1 * !B2 * !X)	-0.00088	-0.00088	-0.00088
	(A2 * !B1 * !B2 * !X)	0.00124	0.00126	0.00125
	(A2 * !A3 * B2 * X)	-0.00103	-0.00104	-0.00103
	(A2 * !A3 * B2 * X)	0.00109	0.00110	0.00110
	(A2 * !A3 * B1 * !B2 * X)	-0.00103	-0.00104	-0.00103
	(A2 * !A3 * B1 * !B2 * X)	0.00109	0.00110	0.00110
	(!A2 * A3 * B2 * X)	-0.00103	-0.00103	-0.00103
	(!A2 * A3 * B2 * X)	0.00106	0.00106	0.00105
	(!A2 * A3 * B1 * !B2 * X)	-0.00103	-0.00103	-0.00103
	(!A2 * A3 * B1 * !B2 * X)	0.00106	0.00106	0.00105
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00088	-0.00088	-0.00088
	(!A2 * A3 * !B1 * !B2 * !X)	0.00120	0.00121	0.00120
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00078	-0.00084	-0.00083
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00127	0.00127	0.00127

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	-0.00115	-0.00116	-0.00115
	(A2 * A3 * B2 * X)	0.00109	0.00110	0.00109
	(A2 * A3 * B1 * !B2 * X)	-0.00115	-0.00116	-0.00115
	(A2 * A3 * B1 * !B2 * X)	0.00109	0.00110	0.00109
	(A2 * !B1 * !B2 * !X)	-0.00101	-0.00101	-0.00101
	(A2 * !B1 * !B2 * !X)	0.00124	0.00125	0.00124
	(A2 * !A3 * B2 * X)	-0.00115	-0.00116	-0.00115
	(A2 * !A3 * B2 * X)	0.00109	0.00110	0.00110
	(A2 * !A3 * B1 * !B2 * X)	-0.00115	-0.00116	-0.00115
	(A2 * !A3 * B1 * !B2 * X)	0.00110	0.00111	0.00110
	(!A2 * A3 * B2 * X)	-0.00115	-0.00115	-0.00115
	(!A2 * A3 * B2 * X)	0.00106	0.00106	0.00105
	(!A2 * A3 * B1 * !B2 * X)	-0.00115	-0.00115	-0.00115
	(!A2 * A3 * B1 * !B2 * X)	0.00106	0.00106	0.00106
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00101	-0.00101	-0.00101
	(!A2 * A3 * !B1 * !B2 * !X)	0.00120	0.00121	0.00120
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00090	-0.00095	-0.00095
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00126	0.00127	0.00126

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	-0.00177	-0.00178	-0.00177
	(A2 * A3 * B2 * X)	0.00221	0.00223	0.00221
	(A2 * A3 * B1 * !B2 * X)	-0.00177	-0.00178	-0.00177
	(A2 * A3 * B1 * !B2 * X)	0.00221	0.00223	0.00221
	(A2 * !B1 * !B2 * !X)	-0.00177	-0.00178	-0.00177
	(A2 * !B1 * !B2 * !X)	0.00221	0.00223	0.00221
	(A2 * !A3 * B2 * X)	-0.00177	-0.00178	-0.00177
	(A2 * !A3 * B2 * X)	0.00221	0.00223	0.00221
	(A2 * !A3 * B1 * !B2 * X)	-0.00177	-0.00178	-0.00177
	(A2 * !A3 * B1 * !B2 * X)	0.00221	0.00223	0.00221
	(!A2 * A3 * B2 * X)	-0.00176	-0.00177	-0.00177
	(!A2 * A3 * B2 * X)	0.00211	0.00214	0.00213
	(!A2 * A3 * B1 * !B2 * X)	-0.00176	-0.00177	-0.00177
	(!A2 * A3 * B1 * !B2 * X)	0.00211	0.00214	0.00213
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00177	-0.00178	-0.00177
	(!A2 * A3 * !B1 * !B2 * !X)	0.00211	0.00213	0.00212
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00157	-0.00167	-0.00166
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00229	0.00229	0.00228

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)**	0.00101	0.00102	0.00098
	(A1 * A3 * B2 * X)	-0.00074	-0.00074	-0.00074
	(A1 * A3 * B1 * !B2 * X)	0.00101	0.00102	0.00098
	(A1 * A3 * B1 * !B2 * X)	-0.00074	-0.00074	-0.00074
	(A1 * A3 * !B1 * !B2 * !X)	0.00090	0.00090	0.00090
	(A1 * A3 * !B1 * !B2 * !X)	-0.00084	-0.00084	-0.00084
	(A1 * !A3 * B2 * X)	0.00095	0.00095	0.00095
	(A1 * !A3 * B2 * X)	-0.00064	-0.00064	-0.00064
	(A1 * !A3 * B1 * !B2 * X)	0.00095	0.00095	0.00095
	(A1 * !A3 * B1 * !B2 * X)	-0.00064	-0.00064	-0.00064
	(A1 * !A3 * !B1 * !B2 * !X)	0.00091	0.00090	0.00090
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00110	-0.00111	-0.00111
	(!A1 * A3 * B2 * X)	0.00112	0.00096	0.00094
	(!A1 * A3 * B2 * X)	-0.00090	-0.00107	-0.00108
	(!A1 * A3 * B1 * !B2 * X)	0.00112	0.00096	0.00094
	(!A1 * A3 * B1 * !B2 * X)	-0.00090	-0.00107	-0.00108
	(!A1 * A3 * !B1 * !B2 * !X)	0.00091	0.00091	0.00090
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00110	-0.00112	-0.00111
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00085	0.00085	0.00084
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00114	-0.00114	-0.00113

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	0.00114	0.00115	0.00111
	(A1 * A3 * B2 * X)	-0.00074	-0.00075	-0.00074
	(A1 * A3 * B1 * !B2 * X)	0.00114	0.00115	0.00111
	(A1 * A3 * B1 * !B2 * X)	-0.00074	-0.00075	-0.00074
	(A1 * A3 * !B1 * !B2 * !X)	0.00103	0.00103	0.00103
	(A1 * A3 * !B1 * !B2 * !X)	-0.00084	-0.00085	-0.00084
	(A1 * !A3 * B2 * X)	0.00108	0.00108	0.00108
	(A1 * !A3 * B2 * X)	-0.00065	-0.00064	-0.00065
	(A1 * !A3 * B1 * !B2 * X)	0.00108	0.00108	0.00108
	(A1 * !A3 * B1 * !B2 * X)	-0.00065	-0.00064	-0.00064
	(A1 * !A3 * !B1 * !B2 * !X)	0.00103	0.00104	0.00103
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00111	-0.00112	-0.00112
	(!A1 * A3 * B2 * X)	0.00125	0.00109	0.00107
	(!A1 * A3 * B2 * X)	-0.00090	-0.00108	-0.00108
	(!A1 * A3 * B1 * !B2 * X)	0.00125	0.00109	0.00107
	(!A1 * A3 * B1 * !B2 * X)	-0.00090	-0.00108	-0.00108
	(!A1 * A3 * !B1 * !B2 * !X)	0.00103	0.00104	0.00103
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00111	-0.00113	-0.00112
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00097	0.00097	0.00097
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00114	-0.00114	-0.00114

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	0.00191	0.00193	0.00185
	(A1 * A3 * B2 * X)	-0.00165	-0.00166	-0.00165
	(A1 * A3 * B1 * !B2 * X)	0.00191	0.00193	0.00186
	(A1 * A3 * B1 * !B2 * X)	-0.00166	-0.00166	-0.00165
	(A1 * A3 * !B1 * !B2 * !X)	0.00182	0.00182	0.00182
	(A1 * A3 * !B1 * !B2 * !X)	-0.00176	-0.00177	-0.00176
	(A1 * !A3 * B2 * X)	0.00184	0.00183	0.00182
	(A1 * !A3 * B2 * X)	-0.00146	-0.00145	-0.00146
	(A1 * !A3 * B1 * !B2 * X)	0.00184	0.00183	0.00182
	(A1 * !A3 * B1 * !B2 * X)	-0.00146	-0.00145	-0.00145
	(A1 * !A3 * !B1 * !B2 * !X)	0.00183	0.00184	0.00182
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00232	-0.00234	-0.00234
	(!A1 * A3 * B2 * X)	0.00214	0.00185	0.00182
	(!A1 * A3 * B2 * X)	-0.00200	-0.00236	-0.00237
	(!A1 * A3 * B1 * !B2 * X)	0.00214	0.00185	0.00182
	(!A1 * A3 * B1 * !B2 * X)	-0.00200	-0.00236	-0.00237
	(!A1 * A3 * !B1 * !B2 * !X)	0.00182	0.00183	0.00182
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00229	-0.00236	-0.00235
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00171	0.00172	0.00171
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00241	-0.00242	-0.00241

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)**	-0.00094	-0.00095	-0.00095
	(A1 * A3 * B2 * X)	0.00074	0.00074	0.00074
	(A1 * A3 * B1 * !B2 * X)	-0.00094	-0.00095	-0.00095
	(A1 * A3 * B1 * !B2 * X)	0.00074	0.00074	0.00074
	(A1 * A3 * !B1 * !B2 * !X)	-0.00090	-0.00090	-0.00090
	(A1 * A3 * !B1 * !B2 * !X)	0.00084	0.00084	0.00084
	(A1 * !A3 * B2 * X)	-0.00093	-0.00093	-0.00092
	(A1 * !A3 * B2 * X)	0.00066	0.00066	0.00066
	(A1 * !A3 * B1 * !B2 * X)	-0.00093	-0.00093	-0.00092
	(A1 * !A3 * B1 * !B2 * X)	0.00066	0.00066	0.00066
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00090	-0.00090	-0.00090
	(A1 * !A3 * !B1 * !B2 * !X)	0.00112	0.00111	0.00111
	(!A1 * A3 * B2 * X)	-0.00094	-0.00094	-0.00093
	(!A1 * A3 * B2 * X)	0.00108	0.00108	0.00108
	(!A1 * A3 * B1 * !B2 * X)	-0.00094	-0.00094	-0.00093
	(!A1 * A3 * B1 * !B2 * X)	0.00108	0.00108	0.00108
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00090	-0.00090	-0.00090
	(!A1 * A3 * !B1 * !B2 * !X)	0.00111	0.00112	0.00111
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00079	-0.00085	-0.00084
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00114	0.00114	0.00114

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	-0.00107	-0.00108	-0.00107
	(A1 * A3 * B2 * X)	0.00074	0.00075	0.00074
	(A1 * A3 * B1 * !B2 * X)	-0.00107	-0.00108	-0.00107
	(A1 * A3 * B1 * !B2 * X)	0.00074	0.00075	0.00074
	(A1 * A3 * !B1 * !B2 * !X)	-0.00102	-0.00103	-0.00102
	(A1 * A3 * !B1 * !B2 * !X)	0.00084	0.00085	0.00084
	(A1 * !A3 * B2 * X)	-0.00106	-0.00106	-0.00105
	(A1 * !A3 * B2 * X)	0.00066	0.00066	0.00067
	(A1 * !A3 * B1 * !B2 * X)	-0.00106	-0.00106	-0.00105
	(A1 * !A3 * B1 * !B2 * X)	0.00066	0.00066	0.00067
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00102	-0.00103	-0.00103
	(A1 * !A3 * !B1 * !B2 * !X)	0.00111	0.00112	0.00112
	(!A1 * A3 * B2 * X)	-0.00107	-0.00107	-0.00106
	(!A1 * A3 * B2 * X)	0.00108	0.00109	0.00108
	(!A1 * A3 * B1 * !B2 * X)	-0.00106	-0.00107	-0.00106
	(!A1 * A3 * B1 * !B2 * X)	0.00107	0.00109	0.00108
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00102	-0.00103	-0.00102
	(!A1 * A3 * !B1 * !B2 * !X)	0.00112	0.00113	0.00112
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00090	-0.00097	-0.00097
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00115	0.00115	0.00114

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	-0.00182	-0.00182	-0.00181
	(A1 * A3 * B2 * X)	0.00165	0.00166	0.00165
	(A1 * A3 * B1 * !B2 * X)	-0.00182	-0.00182	-0.00181
	(A1 * A3 * B1 * !B2 * X)	0.00166	0.00166	0.00165
	(A1 * A3 * !B1 * !B2 * !X)	-0.00181	-0.00182	-0.00181
	(A1 * A3 * !B1 * !B2 * !X)	0.00176	0.00177	0.00176
	(A1 * !A3 * B2 * X)	-0.00179	-0.00179	-0.00178
	(A1 * !A3 * B2 * X)	0.00148	0.00148	0.00150
	(A1 * !A3 * B1 * !B2 * X)	-0.00180	-0.00179	-0.00178
	(A1 * !A3 * B1 * !B2 * X)	0.00149	0.00148	0.00150
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00182	-0.00181	-0.00181
	(A1 * !A3 * !B1 * !B2 * !X)	0.00236	0.00234	0.00234
	(!A1 * A3 * B2 * X)	-0.00181	-0.00181	-0.00180
	(!A1 * A3 * B2 * X)	0.00236	0.00237	0.00237
	(!A1 * A3 * B1 * !B2 * X)	-0.00181	-0.00181	-0.00180
	(!A1 * A3 * B1 * !B2 * X)	0.00236	0.00237	0.00237
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00182	-0.00182	-0.00181
	(!A1 * A3 * !B1 * !B2 * !X)	0.00236	0.00236	0.00235
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00159	-0.00172	-0.00171
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00242	0.00242	0.00242

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	0.00102	0.00102	0.00102
	(A2 * B2 * X)	-0.00059	-0.00059	-0.00059
	(A2 * B1 * !B2 * X)	0.00102	0.00102	0.00102
	(A2 * B1 * !B2 * X)	-0.00059	-0.00059	-0.00059
	(A2 * !B1 * !B2 * !X)	0.00091	0.00091	0.00091
	(A2 * !B1 * !B2 * !X)	-0.00110	-0.00112	-0.00111
	(A1 * !A2 * B2 * X)	0.00102	0.00102	0.00102
	(A1 * !A2 * B2 * X)	-0.00059	-0.00059	-0.00059
	(A1 * !A2 * B1 * !B2 * X)	0.00103	0.00102	0.00102
	(A1 * !A2 * B1 * !B2 * X)	-0.00059	-0.00059	-0.00059
	(A1 * !A2 * !B1 * !B2 * !X)	0.00090	0.00092	0.00091
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00100	-0.00105	-0.00105
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00084	0.00085	0.00085
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00113	-0.00114	-0.00113
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	0.00118	0.00117	0.00117
	(A2 * B2 * X)	-0.00059	-0.00059	-0.00059
	(A2 * B1 * !B2 * X)	0.00118	0.00117	0.00117
	(A2 * B1 * !B2 * X)	-0.00059	-0.00059	-0.00059
	(A2 * !B1 * !B2 * !X)	0.00104	0.00104	0.00103
	(A2 * !B1 * !B2 * !X)	-0.00113	-0.00114	-0.00114
	(A1 * !A2 * B2 * X)	0.00118	0.00118	0.00117
	(A1 * !A2 * B2 * X)	-0.00059	-0.00059	-0.00059
	(A1 * !A2 * B1 * !B2 * X)	0.00118	0.00118	0.00117
	(A1 * !A2 * B1 * !B2 * X)	-0.00059	-0.00059	-0.00059
	(A1 * !A2 * !B1 * !B2 * !X)	0.00103	0.00104	0.00103
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00103	-0.00108	-0.00108
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00096	0.00097	0.00096
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00116	-0.00117	-0.00116

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	0.00192	0.00191	0.00191
	(A2 * B2 * X)	-0.00119	-0.00118	-0.00118
	(A2 * B1 * !B2 * X)	0.00192	0.00191	0.00191
	(A2 * B1 * !B2 * X)	-0.00119	-0.00118	-0.00118
	(A2 * !B1 * !B2 * !X)	0.00175	0.00177	0.00176
	(A2 * !B1 * !B2 * !X)	-0.00207	-0.00215	-0.00214
	(A1 * !A2 * B2 * X)	0.00192	0.00191	0.00191
	(A1 * !A2 * B2 * X)	-0.00119	-0.00118	-0.00118
	(A1 * !A2 * B1 * !B2 * X)	0.00192	0.00191	0.00191
	(A1 * !A2 * B1 * !B2 * X)	-0.00119	-0.00118	-0.00118
	(A1 * !A2 * !B1 * !B2 * !X)	0.00176	0.00178	0.00176
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00193	-0.00202	-0.00202
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00165	0.00165	0.00165
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00221	-0.00221	-0.00221

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	-0.00097	-0.00097	-0.00101
	(A2 * B2 * X)	0.00063	0.00063	0.00060
	(A2 * B1 * !B2 * X)	-0.00097	-0.00097	-0.00101
	(A2 * B1 * !B2 * X)	0.00063	0.00063	0.00060
	(A2 * !B1 * !B2 * !X)	-0.00091	-0.00091	-0.00090
	(A2 * !B1 * !B2 * !X)	0.00112	0.00112	0.00111
	(A1 * !A2 * B2 * X)	-0.00091	-0.00091	-0.00100
	(A1 * !A2 * B2 * X)	0.00067	0.00066	0.00060
	(A1 * !A2 * B1 * !B2 * X)	-0.00091	-0.00091	-0.00100
	(A1 * !A2 * B1 * !B2 * X)	0.00067	0.00066	0.00060
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00090	-0.00091	-0.00090
	(A1 * !A2 * !B1 * !B2 * !X)	0.00105	0.00105	0.00105
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00080	-0.00085	-0.00085
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00114	0.00114	0.00114
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	-0.00112	-0.00112	-0.00117
	(A2 * B2 * X)	0.00064	0.00063	0.00060
	(A2 * B1 * !B2 * X)	-0.00112	-0.00112	-0.00117
	(A2 * B1 * !B2 * X)	0.00064	0.00063	0.00060
	(A2 * !B1 * !B2 * !X)	-0.00103	-0.00103	-0.00103
	(A2 * !B1 * !B2 * !X)	0.00115	0.00114	0.00114
	(A1 * !A2 * B2 * X)	-0.00107	-0.00107	-0.00116
	(A1 * !A2 * B2 * X)	0.00067	0.00066	0.00060
	(A1 * !A2 * B1 * !B2 * X)	-0.00107	-0.00107	-0.00116
	(A1 * !A2 * B1 * !B2 * X)	0.00067	0.00066	0.00060
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00103	-0.00103	-0.00103
	(A1 * !A2 * !B1 * !B2 * !X)	0.00108	0.00108	0.00108
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00091	-0.00097	-0.00096
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00117	0.00117	0.00117

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	-0.00176	-0.00176	-0.00189
	(A2 * B2 * X)	0.00131	0.00130	0.00122
	(A2 * B1 * !B2 * X)	-0.00176	-0.00176	-0.00189
	(A2 * B1 * !B2 * X)	0.00131	0.00130	0.00122
	(A2 * !B1 * !B2 * !X)	-0.00175	-0.00176	-0.00175
	(A2 * !B1 * !B2 * !X)	0.00215	0.00215	0.00214
	(A1 * !A2 * B2 * X)	-0.00163	-0.00163	-0.00186
	(A1 * !A2 * B2 * X)	0.00138	0.00138	0.00122
	(A1 * !A2 * B1 * !B2 * X)	-0.00163	-0.00163	-0.00186
	(A1 * !A2 * B1 * !B2 * X)	0.00139	0.00138	0.00122
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00176	-0.00176	-0.00175
	(A1 * !A2 * !B1 * !B2 * !X)	0.00203	0.00202	0.00202
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00154	-0.00165	-0.00165
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00222	0.00222	0.00221

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	0.00116	0.00105	0.00104
	(A3 * B2 * X)	-0.00099	-0.00112	-0.00113
	(A2 * !A3 * B2 * X)	0.00116	0.00105	0.00104
	(A2 * !A3 * B2 * X)	-0.00099	-0.00112	-0.00113
	(A1 * !A2 * !A3 * B2 * X)	0.00116	0.00105	0.00104
	(A1 * !A2 * !A3 * B2 * X)	-0.00099	-0.00112	-0.00113
	(!A1 * !A2 * !A3 * B2 * !X)	0.00038	0.00038	0.00038
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00137	-0.00139	-0.00139
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00044	0.00044	0.00039
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00132	-0.00133	-0.00140

sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	0.00139	0.00128	0.00126
	(A3 * B2 * X)	-0.00110	-0.00123	-0.00124
	(A2 * !A3 * B2 * X)	0.00139	0.00128	0.00126
	(A2 * !A3 * B2 * X)	-0.00110	-0.00123	-0.00124
	(A1 * !A2 * !A3 * B2 * X)	0.00139	0.00128	0.00126
	(A1 * !A2 * !A3 * B2 * X)	-0.00110	-0.00123	-0.00124
	(!A1 * !A2 * !A3 * B2 * !X)	0.00045	0.00045	0.00045
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00156	-0.00158	-0.00158
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00052	0.00052	0.00047
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00149	-0.00151	-0.00159
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	0.00252	0.00225	0.00221
	(A3 * B2 * X)	-0.00229	-0.00261	-0.00263
	(A2 * !A3 * B2 * X)	0.00252	0.00225	0.00221
	(A2 * !A3 * B2 * X)	-0.00228	-0.00260	-0.00263
	(A1 * !A2 * !A3 * B2 * X)	0.00252	0.00225	0.00221
	(A1 * !A2 * !A3 * B2 * X)	-0.00228	-0.00260	-0.00263
	(!A1 * !A2 * !A3 * B2 * !X)	0.00066	0.00066	0.00066
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00335	-0.00342	-0.00340
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00078	0.00078	0.00069
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00328	-0.00330	-0.00345

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

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

sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	-0.00103	-0.00104	-0.00103
	(A3 * B2 * X)	0.00112	0.00114	0.00113
	(A2 * !A3 * B2 * X)	-0.00103	-0.00104	-0.00103
	(A2 * !A3 * B2 * X)	0.00112	0.00114	0.00113
	(A1 * !A2 * !A3 * B2 * X)	-0.00103	-0.00104	-0.00103
	(A1 * !A2 * !A3 * B2 * X)	0.00112	0.00114	0.00113
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00038	-0.00038	-0.00038
	(!A1 * !A2 * !A3 * B2 * !X)	0.00140	0.00141	0.00139
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00038	-0.00038	-0.00038
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00140	0.00141	0.00141
sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	-0.00126	-0.00126	-0.00125
	(A3 * B2 * X)	0.00123	0.00124	0.00124
	(A2 * !A3 * B2 * X)	-0.00126	-0.00126	-0.00125
	(A2 * !A3 * B2 * X)	0.00124	0.00124	0.00124
	(A1 * !A2 * !A3 * B2 * X)	-0.00126	-0.00126	-0.00125
	(A1 * !A2 * !A3 * B2 * X)	0.00124	0.00124	0.00124
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00045	-0.00045	-0.00045
	(!A1 * !A2 * !A3 * B2 * !X)	0.00158	0.00160	0.00158
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00046	-0.00045	-0.00045
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00160	0.00159	0.00160
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	-0.00220	-0.00220	-0.00219
	(A3 * B2 * X)	0.00262	0.00264	0.00263
	(A2 * !A3 * B2 * X)	-0.00220	-0.00220	-0.00219
	(A2 * !A3 * B2 * X)	0.00261	0.00263	0.00263
	(A1 * !A2 * !A3 * B2 * X)	-0.00220	-0.00221	-0.00219
	(A1 * !A2 * !A3 * B2 * X)	0.00261	0.00264	0.00263
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00066	-0.00066	-0.00066
	(!A1 * !A2 * !A3 * B2 * !X)	0.00342	0.00344	0.00340
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00067	-0.00067	-0.00066
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00347	0.00349	0.00347

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	(A3 * B1 * X)	0.00107	0.00106	0.00106
	(A3 * B1 * X)	-0.00060	-0.00059	-0.00059
	(A2 * !A3 * B1 * X)	0.00107	0.00107	0.00106
	(A2 * !A3 * B1 * X)	-0.00060	-0.00060	-0.00059
	(A1 * !A2 * !A3 * B1 * X)	0.00107	0.00107	0.00106
	(A1 * !A2 * !A3 * B1 * X)	-0.00061	-0.00060	-0.00059
	(!A1 * !A2 * !A3 * B1 * !X)	0.00031	0.00031	0.00031
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00135	-0.00137	-0.00136
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00037	0.00037	0.00033
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00130	-0.00130	-0.00138
sky130_fd_sc_hs__o32a_2	(A3 * B1 * X)	0.00120	0.00119	0.00119
	(A3 * B1 * X)	-0.00060	-0.00060	-0.00060
	(A2 * !A3 * B1 * X)	0.00119	0.00120	0.00119
	(A2 * !A3 * B1 * X)	-0.00059	-0.00060	-0.00060
	(A1 * !A2 * !A3 * B1 * X)	0.00119	0.00120	0.00119
	(A1 * !A2 * !A3 * B1 * X)	-0.00059	-0.00060	-0.00060
	(!A1 * !A2 * !A3 * B1 * !X)	0.00036	0.00035	0.00035
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00138	-0.00139	-0.00139
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00042	0.00042	0.00037
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00132	-0.00133	-0.00140

sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	0.00205	0.00206	0.00205
	(A3 * B1 * X)	-0.00121	-0.00121	-0.00120
	(A2 * !A3 * B1 * X)	0.00205	0.00206	0.00205
	(A2 * !A3 * B1 * X)	-0.00121	-0.00121	-0.00120
	(A1 * !A2 * !A3 * B1 * X)	0.00205	0.00206	0.00205
	(A1 * !A2 * !A3 * B1 * X)	-0.00121	-0.00121	-0.00120
	(!A1 * !A2 * !A3 * B1 * !X)	0.00064	0.00064	0.00063
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00262	-0.00266	-0.00265
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00076	0.00075	0.00067
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00254	-0.00256	-0.00270

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**(A3 * B1 * X)**	-0.00102	-0.00102	-0.00106
	(A3 * B1 * X)	0.00065	0.00064	0.00061
	(A2 * !A3 * B1 * X)	-0.00102	-0.00102	-0.00106
	(A2 * !A3 * B1 * X)	0.00065	0.00064	0.00061
	(A1 * !A2 * !A3 * B1 * X)	-0.00101	-0.00102	-0.00106
	(A1 * !A2 * !A3 * B1 * X)	0.00064	0.00064	0.00061
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00031	-0.00031	-0.00031
	(!A1 * !A2 * !A3 * B1 * !X)	0.00136	0.00137	0.00136
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00032	-0.00031	-0.00031
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00139	0.00139	0.00139

sky130_fd_sc_hs__o32a_2	**(A3 * B1 * X)**	-0.00115	-0.00115	-0.00119
	(A3 * B1 * X)	0.00065	0.00064	0.00061
	(A2 * !A3 * B1 * X)	-0.00115	-0.00115	-0.00119
	(A2 * !A3 * B1 * X)	0.00065	0.00064	0.00061
	(A1 * !A2 * !A3 * B1 * X)	-0.00115	-0.00115	-0.00119
	(A1 * !A2 * !A3 * B1 * X)	0.00065	0.00064	0.00061
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00035	-0.00035	-0.00035
	(!A1 * !A2 * !A3 * B1 * !X)	0.00138	0.00139	0.00139
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00036	-0.00036	-0.00035
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00142	0.00142	0.00141
sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	-0.00194	-0.00195	-0.00204
	(A3 * B1 * X)	0.00130	0.00130	0.00123
	(A2 * !A3 * B1 * X)	-0.00194	-0.00195	-0.00204
	(A2 * !A3 * B1 * X)	0.00130	0.00130	0.00123
	(A1 * !A2 * !A3 * B1 * X)	-0.00194	-0.00195	-0.00204
	(A1 * !A2 * !A3 * B1 * X)	0.00131	0.00131	0.00123
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00064	-0.00064	-0.00063
	(!A1 * !A2 * !A3 * B1 * !X)	0.00266	0.00266	0.00265
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00064	-0.00064	-0.00064
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00271	0.00273	0.00272

SKY130_FD_SC_HS__O41AIx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT					OUTPUT
A1	A2	A3	A4	B1	Y
0	0	0	0	x	1
0	0	x	1	0	1
0	0	x	1	1	0
0	x	1	x	0	1
0	x	1	x	1	0
x	1	x	x	0	1
x	1	x	x	1	0
1	x	x	x	0	1
1	x	x	x	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__o41ai_1	11.18880
sky130_fd_sc_hs__o41ai_2	20.77920
sky130_fd_sc_hs__o41ai_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	A4	B1	Y
sky130_fd_sc_hs__o41ai_1	0.00260	0.00266	0.00276	0.00275	0.00279	0.17377
sky130_fd_sc_hs__o41ai_2	0.00510	0.00521	0.00500	0.00512	0.00542	0.31735
sky130_fd_sc_hs__o41ai_4	0.00990	0.00986	0.01002	0.01026	0.00753	0.60529

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41ai_1	0.00000	0.01583	0.04886
sky130_fd_sc_hs__o41ai_2	0.00000	0.03166	0.09773
sky130_fd_sc_hs__o41ai_4	0.00000	0.04041	0.14659

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)	0.41646	1.69999	11.11150
	A2->Y (FR)	0.39620	1.67699	11.39560
	A3->Y (FR)	0.34867	1.63705	11.68350
	A4->Y (FR)	0.26946	1.52423	11.28180
	B1->Y (FR)	0.04756	0.67137	6.26428
sky130_fd_sc_hs__o41ai_2	A1->Y (FR)	0.43354	1.53664	11.12300
	A2->Y (FR)	0.40910	1.50248	11.38340
	A3->Y (FR)	0.35429	1.46016	11.75410
	A4->Y (FR)	0.24254	1.31536	11.32970
	B1->Y (FR)	0.03767	0.59658	6.07270
sky130_fd_sc_hs__o41ai_4	A1->Y (FR)	0.40633	1.34245	11.05960
	A2->Y (FR)	0.38216	1.31227	11.37190
	A3->Y (FR)	0.32904	1.26897	11.73820
	A4->Y (FR)	0.22241	1.13514	11.35370
	B1->Y (FR)	0.05019	0.69744	7.79463

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41ai_1	A1->Y (RF)	0.04925	0.42228	3.23106
	A2->Y (RF)	0.05040	0.41611	3.21315
	A3->Y (RF)	0.05009	0.40727	3.19689
	A4->Y (RF)	0.04262	0.39215	3.16541
	B1->Y (RF)	0.03769	0.44475	3.52532
sky130_fd_sc_hs__o41ai_2	A1->Y (RF)	0.04721	0.38492	3.18601
	A2->Y (RF)	0.04830	0.37847	3.16798
	A3->Y (RF)	0.04826	0.36731	3.13967
	A4->Y (RF)	0.04044	0.34896	3.10908
	B1->Y (RF)	0.03378	0.40843	3.55298
sky130_fd_sc_hs__o41ai_4	A1->Y (RF)	0.05010	0.35130	3.16713
	A2->Y (RF)	0.04938	0.34088	3.12437
	A3->Y (RF)	0.04748	0.32671	3.08510
	A4->Y (RF)	0.03714	0.30163	3.00710
	B1->Y (RF)	0.03576	0.41423	3.99985

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41ai_1	A1	0.00095	0.00082	0.00083
	A1	0.00683	0.00669	0.00671
	A2	0.00098	0.00085	0.00090
	A2	0.00621	0.00607	0.00607
	A3	0.00098	0.00083	0.00097
	A3	0.00564	0.00549	0.00561
	A4	0.00096	0.00086	0.00160
	A4	0.00501	0.00491	0.00563
	B1	-0.00035	-0.00032	0.00068
	B1	0.00449	0.00448	0.00569
sky130_fd_sc_hs__o41ai_2	A1	0.00141	0.00112	0.00114
	A1	0.01326	0.01297	0.01300
	A2	0.00146	0.00114	0.00124
	A2	0.01199	0.01169	0.01162
	A3	0.00151	0.00121	0.00146
	A3	0.01065	0.01036	0.01057
	A4	0.00142	0.00116	0.00277
	A4	0.00931	0.00903	0.01062
	B1	-0.00149	-0.00134	0.00075
	B1	0.00832	0.00838	0.01049

sky130_fd_sc_hs__o41ai_4	**A1**	0.00242	0.00191	0.00203
	A1	0.02570	0.02523	0.02529
	A2	0.00250	0.00194	0.00220
	A2	0.02306	0.02256	0.02271
	A3	0.00249	0.00192	0.00249
	A3	0.02053	0.01998	0.02050
	A4	0.00235	0.00187	0.00502
	A4	0.01782	0.01738	0.02043
	B1	-0.00230	-0.00230	0.00018
	B1	0.01405	0.01397	0.01629

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41ai_1	**A1**	0.00784	0.00771	0.00775
	A1	0.00197	0.00184	0.00191
	A2	0.00669	0.00657	0.00664
	A2	0.00141	0.00129	0.00138
	A3	0.00547	0.00540	0.00551
	A3	0.00071	0.00064	0.00076
	A4	0.00417	0.00417	0.00432
	A4	-0.00001	-0.00002	0.00013
	B1	0.00667	0.00659	0.00680
	B1	0.00201	0.00192	0.00216

sky130_fd_sc_hs__o41ai_2	**A1**	0.01642	0.01609	0.01610
	A1	0.00467	0.00434	0.00446
	A2	0.01377	0.01354	0.01367
	A2	0.00316	0.00292	0.00311
	A3	0.01129	0.01111	0.01132
	A3	0.00197	0.00178	0.00203
	A4	0.00808	0.00808	0.00847
	A4	-0.00006	-0.00007	0.00031
	B1	0.01395	0.01374	0.01424
	B1	0.00460	0.00437	0.00497
sky130_fd_sc_hs__o41ai_4	**A1**	0.03091	0.03023	0.03041
	A1	0.00787	0.00723	0.00754
	A2	0.02581	0.02526	0.02565
	A2	0.00518	0.00458	0.00506
	A3	0.02095	0.02054	0.02114
	A3	0.00251	0.00207	0.00273
	A4	0.01500	0.01493	0.01588
	A4	-0.00099	-0.00108	-0.00012
	B1	0.02495	0.02474	0.02524
	B1	0.00955	0.00934	0.00984

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)**	0.00107	0.00108	0.00107
	(A2 * A4 * B1 * !Y)	-0.00123	-0.00126	-0.00126
	(A2 * A3 * !A4 * B1 * !Y)	0.00107	0.00108	0.00107
	(A2 * A3 * !A4 * B1 * !Y)	-0.00123	-0.00126	-0.00126
	(A2 * !B1 * Y)	0.00107	0.00107	0.00107
	(A2 * !B1 * Y)	-0.00123	-0.00126	-0.00126
	(A2 * !A3 * !A4 * B1 * !Y)	0.00107	0.00108	0.00107
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00122	-0.00126	-0.00126
	(!A2 * A3 * A4 * B1 * !Y)	0.00107	0.00108	0.00107
	(!A2 * A3 * A4 * B1 * !Y)	-0.00114	-0.00121	-0.00121
	(!A2 * A3 * !B1 * Y)	0.00107	0.00108	0.00107
	(!A2 * A3 * !B1 * Y)	-0.00114	-0.00121	-0.00121
	(!A2 * A3 * !A4 * B1 * !Y)	0.00107	0.00108	0.00107
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00114	-0.00121	-0.00121
	(!A2 * !A3 * A4 * B1 * !Y)	0.00107	0.00108	0.00107
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00112	-0.00119	-0.00119
	(!A2 * !A3 * A4 * !B1 * Y)	0.00107	0.00108	0.00107
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00112	-0.00118	-0.00119
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00100	0.00101	0.00100
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00128	-0.00128	-0.00127

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00212	0.00214	0.00213
	(A2 * A4 * B1 * !Y)	-0.00240	-0.00251	-0.00249
	(A2 * A3 * !A4 * B1 * !Y)	0.00212	0.00214	0.00213
	(A2 * A3 * !A4 * B1 * !Y)	-0.00240	-0.00251	-0.00249
	(A2 * !B1 * Y)	0.00212	0.00214	0.00213
	(A2 * !B1 * Y)	-0.00241	-0.00251	-0.00249
	(A2 * !A3 * !A4 * B1 * !Y)	0.00212	0.00214	0.00213
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00239	-0.00250	-0.00249
	(!A2 * A3 * A4 * B1 * !Y)	0.00213	0.00212	0.00213
	(!A2 * A3 * A4 * B1 * !Y)	-0.00224	-0.00240	-0.00239
	(!A2 * A3 * !B1 * Y)	0.00212	0.00212	0.00212
	(!A2 * A3 * !B1 * Y)	-0.00225	-0.00240	-0.00239
	(!A2 * A3 * !A4 * B1 * !Y)	0.00213	0.00213	0.00213
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00224	-0.00240	-0.00239
	(!A2 * !A3 * A4 * B1 * !Y)	0.00213	0.00215	0.00213
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00221	-0.00236	-0.00235
	(!A2 * !A3 * A4 * !B1 * Y)	0.00212	0.00215	0.00212
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00222	-0.00236	-0.00235
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00198	0.00199	0.00197
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00256	-0.00256	-0.00255

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00410	0.00412	0.00409
	(A2 * A4 * B1 * !Y)	-0.00481	-0.00500	-0.00497
	(A2 * A3 * !A4 * B1 * !Y)	0.00410	0.00412	0.00409
	(A2 * A3 * !A4 * B1 * !Y)	-0.00481	-0.00500	-0.00497
	(A2 * !B1 * Y)	0.00410	0.00412	0.00409
	(A2 * !B1 * Y)	-0.00482	-0.00500	-0.00497
	(A2 * !A3 * !A4 * B1 * !Y)	0.00410	0.00412	0.00409
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00475	-0.00500	-0.00497
	(!A2 * A3 * A4 * B1 * !Y)	0.00410	0.00411	0.00409
	(!A2 * A3 * A4 * B1 * !Y)	-0.00446	-0.00477	-0.00474
	(!A2 * A3 * !B1 * Y)	0.00410	0.00411	0.00409
	(!A2 * A3 * !B1 * Y)	-0.00446	-0.00477	-0.00475
	(!A2 * A3 * !A4 * B1 * !Y)	0.00411	0.00411	0.00409
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00446	-0.00477	-0.00474
	(!A2 * !A3 * A4 * B1 * !Y)	0.00412	0.00415	0.00409
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00441	-0.00468	-0.00467
	(!A2 * !A3 * A4 * !B1 * Y)	0.00410	0.00414	0.00409
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00442	-0.00468	-0.00467
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00377	0.00382	0.00379
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00508	-0.00512	-0.00510

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)**	-0.00107	-0.00107	-0.00107
	(A2 * A4 * B1 * !Y)	0.00125	0.00127	0.00126
	(A2 * A3 * !A4 * B1 * !Y)	-0.00107	-0.00107	-0.00107
	(A2 * A3 * !A4 * B1 * !Y)	0.00126	0.00127	0.00126
	(A2 * !B1 * Y)	-0.00107	-0.00107	-0.00107
	(A2 * !B1 * Y)	0.00126	0.00127	0.00126
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00107	-0.00107	-0.00107
	(A2 * !A3 * !A4 * B1 * !Y)	0.00126	0.00127	0.00126
	(!A2 * A3 * A4 * B1 * !Y)	-0.00107	-0.00107	-0.00107
	(!A2 * A3 * A4 * B1 * !Y)	0.00121	0.00121	0.00121
	(!A2 * A3 * !B1 * Y)	-0.00107	-0.00107	-0.00107
	(!A2 * A3 * !B1 * Y)	0.00121	0.00121	0.00121
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00107	-0.00107	-0.00107
	(!A2 * A3 * !A4 * B1 * !Y)	0.00121	0.00121	0.00121
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00107	-0.00107	-0.00107
	(!A2 * !A3 * A4 * B1 * !Y)	0.00119	0.00119	0.00119
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00107	-0.00107	-0.00107
	(!A2 * !A3 * A4 * !B1 * Y)	0.00119	0.00118	0.00119
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00094	-0.00101	-0.00100
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00128	0.00128	0.00128

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00212	-0.00213	-0.00212
	(A2 * A4 * B1 * !Y)	0.00249	0.00251	0.00249
	(A2 * A3 * !A4 * B1 * !Y)	-0.00212	-0.00213	-0.00212
	(A2 * A3 * !A4 * B1 * !Y)	0.00249	0.00251	0.00249
	(A2 * !B1 * Y)	-0.00212	-0.00213	-0.00212
	(A2 * !B1 * Y)	0.00249	0.00251	0.00249
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00212	-0.00213	-0.00212
	(A2 * !A3 * !A4 * B1 * !Y)	0.00249	0.00251	0.00249
	(!A2 * A3 * A4 * B1 * !Y)	-0.00211	-0.00212	-0.00212
	(!A2 * A3 * A4 * B1 * !Y)	0.00237	0.00240	0.00239
	(!A2 * A3 * !B1 * Y)	-0.00212	-0.00212	-0.00212
	(!A2 * A3 * !B1 * Y)	0.00238	0.00240	0.00239
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00211	-0.00213	-0.00212
	(!A2 * A3 * !A4 * B1 * !Y)	0.00237	0.00240	0.00239
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00212	-0.00213	-0.00212
	(!A2 * !A3 * A4 * B1 * !Y)	0.00233	0.00236	0.00235
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00212	-0.00213	-0.00212
	(!A2 * !A3 * A4 * !B1 * Y)	0.00234	0.00236	0.00235
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00186	-0.00199	-0.00197
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00257	0.00258	0.00256

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00409	-0.00410	-0.00408
	(A2 * A4 * B1 * !Y)	0.00498	0.00501	0.00497
	(A2 * A3 * !A4 * B1 * !Y)	-0.00409	-0.00410	-0.00408
	(A2 * A3 * !A4 * B1 * !Y)	0.00498	0.00501	0.00497
	(A2 * !B1 * Y)	-0.00409	-0.00410	-0.00408
	(A2 * !B1 * Y)	0.00498	0.00501	0.00497
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00409	-0.00410	-0.00408
	(A2 * !A3 * !A4 * B1 * !Y)	0.00498	0.00501	0.00497
	(!A2 * A3 * A4 * B1 * !Y)	-0.00408	-0.00410	-0.00408
	(!A2 * A3 * A4 * B1 * !Y)	0.00474	0.00477	0.00474
	(!A2 * A3 * !B1 * Y)	-0.00408	-0.00410	-0.00408
	(!A2 * A3 * !B1 * Y)	0.00474	0.00477	0.00475
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00408	-0.00410	-0.00408
	(!A2 * A3 * !A4 * B1 * !Y)	0.00474	0.00477	0.00474
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00408	-0.00409	-0.00408
	(!A2 * !A3 * A4 * B1 * !Y)	0.00466	0.00468	0.00467
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00408	-0.00409	-0.00408
	(!A2 * !A3 * A4 * !B1 * Y)	0.00466	0.00468	0.00467
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00357	-0.00382	-0.00379
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00511	0.00514	0.00511

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)**	0.00103	0.00104	0.00104
	(A1 * A3 * A4 * B1 * !Y)	-0.00090	-0.00090	-0.00090
	(A1 * A3 * !B1 * Y)	0.00104	0.00104	0.00104
	(A1 * A3 * !B1 * Y)	-0.00091	-0.00092	-0.00091
	(A1 * A3 * !A4 * B1 * !Y)	0.00104	0.00104	0.00104
	(A1 * A3 * !A4 * B1 * !Y)	-0.00086	-0.00086	-0.00086
	(A1 * !A3 * A4 * B1 * !Y)	0.00104	0.00104	0.00104
	(A1 * !A3 * A4 * B1 * !Y)	-0.00084	-0.00085	-0.00084
	(A1 * !A3 * A4 * !B1 * Y)	0.00103	0.00104	0.00104
	(A1 * !A3 * A4 * !B1 * Y)	-0.00089	-0.00090	-0.00089
	(A1 * !A3 * !A4 * B1 * !Y)	0.00105	0.00104	0.00104
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00075	-0.00074	-0.00074
	(A1 * !A3 * !A4 * !B1 * Y)	0.00103	0.00104	0.00104
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00120	-0.00122	-0.00122
	(!A1 * A3 * A4 * B1 * !Y)	0.00104	0.00105	0.00104
	(!A1 * A3 * A4 * B1 * !Y)	-0.00119	-0.00122	-0.00122
	(!A1 * A3 * !B1 * Y)	0.00104	0.00105	0.00104
	(!A1 * A3 * !B1 * Y)	-0.00119	-0.00122	-0.00122
	(!A1 * A3 * !A4 * B1 * !Y)	0.00105	0.00105	0.00104
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00117	-0.00123	-0.00122
	(!A1 * !A3 * A4 * B1 * !Y)	0.00105	0.00104	0.00104
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00107	-0.00116	-0.00116
	(!A1 * !A3 * A4 * !B1 * Y)	0.00103	0.00104	0.00104
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00108	-0.00116	-0.00115
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00096	0.00097	0.00096
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00124	-0.00125	-0.00124

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00215	0.00215	0.00213
	(A1 * A3 * A4 * B1 * !Y)	-0.00186	-0.00187	-0.00186
	(A1 * A3 * !B1 * Y)	0.00213	0.00214	0.00213
	(A1 * A3 * !B1 * Y)	-0.00189	-0.00190	-0.00189
	(A1 * A3 * !A4 * B1 * !Y)	0.00215	0.00214	0.00213
	(A1 * A3 * !A4 * B1 * !Y)	-0.00179	-0.00180	-0.00180
	(A1 * !A3 * A4 * B1 * !Y)	0.00213	0.00218	0.00214
	(A1 * !A3 * A4 * B1 * !Y)	-0.00176	-0.00177	-0.00177
	(A1 * !A3 * A4 * !B1 * Y)	0.00212	0.00217	0.00213
	(A1 * !A3 * A4 * !B1 * Y)	-0.00188	-0.00190	-0.00188
	(A1 * !A3 * !A4 * B1 * !Y)	0.00212	0.00213	0.00213
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00153	-0.00154	-0.00154
	(A1 * !A3 * !A4 * !B1 * Y)	0.00212	0.00214	0.00213
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00245	-0.00252	-0.00250
	(!A1 * A3 * A4 * B1 * !Y)	0.00213	0.00215	0.00213
	(!A1 * A3 * A4 * B1 * !Y)	-0.00246	-0.00256	-0.00254
	(!A1 * A3 * !B1 * Y)	0.00212	0.00215	0.00213
	(!A1 * A3 * !B1 * Y)	-0.00247	-0.00256	-0.00254
	(!A1 * A3 * !A4 * B1 * !Y)	0.00213	0.00215	0.00213
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00243	-0.00256	-0.00254
	(!A1 * !A3 * A4 * B1 * !Y)	0.00215	0.00215	0.00213
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00228	-0.00244	-0.00242
	(!A1 * !A3 * A4 * !B1 * Y)	0.00212	0.00215	0.00213
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00230	-0.00244	-0.00242
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00197	0.00198	0.00197
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00260	-0.00260	-0.00259

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00410	0.00406	0.00406
	(A1 * A3 * A4 * B1 * !Y)	-0.00352	-0.00354	-0.00353
	(A1 * A3 * !B1 * Y)	0.00406	0.00405	0.00405
	(A1 * A3 * !B1 * Y)	-0.00358	-0.00360	-0.00359
	(A1 * A3 * !A4 * B1 * !Y)	0.00410	0.00406	0.00406
	(A1 * A3 * !A4 * B1 * !Y)	-0.00340	-0.00343	-0.00341
	(A1 * !A3 * A4 * B1 * !Y)	0.00405	0.00413	0.00406
	(A1 * !A3 * A4 * B1 * !Y)	-0.00337	-0.00338	-0.00337
	(A1 * !A3 * A4 * !B1 * Y)	0.00405	0.00413	0.00405
	(A1 * !A3 * A4 * !B1 * Y)	-0.00357	-0.00361	-0.00359
	(A1 * !A3 * !A4 * B1 * !Y)	0.00404	0.00406	0.00405
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00293	-0.00294	-0.00294
	(A1 * !A3 * !A4 * !B1 * Y)	0.00404	0.00404	0.00405
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00482	-0.00492	-0.00491
	(!A1 * A3 * A4 * B1 * !Y)	0.00405	0.00410	0.00405
	(!A1 * A3 * A4 * B1 * !Y)	-0.00476	-0.00493	-0.00493
	(!A1 * A3 * !B1 * Y)	0.00405	0.00409	0.00405
	(!A1 * A3 * !B1 * Y)	-0.00478	-0.00494	-0.00493
	(!A1 * A3 * !A4 * B1 * !Y)	0.00409	0.00410	0.00405
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00468	-0.00497	-0.00493
	(!A1 * !A3 * A4 * B1 * !Y)	0.00410	0.00409	0.00405
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00435	-0.00469	-0.00468
	(!A1 * !A3 * A4 * !B1 * Y)	0.00404	0.00409	0.00405
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00440	-0.00469	-0.00468
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00378	0.00381	0.00377
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00509	-0.00510	-0.00508

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)**	-0.00103	-0.00104	-0.00103
	(A1 * A3 * A4 * B1 * !Y)	0.00090	0.00090	0.00090
	(A1 * A3 * !B1 * Y)	-0.00103	-0.00104	-0.00103
	(A1 * A3 * !B1 * Y)	0.00091	0.00092	0.00091
	(A1 * A3 * !A4 * B1 * !Y)	-0.00103	-0.00104	-0.00103
	(A1 * A3 * !A4 * B1 * !Y)	0.00086	0.00086	0.00086
	(A1 * !A3 * A4 * B1 * !Y)	-0.00103	-0.00104	-0.00103
	(A1 * !A3 * A4 * B1 * !Y)	0.00084	0.00085	0.00084
	(A1 * !A3 * A4 * !B1 * Y)	-0.00103	-0.00104	-0.00103
	(A1 * !A3 * A4 * !B1 * Y)	0.00089	0.00090	0.00089
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00102	-0.00102	-0.00102
	(A1 * !A3 * !A4 * B1 * !Y)	0.00076	0.00076	0.00076
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00103	-0.00104	-0.00103
	(A1 * !A3 * !A4 * !B1 * Y)	0.00121	0.00122	0.00122
	(!A1 * A3 * A4 * B1 * !Y)	-0.00104	-0.00104	-0.00103
	(!A1 * A3 * A4 * B1 * !Y)	0.00122	0.00122	0.00122
	(!A1 * A3 * !B1 * Y)	-0.00103	-0.00104	-0.00103
	(!A1 * A3 * !B1 * Y)	0.00121	0.00122	0.00122
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00104	-0.00104	-0.00103
	(!A1 * A3 * !A4 * B1 * !Y)	0.00122	0.00123	0.00122
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00103	-0.00104	-0.00103
	(!A1 * !A3 * A4 * B1 * !Y)	0.00116	0.00116	0.00116
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00103	-0.00104	-0.00103
	(!A1 * !A3 * A4 * !B1 * Y)	0.00115	0.00116	0.00115
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00091	-0.00097	-0.00096
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00125	0.00125	0.00125

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00212	-0.00213	-0.00212
	(A1 * A3 * A4 * B1 * !Y)	0.00186	0.00187	0.00186
	(A1 * A3 * !B1 * Y)	-0.00212	-0.00213	-0.00212
	(A1 * A3 * !B1 * Y)	0.00189	0.00190	0.00189
	(A1 * A3 * !A4 * B1 * !Y)	-0.00212	-0.00213	-0.00212
	(A1 * A3 * !A4 * B1 * !Y)	0.00179	0.00180	0.00180
	(A1 * !A3 * A4 * B1 * !Y)	-0.00213	-0.00214	-0.00213
	(A1 * !A3 * A4 * B1 * !Y)	0.00176	0.00177	0.00177
	(A1 * !A3 * A4 * !B1 * Y)	-0.00212	-0.00213	-0.00212
	(A1 * !A3 * A4 * !B1 * Y)	0.00188	0.00190	0.00188
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00211	-0.00211	-0.00210
	(A1 * !A3 * !A4 * B1 * !Y)	0.00158	0.00158	0.00158
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00211	-0.00213	-0.00212
	(A1 * !A3 * !A4 * !B1 * Y)	0.00249	0.00252	0.00250
	(!A1 * A3 * A4 * B1 * !Y)	-0.00211	-0.00213	-0.00212
	(!A1 * A3 * A4 * B1 * !Y)	0.00253	0.00256	0.00254
	(!A1 * A3 * !B1 * Y)	-0.00212	-0.00213	-0.00212
	(!A1 * A3 * !B1 * Y)	0.00253	0.00256	0.00254
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00212	-0.00213	-0.00212
	(!A1 * A3 * !A4 * B1 * !Y)	0.00253	0.00256	0.00254
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00212	-0.00214	-0.00212
	(!A1 * !A3 * A4 * B1 * !Y)	0.00241	0.00244	0.00242
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00212	-0.00214	-0.00212
	(!A1 * !A3 * A4 * !B1 * Y)	0.00241	0.00244	0.00242
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00185	-0.00198	-0.00197
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00261	0.00261	0.00260

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00403	-0.00405	-0.00404
	(A1 * A3 * A4 * B1 * !Y)	0.00352	0.00354	0.00353
	(A1 * A3 * !B1 * Y)	-0.00403	-0.00405	-0.00404
	(A1 * A3 * !B1 * Y)	0.00358	0.00360	0.00359
	(A1 * A3 * !A4 * B1 * !Y)	-0.00403	-0.00406	-0.00404
	(A1 * A3 * !A4 * B1 * !Y)	0.00340	0.00343	0.00341
	(A1 * !A3 * A4 * B1 * !Y)	-0.00404	-0.00406	-0.00405
	(A1 * !A3 * A4 * B1 * !Y)	0.00337	0.00338	0.00337
	(A1 * !A3 * A4 * !B1 * Y)	-0.00403	-0.00406	-0.00404
	(A1 * !A3 * A4 * !B1 * Y)	0.00357	0.00361	0.00359
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00399	-0.00398	-0.00397
	(A1 * !A3 * !A4 * B1 * !Y)	0.00304	0.00303	0.00304
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00401	-0.00404	-0.00404
	(A1 * !A3 * !A4 * !B1 * Y)	0.00487	0.00492	0.00491
	(!A1 * A3 * A4 * B1 * !Y)	-0.00402	-0.00405	-0.00404
	(!A1 * A3 * A4 * B1 * !Y)	0.00490	0.00493	0.00493
	(!A1 * A3 * !B1 * Y)	-0.00402	-0.00405	-0.00404
	(!A1 * A3 * !B1 * Y)	0.00490	0.00494	0.00493
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00403	-0.00406	-0.00404
	(!A1 * A3 * !A4 * B1 * !Y)	0.00491	0.00497	0.00493
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00403	-0.00405	-0.00404
	(!A1 * !A3 * A4 * B1 * !Y)	0.00465	0.00469	0.00468
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00403	-0.00405	-0.00404
	(!A1 * !A3 * A4 * !B1 * Y)	0.00465	0.00469	0.00468
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00352	-0.00380	-0.00377
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00509	0.00511	0.00509

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)**	0.00110	0.00110	0.00108
	(A2 * A4 * B1 * !Y)	-0.00083	-0.00084	-0.00083
	(A2 * A4 * !B1 * Y)	0.00103	0.00103	0.00104
	(A2 * A4 * !B1 * Y)	-0.00094	-0.00094	-0.00094
	(A2 * !A4 * B1 * !Y)	0.00109	0.00108	0.00108
	(A2 * !A4 * B1 * !Y)	-0.00073	-0.00072	-0.00072
	(A2 * !A4 * !B1 * Y)	0.00105	0.00104	0.00104
	(A2 * !A4 * !B1 * Y)	-0.00123	-0.00126	-0.00125
	(A1 * !A2 * A4 * B1 * !Y)	0.00114	0.00109	0.00108
	(A1 * !A2 * A4 * B1 * !Y)	-0.00086	-0.00087	-0.00086
	(A1 * !A2 * A4 * !B1 * Y)	0.00104	0.00105	0.00104
	(A1 * !A2 * A4 * !B1 * Y)	-0.00093	-0.00094	-0.00093
	(A1 * !A2 * !A4 * B1 * !Y)	0.00108	0.00109	0.00108
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00071	-0.00072	-0.00072
	(A1 * !A2 * !A4 * !B1 * Y)	0.00104	0.00104	0.00104
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00112	-0.00119	-0.00118
	(!A1 * !A2 * A4 * B1 * !Y)	0.00125	0.00109	0.00108
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00102	-0.00121	-0.00122
	(!A1 * !A2 * A4 * !B1 * Y)	0.00103	0.00104	0.00104
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00122	-0.00125	-0.00125
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00096	0.00097	0.00097
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00127	-0.00128	-0.00128

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00203	0.00205	0.00203
	(A2 * A4 * B1 * !Y)	-0.00169	-0.00170	-0.00169
	(A2 * A4 * !B1 * Y)	0.00202	0.00202	0.00201
	(A2 * A4 * !B1 * Y)	-0.00187	-0.00189	-0.00187
	(A2 * !A4 * B1 * !Y)	0.00202	0.00203	0.00202
	(A2 * !A4 * B1 * !Y)	-0.00148	-0.00149	-0.00149
	(A2 * !A4 * !B1 * Y)	0.00200	0.00202	0.00201
	(A2 * !A4 * !B1 * Y)	-0.00240	-0.00248	-0.00247
	(A1 * !A2 * A4 * B1 * !Y)	0.00208	0.00206	0.00202
	(A1 * !A2 * A4 * B1 * !Y)	-0.00175	-0.00176	-0.00175
	(A1 * !A2 * A4 * !B1 * Y)	0.00200	0.00204	0.00201
	(A1 * !A2 * A4 * !B1 * Y)	-0.00183	-0.00185	-0.00184
	(A1 * !A2 * !A4 * B1 * !Y)	0.00202	0.00203	0.00202
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00147	-0.00148	-0.00148
	(A1 * !A2 * !A4 * !B1 * Y)	0.00200	0.00202	0.00201
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00222	-0.00233	-0.00232
	(!A1 * !A2 * A4 * B1 * !Y)	0.00234	0.00203	0.00201
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00209	-0.00246	-0.00247
	(!A1 * !A2 * A4 * !B1 * Y)	0.00200	0.00202	0.00201
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00240	-0.00247	-0.00246
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00188	0.00189	0.00188
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00253	-0.00254	-0.00253

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00417	0.00423	0.00416
	(A2 * A4 * B1 * !Y)	-0.00336	-0.00340	-0.00338
	(A2 * A4 * !B1 * Y)	0.00417	0.00415	0.00413
	(A2 * A4 * !B1 * Y)	-0.00368	-0.00370	-0.00368
	(A2 * !A4 * B1 * !Y)	0.00413	0.00415	0.00413
	(A2 * !A4 * B1 * !Y)	-0.00299	-0.00301	-0.00301
	(A2 * !A4 * !B1 * Y)	0.00414	0.00414	0.00412
	(A2 * !A4 * !B1 * Y)	-0.00486	-0.00499	-0.00497
	(A1 * !A2 * A4 * B1 * !Y)	0.00433	0.00423	0.00413
	(A1 * !A2 * A4 * B1 * !Y)	-0.00350	-0.00353	-0.00351
	(A1 * !A2 * A4 * !B1 * Y)	0.00414	0.00420	0.00412
	(A1 * !A2 * A4 * !B1 * Y)	-0.00365	-0.00368	-0.00365
	(A1 * !A2 * !A4 * B1 * !Y)	0.00415	0.00416	0.00413
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00298	-0.00299	-0.00299
	(A1 * !A2 * !A4 * !B1 * Y)	0.00414	0.00414	0.00412
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00445	-0.00462	-0.00462
	(!A1 * !A2 * A4 * B1 * !Y)	0.00485	0.00418	0.00413
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00425	-0.00505	-0.00506
	(!A1 * !A2 * A4 * !B1 * Y)	0.00412	0.00414	0.00412
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00493	-0.00505	-0.00504
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00383	0.00383	0.00381
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00517	-0.00517	-0.00516

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)**	-0.00107	-0.00108	-0.00107
	(A2 * A4 * B1 * !Y)	0.00083	0.00084	0.00083
	(A2 * A4 * !B1 * Y)	-0.00103	-0.00103	-0.00104
	(A2 * A4 * !B1 * Y)	0.00094	0.00094	0.00094
	(A2 * !A4 * B1 * !Y)	-0.00107	-0.00106	-0.00106
	(A2 * !A4 * B1 * !Y)	0.00074	0.00074	0.00075
	(A2 * !A4 * !B1 * Y)	-0.00104	-0.00104	-0.00104
	(A2 * !A4 * !B1 * Y)	0.00126	0.00126	0.00125
	(A1 * !A2 * A4 * B1 * !Y)	-0.00107	-0.00108	-0.00107
	(A1 * !A2 * A4 * B1 * !Y)	0.00086	0.00087	0.00086
	(A1 * !A2 * A4 * !B1 * Y)	-0.00103	-0.00104	-0.00104
	(A1 * !A2 * A4 * !B1 * Y)	0.00093	0.00094	0.00093
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00102	-0.00102	-0.00106
	(A1 * !A2 * !A4 * B1 * !Y)	0.00077	0.00076	0.00074
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00104	-0.00104	-0.00104
	(A1 * !A2 * !A4 * !B1 * Y)	0.00118	0.00119	0.00118
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00107	-0.00108	-0.00107
	(!A1 * !A2 * A4 * B1 * !Y)	0.00122	0.00122	0.00122
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00103	-0.00104	-0.00104
	(!A1 * !A2 * A4 * !B1 * Y)	0.00124	0.00125	0.00125
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00091	-0.00097	-0.00097
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00128	0.00128	0.00128

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00201	-0.00203	-0.00202
	(A2 * A4 * B1 * !Y)	0.00169	0.00170	0.00169
	(A2 * A4 * !B1 * Y)	-0.00200	-0.00201	-0.00200
	(A2 * A4 * !B1 * Y)	0.00187	0.00189	0.00187
	(A2 * !A4 * B1 * !Y)	-0.00200	-0.00200	-0.00199
	(A2 * !A4 * B1 * !Y)	0.00152	0.00152	0.00153
	(A2 * !A4 * !B1 * Y)	-0.00200	-0.00201	-0.00200
	(A2 * !A4 * !B1 * Y)	0.00246	0.00248	0.00247
	(A1 * !A2 * A4 * B1 * !Y)	-0.00202	-0.00203	-0.00202
	(A1 * !A2 * A4 * B1 * !Y)	0.00175	0.00176	0.00175
	(A1 * !A2 * A4 * !B1 * Y)	-0.00200	-0.00201	-0.00200
	(A1 * !A2 * A4 * !B1 * Y)	0.00183	0.00185	0.00184
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00189	-0.00190	-0.00195
	(A1 * !A2 * !A4 * B1 * !Y)	0.00156	0.00156	0.00153
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00200	-0.00201	-0.00200
	(A1 * !A2 * !A4 * !B1 * Y)	0.00231	0.00233	0.00232
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00201	-0.00201	-0.00200
	(!A1 * !A2 * A4 * B1 * !Y)	0.00247	0.00246	0.00247
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00200	-0.00201	-0.00200
	(!A1 * !A2 * A4 * !B1 * Y)	0.00245	0.00247	0.00246
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00175	-0.00189	-0.00188
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00254	0.00255	0.00253

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00411	-0.00415	-0.00413
	(A2 * A4 * B1 * !Y)	0.00336	0.00340	0.00338
	(A2 * A4 * !B1 * Y)	-0.00412	-0.00413	-0.00412
	(A2 * A4 * !B1 * Y)	0.00368	0.00370	0.00368
	(A2 * !A4 * B1 * !Y)	-0.00411	-0.00411	-0.00408
	(A2 * !A4 * B1 * !Y)	0.00305	0.00305	0.00308
	(A2 * !A4 * !B1 * Y)	-0.00410	-0.00413	-0.00411
	(A2 * !A4 * !B1 * Y)	0.00495	0.00499	0.00497
	(A1 * !A2 * A4 * B1 * !Y)	-0.00412	-0.00414	-0.00413
	(A1 * !A2 * A4 * B1 * !Y)	0.00350	0.00353	0.00351
	(A1 * !A2 * A4 * !B1 * Y)	-0.00411	-0.00413	-0.00411
	(A1 * !A2 * A4 * !B1 * Y)	0.00365	0.00368	0.00365
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00387	-0.00389	-0.00402
	(A1 * !A2 * !A4 * B1 * !Y)	0.00315	0.00314	0.00308
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00410	-0.00412	-0.00411
	(A1 * !A2 * !A4 * !B1 * Y)	0.00461	0.00462	0.00462
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00410	-0.00412	-0.00409
	(!A1 * !A2 * A4 * B1 * !Y)	0.00503	0.00506	0.00506
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00411	-0.00412	-0.00411
	(!A1 * !A2 * A4 * !B1 * Y)	0.00502	0.00505	0.00504
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00358	-0.00383	-0.00381
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00517	0.00520	0.00517

Passive power(pJ) for A4 rising (conditional):

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

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	0.00118	0.00118	0.00118
	(A3 * B1 * !Y)	-0.00064	-0.00064	-0.00064
	(A3 * !B1 * Y)	0.00104	0.00104	0.00103
	(A3 * !B1 * Y)	-0.00123	-0.00126	-0.00125
	(A2 * !A3 * B1 * !Y)	0.00117	0.00118	0.00118
	(A2 * !A3 * B1 * !Y)	-0.00064	-0.00064	-0.00064
	(A2 * !A3 * !B1 * Y)	0.00103	0.00104	0.00103
	(A2 * !A3 * !B1 * Y)	-0.00112	-0.00120	-0.00119
	(A1 * !A2 * !A3 * B1 * !Y)	0.00118	0.00118	0.00118
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00065	-0.00064	-0.00064
	(A1 * !A2 * !A3 * !B1 * Y)	0.00104	0.00103	0.00103
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00112	-0.00117	-0.00116
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00096	0.00097	0.00096
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00128	-0.00128	-0.00128
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	0.00229	0.00229	0.00229
	(A3 * B1 * !Y)	-0.00133	-0.00133	-0.00132
	(A3 * !B1 * Y)	0.00202	0.00206	0.00204
	(A3 * !B1 * Y)	-0.00241	-0.00251	-0.00250
	(A2 * !A3 * B1 * !Y)	0.00229	0.00229	0.00229
	(A2 * !A3 * B1 * !Y)	-0.00133	-0.00133	-0.00132
	(A2 * !A3 * !B1 * Y)	0.00204	0.00205	0.00204
	(A2 * !A3 * !B1 * Y)	-0.00224	-0.00237	-0.00237
	(A1 * !A2 * !A3 * B1 * !Y)	0.00228	0.00229	0.00229
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00132	-0.00133	-0.00132
	(A1 * !A2 * !A3 * !B1 * Y)	0.00203	0.00205	0.00204
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00219	-0.00232	-0.00231
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00191	0.00191	0.00191
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00256	-0.00256	-0.00256

sky130_fd_sc_hs__o41ai_4	**(A3 * B1 * !Y)**	0.00469	0.00470	0.00470
	(A3 * B1 * !Y)	-0.00257	-0.00257	-0.00257
	(A3 * !B1 * Y)	0.00417	0.00415	0.00413
	(A3 * !B1 * Y)	-0.00484	-0.00498	-0.00497
	(A2 * !A3 * B1 * !Y)	0.00469	0.00471	0.00470
	(A2 * !A3 * B1 * !Y)	-0.00256	-0.00257	-0.00256
	(A2 * !A3 * !B1 * Y)	0.00412	0.00417	0.00413
	(A2 * !A3 * !B1 * Y)	-0.00438	-0.00466	-0.00464
	(A1 * !A2 * !A3 * B1 * !Y)	0.00469	0.00472	0.00470
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00256	-0.00257	-0.00256
	(A1 * !A2 * !A3 * !B1 * Y)	0.00412	0.00415	0.00413
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00432	-0.00453	-0.00451
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00384	0.00386	0.00383
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00510	-0.00511	-0.00509

Passive power(pJ) for A4 falling (conditional):

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

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	-0.00113	-0.00113	-0.00117
	(A3 * B1 * !Y)	0.00069	0.00069	0.00066
	(A3 * !B1 * Y)	-0.00103	-0.00103	-0.00103
	(A3 * !B1 * Y)	0.00126	0.00126	0.00125
	(A2 * !A3 * B1 * !Y)	-0.00105	-0.00105	-0.00116
	(A2 * !A3 * B1 * !Y)	0.00074	0.00073	0.00066
	(A2 * !A3 * !B1 * Y)	-0.00103	-0.00103	-0.00103
	(A2 * !A3 * !B1 * Y)	0.00119	0.00120	0.00119
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00096	-0.00096	-0.00113
	(A1 * !A2 * !A3 * B1 * !Y)	0.00080	0.00080	0.00068
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00102	-0.00103	-0.00103
	(A1 * !A2 * !A3 * !B1 * Y)	0.00116	0.00117	0.00116
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00090	-0.00097	-0.00096
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00128	0.00129	0.00128
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	-0.00211	-0.00214	-0.00226
	(A3 * B1 * !Y)	0.00146	0.00147	0.00136
	(A3 * !B1 * Y)	-0.00202	-0.00204	-0.00203
	(A3 * !B1 * Y)	0.00248	0.00251	0.00250
	(A2 * !A3 * B1 * !Y)	-0.00196	-0.00199	-0.00223
	(A2 * !A3 * B1 * !Y)	0.00155	0.00155	0.00137
	(A2 * !A3 * !B1 * Y)	-0.00203	-0.00204	-0.00203
	(A2 * !A3 * !B1 * Y)	0.00236	0.00237	0.00237
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00173	-0.00176	-0.00216
	(A1 * !A2 * !A3 * B1 * !Y)	0.00169	0.00170	0.00141
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00203	-0.00204	-0.00203
	(A1 * !A2 * !A3 * !B1 * Y)	0.00230	0.00232	0.00231
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00178	-0.00191	-0.00191
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00257	0.00258	0.00257

sky130_fd_sc_hs__o41ai_4	(A3 * B1 * !Y)	-0.00441	-0.00444	-0.00466
	(A3 * B1 * !Y)	0.00281	0.00281	0.00264
	(A3 * !B1 * Y)	-0.00410	-0.00413	-0.00412
	(A3 * !B1 * Y)	0.00494	0.00498	0.00497
	(A2 * !A3 * B1 * !Y)	-0.00411	-0.00414	-0.00460
	(A2 * !A3 * B1 * !Y)	0.00296	0.00296	0.00264
	(A2 * !A3 * !B1 * Y)	-0.00411	-0.00413	-0.00412
	(A2 * !A3 * !B1 * Y)	0.00463	0.00466	0.00464
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00366	-0.00371	-0.00447
	(A1 * !A2 * !A3 * B1 * !Y)	0.00324	0.00324	0.00272
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00412	-0.00414	-0.00412
	(A1 * !A2 * !A3 * !B1 * Y)	0.00450	0.00453	0.00451
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00361	-0.00386	-0.00383
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00512	0.00513	0.00510

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)	0.00047	0.00047	0.00042
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00147	-0.00149	-0.00157
sky130_fd_sc_hs__o41ai_2	(!A1 * !A2 * !A3 * !A4 * Y)	0.00108	0.00109	0.00099
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00280	-0.00284	-0.00299
sky130_fd_sc_hs__o41ai_4	(!A1 * !A2 * !A3 * !A4 * Y)	0.00159	0.00160	0.00143
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00307	-0.00311	-0.00342

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)	-0.00041	-0.00041	-0.00040
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00158	0.00159	0.00158
sky130_fd_sc_hs__o41ai_2	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00097	-0.00096	-0.00095
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00303	0.00303	0.00301
sky130_fd_sc_hs__o41ai_4	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00138	-0.00137	-0.00136
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00347	0.00346	0.00345

SKY130_FD_SC_HS__O41Ax

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT					OUTPUT
A1	A2	A3	A4	B1	X
0	0	0	0	x	0
0	0	x	1	0	0
0	0	x	1	1	1
0	x	1	x	0	0
0	x	1	x	1	1
x	1	x	x	0	0
x	1	x	x	1	1
1	x	x	x	0	0
1	x	x	x	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__o41a_1	14.38560
sky130_fd_sc_hs__o41a_2	15.98400
sky130_fd_sc_hs__o41a_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	A4	B1	X
sky130_fd_sc_hs__o41a_1	0.00247	0.00257	0.00257	0.00261	0.00239	0.75974
sky130_fd_sc_hs__o41a_2	0.00262	0.00275	0.00282	0.00270	0.00273	1.55796
sky130_fd_sc_hs__o41a_4	0.00473	0.00512	0.00516	0.00482	0.00446	2.87546

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41a_1	0.00000	0.07631	0.14851
sky130_fd_sc_hs__o41a_2	0.00000	0.06264	0.09334
sky130_fd_sc_hs__o41a_4	0.00000	0.18252	0.30545

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)	0.12649	0.84696	7.33206
	A2->X (RR)	0.12367	0.83048	7.24634
	A3->X (RR)	0.11739	0.81036	7.14627
	A4->X (RR)	0.10537	0.78421	7.05275
	B1->X (RR)	0.11414	0.82993	7.21012
sky130_fd_sc_hs__o41a_2	A1->X (RR)	0.12618	0.73474	7.40182
	A2->X (RR)	0.12428	0.72303	7.33897
	A3->X (RR)	0.11958	0.70787	7.25808
	A4->X (RR)	0.10629	0.68368	7.17482
	B1->X (RR)	0.11466	0.72955	7.30379
sky130_fd_sc_hs__o41a_4	A1->X (RR)	0.13772	0.67203	7.53418
	A2->X (RR)	0.13562	0.65956	7.46389
	A3->X (RR)	0.12370	0.63792	7.36572
	A4->X (RR)	0.11459	0.61326	7.27477
	B1->X (RR)	0.12516	0.67595	7.47660

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41a_1	A1->X (FF)	0.50984	1.11240	5.38916
	A2->X (FF)	0.48791	1.08711	5.43908
	A3->X (FF)	0.43779	1.04244	5.44907
	A4->X (FF)	0.36364	0.94880	5.08108
	B1->X (FF)	0.10514	0.65912	4.59227
sky130_fd_sc_hs__o41a_2	A1->X (FF)	0.62767	1.23460	5.85153
	A2->X (FF)	0.60899	1.21522	5.96348
	A3->X (FF)	0.56247	1.17513	6.02510
	A4->X (FF)	0.47760	1.06539	5.66664
	B1->X (FF)	0.11629	0.66989	4.91722
sky130_fd_sc_hs__o41a_4	A1->X (FF)	0.63095	1.20106	5.81765
	A2->X (FF)	0.60640	1.17215	5.87620
	A3->X (FF)	0.54098	1.11174	5.90726
	A4->X (FF)	0.44974	0.99619	5.53464
	B1->X (FF)	0.12718	0.63777	4.86030

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41a_1	A1	0.00985	0.00987	0.01055
	A1	0.00434	0.00440	0.00509
	A2	0.00863	0.00862	0.00936
	A2	0.00372	0.00372	0.00452
	A3	0.00733	0.00732	0.00817
	A3	0.00303	0.00302	0.00391
	A4	0.00614	0.00607	0.00765
	A4	0.00238	0.00231	0.00392
	B1	0.00877	0.00879	0.01150
	B1	0.00459	0.00460	0.00737
sky130_fd_sc_hs__o41a_2	A1	0.01197	0.01223	0.01291
	A1	0.00604	0.00630	0.00705
	A2	0.01087	0.01108	0.01179
	A2	0.00552	0.00574	0.00655
	A3	0.00961	0.00984	0.01061
	A3	0.00481	0.00503	0.00592
	A4	0.00824	0.00845	0.00982
	A4	0.00406	0.00428	0.00576
	B1	0.01077	0.01093	0.01323
	B1	0.00619	0.00635	0.00876

sky130_fd_sc_hs__o41a_4	**A1**	0.02323	0.02363	0.02510
	A1	0.01229	0.01270	0.01420
	A2	0.02132	0.02173	0.02328
	A2	0.01111	0.01154	0.01315
	A3	0.01836	0.01881	0.02057
	A3	0.00944	0.00990	0.01177
	A4	0.01527	0.01569	0.01866
	A4	0.00787	0.00831	0.01146
	B1	0.02093	0.02134	0.02693
	B1	0.01265	0.01308	0.01875

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41a_1	**A1**	0.00313	0.00321	0.00379
	A1	0.00863	0.00873	0.00899
	A2	0.00315	0.00323	0.00413
	A2	0.00798	0.00808	0.00859
	A3	0.00316	0.00313	0.00457
	A3	0.00735	0.00745	0.00838
	A4	0.00313	0.00326	0.00568
	A4	0.00676	0.00694	0.00927
	B1	0.00213	0.00235	0.00731
	B1	0.00646	0.00663	0.01123

sky130_fd_sc_hs__o41a_2	**A1**	0.00480	0.00500	0.00539
	A1	0.01068	0.01090	0.01124
	A2	0.00484	0.00503	0.00739
	A2	0.01009	0.01028	0.01083
	A3	0.00483	0.00497	0.00682
	A3	0.00950	0.00968	0.01063
	A4	0.00486	0.00477	0.00790
	A4	0.00887	0.00912	0.01151
	B1	0.00372	0.00400	0.00841
	B1	0.00844	0.00872	0.01252
sky130_fd_sc_hs__o41a_4	**A1**	0.00946	0.00987	0.01191
	A1	0.02040	0.02083	0.02158
	A2	0.00899	0.00940	0.01129
	A2	0.01909	0.01954	0.02063
	A3	0.00910	0.00939	0.01148
	A3	0.01781	0.01817	0.02011
	A4	0.00941	0.01000	0.01517
	A4	0.01655	0.01713	0.02183
	B1	0.00742	0.00823	0.01871
	B1	0.01606	0.01679	0.02579

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)**	0.00094	0.00094	0.00094
	(A2 * A4 * B1 * X)	-0.00124	-0.00128	-0.00127
	(A2 * A3 * !A4 * B1 * X)	0.00094	0.00094	0.00094
	(A2 * A3 * !A4 * B1 * X)	-0.00124	-0.00128	-0.00127
	(A2 * !B1 * !X)	0.00094	0.00094	0.00094
	(A2 * !B1 * !X)	-0.00124	-0.00128	-0.00127
	(A2 * !A3 * !A4 * B1 * X)	0.00094	0.00094	0.00094
	(A2 * !A3 * !A4 * B1 * X)	-0.00123	-0.00127	-0.00127
	(!A2 * A3 * A4 * B1 * X)	0.00094	0.00095	0.00094
	(!A2 * A3 * A4 * B1 * X)	-0.00115	-0.00123	-0.00122
	(!A2 * A3 * !B1 * !X)	0.00094	0.00095	0.00094
	(!A2 * A3 * !B1 * !X)	-0.00116	-0.00123	-0.00122
	(!A2 * A3 * !A4 * B1 * X)	0.00094	0.00095	0.00094
	(!A2 * A3 * !A4 * B1 * X)	-0.00115	-0.00123	-0.00122
	(!A2 * !A3 * A4 * B1 * X)	0.00094	0.00095	0.00094
	(!A2 * !A3 * A4 * B1 * X)	-0.00114	-0.00120	-0.00121
	(!A2 * !A3 * A4 * !B1 * !X)	0.00094	0.00095	0.00094
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00114	-0.00120	-0.00120
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00088	0.00089	0.00088
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00129	-0.00130	-0.00129

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00107	0.00108	0.00107
	(A2 * A4 * B1 * X)	-0.00122	-0.00125	-0.00125
	(A2 * A3 * !A4 * B1 * X)	0.00107	0.00108	0.00107
	(A2 * A3 * !A4 * B1 * X)	-0.00122	-0.00125	-0.00125
	(A2 * !B1 * !X)	0.00107	0.00108	0.00107
	(A2 * !B1 * !X)	-0.00122	-0.00125	-0.00125
	(A2 * !A3 * !A4 * B1 * X)	0.00107	0.00108	0.00107
	(A2 * !A3 * !A4 * B1 * X)	-0.00121	-0.00124	-0.00125
	(!A2 * A3 * A4 * B1 * X)	0.00107	0.00108	0.00107
	(!A2 * A3 * A4 * B1 * X)	-0.00113	-0.00121	-0.00120
	(!A2 * A3 * !B1 * !X)	0.00107	0.00109	0.00107
	(!A2 * A3 * !B1 * !X)	-0.00113	-0.00121	-0.00120
	(!A2 * A3 * !A4 * B1 * X)	0.00107	0.00108	0.00107
	(!A2 * A3 * !A4 * B1 * X)	-0.00113	-0.00121	-0.00120
	(!A2 * !A3 * A4 * B1 * X)	0.00107	0.00108	0.00107
	(!A2 * !A3 * A4 * B1 * X)	-0.00111	-0.00118	-0.00118
	(!A2 * !A3 * A4 * !B1 * !X)	0.00107	0.00108	0.00107
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00112	-0.00118	-0.00118
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00099	0.00100	0.00099
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00127	-0.00127	-0.00126

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00172	0.00174	0.00173
	(A2 * A4 * B1 * X)	-0.00239	-0.00249	-0.00248
	(A2 * A3 * !A4 * B1 * X)	0.00172	0.00174	0.00173
	(A2 * A3 * !A4 * B1 * X)	-0.00239	-0.00249	-0.00248
	(A2 * !B1 * !X)	0.00172	0.00173	0.00172
	(A2 * !B1 * !X)	-0.00240	-0.00249	-0.00248
	(A2 * !A3 * !A4 * B1 * X)	0.00173	0.00174	0.00173
	(A2 * !A3 * !A4 * B1 * X)	-0.00236	-0.00248	-0.00248
	(!A2 * A3 * A4 * B1 * X)	0.00173	0.00173	0.00173
	(!A2 * A3 * A4 * B1 * X)	-0.00222	-0.00238	-0.00237
	(!A2 * A3 * !B1 * !X)	0.00172	0.00173	0.00172
	(!A2 * A3 * !B1 * !X)	-0.00223	-0.00238	-0.00237
	(!A2 * A3 * !A4 * B1 * X)	0.00173	0.00173	0.00173
	(!A2 * A3 * !A4 * B1 * X)	-0.00222	-0.00238	-0.00237
	(!A2 * !A3 * A4 * B1 * X)	0.00174	0.00172	0.00173
	(!A2 * !A3 * A4 * B1 * X)	-0.00218	-0.00233	-0.00232
	(!A2 * !A3 * A4 * !B1 * !X)	0.00173	0.00172	0.00172
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00220	-0.00233	-0.00232
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00160	0.00159	0.00159
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00255	-0.00254	-0.00254

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)**	-0.00093	-0.00094	-0.00094
	(A2 * A4 * B1 * X)	0.00126	0.00128	0.00127
	(A2 * A3 * !A4 * B1 * X)	-0.00093	-0.00094	-0.00094
	(A2 * A3 * !A4 * B1 * X)	0.00126	0.00128	0.00127
	(A2 * !B1 * !X)	-0.00094	-0.00094	-0.00094
	(A2 * !B1 * !X)	0.00127	0.00128	0.00127
	(A2 * !A3 * !A4 * B1 * X)	-0.00094	-0.00094	-0.00094
	(A2 * !A3 * !A4 * B1 * X)	0.00127	0.00128	0.00127
	(!A2 * A3 * A4 * B1 * X)	-0.00094	-0.00094	-0.00094
	(!A2 * A3 * A4 * B1 * X)	0.00123	0.00123	0.00122
	(!A2 * A3 * !B1 * !X)	-0.00094	-0.00094	-0.00094
	(!A2 * A3 * !B1 * !X)	0.00123	0.00123	0.00122
	(!A2 * A3 * !A4 * B1 * X)	-0.00094	-0.00094	-0.00094
	(!A2 * A3 * !A4 * B1 * X)	0.00123	0.00123	0.00122
	(!A2 * !A3 * A4 * B1 * X)	-0.00094	-0.00093	-0.00093
	(!A2 * !A3 * A4 * B1 * X)	0.00121	0.00120	0.00121
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00094	-0.00094	-0.00094
	(!A2 * !A3 * A4 * !B1 * !X)	0.00120	0.00120	0.00120
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00083	-0.00089	-0.00088
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00129	0.00130	0.00129

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00107	-0.00107	-0.00107
	(A2 * A4 * B1 * X)	0.00124	0.00125	0.00125
	(A2 * A3 * !A4 * B1 * X)	-0.00107	-0.00107	-0.00107
	(A2 * A3 * !A4 * B1 * X)	0.00125	0.00125	0.00125
	(A2 * !B1 * !X)	-0.00107	-0.00107	-0.00107
	(A2 * !B1 * !X)	0.00125	0.00125	0.00125
	(A2 * !A3 * !A4 * B1 * X)	-0.00107	-0.00107	-0.00107
	(A2 * !A3 * !A4 * B1 * X)	0.00125	0.00124	0.00125
	(!A2 * A3 * A4 * B1 * X)	-0.00107	-0.00107	-0.00107
	(!A2 * A3 * A4 * B1 * X)	0.00120	0.00121	0.00120
	(!A2 * A3 * !B1 * !X)	-0.00107	-0.00107	-0.00107
	(!A2 * A3 * !B1 * !X)	0.00120	0.00121	0.00120
	(!A2 * A3 * !A4 * B1 * X)	-0.00107	-0.00107	-0.00107
	(!A2 * A3 * !A4 * B1 * X)	0.00120	0.00121	0.00120
	(!A2 * !A3 * A4 * B1 * X)	-0.00107	-0.00107	-0.00107
	(!A2 * !A3 * A4 * B1 * X)	0.00118	0.00118	0.00118
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00107	-0.00107	-0.00107
	(!A2 * !A3 * A4 * !B1 * !X)	0.00118	0.00118	0.00118
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00094	-0.00100	-0.00099
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00127	0.00128	0.00127

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	-0.00172	-0.00173	-0.00172
	(A2 * A4 * B1 * X)	0.00248	0.00250	0.00248
	(A2 * A3 * !A4 * B1 * X)	-0.00172	-0.00172	-0.00172
	(A2 * A3 * !A4 * B1 * X)	0.00248	0.00250	0.00248
	(A2 * !B1 * !X)	-0.00172	-0.00172	-0.00172
	(A2 * !B1 * !X)	0.00249	0.00250	0.00248
	(A2 * !A3 * !A4 * B1 * X)	-0.00172	-0.00173	-0.00172
	(A2 * !A3 * !A4 * B1 * X)	0.00248	0.00249	0.00248
	(!A2 * A3 * A4 * B1 * X)	-0.00172	-0.00173	-0.00172
	(!A2 * A3 * A4 * B1 * X)	0.00238	0.00238	0.00237
	(!A2 * A3 * !B1 * !X)	-0.00171	-0.00172	-0.00172
	(!A2 * A3 * !B1 * !X)	0.00236	0.00238	0.00237
	(!A2 * A3 * !A4 * B1 * X)	-0.00173	-0.00173	-0.00172
	(!A2 * A3 * !A4 * B1 * X)	0.00239	0.00238	0.00237
	(!A2 * !A3 * A4 * B1 * X)	-0.00171	-0.00172	-0.00172
	(!A2 * !A3 * A4 * B1 * X)	0.00231	0.00233	0.00232
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00171	-0.00172	-0.00172
	(!A2 * !A3 * A4 * !B1 * !X)	0.00231	0.00233	0.00232
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00150	-0.00159	-0.00159
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00256	0.00257	0.00255

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)**	0.00090	0.00091	0.00091
	(A1 * A3 * A4 * B1 * X)	-0.00092	-0.00092	-0.00092
	(A1 * A3 * !B1 * !X)	0.00091	0.00090	0.00090
	(A1 * A3 * !B1 * !X)	-0.00093	-0.00094	-0.00093
	(A1 * A3 * !A4 * B1 * X)	0.00090	0.00091	0.00091
	(A1 * A3 * !A4 * B1 * X)	-0.00088	-0.00089	-0.00088
	(A1 * !A3 * A4 * B1 * X)	0.00090	0.00091	0.00090
	(A1 * !A3 * A4 * B1 * X)	-0.00086	-0.00087	-0.00086
	(A1 * !A3 * A4 * !B1 * !X)	0.00090	0.00091	0.00090
	(A1 * !A3 * A4 * !B1 * !X)	-0.00091	-0.00092	-0.00091
	(A1 * !A3 * !A4 * B1 * X)	0.00091	0.00090	0.00090
	(A1 * !A3 * !A4 * B1 * X)	-0.00076	-0.00075	-0.00075
	(A1 * !A3 * !A4 * !B1 * !X)	0.00090	0.00091	0.00090
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00121	-0.00124	-0.00123
	(!A1 * A3 * A4 * B1 * X)	0.00091	0.00091	0.00091
	(!A1 * A3 * A4 * B1 * X)	-0.00121	-0.00125	-0.00124
	(!A1 * A3 * !B1 * !X)	0.00091	0.00091	0.00090
	(!A1 * A3 * !B1 * !X)	-0.00121	-0.00125	-0.00124
	(!A1 * A3 * !A4 * B1 * X)	0.00092	0.00091	0.00091
	(!A1 * A3 * !A4 * B1 * X)	-0.00119	-0.00124	-0.00124
	(!A1 * !A3 * A4 * B1 * X)	0.00092	0.00091	0.00091
	(!A1 * !A3 * A4 * B1 * X)	-0.00109	-0.00119	-0.00118
	(!A1 * !A3 * A4 * !B1 * !X)	0.00090	0.00091	0.00090
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00110	-0.00118	-0.00118
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00085	0.00086	0.00085
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00126	-0.00127	-0.00126

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	0.00103	0.00103	0.00103
	(A1 * A3 * A4 * B1 * X)	-0.00090	-0.00090	-0.00090
	(A1 * A3 * !B1 * !X)	0.00103	0.00102	0.00103
	(A1 * A3 * !B1 * !X)	-0.00091	-0.00092	-0.00091
	(A1 * A3 * !A4 * B1 * X)	0.00103	0.00103	0.00103
	(A1 * A3 * !A4 * B1 * X)	-0.00086	-0.00087	-0.00086
	(A1 * !A3 * A4 * B1 * X)	0.00103	0.00104	0.00103
	(A1 * !A3 * A4 * B1 * X)	-0.00085	-0.00086	-0.00085
	(A1 * !A3 * A4 * !B1 * !X)	0.00103	0.00104	0.00103
	(A1 * !A3 * A4 * !B1 * !X)	-0.00090	-0.00091	-0.00090
	(A1 * !A3 * !A4 * B1 * X)	0.00102	0.00103	0.00103
	(A1 * !A3 * !A4 * B1 * X)	-0.00075	-0.00075	-0.00075
	(A1 * !A3 * !A4 * !B1 * !X)	0.00102	0.00103	0.00103
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00122	-0.00124	-0.00124
	(!A1 * A3 * A4 * B1 * X)	0.00103	0.00104	0.00103
	(!A1 * A3 * A4 * B1 * X)	-0.00121	-0.00125	-0.00124
	(!A1 * A3 * !B1 * !X)	0.00103	0.00104	0.00103
	(!A1 * A3 * !B1 * !X)	-0.00121	-0.00125	-0.00124
	(!A1 * A3 * !A4 * B1 * X)	0.00104	0.00104	0.00103
	(!A1 * A3 * !A4 * B1 * X)	-0.00118	-0.00125	-0.00124
	(!A1 * !A3 * A4 * B1 * X)	0.00104	0.00104	0.00103
	(!A1 * !A3 * A4 * B1 * X)	-0.00109	-0.00118	-0.00118
	(!A1 * !A3 * A4 * !B1 * !X)	0.00102	0.00104	0.00103
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00110	-0.00118	-0.00117
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00095	0.00096	0.00095
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00126	-0.00127	-0.00126

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	0.00218	0.00222	0.00218
	(A1 * A3 * A4 * B1 * X)	-0.00178	-0.00178	-0.00178
	(A1 * A3 * !B1 * !X)	0.00215	0.00218	0.00216
	(A1 * A3 * !B1 * !X)	-0.00183	-0.00185	-0.00183
	(A1 * A3 * !A4 * B1 * X)	0.00218	0.00222	0.00218
	(A1 * A3 * !A4 * B1 * X)	-0.00170	-0.00172	-0.00170
	(A1 * !A3 * A4 * B1 * X)	0.00217	0.00221	0.00217
	(A1 * !A3 * A4 * B1 * X)	-0.00167	-0.00168	-0.00167
	(A1 * !A3 * A4 * !B1 * !X)	0.00215	0.00220	0.00216
	(A1 * !A3 * A4 * !B1 * !X)	-0.00179	-0.00180	-0.00179
	(A1 * !A3 * !A4 * B1 * X)	0.00216	0.00220	0.00217
	(A1 * !A3 * !A4 * B1 * X)	-0.00145	-0.00148	-0.00145
	(A1 * !A3 * !A4 * !B1 * !X)	0.00215	0.00216	0.00215
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00239	-0.00244	-0.00243
	(!A1 * A3 * A4 * B1 * X)	0.00218	0.00217	0.00216
	(!A1 * A3 * A4 * B1 * X)	-0.00233	-0.00244	-0.00242
	(!A1 * A3 * !B1 * !X)	0.00216	0.00216	0.00216
	(!A1 * A3 * !B1 * !X)	-0.00235	-0.00244	-0.00243
	(!A1 * A3 * !A4 * B1 * X)	0.00218	0.00217	0.00216
	(!A1 * A3 * !A4 * B1 * X)	-0.00231	-0.00243	-0.00242
	(!A1 * !A3 * A4 * B1 * X)	0.00218	0.00218	0.00216
	(!A1 * !A3 * A4 * B1 * X)	-0.00214	-0.00231	-0.00231
	(!A1 * !A3 * A4 * !B1 * !X)	0.00215	0.00218	0.00215
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00216	-0.00231	-0.00231
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00203	0.00205	0.00203
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00250	-0.00251	-0.00249

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)**	-0.00090	-0.00090	-0.00090
	(A1 * A3 * A4 * B1 * X)	0.00092	0.00092	0.00092
	(A1 * A3 * !B1 * !X)	-0.00090	-0.00090	-0.00090
	(A1 * A3 * !B1 * !X)	0.00093	0.00094	0.00093
	(A1 * A3 * !A4 * B1 * X)	-0.00090	-0.00090	-0.00090
	(A1 * A3 * !A4 * B1 * X)	0.00088	0.00089	0.00088
	(A1 * !A3 * A4 * B1 * X)	-0.00090	-0.00090	-0.00090
	(A1 * !A3 * A4 * B1 * X)	0.00086	0.00087	0.00086
	(A1 * !A3 * A4 * !B1 * !X)	-0.00090	-0.00091	-0.00090
	(A1 * !A3 * A4 * !B1 * !X)	0.00091	0.00092	0.00091
	(A1 * !A3 * !A4 * B1 * X)	-0.00089	-0.00088	-0.00088
	(A1 * !A3 * !A4 * B1 * X)	0.00078	0.00078	0.00078
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00090	-0.00090	-0.00090
	(A1 * !A3 * !A4 * !B1 * !X)	0.00124	0.00124	0.00123
	(!A1 * A3 * A4 * B1 * X)	-0.00090	-0.00090	-0.00090
	(!A1 * A3 * A4 * B1 * X)	0.00125	0.00125	0.00124
	(!A1 * A3 * !B1 * !X)	-0.00090	-0.00090	-0.00090
	(!A1 * A3 * !B1 * !X)	0.00125	0.00125	0.00124
	(!A1 * A3 * !A4 * B1 * X)	-0.00090	-0.00090	-0.00090
	(!A1 * A3 * !A4 * B1 * X)	0.00125	0.00124	0.00124
	(!A1 * !A3 * A4 * B1 * X)	-0.00090	-0.00090	-0.00090
	(!A1 * !A3 * A4 * B1 * X)	0.00118	0.00119	0.00118
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00090	-0.00091	-0.00090
	(!A1 * !A3 * A4 * !B1 * !X)	0.00118	0.00118	0.00118
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00080	-0.00086	-0.00085
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00126	0.00127	0.00126

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	-0.00102	-0.00103	-0.00102
	(A1 * A3 * A4 * B1 * X)	0.00090	0.00090	0.00090
	(A1 * A3 * !B1 * !X)	-0.00102	-0.00102	-0.00103
	(A1 * A3 * !B1 * !X)	0.00091	0.00092	0.00091
	(A1 * A3 * !A4 * B1 * X)	-0.00102	-0.00103	-0.00102
	(A1 * A3 * !A4 * B1 * X)	0.00086	0.00087	0.00086
	(A1 * !A3 * A4 * B1 * X)	-0.00102	-0.00103	-0.00102
	(A1 * !A3 * A4 * B1 * X)	0.00085	0.00086	0.00085
	(A1 * !A3 * A4 * !B1 * !X)	-0.00102	-0.00103	-0.00103
	(A1 * !A3 * A4 * !B1 * !X)	0.00090	0.00091	0.00090
	(A1 * !A3 * !A4 * B1 * X)	-0.00102	-0.00102	-0.00102
	(A1 * !A3 * !A4 * B1 * X)	0.00076	0.00076	0.00076
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00102	-0.00103	-0.00103
	(A1 * !A3 * !A4 * !B1 * !X)	0.00123	0.00124	0.00124
	(!A1 * A3 * A4 * B1 * X)	-0.00103	-0.00103	-0.00103
	(!A1 * A3 * A4 * B1 * X)	0.00124	0.00125	0.00124
	(!A1 * A3 * !B1 * !X)	-0.00103	-0.00103	-0.00103
	(!A1 * A3 * !B1 * !X)	0.00124	0.00125	0.00124
	(!A1 * A3 * !A4 * B1 * X)	-0.00102	-0.00103	-0.00103
	(!A1 * A3 * !A4 * B1 * X)	0.00123	0.00125	0.00124
	(!A1 * !A3 * A4 * B1 * X)	-0.00103	-0.00103	-0.00102
	(!A1 * !A3 * A4 * B1 * X)	0.00118	0.00118	0.00118
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00102	-0.00103	-0.00103
	(!A1 * !A3 * A4 * !B1 * !X)	0.00116	0.00118	0.00117
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00090	-0.00096	-0.00095
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00127	0.00127	0.00127

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	-0.00217	-0.00217	-0.00217
	(A1 * A3 * A4 * B1 * X)	0.00178	0.00178	0.00178
	(A1 * A3 * !B1 * !X)	-0.00215	-0.00217	-0.00215
	(A1 * A3 * !B1 * !X)	0.00183	0.00185	0.00183
	(A1 * A3 * !A4 * B1 * X)	-0.00216	-0.00218	-0.00216
	(A1 * A3 * !A4 * B1 * X)	0.00170	0.00172	0.00170
	(A1 * !A3 * A4 * B1 * X)	-0.00216	-0.00217	-0.00216
	(A1 * !A3 * A4 * B1 * X)	0.00167	0.00168	0.00167
	(A1 * !A3 * A4 * !B1 * !X)	-0.00215	-0.00216	-0.00215
	(A1 * !A3 * A4 * !B1 * !X)	0.00179	0.00180	0.00179
	(A1 * !A3 * !A4 * B1 * X)	-0.00215	-0.00216	-0.00215
	(A1 * !A3 * !A4 * B1 * X)	0.00147	0.00149	0.00148
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00214	-0.00216	-0.00215
	(A1 * !A3 * !A4 * !B1 * !X)	0.00242	0.00244	0.00243
	(!A1 * A3 * A4 * B1 * X)	-0.00215	-0.00217	-0.00216
	(!A1 * A3 * A4 * B1 * X)	0.00241	0.00244	0.00242
	(!A1 * A3 * !B1 * !X)	-0.00214	-0.00216	-0.00215
	(!A1 * A3 * !B1 * !X)	0.00242	0.00244	0.00243
	(!A1 * A3 * !A4 * B1 * X)	-0.00215	-0.00216	-0.00216
	(!A1 * A3 * !A4 * B1 * X)	0.00241	0.00243	0.00242
	(!A1 * !A3 * A4 * B1 * X)	-0.00215	-0.00215	-0.00215
	(!A1 * !A3 * A4 * B1 * X)	0.00229	0.00231	0.00231
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00215	-0.00215	-0.00215
	(!A1 * !A3 * A4 * !B1 * !X)	0.00230	0.00231	0.00231
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00194	-0.00205	-0.00203
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00251	0.00252	0.00250

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)**	0.00093	0.00092	0.00090
	(A2 * A4 * B1 * X)	-0.00083	-0.00083	-0.00083
	(A2 * A4 * !B1 * !X)	0.00090	0.00089	0.00090
	(A2 * A4 * !B1 * !X)	-0.00089	-0.00089	-0.00089
	(A2 * !A4 * B1 * X)	0.00091	0.00090	0.00090
	(A2 * !A4 * B1 * X)	-0.00072	-0.00072	-0.00072
	(A2 * !A4 * !B1 * !X)	0.00090	0.00090	0.00090
	(A2 * !A4 * !B1 * !X)	-0.00118	-0.00121	-0.00120
	(A1 * !A2 * A4 * B1 * X)	0.00096	0.00092	0.00090
	(A1 * !A2 * A4 * B1 * X)	-0.00085	-0.00086	-0.00085
	(A1 * !A2 * A4 * !B1 * !X)	0.00090	0.00091	0.00090
	(A1 * !A2 * A4 * !B1 * !X)	-0.00088	-0.00089	-0.00088
	(A1 * !A2 * !A4 * B1 * X)	0.00091	0.00091	0.00090
	(A1 * !A2 * !A4 * B1 * X)	-0.00072	-0.00072	-0.00072
	(A1 * !A2 * !A4 * !B1 * !X)	0.00090	0.00090	0.00090
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00107	-0.00113	-0.00113
	(!A1 * !A2 * A4 * B1 * X)	0.00107	0.00091	0.00090
	(!A1 * !A2 * A4 * B1 * X)	-0.00102	-0.00121	-0.00121
	(!A1 * !A2 * A4 * !B1 * !X)	0.00090	0.00090	0.00090
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00118	-0.00121	-0.00120
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00084	0.00085	0.00084
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00123	-0.00124	-0.00123

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00110	0.00110	0.00109
	(A2 * A4 * B1 * X)	-0.00084	-0.00084	-0.00084
	(A2 * A4 * !B1 * !X)	0.00103	0.00104	0.00104
	(A2 * A4 * !B1 * !X)	-0.00095	-0.00096	-0.00095
	(A2 * !A4 * B1 * X)	0.00110	0.00109	0.00109
	(A2 * !A4 * B1 * X)	-0.00074	-0.00073	-0.00073
	(A2 * !A4 * !B1 * !X)	0.00105	0.00105	0.00104
	(A2 * !A4 * !B1 * !X)	-0.00124	-0.00127	-0.00126
	(A1 * !A2 * A4 * B1 * X)	0.00114	0.00110	0.00109
	(A1 * !A2 * A4 * B1 * X)	-0.00086	-0.00087	-0.00086
	(A1 * !A2 * A4 * !B1 * !X)	0.00104	0.00105	0.00104
	(A1 * !A2 * A4 * !B1 * !X)	-0.00094	-0.00094	-0.00094
	(A1 * !A2 * !A4 * B1 * X)	0.00109	0.00109	0.00109
	(A1 * !A2 * !A4 * B1 * X)	-0.00072	-0.00073	-0.00073
	(A1 * !A2 * !A4 * !B1 * !X)	0.00104	0.00105	0.00104
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00113	-0.00119	-0.00119
	(!A1 * !A2 * A4 * B1 * X)	0.00126	0.00110	0.00109
	(!A1 * !A2 * A4 * B1 * X)	-0.00103	-0.00122	-0.00122
	(!A1 * !A2 * A4 * !B1 * !X)	0.00104	0.00105	0.00104
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00124	-0.00127	-0.00126
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00096	0.00098	0.00097
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00129	-0.00129	-0.00129

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00219	0.00221	0.00216
	(A2 * A4 * B1 * X)	-0.00167	-0.00169	-0.00167
	(A2 * A4 * !B1 * !X)	0.00212	0.00215	0.00212
	(A2 * A4 * !B1 * !X)	-0.00183	-0.00185	-0.00183
	(A2 * !A4 * B1 * X)	0.00216	0.00218	0.00215
	(A2 * !A4 * B1 * X)	-0.00143	-0.00145	-0.00143
	(A2 * !A4 * !B1 * !X)	0.00212	0.00213	0.00212
	(A2 * !A4 * !B1 * !X)	-0.00233	-0.00242	-0.00241
	(A1 * !A2 * A4 * B1 * X)	0.00225	0.00215	0.00215
	(A1 * !A2 * A4 * B1 * X)	-0.00170	-0.00171	-0.00170
	(A1 * !A2 * A4 * !B1 * !X)	0.00212	0.00216	0.00212
	(A1 * !A2 * A4 * !B1 * !X)	-0.00179	-0.00180	-0.00179
	(A1 * !A2 * !A4 * B1 * X)	0.00215	0.00219	0.00215
	(A1 * !A2 * !A4 * B1 * X)	-0.00141	-0.00144	-0.00142
	(A1 * !A2 * !A4 * !B1 * !X)	0.00211	0.00214	0.00212
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00216	-0.00227	-0.00226
	(!A1 * !A2 * A4 * B1 * X)	0.00246	0.00216	0.00214
	(!A1 * !A2 * A4 * B1 * X)	-0.00206	-0.00242	-0.00243
	(!A1 * !A2 * A4 * !B1 * !X)	0.00211	0.00213	0.00212
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00238	-0.00244	-0.00243
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00199	0.00201	0.00199
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00248	-0.00250	-0.00248

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)**	-0.00090	-0.00090	-0.00089
	(A2 * A4 * B1 * X)	0.00083	0.00083	0.00083
	(A2 * A4 * !B1 * !X)	-0.00089	-0.00089	-0.00089
	(A2 * A4 * !B1 * !X)	0.00089	0.00089	0.00089
	(A2 * !A4 * B1 * X)	-0.00088	-0.00088	-0.00088
	(A2 * !A4 * B1 * X)	0.00074	0.00074	0.00074
	(A2 * !A4 * !B1 * !X)	-0.00090	-0.00090	-0.00090
	(A2 * !A4 * !B1 * !X)	0.00120	0.00121	0.00120
	(A1 * !A2 * A4 * B1 * X)	-0.00089	-0.00090	-0.00089
	(A1 * !A2 * A4 * B1 * X)	0.00085	0.00086	0.00085
	(A1 * !A2 * A4 * !B1 * !X)	-0.00089	-0.00090	-0.00090
	(A1 * !A2 * A4 * !B1 * !X)	0.00088	0.00089	0.00088
	(A1 * !A2 * !A4 * B1 * X)	-0.00083	-0.00083	-0.00088
	(A1 * !A2 * !A4 * B1 * X)	0.00077	0.00077	0.00073
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00090	-0.00090	-0.00090
	(A1 * !A2 * !A4 * !B1 * !X)	0.00113	0.00113	0.00113
	(!A1 * !A2 * A4 * B1 * X)	-0.00089	-0.00090	-0.00089
	(!A1 * !A2 * A4 * B1 * X)	0.00121	0.00122	0.00121
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00090	-0.00090	-0.00090
	(!A1 * !A2 * A4 * !B1 * !X)	0.00121	0.00121	0.00120
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00079	-0.00085	-0.00084
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00123	0.00124	0.00123

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00108	-0.00109	-0.00108
	(A2 * A4 * B1 * X)	0.00084	0.00084	0.00084
	(A2 * A4 * !B1 * !X)	-0.00103	-0.00104	-0.00104
	(A2 * A4 * !B1 * !X)	0.00095	0.00096	0.00095
	(A2 * !A4 * B1 * X)	-0.00107	-0.00107	-0.00107
	(A2 * !A4 * B1 * X)	0.00075	0.00075	0.00076
	(A2 * !A4 * !B1 * !X)	-0.00104	-0.00104	-0.00104
	(A2 * !A4 * !B1 * !X)	0.00127	0.00127	0.00126
	(A1 * !A2 * A4 * B1 * X)	-0.00108	-0.00109	-0.00108
	(A1 * !A2 * A4 * B1 * X)	0.00086	0.00087	0.00086
	(A1 * !A2 * A4 * !B1 * !X)	-0.00104	-0.00104	-0.00104
	(A1 * !A2 * A4 * !B1 * !X)	0.00094	0.00094	0.00094
	(A1 * !A2 * !A4 * B1 * X)	-0.00103	-0.00104	-0.00106
	(A1 * !A2 * !A4 * B1 * X)	0.00077	0.00076	0.00075
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00104	-0.00104	-0.00104
	(A1 * !A2 * !A4 * !B1 * !X)	0.00120	0.00119	0.00119
	(!A1 * !A2 * A4 * B1 * X)	-0.00108	-0.00108	-0.00108
	(!A1 * !A2 * A4 * B1 * X)	0.00123	0.00122	0.00122
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00104	-0.00104	-0.00104
	(!A1 * !A2 * A4 * !B1 * !X)	0.00126	0.00127	0.00126
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00091	-0.00098	-0.00097
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00129	0.00130	0.00129

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	-0.00214	-0.00216	-0.00215
	(A2 * A4 * B1 * X)	0.00167	0.00169	0.00167
	(A2 * A4 * !B1 * !X)	-0.00212	-0.00213	-0.00212
	(A2 * A4 * !B1 * !X)	0.00183	0.00185	0.00183
	(A2 * !A4 * B1 * X)	-0.00210	-0.00212	-0.00210
	(A2 * !A4 * B1 * X)	0.00148	0.00149	0.00149
	(A2 * !A4 * !B1 * !X)	-0.00211	-0.00212	-0.00212
	(A2 * !A4 * !B1 * !X)	0.00240	0.00242	0.00241
	(A1 * !A2 * A4 * B1 * X)	-0.00214	-0.00215	-0.00214
	(A1 * !A2 * A4 * B1 * X)	0.00170	0.00171	0.00170
	(A1 * !A2 * A4 * !B1 * !X)	-0.00212	-0.00212	-0.00211
	(A1 * !A2 * A4 * !B1 * !X)	0.00179	0.00180	0.00179
	(A1 * !A2 * !A4 * B1 * X)	-0.00198	-0.00200	-0.00209
	(A1 * !A2 * !A4 * B1 * X)	0.00153	0.00154	0.00147
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00211	-0.00212	-0.00211
	(A1 * !A2 * !A4 * !B1 * !X)	0.00225	0.00227	0.00226
	(!A1 * !A2 * A4 * B1 * X)	-0.00212	-0.00213	-0.00211
	(!A1 * !A2 * A4 * B1 * X)	0.00241	0.00243	0.00243
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00211	-0.00212	-0.00211
	(!A1 * !A2 * A4 * !B1 * !X)	0.00242	0.00244	0.00243
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00189	-0.00201	-0.00199
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00249	0.00251	0.00249

Passive power(pJ) for A4 rising (conditional):

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

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	0.00104	0.00103	0.00103
	(A3 * B1 * X)	-0.00065	-0.00064	-0.00064
	(A3 * !B1 * !X)	0.00091	0.00092	0.00091
	(A3 * !B1 * !X)	-0.00120	-0.00123	-0.00123
	(A2 * !A3 * B1 * X)	0.00104	0.00103	0.00103
	(A2 * !A3 * B1 * X)	-0.00065	-0.00064	-0.00064
	(A2 * !A3 * !B1 * !X)	0.00091	0.00092	0.00091
	(A2 * !A3 * !B1 * !X)	-0.00110	-0.00117	-0.00116
	(A1 * !A2 * !A3 * B1 * X)	0.00104	0.00103	0.00103
	(A1 * !A2 * !A3 * B1 * X)	-0.00065	-0.00064	-0.00064
	(A1 * !A2 * !A3 * !B1 * !X)	0.00091	0.00091	0.00091
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00109	-0.00114	-0.00113
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00086	0.00087	0.00086
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00125	-0.00126	-0.00125
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	0.00115	0.00115	0.00115
	(A3 * B1 * X)	-0.00065	-0.00065	-0.00065
	(A3 * !B1 * !X)	0.00104	0.00105	0.00104
	(A3 * !B1 * !X)	-0.00119	-0.00123	-0.00122
	(A2 * !A3 * B1 * X)	0.00115	0.00115	0.00115
	(A2 * !A3 * B1 * X)	-0.00065	-0.00065	-0.00064
	(A2 * !A3 * !B1 * !X)	0.00103	0.00104	0.00104
	(A2 * !A3 * !B1 * !X)	-0.00110	-0.00117	-0.00116
	(A1 * !A2 * !A3 * B1 * X)	0.00115	0.00115	0.00115
	(A1 * !A2 * !A3 * B1 * X)	-0.00065	-0.00065	-0.00064
	(A1 * !A2 * !A3 * !B1 * !X)	0.00103	0.00105	0.00104
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00108	-0.00113	-0.00113
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00097	0.00097	0.00096
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00125	-0.00125	-0.00124

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	0.00194	0.00195	0.00195
	(A3 * B1 * X)	-0.00130	-0.00131	-0.00130
	(A3 * !B1 * !X)	0.00173	0.00174	0.00173
	(A3 * !B1 * !X)	-0.00239	-0.00246	-0.00245
	(A2 * !A3 * B1 * X)	0.00194	0.00195	0.00195
	(A2 * !A3 * B1 * X)	-0.00130	-0.00130	-0.00130
	(A2 * !A3 * !B1 * !X)	0.00173	0.00174	0.00173
	(A2 * !A3 * !B1 * !X)	-0.00219	-0.00232	-0.00231
	(A1 * !A2 * !A3 * B1 * X)	0.00194	0.00195	0.00195
	(A1 * !A2 * !A3 * B1 * X)	-0.00130	-0.00130	-0.00130
	(A1 * !A2 * !A3 * !B1 * !X)	0.00173	0.00173	0.00173
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00215	-0.00225	-0.00225
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00162	0.00162	0.00161
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00251	-0.00252	-0.00251

Passive power(pJ) for A4 falling (conditional):

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

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	-0.00098	-0.00098	-0.00102
	(A3 * B1 * X)	0.00069	0.00069	0.00066
	(A3 * !B1 * !X)	-0.00091	-0.00092	-0.00091
	(A3 * !B1 * !X)	0.00123	0.00123	0.00123
	(A2 * !A3 * B1 * X)	-0.00091	-0.00091	-0.00101
	(A2 * !A3 * B1 * X)	0.00073	0.00073	0.00066
	(A2 * !A3 * !B1 * !X)	-0.00091	-0.00091	-0.00091
	(A2 * !A3 * !B1 * !X)	0.00116	0.00117	0.00116
	(A1 * !A2 * !A3 * B1 * X)	-0.00081	-0.00082	-0.00098
	(A1 * !A2 * !A3 * B1 * X)	0.00080	0.00079	0.00068
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00091	-0.00091	-0.00091
	(A1 * !A2 * !A3 * !B1 * !X)	0.00114	0.00114	0.00113
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00080	-0.00086	-0.00086
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00125	0.00126	0.00125
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	-0.00109	-0.00109	-0.00114
	(A3 * B1 * X)	0.00070	0.00070	0.00066
	(A3 * !B1 * !X)	-0.00104	-0.00104	-0.00103
	(A3 * !B1 * !X)	0.00123	0.00123	0.00122
	(A2 * !A3 * B1 * X)	-0.00102	-0.00102	-0.00113
	(A2 * !A3 * B1 * X)	0.00074	0.00074	0.00067
	(A2 * !A3 * !B1 * !X)	-0.00103	-0.00104	-0.00103
	(A2 * !A3 * !B1 * !X)	0.00116	0.00117	0.00116
	(A1 * !A2 * !A3 * B1 * X)	-0.00093	-0.00093	-0.00110
	(A1 * !A2 * !A3 * B1 * X)	0.00080	0.00079	0.00068
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00103	-0.00104	-0.00103
	(A1 * !A2 * !A3 * !B1 * !X)	0.00114	0.00113	0.00113
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00091	-0.00097	-0.00096
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00125	0.00125	0.00125

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	-0.00183	-0.00183	-0.00193
	(A3 * B1 * X)	0.00141	0.00141	0.00134
	(A3 * !B1 * !X)	-0.00173	-0.00174	-0.00173
	(A3 * !B1 * !X)	0.00246	0.00246	0.00245
	(A2 * !A3 * B1 * X)	-0.00164	-0.00165	-0.00189
	(A2 * !A3 * B1 * X)	0.00152	0.00152	0.00135
	(A2 * !A3 * !B1 * !X)	-0.00173	-0.00174	-0.00173
	(A2 * !A3 * !B1 * !X)	0.00232	0.00232	0.00231
	(A1 * !A2 * !A3 * B1 * X)	-0.00145	-0.00146	-0.00184
	(A1 * !A2 * !A3 * B1 * X)	0.00164	0.00163	0.00138
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00173	-0.00173	-0.00173
	(A1 * !A2 * !A3 * !B1 * !X)	0.00225	0.00225	0.00225
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00150	-0.00162	-0.00161
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00251	0.00253	0.00252

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)**	0.00038	0.00038	0.00034
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00121	-0.00121	-0.00129
sky130_fd_sc_hs__o41a_2	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.00042	0.00042	0.00038
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00138	-0.00139	-0.00147
sky130_fd_sc_hs__o41a_4	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.00070	0.00071	0.00063
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00227	-0.00230	-0.00244

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)	-0.00032	-0.00032	-0.00032
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00129	0.00130	0.00130
sky130_fd_sc_hs__o41a_2	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00036	-0.00036	-0.00036
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00148	0.00149	0.00148
sky130_fd_sc_hs__o41a_4	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00061	-0.00060	-0.00060
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00247	0.00246	0.00246

SKY130_FD_SC_HS__OR2Bx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT		OUTPUT
A	B_N	X
x	0	1
0	1	0
1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__or2b_1	11.18880
sky130_fd_sc_hs__or2b_2	11.18880
sky130_fd_sc_hs__or2b_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B_N	X
sky130_fd_sc_hs__or2b_1	0.00243	0.00228	0.77898
sky130_fd_sc_hs__or2b_2	0.00253	0.00220	1.36559
sky130_fd_sc_hs__or2b_4	0.00479	0.00274	2.88744

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2b_1	0.00000	0.09330	0.14921
sky130_fd_sc_hs__or2b_2	0.00000	0.10415	0.17998
sky130_fd_sc_hs__or2b_4	0.00000	0.11903	0.18071

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)	0.08407	0.75280	7.04164
	B_N->X (FR)	0.16077	0.96572	8.42192
sky130_fd_sc_hs__or2b_2	A->X (RR)	0.08190	0.65936	6.95711
	B_N->X (FR)	0.17277	0.88517	8.42063
sky130_fd_sc_hs__or2b_4	A->X (RR)	0.07539	0.54936	6.96312
	B_N->X (FR)	0.18456	0.83992	8.77879

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2b_1	A->X (FF)	0.17928	0.73402	4.74704
	B_N->X (RF)	0.18399	0.51984	2.59160
sky130_fd_sc_hs__or2b_2	A->X (FF)	0.24181	0.79185	4.82257
	B_N->X (RF)	0.25553	0.56710	2.40592
sky130_fd_sc_hs__or2b_4	A->X (FF)	0.23451	0.75560	4.97671
	B_N->X (RF)	0.23929	0.54824	2.61256

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.00522	0.00505	0.00650
	A	0.00272	0.00255	0.00403
	B_N	0.00472	0.00504	0.00944
	B_N	0.00687	0.00718	0.01159
sky130_fd_sc_hs__or2b_2	A	0.00725	0.00733	0.00909
	A	0.00459	0.00468	0.00643
	B_N	0.00671	0.00724	0.01141
	B_N	0.00884	0.00938	0.01484
sky130_fd_sc_hs__or2b_4	A	0.01377	0.01401	0.01802
	A	0.00884	0.00911	0.01310
	B_N	0.01259	0.01343	0.01763
	B_N	0.01496	0.01584	0.02021

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.00295	0.00294	0.00435
	A	0.00546	0.00545	0.00664
	B_N	0.00681	0.00674	0.01071
	B_N	0.00468	0.00459	0.00845
sky130_fd_sc_hs__or2b_2	A	0.00457	0.00461	0.00626
	A	0.00725	0.00739	0.00864
	B_N	0.00898	0.00892	0.01236
	B_N	0.00686	0.00678	0.01017
sky130_fd_sc_hs__or2b_4	A	0.00911	0.00970	0.01302
	A	0.01407	0.01465	0.01725
	B_N	0.01476	0.01546	0.01924
	B_N	0.01238	0.01307	0.01686

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	0.00105	0.00093	0.00092
	(!B_N * X)	-0.00108	-0.00121	-0.00122
sky130_fd_sc_hs__or2b_2	(!B_N * X)	0.00113	0.00101	0.00099
	(!B_N * X)	-0.00114	-0.00128	-0.00128
sky130_fd_sc_hs__or2b_4	(!B_N * X)	0.00215	0.00194	0.00191
	(!B_N * X)	-0.00209	-0.00233	-0.00235

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	-0.00091	-0.00092	-0.00091
	(!B_N * X)	0.00122	0.00123	0.00123
sky130_fd_sc_hs__or2b_2	(!B_N * X)	-0.00098	-0.00099	-0.00098
	(!B_N * X)	0.00129	0.00130	0.00129
sky130_fd_sc_hs__or2b_4	(!B_N * X)	-0.00191	-0.00191	-0.00190
	(!B_N * X)	0.00236	0.00236	0.00236

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00298	0.00282	0.00667
	(A * X)	0.00050	0.00033	0.00420
sky130_fd_sc_hs__or2b_2	(A * X)	0.00316	0.00300	0.00676
	(A * X)	0.00069	0.00050	0.00428
sky130_fd_sc_hs__or2b_4	(A * X)	0.00408	0.00386	0.00718
	(A * X)	0.00116	0.00093	0.00427

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00087	0.00106	0.00549
	(A * X)	0.00334	0.00353	0.00796
sky130_fd_sc_hs__or2b_2	(A * X)	0.00085	0.00105	0.00542
	(A * X)	0.00333	0.00353	0.00790
sky130_fd_sc_hs__or2b_4	(A * X)	0.00226	0.00234	0.00621
	(A * X)	0.00516	0.00524	0.00910

SKY130_FD_SC_HS__OR2x

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT		OUTPUT
A	B	X
0	0	0
x	1	1
1	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__or2_1	7.99200
sky130_fd_sc_hs__or2_2	7.99200
sky130_fd_sc_hs__or2_4	14.38560

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	X
sky130_fd_sc_hs__or2_1	0.00222	0.00212	0.78329
sky130_fd_sc_hs__or2_2	0.00274	0.00240	1.37658
sky130_fd_sc_hs__or2_4	0.00435	0.00376	2.87180

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2_1	0.00000	0.05116	0.12408
sky130_fd_sc_hs__or2_2	0.00000	0.04299	0.06891
sky130_fd_sc_hs__or2_4	0.00000	0.08246	0.13782

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)	0.08115	0.74801	7.05522
	B->X (RR)	0.07649	0.72597	7.03143
sky130_fd_sc_hs__or2_2	A->X (RR)	0.08309	0.66143	6.98555
	B->X (RR)	0.07734	0.64152	6.93007
sky130_fd_sc_hs__or2_4	A->X (RR)	0.10597	0.63926	7.46555
	B->X (RR)	0.09183	0.60385	7.34130

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2_1	A->X (FF)	0.19168	0.74730	4.71564
	B->X (FF)	0.16800	0.69802	4.41752
sky130_fd_sc_hs__or2_2	A->X (FF)	0.23903	0.78870	4.83915
	B->X (FF)	0.21078	0.74753	4.55889
sky130_fd_sc_hs__or2_4	A->X (FF)	0.21761	0.73875	4.91139
	B->X (FF)	0.18917	0.69091	4.58215

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.00554	0.00539	0.00696
	A	0.00269	0.00255	0.00415
	B	0.00470	0.00463	0.00763
	B	0.00229	0.00224	0.00527
sky130_fd_sc_hs__or2_2	A	0.00794	0.00792	0.00959
	A	0.00451	0.00450	0.00617
	B	0.00678	0.00690	0.00934
	B	0.00400	0.00414	0.00658
sky130_fd_sc_hs__or2_4	A	0.01420	0.01427	0.01689
	A	0.00864	0.00872	0.01140
	B	0.01155	0.01185	0.01602
	B	0.00739	0.00774	0.01203

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.00224	0.00224	0.00391
	A	0.00510	0.00510	0.00656
	B	0.00212	0.00237	0.00654
	B	0.00451	0.00476	0.00859
sky130_fd_sc_hs__or2_2	A	0.00362	0.00376	0.00547
	A	0.00705	0.00720	0.00843
	B	0.00355	0.00386	0.00739
	B	0.00631	0.00664	0.00990
sky130_fd_sc_hs__or2_4	A	0.00790	0.00850	0.01099
	A	0.01350	0.01410	0.01603
	B	0.00786	0.00884	0.01477
	B	0.01201	0.01296	0.01834

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	0.00104	0.00093	0.00091
	(B * X)	-0.00078	-0.00090	-0.00092
sky130_fd_sc_hs__or2_2	(B * X)	0.00126	0.00113	0.00112
	(B * X)	-0.00094	-0.00108	-0.00109
sky130_fd_sc_hs__or2_4	(B * X)	0.00162	0.00137	0.00134
	(B * X)	-0.00193	-0.00221	-0.00224

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	-0.00090	-0.00091	-0.00090
	(B * X)	0.00092	0.00093	0.00092
sky130_fd_sc_hs__or2_2	(B * X)	-0.00111	-0.00111	-0.00111
	(B * X)	0.00108	0.00110	0.00109
sky130_fd_sc_hs__or2_4	(B * X)	-0.00134	-0.00134	-0.00133
	(B * X)	0.00224	0.00225	0.00224

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	0.00098	0.00098	0.00098
	(A * X)	-0.00048	-0.00048	-0.00048
sky130_fd_sc_hs__or2_2	(A * X)	0.00105	0.00105	0.00105
	(A * X)	-0.00059	-0.00059	-0.00059
sky130_fd_sc_hs__or2_4	(A * X)	0.00122	0.00123	0.00122
	(A * X)	-0.00118	-0.00118	-0.00118

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	-0.00094	-0.00094	-0.00097
	(A * X)	0.00051	0.00051	0.00049
sky130_fd_sc_hs__or2_2	(A * X)	-0.00100	-0.00101	-0.00104
	(A * X)	0.00062	0.00062	0.00060
sky130_fd_sc_hs__or2_4	(A * X)	-0.00111	-0.00112	-0.00121
	(A * X)	0.00128	0.00128	0.00121

SKY130_FD_SC_HS__OR3Bx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT			OUTPUT
A	B	C_N	X
0	x	0	1
0	0	1	0
x	1	1	1
1	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__or3b_1	12.78720
sky130_fd_sc_hs__or3b_2	12.78720
sky130_fd_sc_hs__or3b_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C_N	X
sky130_fd_sc_hs__or3b_1	0.00238	0.00261	0.00221	0.77659
sky130_fd_sc_hs__or3b_2	0.00254	0.00246	0.00220	1.36593
sky130_fd_sc_hs__or3b_4	0.00448	0.00408	0.00256	2.87072

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or3b_1	0.00000	0.08277	0.15166
sky130_fd_sc_hs__or3b_2	0.00000	0.09070	0.18560
sky130_fd_sc_hs__or3b_4	0.00000	0.08949	0.17085

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)	0.09173	0.78590	7.16378
	B->X (RR)	0.08975	0.77237	7.09242
	C_N->X (FR)	0.16457	0.97081	8.43087
sky130_fd_sc_hs__or3b_2	A->X (RR)	0.08816	0.68299	7.04099
	B->X (RR)	0.08592	0.67107	6.98206
	C_N->X (FR)	0.17411	0.88664	8.40677
sky130_fd_sc_hs__or3b_4	A->X (RR)	0.11236	0.66038	7.51815
	B->X (RR)	0.10695	0.64193	7.42591
	C_N->X (FR)	0.19917	0.85010	8.77887

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3b_1	A->X (FF)	0.30568	0.88639	5.01305
	B->X (FF)	0.28912	0.87775	5.05450
	C_N->X (RF)	0.27424	0.63201	2.68714
sky130_fd_sc_hs__or3b_2	A->X (FF)	0.39583	0.96491	5.16861
	B->X (FF)	0.37119	0.95260	5.24595
	C_N->X (RF)	0.35960	0.70969	2.60755
sky130_fd_sc_hs__or3b_4	A->X (FF)	0.34432	0.87529	5.14644
	B->X (FF)	0.32009	0.86120	5.18177
	C_N->X (RF)	0.30409	0.62123	2.65659

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.00634	0.00618	0.00738
	A	0.00322	0.00305	0.00431
	B	0.00551	0.00543	0.00687
	B	0.00271	0.00262	0.00411
	C_N	0.00485	0.00518	0.00960
	C_N	0.00668	0.00700	0.01143
sky130_fd_sc_hs__or3b_2	A	0.00838	0.00841	0.00985
	A	0.00515	0.00519	0.00669
	B	0.00738	0.00755	0.00924
	B	0.00464	0.00484	0.00653
	C_N	0.00670	0.00728	0.01146
	C_N	0.00865	0.00924	0.01467
sky130_fd_sc_hs__or3b_4	A	0.01540	0.01547	0.01772
	A	0.00979	0.00987	0.01216
	B	0.01310	0.01343	0.01621
	B	0.00870	0.00905	0.01191
	C_N	0.01149	0.01236	0.01656
	C_N	0.01371	0.01459	0.01914

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.00348	0.00345	0.00425
	A	0.00663	0.00665	0.00734
	B	0.00337	0.00338	0.00462
	B	0.00618	0.00618	0.00732
	C_N	0.00733	0.00723	0.01120
	C_N	0.00552	0.00541	0.00930
sky130_fd_sc_hs__or3b_2	A	0.00497	0.00448	0.00572
	A	0.00822	0.00825	0.00896
	B	0.00484	0.00488	0.00666
	B	0.00756	0.00768	0.00885
	C_N	0.00919	0.00915	0.01270
	C_N	0.00725	0.00721	0.01065
sky130_fd_sc_hs__or3b_4	A	0.00918	0.00980	0.01269
	A	0.01487	0.01548	0.01662
	B	0.00919	0.00970	0.01282
	B	0.01361	0.01426	0.01622
	C_N	0.01451	0.01522	0.01897
	C_N	0.01230	0.01296	0.01675

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)	0.00090	0.00088	0.00088
	(B * C_N * X)	-0.00106	-0.00111	-0.00111
	(B * !C_N * X)	0.00088	0.00088	0.00088
	(B * !C_N * X)	-0.00109	-0.00111	-0.00111
	(!B * !C_N * X)	0.00089	0.00089	0.00088
	(!B * !C_N * X)	-0.00100	-0.00108	-0.00107
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	0.00105	0.00103	0.00102
	(B * C_N * X)	-0.00107	-0.00112	-0.00112
	(B * !C_N * X)	0.00098	0.00099	0.00098
	(B * !C_N * X)	-0.00114	-0.00116	-0.00116
	(!B * !C_N * X)	0.00099	0.00099	0.00098
	(!B * !C_N * X)	-0.00105	-0.00113	-0.00112
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	0.00155	0.00150	0.00149
	(B * C_N * X)	-0.00211	-0.00220	-0.00220
	(B * !C_N * X)	0.00135	0.00134	0.00133
	(B * !C_N * X)	-0.00230	-0.00236	-0.00235
	(!B * !C_N * X)	0.00136	0.00135	0.00133
	(!B * !C_N * X)	-0.00215	-0.00230	-0.00229

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)	-0.00087	-0.00088	-0.00087
	(B * C_N * X)	0.00111	0.00112	0.00111
	(B * !C_N * X)	-0.00087	-0.00088	-0.00087
	(B * !C_N * X)	0.00111	0.00112	0.00111
	(!B * !C_N * X)	-0.00087	-0.00088	-0.00087
	(!B * !C_N * X)	0.00108	0.00108	0.00107
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	-0.00102	-0.00102	-0.00102
	(B * C_N * X)	0.00112	0.00113	0.00112
	(B * !C_N * X)	-0.00098	-0.00099	-0.00098
	(B * !C_N * X)	0.00115	0.00117	0.00116
	(!B * !C_N * X)	-0.00098	-0.00098	-0.00098
	(!B * !C_N * X)	0.00112	0.00113	0.00112
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	-0.00149	-0.00150	-0.00149
	(B * C_N * X)	0.00218	0.00221	0.00220
	(B * !C_N * X)	-0.00134	-0.00134	-0.00133
	(B * !C_N * X)	0.00237	0.00237	0.00235
	(!B * !C_N * X)	-0.00133	-0.00133	-0.00133
	(!B * !C_N * X)	0.00229	0.00230	0.00229

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)	0.00105	0.00105	0.00105
	(A * C_N * X)	-0.00068	-0.00068	-0.00069
	(A * !C_N * X)	0.00101	0.00100	0.00096
	(A * !C_N * X)	-0.00090	-0.00091	-0.00090
	(!A * !C_N * X)	0.00112	0.00095	0.00093
	(!A * !C_N * X)	-0.00106	-0.00123	-0.00124
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	0.00107	0.00108	0.00107
	(A * C_N * X)	-0.00064	-0.00064	-0.00064
	(A * !C_N * X)	0.00096	0.00097	0.00092
	(A * !C_N * X)	-0.00092	-0.00093	-0.00092
	(!A * !C_N * X)	0.00107	0.00091	0.00090
	(!A * !C_N * X)	-0.00108	-0.00125	-0.00125
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	0.00134	0.00135	0.00134
	(A * C_N * X)	-0.00133	-0.00134	-0.00134
	(A * !C_N * X)	0.00125	0.00126	0.00117
	(A * !C_N * X)	-0.00178	-0.00179	-0.00178
	(!A * !C_N * X)	0.00143	0.00112	0.00110
	(!A * !C_N * X)	-0.00214	-0.00246	-0.00246

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)	-0.00103	-0.00103	-0.00103
	(A * C_N * X)	0.00071	0.00070	0.00071
	(A * !C_N * X)	-0.00093	-0.00093	-0.00093
	(A * !C_N * X)	0.00090	0.00091	0.00090
	(!A * !C_N * X)	-0.00093	-0.00093	-0.00092
	(!A * !C_N * X)	0.00125	0.00125	0.00125
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	-0.00106	-0.00105	-0.00106
	(A * C_N * X)	0.00066	0.00066	0.00067
	(A * !C_N * X)	-0.00089	-0.00090	-0.00089
	(A * !C_N * X)	0.00092	0.00093	0.00092
	(!A * !C_N * X)	-0.00089	-0.00089	-0.00089
	(!A * !C_N * X)	0.00126	0.00126	0.00126
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	-0.00131	-0.00131	-0.00131
	(A * C_N * X)	0.00138	0.00138	0.00139
	(A * !C_N * X)	-0.00111	-0.00112	-0.00111
	(A * !C_N * X)	0.00178	0.00179	0.00178
	(!A * !C_N * X)	-0.00109	-0.00109	-0.00108
	(!A * !C_N * X)	0.00246	0.00247	0.00248

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00290	0.00276	0.00666
	(B * X)	0.00050	0.00034	0.00426
	(A * !B * X)	0.00296	0.00282	0.00670
	(A * !B * X)	0.00053	0.00037	0.00427
sky130_fd_sc_hs__or3b_2	(B * X)	0.00325	0.00308	0.00685
	(B * X)	0.00076	0.00059	0.00436
	(A * !B * X)	0.00331	0.00315	0.00689
	(A * !B * X)	0.00078	0.00061	0.00437
sky130_fd_sc_hs__or3b_4	(B * X)	0.00414	0.00397	0.00752
	(B * X)	0.00115	0.00097	0.00453
	(A * !B * X)	0.00427	0.00410	0.00762
	(A * !B * X)	0.00121	0.00103	0.00456

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00071	0.00094	0.00538
	(B * X)	0.00312	0.00335	0.00778
	(A * !B * X)	0.00071	0.00094	0.00538
	(A * !B * X)	0.00312	0.00335	0.00778
sky130_fd_sc_hs__or3b_2	(B * X)	0.00076	0.00096	0.00533
	(B * X)	0.00325	0.00345	0.00782
	(A * !B * X)	0.00076	0.00095	0.00533
	(A * !B * X)	0.00325	0.00346	0.00782
sky130_fd_sc_hs__or3b_4	(B * X)	0.00099	0.00105	0.00510
	(B * X)	0.00397	0.00404	0.00809
	(A * !B * X)	0.00099	0.00105	0.00510
	(A * !B * X)	0.00398	0.00404	0.00809

SKY130_FD_SC_HS__OR3x

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT			OUTPUT
A	B	C	X
0	0	0	0
0	x	1	1
x	1	x	1
1	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__or3_1	9.59040
sky130_fd_sc_hs__or3_2	11.18880
sky130_fd_sc_hs__or3_4	17.58240

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	X
sky130_fd_sc_hs__or3_1	0.00247	0.00244	0.00240	0.79146
sky130_fd_sc_hs__or3_2	0.00251	0.00254	0.00261	1.52520
sky130_fd_sc_hs__or3_4	0.00469	0.00416	0.00406	2.88631

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__or3_1	0.00000	0.02161	0.06470
sky130_fd_sc_hs__or3_2	0.00000	0.02954	0.06891
sky130_fd_sc_hs__or3_4	0.00000	0.05644	0.13782

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)	0.09163	0.78604	7.18887
	B->X (RR)	0.08934	0.77011	7.11640
	C->X (RR)	0.08382	0.74647	7.05324
sky130_fd_sc_hs__or3_2	A->X (RR)	0.08702	0.67410	7.18295
	B->X (RR)	0.08457	0.66082	7.12190
	C->X (RR)	0.08043	0.64402	7.07486
sky130_fd_sc_hs__or3_4	A->X (RR)	0.11272	0.66266	7.55326
	B->X (RR)	0.10731	0.64393	7.46833
	C->X (RR)	0.09822	0.61772	7.39328

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3_1	A->X (FF)	0.31309	0.89986	5.08332
	B->X (FF)	0.29050	0.88544	5.12438
	C->X (FF)	0.24412	0.81787	4.79578
sky130_fd_sc_hs__or3_2	A->X (FF)	0.38602	0.96220	5.38475
	B->X (FF)	0.36074	0.94796	5.46087
	C->X (FF)	0.31925	0.88692	5.14634
sky130_fd_sc_hs__or3_4	A->X (FF)	0.34479	0.87839	5.16444
	B->X (FF)	0.31993	0.86259	5.19365
	C->X (FF)	0.26883	0.78767	4.83248

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.00737	0.00717	0.00837
	A	0.00338	0.00319	0.00444
	B	0.00625	0.00618	0.00764
	B	0.00285	0.00279	0.00429
	C	0.00517	0.00508	0.00738
	C	0.00224	0.00216	0.00450
sky130_fd_sc_hs__or3_2	A	0.00918	0.00922	0.01076
	A	0.00517	0.00522	0.00688
	B	0.00798	0.00819	0.01000
	B	0.00454	0.00475	0.00664
	C	0.00700	0.00715	0.00970
	C	0.00399	0.00415	0.00677
sky130_fd_sc_hs__or3_4	A	0.01687	0.01695	0.01920
	A	0.00981	0.00990	0.01216
	B	0.01427	0.01458	0.01734
	B	0.00868	0.00902	0.01185
	C	0.01189	0.01222	0.01624
	C	0.00727	0.00762	0.01175

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.00268	0.00268	0.00357
	A	0.00672	0.00670	0.00737
	B	0.00269	0.00273	0.00392
	B	0.00611	0.00614	0.00728
	C	0.00263	0.00288	0.00598
	C	0.00555	0.00579	0.00858
sky130_fd_sc_hs__or3_2	A	0.00430	0.00441	0.00584
	A	0.00835	0.00858	0.00936
	B	0.00433	0.00399	0.00652
	B	0.00778	0.00803	0.00932
	C	0.00426	0.00456	0.00832
	C	0.00726	0.00768	0.01067
sky130_fd_sc_hs__or3_4	A	0.00778	0.00841	0.01130
	A	0.01496	0.01558	0.01670
	B	0.00810	0.00862	0.01226
	B	0.01371	0.01437	0.01631
	C	0.00792	0.00849	0.01528
	C	0.01252	0.01339	0.01839

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	0.00095	0.00095	0.00095
	(B * C * X)	-0.00107	-0.00110	-0.00110
	(B * !C * X)	0.00096	0.00095	0.00095
	(B * !C * X)	-0.00106	-0.00110	-0.00110
	(!B * C * X)	0.00096	0.00096	0.00095
	(!B * C * X)	-0.00099	-0.00107	-0.00106
sky130_fd_sc_hs__or3_2	(B * C * X)	0.00100	0.00100	0.00100
	(B * C * X)	-0.00109	-0.00112	-0.00111
	(B * !C * X)	0.00100	0.00100	0.00100
	(B * !C * X)	-0.00107	-0.00112	-0.00111
	(!B * C * X)	0.00101	0.00101	0.00100
	(!B * C * X)	-0.00100	-0.00108	-0.00107
sky130_fd_sc_hs__or3_4	(B * C * X)	0.00159	0.00159	0.00158
	(B * C * X)	-0.00213	-0.00221	-0.00220
	(B * !C * X)	0.00160	0.00159	0.00158
	(B * !C * X)	-0.00211	-0.00221	-0.00220
	(!B * C * X)	0.00161	0.00160	0.00157
	(!B * C * X)	-0.00198	-0.00213	-0.00212

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	-0.00095	-0.00095	-0.00095
	(B * C * X)	0.00110	0.00111	0.00110
	(B * !C * X)	-0.00095	-0.00095	-0.00095
	(B * !C * X)	0.00110	0.00111	0.00110
	(!B * C * X)	-0.00095	-0.00095	-0.00095
	(!B * C * X)	0.00107	0.00107	0.00106
sky130_fd_sc_hs__or3_2	(B * C * X)	-0.00099	-0.00100	-0.00099
	(B * C * X)	0.00111	0.00112	0.00111
	(B * !C * X)	-0.00099	-0.00100	-0.00099
	(B * !C * X)	0.00111	0.00112	0.00111
	(!B * C * X)	-0.00099	-0.00100	-0.00099
	(!B * C * X)	0.00107	0.00108	0.00107
sky130_fd_sc_hs__or3_4	(B * C * X)	-0.00158	-0.00158	-0.00158
	(B * C * X)	0.00220	0.00221	0.00220
	(B * !C * X)	-0.00157	-0.00158	-0.00158
	(B * !C * X)	0.00218	0.00221	0.00220
	(!B * C * X)	-0.00157	-0.00158	-0.00157
	(!B * C * X)	0.00211	0.00213	0.00212

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	0.00095	0.00095	0.00091
	(A * C * X)	-0.00075	-0.00075	-0.00075
	(A * !C * X)	0.00089	0.00088	0.00088
	(A * !C * X)	-0.00065	-0.00064	-0.00065
	(!A * C * X)	0.00105	0.00089	0.00088
	(!A * C * X)	-0.00090	-0.00108	-0.00108
sky130_fd_sc_hs__or3_2	(A * C * X)	0.00097	0.00096	0.00092
	(A * C * X)	-0.00083	-0.00083	-0.00083
	(A * !C * X)	0.00091	0.00090	0.00090
	(A * !C * X)	-0.00073	-0.00072	-0.00072
	(!A * C * X)	0.00108	0.00091	0.00090
	(!A * C * X)	-0.00098	-0.00115	-0.00116
sky130_fd_sc_hs__or3_4	(A * C * X)	0.00125	0.00125	0.00117
	(A * C * X)	-0.00155	-0.00156	-0.00156
	(A * !C * X)	0.00111	0.00112	0.00111
	(A * !C * X)	-0.00134	-0.00135	-0.00136
	(!A * C * X)	0.00143	0.00112	0.00110
	(!A * C * X)	-0.00191	-0.00225	-0.00226

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	-0.00088	-0.00088	-0.00088
	(A * C * X)	0.00075	0.00075	0.00075
	(A * !C * X)	-0.00086	-0.00086	-0.00086
	(A * !C * X)	0.00067	0.00067	0.00067
	(!A * C * X)	-0.00087	-0.00087	-0.00087
	(!A * C * X)	0.00108	0.00109	0.00108
sky130_fd_sc_hs__or3_2	(A * C * X)	-0.00090	-0.00090	-0.00089
	(A * C * X)	0.00083	0.00083	0.00083
	(A * !C * X)	-0.00088	-0.00088	-0.00088
	(A * !C * X)	0.00074	0.00074	0.00075
	(!A * C * X)	-0.00089	-0.00089	-0.00089
	(!A * C * X)	0.00116	0.00117	0.00116
sky130_fd_sc_hs__or3_4	(A * C * X)	-0.00111	-0.00112	-0.00111
	(A * C * X)	0.00155	0.00156	0.00156
	(A * !C * X)	-0.00108	-0.00108	-0.00107
	(A * !C * X)	0.00140	0.00139	0.00140
	(!A * C * X)	-0.00109	-0.00109	-0.00108
	(!A * C * X)	0.00224	0.00226	0.00226

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	0.00097	0.00098	0.00098
	(B * X)	-0.00060	-0.00060	-0.00060
	(A * !B * X)	0.00098	0.00098	0.00098
	(A * !B * X)	-0.00060	-0.00060	-0.00060
sky130_fd_sc_hs__or3_2	(B * X)	0.00111	0.00110	0.00110
	(B * X)	-0.00062	-0.00061	-0.00061
	(A * !B * X)	0.00109	0.00110	0.00110
	(A * !B * X)	-0.00060	-0.00061	-0.00061
sky130_fd_sc_hs__or3_4	(B * X)	0.00139	0.00140	0.00139
	(B * X)	-0.00121	-0.00121	-0.00120
	(A * !B * X)	0.00139	0.00140	0.00139
	(A * !B * X)	-0.00120	-0.00120	-0.00120

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	-0.00094	-0.00094	-0.00097
	(B * X)	0.00064	0.00064	0.00061
	(A * !B * X)	-0.00087	-0.00087	-0.00096
	(A * !B * X)	0.00068	0.00067	0.00062
sky130_fd_sc_hs__or3_2	(B * X)	-0.00105	-0.00106	-0.00109
	(B * X)	0.00065	0.00065	0.00062
	(A * !B * X)	-0.00099	-0.00099	-0.00108
	(A * !B * X)	0.00069	0.00068	0.00062
sky130_fd_sc_hs__or3_4	(B * X)	-0.00129	-0.00129	-0.00138
	(B * X)	0.00131	0.00130	0.00123
	(A * !B * X)	-0.00116	-0.00116	-0.00135
	(A * !B * X)	0.00138	0.00137	0.00123

SKY130_FD_SC_HS__OR4BBx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT				OUTPUT
A	B	C_N	D_N	X
0	x	0	x	1
0	x	1	0	1
0	0	1	1	0
x	1	1	1	1
1	x	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__or4bb_1	15.98400
sky130_fd_sc_hs__or4bb_2	15.98400
sky130_fd_sc_hs__or4bb_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C_N	D_N	X
sky130_fd_sc_hs__or4bb_1	0.00242	0.00239	0.00226	0.00229	0.77619
sky130_fd_sc_hs__or4bb_2	0.00241	0.00255	0.00222	0.00220	1.36403
sky130_fd_sc_hs__or4bb_4	0.00379	0.00387	0.00246	0.00244	2.59163

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4bb_1	0.00000	0.13703	0.27398
sky130_fd_sc_hs__or4bb_2	0.00000	0.14330	0.31109
sky130_fd_sc_hs__or4bb_4	0.00000	0.10631	0.23555

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)	0.09356	0.80197	7.25455
	B->X (RR)	0.09316	0.79229	7.18196
	C_N->X (FR)	0.18707	1.00629	8.51929
	D_N->X (FR)	0.17037	0.97726	8.44128
sky130_fd_sc_hs__or4bb_2	A->X (RR)	0.08922	0.69599	7.11447
	B->X (RR)	0.09028	0.69055	7.06557
	C_N->X (FR)	0.17055	0.87823	8.36228
	D_N->X (FR)	0.17360	0.88637	8.42475
sky130_fd_sc_hs__or4bb_4	A->X (RR)	0.12198	0.70425	7.63969
	B->X (RR)	0.12453	0.69637	7.57412
	C_N->X (FR)	0.23297	0.90321	8.88122
	D_N->X (FR)	0.23656	0.91386	8.92380

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4bb_1	A->X (FF)	0.44973	1.05628	5.26794
	B->X (FF)	0.42121	1.02710	5.30087
	C_N->X (RF)	0.41824	0.82139	2.93246
	D_N->X (RF)	0.33478	0.72422	2.78800
sky130_fd_sc_hs__or4bb_2	A->X (FF)	0.55024	1.14700	5.36273
	B->X (FF)	0.53356	1.12871	5.47444
	C_N->X (RF)	0.52175	0.90558	2.79460
	D_N->X (RF)	0.45807	0.83433	2.73070
sky130_fd_sc_hs__or4bb_4	A->X (FF)	0.58917	1.15895	5.36889
	B->X (FF)	0.56822	1.12848	5.41317
	C_N->X (RF)	0.56000	0.91743	2.78311
	D_N->X (RF)	0.45591	0.81583	2.70293

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.00686	0.00669	0.00765
	A	0.00384	0.00367	0.00469
	B	0.00590	0.00588	0.00711
	B	0.00327	0.00325	0.00454
	C_N	0.00546	0.00579	0.01006
	C_N	0.00754	0.00789	0.01218
	D_N	0.00474	0.00498	0.00946
	D_N	0.00658	0.00682	0.01130
sky130_fd_sc_hs__or4bb_2	A	0.00855	0.00879	0.01039
	A	0.00549	0.00575	0.00743
	B	0.00776	0.00797	0.00965
	B	0.00501	0.00523	0.00697
	C_N	0.00696	0.00765	0.01209
	C_N	0.00897	0.00967	0.01437
	D_N	0.00675	0.00711	0.01125
	D_N	0.00858	0.00895	0.01433
sky130_fd_sc_hs__or4bb_4	A	0.01720	0.01749	0.01982
	A	0.01180	0.01212	0.01481
	B	0.01469	0.01502	0.01743
	B	0.01036	0.01073	0.01350
	C_N	0.01431	0.01522	0.01904
	C_N	0.01617	0.01709	0.02110
	D_N	0.01261	0.01339	0.01713
	D_N	0.01450	0.01529	0.01921

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.00432	0.00415	0.00471
	A	0.00738	0.00737	0.00770
	B	0.00415	0.00420	0.00520
	B	0.00679	0.00683	0.00749
	C_N	0.00853	0.00829	0.01215
	C_N	0.00644	0.00635	0.00994
	D_N	0.00754	0.00742	0.01142
	D_N	0.00572	0.00565	0.00948
sky130_fd_sc_hs__or4bb_2	A	0.00576	0.00596	0.00684
	A	0.00885	0.00909	0.00961
	B	0.00560	0.00571	0.00717
	B	0.00837	0.00855	0.00933
	C_N	0.00983	0.00984	0.01377
	C_N	0.00783	0.00790	0.01164
	D_N	0.00935	0.00927	0.01297
	D_N	0.00751	0.00748	0.01102
sky130_fd_sc_hs__or4bb_4	A	0.01222	0.01271	0.01530
	A	0.01774	0.01826	0.01896
	B	0.01235	0.01274	0.01459
	B	0.01670	0.01714	0.01813
	C_N	0.01740	0.01766	0.02124
	C_N	0.01552	0.01580	0.01925
	D_N	0.01675	0.01690	0.02048
	D_N	0.01485	0.01502	0.01839

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)**	0.00092	0.00091	0.00090
	(B * C_N * D_N * X)	-0.00107	-0.00111	-0.00111
	(B * !D_N * X)	0.00091	0.00090	0.00090
	(B * !D_N * X)	-0.00107	-0.00111	-0.00111
	(B * !C_N * D_N * X)	0.00090	0.00090	0.00090
	(B * !C_N * D_N * X)	-0.00108	-0.00111	-0.00111
	(!B * C_N * !D_N * X)	0.00097	0.00094	0.00092
	(!B * C_N * !D_N * X)	-0.00100	-0.00105	-0.00106
	(!B * !C_N * D_N * X)	0.00090	0.00091	0.00090
	(!B * !C_N * D_N * X)	-0.00102	-0.00108	-0.00107
	(!B * !C_N * !D_N * X)	0.00090	0.00091	0.00090
	(!B * !C_N * !D_N * X)	-0.00102	-0.00108	-0.00107
sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	0.00098	0.00096	0.00096
	(B * C_N * D_N * X)	-0.00106	-0.00110	-0.00110
	(B * !D_N * X)	0.00098	0.00096	0.00096
	(B * !D_N * X)	-0.00107	-0.00110	-0.00110
	(B * !C_N * D_N * X)	0.00086	0.00086	0.00085
	(B * !C_N * D_N * X)	-0.00118	-0.00121	-0.00121
	(!B * C_N * !D_N * X)	0.00102	0.00100	0.00097
	(!B * C_N * !D_N * X)	-0.00099	-0.00105	-0.00105
	(!B * !C_N * D_N * X)	0.00085	0.00087	0.00086
	(!B * !C_N * D_N * X)	-0.00111	-0.00118	-0.00117
	(!B * !C_N * !D_N * X)	0.00085	0.00086	0.00085
	(!B * !C_N * !D_N * X)	-0.00111	-0.00117	-0.00117

sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	0.00121	0.00118	0.00117
	(B * C_N * D_N * X)	-0.00217	-0.00228	-0.00227
	(B * !D_N * X)	0.00120	0.00118	0.00117
	(B * !D_N * X)	-0.00218	-0.00228	-0.00227
	(B * !C_N * D_N * X)	0.00117	0.00118	0.00117
	(B * !C_N * D_N * X)	-0.00220	-0.00228	-0.00227
	(!B * C_N * !D_N * X)	0.00131	0.00125	0.00121
	(!B * C_N * !D_N * X)	-0.00203	-0.00215	-0.00215
	(!B * !C_N * D_N * X)	0.00118	0.00119	0.00117
	(!B * !C_N * D_N * X)	-0.00207	-0.00220	-0.00219
	(!B * !C_N * !D_N * X)	0.00118	0.00119	0.00117
	(!B * !C_N * !D_N * X)	-0.00206	-0.00220	-0.00218

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)**	-0.00089	-0.00090	-0.00090
	(B * C_N * D_N * X)	0.00111	0.00112	0.00111
	(B * !D_N * X)	-0.00089	-0.00090	-0.00090
	(B * !D_N * X)	0.00111	0.00112	0.00111
	(B * !C_N * D_N * X)	-0.00090	-0.00090	-0.00090
	(B * !C_N * D_N * X)	0.00110	0.00112	0.00111
	(!B * C_N * !D_N * X)	-0.00094	-0.00093	-0.00092
	(!B * C_N * !D_N * X)	0.00106	0.00105	0.00106
	(!B * !C_N * D_N * X)	-0.00090	-0.00090	-0.00090
	(!B * !C_N * D_N * X)	0.00108	0.00108	0.00107
	(!B * !C_N * !D_N * X)	-0.00090	-0.00090	-0.00090
	(!B * !C_N * !D_N * X)	0.00108	0.00108	0.00107

sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	-0.00095	-0.00096	-0.00095
	(B * C_N * D_N * X)	0.00110	0.00111	0.00110
	(B * !D_N * X)	-0.00095	-0.00096	-0.00095
	(B * !D_N * X)	0.00110	0.00111	0.00110
	(B * !C_N * D_N * X)	-0.00085	-0.00086	-0.00085
	(B * !C_N * D_N * X)	0.00120	0.00122	0.00121
	(!B * C_N * !D_N * X)	-0.00099	-0.00099	-0.00097
	(!B * C_N * !D_N * X)	0.00105	0.00105	0.00105
	(!B * !C_N * D_N * X)	-0.00085	-0.00085	-0.00085
	(!B * !C_N * D_N * X)	0.00117	0.00118	0.00117
	(!B * !C_N * !D_N * X)	-0.00085	-0.00085	-0.00085
	(!B * !C_N * !D_N * X)	0.00117	0.00117	0.00117
sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	-0.00117	-0.00117	-0.00117
	(B * C_N * D_N * X)	0.00228	0.00229	0.00227
	(B * !D_N * X)	-0.00117	-0.00118	-0.00117
	(B * !D_N * X)	0.00227	0.00228	0.00227
	(B * !C_N * D_N * X)	-0.00117	-0.00117	-0.00117
	(B * !C_N * D_N * X)	0.00227	0.00229	0.00227
	(!B * C_N * !D_N * X)	-0.00125	-0.00125	-0.00121
	(!B * C_N * !D_N * X)	0.00215	0.00215	0.00215
	(!B * !C_N * D_N * X)	-0.00117	-0.00118	-0.00117
	(!B * !C_N * D_N * X)	0.00219	0.00220	0.00219
	(!B * !C_N * !D_N * X)	-0.00117	-0.00118	-0.00117
	(!B * !C_N * !D_N * X)	0.00219	0.00220	0.00218

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)**	0.00097	0.00097	0.00097
	(A * C_N * D_N * X)	-0.00071	-0.00072	-0.00072
	(A * C_N * !D_N * X)	0.00108	0.00112	0.00112
	(A * C_N * !D_N * X)	-0.00082	-0.00082	-0.00082
	(A * !C_N * D_N * X)	0.00079	0.00080	0.00078
	(A * !C_N * D_N * X)	-0.00102	-0.00103	-0.00103
	(A * !C_N * !D_N * X)	0.00077	0.00078	0.00078
	(A * !C_N * !D_N * X)	-0.00105	-0.00106	-0.00105
	(!A * C_N * !D_N * X)	0.00110	0.00101	0.00098
	(!A * C_N * !D_N * X)	-0.00103	-0.00111	-0.00110
	(!A * !C_N * D_N * X)	0.00083	0.00078	0.00078
	(!A * !C_N * D_N * X)	-0.00130	-0.00135	-0.00134
	(!A * !C_N * !D_N * X)	0.00078	0.00078	0.00078
	(!A * !C_N * !D_N * X)	-0.00134	-0.00135	-0.00134
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	0.00119	0.00119	0.00118
	(A * C_N * D_N * X)	-0.00065	-0.00065	-0.00065
	(A * C_N * !D_N * X)	0.00131	0.00135	0.00133
	(A * C_N * !D_N * X)	-0.00075	-0.00076	-0.00075
	(A * !C_N * D_N * X)	0.00107	0.00108	0.00106
	(A * !C_N * D_N * X)	-0.00089	-0.00090	-0.00089
	(A * !C_N * !D_N * X)	0.00106	0.00106	0.00105
	(A * !C_N * !D_N * X)	-0.00092	-0.00093	-0.00092
	(!A * C_N * !D_N * X)	0.00131	0.00123	0.00119
	(!A * C_N * !D_N * X)	-0.00096	-0.00104	-0.00103
	(!A * !C_N * D_N * X)	0.00110	0.00107	0.00106
	(!A * !C_N * D_N * X)	-0.00115	-0.00121	-0.00121
	(!A * !C_N * !D_N * X)	0.00105	0.00107	0.00105
	(!A * !C_N * !D_N * X)	-0.00119	-0.00121	-0.00121

sky130_fd_sc_hs__or4bb_4	**(A * C_N * D_N * X)**	0.00120	0.00120	0.00120
	(A * C_N * D_N * X)	-0.00138	-0.00139	-0.00138
	(A * C_N * !D_N * X)	0.00139	0.00148	0.00147
	(A * C_N * !D_N * X)	-0.00161	-0.00163	-0.00162
	(A * !C_N * D_N * X)	0.00118	0.00117	0.00116
	(A * !C_N * D_N * X)	-0.00169	-0.00170	-0.00169
	(A * !C_N * !D_N * X)	0.00116	0.00115	0.00115
	(A * !C_N * !D_N * X)	-0.00174	-0.00175	-0.00174
	(!A * C_N * !D_N * X)	0.00142	0.00127	0.00121
	(!A * C_N * !D_N * X)	-0.00203	-0.00220	-0.00217
	(!A * !C_N * D_N * X)	0.00119	0.00115	0.00114
	(!A * !C_N * D_N * X)	-0.00222	-0.00232	-0.00232
	(!A * !C_N * !D_N * X)	0.00114	0.00115	0.00114
	(!A * !C_N * !D_N * X)	-0.00227	-0.00232	-0.00231

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)**	-0.00094	-0.00094	-0.00095
	(A * C_N * D_N * X)	0.00075	0.00074	0.00075
	(A * C_N * !D_N * X)	-0.00105	-0.00106	-0.00105
	(A * C_N * !D_N * X)	0.00082	0.00082	0.00082
	(A * !C_N * D_N * X)	-0.00077	-0.00078	-0.00077
	(A * !C_N * D_N * X)	0.00102	0.00103	0.00103
	(A * !C_N * !D_N * X)	-0.00077	-0.00078	-0.00077
	(A * !C_N * !D_N * X)	0.00105	0.00106	0.00105
	(!A * C_N * !D_N * X)	-0.00102	-0.00101	-0.00098
	(!A * C_N * !D_N * X)	0.00111	0.00111	0.00110
	(!A * !C_N * D_N * X)	-0.00078	-0.00078	-0.00077
	(!A * !C_N * D_N * X)	0.00135	0.00135	0.00135
	(!A * !C_N * !D_N * X)	-0.00078	-0.00078	-0.00077
	(!A * !C_N * !D_N * X)	0.00135	0.00135	0.00134
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	-0.00117	-0.00117	-0.00117
	(A * C_N * D_N * X)	0.00067	0.00067	0.00067
	(A * C_N * !D_N * X)	-0.00127	-0.00127	-0.00127
	(A * C_N * !D_N * X)	0.00075	0.00076	0.00075
	(A * !C_N * D_N * X)	-0.00105	-0.00106	-0.00105
	(A * !C_N * D_N * X)	0.00089	0.00090	0.00089
	(A * !C_N * !D_N * X)	-0.00106	-0.00106	-0.00105
	(A * !C_N * !D_N * X)	0.00092	0.00093	0.00092
	(!A * C_N * !D_N * X)	-0.00123	-0.00123	-0.00119
	(!A * C_N * !D_N * X)	0.00103	0.00104	0.00103
	(!A * !C_N * D_N * X)	-0.00105	-0.00105	-0.00105
	(!A * !C_N * D_N * X)	0.00120	0.00122	0.00121
	(!A * !C_N * !D_N * X)	-0.00105	-0.00106	-0.00105
	(!A * !C_N * !D_N * X)	0.00120	0.00121	0.00121

sky130_fd_sc_hs__or4bb_4	(A * C_N * D_N * X)	-0.00113	-0.00113	-0.00114
	(A * C_N * D_N * X)	0.00146	0.00147	0.00146
	(A * C_N * !D_N * X)	-0.00136	-0.00137	-0.00136
	(A * C_N * !D_N * X)	0.00161	0.00163	0.00162
	(A * !C_N * D_N * X)	-0.00114	-0.00115	-0.00114
	(A * !C_N * D_N * X)	0.00169	0.00170	0.00169
	(A * !C_N * !D_N * X)	-0.00114	-0.00115	-0.00114
	(A * !C_N * !D_N * X)	0.00174	0.00175	0.00174
	(!A * C_N * !D_N * X)	-0.00129	-0.00127	-0.00121
	(!A * C_N * !D_N * X)	0.00216	0.00220	0.00217
	(!A * !C_N * D_N * X)	-0.00113	-0.00114	-0.00113
	(!A * !C_N * D_N * X)	0.00231	0.00232	0.00232
	(!A * !C_N * !D_N * X)	-0.00113	-0.00114	-0.00114
	(!A * !C_N * !D_N * X)	0.00230	0.00232	0.00231

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * X)	0.00333	0.00316	0.00690
	(B * X)	0.00077	0.00059	0.00435
	(A * !B * X) + (!A * !B * !D_N * X)	0.00339	0.00322	0.00693
	(A * !B * X) + (!A * !B * !D_N * X)	0.00079	0.00061	0.00434
sky130_fd_sc_hs__or4bb_2	(B * X)	0.00304	0.00288	0.00675
	(B * X)	0.00057	0.00041	0.00429
	(A * !B * X) + (!A * !B * !D_N * X)	0.00310	0.00294	0.00678
	(A * !B * X) + (!A * !B * !D_N * X)	0.00058	0.00042	0.00427
sky130_fd_sc_hs__or4bb_4	(B * X)	0.00370	0.00354	0.00711
	(B * X)	0.00108	0.00092	0.00451
	(A * !B * X) + (!A * !B * !D_N * X)	0.00386	0.00369	0.00721
	(A * !B * X) + (!A * !B * !D_N * X)	0.00114	0.00097	0.00451

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * X)	0.00084	0.00102	0.00537
	(B * X)	0.00339	0.00358	0.00792
	(A * !B * X) + (!A * !B * !D_N * X)	0.00085	0.00103	0.00537
	(A * !B * X) + (!A * !B * !D_N * X)	0.00340	0.00359	0.00792
sky130_fd_sc_hs__or4bb_2	(B * X)	0.00074	0.00094	0.00537
	(B * X)	0.00320	0.00341	0.00784
	(A * !B * X) + (!A * !B * !D_N * X)	0.00075	0.00095	0.00537
	(A * !B * X) + (!A * !B * !D_N * X)	0.00321	0.00341	0.00784
sky130_fd_sc_hs__or4bb_4	(B * X)	0.00137	0.00152	0.00547
	(B * X)	0.00398	0.00412	0.00807
	(A * !B * X) + (!A * !B * !D_N * X)	0.00138	0.00152	0.00547
	(A * !B * X) + (!A * !B * !D_N * X)	0.00399	0.00414	0.00808

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)	0.00293	0.00277	0.00660
	(B * C_N * X)	0.00062	0.00046	0.00430
	(A * !B * C_N * X)	0.00301	0.00285	0.00666
	(A * !B * C_N * X)	0.00067	0.00051	0.00434
	(!C_N * X)	0.00299	0.00283	0.00668
	(!C_N * X)	0.00069	0.00053	0.00438
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00297	0.00281	0.00658
	(B * C_N * X)	0.00068	0.00051	0.00430
	(A * !B * C_N * X)	0.00305	0.00288	0.00663
	(A * !B * C_N * X)	0.00073	0.00056	0.00433
	(!C_N * X)	0.00304	0.00287	0.00666
	(!C_N * X)	0.00076	0.00059	0.00439
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00426	0.00408	0.00745
	(B * C_N * X)	0.00164	0.00146	0.00484
	(A * !B * C_N * X)	0.00447	0.00428	0.00759
	(A * !B * C_N * X)	0.00178	0.00159	0.00494
	(!C_N * X)	0.00449	0.00431	0.00770
	(!C_N * X)	0.00189	0.00171	0.00512

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)	0.00084	0.00107	0.00545
	(B * C_N * X)	0.00314	0.00337	0.00775
	(A * !B * C_N * X)	0.00084	0.00107	0.00546
	(A * !B * C_N * X)	0.00314	0.00337	0.00775
	(!C_N * X)	0.00074	0.00097	0.00535
	(!C_N * X)	0.00303	0.00326	0.00765
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00101	0.00121	0.00559
	(B * C_N * X)	0.00329	0.00349	0.00787
	(A * !B * C_N * X)	0.00101	0.00121	0.00559
	(A * !B * C_N * X)	0.00329	0.00349	0.00787
	(!C_N * X)	0.00090	0.00110	0.00548
	(!C_N * X)	0.00318	0.00338	0.00776
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00165	0.00181	0.00566
	(B * C_N * X)	0.00425	0.00441	0.00825
	(A * !B * C_N * X)	0.00165	0.00181	0.00566
	(A * !B * C_N * X)	0.00425	0.00441	0.00825
	(!C_N * X)	0.00134	0.00150	0.00535
	(!C_N * X)	0.00394	0.00410	0.00794

SKY130_FD_SC_HS__OR4Bx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT				OUTPUT
A	B	C	D_N	X
0	0	x	0	1
0	0	0	1	0
0	x	1	1	1
x	1	x	x	1
1	x	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__or4b_1	14.38560
sky130_fd_sc_hs__or4b_2	14.38560
sky130_fd_sc_hs__or4b_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D_N	X
sky130_fd_sc_hs__or4b_1	0.00247	0.00236	0.00245	0.00232	0.76100
sky130_fd_sc_hs__or4b_2	0.00255	0.00246	0.00247	0.00220	1.36985
sky130_fd_sc_hs__or4b_4	0.00375	0.00427	0.00429	0.00240	2.95105

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4b_1	0.00000	0.07587	0.15412
sky130_fd_sc_hs__or4b_2	0.00000	0.08214	0.19123
sky130_fd_sc_hs__or4b_4	0.00000	0.07326	0.17507

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)	0.09789	0.81779	7.33210
	B->X (RR)	0.09730	0.80872	7.26961
	C->X (RR)	0.09408	0.79333	7.19152
	D_N->X (FR)	0.17106	0.98493	8.48048
sky130_fd_sc_hs__or4b_2	A->X (RR)	0.09047	0.69796	7.13891
	B->X (RR)	0.09057	0.69245	7.08906
	C->X (RR)	0.08809	0.67936	7.02696
	D_N->X (FR)	0.18113	0.89953	8.45047
sky130_fd_sc_hs__or4b_4	A->X (RR)	0.12276	0.69855	7.76665
	B->X (RR)	0.12331	0.68709	7.70215
	C->X (RR)	0.11493	0.66382	7.60015
	D_N->X (FR)	0.21082	0.87093	8.94468

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4b_1	A->X (FF)	0.47181	1.08259	5.30300
	B->X (FF)	0.44250	1.05352	5.35112
	C->X (FF)	0.40221	1.01685	5.35672
	D_N->X (RF)	0.35037	0.75133	2.77826
sky130_fd_sc_hs__or4b_2	A->X (FF)	0.57920	1.17853	5.43355
	B->X (FF)	0.55163	1.15252	5.53960
	C->X (FF)	0.50189	1.11084	5.57484
	D_N->X (RF)	0.46867	0.85626	2.78771
sky130_fd_sc_hs__or4b_4	A->X (FF)	0.56834	1.14639	5.64070
	B->X (FF)	0.55051	1.12226	5.68008
	C->X (FF)	0.48176	1.05666	5.65738
	D_N->X (RF)	0.43012	0.79064	2.90935

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.00780	0.00762	0.00855
	A	0.00394	0.00377	0.00474
	B	0.00668	0.00666	0.00786
	B	0.00347	0.00344	0.00470
	C	0.00576	0.00572	0.00701
	C	0.00288	0.00285	0.00420
	D_N	0.00511	0.00541	0.00981
	D_N	0.00680	0.00710	0.01153
sky130_fd_sc_hs__or4b_2	A	0.00971	0.00974	0.01094
	A	0.00580	0.00584	0.00713
	B	0.00861	0.00882	0.01029
	B	0.00532	0.00554	0.00709
	C	0.00763	0.00784	0.00939
	C	0.00468	0.00491	0.00645
	D_N	0.00708	0.00762	0.01177
	D_N	0.00887	0.00941	0.01360
sky130_fd_sc_hs__or4b_4	A	0.01788	0.01823	0.02058
	A	0.01125	0.01164	0.01436
	B	0.01607	0.01639	0.01880
	B	0.01018	0.01051	0.01329
	C	0.01355	0.01396	0.01658
	C	0.00853	0.00897	0.01197
	D_N	0.01224	0.01324	0.01712
	D_N	0.01387	0.01486	0.01893

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.00370	0.00349	0.00438
	A	0.00762	0.00756	0.00791
	B	0.00371	0.00368	0.00486
	B	0.00696	0.00697	0.00762
	C	0.00363	0.00328	0.00516
	C	0.00650	0.00651	0.00753
	D_N	0.00749	0.00746	0.01134
	D_N	0.00581	0.00578	0.00966
sky130_fd_sc_hs__or4b_2	A	0.00511	0.00505	0.00597
	A	0.00909	0.00904	0.00940
	B	0.00509	0.00510	0.00678
	B	0.00841	0.00847	0.00913
	C	0.00494	0.00489	0.00666
	C	0.00788	0.00797	0.00902
	D_N	0.00951	0.00933	0.01295
	D_N	0.00771	0.00759	0.01101
sky130_fd_sc_hs__or4b_4	A	0.01095	0.01150	0.01240
	A	0.01775	0.01833	0.01904
	B	0.01083	0.01132	0.01235
	B	0.01684	0.01734	0.01834
	C	0.01047	0.01078	0.01279
	C	0.01549	0.01596	0.01779
	D_N	0.01597	0.01632	0.02038
	D_N	0.01433	0.01474	0.01848

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)**	0.00094	0.00094	0.00094
	(B * C * D_N * X)	-0.00107	-0.00110	-0.00110
	(B * !D_N * X)	0.00094	0.00094	0.00094
	(B * !D_N * X)	-0.00107	-0.00110	-0.00110
	(B * !C * D_N * X)	0.00094	0.00094	0.00094
	(B * !C * D_N * X)	-0.00105	-0.00110	-0.00110
	(!B * C * D_N * X)	0.00094	0.00095	0.00094
	(!B * C * D_N * X)	-0.00099	-0.00106	-0.00105
	(!B * C * !D_N * X)	0.00094	0.00095	0.00094
	(!B * C * !D_N * X)	-0.00099	-0.00106	-0.00105
	(!B * !C * !D_N * X)	0.00094	0.00095	0.00094
	(!B * !C * !D_N * X)	-0.00098	-0.00104	-0.00104
sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	0.00103	0.00103	0.00103
	(B * C * D_N * X)	-0.00108	-0.00111	-0.00111
	(B * !D_N * X)	0.00099	0.00100	0.00099
	(B * !D_N * X)	-0.00112	-0.00115	-0.00115
	(B * !C * D_N * X)	0.00103	0.00103	0.00103
	(B * !C * D_N * X)	-0.00107	-0.00111	-0.00111
	(!B * C * D_N * X)	0.00103	0.00104	0.00103
	(!B * C * D_N * X)	-0.00100	-0.00107	-0.00107
	(!B * C * !D_N * X)	0.00099	0.00100	0.00099
	(!B * C * !D_N * X)	-0.00104	-0.00111	-0.00110
	(!B * !C * !D_N * X)	0.00099	0.00100	0.00099
	(!B * !C * !D_N * X)	-0.00103	-0.00109	-0.00109

sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	0.00102	0.00102	0.00101
	(B * C * D_N * X)	-0.00219	-0.00226	-0.00225
	(B * !D_N * X)	0.00102	0.00101	0.00101
	(B * !D_N * X)	-0.00220	-0.00226	-0.00225
	(B * !C * D_N * X)	0.00103	0.00102	0.00101
	(B * !C * D_N * X)	-0.00215	-0.00225	-0.00225
	(!B * C * D_N * X)	0.00103	0.00102	0.00101
	(!B * C * D_N * X)	-0.00202	-0.00216	-0.00215
	(!B * C * !D_N * X)	0.00101	0.00102	0.00101
	(!B * C * !D_N * X)	-0.00203	-0.00217	-0.00216
	(!B * !C * !D_N * X)	0.00102	0.00102	0.00101
	(!B * !C * !D_N * X)	-0.00201	-0.00214	-0.00213

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)**	-0.00093	-0.00094	-0.00094
	(B * C * D_N * X)	0.00109	0.00111	0.00110
	(B * !D_N * X)	-0.00093	-0.00094	-0.00094
	(B * !D_N * X)	0.00109	0.00111	0.00110
	(B * !C * D_N * X)	-0.00093	-0.00094	-0.00094
	(B * !C * D_N * X)	0.00109	0.00111	0.00110
	(!B * C * D_N * X)	-0.00094	-0.00094	-0.00094
	(!B * C * D_N * X)	0.00106	0.00106	0.00105
	(!B * C * !D_N * X)	-0.00094	-0.00094	-0.00094
	(!B * C * !D_N * X)	0.00106	0.00106	0.00105
	(!B * !C * !D_N * X)	-0.00094	-0.00094	-0.00094
	(!B * !C * !D_N * X)	0.00104	0.00104	0.00104

sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	-0.00102	-0.00103	-0.00102
	(B * C * D_N * X)	0.00110	0.00112	0.00111
	(B * !D_N * X)	-0.00098	-0.00099	-0.00099
	(B * !D_N * X)	0.00114	0.00115	0.00115
	(B * !C * D_N * X)	-0.00102	-0.00103	-0.00102
	(B * !C * D_N * X)	0.00111	0.00112	0.00111
	(!B * C * D_N * X)	-0.00102	-0.00103	-0.00102
	(!B * C * D_N * X)	0.00107	0.00107	0.00107
	(!B * C * !D_N * X)	-0.00099	-0.00099	-0.00099
	(!B * C * !D_N * X)	0.00110	0.00111	0.00110
	(!B * !C * !D_N * X)	-0.00099	-0.00099	-0.00099
	(!B * !C * !D_N * X)	0.00109	0.00109	0.00109
sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	-0.00101	-0.00101	-0.00101
	(B * C * D_N * X)	0.00225	0.00227	0.00225
	(B * !D_N * X)	-0.00101	-0.00101	-0.00101
	(B * !D_N * X)	0.00225	0.00227	0.00225
	(B * !C * D_N * X)	-0.00101	-0.00101	-0.00101
	(B * !C * D_N * X)	0.00225	0.00226	0.00225
	(!B * C * D_N * X)	-0.00101	-0.00102	-0.00101
	(!B * C * D_N * X)	0.00213	0.00216	0.00215
	(!B * C * !D_N * X)	-0.00100	-0.00101	-0.00101
	(!B * C * !D_N * X)	0.00214	0.00217	0.00216
	(!B * !C * !D_N * X)	-0.00100	-0.00101	-0.00100
	(!B * !C * !D_N * X)	0.00212	0.00214	0.00213

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)**	0.00084	0.00084	0.00083
	(A * C * D_N * X)	-0.00075	-0.00075	-0.00075
	(A * C * !D_N * X)	0.00082	0.00082	0.00082
	(A * C * !D_N * X)	-0.00077	-0.00078	-0.00077
	(A * !C * D_N * X)	0.00082	0.00082	0.00082
	(A * !C * D_N * X)	-0.00064	-0.00064	-0.00064
	(A * !C * !D_N * X)	0.00082	0.00083	0.00082
	(A * !C * !D_N * X)	-0.00074	-0.00074	-0.00074
	(!A * C * D_N * X)	0.00087	0.00082	0.00082
	(!A * C * D_N * X)	-0.00100	-0.00106	-0.00107
	(!A * C * !D_N * X)	0.00082	0.00082	0.00082
	(!A * C * !D_N * X)	-0.00105	-0.00106	-0.00107
	(!A * !C * !D_N * X)	0.00084	0.00082	0.00082
	(!A * !C * !D_N * X)	-0.00094	-0.00102	-0.00102
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	0.00094	0.00094	0.00093
	(A * C * D_N * X)	-0.00075	-0.00076	-0.00076
	(A * C * !D_N * X)	0.00089	0.00089	0.00089
	(A * C * !D_N * X)	-0.00081	-0.00082	-0.00081
	(A * !C * D_N * X)	0.00093	0.00092	0.00092
	(A * !C * D_N * X)	-0.00066	-0.00065	-0.00065
	(A * !C * !D_N * X)	0.00089	0.00090	0.00089
	(A * !C * !D_N * X)	-0.00078	-0.00079	-0.00078
	(!A * C * D_N * X)	0.00096	0.00093	0.00092
	(!A * C * D_N * X)	-0.00102	-0.00109	-0.00108
	(!A * C * !D_N * X)	0.00089	0.00090	0.00089
	(!A * C * !D_N * X)	-0.00109	-0.00112	-0.00111
	(!A * !C * !D_N * X)	0.00091	0.00090	0.00089
	(!A * !C * !D_N * X)	-0.00098	-0.00107	-0.00106

sky130_fd_sc_hs__or4b_4	**(A * C * D_N * X)**	0.00132	0.00132	0.00131
	(A * C * D_N * X)	-0.00160	-0.00161	-0.00160
	(A * C * !D_N * X)	0.00127	0.00127	0.00127
	(A * C * !D_N * X)	-0.00170	-0.00170	-0.00169
	(A * !C * D_N * X)	0.00129	0.00128	0.00128
	(A * !C * D_N * X)	-0.00140	-0.00139	-0.00138
	(A * !C * !D_N * X)	0.00126	0.00128	0.00126
	(A * !C * !D_N * X)	-0.00161	-0.00161	-0.00161
	(!A * C * D_N * X)	0.00135	0.00128	0.00127
	(!A * C * D_N * X)	-0.00214	-0.00226	-0.00225
	(!A * C * !D_N * X)	0.00127	0.00127	0.00126
	(!A * C * !D_N * X)	-0.00221	-0.00227	-0.00226
	(!A * !C * !D_N * X)	0.00130	0.00127	0.00126
	(!A * !C * !D_N * X)	-0.00201	-0.00217	-0.00217

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)**	-0.00082	-0.00082	-0.00082
	(A * C * D_N * X)	0.00075	0.00075	0.00075
	(A * C * !D_N * X)	-0.00082	-0.00082	-0.00082
	(A * C * !D_N * X)	0.00077	0.00078	0.00077
	(A * !C * D_N * X)	-0.00079	-0.00079	-0.00079
	(A * !C * D_N * X)	0.00067	0.00067	0.00067
	(A * !C * !D_N * X)	-0.00082	-0.00082	-0.00082
	(A * !C * !D_N * X)	0.00074	0.00074	0.00074
	(!A * C * D_N * X)	-0.00082	-0.00081	-0.00081
	(!A * C * D_N * X)	0.00107	0.00106	0.00107
	(!A * C * !D_N * X)	-0.00082	-0.00081	-0.00081
	(!A * C * !D_N * X)	0.00107	0.00106	0.00107
	(!A * !C * !D_N * X)	-0.00081	-0.00082	-0.00081
	(!A * !C * !D_N * X)	0.00102	0.00102	0.00102
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	-0.00092	-0.00092	-0.00092
	(A * C * D_N * X)	0.00075	0.00076	0.00076
	(A * C * !D_N * X)	-0.00088	-0.00089	-0.00089
	(A * C * !D_N * X)	0.00081	0.00082	0.00081
	(A * !C * D_N * X)	-0.00091	-0.00091	-0.00091
	(A * !C * D_N * X)	0.00067	0.00066	0.00067
	(A * !C * !D_N * X)	-0.00088	-0.00089	-0.00089
	(A * !C * !D_N * X)	0.00078	0.00079	0.00078
	(!A * C * D_N * X)	-0.00092	-0.00092	-0.00091
	(!A * C * D_N * X)	0.00109	0.00109	0.00108
	(!A * C * !D_N * X)	-0.00089	-0.00089	-0.00089
	(!A * C * !D_N * X)	0.00111	0.00112	0.00111
	(!A * !C * !D_N * X)	-0.00089	-0.00089	-0.00088
	(!A * !C * !D_N * X)	0.00106	0.00107	0.00106

sky130_fd_sc_hs__or4b_4	(A * C * D_N * X)	-0.00129	-0.00129	-0.00129
	(A * C * D_N * X)	0.00160	0.00161	0.00160
	(A * C * !D_N * X)	-0.00127	-0.00127	-0.00126
	(A * C * !D_N * X)	0.00170	0.00170	0.00169
	(A * !C * D_N * X)	-0.00126	-0.00126	-0.00127
	(A * !C * D_N * X)	0.00140	0.00141	0.00140
	(A * !C * !D_N * X)	-0.00126	-0.00126	-0.00126
	(A * !C * !D_N * X)	0.00161	0.00161	0.00161
	(!A * C * D_N * X)	-0.00127	-0.00128	-0.00127
	(!A * C * D_N * X)	0.00225	0.00226	0.00225
	(!A * C * !D_N * X)	-0.00126	-0.00127	-0.00126
	(!A * C * !D_N * X)	0.00226	0.00227	0.00226
	(!A * !C * !D_N * X)	-0.00126	-0.00126	-0.00125
	(!A * !C * !D_N * X)	0.00217	0.00217	0.00217

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)	0.00099	0.00098	0.00098
	(B * D_N * X)	-0.00064	-0.00063	-0.00063
	(B * !D_N * X)	0.00094	0.00094	0.00091
	(B * !D_N * X)	-0.00081	-0.00081	-0.00081
	(A * !B * D_N * X)	0.00099	0.00098	0.00098
	(A * !B * D_N * X)	-0.00063	-0.00063	-0.00063
	(A * !B * !D_N * X)	0.00098	0.00092	0.00090
	(A * !B * !D_N * X)	-0.00083	-0.00084	-0.00084
	(!A * !B * !D_N * X)	0.00108	0.00091	0.00090
	(!A * !B * !D_N * X)	-0.00096	-0.00114	-0.00115

sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	0.00108	0.00108	0.00108
	(B * D_N * X)	-0.00065	-0.00065	-0.00065
	(B * !D_N * X)	0.00091	0.00092	0.00089
	(B * !D_N * X)	-0.00094	-0.00096	-0.00095
	(A * !B * D_N * X)	0.00108	0.00108	0.00108
	(A * !B * D_N * X)	-0.00064	-0.00065	-0.00065
	(A * !B * !D_N * X)	0.00094	0.00090	0.00088
	(A * !B * !D_N * X)	-0.00097	-0.00098	-0.00097
	(!A * !B * !D_N * X)	0.00106	0.00090	0.00088
	(!A * !B * !D_N * X)	-0.00111	-0.00127	-0.00128
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	0.00159	0.00159	0.00159
	(B * D_N * X)	-0.00133	-0.00134	-0.00134
	(B * !D_N * X)	0.00135	0.00133	0.00129
	(B * !D_N * X)	-0.00189	-0.00189	-0.00188
	(A * !B * D_N * X)	0.00159	0.00160	0.00159
	(A * !B * D_N * X)	-0.00133	-0.00133	-0.00134
	(A * !B * !D_N * X)	0.00140	0.00131	0.00129
	(A * !B * !D_N * X)	-0.00189	-0.00192	-0.00190
	(!A * !B * !D_N * X)	0.00161	0.00131	0.00128
	(!A * !B * !D_N * X)	-0.00217	-0.00251	-0.00253

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)**	-0.00096	-0.00096	-0.00096
	(B * D_N * X)	0.00065	0.00065	0.00066
	(B * !D_N * X)	-0.00090	-0.00090	-0.00090
	(B * !D_N * X)	0.00081	0.00081	0.00081
	(A * !B * D_N * X)	-0.00091	-0.00091	-0.00096
	(A * !B * D_N * X)	0.00067	0.00067	0.00065
	(A * !B * !D_N * X)	-0.00089	-0.00090	-0.00090
	(A * !B * !D_N * X)	0.00083	0.00084	0.00084
	(!A * !B * !D_N * X)	-0.00089	-0.00089	-0.00088
	(!A * !B * !D_N * X)	0.00115	0.00116	0.00116
sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	-0.00106	-0.00106	-0.00106
	(B * D_N * X)	0.00067	0.00067	0.00068
	(B * !D_N * X)	-0.00087	-0.00088	-0.00088
	(B * !D_N * X)	0.00094	0.00096	0.00095
	(A * !B * D_N * X)	-0.00101	-0.00102	-0.00106
	(A * !B * D_N * X)	0.00069	0.00069	0.00067
	(A * !B * !D_N * X)	-0.00088	-0.00088	-0.00088
	(A * !B * !D_N * X)	0.00097	0.00098	0.00097
	(!A * !B * !D_N * X)	-0.00088	-0.00087	-0.00087
	(!A * !B * !D_N * X)	0.00129	0.00128	0.00129
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	-0.00154	-0.00154	-0.00156
	(B * D_N * X)	0.00139	0.00138	0.00139
	(B * !D_N * X)	-0.00129	-0.00129	-0.00128
	(B * !D_N * X)	0.00189	0.00189	0.00188
	(A * !B * D_N * X)	-0.00141	-0.00142	-0.00154
	(A * !B * D_N * X)	0.00144	0.00143	0.00138
	(A * !B * !D_N * X)	-0.00127	-0.00129	-0.00128
	(A * !B * !D_N * X)	0.00189	0.00192	0.00190
	(!A * !B * !D_N * X)	-0.00128	-0.00128	-0.00126
	(!A * !B * !D_N * X)	0.00254	0.00255	0.00254

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00300	0.00284	0.00671
	(C * X)	0.00053	0.00035	0.00424
	(B * !C * X)	0.00307	0.00289	0.00676
	(B * !C * X)	0.00056	0.00038	0.00426
	(A * !B * !C * X)	0.00315	0.00297	0.00682
	(A * !B * !C * X)	0.00061	0.00043	0.00429
sky130_fd_sc_hs__or4b_2	(C * X)	0.00337	0.00319	0.00690
	(C * X)	0.00083	0.00066	0.00437
	(B * !C * X)	0.00343	0.00326	0.00694
	(B * !C * X)	0.00087	0.00068	0.00439
	(A * !B * !C * X)	0.00351	0.00334	0.00700
	(A * !B * !C * X)	0.00091	0.00073	0.00442
sky130_fd_sc_hs__or4b_4	(C * X)	0.00402	0.00386	0.00737
	(C * X)	0.00125	0.00108	0.00461
	(B * !C * X)	0.00420	0.00404	0.00750
	(B * !C * X)	0.00134	0.00117	0.00466
	(A * !B * !C * X)	0.00436	0.00420	0.00762
	(A * !B * !C * X)	0.00143	0.00126	0.00472

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00072	0.00089	0.00535
	(C * X)	0.00319	0.00337	0.00782
	(B * !C * X)	0.00072	0.00089	0.00535
	(B * !C * X)	0.00319	0.00337	0.00783
	(A * !B * !C * X)	0.00072	0.00089	0.00535
	(A * !B * !C * X)	0.00319	0.00337	0.00783
sky130_fd_sc_hs__or4b_2	(C * X)	0.00085	0.00105	0.00539
	(C * X)	0.00339	0.00359	0.00792
	(B * !C * X)	0.00085	0.00105	0.00539
	(B * !C * X)	0.00339	0.00359	0.00793
	(A * !B * !C * X)	0.00085	0.00105	0.00539
	(A * !B * !C * X)	0.00339	0.00359	0.00793
sky130_fd_sc_hs__or4b_4	(C * X)	0.00130	0.00146	0.00539
	(C * X)	0.00406	0.00422	0.00816
	(B * !C * X)	0.00130	0.00145	0.00539
	(B * !C * X)	0.00407	0.00423	0.00816
	(A * !B * !C * X)	0.00130	0.00145	0.00539
	(A * !B * !C * X)	0.00407	0.00423	0.00817

SKY130_FD_SC_HS__OR4x

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT				OUTPUT
A	B	C	D	X
0	0	0	0	0
0	0	x	1	1
0	x	1	x	1
x	1	x	x	1
1	x	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__or4_1	11.18880
sky130_fd_sc_hs__or4_2	12.78720
sky130_fd_sc_hs__or4_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D	X
sky130_fd_sc_hs__or4_1	0.00246	0.00233	0.00239	0.00232	0.75806
sky130_fd_sc_hs__or4_2	0.00255	0.00252	0.00263	0.00261	1.53160
sky130_fd_sc_hs__or4_4	0.00370	0.00430	0.00436	0.00410	2.91498

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__or4_1	0.00000	0.01471	0.06470
sky130_fd_sc_hs__or4_2	0.00000	0.02098	0.07136
sky130_fd_sc_hs__or4_4	0.00000	0.04020	0.13782

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)	0.09428	0.81349	7.31741
	B->X (RR)	0.09447	0.80402	7.24735
	C->X (RR)	0.09133	0.78617	7.17024
	D->X (RR)	0.08476	0.76139	7.09998
sky130_fd_sc_hs__or4_2	A->X (RR)	0.08816	0.68817	7.26527
	B->X (RR)	0.08803	0.67856	7.21212
	C->X (RR)	0.08608	0.66639	7.15257
	D->X (RR)	0.08142	0.64782	7.10078
sky130_fd_sc_hs__or4_4	A->X (RR)	0.11284	0.67753	7.65832
	B->X (RR)	0.11727	0.67400	7.60662
	C->X (RR)	0.10873	0.64678	7.49587
	D->X (RR)	0.10086	0.62269	7.41214

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4_1	A->X (FF)	0.45391	1.05878	5.20669
	B->X (FF)	0.42576	1.03012	5.24541
	C->X (FF)	0.37802	0.98669	5.23814
	D->X (FF)	0.30008	0.89097	4.88413
sky130_fd_sc_hs__or4_2	A->X (FF)	0.55830	1.16308	5.62821
	B->X (FF)	0.53034	1.13489	5.72377
	C->X (FF)	0.48919	1.10216	5.77634
	D->X (FF)	0.41603	0.99964	5.43050
sky130_fd_sc_hs__or4_4	A->X (FF)	0.54288	1.11145	5.53729
	B->X (FF)	0.52795	1.08836	5.55614
	C->X (FF)	0.46201	1.02580	5.55424
	D->X (FF)	0.36657	0.90975	5.15327

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.00860	0.00839	0.00935
	A	0.00399	0.00380	0.00480
	B	0.00747	0.00744	0.00863
	B	0.00349	0.00345	0.00469
	C	0.00634	0.00631	0.00761
	C	0.00284	0.00280	0.00416
	D	0.00525	0.00520	0.00713
	D	0.00220	0.00216	0.00413
sky130_fd_sc_hs__or4_2	A	0.01043	0.01043	0.01173
	A	0.00562	0.00563	0.00704
	B	0.00926	0.00946	0.01104
	B	0.00502	0.00524	0.00692
	C	0.00824	0.00843	0.01010
	C	0.00449	0.00468	0.00646
	D	0.00717	0.00734	0.00969
	D	0.00387	0.00404	0.00647
sky130_fd_sc_hs__or4_4	A	0.01957	0.01990	0.02225
	A	0.01162	0.01196	0.01468
	B	0.01776	0.01781	0.01984
	B	0.01044	0.01052	0.01294
	C	0.01505	0.01539	0.01801
	C	0.00885	0.00922	0.01190
	D	0.01260	0.01300	0.01699
	D	0.00747	0.00792	0.01198

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.00256	0.00237	0.00336
	A	0.00724	0.00717	0.00750
	B	0.00259	0.00258	0.00345
	B	0.00663	0.00661	0.00725
	C	0.00259	0.00252	0.00435
	C	0.00612	0.00612	0.00716
	D	0.00250	0.00271	0.00546
	D	0.00554	0.00576	0.00829
sky130_fd_sc_hs__or4_2	A	0.00427	0.00437	0.00488
	A	0.00916	0.00930	0.00974
	B	0.00433	0.00442	0.00524
	B	0.00862	0.00875	0.00951
	C	0.00428	0.00435	0.00611
	C	0.00806	0.00821	0.00937
	D	0.00422	0.00392	0.00842
	D	0.00752	0.00784	0.01060
sky130_fd_sc_hs__or4_4	A	0.00845	0.00905	0.01100
	A	0.01664	0.01727	0.01802
	B	0.00836	0.00888	0.01167
	B	0.01580	0.01633	0.01734
	C	0.00840	0.00874	0.01088
	C	0.01462	0.01510	0.01697
	D	0.00812	0.00873	0.01488
	D	0.01324	0.01385	0.01872

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__or4_1	**(B * D * X)**	0.00093	0.00093	0.00092
	(B * D * X)	-0.00108	-0.00111	-0.00111
	(B * C * !D * X)	0.00093	0.00093	0.00092
	(B * C * !D * X)	-0.00108	-0.00111	-0.00111
	(B * !C * !D * X)	0.00093	0.00093	0.00092
	(B * !C * !D * X)	-0.00107	-0.00111	-0.00111
	(!B * C * D * X)	0.00092	0.00093	0.00092
	(!B * C * D * X)	-0.00101	-0.00107	-0.00107
	(!B * C * !D * X)	0.00092	0.00093	0.00092
	(!B * C * !D * X)	-0.00101	-0.00107	-0.00107
	(!B * !C * D * X)	0.00093	0.00093	0.00092
	(!B * !C * D * X)	-0.00099	-0.00105	-0.00105
sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00101	0.00101	0.00101
	(B * D * X)	-0.00110	-0.00113	-0.00113
	(B * C * !D * X)	0.00101	0.00101	0.00101
	(B * C * !D * X)	-0.00110	-0.00113	-0.00113
	(B * !C * !D * X)	0.00101	0.00101	0.00101
	(B * !C * !D * X)	-0.00109	-0.00113	-0.00113
	(!B * C * D * X)	0.00101	0.00102	0.00101
	(!B * C * D * X)	-0.00102	-0.00109	-0.00108
	(!B * C * !D * X)	0.00101	0.00102	0.00101
	(!B * C * !D * X)	-0.00102	-0.00109	-0.00108
	(!B * !C * D * X)	0.00101	0.00102	0.00101
	(!B * !C * D * X)	-0.00101	-0.00106	-0.00107

sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00102	0.00102	0.00102
	(B * D * X)	-0.00217	-0.00221	-0.00222
	(B * C * !D * X)	0.00102	0.00102	0.00102
	(B * C * !D * X)	-0.00216	-0.00221	-0.00222
	(B * !C * !D * X)	0.00103	0.00103	0.00102
	(B * !C * !D * X)	-0.00213	-0.00223	-0.00222
	(!B * C * D * X)	0.00102	0.00102	0.00102
	(!B * C * D * X)	-0.00200	-0.00214	-0.00213
	(!B * C * !D * X)	0.00102	0.00102	0.00102
	(!B * C * !D * X)	-0.00200	-0.00214	-0.00213
	(!B * !C * D * X)	0.00103	0.00103	0.00102
	(!B * !C * D * X)	-0.00197	-0.00211	-0.00209

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00092	-0.00093	-0.00092
	(B * D * X)	0.00110	0.00112	0.00111
	(B * C * !D * X)	-0.00092	-0.00093	-0.00092
	(B * C * !D * X)	0.00110	0.00112	0.00111
	(B * !C * !D * X)	-0.00092	-0.00093	-0.00092
	(B * !C * !D * X)	0.00110	0.00112	0.00111
	(!B * C * D * X)	-0.00092	-0.00093	-0.00092
	(!B * C * D * X)	0.00107	0.00107	0.00107
	(!B * C * !D * X)	-0.00092	-0.00093	-0.00092
	(!B * C * !D * X)	0.00107	0.00107	0.00107
	(!B * !C * D * X)	-0.00092	-0.00092	-0.00092
	(!B * !C * D * X)	0.00105	0.00105	0.00105

sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00100	-0.00101	-0.00101
	(B * D * X)	0.00112	0.00113	0.00113
	(B * C * !D * X)	-0.00100	-0.00101	-0.00101
	(B * C * !D * X)	0.00112	0.00113	0.00113
	(B * !C * !D * X)	-0.00101	-0.00101	-0.00101
	(B * !C * !D * X)	0.00112	0.00113	0.00113
	(!B * C * D * X)	-0.00101	-0.00101	-0.00101
	(!B * C * D * X)	0.00109	0.00109	0.00108
	(!B * C * !D * X)	-0.00101	-0.00101	-0.00101
	(!B * C * !D * X)	0.00109	0.00109	0.00108
	(!B * !C * D * X)	-0.00101	-0.00101	-0.00101
	(!B * !C * D * X)	0.00107	0.00106	0.00107
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00102	-0.00101	-0.00101
	(B * D * X)	0.00223	0.00221	0.00222
	(B * C * !D * X)	-0.00102	-0.00101	-0.00101
	(B * C * !D * X)	0.00223	0.00221	0.00222
	(B * !C * !D * X)	-0.00102	-0.00102	-0.00101
	(B * !C * !D * X)	0.00223	0.00224	0.00222
	(!B * C * D * X)	-0.00101	-0.00102	-0.00102
	(!B * C * D * X)	0.00212	0.00214	0.00213
	(!B * C * !D * X)	-0.00101	-0.00102	-0.00102
	(!B * C * !D * X)	0.00212	0.00214	0.00213
	(!B * !C * D * X)	-0.00101	-0.00102	-0.00101
	(!B * !C * D * X)	0.00208	0.00211	0.00209

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)**	0.00082	0.00082	0.00082
	(A * C * D * X)	-0.00081	-0.00081	-0.00081
	(A * C * !D * X)	0.00082	0.00083	0.00082
	(A * C * !D * X)	-0.00078	-0.00079	-0.00078
	(A * !C * D * X)	0.00082	0.00083	0.00082
	(A * !C * D * X)	-0.00076	-0.00077	-0.00076
	(A * !C * !D * X)	0.00082	0.00082	0.00082
	(A * !C * !D * X)	-0.00067	-0.00067	-0.00066
	(!A * C * D * X)	0.00082	0.00082	0.00082
	(!A * C * D * X)	-0.00107	-0.00109	-0.00109
	(!A * C * !D * X)	0.00084	0.00082	0.00082
	(!A * C * !D * X)	-0.00103	-0.00110	-0.00109
	(!A * !C * D * X)	0.00083	0.00082	0.00082
	(!A * !C * D * X)	-0.00095	-0.00104	-0.00104
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	0.00090	0.00090	0.00090
	(A * C * D * X)	-0.00085	-0.00086	-0.00085
	(A * C * !D * X)	0.00091	0.00091	0.00090
	(A * C * !D * X)	-0.00083	-0.00083	-0.00083
	(A * !C * D * X)	0.00090	0.00091	0.00090
	(A * !C * D * X)	-0.00081	-0.00082	-0.00081
	(A * !C * !D * X)	0.00090	0.00090	0.00090
	(A * !C * !D * X)	-0.00073	-0.00072	-0.00072
	(!A * C * D * X)	0.00090	0.00091	0.00090
	(!A * C * D * X)	-0.00113	-0.00115	-0.00115
	(!A * C * !D * X)	0.00094	0.00091	0.00090
	(!A * C * !D * X)	-0.00108	-0.00114	-0.00115
	(!A * !C * D * X)	0.00092	0.00091	0.00090
	(!A * !C * D * X)	-0.00101	-0.00110	-0.00110

sky130_fd_sc_hs__or4_4	**(A * C * D * X)**	0.00132	0.00132	0.00132
	(A * C * D * X)	-0.00167	-0.00168	-0.00167
	(A * C * !D * X)	0.00132	0.00132	0.00132
	(A * C * !D * X)	-0.00161	-0.00161	-0.00160
	(A * !C * D * X)	0.00130	0.00132	0.00131
	(A * !C * D * X)	-0.00158	-0.00159	-0.00158
	(A * !C * !D * X)	0.00131	0.00130	0.00130
	(A * !C * !D * X)	-0.00140	-0.00138	-0.00138
	(!A * C * D * X)	0.00132	0.00131	0.00130
	(!A * C * D * X)	-0.00217	-0.00225	-0.00224
	(!A * C * !D * X)	0.00133	0.00131	0.00130
	(!A * C * !D * X)	-0.00214	-0.00225	-0.00224
	(!A * !C * D * X)	0.00134	0.00131	0.00130
	(!A * !C * D * X)	-0.00197	-0.00215	-0.00214

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)**	-0.00082	-0.00082	-0.00082
	(A * C * D * X)	0.00081	0.00081	0.00081
	(A * C * !D * X)	-0.00082	-0.00082	-0.00082
	(A * C * !D * X)	0.00078	0.00079	0.00078
	(A * !C * D * X)	-0.00081	-0.00082	-0.00082
	(A * !C * D * X)	0.00076	0.00077	0.00076
	(A * !C * !D * X)	-0.00079	-0.00079	-0.00079
	(A * !C * !D * X)	0.00069	0.00069	0.00069
	(!A * C * D * X)	-0.00082	-0.00082	-0.00081
	(!A * C * D * X)	0.00109	0.00109	0.00109
	(!A * C * !D * X)	-0.00082	-0.00082	-0.00081
	(!A * C * !D * X)	0.00110	0.00110	0.00109
	(!A * !C * D * X)	-0.00081	-0.00081	-0.00081
	(!A * !C * D * X)	0.00104	0.00104	0.00104
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	-0.00090	-0.00090	-0.00090
	(A * C * D * X)	0.00085	0.00086	0.00085
	(A * C * !D * X)	-0.00090	-0.00090	-0.00090
	(A * C * !D * X)	0.00083	0.00083	0.00083
	(A * !C * D * X)	-0.00090	-0.00090	-0.00090
	(A * !C * D * X)	0.00081	0.00082	0.00081
	(A * !C * !D * X)	-0.00087	-0.00087	-0.00087
	(A * !C * !D * X)	0.00075	0.00075	0.00075
	(!A * C * D * X)	-0.00090	-0.00090	-0.00090
	(!A * C * D * X)	0.00115	0.00115	0.00115
	(!A * C * !D * X)	-0.00090	-0.00089	-0.00090
	(!A * C * !D * X)	0.00115	0.00114	0.00115
	(!A * !C * D * X)	-0.00090	-0.00090	-0.00089
	(!A * !C * D * X)	0.00110	0.00110	0.00110

sky130_fd_sc_hs__or4_4	(A * C * D * X)	-0.00131	-0.00131	-0.00131
	(A * C * D * X)	0.00167	0.00168	0.00167
	(A * C * !D * X)	-0.00131	-0.00131	-0.00131
	(A * C * !D * X)	0.00161	0.00161	0.00160
	(A * !C * D * X)	-0.00130	-0.00130	-0.00130
	(A * !C * D * X)	0.00158	0.00159	0.00158
	(A * !C * !D * X)	-0.00129	-0.00129	-0.00130
	(A * !C * !D * X)	0.00140	0.00140	0.00140
	(!A * C * D * X)	-0.00130	-0.00131	-0.00130
	(!A * C * D * X)	0.00224	0.00225	0.00224
	(!A * C * !D * X)	-0.00130	-0.00130	-0.00130
	(!A * C * !D * X)	0.00224	0.00225	0.00224
	(!A * !C * D * X)	-0.00130	-0.00130	-0.00129
	(!A * !C * D * X)	0.00214	0.00215	0.00214

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(B * D * X)	0.00088	0.00087	0.00085
	(B * D * X)	-0.00075	-0.00076	-0.00075
	(B * !D * X)	0.00084	0.00084	0.00083
	(B * !D * X)	-0.00066	-0.00066	-0.00066
	(A * !B * D * X)	0.00091	0.00085	0.00084
	(A * !B * D * X)	-0.00076	-0.00078	-0.00078
	(A * !B * !D * X)	0.00084	0.00084	0.00083
	(A * !B * !D * X)	-0.00066	-0.00065	-0.00065
	(!A * !B * D * X)	0.00102	0.00085	0.00083
	(!A * !B * D * X)	-0.00091	-0.00108	-0.00109

sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00101	0.00101	0.00098
	(B * D * X)	-0.00076	-0.00076	-0.00075
	(B * !D * X)	0.00097	0.00097	0.00096
	(B * !D * X)	-0.00067	-0.00066	-0.00067
	(A * !B * D * X)	0.00105	0.00099	0.00096
	(A * !B * D * X)	-0.00077	-0.00079	-0.00078
	(A * !B * !D * X)	0.00098	0.00097	0.00096
	(A * !B * !D * X)	-0.00066	-0.00066	-0.00066
	(!A * !B * D * X)	0.00115	0.00098	0.00096
	(!A * !B * D * X)	-0.00091	-0.00109	-0.00111
sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00141	0.00138	0.00135
	(B * D * X)	-0.00158	-0.00159	-0.00158
	(B * !D * X)	0.00133	0.00134	0.00133
	(B * !D * X)	-0.00136	-0.00136	-0.00137
	(A * !B * D * X)	0.00145	0.00136	0.00134
	(A * !B * D * X)	-0.00161	-0.00162	-0.00161
	(A * !B * !D * X)	0.00134	0.00134	0.00134
	(A * !B * !D * X)	-0.00135	-0.00136	-0.00136
	(!A * !B * D * X)	0.00167	0.00135	0.00133
	(!A * !B * D * X)	-0.00191	-0.00224	-0.00226

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

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

sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00083	-0.00083	-0.00083
	(B * D * X)	0.00075	0.00076	0.00075
	(B * !D * X)	-0.00082	-0.00082	-0.00082
	(B * !D * X)	0.00068	0.00067	0.00068
	(A * !B * D * X)	-0.00083	-0.00084	-0.00083
	(A * !B * D * X)	0.00077	0.00078	0.00078
	(A * !B * !D * X)	-0.00077	-0.00077	-0.00082
	(A * !B * !D * X)	0.00070	0.00070	0.00067
	(!A * !B * D * X)	-0.00083	-0.00083	-0.00082
	(!A * !B * D * X)	0.00109	0.00110	0.00109
sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00096	-0.00096	-0.00096
	(B * D * X)	0.00076	0.00076	0.00075
	(B * !D * X)	-0.00095	-0.00095	-0.00095
	(B * !D * X)	0.00068	0.00068	0.00069
	(A * !B * D * X)	-0.00095	-0.00097	-0.00096
	(A * !B * D * X)	0.00078	0.00079	0.00078
	(A * !B * !D * X)	-0.00091	-0.00092	-0.00094
	(A * !B * !D * X)	0.00070	0.00070	0.00068
	(!A * !B * D * X)	-0.00096	-0.00096	-0.00095
	(!A * !B * D * X)	0.00111	0.00111	0.00111
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00133	-0.00134	-0.00134
	(B * D * X)	0.00158	0.00159	0.00158
	(B * !D * X)	-0.00129	-0.00130	-0.00129
	(B * !D * X)	0.00142	0.00141	0.00142
	(A * !B * D * X)	-0.00133	-0.00134	-0.00133
	(A * !B * D * X)	0.00162	0.00162	0.00161
	(A * !B * !D * X)	-0.00118	-0.00120	-0.00129
	(A * !B * !D * X)	0.00147	0.00146	0.00140
	(!A * !B * D * X)	-0.00131	-0.00132	-0.00130
	(!A * !B * D * X)	0.00224	0.00226	0.00226

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	0.00094	0.00093	0.00093
	(C * X)	-0.00062	-0.00062	-0.00062
	(B * !C * X)	0.00093	0.00093	0.00093
	(B * !C * X)	-0.00062	-0.00062	-0.00062
	(A * !B * !C * X)	0.00093	0.00093	0.00093
	(A * !B * !C * X)	-0.00062	-0.00062	-0.00062
sky130_fd_sc_hs__or4_2	(C * X)	0.00109	0.00110	0.00110
	(C * X)	-0.00061	-0.00061	-0.00061
	(B * !C * X)	0.00110	0.00110	0.00110
	(B * !C * X)	-0.00061	-0.00061	-0.00061
	(A * !B * !C * X)	0.00109	0.00110	0.00110
	(A * !B * !C * X)	-0.00061	-0.00061	-0.00061
sky130_fd_sc_hs__or4_4	(C * X)	0.00151	0.00153	0.00152
	(C * X)	-0.00120	-0.00121	-0.00120
	(B * !C * X)	0.00151	0.00153	0.00152
	(B * !C * X)	-0.00119	-0.00121	-0.00120
	(A * !B * !C * X)	0.00151	0.00153	0.00152
	(A * !B * !C * X)	-0.00119	-0.00121	-0.00120

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	-0.00089	-0.00089	-0.00092
	(C * X)	0.00066	0.00065	0.00063
	(B * !C * X)	-0.00082	-0.00082	-0.00091
	(B * !C * X)	0.00070	0.00069	0.00063
	(A * !B * !C * X)	-0.00074	-0.00074	-0.00089
	(A * !B * !C * X)	0.00076	0.00075	0.00065
sky130_fd_sc_hs__or4_2	(C * X)	-0.00106	-0.00106	-0.00110
	(C * X)	0.00066	0.00065	0.00063
	(B * !C * X)	-0.00100	-0.00100	-0.00108
	(B * !C * X)	0.00069	0.00068	0.00063
	(A * !B * !C * X)	-0.00091	-0.00092	-0.00106
	(A * !B * !C * X)	0.00075	0.00074	0.00064
sky130_fd_sc_hs__or4_4	(C * X)	-0.00142	-0.00143	-0.00151
	(C * X)	0.00130	0.00131	0.00123
	(B * !C * X)	-0.00124	-0.00126	-0.00147
	(B * !C * X)	0.00140	0.00141	0.00125
	(A * !B * !C * X)	-0.00107	-0.00109	-0.00142
	(A * !B * !C * X)	0.00151	0.00151	0.00128

SKY130_FD_SC_HS__SDFBBNx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT						OUTPUT	
D	SCD	SCE	RESET_B	SET_B	CLK_N	Q	Q_N
0	0	x	1	1	F	0	1
0	1	0	1	1	F	0	1
x	1	1	1	1	F	1	0
1	x	0	1	1	F	1	0
1	0	1	1	1	F	0	1
x	x	x	x	0	x	1	0
x	x	x	0	1	x	0	1
x	x	x	1	1	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfbbn_1	55.94400
sky130_fd_sc_hs__sdfbbn_2	60.73920

Pin Capacitance Information

Cell Name	Pin Cap(pf)						Max Cap(pf)	
	D	SCD	SCE	RESET_B	SET_B	CLK_N	Q	Q_N
sky130_fd_sc_hs__sdfbbn_1	0.00191	0.00170	0.00403	0.00176	0.00535	0.00288	0.76747	0.76353
sky130_fd_sc_hs__sdfbbn_2	0.00192	0.00171	0.00408	0.00163	0.00524	0.00284	1.55589	1.54026

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfbbn_1	0.00000	0.48952	0.88564
sky130_fd_sc_hs__sdfbbn_2	0.00000	0.48380	0.91745

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)	0.58621	1.45544	9.42636
	SET_B->Q (FR)	0.27161	1.16796	9.33823
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FR)	0.66911	1.41082	9.57523
	SET_B->Q (FR)	0.32239	1.10810	9.57947

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)	0.57913	1.12688	4.84600
	RESET_B->Q (FF)	0.35308	0.91914	4.66796
	SET_B->Q (RF)	0.20209	0.57758	2.84778
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FF)	0.62097	1.13544	4.93289
	RESET_B->Q (FF)	0.40130	0.93566	4.79012
	SET_B->Q (RF)	0.24985	0.60876	3.10141

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)	0.52928	1.41503	9.34602
	RESET_B->Q_N (FR)	0.30407	1.21442	9.19305
	SET_B->Q_N (RR)	0.15302	0.87707	7.49426
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FR)	0.52347	1.29802	9.29296
	RESET_B->Q_N (FR)	0.30556	1.10055	9.16305
	SET_B->Q_N (RR)	0.15457	0.77895	7.56756

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)	0.49723	1.14038	4.99566
	SET_B->Q_N (FF)	0.19397	0.83362	5.22602
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FF)	0.53353	1.16071	5.02538
	SET_B->Q_N (FF)	0.20951	0.82654	5.35355

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)	-0.02253	0.04206	1.36484
	setup	CLK_N (F)	0.22835	0.13404	-1.29716
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.02727	0.03514	1.33246
	setup	CLK_N (F)	0.23553	0.14330	-1.26751

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)	-0.34919	-0.39167	-0.91887
	setup	CLK_N (F)	0.39857	0.43162	0.96777
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.37907	-0.42011	-1.02301
	setup	CLK_N (F)	0.42869	0.45900	1.08364

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)	-0.02253	0.04206	1.36484
	setup	CLK_N (F)	0.22835	0.13404	-1.29716
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.02727	0.03514	1.33246
	setup	CLK_N (F)	0.23553	0.14330	-1.26751

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)	-0.34919	-0.39167	-0.91887
	setup	CLK_N (F)	0.39857	0.43162	0.96777
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.37907	-0.42011	-1.02301
	setup	CLK_N (F)	0.42869	0.45900	1.08364

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)	-0.04494	0.02666	1.19780
	setup	CLK_N (F)	0.25419	0.15577	-1.12099
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.04962	0.02339	1.17109
	setup	CLK_N (F)	0.25907	0.16154	-1.09341

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)	-0.43612	-0.50121	-1.40733
	setup	CLK_N (F)	0.49542	0.54709	1.54403
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.46774	-0.53191	-1.51384
	setup	CLK_N (F)	0.52823	0.57804	1.65528

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)	-0.04494	0.02666	1.19780
	hold	CLK_N (F)	-0.04973	0.02171	1.16696
	setup	CLK_N (F)	0.25264	0.15227	-1.14669
	setup	CLK_N (F)	0.25419	0.15577	-1.12099
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.04962	0.02339	1.17109
	hold	CLK_N (F)	-0.05116	0.01854	1.14299
	setup	CLK_N (F)	0.25852	0.15566	-1.11803
	setup	CLK_N (F)	0.25907	0.16154	-1.09341

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)	-0.44317	-0.50595	-1.47891
	hold	CLK_N (F)	-0.43612	-0.50121	-1.40733
	setup	CLK_N (F)	0.49542	0.54709	1.54403
	setup	CLK_N (F)	0.49268	0.54458	1.46159
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.47634	-0.53686	-1.59253
	hold	CLK_N (F)	-0.46774	-0.53191	-1.51384
	setup	CLK_N (F)	0.52607	0.57804	1.65528
	setup	CLK_N (F)	0.52823	0.57803	1.58164

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)	-0.03003	0.02740	1.26566
	setup	CLK_N (F)	0.48054	0.41974	-0.99557
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.03553	0.02286	1.23966
	setup	CLK_N (F)	0.51040	0.45164	-0.94284

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)	-0.11163	-0.10174	0.21268
	setup	CLK_N (F)	0.40030	0.44701	1.26578
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.11414	-0.10543	0.20417
	setup	CLK_N (F)	0.43634	0.47834	1.38586

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)	-0.43004	-0.37807	1.03258
	hold	CLK_N (F)	-0.03003	0.02740	1.26566
	setup	CLK_N (F)	0.48054	0.41974	-0.99557
	setup	CLK_N (F)	0.24224	0.15428	-1.20567
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.45786	-0.41127	0.98220
	hold	CLK_N (F)	-0.03553	0.02286	1.23966
	setup	CLK_N (F)	0.51040	0.45164	-0.94284
	setup	CLK_N (F)	0.24720	0.15818	-1.17852

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)	-0.11163	-0.10174	0.21268
	hold	CLK_N (F)	-0.35381	-0.40590	-1.21367
	setup	CLK_N (F)	0.31919	0.27616	-0.18970
	setup	CLK_N (F)	0.40030	0.44701	1.26578
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.11414	-0.10543	0.20417
	hold	CLK_N (F)	-0.38374	-0.43675	-1.32430
	setup	CLK_N (F)	0.32296	0.28077	-0.18036
	setup	CLK_N (F)	0.43634	0.47834	1.38586

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)	0.16946	0.06320	-1.61442
	removal	CLK_N (F)	0.04559	0.12878	1.70868
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.16762	0.05795	-1.62729
	removal	CLK_N (F)	0.05046	0.13344	1.72443

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)	0.16902	0.06316	-1.61461
	recovery	CLK_N (F)	0.16946	0.06302	-1.61442
	recovery	CLK_N (F)	0.16884	0.06320	-1.61616
	removal	CLK_N (F)	0.04559	0.12755	1.70713
	removal	CLK_N (F)	0.04344	0.12607	1.70868
	removal	CLK_N (F)	0.04308	0.12878	1.70515
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.16746	0.05795	-1.62729
	recovery	CLK_N (F)	0.16762	0.05793	-1.62763
	recovery	CLK_N (F)	0.16759	0.05793	-1.62742
	removal	CLK_N (F)	0.04724	0.13344	1.72443
	removal	CLK_N (F)	0.05046	0.13344	1.72443
	removal	CLK_N (F)	0.05046	0.13344	1.72443

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 ()	0.31281	0.77881	16.50020
	min_pulse_width	RESET_B ()	0.27229	0.77881	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	RESET_B ()	0.31570	0.77881	16.50020
	min_pulse_width	RESET_B ()	0.27518	0.77881	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)	-0.05218	-0.16404	-1.30743
	removal	CLK_N (F)	0.07170	0.18825	1.94799
	hold	RESET_B (R)	-0.07955	-0.14616	-0.61942
	setup	RESET_B (R)	0.16835	0.21262	1.02094
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.04691	-0.15960	-1.05823
	removal	CLK_N (F)	0.06936	0.18314	1.91057
	hold	RESET_B (R)	-0.10107	-0.17974	-0.80108
	setup	RESET_B (R)	0.16628	0.23095	1.11765

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)	-0.05247	-0.16414	-1.30743
	recovery	CLK_N (F)	-0.05236	-0.16421	-1.32227
	recovery	CLK_N (F)	-0.05218	-0.16404	-1.32180
	removal	CLK_N (F)	0.07170	0.18825	1.94503
	removal	CLK_N (F)	0.07170	0.18825	1.94503
	removal	CLK_N (F)	0.07170	0.18825	1.94799
	hold	RESET_B (R)	-0.07955	-0.14683	-0.61942
	hold	RESET_B (R)	-0.07982	-0.14616	-0.62273
	setup	RESET_B (R)	0.16835	0.21262	1.01816
	setup	RESET_B (R)	0.12394	0.18790	1.02094
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.04693	-0.15960	-1.06153
	recovery	CLK_N (F)	-0.04691	-0.15960	-1.06125
	recovery	CLK_N (F)	-0.04763	-0.15960	-1.05823
	removal	CLK_N (F)	0.06936	0.18314	1.91057
	removal	CLK_N (F)	0.06936	0.18314	1.91057
	removal	CLK_N (F)	0.06936	0.18314	1.91056
	hold	RESET_B (R)	-0.10794	-0.18559	-0.82254
	hold	RESET_B (R)	-0.10107	-0.17974	-0.80108
	setup	RESET_B (R)	0.16628	0.23095	1.11765
	setup	RESET_B (R)	0.12801	0.22114	1.11111

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 ()	0.22019	0.77881	16.50020
	min_pulse_width	SET_B ()	0.19414	0.77881	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	SET_B ()	0.24913	0.77881	16.50020
	min_pulse_width	SET_B ()	0.22887	0.77881	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 ()	0.28965	0.77881	16.50020
	min_pulse_width	CLK_N ()	0.21151	0.77881	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.29544	0.77881	16.50020
	min_pulse_width	CLK_N ()	0.22308	0.77881	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 ()	0.27808	0.77881	16.50020
	min_pulse_width	CLK_N ()	0.31570	0.77881	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.30992	0.77881	16.50020
	min_pulse_width	CLK_N ()	0.31860	0.77881	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	0.00930	0.00938	0.01154
	CLK_N	0.01079	0.01087	0.01259
	SET_B	0.00973	0.00968	0.01403
	SET_B	0.01252	0.01247	0.01623
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01097	0.01127	0.01368
	CLK_N	0.01240	0.01269	0.01448
	SET_B	0.01147	0.01163	0.01610
	SET_B	0.01418	0.01434	0.01810

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.00994	0.01003	0.01170
	CLK_N	0.01122	0.01132	0.01286
	RESET_B	0.01199	0.01207	0.01313
	RESET_B	0.01279	0.01291	0.01381
	SET_B	0.01257	0.01245	0.01404
	SET_B	0.00976	0.00960	0.01122
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01162	0.01197	0.01360
	CLK_N	0.01294	0.01329	0.01481
	RESET_B	0.01397	0.01435	0.01532
	RESET_B	0.01480	0.01517	0.01609
	SET_B	0.01448	0.01463	0.01618
	SET_B	0.01176	0.01185	0.01336

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.00995	0.01005	0.01206
	CLK_N	0.01123	0.01134	0.01301
	RESET_B	0.01200	0.01209	0.01349
	RESET_B	0.01281	0.01292	0.01399
	SET_B	0.01258	0.01243	0.01413
	SET_B	0.00977	0.00961	0.01133
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01163	0.01199	0.01451
	CLK_N	0.01295	0.01330	0.01509
	RESET_B	0.01399	0.01437	0.01624
	RESET_B	0.01482	0.01518	0.01636
	SET_B	0.01450	0.01471	0.01619
	SET_B	0.01177	0.01186	0.01347

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.00928	0.00936	0.01090
	CLK_N	0.01077	0.01085	0.01237
	SET_B	0.00970	0.00963	0.01330
	SET_B	0.01248	0.01244	0.01597
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01096	0.01125	0.01277
	CLK_N	0.01239	0.01267	0.01419
	SET_B	0.01143	0.01160	0.01549
	SET_B	0.01414	0.01430	0.01782

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)**	0.00082	0.00083	0.00082
	(CLK_N * SCD * SCE)	-0.00042	-0.00042	-0.00041
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00803	0.00783	0.00943
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00625	0.00606	0.00766
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00555	0.00541	0.00694
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00346	0.00332	0.00486
	(CLK_N * !SCD * SCE)	0.00035	0.00035	0.00034
	(CLK_N * !SCD * SCE)	-0.00096	-0.00097	-0.00099
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00473	0.00459	0.00609
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00266	0.00252	0.00403
	(!CLK_N * SCD * SCE)	0.00082	0.00082	0.00082
	(!CLK_N * SCD * SCE)	-0.00041	-0.00041	-0.00041
	(!CLK_N * !SCE)	0.00314	0.00298	0.00491
	(!CLK_N * !SCE)	0.00109	0.00091	0.00285
	(!CLK_N * !SCD * SCE)	0.00034	0.00035	0.00034
	(!CLK_N * !SCD * SCE)	-0.00095	-0.00097	-0.00099

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	0.00084	0.00085	0.00084
	(CLK_N * SCD * SCE)	-0.00042	-0.00042	-0.00041
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00811	0.00792	0.00947
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00628	0.00608	0.00764
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00565	0.00552	0.00701
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00354	0.00339	0.00490
	(CLK_N * !SCD * SCE)	0.00037	0.00037	0.00036
	(CLK_N * !SCD * SCE)	-0.00096	-0.00097	-0.00099
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00477	0.00463	0.00611
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00267	0.00253	0.00401
	(!CLK_N * SCD * SCE)	0.00084	0.00084	0.00084
	(!CLK_N * SCD * SCE)	-0.00042	-0.00041	-0.00041
	(!CLK_N * !SCE)	0.00311	0.00294	0.00485
	(!CLK_N * !SCE)	0.00100	0.00083	0.00275
	(!CLK_N * !SCD * SCE)	0.00036	0.00037	0.00036
	(!CLK_N * !SCD * SCE)	-0.00095	-0.00098	-0.00099

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)**	-0.00077	-0.00079	-0.00081
	(CLK_N * SCD * SCE)	0.00045	0.00045	0.00043
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00757	0.00744	0.00973
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00935	0.00922	0.01151
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00242	0.00232	0.00446
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00450	0.00441	0.00655
	(CLK_N * !SCD * SCE)	-0.00032	-0.00032	-0.00032
	(CLK_N * !SCD * SCE)	0.00100	0.00099	0.00099
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00315	0.00304	0.00525
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00520	0.00511	0.00731
	(!CLK_N * SCD * SCE)	-0.00077	-0.00078	-0.00081
	(!CLK_N * SCD * SCE)	0.00045	0.00045	0.00043
	(!CLK_N * !SCE)	0.00154	0.00147	0.00385
	(!CLK_N * !SCE)	0.00361	0.00354	0.00592
	(!CLK_N * !SCD * SCE)	-0.00032	-0.00032	-0.00032
	(!CLK_N * !SCD * SCE)	0.00099	0.00099	0.00099

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	-0.00080	-0.00081	-0.00083
	(CLK_N * SCD * SCE)	0.00045	0.00045	0.00043
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00819	0.00805	0.01032
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01002	0.00988	0.01215
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00263	0.00253	0.00465
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00476	0.00466	0.00677
	(CLK_N * !SCD * SCE)	-0.00034	-0.00034	-0.00034
	(CLK_N * !SCD * SCE)	0.00100	0.00099	0.00099
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00341	0.00331	0.00549
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00552	0.00542	0.00759
	(!CLK_N * SCD * SCE)	-0.00080	-0.00081	-0.00083
	(!CLK_N * SCD * SCE)	0.00045	0.00045	0.00043
	(!CLK_N * !SCE)	0.00172	0.00164	0.00400
	(!CLK_N * !SCE)	0.00382	0.00375	0.00610
	(!CLK_N * !SCD * SCE)	-0.00034	-0.00034	-0.00034
	(!CLK_N * !SCD * SCE)	0.00099	0.00099	0.00099

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)**	0.00668	0.00658	0.00726
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00397	0.00386	0.00456
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00914	0.00900	0.00972
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00674	0.00660	0.00733
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00586	0.00576	0.00642
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00317	0.00306	0.00374
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00718	0.00708	0.00770
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00438	0.00428	0.00491
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00964	0.00951	0.01016
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00715	0.00702	0.00768
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00636	0.00626	0.00686
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00358	0.00347	0.00409
	(!CLK_N * D * SCE)	0.00428	0.00416	0.00497
	(!CLK_N * D * SCE)	0.00159	0.00147	0.00229
	(!CLK_N * !D * SCE)	0.00478	0.00467	0.00540
	(!CLK_N * !D * SCE)	0.00200	0.00188	0.00263
	!SCE	0.00069	0.00063	0.00062
	!SCE	-0.00074	-0.00082	-0.00083

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.00675	0.00665	0.00733
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00406	0.00395	0.00464
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00919	0.00904	0.00976
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00678	0.00664	0.00736
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00587	0.00577	0.00643
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00319	0.00308	0.00375
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00725	0.00715	0.00776
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00446	0.00436	0.00499
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00969	0.00956	0.01019
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00719	0.00705	0.00770
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00636	0.00626	0.00686
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00359	0.00349	0.00410
	(!CLK_N * D * SCE)	0.00421	0.00409	0.00490
	(!CLK_N * D * SCE)	0.00153	0.00141	0.00223
	(!CLK_N * !D * SCE)	0.00470	0.00459	0.00531
	(!CLK_N * !D * SCE)	0.00193	0.00182	0.00255
	!SCE	0.00069	0.00063	0.00061
	!SCE	-0.00075	-0.00083	-0.00084

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)**	0.00336	0.00329	0.00401
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00608	0.00601	0.00671
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00850	0.00839	0.00921
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01090	0.01080	0.01160
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00409	0.00401	0.00477
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00678	0.00671	0.00745
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00309	0.00302	0.00378
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00589	0.00582	0.00656
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00824	0.00813	0.00902
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01072	0.01061	0.01149
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00381	0.00374	0.00455
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00659	0.00652	0.00731
	(!CLK_N * D * SCE)	0.00251	0.00243	0.00328
	(!CLK_N * D * SCE)	0.00520	0.00512	0.00595
	(!CLK_N * !D * SCE)	0.00223	0.00215	0.00306
	(!CLK_N * !D * SCE)	0.00500	0.00494	0.00582
	!SCE	-0.00059	-0.00061	-0.00061
	!SCE	0.00083	0.00084	0.00083

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.00359	0.00351	0.00423
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00629	0.00622	0.00691
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00912	0.00902	0.00982
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01153	0.01144	0.01221
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00437	0.00429	0.00505
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00705	0.00698	0.00772
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00331	0.00324	0.00399
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00610	0.00602	0.00677
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00885	0.00875	0.00963
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01135	0.01124	0.01211
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00409	0.00402	0.00482
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00686	0.00678	0.00758
	(!CLK_N * D * SCE)	0.00269	0.00261	0.00346
	(!CLK_N * D * SCE)	0.00537	0.00530	0.00612
	(!CLK_N * !D * SCE)	0.00241	0.00233	0.00324
	(!CLK_N * !D * SCE)	0.00517	0.00510	0.00599
	!SCE	-0.00059	-0.00061	-0.00061
	!SCE	0.00084	0.00085	0.00084

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (CLK_N * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	0.00343	0.00325	0.00574
	(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)	-0.00028	-0.00048	0.00203
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01221	0.01209	0.01453
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00925	0.00912	0.01152
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00708	0.00696	0.00947
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00443	0.00429	0.00677
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00781	0.00770	0.01021
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00514	0.00500	0.00749
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00867	0.00846	0.01204
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00404	0.00382	0.00742
sky130_fd_sc_hs__sdfbbn_1	**(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)**	0.01114	0.01087	0.01452
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00681	0.00655	0.01022
	(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)	0.00339	0.00328	0.00576
	(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)	-0.00009	-0.00021	0.00228
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00785	0.00763	0.01118
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00323	0.00302	0.00659
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00351	0.00333	0.00582
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00020	-0.00041	0.00210
	(!CLK_N * D * !SCD)	0.00636	0.00619	0.00864
	(!CLK_N * D * !SCD)	0.00369	0.00349	0.00593
	(!CLK_N * !D * SCD)	0.00635	0.00611	0.00988
	(!CLK_N * !D * SCD)	0.00173	0.00149	0.00528

	(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)	0.00349	0.00330	0.00580
	(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)	-0.00028	-0.00048	0.00203
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01287	0.01275	0.01519
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00990	0.00976	0.01217
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00733	0.00722	0.00972
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00465	0.00453	0.00701
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00812	0.00802	0.01053
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00542	0.00529	0.00779
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00881	0.00859	0.01215
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00412	0.00389	0.00749
sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)**	0.01126	0.01098	0.01462
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00685	0.00657	0.01023
	(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)	0.00343	0.00332	0.00581
	(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)	-0.00010	-0.00022	0.00227
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00793	0.00769	0.01125
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00325	0.00303	0.00659
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00356	0.00338	0.00588
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00020	-0.00040	0.00211
	(!CLK_N * D * !SCD)	0.00658	0.00641	0.00887
	(!CLK_N * D * !SCD)	0.00388	0.00369	0.00613
	(!CLK_N * !D * SCD)	0.00634	0.00610	0.00987
	(!CLK_N * !D * SCD)	0.00166	0.00142	0.00521

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)	-0.00034	-0.00022	0.00261
	(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)	0.00335	0.00347	0.00631
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00757	0.00763	0.01030
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01055	0.01062	0.01326
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00510	0.00517	0.00788
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00778	0.00784	0.01054
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00428	0.00435	0.00706
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00697	0.00705	0.00972
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00245	0.00233	0.00619
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00707	0.00696	0.01081
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00760	0.00743	0.01136
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01191	0.01174	0.01566
	(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)	-0.00017	-0.00012	0.00272
	(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)	0.00332	0.00336	0.00619
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00317	0.00306	0.00695
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00777	0.00765	0.01156
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00042	-0.00030	0.00254
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00328	0.00341	0.00624
	(!CLK_N * D * !SCD)	0.00265	0.00266	0.00540
	(!CLK_N * D * !SCD)	0.00534	0.00537	0.00807
	(!CLK_N * !D * SCD)	0.00150	0.00139	0.00544
	(!CLK_N * !D * SCD)	0.00610	0.00600	0.01004

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)**	-0.00040	-0.00028	0.00255
	(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)	0.00335	0.00348	0.00631
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00760	0.00767	0.01033
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01059	0.01066	0.01330
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00515	0.00522	0.00793
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00785	0.00794	0.01061
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00427	0.00434	0.00703
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00699	0.00707	0.00974
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00263	0.00251	0.00635
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00731	0.00720	0.01104
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00818	0.00801	0.01192
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01257	0.01241	0.01632
	(CLK_N * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (CLK_N * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	-0.00022	-0.00016	0.00268
	(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)	0.00332	0.00338	0.00620
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00342	0.00329	0.00718
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00807	0.00796	0.01184
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00048	-0.00036	0.00248
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00327	0.00341	0.00624
	(!CLK_N * D * !SCD)	0.00255	0.00257	0.00530
	(!CLK_N * D * !SCD)	0.00527	0.00530	0.00799
	(!CLK_N * !D * SCD)	0.00164	0.00152	0.00556
	(!CLK_N * !D * SCD)	0.00630	0.00619	0.01023

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)	0.00813	0.00792	0.00974
	(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)	0.00632	0.00610	0.00793
	(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)	0.00479	0.00470	0.00660
	(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)	0.00269	0.00259	0.00449
	(!SET_B * Q * !Q_N)	0.00479	0.00468	0.00667
	(!SET_B * Q * !Q_N)	0.00265	0.00252	0.00452

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)**	0.00794	0.00771	0.00954
	(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)	0.00616	0.00594	0.00777
	(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)	0.00457	0.00447	0.00638
	(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)	0.00253	0.00242	0.00434
	(!SET_B * Q * !Q_N)	0.00469	0.00457	0.00657
	(!SET_B * Q * !Q_N)	0.00261	0.00248	0.00449

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)**	0.00710	0.00703	0.00945
	(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)	0.00892	0.00885	0.01127
	(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)	0.00230	0.00231	0.00471
	(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)	0.00440	0.00442	0.00681
	(!SET_B * Q * !Q_N)	0.00164	0.00169	0.00411
	(!SET_B * Q * !Q_N)	0.00380	0.00385	0.00627

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)**	0.00753	0.00742	0.00989
	(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)	0.00930	0.00920	0.01166
	(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)	0.00242	0.00234	0.00483
	(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)	0.00446	0.00439	0.00686
	(!SET_B * Q * !Q_N)	0.00166	0.00162	0.00412
	(!SET_B * Q * !Q_N)	0.00375	0.00371	0.00621

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)**	0.00216	0.00218	0.00216
	(CLK_N * D * RESET_B * SCD * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SCE * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00265	-0.00267	-0.00266
	(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)	0.00745	0.00724	0.00948
	(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)	0.00225	0.00201	0.00427

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)**	0.00222	0.00224	0.00223
	(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)	-0.00256	-0.00257	-0.00257
	(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)	0.00787	0.00765	0.00984
	(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)	0.00271	0.00249	0.00467

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)**	-0.00214	-0.00217	-0.00216
	(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)	0.00270	0.00269	0.00267
	(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)	0.00109	0.00101	0.00477
	(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)	0.00628	0.00623	0.00999

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)**	-0.00220	-0.00223	-0.00222
	(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)	0.00259	0.00260	0.00258
	(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)	0.00100	0.00093	0.00466
	(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)	0.00613	0.00611	0.00983

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)	0.01358	0.01335	0.01644
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01110	0.01086	0.01395
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00844	0.00811	0.01072
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00566	0.00533	0.00794
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01365	0.01341	0.01651
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01116	0.01092	0.01401
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00849	0.00816	0.01078
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00571	0.00538	0.00800
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01457	0.01414	0.01672
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01152	0.01109	0.01367
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00827	0.00792	0.01059
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00549	0.00514	0.00782
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00919	0.00877	0.01146
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00643	0.00599	0.00869
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01032	0.01008	0.01315
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00754	0.00729	0.01036
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01037	0.01014	0.01320
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00760	0.00734	0.01042
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01359	0.01335	0.01645
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01110	0.01086	0.01395
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00844	0.00811	0.01072
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00566	0.00533	0.00794
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01460	0.01418	0.01676
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01154	0.01110	0.01369
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01457	0.01414	0.01671
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01151	0.01108	0.01365
	(!D * !SCE * SET_B * !Q * Q_N)	0.00832	0.00798	0.01065
	(!D * !SCE * SET_B * !Q * Q_N)	0.00554	0.00519	0.00787
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00924	0.00882	0.01152
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00648	0.00604	0.00875
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00827	0.00792	0.01059
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00549	0.00514	0.00782
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00919	0.00877	0.01146
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00643	0.00599	0.00869
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01032	0.01008	0.01315
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00754	0.00729	0.01037

sky130_fd_sc_hs__sdfbbn_2	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01375	0.01349	0.01658
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01128	0.01103	0.01411
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00838	0.00808	0.01066
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00564	0.00533	0.00792
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01381	0.01356	0.01664
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01134	0.01109	0.01417
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00843	0.00813	0.01071
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00569	0.00538	0.00797
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01488	0.01449	0.01703
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01189	0.01150	0.01404
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00824	0.00789	0.01057
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00550	0.00514	0.00784
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00911	0.00874	0.01138
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00639	0.00600	0.00865
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01041	0.01016	0.01322
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00767	0.00740	0.01048
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01046	0.01021	0.01328
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00772	0.00745	0.01053
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01375	0.01351	0.01659
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01128	0.01103	0.01411
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00838	0.00808	0.01066
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00564	0.00534	0.00792
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01491	0.01452	0.01707
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01191	0.01152	0.01405
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01488	0.01449	0.01703
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01189	0.01149	0.01403
	(!D * !SCE * SET_B * !Q * Q_N)	0.00829	0.00794	0.01062
	(!D * !SCE * SET_B * !Q * Q_N)	0.00555	0.00519	0.00789
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00916	0.00879	0.01144
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00644	0.00605	0.00871
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00824	0.00789	0.01057
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00550	0.00514	0.00784
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00911	0.00874	0.01139
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00639	0.00600	0.00866
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01041	0.01016	0.01322
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00767	0.00740	0.01048

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)**	0.00654	0.00636	0.00960
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00932	0.00915	0.01238
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00649	0.00630	0.00954
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00926	0.00909	0.01233
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00682	0.00664	0.00985
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00959	0.00943	0.01264
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00896	0.00872	0.01201
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01172	0.01149	0.01479
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00904	0.00884	0.01196
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01182	0.01162	0.01474
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00899	0.00879	0.01190
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01177	0.01156	0.01468
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00654	0.00636	0.00960
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00932	0.00915	0.01238
	(!D * !SCE * SET_B * !Q * Q_N)	0.00676	0.00658	0.00980
	(!D * !SCE * SET_B * !Q * Q_N)	0.00953	0.00936	0.01258
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00890	0.00866	0.01195
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01166	0.01143	0.01473
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00682	0.00664	0.00985
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00959	0.00943	0.01264
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00895	0.00871	0.01201
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01171	0.01148	0.01479
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00905	0.00884	0.01196
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01182	0.01162	0.01474

sky130_fd_sc_hs__sdfbbn_2	**(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)**	0.00653	0.00635	0.00958
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00928	0.00910	0.01233
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00648	0.00630	0.00953
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00922	0.00905	0.01228
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00677	0.00660	0.00981
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00952	0.00934	0.01254
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00894	0.00871	0.01201
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01168	0.01144	0.01474
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00916	0.00896	0.01205
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01190	0.01170	0.01480
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00911	0.00891	0.01200
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01186	0.01165	0.01475
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00653	0.00635	0.00958
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00928	0.00910	0.01233
	(!D * !SCE * SET_B * !Q * Q_N)	0.00672	0.00654	0.00976
	(!D * !SCE * SET_B * !Q * Q_N)	0.00946	0.00928	0.01249
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00889	0.00866	0.01196
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01163	0.01139	0.01469
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00677	0.00660	0.00981
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00952	0.00934	0.01254
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00894	0.00871	0.01201
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01167	0.01144	0.01474
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00916	0.00896	0.01205
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01191	0.01170	0.01480

SKY130_FD_SC_HS__SDFBBP

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT						OUTPUT	
D	SCD	SCE	RESET_B	SET_B	CLK	Q	Q_N
0	0	x	1	1	R	0	1
0	1	0	1	1	R	0	1
x	1	1	1	1	R	1	0
1	x	0	1	1	R	1	0
1	0	1	1	1	R	0	1
x	x	x	x	0	x	1	0
x	x	x	0	1	x	0	1
x	x	x	1	1	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfbbp_1	52.74720

Pin Capacitance Information

Cell Name	Pin Cap(pf)						Max Cap(pf)	
	D	SCD	SCE	RESET_B	SET_B	CLK	Q	Q_N
sky130_fd_sc_hs__sdfbbp_1	0.00190	0.00172	0.00393	0.00164	0.00613	0.00282	0.75239	0.71103

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfbbp_1	0.00000	0.48951	0.88563

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)	0.56418	1.24119	7.48787
	SET_B->Q (FR)	0.25215	1.15260	9.26424

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbp_1	CLK->Q (RF)	0.42393	0.76581	2.76326
	RESET_B->Q (FF)	0.33977	0.89483	4.53355
	SET_B->Q (RF)	0.20619	0.56617	2.74801

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)	0.37475	1.06695	7.31667
	RESET_B->Q_N (FR)	0.29066	1.20487	9.11454
	SET_B->Q_N (RR)	0.15741	0.87883	7.43865

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)	0.47458	0.90602	2.88152
	SET_B->Q_N (FF)	0.17650	0.79568	4.97522

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)	-0.11354	-0.20089	-1.00630
	setup	CLK (R)	0.19125	0.24000	1.08208

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)	-0.31909	-0.40598	-2.64072
	setup	CLK (R)	0.43229	0.49213	2.86826

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)	-0.11354	-0.20089	-1.00630
	setup	CLK (R)	0.19125	0.24000	1.08208

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)	-0.31909	-0.40598	-2.64072
	setup	CLK (R)	0.43229	0.49213	2.86826

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)	-0.13507	-0.21773	-1.19609
	setup	CLK (R)	0.21419	0.26029	1.27287

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)	-0.41801	-0.52033	-3.11541
	setup	CLK (R)	0.53377	0.61556	3.34521

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)	-0.13507	-0.21773	-1.19609
	hold	CLK (R)	-0.13925	-0.22250	-1.20457
	setup	CLK (R)	0.21419	0.25585	1.26494
	setup	CLK (R)	0.21346	0.26029	1.27287

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)	-0.42189	-0.52629	-3.12873
	hold	CLK (R)	-0.41801	-0.52033	-3.11541
	setup	CLK (R)	0.53307	0.61556	3.34521
	setup	CLK (R)	0.53377	0.61240	3.32322

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)	-0.12493	-0.22159	-0.45549
	setup	CLK (R)	0.52025	0.49233	1.17628

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)	-0.20568	-0.34597	-2.19579
	setup	CLK (R)	0.43454	0.50806	3.07628

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)	-0.40827	-0.40375	-0.45549
	hold	CLK (R)	-0.12493	-0.22159	-1.10242
	setup	CLK (R)	0.52025	0.49233	0.66810
	setup	CLK (R)	0.20361	0.25865	1.17628

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)	-0.20568	-0.34597	-2.19579
	hold	CLK (R)	-0.32721	-0.41712	-2.83641
	setup	CLK (R)	0.28274	0.38236	2.25436
	setup	CLK (R)	0.43454	0.50806	3.07628

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)	0.12620	0.13626	0.37709
	removal	CLK (R)	-0.04746	-0.06818	-0.25115

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)	0.12620	0.13624	0.37709
	recovery	CLK (R)	0.12466	0.13624	0.37703
	recovery	CLK (R)	0.12481	0.13626	0.37699
	removal	CLK (R)	-0.05145	-0.06818	-0.25115
	removal	CLK (R)	-0.04746	-0.06818	-0.25115
	removal	CLK (R)	-0.04746	-0.06818	-0.25115

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 ()	0.26939	0.77881	16.50020
	min_pulse_width	RESET_B ()	0.27808	0.77881	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)	0.01541	0.00000	2.30221
	removal	CLK (R)	0.10547	0.13175	0.27344
	hold	RESET_B (R)	-0.08260	-0.15995	-0.68540
	setup	RESET_B (R)	0.14832	0.21463	1.11060

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)	0.01525	0.00000	2.21279
	recovery	CLK (R)	0.01521	0.00000	2.29760
	recovery	CLK (R)	0.01541	0.00000	2.30221
	removal	CLK (R)	0.10547	0.13175	0.27344
	removal	CLK (R)	0.10547	0.13175	0.27344
	removal	CLK (R)	0.10518	0.13175	0.26944
	hold	RESET_B (R)	-0.08294	-0.15995	-0.68564
	hold	RESET_B (R)	-0.08260	-0.16047	-0.68540
	setup	RESET_B (R)	0.14278	0.20489	1.10270
	setup	RESET_B (R)	0.14832	0.21463	1.11060

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 ()	0.17098	0.77881	16.50020
	min_pulse_width	SET_B ()	0.19124	0.77881	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 ()	0.14494	0.77881	16.50020
	min_pulse_width	CLK ()	0.19124	0.77881	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 ()	0.26939	0.77881	16.50020
	min_pulse_width	CLK ()	0.40543	0.77881	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	0.01084	0.01097	0.01242
	CLK	0.00942	0.00956	0.01095
	SET_B	0.00953	0.00951	0.01378
	SET_B	0.01252	0.01251	0.01628

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01076	0.01076	0.01198
	CLK	0.00920	0.00921	0.01042
	RESET_B	0.01098	0.01107	0.01200
	RESET_B	0.01172	0.01180	0.01266
	SET_B	0.01188	0.01167	0.01328
	SET_B	0.00888	0.00864	0.01026

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01078	0.01078	0.01213
	CLK	0.00922	0.00922	0.01057
	RESET_B	0.01100	0.01107	0.01211
	RESET_B	0.01173	0.01182	0.01284
	SET_B	0.01190	0.01166	0.01344
	SET_B	0.00890	0.00865	0.01043

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01082	0.01095	0.01221
	CLK	0.00940	0.00954	0.01079
	SET_B	0.00949	0.00947	0.01301
	SET_B	0.01248	0.01246	0.01598

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	0.00083	0.00083	0.00083
	(CLK * SCD * SCE)	-0.00041	-0.00041	-0.00041
	(CLK * !SCE)	0.00305	0.00289	0.00496
	(CLK * !SCE)	0.00097	0.00080	0.00288
	(CLK * !SCD * SCE)	0.00036	0.00035	0.00034
	(CLK * !SCD * SCE)	-0.00096	-0.00097	-0.00099
	(!CLK * SCD * SCE)	0.00082	0.00084	0.00082
	(!CLK * SCD * SCE)	-0.00041	-0.00042	-0.00041
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00800	0.00780	0.00944
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00607	0.00586	0.00750
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00529	0.00515	0.00672
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00304	0.00289	0.00446
	(!CLK * !SCD * SCE)	0.00036	0.00035	0.00034
	(!CLK * !SCD * SCE)	-0.00096	-0.00097	-0.00099
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00457	0.00444	0.00598
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00233	0.00218	0.00372

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	-0.00078	-0.00079	-0.00081
	(CLK * SCD * SCE)	0.00045	0.00045	0.00043
	(CLK * !SCE)	0.00079	0.00074	0.00319
	(CLK * !SCE)	0.00288	0.00283	0.00528
	(CLK * !SCD * SCE)	-0.00033	-0.00032	-0.00032
	(CLK * !SCD * SCE)	0.00099	0.00099	0.00099
	(!CLK * SCD * SCE)	-0.00078	-0.00079	-0.00082
	(!CLK * SCD * SCE)	0.00045	0.00045	0.00043
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00605	0.00593	0.00830
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00800	0.00787	0.01024
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00233	0.00222	0.00438
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00459	0.00449	0.00665
	(!CLK * !SCD * SCE)	-0.00033	-0.00033	-0.00032
	(!CLK * !SCD * SCE)	0.00099	0.00099	0.00099
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00292	0.00282	0.00504
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00517	0.00507	0.00730

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCE)**	0.00420	0.00409	0.00493
	(CLK * D * SCE)	0.00150	0.00138	0.00224
	(CLK * !D * SCE)	0.00471	0.00459	0.00535
	(CLK * !D * SCE)	0.00192	0.00179	0.00257
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00644	0.00634	0.00703
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00356	0.00345	0.00416
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00914	0.00899	0.00971
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00658	0.00643	0.00715
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00572	0.00561	0.00629
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00285	0.00274	0.00343
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00694	0.00684	0.00747
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00397	0.00386	0.00451
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00964	0.00951	0.01014
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00699	0.00685	0.00750
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00622	0.00612	0.00673
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00326	0.00315	0.00378
	!SCE	0.00070	0.00063	0.00062
	!SCE	-0.00075	-0.00082	-0.00083

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCE)**	0.00176	0.00168	0.00256
	(CLK * D * SCE)	0.00446	0.00438	0.00525
	(CLK * !D * SCE)	0.00149	0.00141	0.00236
	(CLK * !D * SCE)	0.00427	0.00420	0.00513
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00326	0.00318	0.00391
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00615	0.00608	0.00678
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00696	0.00686	0.00774
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00953	0.00943	0.01029
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00385	0.00378	0.00455
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00673	0.00666	0.00741
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00299	0.00291	0.00369
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00596	0.00589	0.00665
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00671	0.00661	0.00757
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00935	0.00925	0.01020
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00359	0.00351	0.00433
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00654	0.00647	0.00728
	!SCE	-0.00060	-0.00061	-0.00061
	!SCE	0.00085	0.00085	0.00084

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)**	0.00340	0.00321	0.00569
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00024	-0.00046	0.00204
	(CLK * D * !SCD)	0.00553	0.00533	0.00777
	(CLK * D * !SCD)	0.00294	0.00271	0.00514
	(CLK * !D * SCD)	0.00616	0.00592	0.00973
	(CLK * !D * SCD)	0.00160	0.00134	0.00519
	(!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)	0.00353	0.00334	0.00583
	(!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)	-0.00011	-0.00033	0.00217
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01078	0.01066	0.01309
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00805	0.00792	0.01031
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00707	0.00695	0.00938
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00467	0.00453	0.00693
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00768	0.00755	0.01000
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00526	0.00512	0.00754
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00854	0.00830	0.01189
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00379	0.00356	0.00717
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01124	0.01096	0.01461
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00682	0.00653	0.01020
	(!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)	0.00350	0.00339	0.00586
	(!CLK * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (!CLK * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	0.00009	-0.00005	0.00243
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00782	0.00759	0.01115
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00308	0.00285	0.00644

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)**	-0.00027	-0.00016	0.00266
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00335	0.00349	0.00630
	(CLK * D * !SCD)	0.00270	0.00270	0.00544
	(CLK * D * !SCD)	0.00531	0.00533	0.00801
	(CLK * !D * SCD)	0.00090	0.00079	0.00489
	(CLK * !D * SCD)	0.00544	0.00535	0.00943
	(!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)	-0.00041	-0.00030	0.00252
	(!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)	0.00322	0.00335	0.00617
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00748	0.00755	0.01016
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01023	0.01030	0.01289
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00478	0.00485	0.00753
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00720	0.00728	0.00994
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00406	0.00413	0.00683
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00649	0.00658	0.00924
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00228	0.00217	0.00602
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00701	0.00690	0.01076
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00600	0.00585	0.00982
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01041	0.01025	0.01423
	(!CLK * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (!CLK * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	-0.00025	-0.00020	0.00262
	(!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)	0.00317	0.00323	0.00605
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00288	0.00276	0.00667
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00759	0.00749	0.01139

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)	0.00403	0.00392	0.00594
	(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)	0.00228	0.00217	0.00420
	(!SET_B * Q * !Q_N)	0.00438	0.00425	0.00639
	(!SET_B * Q * !Q_N)	0.00259	0.00246	0.00460
	(!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)	0.00763	0.00737	0.00930
	(!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)	0.00620	0.00594	0.00787

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)	0.00217	0.00211	0.00462
	(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)	0.00392	0.00385	0.00637
	(!SET_B * Q * !Q_N)	0.00116	0.00114	0.00368
	(!SET_B * Q * !Q_N)	0.00296	0.00294	0.00547
	(!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)	0.00581	0.00566	0.00820
	(!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)	0.00724	0.00709	0.00963

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)	0.00226	0.00228	0.00227
	(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)	-0.00318	-0.00320	-0.00319
	(!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)	0.00598	0.00577	0.00821
	(!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)	0.00012	-0.00012	0.00237

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)	-0.00222	-0.00228	-0.00226
	(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)	0.00320	0.00323	0.00320
	(!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)	0.00144	0.00135	0.00521
	(!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)	0.00728	0.00720	0.01108

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)**	0.00970	0.00938	0.01192
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00674	0.00640	0.00895
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00985	0.00953	0.01208
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00689	0.00656	0.00911
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00963	0.00929	0.01190
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00667	0.00631	0.00893
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01228	0.01197	0.01458
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00914	0.00882	0.01143
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01166	0.01124	0.01382
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00887	0.00843	0.01103
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01181	0.01144	0.01397
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00903	0.00863	0.01118
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00970	0.00938	0.01192
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00674	0.00640	0.00896
	(!D * !SCE * SET_B * !Q * Q_N)	0.00979	0.00944	0.01205
	(!D * !SCE * SET_B * !Q * Q_N)	0.00683	0.00647	0.00909
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01243	0.01213	0.01473
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00929	0.00897	0.01158
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00964	0.00932	0.01190
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00667	0.00635	0.00894
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01229	0.01198	0.01458
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00915	0.00882	0.01143
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01166	0.01124	0.01381
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00887	0.00843	0.01103

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)	0.01034	0.01007	0.01321
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01345	0.01317	0.01633
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00527	0.00511	0.00834
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00823	0.00808	0.01131
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01019	0.00992	0.01307
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01330	0.01303	0.01617
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00511	0.00495	0.00818
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00808	0.00792	0.01116
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01121	0.01110	0.01462
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01407	0.01396	0.01749
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00542	0.00527	0.00846
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00839	0.00824	0.01143
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00736	0.00726	0.01073
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01051	0.01042	0.01388
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00666	0.00645	0.00967
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00946	0.00925	0.01247
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00651	0.00629	0.00951
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00930	0.00910	0.01232
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01034	0.01007	0.01321
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01344	0.01317	0.01633
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00527	0.00511	0.00834
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00823	0.00808	0.01131
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01104	0.01094	0.01445
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01388	0.01378	0.01730
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01122	0.01111	0.01462
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01407	0.01397	0.01747
	(!D * !SCE * SET_B * !Q * Q_N)	0.00527	0.00511	0.00830
	(!D * !SCE * SET_B * !Q * Q_N)	0.00823	0.00809	0.01127
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00721	0.00711	0.01057
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01036	0.01027	0.01373
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00542	0.00527	0.00845
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00839	0.00824	0.01143
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00737	0.00727	0.01073
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01052	0.01043	0.01389
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00666	0.00645	0.00967
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00946	0.00925	0.01247

SKY130_FD_SC_HS__SDFRBPx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT					OUTPUT	
D	SCD	SCE	RESET_B	CLK	Q	Q_N
0	0	x	1	R	0	1
0	1	0	1	R	0	1
x	1	1	1	R	1	0
1	x	0	1	R	1	0
1	0	1	1	R	0	1
x	x	x	0	x	0	1
x	x	x	1	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfrbp_1	46.35360
sky130_fd_sc_hs__sdfrbp_2	49.55040

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)	
	D	SCD	SCE	RESET_B	CLK	Q	Q_N
sky130_fd_sc_hs__sdfrbp_1	0.00182	0.00186	0.00411	0.00565	0.00296	0.77007	0.77450
sky130_fd_sc_hs__sdfrbp_2	0.00184	0.00189	0.00422	0.00575	0.00291	1.54416	1.54527

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfrbp_1	0.00000	0.30075	0.54577
sky130_fd_sc_hs__sdfrbp_2	0.00000	0.31171	0.51900

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)	0.35489	1.01621	7.27477
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RR)	0.42529	0.97560	7.64684

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrbp_1	CLK->Q (RF)	0.30519	0.65191	2.65575
	RESET_B->Q (FF)	0.43493	1.03946	5.44397
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RF)	0.34986	0.66836	2.79794
	RESET_B->Q (FF)	0.48407	1.06171	5.60290

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)	0.25493	0.93929	7.13816
	RESET_B->Q_N (FR)	0.38458	1.32181	9.92213
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RR)	0.25666	0.83655	7.18048
	RESET_B->Q_N (FR)	0.39108	1.22558	9.97907

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)	0.26749	0.70956	2.91620
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RF)	0.29502	0.71614	2.90904

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)	-0.12178	-0.23640	-1.22749
	setup	CLK (R)	0.25237	0.31777	1.39293
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.12580	-0.24566	-1.26460
	setup	CLK (R)	0.24204	0.31665	1.37659

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)	-0.12318	-0.27166	-2.13282
	setup	CLK (R)	0.41683	0.48879	2.91591
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.15992	-0.31343	-2.61667
	setup	CLK (R)	0.43475	0.51008	2.96594

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)	-0.12178	-0.23640	-1.22754
	hold	CLK (R)	-0.12192	-0.24028	-1.22749
	setup	CLK (R)	0.25232	0.31754	1.39290
	setup	CLK (R)	0.25237	0.31777	1.39293
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.12676	-0.24566	-1.26478
	hold	CLK (R)	-0.12580	-0.24598	-1.26460
	setup	CLK (R)	0.24118	0.31659	1.37659
	setup	CLK (R)	0.24204	0.31665	1.37392

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)	-0.12318	-0.27173	-2.13301
	hold	CLK (R)	-0.12336	-0.27166	-2.13282
	setup	CLK (R)	0.41683	0.48879	2.91290
	setup	CLK (R)	0.41304	0.48876	2.91591
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.15992	-0.31416	-2.61667
	hold	CLK (R)	-0.16039	-0.31343	-2.61732
	setup	CLK (R)	0.43475	0.51008	2.96594
	setup	CLK (R)	0.43230	0.50935	2.96582

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)	-0.14814	-0.25889	-1.41077
	setup	CLK (R)	0.27917	0.33646	1.53770
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.15227	-0.26311	-1.43070
	setup	CLK (R)	0.26709	0.33437	1.53151

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)	-0.16433	-0.33352	-2.71526
	setup	CLK (R)	0.50621	0.59476	3.37085
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.20363	-0.37659	-3.11387
	setup	CLK (R)	0.52483	0.60952	3.40495

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)	-0.14814	-0.25889	-1.41077
	hold	CLK (R)	-0.15347	-0.26462	-1.41693
	setup	CLK (R)	0.27902	0.33385	1.53088
	setup	CLK (R)	0.27917	0.33646	1.53770
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.15227	-0.26311	-1.43070
	hold	CLK (R)	-0.15646	-0.26809	-1.44483
	setup	CLK (R)	0.26607	0.33128	1.51585
	setup	CLK (R)	0.26709	0.33437	1.53151

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)	-0.17696	-0.35176	-2.77636
	hold	CLK (R)	-0.16433	-0.33352	-2.71526
	setup	CLK (R)	0.50621	0.59476	3.37085
	setup	CLK (R)	0.50553	0.59018	3.35875
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.21828	-0.39742	-3.13383
	hold	CLK (R)	-0.20363	-0.37659	-3.11387
	setup	CLK (R)	0.52136	0.60952	3.40495
	setup	CLK (R)	0.52483	0.60930	3.40260

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)	-0.12764	-0.24225	-0.41979
	setup	CLK (R)	0.50299	0.49564	1.41734
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.13120	-0.24797	-0.48801
	setup	CLK (R)	0.51724	0.50877	1.39853

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)	-0.14059	-0.30120	-2.41272
	setup	CLK (R)	0.43624	0.51776	3.15065
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.17506	-0.33658	-2.39066
	setup	CLK (R)	0.44715	0.53223	3.18458

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)	-0.17402	-0.25476	-0.41979
	hold	CLK (R)	-0.12764	-0.24225	-1.26754
	setup	CLK (R)	0.50299	0.49564	0.80415
	setup	CLK (R)	0.25173	0.32165	1.41734
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.21286	-0.29790	-0.48801
	hold	CLK (R)	-0.13120	-0.24797	-1.29484
	setup	CLK (R)	0.51724	0.50877	0.72960
	setup	CLK (R)	0.24074	0.31715	1.39853

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)	-0.22923	-0.40215	-2.41272
	hold	CLK (R)	-0.14059	-0.30120	-2.49131
	setup	CLK (R)	0.35813	0.47725	2.48103
	setup	CLK (R)	0.43624	0.51776	3.15065
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.23049	-0.40111	-2.39066
	hold	CLK (R)	-0.17506	-0.33658	-2.87380
	setup	CLK (R)	0.34473	0.46751	2.45040
	setup	CLK (R)	0.44715	0.53223	3.18458

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)	0.30192	0.34228	1.56984
	removal	CLK (R)	-0.21984	-0.28069	-1.36854
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.29009	0.34013	1.55192
	removal	CLK (R)	-0.23035	-0.28897	-1.40314

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)	0.30192	0.33792	1.56465
	recovery	CLK (R)	0.29693	0.32793	1.48747
	recovery	CLK (R)	0.28907	0.32039	1.45081
	recovery	CLK (R)	0.30175	0.34228	1.56984
	removal	CLK (R)	-0.23044	-0.30007	-1.48790
	removal	CLK (R)	-0.22568	-0.29172	-1.41551
	removal	CLK (R)	-0.21984	-0.28069	-1.36854
	removal	CLK (R)	-0.23382	-0.30547	-1.49811
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.28749	0.33609	1.54113
	recovery	CLK (R)	0.28076	0.32622	1.47439
	recovery	CLK (R)	0.27985	0.31542	1.43183
	recovery	CLK (R)	0.29009	0.34013	1.55192
	removal	CLK (R)	-0.24112	-0.30837	-1.51415
	removal	CLK (R)	-0.23406	-0.30007	-1.44358
	removal	CLK (R)	-0.23035	-0.28897	-1.40314
	removal	CLK (R)	-0.24241	-0.31383	-1.52878

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 ()	0.22598	0.77881	16.50020
	min_pulse_width	RESET_B ()	0.19124	0.77881	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	RESET_B ()	0.22887	0.77881	16.50020
	min_pulse_width	RESET_B ()	0.20861	0.77881	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 ()	0.21151	0.77881	16.50020
	min_pulse_width	CLK ()	0.11599	0.77881	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.27518	0.77881	16.50020
	min_pulse_width	CLK ()	0.13625	0.77881	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 ()	0.28965	0.77881	16.50020
	min_pulse_width	CLK ()	0.37938	0.77881	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.26939	0.77881	16.50020
	min_pulse_width	CLK ()	0.37938	0.77881	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	0.00984	0.00984	0.01124
	CLK	0.00832	0.00832	0.00969
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01156	0.01186	0.01346
	CLK	0.01001	0.01031	0.01183

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.01004	0.01012	0.01162
	CLK	0.00855	0.00863	0.01011
	RESET_B	0.00848	0.00839	0.01056
	RESET_B	0.01201	0.01191	0.01378
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01167	0.01203	0.01373
	CLK	0.01028	0.01063	0.01228
	RESET_B	0.01019	0.01039	0.01266
	RESET_B	0.01380	0.01400	0.01586

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.01005	0.01015	0.01177
	CLK	0.00855	0.00864	0.01026
	RESET_B	0.00850	0.00841	0.01043
	RESET_B	0.01204	0.01194	0.01392
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01168	0.01207	0.01382
	CLK	0.01029	0.01064	0.01239
	RESET_B	0.01021	0.01041	0.01267
	RESET_B	0.01383	0.01403	0.01606

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.00983	0.00983	0.01111
	CLK	0.00831	0.00831	0.00956
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01155	0.01184	0.01322
	CLK	0.01000	0.01029	0.01163

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * RESET_B * SCD * SCE)	0.00081	0.00082	0.00081
	(CLK * RESET_B * SCD * SCE)	-0.00040	-0.00040	-0.00040
	(CLK * RESET_B * SCD * !SCE)	0.00355	0.00341	0.00534
	(CLK * RESET_B * SCD * !SCE)	0.00125	0.00110	0.00304
	(CLK * RESET_B * !SCD * !SCE)	0.00355	0.00341	0.00534
	(CLK * RESET_B * !SCD * !SCE)	0.00125	0.00110	0.00304
	(CLK * !SCD * SCE)	0.00043	0.00044	0.00042
	(CLK * !SCD * SCE)	-0.00084	-0.00086	-0.00087
	(CLK * !RESET_B * SCD * SCE)	0.00042	0.00042	0.00041
	(CLK * !RESET_B * SCD * SCE)	-0.00085	-0.00087	-0.00087
	(CLK * !RESET_B * SCD * !SCE)	0.00031	0.00030	0.00026
	(CLK * !RESET_B * SCD * !SCE)	-0.00096	-0.00096	-0.00103
	(CLK * !RESET_B * !SCD * !SCE)	0.00030	0.00030	0.00026
	(CLK * !RESET_B * !SCD * !SCE)	-0.00099	-0.00100	-0.00104
	(!CLK * RESET_B * SCD * SCE)	0.00081	0.00081	0.00081
	(!CLK * RESET_B * SCD * SCE)	-0.00040	-0.00040	-0.00040
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.00802	0.00790	0.00945
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00559	0.00547	0.00702
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00802	0.00790	0.00945
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00559	0.00547	0.00702
	(!CLK * !SCD * SCE)	0.00043	0.00044	0.00043
	(!CLK * !SCD * SCE)	-0.00083	-0.00085	-0.00087
	(!CLK * !RESET_B * SCD * SCE)	0.00042	0.00042	0.00041
	(!CLK * !RESET_B * SCD * SCE)	-0.00085	-0.00087	-0.00087
	(!CLK * !RESET_B * SCD * !SCE)	0.00031	0.00031	0.00026
	(!CLK * !RESET_B * SCD * !SCE)	-0.00096	-0.00097	-0.00103
	(!CLK * !RESET_B * !SCD * !SCE)	0.00030	0.00030	0.00026
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00099	-0.00100	-0.00104

	(CLK * RESET_B * SCD * SCE)	0.00082	0.00082	0.00083
	(CLK * RESET_B * SCD * SCE)	-0.00039	-0.00039	-0.00039
	(CLK * RESET_B * SCD * !SCE)	0.00377	0.00362	0.00551
	(CLK * RESET_B * SCD * !SCE)	0.00142	0.00127	0.00316
	(CLK * RESET_B * !SCD * !SCE)	0.00377	0.00362	0.00551
	(CLK * RESET_B * !SCD * !SCE)	0.00142	0.00127	0.00316
	(CLK * !SCD * SCE)	0.00044	0.00044	0.00043
	(CLK * !SCD * SCE)	-0.00085	-0.00087	-0.00088
	(CLK * !RESET_B * SCD * SCE)	0.00042	0.00042	0.00042
	(CLK * !RESET_B * SCD * SCE)	-0.00086	-0.00088	-0.00088
	(CLK * !RESET_B * SCD * !SCE)	0.00030	0.00030	0.00025
	(CLK * !RESET_B * SCD * !SCE)	-0.00099	-0.00099	-0.00105
	(CLK * !RESET_B * !SCD * !SCE)	0.00029	0.00029	0.00026
	(CLK * !RESET_B * !SCD * !SCE)	-0.00102	-0.00102	-0.00107
	(!CLK * RESET_B * SCD * SCE)	0.00082	0.00083	0.00083
	(!CLK * RESET_B * SCD * SCE)	-0.00039	-0.00040	-0.00040
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.00827	0.00813	0.00975
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00579	0.00565	0.00727
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00827	0.00813	0.00975
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00579	0.00566	0.00727
	(!CLK * !SCD * SCE)	0.00044	0.00044	0.00043
	(!CLK * !SCD * SCE)	-0.00085	-0.00086	-0.00088
	(!CLK * !RESET_B * SCD * SCE)	0.00042	0.00042	0.00042
	(!CLK * !RESET_B * SCD * SCE)	-0.00086	-0.00088	-0.00088
	(!CLK * !RESET_B * SCD * !SCE)	0.00030	0.00029	0.00025
	(!CLK * !RESET_B * SCD * !SCE)	-0.00099	-0.00099	-0.00105
	(!CLK * !RESET_B * !SCD * !SCE)	0.00029	0.00029	0.00026
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00102	-0.00102	-0.00107

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrbp_1	**(CLK * RESET_B * SCD * SCE)**	-0.00076	-0.00078	-0.00080
	(CLK * RESET_B * SCD * SCE)	0.00043	0.00043	0.00041
	(CLK * RESET_B * SCD * !SCE)	0.00047	0.00042	0.00280
	(CLK * RESET_B * SCD * !SCE)	0.00278	0.00272	0.00510
	(CLK * RESET_B * !SCD * !SCE)	0.00047	0.00041	0.00280
	(CLK * RESET_B * !SCD * !SCE)	0.00278	0.00271	0.00510
	(CLK * !SCD * SCE)	-0.00041	-0.00041	-0.00041
	(CLK * !SCD * SCE)	0.00087	0.00087	0.00087
	(CLK * !RESET_B * SCD * SCE)	-0.00041	-0.00041	-0.00040
	(CLK * !RESET_B * SCD * SCE)	0.00087	0.00088	0.00087
	(CLK * !RESET_B * SCD * !SCE)	-0.00025	-0.00025	-0.00025
	(CLK * !RESET_B * SCD * !SCE)	0.00104	0.00104	0.00104
	(CLK * !RESET_B * !SCD * !SCE)	-0.00025	-0.00025	-0.00025
	(CLK * !RESET_B * !SCD * !SCE)	0.00105	0.00104	0.00105
	(!CLK * RESET_B * SCD * SCE)	-0.00076	-0.00077	-0.00080
	(!CLK * RESET_B * SCD * SCE)	0.00043	0.00043	0.00041
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00462	0.00454	0.00722
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00705	0.00697	0.00965
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00462	0.00454	0.00722
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00705	0.00697	0.00965
	(!CLK * !SCD * SCE)	-0.00041	-0.00041	-0.00041
	(!CLK * !SCD * SCE)	0.00087	0.00087	0.00087
	(!CLK * !RESET_B * SCD * SCE)	-0.00040	-0.00041	-0.00040
	(!CLK * !RESET_B * SCD * SCE)	0.00087	0.00088	0.00087
	(!CLK * !RESET_B * SCD * !SCE)	-0.00025	-0.00025	-0.00025
	(!CLK * !RESET_B * SCD * !SCE)	0.00104	0.00104	0.00104
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00025	-0.00025	-0.00025
	(!CLK * !RESET_B * !SCD * !SCE)	0.00104	0.00104	0.00105

sky130_fd_sc_hs__sdfrbp_2	**(CLK * RESET_B * SCD * SCE)**	-0.00078	-0.00080	-0.00082
	(CLK * RESET_B * SCD * SCE)	0.00043	0.00043	0.00041
	(CLK * RESET_B * SCD * !SCE)	0.00054	0.00048	0.00284
	(CLK * RESET_B * SCD * !SCE)	0.00290	0.00284	0.00519
	(CLK * RESET_B * !SCD * !SCE)	0.00055	0.00047	0.00284
	(CLK * RESET_B * !SCD * !SCE)	0.00290	0.00282	0.00519
	(CLK * !SCD * SCE)	-0.00042	-0.00042	-0.00042
	(CLK * !SCD * SCE)	0.00088	0.00088	0.00088
	(CLK * !RESET_B * SCD * SCE)	-0.00041	-0.00041	-0.00041
	(CLK * !RESET_B * SCD * SCE)	0.00088	0.00089	0.00088
	(CLK * !RESET_B * SCD * !SCE)	-0.00024	-0.00024	-0.00023
	(CLK * !RESET_B * SCD * !SCE)	0.00107	0.00107	0.00107
	(CLK * !RESET_B * !SCD * !SCE)	-0.00024	-0.00024	-0.00023
	(CLK * !RESET_B * !SCD * !SCE)	0.00107	0.00107	0.00107
	(!CLK * RESET_B * SCD * SCE)	-0.00078	-0.00080	-0.00082
	(!CLK * RESET_B * SCD * SCE)	0.00043	0.00043	0.00041
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00470	0.00462	0.00728
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00717	0.00709	0.00976
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00470	0.00462	0.00728
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00717	0.00709	0.00976
	(!CLK * !SCD * SCE)	-0.00042	-0.00042	-0.00042
	(!CLK * !SCD * SCE)	0.00088	0.00088	0.00088
	(!CLK * !RESET_B * SCD * SCE)	-0.00041	-0.00042	-0.00041
	(!CLK * !RESET_B * SCD * SCE)	0.00088	0.00089	0.00088
	(!CLK * !RESET_B * SCD * !SCE)	-0.00024	-0.00024	-0.00023
	(!CLK * !RESET_B * SCD * !SCE)	0.00107	0.00107	0.00107
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00024	-0.00024	-0.00023
	(!CLK * !RESET_B * !SCD * !SCE)	0.00107	0.00108	0.00107

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.00457	0.00443	0.00530
	(CLK * D * RESET_B * SCE)	0.00165	0.00150	0.00238
	(CLK * D * RESET_B * !SCE)	0.00076	0.00068	0.00067
	(CLK * D * RESET_B * !SCE)	-0.00074	-0.00082	-0.00083
	(CLK * D * !RESET_B * SCE)	0.00038	0.00039	0.00037
	(CLK * D * !RESET_B * SCE)	-0.00090	-0.00091	-0.00090
	(CLK * D * !RESET_B * !SCE)	0.00028	0.00028	0.00028
	(CLK * D * !RESET_B * !SCE)	-0.00098	-0.00098	-0.00099
	(CLK * !D * RESET_B * SCE)	0.00507	0.00494	0.00572
	(CLK * !D * RESET_B * SCE)	0.00206	0.00192	0.00271
	(CLK * !D * !RESET_B * SCE)	0.00038	0.00039	0.00037
	(CLK * !D * !RESET_B * SCE)	-0.00090	-0.00091	-0.00090
	(!D * RESET_B * !SCE)	0.00053	0.00054	0.00053
	(!D * RESET_B * !SCE)	-0.00095	-0.00097	-0.00096
	(!D * !RESET_B * !SCE)	0.00032	0.00032	0.00032
	(!D * !RESET_B * !SCE)	-0.00101	-0.00103	-0.00103
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.00903	0.00891	0.00971
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00599	0.00586	0.00666
	(!CLK * D * RESET_B * !SCE)	0.00076	0.00068	0.00067
	(!CLK * D * RESET_B * !SCE)	-0.00072	-0.00082	-0.00083
	(!CLK * D * !RESET_B * SCE)	0.00038	0.00039	0.00037
	(!CLK * D * !RESET_B * SCE)	-0.00090	-0.00091	-0.00090
	(!CLK * D * !RESET_B * !SCE)	0.00028	0.00028	0.00028
	(!CLK * D * !RESET_B * !SCE)	-0.00098	-0.00098	-0.00099
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00954	0.00942	0.01013
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00641	0.00629	0.00700
	(!CLK * !D * !RESET_B * SCE)	0.00039	0.00039	0.00037
	(!CLK * !D * !RESET_B * SCE)	-0.00090	-0.00091	-0.00090

	(CLK * D * RESET_B * SCE)	0.00473	0.00459	0.00545
	(CLK * D * RESET_B * SCE)	0.00176	0.00161	0.00248
	(CLK * D * RESET_B * !SCE)	0.00079	0.00070	0.00069
	(CLK * D * RESET_B * !SCE)	-0.00073	-0.00082	-0.00083
	(CLK * D * !RESET_B * SCE)	0.00040	0.00040	0.00039
	(CLK * D * !RESET_B * SCE)	-0.00091	-0.00091	-0.00090
	(CLK * D * !RESET_B * !SCE)	0.00029	0.00029	0.00029
	(CLK * D * !RESET_B * !SCE)	-0.00099	-0.00099	-0.00099
	(CLK * !D * RESET_B * SCE)	0.00523	0.00510	0.00586
	(CLK * !D * RESET_B * SCE)	0.00217	0.00204	0.00282
	(CLK * !D * !RESET_B * SCE)	0.00040	0.00040	0.00039
	(CLK * !D * !RESET_B * SCE)	-0.00091	-0.00091	-0.00090
	(!D * RESET_B * !SCE)	0.00055	0.00055	0.00055
	(!D * RESET_B * !SCE)	-0.00097	-0.00097	-0.00097
	(!D * !RESET_B * !SCE)	0.00033	0.00033	0.00033
	(!D * !RESET_B * !SCE)	-0.00103	-0.00104	-0.00104
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.00922	0.00909	0.00988
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00612	0.00599	0.00678
	(!CLK * D * RESET_B * !SCE)	0.00078	0.00070	0.00069
	(!CLK * D * RESET_B * !SCE)	-0.00072	-0.00082	-0.00083
	(!CLK * D * !RESET_B * SCE)	0.00040	0.00040	0.00039
	(!CLK * D * !RESET_B * SCE)	-0.00091	-0.00091	-0.00090
	(!CLK * D * !RESET_B * !SCE)	0.00029	0.00029	0.00029
	(!CLK * D * !RESET_B * !SCE)	-0.00099	-0.00099	-0.00099
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00972	0.00961	0.01031
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00654	0.00642	0.00713
	(!CLK * !D * !RESET_B * SCE)	0.00040	0.00040	0.00039
	(!CLK * !D * !RESET_B * SCE)	-0.00091	-0.00091	-0.00090

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.00137	0.00121	0.00217
	(CLK * D * RESET_B * SCE)	0.00429	0.00414	0.00508
	(CLK * D * RESET_B * !SCE)	-0.00064	-0.00066	-0.00066
	(CLK * D * RESET_B * !SCE)	0.00084	0.00084	0.00084
	(CLK * D * !RESET_B * SCE)	-0.00034	-0.00035	-0.00035
	(CLK * D * !RESET_B * SCE)	0.00092	0.00093	0.00091
	(CLK * D * !RESET_B * !SCE)	-0.00027	-0.00027	-0.00027
	(CLK * D * !RESET_B * !SCE)	0.00099	0.00100	0.00099
	(CLK * !D * RESET_B * SCE)	0.00105	0.00089	0.00191
	(CLK * !D * RESET_B * SCE)	0.00405	0.00390	0.00491
	(CLK * !D * !RESET_B * SCE)	-0.00034	-0.00035	-0.00035
	(CLK * !D * !RESET_B * SCE)	0.00092	0.00093	0.00091
	(!D * RESET_B * !SCE)	-0.00050	-0.00053	-0.00053
	(!D * RESET_B * !SCE)	0.00098	0.00097	0.00097
	(!D * !RESET_B * !SCE)	-0.00032	-0.00032	-0.00032
	(!D * !RESET_B * !SCE)	0.00104	0.00104	0.00104
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.00550	0.00534	0.00658
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00855	0.00840	0.00961
	(!CLK * D * RESET_B * !SCE)	-0.00064	-0.00066	-0.00066
	(!CLK * D * RESET_B * !SCE)	0.00084	0.00084	0.00084
	(!CLK * D * !RESET_B * SCE)	-0.00034	-0.00035	-0.00035
	(!CLK * D * !RESET_B * SCE)	0.00092	0.00092	0.00091
	(!CLK * D * !RESET_B * !SCE)	-0.00027	-0.00027	-0.00027
	(!CLK * D * !RESET_B * !SCE)	0.00099	0.00100	0.00099
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00519	0.00504	0.00633
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00833	0.00817	0.00945
	(!CLK * !D * !RESET_B * SCE)	-0.00034	-0.00034	-0.00035
	(!CLK * !D * !RESET_B * SCE)	0.00092	0.00092	0.00091

	(CLK * D * RESET_B * SCE)	0.00142	0.00125	0.00221
	(CLK * D * RESET_B * SCE)	0.00439	0.00423	0.00517
	(CLK * D * RESET_B * !SCE)	-0.00066	-0.00068	-0.00068
	(CLK * D * RESET_B * !SCE)	0.00084	0.00084	0.00084
	(CLK * D * !RESET_B * SCE)	-0.00036	-0.00036	-0.00037
	(CLK * D * !RESET_B * SCE)	0.00093	0.00093	0.00091
	(CLK * D * !RESET_B * !SCE)	-0.00028	-0.00028	-0.00028
	(CLK * D * !RESET_B * !SCE)	0.00100	0.00101	0.00100
	(CLK * !D * RESET_B * SCE)	0.00114	0.00098	0.00200
	(CLK * !D * RESET_B * SCE)	0.00419	0.00403	0.00504
	(CLK * !D * !RESET_B * SCE)	-0.00036	-0.00036	-0.00037
	(CLK * !D * !RESET_B * SCE)	0.00093	0.00093	0.00091
	(!D * RESET_B * !SCE)	-0.00051	-0.00054	-0.00055
	(!D * RESET_B * !SCE)	0.00099	0.00098	0.00097
	(!D * !RESET_B * !SCE)	-0.00033	-0.00033	-0.00033
	(!D * !RESET_B * !SCE)	0.00105	0.00106	0.00105
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.00555	0.00541	0.00663
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00865	0.00852	0.00972
	(!CLK * D * RESET_B * !SCE)	-0.00066	-0.00068	-0.00068
	(!CLK * D * RESET_B * !SCE)	0.00084	0.00084	0.00084
	(!CLK * D * !RESET_B * SCE)	-0.00036	-0.00036	-0.00037
	(!CLK * D * !RESET_B * SCE)	0.00093	0.00093	0.00091
	(!CLK * D * !RESET_B * !SCE)	-0.00028	-0.00028	-0.00028
	(!CLK * D * !RESET_B * !SCE)	0.00100	0.00101	0.00100
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00529	0.00513	0.00650
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00847	0.00832	0.00967
	(!CLK * !D * !RESET_B * SCE)	-0.00036	-0.00036	-0.00037
	(!CLK * !D * !RESET_B * SCE)	0.00093	0.00093	0.00091

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)**	0.00411	0.00383	0.00616
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00011	-0.00018	0.00216
	(CLK * D * RESET_B * !SCD)	0.00580	0.00554	0.00788
	(CLK * D * RESET_B * !SCD)	0.00312	0.00284	0.00517
	(CLK * !D * RESET_B * SCD)	0.00753	0.00719	0.01078
	(CLK * !D * RESET_B * SCD)	0.00237	0.00202	0.00563
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00411	0.00383	0.00616
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00012	-0.00019	0.00216
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00986	0.00966	0.01198
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00730	0.00710	0.00938
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00404	0.00383	0.00622
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00025	0.00001	0.00240
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01199	0.01166	0.01516
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00672	0.00638	0.00990

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00381	0.00354	0.00593
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00031	-0.00061	0.00180
	(CLK * D * RESET_B * !SCD)	0.00560	0.00534	0.00770
	(CLK * D * RESET_B * !SCD)	0.00282	0.00253	0.00488
	(CLK * !D * RESET_B * SCD)	0.00741	0.00708	0.01071
	(CLK * !D * RESET_B * SCD)	0.00211	0.00175	0.00540
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00382	0.00354	0.00593
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00031	-0.00062	0.00180
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00966	0.00947	0.01185
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00701	0.00680	0.00914
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00378	0.00360	0.00602
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00014	-0.00034	0.00207
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01190	0.01157	0.01513
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00647	0.00612	0.00970

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)**	-0.00020	-0.00022	0.00260
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00381	0.00379	0.00660
	(CLK * D * RESET_B * !SCD)	0.00334	0.00321	0.00593
	(CLK * D * RESET_B * !SCD)	0.00603	0.00590	0.00860
	(CLK * !D * RESET_B * SCD)	0.00081	0.00062	0.00455
	(CLK * !D * RESET_B * SCD)	0.00595	0.00576	0.00970
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00019	-0.00021	0.00261
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00381	0.00379	0.00659
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00779	0.00772	0.01041
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01036	0.01030	0.01297
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00018	-0.00021	0.00255
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00362	0.00361	0.00635
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00495	0.00475	0.00885
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01023	0.01002	0.01413

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00017	-0.00018	0.00266
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00397	0.00394	0.00679
	(CLK * D * RESET_B * !SCD)	0.00358	0.00346	0.00619
	(CLK * D * RESET_B * !SCD)	0.00641	0.00627	0.00897
	(CLK * !D * RESET_B * SCD)	0.00087	0.00068	0.00463
	(CLK * !D * RESET_B * SCD)	0.00618	0.00599	0.00995
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00017	-0.00018	0.00266
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00398	0.00396	0.00679
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00806	0.00799	0.01069
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01076	0.01067	0.01336
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00018	-0.00020	0.00258
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00377	0.00374	0.00652
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00501	0.00483	0.00897
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01046	0.01027	0.01440

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)**	0.00662	0.00643	0.00778
	(CLK * D * SCD * SCE * !Q * Q_N)	-0.00019	-0.00038	0.00096
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00636	0.00617	0.00762
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00021	-0.00042	0.00106
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00224	0.00225	0.00224
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00285	-0.00285	-0.00285
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00607	0.00588	0.00742
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00020	-0.00041	0.00114
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00712	0.00695	0.00817
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00023	0.00004	0.00127
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00221	0.00221	0.00221
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00286	-0.00285	-0.00286
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00223	0.00224	0.00224
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00284	-0.00285	-0.00285
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00221	0.00225	0.00222
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00286	-0.00287	-0.00287
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01152	0.01112	0.01244
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00461	0.00419	0.00551
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01127	0.01084	0.01227
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00460	0.00417	0.00557
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00224	0.00225	0.00224
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00284	-0.00285	-0.00284
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01098	0.01057	0.01203
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00461	0.00416	0.00562
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01203	0.01165	0.01285
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00503	0.00462	0.00585
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00222	0.00222	0.00222
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00286	-0.00286	-0.00286
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00224	0.00225	0.00224
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00284	-0.00285	-0.00284
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00222	0.00223	0.00222
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00286	-0.00286	-0.00286

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.00668	0.00651	0.00781
	(CLK * D * SCD * SCE * !Q * Q_N)	-0.00015	-0.00035	0.00099
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00650	0.00632	0.00774
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00008	-0.00030	0.00113
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00215	0.00217	0.00216
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00291	-0.00292	-0.00291
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00621	0.00603	0.00753
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00008	-0.00030	0.00121
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00719	0.00703	0.00821
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00027	0.00007	0.00129
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00213	0.00216	0.00213
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00292	-0.00294	-0.00293
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00215	0.00216	0.00216
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00291	-0.00291	-0.00291
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00213	0.00216	0.00214
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00293	-0.00294	-0.00293
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01159	0.01120	0.01249
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00465	0.00424	0.00554
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01141	0.01101	0.01237
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00472	0.00428	0.00566
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00215	0.00216	0.00215
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00292	-0.00292	-0.00292
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01113	0.01073	0.01215
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00473	0.00428	0.00572
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01210	0.01170	0.01291
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00507	0.00468	0.00589
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00212	0.00213	0.00213
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00292	-0.00293	-0.00293
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00215	0.00216	0.00215
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00292	-0.00292	-0.00292
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00213	0.00214	0.00213
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00294	-0.00294	-0.00294

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)**	0.00037	0.00023	0.00261
	(CLK * D * SCD * SCE * !Q * Q_N)	0.00718	0.00707	0.00942
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00023	-0.00037	0.00200
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00635	0.00623	0.00858
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00220	-0.00224	-0.00224
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00289	0.00286	0.00286
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00043	-0.00056	0.00187
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00586	0.00574	0.00817
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00005	-0.00009	0.00238
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00694	0.00684	0.00928
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00216	-0.00221	-0.00221
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00291	0.00287	0.00286
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00220	-0.00224	-0.00224
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00289	0.00286	0.00286
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00217	-0.00223	-0.00222
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00292	0.00287	0.00287
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00495	0.00452	0.00708
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01188	0.01146	0.01402
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00436	0.00391	0.00645
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01105	0.01062	0.01313
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00221	-0.00224	-0.00224
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00288	0.00285	0.00285
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00416	0.00373	0.00632
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01056	0.01015	0.01274
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00464	0.00418	0.00686
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01164	0.01121	0.01388
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00216	-0.00222	-0.00222
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00290	0.00286	0.00286
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00221	-0.00224	-0.00224
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00288	0.00285	0.00285
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00218	-0.00223	-0.00222
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00291	0.00287	0.00286

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.00049	0.00037	0.00273
	(CLK * D * SCD * SCE * !Q * Q_N)	0.00733	0.00720	0.00955
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00013	-0.00028	0.00208
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00647	0.00635	0.00869
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00212	-0.00216	-0.00216
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00295	0.00293	0.00292
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00033	-0.00047	0.00196
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00598	0.00586	0.00828
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00022	0.00008	0.00253
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00713	0.00702	0.00945
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00207	-0.00215	-0.00213
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00298	0.00294	0.00293
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00212	-0.00216	-0.00216
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00295	0.00293	0.00292
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00209	-0.00215	-0.00214
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00299	0.00294	0.00293
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00510	0.00465	0.00722
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01204	0.01162	0.01418
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00447	0.00402	0.00655
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01118	0.01074	0.01328
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00212	-0.00216	-0.00215
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00296	0.00293	0.00293
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00428	0.00385	0.00643
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01069	0.01027	0.01287
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00482	0.00439	0.00703
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01185	0.01145	0.01408
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00207	-0.00213	-0.00213
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00298	0.00294	0.00293
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00211	-0.00215	-0.00215
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00296	0.00292	0.00293
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00208	-0.00214	-0.00213
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00299	0.00295	0.00294

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)**	0.00944	0.00909	0.01174
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00643	0.00606	0.00872
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00944	0.00909	0.01174
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00643	0.00606	0.00872
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00944	0.00909	0.01174
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00643	0.00606	0.00873
	(D * !SCD * SCE * !Q * Q_N)	0.00972	0.00939	0.01201
	(D * !SCD * SCE * !Q * Q_N)	0.00671	0.00636	0.00899
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00972	0.00939	0.01202
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00671	0.00636	0.00901
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00972	0.00939	0.01202
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00670	0.00636	0.00901
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00972	0.00939	0.01201
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00670	0.00636	0.00900
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00944	0.00909	0.01174
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00643	0.00607	0.00872
	(!D * !SCE * !Q * Q_N)	0.00972	0.00939	0.01201
	(!D * !SCE * !Q * Q_N)	0.00670	0.00636	0.00899
	(!D * !SCD * SCE * !Q * Q_N)	0.00972	0.00938	0.01202
	(!D * !SCD * SCE * !Q * Q_N)	0.00671	0.00637	0.00900
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00972	0.00939	0.01203
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00671	0.00636	0.00901

sky130_fd_sc_hs__sdfrbp_2	**(D * RESET_B * SCD * SCE * Q * !Q_N)**	0.00949	0.00912	0.01177
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00654	0.00617	0.00882
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00949	0.00912	0.01178
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00654	0.00617	0.00882
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00949	0.00912	0.01178
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00654	0.00617	0.00882
	(D * !SCD * SCE * !Q * Q_N)	0.00972	0.00935	0.01199
	(D * !SCD * SCE * !Q * Q_N)	0.00677	0.00639	0.00904
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00972	0.00935	0.01199
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00677	0.00639	0.00903
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00971	0.00935	0.01199
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00676	0.00639	0.00904
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00971	0.00935	0.01199
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00676	0.00639	0.00904
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00949	0.00913	0.01178
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00654	0.00617	0.00882
	(!D * !SCE * !Q * Q_N)	0.00972	0.00935	0.01199
	(!D * !SCE * !Q * Q_N)	0.00676	0.00639	0.00904
	(!D * !SCD * SCE * !Q * Q_N)	0.00972	0.00935	0.01199
	(!D * !SCD * SCE * !Q * Q_N)	0.00677	0.00639	0.00903
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00972	0.00935	0.01199
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00677	0.00639	0.00903

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)	0.00511	0.00498	0.00820
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00814	0.00800	0.01122
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.00931	0.00910	0.01233
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01221	0.01199	0.01523
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00511	0.00498	0.00820
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00813	0.00800	0.01122
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.00927	0.00907	0.01229
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01217	0.01195	0.01519
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.00980	0.00973	0.01327
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01297	0.01289	0.01644
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00511	0.00498	0.00820
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00814	0.00800	0.01122
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00927	0.00907	0.01229
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01217	0.01195	0.01519
	(D * !SCD * SCE * !Q * Q_N)	0.00475	0.00461	0.00785
	(D * !SCD * SCE * !Q * Q_N)	0.00778	0.00763	0.01087
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00476	0.00462	0.00785
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00778	0.00764	0.01087
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00475	0.00462	0.00785
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00778	0.00764	0.01087
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00475	0.00462	0.00785
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00778	0.00764	0.01087
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00511	0.00498	0.00820
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00814	0.00800	0.01122
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.00934	0.00914	0.01236
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01223	0.01202	0.01525
	(!D * RESET_B * !SCE * Q * !Q_N)	0.00977	0.00971	0.01325
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01292	0.01285	0.01640
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.00979	0.00972	0.01324
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01295	0.01287	0.01639
	(!D * !SCE * !Q * Q_N)	0.00475	0.00461	0.00784
	(!D * !SCE * !Q * Q_N)	0.00778	0.00763	0.01087
	(!D * !SCD * SCE * !Q * Q_N)	0.00475	0.00461	0.00785
	(!D * !SCD * SCE * !Q * Q_N)	0.00778	0.00763	0.01087
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00476	0.00462	0.00785
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00778	0.00764	0.01087

sky130_fd_sc_hs__sdfrbp_2	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00508	0.00500	0.00819
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00803	0.00796	0.01114
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.00934	0.00913	0.01236
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01216	0.01195	0.01519
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00508	0.00500	0.00819
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00803	0.00795	0.01114
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.00930	0.00909	0.01232
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01212	0.01192	0.01516
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.00976	0.00974	0.01323
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01285	0.01284	0.01633
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00508	0.00500	0.00819
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00803	0.00796	0.01114
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00930	0.00909	0.01233
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01212	0.01191	0.01516
	(D * !SCD * SCE * !Q * Q_N)	0.00478	0.00466	0.00790
	(D * !SCD * SCE * !Q * Q_N)	0.00773	0.00762	0.01086
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00478	0.00468	0.00790
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00773	0.00764	0.01086
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00478	0.00467	0.00790
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00773	0.00763	0.01086
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00478	0.00467	0.00790
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00773	0.00763	0.01086
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00508	0.00500	0.00819
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00803	0.00796	0.01114
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.00937	0.00916	0.01239
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01217	0.01198	0.01521
	(!D * RESET_B * !SCE * Q * !Q_N)	0.00974	0.00972	0.01321
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01281	0.01280	0.01630
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.00975	0.00973	0.01322
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01284	0.01282	0.01632
	(!D * !SCE * !Q * Q_N)	0.00478	0.00466	0.00789
	(!D * !SCE * !Q * Q_N)	0.00773	0.00762	0.01086
	(!D * !SCD * SCE * !Q * Q_N)	0.00478	0.00467	0.00790
	(!D * !SCD * SCE * !Q * Q_N)	0.00773	0.00763	0.01086
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00478	0.00466	0.00790
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00773	0.00763	0.01086

SKY130_FD_SC_HS__SDFRTN

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT					OUTPUT
D	SCD	SCE	RESET_B	CLK_N	Q
0	0	x	1	F	0
0	1	0	1	F	0
x	1	1	1	F	1
1	x	0	1	F	1
1	0	1	1	F	0
x	x	x	0	x	0
x	x	x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfrtn_1	46.35360

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	D	SCD	SCE	RESET_B	CLK_N	Q
sky130_fd_sc_hs__sdfrtn_1	0.00192	0.00186	0.00405	0.00548	0.00277	0.76976

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrtn_1	0.00000	0.28980	0.52134

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)	0.38855	1.26695	9.20103

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)	0.30612	0.86253	4.68804
	RESET_B->Q (FF)	0.41800	1.02167	5.40618

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)	-0.00660	0.04504	1.18922
	setup	CLK_N (F)	0.18280	0.10072	-1.05141

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)	-0.18397	-0.21277	-0.71000
	setup	CLK_N (F)	0.52265	0.53245	0.93763

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)	-0.00660	0.04504	1.18820
	hold	CLK_N (F)	-0.00787	0.04470	1.18922
	setup	CLK_N (F)	0.18102	0.10072	-1.05494
	setup	CLK_N (F)	0.18280	0.10032	-1.05141

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)	-0.18397	-0.21285	-0.71007
	hold	CLK_N (F)	-0.18420	-0.21277	-0.71000
	setup	CLK_N (F)	0.52237	0.53245	0.93756
	setup	CLK_N (F)	0.52265	0.53239	0.93763

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)	-0.03004	0.02769	1.05551
	setup	CLK_N (F)	0.20602	0.12000	-0.90832

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)	-0.23047	-0.27236	-1.20511
	setup	CLK_N (F)	0.61243	0.63597	1.50494

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)	-0.03004	0.02769	1.05551
	hold	CLK_N (F)	-0.03936	0.01892	1.01995
	setup	CLK_N (F)	0.20516	0.11729	-0.93998
	setup	CLK_N (F)	0.20602	0.12000	-0.90832

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)	-0.25203	-0.29597	-1.27809
	hold	CLK_N (F)	-0.23047	-0.27236	-1.20511
	setup	CLK_N (F)	0.60548	0.63199	1.50494
	setup	CLK_N (F)	0.61243	0.63597	1.42861

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)	-0.00952	0.03844	1.14604
	setup	CLK_N (F)	0.60084	0.52910	-0.99910

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)	-0.10991	-0.11523	0.10996
	setup	CLK_N (F)	0.54711	0.56782	1.29886

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)	-0.24921	-0.19717	1.14604
	hold	CLK_N (F)	-0.00952	0.03844	1.14346
	setup	CLK_N (F)	0.60084	0.52910	-0.99910
	setup	CLK_N (F)	0.18078	0.10448	-1.01195

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)	-0.10991	-0.11523	0.10996
	hold	CLK_N (F)	-0.20619	-0.24377	-1.07999
	setup	CLK_N (F)	0.28374	0.25418	-0.05491
	setup	CLK_N (F)	0.54711	0.56782	1.29886

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)	0.22998	0.12300	-0.94110
	removal	CLK_N (F)	-0.14346	-0.04286	1.10745

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)	0.22947	0.11851	-0.96852
	recovery	CLK_N (F)	0.22168	0.10956	-1.04100
	recovery	CLK_N (F)	0.21512	0.09977	-1.07050
	recovery	CLK_N (F)	0.22998	0.12300	-0.94110
	removal	CLK_N (F)	-0.15524	-0.06096	1.00080
	removal	CLK_N (F)	-0.14719	-0.05333	1.07979
	removal	CLK_N (F)	-0.14346	-0.04286	1.10745
	removal	CLK_N (F)	-0.15601	-0.06767	0.97430

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 ()	0.18256	0.77881	16.50020
	min_pulse_width	RESET_B ()	0.22598	0.77881	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 ()	0.21440	0.77881	16.50020
	min_pulse_width	CLK_N ()	0.35044	0.77881	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 ()	0.23177	0.77881	16.50020
	min_pulse_width	CLK_N ()	0.19993	0.77881	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	0.01561	0.01572	0.01971
	CLK_N	0.01868	0.01878	0.02289

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtn_1	CLK_N	0.01459	0.01442	0.01810
	CLK_N	0.01727	0.01710	0.02049
	RESET_B	0.01558	0.01516	0.01950
	RESET_B	0.02231	0.02187	0.02563

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)**	0.00083	0.00083	0.00083
	(CLK_N * RESET_B * SCD * SCE)	-0.00046	-0.00046	-0.00046
	(CLK_N * RESET_B * SCD * !SCE)	0.00850	0.00838	0.00988
	(CLK_N * RESET_B * SCD * !SCE)	0.00613	0.00601	0.00751
	(CLK_N * RESET_B * !SCD * !SCE)	0.00850	0.00838	0.00988
	(CLK_N * RESET_B * !SCD * !SCE)	0.00612	0.00601	0.00750
	(CLK_N * !SCD * SCE)	0.00049	0.00049	0.00048
	(CLK_N * !SCD * SCE)	-0.00089	-0.00089	-0.00091
	(CLK_N * !RESET_B * SCD * SCE)	0.00047	0.00047	0.00047
	(CLK_N * !RESET_B * SCD * SCE)	-0.00089	-0.00091	-0.00091
	(CLK_N * !RESET_B * SCD * !SCE)	0.00026	0.00026	0.00022
	(CLK_N * !RESET_B * SCD * !SCE)	-0.00109	-0.00110	-0.00116
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00025	0.00025	0.00022
	(CLK_N * !RESET_B * !SCD * !SCE)	-0.00112	-0.00113	-0.00117
	(!CLK_N * RESET_B * SCD * SCE)	0.00083	0.00084	0.00083
	(!CLK_N * RESET_B * SCD * SCE)	-0.00046	-0.00047	-0.00046
	(!CLK_N * RESET_B * SCD * !SCE)	0.00373	0.00359	0.00542
	(!CLK_N * RESET_B * SCD * !SCE)	0.00133	0.00118	0.00302
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00373	0.00359	0.00542
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00133	0.00119	0.00302
	(!CLK_N * !SCD * SCE)	0.00049	0.00049	0.00048
	(!CLK_N * !SCD * SCE)	-0.00089	-0.00090	-0.00090
	(!CLK_N * !RESET_B * SCD * SCE)	0.00047	0.00047	0.00047
	(!CLK_N * !RESET_B * SCD * SCE)	-0.00089	-0.00091	-0.00091
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00026	0.00026	0.00022
	(!CLK_N * !RESET_B * SCD * !SCE)	-0.00109	-0.00110	-0.00116
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00025	0.00025	0.00022
	(!CLK_N * !RESET_B * !SCD * !SCE)	-0.00112	-0.00113	-0.00117

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)**	-0.00079	-0.00080	-0.00083
	(CLK_N * RESET_B * SCD * SCE)	0.00050	0.00050	0.00048
	(CLK_N * RESET_B * SCD * !SCE)	0.00550	0.00541	0.00798
	(CLK_N * RESET_B * SCD * !SCE)	0.00787	0.00778	0.01036
	(CLK_N * RESET_B * !SCD * !SCE)	0.00549	0.00541	0.00798
	(CLK_N * RESET_B * !SCD * !SCE)	0.00787	0.00778	0.01036
	(CLK_N * !SCD * SCE)	-0.00046	-0.00047	-0.00046
	(CLK_N * !SCD * SCE)	0.00090	0.00092	0.00091
	(CLK_N * !RESET_B * SCD * SCE)	-0.00046	-0.00047	-0.00046
	(CLK_N * !RESET_B * SCD * SCE)	0.00091	0.00092	0.00091
	(CLK_N * !RESET_B * SCD * !SCE)	-0.00021	-0.00021	-0.00021
	(CLK_N * !RESET_B * SCD * !SCE)	0.00118	0.00118	0.00118
	(CLK_N * !RESET_B * !SCD * !SCE)	-0.00021	-0.00021	-0.00021
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00118	0.00118	0.00118
	(!CLK_N * RESET_B * SCD * SCE)	-0.00079	-0.00081	-0.00083
	(!CLK_N * RESET_B * SCD * SCE)	0.00050	0.00050	0.00048
	(!CLK_N * RESET_B * SCD * !SCE)	0.00083	0.00077	0.00310
	(!CLK_N * RESET_B * SCD * !SCE)	0.00324	0.00317	0.00550
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00083	0.00077	0.00310
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00324	0.00317	0.00550
	(!CLK_N * !SCD * SCE)	-0.00046	-0.00047	-0.00047
	(!CLK_N * !SCD * SCE)	0.00090	0.00090	0.00090
	(!CLK_N * !RESET_B * SCD * SCE)	-0.00046	-0.00046	-0.00046
	(!CLK_N * !RESET_B * SCD * SCE)	0.00090	0.00091	0.00091
	(!CLK_N * !RESET_B * SCD * !SCE)	-0.00021	-0.00021	-0.00021
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00118	0.00118	0.00118
	(!CLK_N * !RESET_B * !SCD * !SCE)	-0.00021	-0.00021	-0.00021
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00118	0.00118	0.00118

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)**	0.00949	0.00939	0.01016
	(CLK_N * D * RESET_B * SCE)	0.00658	0.00647	0.00724
	(CLK_N * D * RESET_B * !SCE)	0.00072	0.00064	0.00063
	(CLK_N * D * RESET_B * !SCE)	-0.00079	-0.00088	-0.00089
	(CLK_N * D * !RESET_B * SCE)	0.00043	0.00044	0.00043
	(CLK_N * D * !RESET_B * SCE)	-0.00086	-0.00087	-0.00086
	(CLK_N * D * !RESET_B * !SCE)	0.00028	0.00028	0.00028
	(CLK_N * D * !RESET_B * !SCE)	-0.00099	-0.00100	-0.00100
	(CLK_N * !D * RESET_B * SCE)	0.00999	0.00990	0.01059
	(CLK_N * !D * RESET_B * SCE)	0.00699	0.00689	0.00759
	(CLK_N * !D * !RESET_B * SCE)	0.00044	0.00044	0.00043
	(CLK_N * !D * !RESET_B * SCE)	-0.00087	-0.00087	-0.00086
	(!D * RESET_B * !SCE)	0.00055	0.00055	0.00055
	(!D * RESET_B * !SCE)	-0.00096	-0.00097	-0.00097
	(!D * !RESET_B * !SCE)	0.00032	0.00032	0.00032
	(!D * !RESET_B * !SCE)	-0.00104	-0.00105	-0.00104
	(!CLK_N * D * RESET_B * SCE)	0.00473	0.00461	0.00546
	(!CLK_N * D * RESET_B * SCE)	0.00179	0.00167	0.00253
	(!CLK_N * D * RESET_B * !SCE)	0.00072	0.00064	0.00063
	(!CLK_N * D * RESET_B * !SCE)	-0.00079	-0.00088	-0.00089
	(!CLK_N * D * !RESET_B * SCE)	0.00044	0.00044	0.00043
	(!CLK_N * D * !RESET_B * SCE)	-0.00087	-0.00087	-0.00086
	(!CLK_N * D * !RESET_B * !SCE)	0.00028	0.00028	0.00028
	(!CLK_N * D * !RESET_B * !SCE)	-0.00099	-0.00100	-0.00100
	(!CLK_N * !D * RESET_B * SCE)	0.00522	0.00511	0.00587
	(!CLK_N * !D * RESET_B * SCE)	0.00219	0.00208	0.00285
	(!CLK_N * !D * !RESET_B * SCE)	0.00044	0.00044	0.00043
	(!CLK_N * !D * !RESET_B * SCE)	-0.00087	-0.00087	-0.00086

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)**	0.00626	0.00613	0.00728
	(CLK_N * D * RESET_B * SCE)	0.00918	0.00906	0.01019
	(CLK_N * D * RESET_B * !SCE)	-0.00060	-0.00062	-0.00062
	(CLK_N * D * RESET_B * !SCE)	0.00089	0.00090	0.00090
	(CLK_N * D * !RESET_B * SCE)	-0.00040	-0.00040	-0.00041
	(CLK_N * D * !RESET_B * SCE)	0.00089	0.00088	0.00087
	(CLK_N * D * !RESET_B * !SCE)	-0.00027	-0.00028	-0.00027
	(CLK_N * D * !RESET_B * !SCE)	0.00100	0.00101	0.00100
	(CLK_N * !D * RESET_B * SCE)	0.00600	0.00586	0.00715
	(CLK_N * !D * RESET_B * SCE)	0.00900	0.00887	0.01014
	(CLK_N * !D * !RESET_B * SCE)	-0.00040	-0.00040	-0.00041
	(CLK_N * !D * !RESET_B * SCE)	0.00089	0.00088	0.00087
	(!D * RESET_B * !SCE)	-0.00051	-0.00054	-0.00055
	(!D * RESET_B * !SCE)	0.00099	0.00098	0.00097
	(!D * !RESET_B * !SCE)	-0.00032	-0.00032	-0.00032
	(!D * !RESET_B * !SCE)	0.00105	0.00106	0.00106
	(!CLK_N * D * RESET_B * SCE)	0.00161	0.00147	0.00243
	(!CLK_N * D * RESET_B * SCE)	0.00456	0.00442	0.00536
	(!CLK_N * D * RESET_B * !SCE)	-0.00060	-0.00062	-0.00062
	(!CLK_N * D * RESET_B * !SCE)	0.00089	0.00090	0.00090
	(!CLK_N * D * !RESET_B * SCE)	-0.00040	-0.00040	-0.00041
	(!CLK_N * D * !RESET_B * SCE)	0.00089	0.00088	0.00087
	(!CLK_N * D * !RESET_B * !SCE)	-0.00027	-0.00028	-0.00027
	(!CLK_N * D * !RESET_B * !SCE)	0.00100	0.00101	0.00100
	(!CLK_N * !D * RESET_B * SCE)	0.00134	0.00121	0.00222
	(!CLK_N * !D * RESET_B * SCE)	0.00437	0.00424	0.00524
	(!CLK_N * !D * !RESET_B * SCE)	-0.00040	-0.00040	-0.00041
	(!CLK_N * !D * !RESET_B * SCE)	0.00089	0.00088	0.00087

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)	0.00375	0.00348	0.00589
	(CLK_N * D * RESET_B * SCD)	-0.00028	-0.00055	0.00185
	(CLK_N * D * RESET_B * !SCD)	0.01031	0.01014	0.01251
	(CLK_N * D * RESET_B * !SCD)	0.00757	0.00740	0.00973
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00370	0.00351	0.00596
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	-0.00014	-0.00034	0.00211
	(CLK_N * !D * RESET_B * SCD)	0.01214	0.01180	0.01531
	(CLK_N * !D * RESET_B * SCD)	0.00696	0.00663	0.01017
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00375	0.00349	0.00589
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	-0.00028	-0.00055	0.00185
	(!CLK_N * D * RESET_B * !SCD)	0.00574	0.00551	0.00793
	(!CLK_N * D * RESET_B * !SCD)	0.00303	0.00279	0.00518
	(!CLK_N * !D * RESET_B * SCD)	0.00737	0.00710	0.01064
	(!CLK_N * !D * RESET_B * SCD)	0.00216	0.00190	0.00546

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)	-0.00017	-0.00016	0.00266
	(CLK_N * D * RESET_B * SCD)	0.00386	0.00386	0.00669
	(CLK_N * D * RESET_B * !SCD)	0.00836	0.00832	0.01099
	(CLK_N * D * RESET_B * !SCD)	0.01111	0.01107	0.01374
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	-0.00017	-0.00018	0.00260
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00366	0.00368	0.00643
	(CLK_N * !D * RESET_B * SCD)	0.00579	0.00560	0.00964
	(CLK_N * !D * RESET_B * SCD)	0.01095	0.01076	0.01481
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	-0.00017	-0.00017	0.00266
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00386	0.00386	0.00669
	(!CLK_N * D * RESET_B * !SCD)	0.00361	0.00352	0.00624
	(!CLK_N * D * RESET_B * !SCD)	0.00634	0.00626	0.00895
	(!CLK_N * !D * RESET_B * SCD)	0.00114	0.00095	0.00486
	(!CLK_N * !D * RESET_B * SCD)	0.00632	0.00615	0.01005

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.01227	0.01186	0.01310
	(CLK_N * D * SCD * SCE * !Q)	0.00547	0.00504	0.00628
	(CLK_N * D * SCD * !SCE * !Q)	0.01211	0.01168	0.01300
	(CLK_N * D * SCD * !SCE * !Q)	0.00554	0.00510	0.00641
	(CLK_N * D * !SCD * SCE * !Q)	0.00255	0.00258	0.00255
	(CLK_N * D * !SCD * SCE * !Q)	-0.00256	-0.00257	-0.00255
	(CLK_N * D * !SCD * !SCE * !Q)	0.01182	0.01140	0.01276
	(CLK_N * D * !SCD * !SCE * !Q)	0.00555	0.00510	0.00647
	(CLK_N * !D * SCD * SCE * !Q)	0.01278	0.01238	0.01351
	(CLK_N * !D * SCD * SCE * !Q)	0.00588	0.00547	0.00661
	(CLK_N * !D * SCD * !SCE * !Q)	0.00252	0.00255	0.00253
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00257	-0.00258	-0.00257
	(CLK_N * !D * !SCD * SCE * !Q)	0.00255	0.00258	0.00255
	(CLK_N * !D * !SCD * SCE * !Q)	-0.00256	-0.00257	-0.00255
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00253	0.00256	0.00253
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00258	-0.00259	-0.00258
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.00703	0.00686	0.00813
	(!CLK_N * D * SCD * SCE * !Q)	0.00020	-0.00001	0.00130
	(!CLK_N * D * SCD * !SCE * !Q)	0.00687	0.00668	0.00807
	(!CLK_N * D * SCD * !SCE * !Q)	0.00027	0.00005	0.00146
	(!CLK_N * D * !SCD * SCE * !Q)	0.00248	0.00251	0.00249
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00262	-0.00264	-0.00262
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00658	0.00640	0.00786
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00028	0.00006	0.00154
	(!CLK_N * !D * SCD * SCE * !Q)	0.00753	0.00737	0.00854
	(!CLK_N * !D * SCD * SCE * !Q)	0.00061	0.00041	0.00160
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00246	0.00248	0.00246
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00264	-0.00265	-0.00264
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00248	0.00251	0.00249
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00262	-0.00264	-0.00262
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00246	0.00249	0.00247
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00264	-0.00266	-0.00264

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.00542	0.00502	0.00747
	(CLK_N * D * SCD * SCE * !Q)	0.01228	0.01185	0.01430
	(CLK_N * D * SCD * !SCE * !Q)	0.00479	0.00437	0.00681
	(CLK_N * D * SCD * !SCE * !Q)	0.01141	0.01097	0.01339
	(CLK_N * D * !SCD * SCE * !Q)	-0.00252	-0.00257	-0.00255
	(CLK_N * D * !SCD * SCE * !Q)	0.00259	0.00259	0.00256
	(CLK_N * D * !SCD * !SCE * !Q)	0.00459	0.00416	0.00667
	(CLK_N * D * !SCD * !SCE * !Q)	0.01092	0.01046	0.01297
	(CLK_N * !D * SCD * SCE * !Q)	0.00516	0.00473	0.00729
	(CLK_N * !D * SCD * SCE * !Q)	0.01210	0.01165	0.01418
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00247	-0.00255	-0.00253
	(CLK_N * !D * SCD * !SCE * !Q)	0.00262	0.00260	0.00257
	(CLK_N * !D * !SCD * SCE * !Q)	-0.00251	-0.00257	-0.00255
	(CLK_N * !D * !SCD * SCE * !Q)	0.00258	0.00259	0.00256
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00247	-0.00255	-0.00253
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00261	0.00261	0.00258
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.00032	0.00017	0.00254
	(!CLK_N * D * SCD * SCE * !Q)	0.00717	0.00705	0.00938
	(!CLK_N * D * SCD * !SCE * !Q)	-0.00031	-0.00046	0.00189
	(!CLK_N * D * SCD * !SCE * !Q)	0.00629	0.00616	0.00850
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00244	-0.00250	-0.00249
	(!CLK_N * D * !SCD * SCE * !Q)	0.00265	0.00266	0.00263
	(!CLK_N * D * !SCD * !SCE * !Q)	-0.00051	-0.00065	0.00176
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00580	0.00569	0.00809
	(!CLK_N * !D * SCD * SCE * !Q)	0.00005	-0.00009	0.00234
	(!CLK_N * !D * SCD * SCE * !Q)	0.00699	0.00687	0.00928
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00239	-0.00248	-0.00246
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00268	0.00267	0.00264
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00244	-0.00250	-0.00249
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00265	0.00266	0.00263
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00240	-0.00248	-0.00247
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00269	0.00268	0.00265

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)**	0.00872	0.00831	0.01096
	(D * RESET_B * SCD * SCE * Q)	0.00585	0.00542	0.00808
	(D * RESET_B * SCD * SCE * !Q)	0.01383	0.01345	0.01621
	(D * RESET_B * SCD * SCE * !Q)	0.01098	0.01060	0.01335
	(D * RESET_B * SCD * !SCE * Q)	0.00872	0.00830	0.01095
	(D * RESET_B * SCD * !SCE * Q)	0.00585	0.00542	0.00807
	(D * RESET_B * SCD * !SCE * !Q)	0.01380	0.01343	0.01618
	(D * RESET_B * SCD * !SCE * !Q)	0.01096	0.01057	0.01333
	(D * RESET_B * !SCD * SCE * Q)	0.01320	0.01267	0.01517
	(D * RESET_B * !SCD * SCE * Q)	0.01032	0.00979	0.01229
	(D * RESET_B * !SCD * !SCE * Q)	0.00872	0.00830	0.01095
	(D * RESET_B * !SCD * !SCE * Q)	0.00585	0.00542	0.00807
	(D * RESET_B * !SCD * !SCE * !Q)	0.01380	0.01342	0.01617
	(D * RESET_B * !SCD * !SCE * !Q)	0.01096	0.01058	0.01332
	(D * !SCD * SCE * !Q)	0.00859	0.00818	0.01080
	(D * !SCD * SCE * !Q)	0.00572	0.00530	0.00793
	(D * !RESET_B * SCD * SCE * !Q)	0.00859	0.00818	0.01080
	(D * !RESET_B * SCD * SCE * !Q)	0.00572	0.00530	0.00793
	(D * !RESET_B * SCD * !SCE * !Q)	0.00859	0.00818	0.01080
	(D * !RESET_B * SCD * !SCE * !Q)	0.00572	0.00530	0.00793
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00859	0.00818	0.01080
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00572	0.00530	0.00793
	(!D * RESET_B * SCD * SCE * Q)	0.00872	0.00830	0.01096
	(!D * RESET_B * SCD * SCE * Q)	0.00585	0.00542	0.00808
	(!D * RESET_B * SCD * SCE * !Q)	0.01386	0.01348	0.01622
	(!D * RESET_B * SCD * SCE * !Q)	0.01100	0.01062	0.01337
	(!D * RESET_B * !SCE * Q)	0.01318	0.01265	0.01515
	(!D * RESET_B * !SCE * Q)	0.01029	0.00975	0.01225
	(!D * RESET_B * !SCD * SCE * Q)	0.01320	0.01268	0.01516
	(!D * RESET_B * !SCD * SCE * Q)	0.01032	0.00978	0.01227
	(!D * !SCE * !Q)	0.00859	0.00818	0.01080
	(!D * !SCE * !Q)	0.00572	0.00530	0.00793
	(!D * !SCD * SCE * !Q)	0.00859	0.00818	0.01080
	(!D * !SCD * SCE * !Q)	0.00572	0.00530	0.00793
	(!D * !RESET_B * SCD * SCE * !Q)	0.00859	0.00818	0.01081
	(!D * !RESET_B * SCD * SCE * !Q)	0.00572	0.00530	0.00793

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)	0.00634	0.00616	0.00935
	(D * RESET_B * SCD * SCE * Q)	0.00922	0.00904	0.01223
	(D * RESET_B * SCD * !SCE * Q)	0.00634	0.00616	0.00935
	(D * RESET_B * SCD * !SCE * Q)	0.00922	0.00904	0.01223
	(D * RESET_B * !SCD * !SCE * Q)	0.00634	0.00616	0.00936
	(D * RESET_B * !SCD * !SCE * Q)	0.00922	0.00904	0.01223
	(D * !SCD * SCE * !Q)	0.00636	0.00618	0.00938
	(D * !SCD * SCE * !Q)	0.00924	0.00905	0.01226
	(D * !RESET_B * SCD * SCE * !Q)	0.00636	0.00619	0.00938
	(D * !RESET_B * SCD * SCE * !Q)	0.00924	0.00906	0.01226
	(D * !RESET_B * SCD * !SCE * !Q)	0.00636	0.00618	0.00938
	(D * !RESET_B * SCD * !SCE * !Q)	0.00924	0.00906	0.01226
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00636	0.00618	0.00938
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00924	0.00906	0.01226
	(!D * RESET_B * SCD * SCE * Q)	0.00634	0.00616	0.00936
	(!D * RESET_B * SCD * SCE * Q)	0.00922	0.00904	0.01223
	(!D * !SCE * !Q)	0.00636	0.00618	0.00938
	(!D * !SCE * !Q)	0.00924	0.00905	0.01226
	(!D * !SCD * SCE * !Q)	0.00637	0.00618	0.00938
	(!D * !SCD * SCE * !Q)	0.00924	0.00906	0.01226
	(!D * !RESET_B * SCD * SCE * !Q)	0.00636	0.00619	0.00938
	(!D * !RESET_B * SCD * SCE * !Q)	0.00924	0.00906	0.01226

SKY130_FD_SC_HS__SDFRTPx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT					OUTPUT
D	SCD	SCE	RESET_B	CLK	Q
0	0	x	1	R	0
0	1	0	1	R	0
x	1	1	1	R	1
1	x	0	1	R	1
1	0	1	1	R	0
x	x	x	0	x	0
x	x	x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfrtp_1	44.75520
sky130_fd_sc_hs__sdfrtp_2	47.95200
sky130_fd_sc_hs__sdfrtp_4	49.55040

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	D	SCD	SCE	RESET_B	CLK	Q
sky130_fd_sc_hs__sdfrtp_1	0.00184	0.00190	0.00406	0.00553	0.00298	0.78031
sky130_fd_sc_hs__sdfrtp_2	0.00178	0.00191	0.00414	0.00561	0.00298	1.55083
sky130_fd_sc_hs__sdfrtp_4	0.00178	0.00189	0.00417	0.00554	0.00297	2.91654

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfrtp_1	0.00000	0.28980	0.52133
sky130_fd_sc_hs__sdfrtp_2	0.00000	0.28910	0.50775
sky130_fd_sc_hs__sdfrtp_4	0.00000	0.38353	0.65243

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)	0.28863	0.95961	7.25046
sky130_fd_sc_hs__sdfrtp_2	CLK->Q (RR)	0.30938	0.86299	7.27599
sky130_fd_sc_hs__sdfrtp_4	CLK->Q (RR)	0.35805	0.82997	7.32858

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrtp_1	CLK->Q (RF)	0.29096	0.63741	2.65886
	RESET_B->Q (FF)	0.41635	1.01937	5.43819
sky130_fd_sc_hs__sdfrtp_2	CLK->Q (RF)	0.30506	0.62419	2.68745
	RESET_B->Q (FF)	0.43465	1.01149	5.49510
sky130_fd_sc_hs__sdfrtp_4	CLK->Q (RF)	0.31596	0.60665	2.62474
	RESET_B->Q (FF)	0.44319	0.99249	5.42894

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)	-0.13679	-0.25945	-1.31971
	setup	CLK (R)	0.29410	0.34941	1.53194
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.13029	-0.24829	-1.26440
	setup	CLK (R)	0.29479	0.34870	1.48664
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.13072	-0.25010	-1.26805
	setup	CLK (R)	0.27674	0.33695	1.46876

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)	-0.10735	-0.25584	-1.83119
	setup	CLK (R)	0.44450	0.51652	3.01195
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.10473	-0.24910	-1.85229
	setup	CLK (R)	0.42272	0.49640	2.94970
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.11822	-0.26514	-2.02312
	setup	CLK (R)	0.41693	0.49524	2.94012

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)	-0.13887	-0.25945	-1.32250
	hold	CLK (R)	-0.13679	-0.26195	-1.31971
	setup	CLK (R)	0.29410	0.34935	1.52821
	setup	CLK (R)	0.29401	0.34941	1.53194
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.13070	-0.24829	-1.26440
	hold	CLK (R)	-0.13029	-0.24885	-1.26441
	setup	CLK (R)	0.29479	0.34870	1.48624
	setup	CLK (R)	0.29451	0.34861	1.48664
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.13072	-0.25010	-1.26805
	hold	CLK (R)	-0.13368	-0.25048	-1.27154
	setup	CLK (R)	0.27674	0.33695	1.46870
	setup	CLK (R)	0.27377	0.33614	1.46876

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)	-0.10810	-0.25694	-1.83374
	hold	CLK (R)	-0.10735	-0.25584	-1.83119
	setup	CLK (R)	0.44338	0.51643	3.01195
	setup	CLK (R)	0.44450	0.51652	3.01188
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.10533	-0.24910	-1.85229
	hold	CLK (R)	-0.10473	-0.24979	-1.85711
	setup	CLK (R)	0.42244	0.49640	2.94892
	setup	CLK (R)	0.42272	0.49640	2.94970
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.11822	-0.26515	-2.02331
	hold	CLK (R)	-0.11831	-0.26514	-2.02312
	setup	CLK (R)	0.41661	0.49524	2.94012
	setup	CLK (R)	0.41693	0.49514	2.93887

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)	-0.16344	-0.27620	-1.48070
	setup	CLK (R)	0.31816	0.37132	1.66456
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.15685	-0.26713	-1.43883
	setup	CLK (R)	0.32032	0.36621	1.62831
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.15842	-0.26862	-1.44436
	setup	CLK (R)	0.29992	0.35560	1.60620

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)	-0.14636	-0.31594	-2.42869
	setup	CLK (R)	0.53339	0.61678	3.45040
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.14730	-0.31373	-2.47294
	setup	CLK (R)	0.52013	0.60625	3.39831
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.15924	-0.33099	-2.65895
	setup	CLK (R)	0.51667	0.60003	3.40152

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)	-0.16344	-0.27620	-1.48070
	hold	CLK (R)	-0.16725	-0.28167	-1.49215
	setup	CLK (R)	0.31801	0.36422	1.65024
	setup	CLK (R)	0.31816	0.37132	1.66456
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.15685	-0.26713	-1.43883
	hold	CLK (R)	-0.16414	-0.27210	-1.45219
	setup	CLK (R)	0.31837	0.36386	1.61168
	setup	CLK (R)	0.32032	0.36621	1.62831
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.15842	-0.26862	-1.44436
	hold	CLK (R)	-0.16065	-0.27332	-1.44960
	setup	CLK (R)	0.29833	0.35289	1.60105
	setup	CLK (R)	0.29992	0.35560	1.60620

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)	-0.15717	-0.33036	-2.48637
	hold	CLK (R)	-0.14636	-0.31594	-2.42869
	setup	CLK (R)	0.53112	0.61678	3.45040
	setup	CLK (R)	0.53339	0.61515	3.44455
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.15883	-0.33070	-2.50797
	hold	CLK (R)	-0.14730	-0.31373	-2.47294
	setup	CLK (R)	0.52013	0.60625	3.39831
	setup	CLK (R)	0.51871	0.60277	3.39757
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.17348	-0.34836	-2.73814
	hold	CLK (R)	-0.15924	-0.33099	-2.65895
	setup	CLK (R)	0.51667	0.60003	3.40152
	setup	CLK (R)	0.51664	0.59906	3.39298

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)	-0.13928	-0.22950	-0.34358
	setup	CLK (R)	0.52647	0.51905	1.55715
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.13758	-0.22214	-0.32945
	setup	CLK (R)	0.51013	0.49683	1.52189
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.13636	-0.24074	-0.37034
	setup	CLK (R)	0.50496	0.49427	1.49984

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)	-0.12503	-0.28028	-2.23524
	setup	CLK (R)	0.45808	0.54334	3.23381
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.12209	-0.27799	-2.26364
	setup	CLK (R)	0.43820	0.52309	3.17379
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.13183	-0.29378	-2.37167
	setup	CLK (R)	0.43505	0.51942	3.16437

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)	-0.15164	-0.22950	-0.34358
	hold	CLK (R)	-0.13928	-0.25979	-1.35306
	setup	CLK (R)	0.52647	0.51905	0.82129
	setup	CLK (R)	0.28902	0.35346	1.55715
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.14899	-0.22214	-0.32945
	hold	CLK (R)	-0.13758	-0.25473	-1.30749
	setup	CLK (R)	0.51013	0.49683	0.74209
	setup	CLK (R)	0.29674	0.34980	1.52189
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.16251	-0.24074	-0.37034
	hold	CLK (R)	-0.13636	-0.25375	-1.30587
	setup	CLK (R)	0.50496	0.49427	0.74099
	setup	CLK (R)	0.27386	0.33895	1.49984

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)	-0.23682	-0.41273	-2.40756
	hold	CLK (R)	-0.12503	-0.28028	-2.23524
	setup	CLK (R)	0.39350	0.49989	2.51894
	setup	CLK (R)	0.45808	0.54334	3.23381
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.22945	-0.39740	-2.37345
	hold	CLK (R)	-0.12209	-0.27799	-2.26364
	setup	CLK (R)	0.38894	0.49435	2.48236
	setup	CLK (R)	0.43820	0.52309	3.17379
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.22981	-0.39778	-2.37167
	hold	CLK (R)	-0.13183	-0.29378	-2.41492
	setup	CLK (R)	0.37181	0.47904	2.47192
	setup	CLK (R)	0.43505	0.51942	3.16437

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)	0.34187	0.37255	1.66053
	removal	CLK (R)	-0.23133	-0.29450	-1.42598
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.34581	0.36938	1.62968
	removal	CLK (R)	-0.22665	-0.28616	-1.38959
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.32265	0.35867	1.61247
	removal	CLK (R)	-0.22477	-0.28622	-1.39310

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)	0.34187	0.36742	1.64945
	recovery	CLK (R)	0.33462	0.36131	1.58225
	recovery	CLK (R)	0.32926	0.35136	1.54299
	recovery	CLK (R)	0.34168	0.37255	1.66053
	removal	CLK (R)	-0.24204	-0.31391	-1.53697
	removal	CLK (R)	-0.23400	-0.30279	-1.46874
	removal	CLK (R)	-0.23133	-0.29450	-1.42598
	removal	CLK (R)	-0.24372	-0.31953	-1.55042
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.34220	0.36806	1.61831
	recovery	CLK (R)	0.33597	0.35956	1.54938
	recovery	CLK (R)	0.33269	0.34939	1.50750
	recovery	CLK (R)	0.34581	0.36938	1.62968
	removal	CLK (R)	-0.24058	-0.30821	-1.50730
	removal	CLK (R)	-0.23426	-0.29712	-1.43115
	removal	CLK (R)	-0.22665	-0.28616	-1.38959
	removal	CLK (R)	-0.24260	-0.31395	-1.51722
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.32214	0.35576	1.60921
	recovery	CLK (R)	0.31882	0.34797	1.53629
	recovery	CLK (R)	0.31359	0.33387	1.49393
	recovery	CLK (R)	0.32265	0.35867	1.61247
	removal	CLK (R)	-0.23874	-0.30831	-1.51178
	removal	CLK (R)	-0.23265	-0.29728	-1.43410
	removal	CLK (R)	-0.22477	-0.28622	-1.39310
	removal	CLK (R)	-0.24295	-0.31117	-1.51757

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 ()	0.22308	0.77881	16.50020
	min_pulse_width	RESET_B ()	0.17677	0.77881	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	RESET_B ()	0.22887	0.77881	16.50020
	min_pulse_width	RESET_B ()	0.17967	0.77881	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	RESET_B ()	0.22598	0.77881	16.50020
	min_pulse_width	RESET_B ()	0.17967	0.77881	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 ()	0.15072	0.77881	16.50020
	min_pulse_width	CLK ()	0.10731	0.77881	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.17098	0.77881	16.50020
	min_pulse_width	CLK ()	0.11020	0.77881	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.20282	0.77881	16.50020
	min_pulse_width	CLK ()	0.11310	0.77881	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 ()	0.31281	0.77881	16.50020
	min_pulse_width	CLK ()	0.37359	0.77881	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.33018	0.77881	16.50020
	min_pulse_width	CLK ()	0.38806	0.77881	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.30702	0.77881	16.50020
	min_pulse_width	CLK ()	0.38228	0.77881	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	0.01765	0.01747	0.02014
	CLK	0.01461	0.01443	0.01711
sky130_fd_sc_hs__sdfrtp_2	CLK	0.01990	0.01999	0.02271
	CLK	0.01677	0.01686	0.01977
sky130_fd_sc_hs__sdfrtp_4	CLK	0.02392	0.02432	0.02715
	CLK	0.02086	0.02128	0.02439

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtp_1	CLK	0.01831	0.01833	0.02141
	CLK	0.01534	0.01531	0.01835
	RESET_B	0.01514	0.01472	0.01931
	RESET_B	0.02221	0.02174	0.02556
sky130_fd_sc_hs__sdfrtp_2	CLK	0.02013	0.02044	0.02369
	CLK	0.01721	0.01751	0.02058
	RESET_B	0.01727	0.01715	0.02195
	RESET_B	0.02438	0.02421	0.02801
sky130_fd_sc_hs__sdfrtp_4	CLK	0.02484	0.02569	0.02916
	CLK	0.02186	0.02272	0.02584
	RESET_B	0.02202	0.02247	0.02788
	RESET_B	0.02905	0.02945	0.03335

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)**	0.00083	0.00083	0.00083
	(CLK * RESET_B * SCD * SCE)	-0.00042	-0.00042	-0.00042
	(CLK * RESET_B * SCD * !SCE)	0.00415	0.00400	0.00582
	(CLK * RESET_B * SCD * !SCE)	0.00179	0.00164	0.00346
	(CLK * RESET_B * !SCD * !SCE)	0.00415	0.00400	0.00582
	(CLK * RESET_B * !SCD * !SCE)	0.00179	0.00163	0.00346
	(CLK * !SCD * SCE)	0.00044	0.00045	0.00043
	(CLK * !SCD * SCE)	-0.00087	-0.00089	-0.00090
	(CLK * !RESET_B * SCD * SCE)	0.00042	0.00043	0.00042
	(CLK * !RESET_B * SCD * SCE)	-0.00089	-0.00091	-0.00091
	(CLK * !RESET_B * SCD * !SCE)	0.00032	0.00031	0.00027
	(CLK * !RESET_B * SCD * !SCE)	-0.00100	-0.00100	-0.00106
	(CLK * !RESET_B * !SCD * !SCE)	0.00031	0.00031	0.00028
	(CLK * !RESET_B * !SCD * !SCE)	-0.00103	-0.00103	-0.00108
	(!CLK * RESET_B * SCD * SCE)	0.00083	0.00083	0.00083
	(!CLK * RESET_B * SCD * SCE)	-0.00042	-0.00042	-0.00042
	(!CLK * RESET_B * SCD * !SCE)	0.00866	0.00853	0.01006
	(!CLK * RESET_B * SCD * !SCE)	0.00617	0.00604	0.00757
	(!CLK * RESET_B * !SCD * !SCE)	0.00866	0.00853	0.01006
	(!CLK * RESET_B * !SCD * !SCE)	0.00617	0.00604	0.00757
	(!CLK * !SCD * SCE)	0.00044	0.00045	0.00044
	(!CLK * !SCD * SCE)	-0.00087	-0.00089	-0.00090
	(!CLK * !RESET_B * SCD * SCE)	0.00042	0.00043	0.00042
	(!CLK * !RESET_B * SCD * SCE)	-0.00089	-0.00091	-0.00091
	(!CLK * !RESET_B * SCD * !SCE)	0.00032	0.00031	0.00027
	(!CLK * !RESET_B * SCD * !SCE)	-0.00100	-0.00100	-0.00106
	(!CLK * !RESET_B * !SCD * !SCE)	0.00031	0.00031	0.00028
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00103	-0.00103	-0.00108

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	0.00078	0.00079	0.00079
	(CLK * RESET_B * SCD * SCE)	-0.00039	-0.00040	-0.00040
	(CLK * RESET_B * SCD * !SCE)	0.00353	0.00339	0.00532
	(CLK * RESET_B * SCD * !SCE)	0.00126	0.00112	0.00306
	(CLK * RESET_B * !SCD * !SCE)	0.00353	0.00339	0.00532
	(CLK * RESET_B * !SCD * !SCE)	0.00127	0.00112	0.00306
	(CLK * !SCD * SCE)	0.00043	0.00043	0.00042
	(CLK * !SCD * SCE)	-0.00082	-0.00084	-0.00085
	(CLK * !RESET_B * SCD * SCE)	0.00041	0.00041	0.00041
	(CLK * !RESET_B * SCD * SCE)	-0.00084	-0.00086	-0.00085
	(CLK * !RESET_B * SCD * !SCE)	0.00031	0.00030	0.00026
	(CLK * !RESET_B * SCD * !SCE)	-0.00095	-0.00094	-0.00101
	(CLK * !RESET_B * !SCD * !SCE)	0.00030	0.00030	0.00027
	(CLK * !RESET_B * !SCD * !SCE)	-0.00098	-0.00097	-0.00102
	(!CLK * RESET_B * SCD * SCE)	0.00079	0.00079	0.00079
	(!CLK * RESET_B * SCD * SCE)	-0.00040	-0.00040	-0.00040
	(!CLK * RESET_B * SCD * !SCE)	0.00822	0.00809	0.00970
	(!CLK * RESET_B * SCD * !SCE)	0.00583	0.00571	0.00731
	(!CLK * RESET_B * !SCD * !SCE)	0.00822	0.00809	0.00970
	(!CLK * RESET_B * !SCD * !SCE)	0.00583	0.00571	0.00731
	(!CLK * !SCD * SCE)	0.00043	0.00043	0.00042
	(!CLK * !SCD * SCE)	-0.00082	-0.00084	-0.00085
	(!CLK * !RESET_B * SCD * SCE)	0.00041	0.00041	0.00041
	(!CLK * !RESET_B * SCD * SCE)	-0.00084	-0.00085	-0.00085
	(!CLK * !RESET_B * SCD * !SCE)	0.00031	0.00030	0.00026
	(!CLK * !RESET_B * SCD * !SCE)	-0.00094	-0.00094	-0.00101
	(!CLK * !RESET_B * !SCD * !SCE)	0.00030	0.00030	0.00027
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00098	-0.00098	-0.00102

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	0.00079	0.00080	0.00079
	(CLK * RESET_B * SCD * SCE)	-0.00039	-0.00040	-0.00040
	(CLK * RESET_B * SCD * !SCE)	0.00358	0.00343	0.00536
	(CLK * RESET_B * SCD * !SCE)	0.00128	0.00114	0.00307
	(CLK * RESET_B * !SCD * !SCE)	0.00358	0.00344	0.00536
	(CLK * RESET_B * !SCD * !SCE)	0.00129	0.00114	0.00307
	(CLK * !SCD * SCE)	0.00043	0.00043	0.00042
	(CLK * !SCD * SCE)	-0.00083	-0.00085	-0.00086
	(CLK * !RESET_B * SCD * SCE)	0.00041	0.00041	0.00040
	(CLK * !RESET_B * SCD * SCE)	-0.00084	-0.00086	-0.00086
	(CLK * !RESET_B * SCD * !SCE)	0.00031	0.00031	0.00027
	(CLK * !RESET_B * SCD * !SCE)	-0.00094	-0.00093	-0.00100
	(CLK * !RESET_B * !SCD * !SCE)	0.00031	0.00030	0.00027
	(CLK * !RESET_B * !SCD * !SCE)	-0.00097	-0.00098	-0.00101
	(!CLK * RESET_B * SCD * SCE)	0.00079	0.00080	0.00079
	(!CLK * RESET_B * SCD * SCE)	-0.00040	-0.00040	-0.00039
	(!CLK * RESET_B * SCD * !SCE)	0.00828	0.00817	0.00977
	(!CLK * RESET_B * SCD * !SCE)	0.00586	0.00575	0.00736
	(!CLK * RESET_B * !SCD * !SCE)	0.00828	0.00817	0.00977
	(!CLK * RESET_B * !SCD * !SCE)	0.00586	0.00575	0.00736
	(!CLK * !SCD * SCE)	0.00043	0.00043	0.00042
	(!CLK * !SCD * SCE)	-0.00083	-0.00084	-0.00086
	(!CLK * !RESET_B * SCD * SCE)	0.00041	0.00041	0.00040
	(!CLK * !RESET_B * SCD * SCE)	-0.00084	-0.00086	-0.00086
	(!CLK * !RESET_B * SCD * !SCE)	0.00031	0.00031	0.00027
	(!CLK * !RESET_B * SCD * !SCE)	-0.00094	-0.00094	-0.00100
	(!CLK * !RESET_B * !SCD * !SCE)	0.00031	0.00031	0.00027
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00097	-0.00098	-0.00101

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)**	-0.00079	-0.00080	-0.00082
	(CLK * RESET_B * SCD * SCE)	0.00046	0.00046	0.00044
	(CLK * RESET_B * SCD * !SCE)	0.00052	0.00045	0.00278
	(CLK * RESET_B * SCD * !SCE)	0.00289	0.00282	0.00515
	(CLK * RESET_B * !SCD * !SCE)	0.00052	0.00044	0.00278
	(CLK * RESET_B * !SCD * !SCE)	0.00289	0.00281	0.00515
	(CLK * !SCD * SCE)	-0.00042	-0.00042	-0.00042
	(CLK * !SCD * SCE)	0.00090	0.00090	0.00090
	(CLK * !RESET_B * SCD * SCE)	-0.00042	-0.00042	-0.00041
	(CLK * !RESET_B * SCD * SCE)	0.00091	0.00091	0.00091
	(CLK * !RESET_B * SCD * !SCE)	-0.00026	-0.00026	-0.00025
	(CLK * !RESET_B * SCD * !SCE)	0.00108	0.00108	0.00108
	(CLK * !RESET_B * !SCD * !SCE)	-0.00026	-0.00026	-0.00025
	(CLK * !RESET_B * !SCD * !SCE)	0.00108	0.00108	0.00108
	(!CLK * RESET_B * SCD * SCE)	-0.00079	-0.00080	-0.00082
	(!CLK * RESET_B * SCD * SCE)	0.00046	0.00046	0.00044
	(!CLK * RESET_B * SCD * !SCE)	0.00472	0.00464	0.00730
	(!CLK * RESET_B * SCD * !SCE)	0.00721	0.00713	0.00980
	(!CLK * RESET_B * !SCD * !SCE)	0.00472	0.00463	0.00730
	(!CLK * RESET_B * !SCD * !SCE)	0.00721	0.00713	0.00980
	(!CLK * !SCD * SCE)	-0.00042	-0.00042	-0.00042
	(!CLK * !SCD * SCE)	0.00091	0.00090	0.00090
	(!CLK * !RESET_B * SCD * SCE)	-0.00042	-0.00042	-0.00041
	(!CLK * !RESET_B * SCD * SCE)	0.00091	0.00092	0.00091
	(!CLK * !RESET_B * SCD * !SCE)	-0.00026	-0.00026	-0.00025
	(!CLK * !RESET_B * SCD * !SCE)	0.00108	0.00108	0.00108
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00026	-0.00026	-0.00025
	(!CLK * !RESET_B * !SCD * !SCE)	0.00108	0.00108	0.00108

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	-0.00074	-0.00076	-0.00078
	(CLK * RESET_B * SCD * SCE)	0.00043	0.00043	0.00041
	(CLK * RESET_B * SCD * !SCE)	0.00055	0.00050	0.00288
	(CLK * RESET_B * SCD * !SCE)	0.00282	0.00277	0.00515
	(CLK * RESET_B * !SCD * !SCE)	0.00056	0.00050	0.00288
	(CLK * RESET_B * !SCD * !SCE)	0.00282	0.00276	0.00515
	(CLK * !SCD * SCE)	-0.00041	-0.00041	-0.00041
	(CLK * !SCD * SCE)	0.00085	0.00085	0.00085
	(CLK * !RESET_B * SCD * SCE)	-0.00040	-0.00040	-0.00040
	(CLK * !RESET_B * SCD * SCE)	0.00085	0.00086	0.00085
	(CLK * !RESET_B * SCD * !SCE)	-0.00025	-0.00025	-0.00024
	(CLK * !RESET_B * SCD * !SCE)	0.00102	0.00103	0.00103
	(CLK * !RESET_B * !SCD * !SCE)	-0.00025	-0.00025	-0.00024
	(CLK * !RESET_B * !SCD * !SCE)	0.00103	0.00103	0.00103
	(!CLK * RESET_B * SCD * SCE)	-0.00074	-0.00076	-0.00078
	(!CLK * RESET_B * SCD * SCE)	0.00043	0.00043	0.00041
	(!CLK * RESET_B * SCD * !SCE)	0.00516	0.00508	0.00774
	(!CLK * RESET_B * SCD * !SCE)	0.00754	0.00746	0.01012
	(!CLK * RESET_B * !SCD * !SCE)	0.00516	0.00508	0.00774
	(!CLK * RESET_B * !SCD * !SCE)	0.00754	0.00746	0.01012
	(!CLK * !SCD * SCE)	-0.00041	-0.00041	-0.00041
	(!CLK * !SCD * SCE)	0.00085	0.00085	0.00085
	(!CLK * !RESET_B * SCD * SCE)	-0.00040	-0.00041	-0.00040
	(!CLK * !RESET_B * SCD * SCE)	0.00086	0.00086	0.00085
	(!CLK * !RESET_B * SCD * !SCE)	-0.00025	-0.00025	-0.00024
	(!CLK * !RESET_B * SCD * !SCE)	0.00102	0.00103	0.00103
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00025	-0.00025	-0.00024
	(!CLK * !RESET_B * !SCD * !SCE)	0.00103	0.00103	0.00103

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	-0.00074	-0.00076	-0.00078
	(CLK * RESET_B * SCD * SCE)	0.00043	0.00043	0.00041
	(CLK * RESET_B * SCD * !SCE)	0.00051	0.00046	0.00284
	(CLK * RESET_B * SCD * !SCE)	0.00281	0.00276	0.00513
	(CLK * RESET_B * !SCD * !SCE)	0.00052	0.00046	0.00284
	(CLK * RESET_B * !SCD * !SCE)	0.00281	0.00275	0.00513
	(CLK * !SCD * SCE)	-0.00041	-0.00040	-0.00040
	(CLK * !SCD * SCE)	0.00086	0.00086	0.00086
	(CLK * !RESET_B * SCD * SCE)	-0.00039	-0.00040	-0.00039
	(CLK * !RESET_B * SCD * SCE)	0.00086	0.00087	0.00086
	(CLK * !RESET_B * SCD * !SCE)	-0.00026	-0.00026	-0.00025
	(CLK * !RESET_B * SCD * !SCE)	0.00102	0.00102	0.00102
	(CLK * !RESET_B * !SCD * !SCE)	-0.00026	-0.00026	-0.00025
	(CLK * !RESET_B * !SCD * !SCE)	0.00102	0.00102	0.00102
	(!CLK * RESET_B * SCD * SCE)	-0.00074	-0.00076	-0.00078
	(!CLK * RESET_B * SCD * SCE)	0.00044	0.00043	0.00041
	(!CLK * RESET_B * SCD * !SCE)	0.00489	0.00482	0.00749
	(!CLK * RESET_B * SCD * !SCE)	0.00731	0.00723	0.00991
	(!CLK * RESET_B * !SCD * !SCE)	0.00489	0.00481	0.00750
	(!CLK * RESET_B * !SCD * !SCE)	0.00731	0.00723	0.00991
	(!CLK * !SCD * SCE)	-0.00040	-0.00040	-0.00040
	(!CLK * !SCD * SCE)	0.00087	0.00086	0.00086
	(!CLK * !RESET_B * SCD * SCE)	-0.00040	-0.00040	-0.00039
	(!CLK * !RESET_B * SCD * SCE)	0.00086	0.00087	0.00086
	(!CLK * !RESET_B * SCD * !SCE)	-0.00026	-0.00026	-0.00025
	(!CLK * !RESET_B * SCD * !SCE)	0.00102	0.00102	0.00102
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00026	-0.00026	-0.00025
	(!CLK * !RESET_B * !SCD * !SCE)	0.00102	0.00102	0.00102

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)**	0.00508	0.00494	0.00578
	(CLK * D * RESET_B * SCE)	0.00211	0.00196	0.00281
	(CLK * D * RESET_B * !SCE)	0.00079	0.00071	0.00069
	(CLK * D * RESET_B * !SCE)	-0.00075	-0.00083	-0.00084
	(CLK * D * !RESET_B * SCE)	0.00041	0.00041	0.00040
	(CLK * D * !RESET_B * SCE)	-0.00091	-0.00092	-0.00091
	(CLK * D * !RESET_B * !SCE)	0.00029	0.00029	0.00029
	(CLK * D * !RESET_B * !SCE)	-0.00100	-0.00101	-0.00101
	(CLK * !D * RESET_B * SCE)	0.00558	0.00546	0.00620
	(CLK * !D * RESET_B * SCE)	0.00252	0.00239	0.00315
	(CLK * !D * !RESET_B * SCE)	0.00041	0.00042	0.00040
	(CLK * !D * !RESET_B * SCE)	-0.00091	-0.00092	-0.00091
	(!D * RESET_B * !SCE)	0.00055	0.00056	0.00055
	(!D * RESET_B * !SCE)	-0.00098	-0.00099	-0.00098
	(!D * !RESET_B * !SCE)	0.00033	0.00033	0.00033
	(!D * !RESET_B * !SCE)	-0.00105	-0.00105	-0.00105
	(!CLK * D * RESET_B * SCE)	0.00959	0.00946	0.01024
	(!CLK * D * RESET_B * SCE)	0.00648	0.00636	0.00714
	(!CLK * D * RESET_B * !SCE)	0.00079	0.00071	0.00069
	(!CLK * D * RESET_B * !SCE)	-0.00075	-0.00084	-0.00084
	(!CLK * D * !RESET_B * SCE)	0.00041	0.00041	0.00040
	(!CLK * D * !RESET_B * SCE)	-0.00091	-0.00092	-0.00091
	(!CLK * D * !RESET_B * !SCE)	0.00029	0.00029	0.00029
	(!CLK * D * !RESET_B * !SCE)	-0.00100	-0.00101	-0.00101
	(!CLK * !D * RESET_B * SCE)	0.01009	0.00998	0.01068
	(!CLK * !D * RESET_B * SCE)	0.00690	0.00678	0.00749
	(!CLK * !D * !RESET_B * SCE)	0.00041	0.00042	0.00040
	(!CLK * !D * !RESET_B * SCE)	-0.00091	-0.00092	-0.00091

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.00459	0.00444	0.00531
	(CLK * D * RESET_B * SCE)	0.00166	0.00151	0.00238
	(CLK * D * RESET_B * !SCE)	0.00079	0.00072	0.00070
	(CLK * D * RESET_B * !SCE)	-0.00074	-0.00082	-0.00083
	(CLK * D * !RESET_B * SCE)	0.00038	0.00039	0.00037
	(CLK * D * !RESET_B * SCE)	-0.00093	-0.00094	-0.00093
	(CLK * D * !RESET_B * !SCE)	0.00028	0.00028	0.00028
	(CLK * D * !RESET_B * !SCE)	-0.00100	-0.00101	-0.00101
	(CLK * !D * RESET_B * SCE)	0.00509	0.00495	0.00572
	(CLK * !D * RESET_B * SCE)	0.00207	0.00193	0.00271
	(CLK * !D * !RESET_B * SCE)	0.00039	0.00039	0.00037
	(CLK * !D * !RESET_B * SCE)	-0.00093	-0.00094	-0.00093
	(!D * RESET_B * !SCE)	0.00054	0.00055	0.00054
	(!D * RESET_B * !SCE)	-0.00098	-0.00099	-0.00099
	(!D * !RESET_B * !SCE)	0.00032	0.00032	0.00032
	(!D * !RESET_B * !SCE)	-0.00105	-0.00106	-0.00105
	(!CLK * D * RESET_B * SCE)	0.00927	0.00914	0.00992
	(!CLK * D * RESET_B * SCE)	0.00622	0.00609	0.00687
	(!CLK * D * RESET_B * !SCE)	0.00079	0.00071	0.00070
	(!CLK * D * RESET_B * !SCE)	-0.00074	-0.00082	-0.00083
	(!CLK * D * !RESET_B * SCE)	0.00038	0.00039	0.00037
	(!CLK * D * !RESET_B * SCE)	-0.00093	-0.00094	-0.00093
	(!CLK * D * !RESET_B * !SCE)	0.00028	0.00028	0.00028
	(!CLK * D * !RESET_B * !SCE)	-0.00100	-0.00101	-0.00101
	(!CLK * !D * RESET_B * SCE)	0.00978	0.00966	0.01036
	(!CLK * !D * RESET_B * SCE)	0.00664	0.00652	0.00722
	(!CLK * !D * !RESET_B * SCE)	0.00039	0.00039	0.00037
	(!CLK * !D * !RESET_B * SCE)	-0.00093	-0.00094	-0.00093

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.00460	0.00447	0.00533
	(CLK * D * RESET_B * SCE)	0.00167	0.00152	0.00240
	(CLK * D * RESET_B * !SCE)	0.00078	0.00070	0.00068
	(CLK * D * RESET_B * !SCE)	-0.00074	-0.00082	-0.00083
	(CLK * D * !RESET_B * SCE)	0.00038	0.00039	0.00037
	(CLK * D * !RESET_B * SCE)	-0.00091	-0.00092	-0.00091
	(CLK * D * !RESET_B * !SCE)	0.00028	0.00028	0.00028
	(CLK * D * !RESET_B * !SCE)	-0.00098	-0.00099	-0.00099
	(CLK * !D * RESET_B * SCE)	0.00511	0.00498	0.00575
	(CLK * !D * RESET_B * SCE)	0.00208	0.00194	0.00273
	(CLK * !D * !RESET_B * SCE)	0.00038	0.00039	0.00037
	(CLK * !D * !RESET_B * SCE)	-0.00091	-0.00092	-0.00091
	(!D * RESET_B * !SCE)	0.00054	0.00055	0.00054
	(!D * RESET_B * !SCE)	-0.00095	-0.00097	-0.00097
	(!D * !RESET_B * !SCE)	0.00032	0.00032	0.00032
	(!D * !RESET_B * !SCE)	-0.00103	-0.00104	-0.00103
	(!CLK * D * RESET_B * SCE)	0.00930	0.00918	0.00997
	(!CLK * D * RESET_B * SCE)	0.00624	0.00611	0.00691
	(!CLK * D * RESET_B * !SCE)	0.00077	0.00070	0.00068
	(!CLK * D * RESET_B * !SCE)	-0.00072	-0.00082	-0.00083
	(!CLK * D * !RESET_B * SCE)	0.00038	0.00039	0.00037
	(!CLK * D * !RESET_B * SCE)	-0.00091	-0.00092	-0.00091
	(!CLK * D * !RESET_B * !SCE)	0.00028	0.00028	0.00028
	(!CLK * D * !RESET_B * !SCE)	-0.00098	-0.00099	-0.00099
	(!CLK * !D * RESET_B * SCE)	0.00981	0.00969	0.01040
	(!CLK * !D * RESET_B * SCE)	0.00666	0.00654	0.00726
	(!CLK * !D * !RESET_B * SCE)	0.00038	0.00039	0.00037
	(!CLK * !D * !RESET_B * SCE)	-0.00091	-0.00092	-0.00091

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)	0.00142	0.00125	0.00220
	(CLK * D * RESET_B * SCE)	0.00440	0.00424	0.00516
	(CLK * D * RESET_B * !SCE)	-0.00066	-0.00068	-0.00069
	(CLK * D * RESET_B * !SCE)	0.00085	0.00086	0.00085
	(CLK * D * !RESET_B * SCE)	-0.00037	-0.00037	-0.00038
	(CLK * D * !RESET_B * SCE)	0.00093	0.00093	0.00092
	(CLK * D * !RESET_B * !SCE)	-0.00028	-0.00029	-0.00028
	(CLK * D * !RESET_B * !SCE)	0.00101	0.00102	0.00101
	(CLK * !D * RESET_B * SCE)	0.00113	0.00097	0.00198
	(CLK * !D * RESET_B * SCE)	0.00419	0.00403	0.00502
	(CLK * !D * !RESET_B * SCE)	-0.00037	-0.00037	-0.00038
	(CLK * !D * !RESET_B * SCE)	0.00093	0.00093	0.00092
	(!D * RESET_B * !SCE)	-0.00051	-0.00055	-0.00055
	(!D * RESET_B * !SCE)	0.00100	0.00099	0.00098
	(!D * !RESET_B * !SCE)	-0.00033	-0.00033	-0.00033
	(!D * !RESET_B * !SCE)	0.00106	0.00107	0.00107
	(!CLK * D * RESET_B * SCE)	0.00560	0.00546	0.00666
	(!CLK * D * RESET_B * SCE)	0.00871	0.00857	0.00976
	(!CLK * D * RESET_B * !SCE)	-0.00066	-0.00068	-0.00069
	(!CLK * D * RESET_B * !SCE)	0.00085	0.00086	0.00086
	(!CLK * D * !RESET_B * SCE)	-0.00037	-0.00037	-0.00038
	(!CLK * D * !RESET_B * SCE)	0.00093	0.00093	0.00092
	(!CLK * D * !RESET_B * !SCE)	-0.00028	-0.00029	-0.00028
	(!CLK * D * !RESET_B * !SCE)	0.00101	0.00102	0.00101
	(!CLK * !D * RESET_B * SCE)	0.00533	0.00517	0.00653
	(!CLK * !D * RESET_B * SCE)	0.00852	0.00836	0.00971
	(!CLK * !D * !RESET_B * SCE)	-0.00037	-0.00037	-0.00038
	(!CLK * !D * !RESET_B * SCE)	0.00093	0.00093	0.00092

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.00141	0.00123	0.00219
	(CLK * D * RESET_B * SCE)	0.00434	0.00417	0.00511
	(CLK * D * RESET_B * !SCE)	-0.00067	-0.00069	-0.00070
	(CLK * D * RESET_B * !SCE)	0.00084	0.00085	0.00084
	(CLK * D * !RESET_B * SCE)	-0.00035	-0.00035	-0.00035
	(CLK * D * !RESET_B * SCE)	0.00095	0.00095	0.00094
	(CLK * D * !RESET_B * !SCE)	-0.00027	-0.00028	-0.00027
	(CLK * D * !RESET_B * !SCE)	0.00101	0.00103	0.00102
	(CLK * !D * RESET_B * SCE)	0.00112	0.00095	0.00197
	(CLK * !D * RESET_B * SCE)	0.00414	0.00397	0.00498
	(CLK * !D * !RESET_B * SCE)	-0.00035	-0.00035	-0.00035
	(CLK * !D * !RESET_B * SCE)	0.00095	0.00095	0.00094
	(!D * RESET_B * !SCE)	-0.00051	-0.00054	-0.00054
	(!D * RESET_B * !SCE)	0.00100	0.00099	0.00099
	(!D * !RESET_B * !SCE)	-0.00032	-0.00032	-0.00032
	(!D * !RESET_B * !SCE)	0.00106	0.00107	0.00107
	(!CLK * D * RESET_B * SCE)	0.00598	0.00583	0.00702
	(!CLK * D * RESET_B * SCE)	0.00905	0.00889	0.01006
	(!CLK * D * RESET_B * !SCE)	-0.00067	-0.00069	-0.00070
	(!CLK * D * RESET_B * !SCE)	0.00084	0.00084	0.00084
	(!CLK * D * !RESET_B * SCE)	-0.00035	-0.00035	-0.00035
	(!CLK * D * !RESET_B * SCE)	0.00095	0.00095	0.00094
	(!CLK * D * !RESET_B * !SCE)	-0.00027	-0.00028	-0.00027
	(!CLK * D * !RESET_B * !SCE)	0.00101	0.00103	0.00102
	(!CLK * !D * RESET_B * SCE)	0.00572	0.00555	0.00689
	(!CLK * !D * RESET_B * SCE)	0.00886	0.00869	0.01001
	(!CLK * !D * !RESET_B * SCE)	-0.00035	-0.00035	-0.00035
	(!CLK * !D * !RESET_B * SCE)	0.00095	0.00095	0.00094

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.00142	0.00126	0.00221
	(CLK * D * RESET_B * SCE)	0.00436	0.00421	0.00514
	(CLK * D * RESET_B * !SCE)	-0.00065	-0.00068	-0.00068
	(CLK * D * RESET_B * !SCE)	0.00084	0.00085	0.00084
	(CLK * D * !RESET_B * SCE)	-0.00035	-0.00035	-0.00035
	(CLK * D * !RESET_B * SCE)	0.00093	0.00094	0.00092
	(CLK * D * !RESET_B * !SCE)	-0.00027	-0.00028	-0.00027
	(CLK * D * !RESET_B * !SCE)	0.00100	0.00101	0.00100
	(CLK * !D * RESET_B * SCE)	0.00110	0.00093	0.00196
	(CLK * !D * RESET_B * SCE)	0.00412	0.00396	0.00497
	(CLK * !D * !RESET_B * SCE)	-0.00035	-0.00035	-0.00035
	(CLK * !D * !RESET_B * SCE)	0.00093	0.00093	0.00092
	(!D * RESET_B * !SCE)	-0.00050	-0.00054	-0.00054
	(!D * RESET_B * !SCE)	0.00099	0.00097	0.00097
	(!D * !RESET_B * !SCE)	-0.00032	-0.00032	-0.00032
	(!D * !RESET_B * !SCE)	0.00104	0.00105	0.00105
	(!CLK * D * RESET_B * SCE)	0.00577	0.00563	0.00683
	(!CLK * D * RESET_B * SCE)	0.00885	0.00870	0.00989
	(!CLK * D * RESET_B * !SCE)	-0.00065	-0.00067	-0.00068
	(!CLK * D * RESET_B * !SCE)	0.00084	0.00084	0.00084
	(!CLK * D * !RESET_B * SCE)	-0.00035	-0.00035	-0.00035
	(!CLK * D * !RESET_B * SCE)	0.00093	0.00093	0.00092
	(!CLK * D * !RESET_B * !SCE)	-0.00027	-0.00028	-0.00027
	(!CLK * D * !RESET_B * !SCE)	0.00100	0.00101	0.00100
	(!CLK * !D * RESET_B * SCE)	0.00546	0.00531	0.00667
	(!CLK * !D * RESET_B * SCE)	0.00862	0.00846	0.00981
	(!CLK * !D * !RESET_B * SCE)	-0.00035	-0.00035	-0.00035
	(!CLK * !D * !RESET_B * SCE)	0.00093	0.00093	0.00092

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)	0.00372	0.00347	0.00586
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00026	-0.00054	0.00187
	(CLK * D * RESET_B * !SCD)	0.00552	0.00528	0.00771
	(CLK * D * RESET_B * !SCD)	0.00287	0.00261	0.00502
	(CLK * !D * RESET_B * SCD)	0.00766	0.00734	0.01095
	(CLK * !D * RESET_B * SCD)	0.00250	0.00217	0.00582
	(!CLK * D * RESET_B * SCD)	0.00372	0.00346	0.00586
	(!CLK * D * RESET_B * SCD)	-0.00026	-0.00054	0.00187
	(!CLK * D * RESET_B * !SCD)	0.00963	0.00945	0.01183
	(!CLK * D * RESET_B * !SCD)	0.00712	0.00692	0.00926
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00371	0.00351	0.00598
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00006	-0.00029	0.00218
	(!CLK * !D * RESET_B * SCD)	0.01217	0.01185	0.01541
	(!CLK * !D * RESET_B * SCD)	0.00688	0.00656	0.01014

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00374	0.00350	0.00591
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00029	-0.00055	0.00187
	(CLK * D * RESET_B * !SCD)	0.00547	0.00524	0.00763
	(CLK * D * RESET_B * !SCD)	0.00273	0.00247	0.00485
	(CLK * !D * RESET_B * SCD)	0.00715	0.00683	0.01052
	(CLK * !D * RESET_B * SCD)	0.00199	0.00165	0.00536
	(!CLK * D * RESET_B * SCD)	0.00374	0.00349	0.00590
	(!CLK * D * RESET_B * SCD)	-0.00029	-0.00056	0.00187
	(!CLK * D * RESET_B * !SCD)	0.00998	0.00979	0.01220
	(!CLK * D * RESET_B * !SCD)	0.00736	0.00717	0.00955
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00368	0.00349	0.00597
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00015	-0.00037	0.00212
	(!CLK * !D * RESET_B * SCD)	0.01183	0.01153	0.01513
	(!CLK * !D * RESET_B * SCD)	0.00656	0.00623	0.00985

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00375	0.00351	0.00592
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00029	-0.00055	0.00187
	(CLK * D * RESET_B * !SCD)	0.00548	0.00525	0.00766
	(CLK * D * RESET_B * !SCD)	0.00276	0.00251	0.00490
	(CLK * !D * RESET_B * SCD)	0.00719	0.00687	0.01055
	(CLK * !D * RESET_B * SCD)	0.00200	0.00166	0.00537
	(!CLK * D * RESET_B * SCD)	0.00375	0.00350	0.00592
	(!CLK * D * RESET_B * SCD)	-0.00029	-0.00056	0.00187
	(!CLK * D * RESET_B * !SCD)	0.00976	0.00958	0.01199
	(!CLK * D * RESET_B * !SCD)	0.00717	0.00698	0.00937
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00368	0.00351	0.00597
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00016	-0.00034	0.00211
	(!CLK * !D * RESET_B * SCD)	0.01189	0.01158	0.01519
	(!CLK * !D * RESET_B * SCD)	0.00657	0.00625	0.00987

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)**	-0.00014	-0.00015	0.00270
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00384	0.00384	0.00667
	(CLK * D * RESET_B * !SCD)	0.00396	0.00385	0.00658
	(CLK * D * RESET_B * !SCD)	0.00663	0.00653	0.00922
	(CLK * !D * RESET_B * SCD)	0.00086	0.00068	0.00462
	(CLK * !D * RESET_B * SCD)	0.00601	0.00583	0.00977
	(!CLK * D * RESET_B * SCD)	-0.00014	-0.00014	0.00270
	(!CLK * D * RESET_B * SCD)	0.00385	0.00384	0.00668
	(!CLK * D * RESET_B * !SCD)	0.00846	0.00840	0.01112
	(!CLK * D * RESET_B * !SCD)	0.01100	0.01094	0.01364
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00018	-0.00020	0.00259
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00361	0.00360	0.00638
	(!CLK * !D * RESET_B * SCD)	0.00506	0.00487	0.00901
	(!CLK * !D * RESET_B * SCD)	0.01032	0.01015	0.01429

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00022	-0.00022	0.00264
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00382	0.00381	0.00667
	(CLK * D * RESET_B * !SCD)	0.00330	0.00319	0.00595
	(CLK * D * RESET_B * !SCD)	0.00606	0.00595	0.00868
	(CLK * !D * RESET_B * SCD)	0.00085	0.00068	0.00467
	(CLK * !D * RESET_B * SCD)	0.00602	0.00585	0.00982
	(!CLK * D * RESET_B * SCD)	-0.00022	-0.00022	0.00264
	(!CLK * D * RESET_B * SCD)	0.00382	0.00382	0.00667
	(!CLK * D * RESET_B * !SCD)	0.00797	0.00792	0.01066
	(!CLK * D * RESET_B * !SCD)	0.01061	0.01055	0.01328
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00022	-0.00023	0.00258
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00363	0.00362	0.00641
	(!CLK * !D * RESET_B * SCD)	0.00545	0.00526	0.00939
	(!CLK * !D * RESET_B * SCD)	0.01072	0.01055	0.01467

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00025	-0.00024	0.00262
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00380	0.00380	0.00666
	(CLK * D * RESET_B * !SCD)	0.00332	0.00321	0.00597
	(CLK * D * RESET_B * !SCD)	0.00606	0.00595	0.00868
	(CLK * !D * RESET_B * SCD)	0.00081	0.00064	0.00462
	(CLK * !D * RESET_B * SCD)	0.00601	0.00584	0.00982
	(!CLK * D * RESET_B * SCD)	-0.00024	-0.00023	0.00262
	(!CLK * D * RESET_B * SCD)	0.00380	0.00379	0.00666
	(!CLK * D * RESET_B * !SCD)	0.00800	0.00796	0.01069
	(!CLK * D * RESET_B * !SCD)	0.01061	0.01057	0.01328
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00023	-0.00023	0.00257
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00363	0.00362	0.00642
	(!CLK * !D * RESET_B * SCD)	0.00518	0.00501	0.00915
	(!CLK * !D * RESET_B * SCD)	0.01049	0.01033	0.01446

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)**	0.00704	0.00688	0.00814
	(CLK * D * SCD * SCE * !Q)	0.00029	0.00008	0.00136
	(CLK * D * SCD * !SCE * !Q)	0.00688	0.00671	0.00807
	(CLK * D * SCD * !SCE * !Q)	0.00037	0.00014	0.00153
	(CLK * D * !SCD * SCE * !Q)	0.00217	0.00221	0.00218
	(CLK * D * !SCD * SCE * !Q)	-0.00283	-0.00285	-0.00284
	(CLK * D * !SCD * !SCE * !Q)	0.00660	0.00643	0.00786
	(CLK * D * !SCD * !SCE * !Q)	0.00037	0.00014	0.00160
	(CLK * !D * SCD * SCE * !Q)	0.00756	0.00739	0.00854
	(CLK * !D * SCD * SCE * !Q)	0.00070	0.00050	0.00168
	(CLK * !D * SCD * !SCE * !Q)	0.00215	0.00217	0.00216
	(CLK * !D * SCD * !SCE * !Q)	-0.00285	-0.00286	-0.00285
	(CLK * !D * !SCD * SCE * !Q)	0.00217	0.00219	0.00218
	(CLK * !D * !SCD * SCE * !Q)	-0.00283	-0.00284	-0.00284
	(CLK * !D * !SCD * !SCE * !Q)	0.00216	0.00218	0.00216
	(CLK * !D * !SCD * !SCE * !Q)	-0.00286	-0.00287	-0.00286
	(!CLK * D * SCD * SCE * !Q)	0.01200	0.01159	0.01285
	(!CLK * D * SCD * SCE * !Q)	0.00512	0.00470	0.00595
	(!CLK * D * SCD * !SCE * !Q)	0.01184	0.01143	0.01274
	(!CLK * D * SCD * !SCE * !Q)	0.00520	0.00476	0.00608
	(!CLK * D * !SCD * SCE * !Q)	0.00219	0.00220	0.00219
	(!CLK * D * !SCD * SCE * !Q)	-0.00283	-0.00282	-0.00283
	(!CLK * D * !SCD * !SCE * !Q)	0.01155	0.01114	0.01253
	(!CLK * D * !SCD * !SCE * !Q)	0.00522	0.00476	0.00615
	(!CLK * !D * SCD * SCE * !Q)	0.01251	0.01211	0.01332
	(!CLK * !D * SCD * SCE * !Q)	0.00554	0.00513	0.00634
	(!CLK * !D * SCD * !SCE * !Q)	0.00216	0.00219	0.00217
	(!CLK * !D * SCD * !SCE * !Q)	-0.00284	-0.00284	-0.00284
	(!CLK * !D * !SCD * SCE * !Q)	0.00219	0.00220	0.00219
	(!CLK * !D * !SCD * SCE * !Q)	-0.00283	-0.00283	-0.00283
	(!CLK * !D * !SCD * !SCE * !Q)	0.00217	0.00220	0.00217
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00285	-0.00284	-0.00285

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.00655	0.00637	0.00770
	(CLK * D * SCD * SCE * !Q)	-0.00020	-0.00040	0.00095
	(CLK * D * SCD * !SCE * !Q)	0.00628	0.00610	0.00757
	(CLK * D * SCD * !SCE * !Q)	-0.00022	-0.00044	0.00103
	(CLK * D * !SCD * SCE * !Q)	0.00218	0.00220	0.00218
	(CLK * D * !SCD * SCE * !Q)	-0.00286	-0.00287	-0.00286
	(CLK * D * !SCD * !SCE * !Q)	0.00599	0.00582	0.00736
	(CLK * D * !SCD * !SCE * !Q)	-0.00022	-0.00043	0.00112
	(CLK * !D * SCD * SCE * !Q)	0.00705	0.00687	0.00810
	(CLK * !D * SCD * SCE * !Q)	0.00022	0.00004	0.00126
	(CLK * !D * SCD * !SCE * !Q)	0.00216	0.00219	0.00216
	(CLK * !D * SCD * !SCE * !Q)	-0.00287	-0.00288	-0.00287
	(CLK * !D * !SCD * SCE * !Q)	0.00218	0.00218	0.00218
	(CLK * !D * !SCD * SCE * !Q)	-0.00286	-0.00286	-0.00286
	(CLK * !D * !SCD * !SCE * !Q)	0.00216	0.00218	0.00216
	(CLK * !D * !SCD * !SCE * !Q)	-0.00287	-0.00288	-0.00288
	(!CLK * D * SCD * SCE * !Q)	0.01171	0.01130	0.01259
	(!CLK * D * SCD * SCE * !Q)	0.00486	0.00443	0.00572
	(!CLK * D * SCD * !SCE * !Q)	0.01145	0.01103	0.01240
	(!CLK * D * SCD * !SCE * !Q)	0.00484	0.00439	0.00579
	(!CLK * D * !SCD * SCE * !Q)	0.00218	0.00219	0.00218
	(!CLK * D * !SCD * SCE * !Q)	-0.00286	-0.00287	-0.00286
	(!CLK * D * !SCD * !SCE * !Q)	0.01117	0.01075	0.01217
	(!CLK * D * !SCD * !SCE * !Q)	0.00483	0.00439	0.00583
	(!CLK * !D * SCD * SCE * !Q)	0.01222	0.01181	0.01302
	(!CLK * !D * SCD * SCE * !Q)	0.00528	0.00488	0.00607
	(!CLK * !D * SCD * !SCE * !Q)	0.00215	0.00215	0.00215
	(!CLK * !D * SCD * !SCE * !Q)	-0.00287	-0.00287	-0.00287
	(!CLK * !D * !SCD * SCE * !Q)	0.00218	0.00218	0.00218
	(!CLK * !D * !SCD * SCE * !Q)	-0.00286	-0.00286	-0.00286
	(!CLK * !D * !SCD * !SCE * !Q)	0.00216	0.00216	0.00216
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00288	-0.00288	-0.00288

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.00656	0.00639	0.00773
	(CLK * D * SCD * SCE * !Q)	-0.00014	-0.00036	0.00099
	(CLK * D * SCD * !SCE * !Q)	0.00631	0.00612	0.00757
	(CLK * D * SCD * !SCE * !Q)	-0.00018	-0.00040	0.00108
	(CLK * D * !SCD * SCE * !Q)	0.00214	0.00218	0.00215
	(CLK * D * !SCD * SCE * !Q)	-0.00283	-0.00284	-0.00284
	(CLK * D * !SCD * !SCE * !Q)	0.00603	0.00584	0.00737
	(CLK * D * !SCD * !SCE * !Q)	-0.00018	-0.00039	0.00115
	(CLK * !D * SCD * SCE * !Q)	0.00708	0.00689	0.00812
	(CLK * !D * SCD * SCE * !Q)	0.00026	0.00008	0.00130
	(CLK * !D * SCD * !SCE * !Q)	0.00212	0.00214	0.00213
	(CLK * !D * SCD * !SCE * !Q)	-0.00285	-0.00287	-0.00285
	(CLK * !D * !SCD * SCE * !Q)	0.00215	0.00216	0.00215
	(CLK * !D * !SCD * SCE * !Q)	-0.00283	-0.00284	-0.00284
	(CLK * !D * !SCD * !SCE * !Q)	0.00213	0.00216	0.00213
	(CLK * !D * !SCD * !SCE * !Q)	-0.00285	-0.00287	-0.00286
	(!CLK * D * SCD * SCE * !Q)	0.01169	0.01128	0.01257
	(!CLK * D * SCD * SCE * !Q)	0.00485	0.00442	0.00573
	(!CLK * D * SCD * !SCE * !Q)	0.01142	0.01099	0.01239
	(!CLK * D * SCD * !SCE * !Q)	0.00483	0.00439	0.00578
	(!CLK * D * !SCD * SCE * !Q)	0.00214	0.00215	0.00214
	(!CLK * D * !SCD * SCE * !Q)	-0.00285	-0.00285	-0.00285
	(!CLK * D * !SCD * !SCE * !Q)	0.01115	0.01072	0.01216
	(!CLK * D * !SCD * !SCE * !Q)	0.00482	0.00439	0.00583
	(!CLK * !D * SCD * SCE * !Q)	0.01220	0.01180	0.01302
	(!CLK * !D * SCD * SCE * !Q)	0.00527	0.00486	0.00608
	(!CLK * !D * SCD * !SCE * !Q)	0.00211	0.00212	0.00212
	(!CLK * !D * SCD * !SCE * !Q)	-0.00286	-0.00286	-0.00286
	(!CLK * !D * !SCD * SCE * !Q)	0.00214	0.00215	0.00214
	(!CLK * !D * !SCD * SCE * !Q)	-0.00284	-0.00285	-0.00285
	(!CLK * !D * !SCD * !SCE * !Q)	0.00212	0.00215	0.00213
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00286	-0.00287	-0.00287

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)**	0.00050	0.00036	0.00271
	(CLK * D * SCD * SCE * !Q)	0.00727	0.00716	0.00948
	(CLK * D * SCD * !SCE * !Q)	-0.00015	-0.00030	0.00204
	(CLK * D * SCD * !SCE * !Q)	0.00639	0.00627	0.00859
	(CLK * D * !SCD * SCE * !Q)	-0.00214	-0.00218	-0.00218
	(CLK * D * !SCD * SCE * !Q)	0.00288	0.00285	0.00285
	(CLK * D * !SCD * !SCE * !Q)	-0.00035	-0.00048	0.00192
	(CLK * D * !SCD * !SCE * !Q)	0.00590	0.00578	0.00818
	(CLK * !D * SCD * SCE * !Q)	0.00022	0.00008	0.00250
	(CLK * !D * SCD * SCE * !Q)	0.00708	0.00697	0.00937
	(CLK * !D * SCD * !SCE * !Q)	-0.00210	-0.00217	-0.00216
	(CLK * !D * SCD * !SCE * !Q)	0.00290	0.00289	0.00286
	(CLK * !D * !SCD * SCE * !Q)	-0.00214	-0.00218	-0.00218
	(CLK * !D * !SCD * SCE * !Q)	0.00288	0.00285	0.00285
	(CLK * !D * !SCD * !SCE * !Q)	-0.00211	-0.00218	-0.00216
	(CLK * !D * !SCD * !SCE * !Q)	0.00291	0.00289	0.00286
	(!CLK * D * SCD * SCE * !Q)	0.00516	0.00472	0.00725
	(!CLK * D * SCD * SCE * !Q)	0.01205	0.01165	0.01415
	(!CLK * D * SCD * !SCE * !Q)	0.00451	0.00406	0.00657
	(!CLK * D * SCD * !SCE * !Q)	0.01117	0.01075	0.01323
	(!CLK * D * !SCD * SCE * !Q)	-0.00215	-0.00218	-0.00219
	(!CLK * D * !SCD * SCE * !Q)	0.00286	0.00282	0.00284
	(!CLK * D * !SCD * !SCE * !Q)	0.00432	0.00385	0.00644
	(!CLK * D * !SCD * !SCE * !Q)	0.01068	0.01024	0.01281
	(!CLK * !D * SCD * SCE * !Q)	0.00488	0.00441	0.00705
	(!CLK * !D * SCD * SCE * !Q)	0.01186	0.01140	0.01404
	(!CLK * !D * SCD * !SCE * !Q)	-0.00211	-0.00216	-0.00217
	(!CLK * !D * SCD * !SCE * !Q)	0.00289	0.00284	0.00284
	(!CLK * !D * !SCD * SCE * !Q)	-0.00215	-0.00220	-0.00219
	(!CLK * !D * !SCD * SCE * !Q)	0.00286	0.00287	0.00284
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00212	-0.00217	-0.00217
	(!CLK * !D * !SCD * !SCE * !Q)	0.00290	0.00284	0.00285

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.00042	0.00030	0.00268
	(CLK * D * SCD * SCE * !Q)	0.00718	0.00708	0.00943
	(CLK * D * SCD * !SCE * !Q)	-0.00016	-0.00030	0.00208
	(CLK * D * SCD * !SCE * !Q)	0.00636	0.00624	0.00860
	(CLK * D * !SCD * SCE * !Q)	-0.00214	-0.00219	-0.00218
	(CLK * D * !SCD * SCE * !Q)	0.00290	0.00287	0.00287
	(CLK * D * !SCD * !SCE * !Q)	-0.00036	-0.00049	0.00195
	(CLK * D * !SCD * !SCE * !Q)	0.00587	0.00576	0.00819
	(CLK * !D * SCD * SCE * !Q)	0.00014	0.00002	0.00248
	(CLK * !D * SCD * SCE * !Q)	0.00698	0.00687	0.00932
	(CLK * !D * SCD * !SCE * !Q)	-0.00210	-0.00217	-0.00216
	(CLK * !D * SCD * !SCE * !Q)	0.00292	0.00288	0.00287
	(CLK * !D * !SCD * SCE * !Q)	-0.00214	-0.00218	-0.00218
	(CLK * !D * !SCD * SCE * !Q)	0.00290	0.00287	0.00287
	(CLK * !D * !SCD * !SCE * !Q)	-0.00211	-0.00217	-0.00216
	(CLK * !D * !SCD * !SCE * !Q)	0.00293	0.00288	0.00288
	(!CLK * D * SCD * SCE * !Q)	0.00549	0.00503	0.00757
	(!CLK * D * SCD * SCE * !Q)	0.01235	0.01191	0.01445
	(!CLK * D * SCD * !SCE * !Q)	0.00490	0.00443	0.00694
	(!CLK * D * SCD * !SCE * !Q)	0.01154	0.01109	0.01358
	(!CLK * D * !SCD * SCE * !Q)	-0.00214	-0.00218	-0.00218
	(!CLK * D * !SCD * SCE * !Q)	0.00290	0.00287	0.00287
	(!CLK * D * !SCD * !SCE * !Q)	0.00471	0.00427	0.00682
	(!CLK * D * !SCD * !SCE * !Q)	0.01105	0.01062	0.01317
	(!CLK * !D * SCD * SCE * !Q)	0.00521	0.00477	0.00739
	(!CLK * !D * SCD * SCE * !Q)	0.01216	0.01175	0.01434
	(!CLK * !D * SCD * !SCE * !Q)	-0.00210	-0.00215	-0.00215
	(!CLK * !D * SCD * !SCE * !Q)	0.00292	0.00288	0.00288
	(!CLK * !D * !SCD * SCE * !Q)	-0.00214	-0.00218	-0.00218
	(!CLK * !D * !SCD * SCE * !Q)	0.00290	0.00287	0.00287
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00211	-0.00216	-0.00216
	(!CLK * !D * !SCD * !SCE * !Q)	0.00293	0.00289	0.00288

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.00044	0.00031	0.00268
	(CLK * D * SCD * SCE * !Q)	0.00717	0.00704	0.00941
	(CLK * D * SCD * !SCE * !Q)	-0.00015	-0.00029	0.00208
	(CLK * D * SCD * !SCE * !Q)	0.00635	0.00623	0.00858
	(CLK * D * !SCD * SCE * !Q)	-0.00211	-0.00214	-0.00215
	(CLK * D * !SCD * SCE * !Q)	0.00288	0.00284	0.00285
	(CLK * D * !SCD * !SCE * !Q)	-0.00035	-0.00048	0.00195
	(CLK * D * !SCD * !SCE * !Q)	0.00586	0.00574	0.00817
	(CLK * !D * SCD * SCE * !Q)	0.00012	-0.00002	0.00244
	(CLK * !D * SCD * SCE * !Q)	0.00693	0.00682	0.00927
	(CLK * !D * SCD * !SCE * !Q)	-0.00207	-0.00214	-0.00213
	(CLK * !D * SCD * !SCE * !Q)	0.00290	0.00289	0.00286
	(CLK * !D * !SCD * SCE * !Q)	-0.00211	-0.00216	-0.00215
	(CLK * !D * !SCD * SCE * !Q)	0.00288	0.00288	0.00285
	(CLK * !D * !SCD * !SCE * !Q)	-0.00208	-0.00215	-0.00213
	(CLK * !D * !SCD * !SCE * !Q)	0.00291	0.00290	0.00286
	(!CLK * D * SCD * SCE * !Q)	0.00529	0.00485	0.00741
	(!CLK * D * SCD * SCE * !Q)	0.01214	0.01172	0.01427
	(!CLK * D * SCD * !SCE * !Q)	0.00471	0.00426	0.00677
	(!CLK * D * SCD * !SCE * !Q)	0.01132	0.01088	0.01340
	(!CLK * D * !SCD * SCE * !Q)	-0.00210	-0.00213	-0.00214
	(!CLK * D * !SCD * SCE * !Q)	0.00289	0.00285	0.00286
	(!CLK * D * !SCD * !SCE * !Q)	0.00451	0.00404	0.00665
	(!CLK * D * !SCD * !SCE * !Q)	0.01083	0.01037	0.01299
	(!CLK * !D * SCD * SCE * !Q)	0.00498	0.00450	0.00718
	(!CLK * !D * SCD * SCE * !Q)	0.01191	0.01146	0.01413
	(!CLK * !D * SCD * !SCE * !Q)	-0.00206	-0.00212	-0.00212
	(!CLK * !D * SCD * !SCE * !Q)	0.00291	0.00287	0.00287
	(!CLK * !D * !SCD * SCE * !Q)	-0.00210	-0.00215	-0.00214
	(!CLK * !D * !SCD * SCE * !Q)	0.00289	0.00289	0.00286
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00207	-0.00212	-0.00213
	(!CLK * !D * !SCD * !SCE * !Q)	0.00292	0.00287	0.00287

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)	0.00958	0.00924	0.01189
	(D * RESET_B * SCD * SCE * Q)	0.00658	0.00622	0.00888
	(D * RESET_B * SCD * !SCE * Q)	0.00958	0.00924	0.01190
	(D * RESET_B * SCD * !SCE * Q)	0.00657	0.00622	0.00888
	(D * RESET_B * !SCD * !SCE * Q)	0.00958	0.00924	0.01190
	(D * RESET_B * !SCD * !SCE * Q)	0.00658	0.00622	0.00888
	(D * !SCD * SCE * !Q)	0.00985	0.00952	0.01214
	(D * !SCD * SCE * !Q)	0.00684	0.00651	0.00913
	(D * !RESET_B * SCD * SCE * !Q)	0.00985	0.00952	0.01214
	(D * !RESET_B * SCD * SCE * !Q)	0.00684	0.00651	0.00913
	(D * !RESET_B * SCD * !SCE * !Q)	0.00985	0.00952	0.01214
	(D * !RESET_B * SCD * !SCE * !Q)	0.00684	0.00651	0.00913
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00985	0.00952	0.01214
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00684	0.00651	0.00913
	(!D * RESET_B * SCD * SCE * Q)	0.00958	0.00924	0.01189
	(!D * RESET_B * SCD * SCE * Q)	0.00658	0.00622	0.00888
	(!D * !SCE * !Q)	0.00985	0.00951	0.01214
	(!D * !SCE * !Q)	0.00684	0.00650	0.00913
	(!D * !SCD * SCE * !Q)	0.00985	0.00952	0.01214
	(!D * !SCD * SCE * !Q)	0.00684	0.00651	0.00913
	(!D * !RESET_B * SCD * SCE * !Q)	0.00985	0.00952	0.01214
	(!D * !RESET_B * SCD * SCE * !Q)	0.00684	0.00651	0.00913

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.00956	0.00922	0.01185
	(D * RESET_B * SCD * SCE * Q)	0.00653	0.00618	0.00882
	(D * RESET_B * SCD * !SCE * Q)	0.00956	0.00922	0.01185
	(D * RESET_B * SCD * !SCE * Q)	0.00653	0.00618	0.00882
	(D * RESET_B * !SCD * !SCE * Q)	0.00956	0.00922	0.01185
	(D * RESET_B * !SCD * !SCE * Q)	0.00653	0.00618	0.00882
	(D * !SCD * SCE * !Q)	0.00988	0.00955	0.01216
	(D * !SCD * SCE * !Q)	0.00685	0.00650	0.00913
	(D * !RESET_B * SCD * SCE * !Q)	0.00988	0.00955	0.01217
	(D * !RESET_B * SCD * SCE * !Q)	0.00685	0.00651	0.00914
	(D * !RESET_B * SCD * !SCE * !Q)	0.00987	0.00955	0.01216
	(D * !RESET_B * SCD * !SCE * !Q)	0.00685	0.00651	0.00913
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00987	0.00955	0.01216
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00685	0.00651	0.00913
	(!D * RESET_B * SCD * SCE * Q)	0.00956	0.00922	0.01185
	(!D * RESET_B * SCD * SCE * Q)	0.00653	0.00618	0.00882
	(!D * !SCE * !Q)	0.00987	0.00954	0.01215
	(!D * !SCE * !Q)	0.00685	0.00650	0.00912
	(!D * !SCD * SCE * !Q)	0.00988	0.00955	0.01215
	(!D * !SCD * SCE * !Q)	0.00685	0.00651	0.00912
	(!D * !RESET_B * SCD * SCE * !Q)	0.00988	0.00955	0.01216
	(!D * !RESET_B * SCD * SCE * !Q)	0.00685	0.00651	0.00913

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.00943	0.00909	0.01175
	(D * RESET_B * SCD * SCE * Q)	0.00641	0.00605	0.00872
	(D * RESET_B * SCD * !SCE * Q)	0.00943	0.00909	0.01175
	(D * RESET_B * SCD * !SCE * Q)	0.00640	0.00605	0.00872
	(D * RESET_B * !SCD * !SCE * Q)	0.00943	0.00909	0.01175
	(D * RESET_B * !SCD * !SCE * Q)	0.00640	0.00605	0.00872
	(D * !SCD * SCE * !Q)	0.00972	0.00940	0.01202
	(D * !SCD * SCE * !Q)	0.00670	0.00636	0.00900
	(D * !RESET_B * SCD * SCE * !Q)	0.00972	0.00940	0.01204
	(D * !RESET_B * SCD * SCE * !Q)	0.00670	0.00637	0.00901
	(D * !RESET_B * SCD * !SCE * !Q)	0.00972	0.00940	0.01204
	(D * !RESET_B * SCD * !SCE * !Q)	0.00670	0.00636	0.00901
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00972	0.00940	0.01204
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00670	0.00636	0.00901
	(!D * RESET_B * SCD * SCE * Q)	0.00943	0.00909	0.01174
	(!D * RESET_B * SCD * SCE * Q)	0.00640	0.00605	0.00871
	(!D * !SCE * !Q)	0.00972	0.00939	0.01202
	(!D * !SCE * !Q)	0.00670	0.00636	0.00900
	(!D * !SCD * SCE * !Q)	0.00972	0.00939	0.01202
	(!D * !SCD * SCE * !Q)	0.00670	0.00636	0.00900
	(!D * !RESET_B * SCD * SCE * !Q)	0.00972	0.00940	0.01204
	(!D * !RESET_B * SCD * SCE * !Q)	0.00670	0.00637	0.00901

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)**	0.00511	0.00497	0.00820
	(D * RESET_B * SCD * SCE * Q)	0.00812	0.00798	0.01120
	(D * RESET_B * SCD * SCE * !Q)	0.00935	0.00914	0.01234
	(D * RESET_B * SCD * SCE * !Q)	0.01223	0.01200	0.01522
	(D * RESET_B * SCD * !SCE * Q)	0.00510	0.00497	0.00819
	(D * RESET_B * SCD * !SCE * Q)	0.00812	0.00798	0.01120
	(D * RESET_B * SCD * !SCE * !Q)	0.00931	0.00911	0.01231
	(D * RESET_B * SCD * !SCE * !Q)	0.01220	0.01198	0.01520
	(D * RESET_B * !SCD * SCE * Q)	0.00985	0.00978	0.01332
	(D * RESET_B * !SCD * SCE * Q)	0.01301	0.01294	0.01648
	(D * RESET_B * !SCD * !SCE * Q)	0.00511	0.00497	0.00820
	(D * RESET_B * !SCD * !SCE * Q)	0.00812	0.00798	0.01121
	(D * RESET_B * !SCD * !SCE * !Q)	0.00931	0.00911	0.01231
	(D * RESET_B * !SCD * !SCE * !Q)	0.01220	0.01198	0.01520
	(D * !SCD * SCE * !Q)	0.00476	0.00462	0.00785
	(D * !SCD * SCE * !Q)	0.00778	0.00763	0.01087
	(D * !RESET_B * SCD * SCE * !Q)	0.00476	0.00463	0.00786
	(D * !RESET_B * SCD * SCE * !Q)	0.00778	0.00764	0.01087
	(D * !RESET_B * SCD * !SCE * !Q)	0.00476	0.00463	0.00786
	(D * !RESET_B * SCD * !SCE * !Q)	0.00778	0.00763	0.01087
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00476	0.00463	0.00786
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00778	0.00763	0.01087
	(!D * RESET_B * SCD * SCE * Q)	0.00511	0.00497	0.00820
	(!D * RESET_B * SCD * SCE * Q)	0.00812	0.00798	0.01121
	(!D * RESET_B * SCD * SCE * !Q)	0.00937	0.00917	0.01237
	(!D * RESET_B * SCD * SCE * !Q)	0.01225	0.01204	0.01525
	(!D * RESET_B * !SCE * Q)	0.00983	0.00976	0.01330
	(!D * RESET_B * !SCE * Q)	0.01297	0.01290	0.01645
	(!D * RESET_B * !SCD * SCE * Q)	0.00984	0.00978	0.01332
	(!D * RESET_B * !SCD * SCE * Q)	0.01300	0.01293	0.01647
	(!D * !SCE * !Q)	0.00476	0.00462	0.00785
	(!D * !SCE * !Q)	0.00778	0.00763	0.01087
	(!D * !SCD * SCE * !Q)	0.00476	0.00462	0.00786
	(!D * !SCD * SCE * !Q)	0.00778	0.00763	0.01087
	(!D * !RESET_B * SCD * SCE * !Q)	0.00476	0.00463	0.00786
	(!D * !RESET_B * SCD * SCE * !Q)	0.00778	0.00764	0.01087

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.00512	0.00499	0.00821
	(D * RESET_B * SCD * SCE * Q)	0.00815	0.00801	0.01124
	(D * RESET_B * SCD * SCE * !Q)	0.00957	0.00936	0.01257
	(D * RESET_B * SCD * SCE * !Q)	0.01248	0.01226	0.01548
	(D * RESET_B * SCD * !SCE * Q)	0.00511	0.00499	0.00821
	(D * RESET_B * SCD * !SCE * Q)	0.00815	0.00801	0.01124
	(D * RESET_B * SCD * !SCE * !Q)	0.00953	0.00932	0.01253
	(D * RESET_B * SCD * !SCE * !Q)	0.01245	0.01223	0.01544
	(D * RESET_B * !SCD * SCE * Q)	0.01026	0.01016	0.01372
	(D * RESET_B * !SCD * SCE * Q)	0.01344	0.01333	0.01689
	(D * RESET_B * !SCD * !SCE * Q)	0.00512	0.00499	0.00821
	(D * RESET_B * !SCD * !SCE * Q)	0.00815	0.00801	0.01124
	(D * RESET_B * !SCD * !SCE * !Q)	0.00953	0.00933	0.01253
	(D * RESET_B * !SCD * !SCE * !Q)	0.01245	0.01223	0.01544
	(D * !SCD * SCE * !Q)	0.00478	0.00464	0.00787
	(D * !SCD * SCE * !Q)	0.00782	0.00767	0.01091
	(D * !RESET_B * SCD * SCE * !Q)	0.00478	0.00464	0.00787
	(D * !RESET_B * SCD * SCE * !Q)	0.00782	0.00768	0.01091
	(D * !RESET_B * SCD * !SCE * !Q)	0.00478	0.00464	0.00787
	(D * !RESET_B * SCD * !SCE * !Q)	0.00782	0.00767	0.01091
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00478	0.00464	0.00787
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00782	0.00767	0.01091
	(!D * RESET_B * SCD * SCE * Q)	0.00512	0.00499	0.00821
	(!D * RESET_B * SCD * SCE * Q)	0.00815	0.00801	0.01124
	(!D * RESET_B * SCD * SCE * !Q)	0.00960	0.00939	0.01260
	(!D * RESET_B * SCD * SCE * !Q)	0.01250	0.01228	0.01550
	(!D * RESET_B * !SCE * Q)	0.01024	0.01018	0.01369
	(!D * RESET_B * !SCE * Q)	0.01340	0.01333	0.01685
	(!D * RESET_B * !SCD * SCE * Q)	0.01026	0.01017	0.01371
	(!D * RESET_B * !SCD * SCE * Q)	0.01343	0.01333	0.01688
	(!D * !SCE * !Q)	0.00478	0.00464	0.00787
	(!D * !SCE * !Q)	0.00782	0.00767	0.01091
	(!D * !SCD * SCE * !Q)	0.00478	0.00464	0.00787
	(!D * !SCD * SCE * !Q)	0.00782	0.00767	0.01091
	(!D * !RESET_B * SCD * SCE * !Q)	0.00478	0.00464	0.00787
	(!D * !RESET_B * SCD * SCE * !Q)	0.00782	0.00768	0.01091

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.00509	0.00496	0.00818
	(D * RESET_B * SCD * SCE * Q)	0.00812	0.00799	0.01121
	(D * RESET_B * SCD * SCE * !Q)	0.00947	0.00927	0.01247
	(D * RESET_B * SCD * SCE * !Q)	0.01238	0.01216	0.01538
	(D * RESET_B * SCD * !SCE * Q)	0.00509	0.00496	0.00818
	(D * RESET_B * SCD * !SCE * Q)	0.00812	0.00798	0.01121
	(D * RESET_B * SCD * !SCE * !Q)	0.00943	0.00923	0.01244
	(D * RESET_B * SCD * !SCE * !Q)	0.01234	0.01212	0.01534
	(D * RESET_B * !SCD * SCE * Q)	0.01000	0.00994	0.01348
	(D * RESET_B * !SCD * SCE * Q)	0.01318	0.01311	0.01666
	(D * RESET_B * !SCD * !SCE * Q)	0.00509	0.00496	0.00819
	(D * RESET_B * !SCD * !SCE * Q)	0.00812	0.00799	0.01121
	(D * RESET_B * !SCD * !SCE * !Q)	0.00943	0.00923	0.01244
	(D * RESET_B * !SCD * !SCE * !Q)	0.01234	0.01212	0.01534
	(D * !SCD * SCE * !Q)	0.00472	0.00458	0.00782
	(D * !SCD * SCE * !Q)	0.00776	0.00761	0.01085
	(D * !RESET_B * SCD * SCE * !Q)	0.00472	0.00459	0.00782
	(D * !RESET_B * SCD * SCE * !Q)	0.00776	0.00762	0.01085
	(D * !RESET_B * SCD * !SCE * !Q)	0.00472	0.00458	0.00782
	(D * !RESET_B * SCD * !SCE * !Q)	0.00776	0.00761	0.01085
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00472	0.00458	0.00782
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00776	0.00761	0.01085
	(!D * RESET_B * SCD * SCE * Q)	0.00509	0.00496	0.00819
	(!D * RESET_B * SCD * SCE * Q)	0.00812	0.00799	0.01121
	(!D * RESET_B * SCD * SCE * !Q)	0.00950	0.00930	0.01251
	(!D * RESET_B * SCD * SCE * !Q)	0.01239	0.01218	0.01540
	(!D * RESET_B * !SCE * Q)	0.00997	0.00991	0.01346
	(!D * RESET_B * !SCE * Q)	0.01314	0.01307	0.01661
	(!D * RESET_B * !SCD * SCE * Q)	0.00999	0.00993	0.01344
	(!D * RESET_B * !SCD * SCE * Q)	0.01316	0.01309	0.01661
	(!D * !SCE * !Q)	0.00472	0.00458	0.00782
	(!D * !SCE * !Q)	0.00775	0.00761	0.01085
	(!D * !SCD * SCE * !Q)	0.00472	0.00458	0.00782
	(!D * !SCD * SCE * !Q)	0.00776	0.00761	0.01085
	(!D * !RESET_B * SCD * SCE * !Q)	0.00472	0.00459	0.00782
	(!D * !RESET_B * SCD * SCE * !Q)	0.00776	0.00762	0.01085

SKY130_FD_SC_HS__SDFSBPx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT					OUTPUT	
D	SCD	SCE	SET_B	CLK	Q	Q_N
0	0	x	1	R	0	1
0	1	0	1	R	0	1
x	1	1	1	R	1	0
1	x	0	1	R	1	0
1	0	1	1	R	0	1
x	x	x	0	x	1	0
x	x	x	1	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfsbp_1	47.95200
sky130_fd_sc_hs__sdfsbp_2	59.14080

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)	
	D	SCD	SCE	SET_B	CLK	Q	Q_N
sky130_fd_sc_hs__sdfsbp_1	0.00185	0.00203	0.00391	0.00339	0.00287	0.74913	0.71898
sky130_fd_sc_hs__sdfsbp_2	0.00191	0.00197	0.00411	0.00346	0.00290	1.53153	1.54541

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfsbp_1	0.00000	0.28664	0.42202
sky130_fd_sc_hs__sdfsbp_2	0.00000	0.30304	0.57324

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)	0.41815	1.08025	7.32083
	SET_B->Q (FR)	0.39917	1.33908	10.27760
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RR)	0.44118	0.99230	7.45145
	SET_B->Q (FR)	0.54559	1.35176	10.74570

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfsbp_1	CLK->Q (RF)	0.33250	0.67668	2.63625
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RF)	0.37629	0.70814	2.87724

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)	0.28307	0.99406	7.30338
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RR)	0.28468	0.87751	7.38645

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)	0.33122	0.77054	2.70884
	SET_B->Q_N (FF)	0.31018	1.02516	5.80496
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RF)	0.31990	0.73036	3.01682
	SET_B->Q_N (FF)	0.38687	1.11205	6.44228

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)	-0.10799	-0.21741	-1.18624
	setup	CLK (R)	0.18825	0.26493	1.26413
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.13392	-0.24260	-1.25545
	setup	CLK (R)	0.23556	0.30921	1.36758

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)	-0.11968	-0.26453	-2.03561
	setup	CLK (R)	0.45550	0.51875	3.05723
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.14686	-0.28609	-2.08825
	setup	CLK (R)	0.54145	0.59823	3.14855

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)	-0.10799	-0.21741	-1.18624
	setup	CLK (R)	0.18825	0.26493	1.26413
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.13392	-0.24260	-1.25545
	setup	CLK (R)	0.23556	0.30921	1.36758

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)	-0.11968	-0.26453	-2.03561
	setup	CLK (R)	0.45550	0.51875	3.05723
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.14686	-0.28609	-2.08825
	setup	CLK (R)	0.54145	0.59823	3.14855

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)	-0.12947	-0.23134	-1.33132
	setup	CLK (R)	0.21258	0.28164	1.40685
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.15476	-0.25487	-1.37399
	setup	CLK (R)	0.26173	0.31971	1.47169

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)	-0.15474	-0.32491	-2.65322
	setup	CLK (R)	0.54126	0.61528	3.47177
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.18176	-0.34661	-2.70614
	setup	CLK (R)	0.63222	0.70033	3.55189

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)	-0.12947	-0.23134	-1.33132
	hold	CLK (R)	-0.13294	-0.23475	-1.34427
	setup	CLK (R)	0.21241	0.27966	1.39531
	setup	CLK (R)	0.21258	0.28164	1.40685
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.15476	-0.25487	-1.37399
	hold	CLK (R)	-0.16020	-0.25933	-1.38956
	setup	CLK (R)	0.26058	0.31813	1.46306
	setup	CLK (R)	0.26173	0.31971	1.47169

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)	-0.16717	-0.34047	-2.72356
	hold	CLK (R)	-0.15474	-0.32491	-2.65322
	setup	CLK (R)	0.53756	0.61493	3.46747
	setup	CLK (R)	0.54126	0.61528	3.47177
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.19428	-0.35787	-2.75374
	hold	CLK (R)	-0.18176	-0.34661	-2.70614
	setup	CLK (R)	0.62765	0.69809	3.54963
	setup	CLK (R)	0.63222	0.70033	3.55189

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)	-0.11575	-0.22907	-0.31401
	setup	CLK (R)	0.52559	0.50573	1.31024
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.14528	-0.24786	-0.23633
	setup	CLK (R)	0.61881	0.58632	1.41770

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)	-0.14152	-0.29818	-2.35502
	setup	CLK (R)	0.47414	0.54959	3.29134
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.16530	-0.31364	-2.31297
	setup	CLK (R)	0.55768	0.62711	3.36348

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)	-0.15984	-0.22907	-0.31401
	hold	CLK (R)	-0.11575	-0.23082	-1.23042
	setup	CLK (R)	0.52559	0.50573	1.24347
	setup	CLK (R)	0.19503	0.27974	1.31024
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.18375	-0.24786	-0.23633
	hold	CLK (R)	-0.14528	-0.25764	-1.30204
	setup	CLK (R)	0.61881	0.58632	0.71812
	setup	CLK (R)	0.24466	0.31928	1.41770

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)	-0.20213	-0.37105	-2.35502
	hold	CLK (R)	-0.14152	-0.29818	-2.40821
	setup	CLK (R)	0.28332	0.41144	2.37574
	setup	CLK (R)	0.47414	0.54959	3.29134
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.22783	-0.39027	-2.31297
	hold	CLK (R)	-0.16530	-0.31364	-2.46841
	setup	CLK (R)	0.32808	0.44746	2.34807
	setup	CLK (R)	0.55768	0.62711	3.36348

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)	-0.12774	-0.17898	-0.53031
	removal	CLK (R)	0.15848	0.20135	0.58445
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.17463	-0.24183	-0.75726
	removal	CLK (R)	0.19985	0.26154	0.92426

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)	-0.12774	-0.17898	-0.53052
	recovery	CLK (R)	-0.12774	-0.17898	-0.53048
	recovery	CLK (R)	-0.12788	-0.17898	-0.53031
	removal	CLK (R)	0.15525	0.20135	0.58445
	removal	CLK (R)	0.15525	0.20135	0.58445
	removal	CLK (R)	0.15848	0.20135	0.58445
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.17562	-0.24183	-0.75726
	recovery	CLK (R)	-0.17463	-0.24185	-0.75751
	recovery	CLK (R)	-0.17669	-0.24201	-0.75753
	removal	CLK (R)	0.19712	0.25900	0.92280
	removal	CLK (R)	0.19858	0.26154	0.92426
	removal	CLK (R)	0.19985	0.26154	0.92027

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 ()	0.31725	0.78293	16.50020
	min_pulse_width	SET_B ()	0.31450	0.80766	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	SET_B ()	0.36420	0.79736	16.50020
	min_pulse_width	SET_B ()	0.43297	0.92515	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 ()	0.26650	0.77881	16.50020
	min_pulse_width	CLK ()	0.12757	0.77881	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.27229	0.77881	16.50020
	min_pulse_width	CLK ()	0.15072	0.77881	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 ()	0.26071	0.77881	16.50020
	min_pulse_width	CLK ()	0.46042	0.77881	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.33018	0.77881	16.50020
	min_pulse_width	CLK ()	0.57910	0.77881	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	0.01002	0.01003	0.01137
	CLK	0.00860	0.00860	0.00993
	SET_B	0.00951	0.00951	0.01021
	SET_B	0.01107	0.01107	0.01165
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01401	0.01419	0.01555
	CLK	0.01253	0.01271	0.01403
	SET_B	0.01325	0.01341	0.01389
	SET_B	0.01487	0.01503	0.01549

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01059	0.01063	0.01189
	CLK	0.00908	0.00911	0.01036
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01412	0.01443	0.01578
	CLK	0.01262	0.01292	0.01426

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01062	0.01067	0.01210
	CLK	0.00911	0.00913	0.01059
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01415	0.01446	0.01596
	CLK	0.01266	0.01296	0.01444

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01001	0.01001	0.01119
	CLK	0.00858	0.00858	0.00977
	SET_B	0.00949	0.00949	0.01008
	SET_B	0.01105	0.01105	0.01151
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01398	0.01416	0.01536
	CLK	0.01250	0.01268	0.01383
	SET_B	0.01323	0.01339	0.01418
	SET_B	0.01484	0.01500	0.01535

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	0.00081	0.00083	0.00081
	(CLK * SCD * SCE)	-0.00041	-0.00042	-0.00041
	(CLK * !SCE)	0.00282	0.00268	0.00484
	(CLK * !SCE)	0.00071	0.00057	0.00273
	(CLK * !SCD * SCE)	0.00045	0.00045	0.00044
	(CLK * !SCD * SCE)	-0.00086	-0.00087	-0.00088
	(!CLK * SCD * SCE)	0.00081	0.00082	0.00081
	(!CLK * SCD * SCE)	-0.00041	-0.00042	-0.00041
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00748	0.00734	0.00878
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00514	0.00500	0.00643
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00597	0.00586	0.00732
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00355	0.00344	0.00491
	(!CLK * !SCD * SCE)	0.00045	0.00045	0.00044
	(!CLK * !SCD * SCE)	-0.00086	-0.00087	-0.00088

	(CLK * SCD * SCE)	0.00087	0.00088	0.00087
	(CLK * SCD * SCE)	-0.00040	-0.00040	-0.00040
	(CLK * !SCE)	0.00295	0.00280	0.00493
	(CLK * !SCE)	0.00080	0.00065	0.00278
	(CLK * !SCD * SCE)	0.00047	0.00047	0.00046
	(CLK * !SCD * SCE)	-0.00087	-0.00088	-0.00089
	(!CLK * SCD * SCE)	0.00086	0.00087	0.00087
	(!CLK * SCD * SCE)	-0.00040	-0.00040	-0.00040
sky130_fd_sc_hs__sdfsbp_2	**(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)**	0.00838	0.00825	0.00956
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00610	0.00597	0.00728
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00692	0.00681	0.00813
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00455	0.00444	0.00576
	(!CLK * !SCD * SCE)	0.00047	0.00047	0.00046
	(!CLK * !SCD * SCE)	-0.00086	-0.00088	-0.00089

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	-0.00077	-0.00079	-0.00081
	(CLK * SCD * SCE)	0.00045	0.00045	0.00043
	(CLK * !SCE)	0.00058	0.00056	0.00305
	(CLK * !SCE)	0.00267	0.00267	0.00515
	(CLK * !SCD * SCE)	-0.00043	-0.00042	-0.00042
	(CLK * !SCD * SCE)	0.00088	0.00088	0.00088
	(!CLK * SCD * SCE)	-0.00077	-0.00078	-0.00081
	(!CLK * SCD * SCE)	0.00045	0.00045	0.00043
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00493	0.00488	0.00709
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00726	0.00723	0.00944
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00295	0.00290	0.00500
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00537	0.00533	0.00742
	(!CLK * !SCD * SCE)	-0.00043	-0.00043	-0.00042
	(!CLK * !SCD * SCE)	0.00089	0.00088	0.00088

sky130_fd_sc_hs__sdfsbp_2	**(CLK * SCD * SCE)**	-0.00082	-0.00084	-0.00086
	(CLK * SCD * SCE)	0.00043	0.00043	0.00041
	(CLK * !SCE)	0.00068	0.00066	0.00312
	(CLK * !SCE)	0.00283	0.00280	0.00527
	(CLK * !SCD * SCE)	-0.00045	-0.00045	-0.00045
	(CLK * !SCD * SCE)	0.00090	0.00089	0.00089
	(!CLK * SCD * SCE)	-0.00083	-0.00083	-0.00086
	(!CLK * SCD * SCE)	0.00043	0.00043	0.00041
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00634	0.00630	0.00843
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00862	0.00858	0.01072
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00425	0.00422	0.00619
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00663	0.00659	0.00856
	(!CLK * !SCD * SCE)	-0.00045	-0.00045	-0.00045
	(!CLK * !SCD * SCE)	0.00090	0.00089	0.00089

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00398	0.00383	0.00477
	(CLK * D * SCE)	0.00107	0.00091	0.00187
	(CLK * !D * SCE)	0.00449	0.00434	0.00519
	(CLK * !D * SCE)	0.00148	0.00133	0.00219
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00854	0.00839	0.00908
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00539	0.00524	0.00593
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00703	0.00691	0.00762
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00381	0.00367	0.00439
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00904	0.00891	0.00952
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00580	0.00566	0.00628
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00753	0.00741	0.00806
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00422	0.00410	0.00474
	!SCE	0.00098	0.00090	0.00089
	!SCE	-0.00073	-0.00082	-0.00083

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.00401	0.00387	0.00481
	(CLK * D * SCE)	0.00114	0.00099	0.00194
	(CLK * !D * SCE)	0.00451	0.00438	0.00522
	(CLK * !D * SCE)	0.00155	0.00142	0.00226
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00935	0.00923	0.00988
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00635	0.00623	0.00688
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00789	0.00778	0.00845
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00480	0.00470	0.00537
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00986	0.00974	0.01033
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00677	0.00665	0.00724
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00840	0.00830	0.00891
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00522	0.00511	0.00573
	!SCE	0.00093	0.00085	0.00083
	!SCE	-0.00074	-0.00083	-0.00084

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00128	0.00114	0.00215
	(CLK * D * SCE)	0.00420	0.00406	0.00506
	(CLK * !D * SCE)	0.00100	0.00086	0.00195
	(CLK * !D * SCE)	0.00400	0.00387	0.00494
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00571	0.00557	0.00647
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00887	0.00873	0.00962
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00374	0.00360	0.00442
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00698	0.00685	0.00764
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00543	0.00530	0.00628
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00868	0.00854	0.00951
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00346	0.00333	0.00419
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00678	0.00665	0.00750
	!SCE	-0.00087	-0.00088	-0.00088
	!SCE	0.00084	0.00084	0.00084

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.00143	0.00130	0.00231
	(CLK * D * SCE)	0.00430	0.00419	0.00517
	(CLK * !D * SCE)	0.00115	0.00102	0.00210
	(CLK * !D * SCE)	0.00410	0.00399	0.00504
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00714	0.00702	0.00792
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01014	0.01004	0.01091
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00506	0.00495	0.00571
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00816	0.00805	0.00879
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00687	0.00675	0.00767
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00995	0.00985	0.01075
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00478	0.00467	0.00548
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00796	0.00786	0.00865
	!SCE	-0.00081	-0.00082	-0.00083
	!SCE	0.00085	0.00085	0.00085

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)**	0.00350	0.00328	0.00572
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00028	-0.00053	0.00191
	(CLK * D * !SCD)	0.00536	0.00510	0.00753
	(CLK * D * !SCD)	0.00265	0.00236	0.00478
	(CLK * !D * SCD)	0.00618	0.00593	0.00966
	(CLK * !D * SCD)	0.00146	0.00118	0.00493
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00350	0.00328	0.00572
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00028	-0.00053	0.00191
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00956	0.00939	0.01184
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00709	0.00691	0.00933
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00759	0.00743	0.00992
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00520	0.00502	0.00748
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01085	0.01053	0.01399
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00586	0.00555	0.00902
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00934	0.00905	0.01252
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00428	0.00399	0.00748
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00345	0.00326	0.00569
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	-0.00012	-0.00032	0.00212

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00368	0.00345	0.00588
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00026	-0.00051	0.00193
	(CLK * D * !SCD)	0.00562	0.00536	0.00779
	(CLK * D * !SCD)	0.00277	0.00249	0.00491
	(CLK * !D * SCD)	0.00643	0.00616	0.00987
	(CLK * !D * SCD)	0.00154	0.00127	0.00500
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00368	0.00344	0.00587
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00026	-0.00051	0.00193
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01111	0.01095	0.01340
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00840	0.00823	0.01066
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00904	0.00888	0.01137
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00641	0.00624	0.00871
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01185	0.01155	0.01494
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00684	0.00653	0.00994
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01038	0.01010	0.01351
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00529	0.00500	0.00842
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00356	0.00337	0.00580
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	-0.00015	-0.00035	0.00209

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)**	-0.00017	-0.00015	0.00271
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00362	0.00366	0.00651
	(CLK * D * !SCD)	0.00270	0.00259	0.00536
	(CLK * D * !SCD)	0.00542	0.00532	0.00806
	(CLK * !D * SCD)	0.00085	0.00072	0.00477
	(CLK * !D * SCD)	0.00558	0.00546	0.00949
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00016	-0.00014	0.00271
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00363	0.00366	0.00651
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00733	0.00731	0.00998
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00981	0.00980	0.01246
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00582	0.00580	0.00850
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00823	0.00822	0.01090
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00520	0.00504	0.00889
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01016	0.01002	0.01386
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00323	0.00310	0.00685
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00828	0.00814	0.01189
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00008	0.00010	0.00288
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00365	0.00369	0.00646

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00029	-0.00028	0.00259
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00364	0.00366	0.00652
	(CLK * D * !SCD)	0.00263	0.00252	0.00530
	(CLK * D * !SCD)	0.00549	0.00538	0.00813
	(CLK * !D * SCD)	0.00096	0.00081	0.00485
	(CLK * !D * SCD)	0.00582	0.00569	0.00972
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00029	-0.00026	0.00259
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00364	0.00368	0.00652
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00802	0.00800	0.01069
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01075	0.01072	0.01341
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00656	0.00654	0.00926
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00921	0.00920	0.01188
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00661	0.00645	0.01025
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01161	0.01147	0.01526
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00454	0.00437	0.00808
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00962	0.00948	0.01318
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00001	0.00001	0.00280
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00372	0.00373	0.00652

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)	0.00175	0.00177	0.00175
	(CLK * Q * !Q_N)	-0.00149	-0.00150	-0.00149
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00187	0.00188	0.00186
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00138	-0.00138	-0.00138
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00344	0.00337	0.00413
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00008	-0.00002	0.00076
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	0.00179	0.00180	0.00178
	(CLK * Q * !Q_N)	-0.00155	-0.00155	-0.00155
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00186	0.00188	0.00186
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00147	-0.00148	-0.00147
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00362	0.00355	0.00431
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00017	0.00007	0.00084

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)	-0.00171	-0.00174	-0.00175
	(CLK * Q * !Q_N)	0.00151	0.00150	0.00150
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00182	-0.00186	-0.00186
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00140	0.00139	0.00139
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	-0.00001	-0.00005	0.00088
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00335	0.00332	0.00426
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	-0.00176	-0.00177	-0.00178
	(CLK * Q * !Q_N)	0.00158	0.00155	0.00156
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00183	-0.00188	-0.00186
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00150	0.00150	0.00148
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	-0.00015	-0.00021	0.00073
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00331	0.00327	0.00420

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)	0.00967	0.00931	0.01190
	(D * SCD * SCE * Q * !Q_N)	0.00673	0.00637	0.00895
	(D * !SCE * Q * !Q_N)	0.00967	0.00931	0.01190
	(D * !SCE * Q * !Q_N)	0.00673	0.00637	0.00895
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00963	0.00926	0.01183
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00669	0.00631	0.00889
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01698	0.01673	0.01973
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01373	0.01347	0.01647
	(!D * SCD * SCE * Q * !Q_N)	0.00967	0.00931	0.01190
	(!D * SCD * SCE * Q * !Q_N)	0.00673	0.00637	0.00895
	(!D * !SCE * SET_B * !Q * Q_N)	0.00963	0.00926	0.01183
	(!D * !SCE * SET_B * !Q * Q_N)	0.00669	0.00631	0.00889
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01698	0.01673	0.01973
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01373	0.01347	0.01647
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00963	0.00926	0.01184
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00669	0.00631	0.00889
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01702	0.01675	0.01972
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01377	0.01348	0.01646

sky130_fd_sc_hs__sdfsbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.01261	0.01217	0.01451
	(D * SCD * SCE * Q * !Q_N)	0.00965	0.00919	0.01154
	(D * !SCE * Q * !Q_N)	0.01261	0.01217	0.01451
	(D * !SCE * Q * !Q_N)	0.00965	0.00919	0.01154
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01248	0.01203	0.01436
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00951	0.00904	0.01140
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02635	0.02617	0.02935
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02316	0.02297	0.02616
	(!D * SCD * SCE * Q * !Q_N)	0.01261	0.01217	0.01451
	(!D * SCD * SCE * Q * !Q_N)	0.00965	0.00919	0.01154
	(!D * !SCE * SET_B * !Q * Q_N)	0.01248	0.01206	0.01436
	(!D * !SCE * SET_B * !Q * Q_N)	0.00951	0.00907	0.01140
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02635	0.02617	0.02935
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02316	0.02298	0.02616
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01248	0.01203	0.01436
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00951	0.00904	0.01140
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02642	0.02618	0.02933
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02323	0.02299	0.02614

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(D * SCD * SCE * SET_B * !Q * Q_N)	0.01003	0.00984	0.01300
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.01275	0.01254	0.01570
	(D * SCD * SCE * Q * !Q_N)	0.00552	0.00545	0.00861
	(D * SCD * SCE * Q * !Q_N)	0.00847	0.00839	0.01155
	(D * !SCE * SET_B * !Q * Q_N)	0.01000	0.00982	0.01297
	(D * !SCE * SET_B * !Q * Q_N)	0.01272	0.01251	0.01569
	(D * !SCE * Q * !Q_N)	0.00552	0.00545	0.00861
	(D * !SCE * Q * !Q_N)	0.00847	0.00839	0.01155
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01095	0.01092	0.01438
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01416	0.01412	0.01757
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00562	0.00550	0.00870
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00857	0.00844	0.01165
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00894	0.00891	0.01236
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01220	0.01217	0.01562
sky130_fd_sc_hs__sdfsbp_1	**(!D * SCD * SCE * SET_B * !Q * Q_N)**	0.01006	0.00987	0.01303
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.01276	0.01256	0.01573
	(!D * SCD * SCE * Q * !Q_N)	0.00552	0.00545	0.00861
	(!D * SCD * SCE * Q * !Q_N)	0.00847	0.00839	0.01155
	(!D * !SCE * SET_B * Q * !Q_N)	0.01093	0.01091	0.01434
	(!D * !SCE * SET_B * Q * !Q_N)	0.01412	0.01408	0.01751
	(!D * !SCE * SET_B * !Q * Q_N)	0.00562	0.00550	0.00870
	(!D * !SCE * SET_B * !Q * Q_N)	0.00856	0.00844	0.01165
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00894	0.00891	0.01236
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01221	0.01217	0.01562
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01095	0.01092	0.01436
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01415	0.01411	0.01755
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00562	0.00550	0.00870
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00857	0.00844	0.01165
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00896	0.00895	0.01236
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01222	0.01221	0.01561

	(D * SCD * SCE * SET_B * !Q * Q_N)	0.01200	0.01179	0.01484
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.01486	0.01463	0.01769
	(D * SCD * SCE * Q * !Q_N)	0.00662	0.00648	0.00954
	(D * SCD * SCE * Q * !Q_N)	0.00960	0.00946	0.01251
	(D * !SCE * SET_B * !Q * Q_N)	0.01198	0.01177	0.01482
	(D * !SCE * SET_B * !Q * Q_N)	0.01483	0.01461	0.01767
	(D * !SCE * Q * !Q_N)	0.00662	0.00648	0.00954
	(D * !SCE * Q * !Q_N)	0.00960	0.00946	0.01251
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01377	0.01366	0.01699
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01690	0.01678	0.02012
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00682	0.00667	0.00976
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00980	0.00965	0.01273
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01157	0.01149	0.01485
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01476	0.01469	0.01804
sky130_fd_sc_hs__sdfsbp_2	**(!D * SCD * SCE * SET_B * !Q * Q_N)**	0.01204	0.01183	0.01488
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.01488	0.01465	0.01772
	(!D * SCD * SCE * Q * !Q_N)	0.00662	0.00649	0.00954
	(!D * SCD * SCE * Q * !Q_N)	0.00960	0.00946	0.01251
	(!D * !SCE * SET_B * Q * !Q_N)	0.01375	0.01364	0.01697
	(!D * !SCE * SET_B * Q * !Q_N)	0.01686	0.01675	0.02008
	(!D * !SCE * SET_B * !Q * Q_N)	0.00682	0.00667	0.00976
	(!D * !SCE * SET_B * !Q * Q_N)	0.00980	0.00965	0.01273
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01159	0.01146	0.01484
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01480	0.01465	0.01804
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01377	0.01366	0.01698
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01689	0.01677	0.02010
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00682	0.00667	0.00976
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00980	0.00965	0.01273
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01159	0.01150	0.01485
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01480	0.01469	0.01805

SKY130_FD_SC_HS__SDFSTPx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT					OUTPUT
D	SCD	SCE	SET_B	CLK	Q
0	0	x	1	R	0
0	1	0	1	R	0
x	1	1	1	R	1
1	x	0	1	R	1
1	0	1	1	R	0
x	x	x	0	x	1
x	x	x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfstp_1	46.35360
sky130_fd_sc_hs__sdfstp_2	49.55040
sky130_fd_sc_hs__sdfstp_4	52.74720

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	D	SCD	SCE	SET_B	CLK	Q
sky130_fd_sc_hs__sdfstp_1	0.00183	0.00203	0.00389	0.00326	0.00286	0.75983
sky130_fd_sc_hs__sdfstp_2	0.00183	0.00199	0.00389	0.00338	0.00285	1.51956
sky130_fd_sc_hs__sdfstp_4	0.00183	0.00204	0.00395	0.00337	0.00285	2.90672

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfstp_1	0.00000	0.26895	0.39759
sky130_fd_sc_hs__sdfstp_2	0.00000	0.26766	0.56481
sky130_fd_sc_hs__sdfstp_4	0.00000	0.40859	0.61226

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)	0.34049	1.01494	7.31606
	SET_B->Q (FR)	0.34040	1.28785	10.13270
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RR)	0.29910	0.85693	7.21446
	SET_B->Q (FR)	0.39028	1.21872	10.25150
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RR)	0.34360	0.81944	7.29010
	SET_B->Q (FR)	0.44880	1.19449	10.42270

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfstp_1	CLK->Q (RF)	0.31756	0.66311	2.65858
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RF)	0.34055	0.66533	2.76897
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RF)	0.34666	0.65031	2.83219

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)	-0.11263	-0.21997	-1.18985
	setup	CLK (R)	0.19161	0.26705	1.30232
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.13279	-0.24190	-1.26032
	setup	CLK (R)	0.24316	0.30873	1.45142
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.13272	-0.24256	-1.27359
	setup	CLK (R)	0.23473	0.30534	1.43982

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)	-0.09919	-0.24036	-1.66881
	setup	CLK (R)	0.43847	0.50628	3.01975
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.10049	-0.24589	-1.65288
	setup	CLK (R)	0.50715	0.56479	3.12692
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.11518	-0.25750	-1.69834
	setup	CLK (R)	0.50694	0.56971	3.14981

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)	-0.11263	-0.21997	-1.18985
	setup	CLK (R)	0.19161	0.26705	1.30232
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.13279	-0.24190	-1.26032
	setup	CLK (R)	0.24316	0.30873	1.45142
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.13272	-0.24256	-1.27359
	setup	CLK (R)	0.23473	0.30534	1.43982

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)	-0.09919	-0.24036	-1.66881
	setup	CLK (R)	0.43847	0.50628	3.01975
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.10049	-0.24589	-1.65288
	setup	CLK (R)	0.50715	0.56479	3.12692
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.11518	-0.25750	-1.69834
	setup	CLK (R)	0.50694	0.56971	3.14981

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)	-0.13098	-0.23284	-1.33493
	setup	CLK (R)	0.22129	0.28684	1.42382
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.15600	-0.25377	-1.39087
	setup	CLK (R)	0.26856	0.32417	1.55122
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.15342	-0.25214	-1.40256
	setup	CLK (R)	0.25795	0.32059	1.54418

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)	-0.13550	-0.29730	-2.34739
	setup	CLK (R)	0.52221	0.60078	3.46040
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.13583	-0.30216	-2.22425
	setup	CLK (R)	0.59405	0.66699	3.55281
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.15104	-0.31244	-2.36794
	setup	CLK (R)	0.59621	0.66842	3.56851

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)	-0.13098	-0.23284	-1.33493
	hold	CLK (R)	-0.13683	-0.23775	-1.34876
	setup	CLK (R)	0.21877	0.28182	1.42202
	setup	CLK (R)	0.22129	0.28684	1.42382
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.15600	-0.25377	-1.39087
	hold	CLK (R)	-0.15917	-0.25689	-1.40180
	setup	CLK (R)	0.26856	0.31822	1.53900
	setup	CLK (R)	0.26839	0.32417	1.55122
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.15342	-0.25214	-1.40256
	hold	CLK (R)	-0.15848	-0.25743	-1.41193
	setup	CLK (R)	0.25795	0.31571	1.53080
	setup	CLK (R)	0.25781	0.32059	1.54418

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)	-0.14359	-0.31128	-2.38472
	hold	CLK (R)	-0.13550	-0.29730	-2.34739
	setup	CLK (R)	0.52149	0.60051	3.46040
	setup	CLK (R)	0.52221	0.60078	3.45285
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.14639	-0.31148	-2.35346
	hold	CLK (R)	-0.13583	-0.30216	-2.22425
	setup	CLK (R)	0.59197	0.66482	3.55281
	setup	CLK (R)	0.59405	0.66699	3.54064
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.16040	-0.32829	-2.39190
	hold	CLK (R)	-0.15104	-0.31244	-2.36794
	setup	CLK (R)	0.59452	0.66842	3.55932
	setup	CLK (R)	0.59621	0.66679	3.56851

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)	-0.12122	-0.20546	-0.23029
	setup	CLK (R)	0.51310	0.49367	1.41997
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.13642	-0.20564	-0.16687
	setup	CLK (R)	0.58196	0.55320	1.49541
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.14225	-0.21681	-0.20364
	setup	CLK (R)	0.58176	0.55767	1.48019

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)	-0.12055	-0.27153	-2.09900
	setup	CLK (R)	0.46025	0.53840	3.26202
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.12281	-0.27317	-2.03891
	setup	CLK (R)	0.52591	0.59727	3.35723
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.13655	-0.28806	-2.14426
	setup	CLK (R)	0.52850	0.60300	3.39133

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)	-0.13554	-0.20546	-0.23029
	hold	CLK (R)	-0.12122	-0.23122	-1.23839
	setup	CLK (R)	0.51310	0.49367	1.41997
	setup	CLK (R)	0.20371	0.28389	1.33972
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.13642	-0.20564	-0.16687
	hold	CLK (R)	-0.14206	-0.25401	-1.30391
	setup	CLK (R)	0.58196	0.55320	0.83717
	setup	CLK (R)	0.25260	0.32059	1.49541
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.14810	-0.21681	-0.20364
	hold	CLK (R)	-0.14225	-0.25478	-1.31680
	setup	CLK (R)	0.58176	0.55767	0.86159
	setup	CLK (R)	0.24123	0.31746	1.48019

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)	-0.20400	-0.37270	-2.36668
	hold	CLK (R)	-0.12055	-0.27153	-2.09900
	setup	CLK (R)	0.28918	0.41493	2.39383
	setup	CLK (R)	0.46025	0.53840	3.26202
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.22804	-0.38902	-2.36258
	hold	CLK (R)	-0.12281	-0.27317	-2.03891
	setup	CLK (R)	0.33432	0.45173	2.43672
	setup	CLK (R)	0.52591	0.59727	3.35723
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.22905	-0.39167	-2.36739
	hold	CLK (R)	-0.13655	-0.28806	-2.14426
	setup	CLK (R)	0.32617	0.44664	2.42684
	setup	CLK (R)	0.52850	0.60300	3.39133

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)	-0.13116	-0.18991	-0.56989
	removal	CLK (R)	0.16114	0.20881	0.66379
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.18411	-0.24045	-0.64785
	removal	CLK (R)	0.20524	0.27340	3.18434
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.17491	-0.23633	-0.66325
	removal	CLK (R)	0.19311	0.25394	1.35774

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)	-0.13116	-0.18992	-0.57040
	recovery	CLK (R)	-0.13116	-0.18991	-0.57039
	recovery	CLK (R)	-0.13429	-0.19023	-0.56989
	removal	CLK (R)	0.16114	0.20881	0.66379
	removal	CLK (R)	0.16114	0.20881	0.66379
	removal	CLK (R)	0.16114	0.20881	0.66275
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.18411	-0.24045	-0.64889
	recovery	CLK (R)	-0.18411	-0.24045	-0.64889
	recovery	CLK (R)	-0.18411	-0.24045	-0.64785
	removal	CLK (R)	0.20318	0.27340	3.18434
	removal	CLK (R)	0.20318	0.27340	3.16366
	removal	CLK (R)	0.20524	0.27340	3.14508
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.17491	-0.23633	-0.66439
	recovery	CLK (R)	-0.17491	-0.23633	-0.66439
	recovery	CLK (R)	-0.17601	-0.23633	-0.66325
	removal	CLK (R)	0.19220	0.25394	1.35774
	removal	CLK (R)	0.19220	0.25394	1.35774
	removal	CLK (R)	0.19311	0.25394	1.33456

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 ()	0.28387	0.77881	16.50020
	min_pulse_width	SET_B ()	0.25782	0.77881	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	SET_B ()	0.30123	0.77881	16.50020
	min_pulse_width	SET_B ()	0.29822	0.79530	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	SET_B ()	0.30702	0.77881	16.50020
	min_pulse_width	SET_B ()	0.32732	0.82622	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 ()	0.19703	0.77881	16.50020
	min_pulse_width	CLK ()	0.11889	0.77881	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.15651	0.77881	16.50020
	min_pulse_width	CLK ()	0.13336	0.77881	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.18256	0.77881	16.50020
	min_pulse_width	CLK ()	0.13336	0.77881	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 ()	0.26360	0.77881	16.50020
	min_pulse_width	CLK ()	0.44885	0.77881	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.33307	0.77881	16.50020
	min_pulse_width	CLK ()	0.54147	0.77881	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.32149	0.77881	16.50020
	min_pulse_width	CLK ()	0.53278	0.77881	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	0.01792	0.01762	0.02023
	CLK	0.01515	0.01485	0.01753
	SET_B	0.01671	0.01635	0.01745
	SET_B	0.01980	0.01942	0.02055
sky130_fd_sc_hs__sdfstp_2	CLK	0.02217	0.02205	0.02464
	CLK	0.01942	0.01931	0.02201
	SET_B	0.02178	0.02159	0.02246
	SET_B	0.02492	0.02472	0.02565
sky130_fd_sc_hs__sdfstp_4	CLK	0.02625	0.02658	0.02935
	CLK	0.02356	0.02390	0.02700
	SET_B	0.02588	0.02615	0.02713
	SET_B	0.02907	0.02934	0.03043

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfstp_1	CLK	0.01936	0.01920	0.02187
	CLK	0.01634	0.01615	0.01878
sky130_fd_sc_hs__sdfstp_2	CLK	0.02367	0.02377	0.02640
	CLK	0.02071	0.02081	0.02333
sky130_fd_sc_hs__sdfstp_4	CLK	0.02812	0.02895	0.03196
	CLK	0.02509	0.02579	0.02852

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	0.00080	0.00082	0.00081
	(CLK * SCD * SCE)	-0.00041	-0.00042	-0.00041
	(CLK * !SCE)	0.00285	0.00272	0.00488
	(CLK * !SCE)	0.00076	0.00062	0.00279
	(CLK * !SCD * SCE)	0.00045	0.00045	0.00043
	(CLK * !SCD * SCE)	-0.00085	-0.00086	-0.00087
	(!CLK * SCD * SCE)	0.00080	0.00082	0.00081
	(!CLK * SCD * SCE)	-0.00041	-0.00042	-0.00041
	(!CLK * !SCE * SET_B)	0.00725	0.00712	0.00856
	(!CLK * !SCE * SET_B)	0.00497	0.00483	0.00628
	(!CLK * !SCE * !SET_B * Q)	0.00583	0.00573	0.00720
	(!CLK * !SCE * !SET_B * Q)	0.00349	0.00337	0.00485
	(!CLK * !SCD * SCE)	0.00045	0.00044	0.00043
	(!CLK * !SCD * SCE)	-0.00085	-0.00086	-0.00087
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	0.00080	0.00082	0.00081
	(CLK * SCD * SCE)	-0.00041	-0.00042	-0.00041
	(CLK * !SCE)	0.00282	0.00269	0.00485
	(CLK * !SCE)	0.00073	0.00059	0.00276
	(CLK * !SCD * SCE)	0.00044	0.00044	0.00043
	(CLK * !SCD * SCE)	-0.00085	-0.00087	-0.00088
	(!CLK * SCD * SCE)	0.00080	0.00082	0.00081
	(!CLK * SCD * SCE)	-0.00041	-0.00042	-0.00041
	(!CLK * !SCE * SET_B)	0.00827	0.00815	0.00948
	(!CLK * !SCE * SET_B)	0.00590	0.00578	0.00711
	(!CLK * !SCE * !SET_B * Q)	0.00677	0.00667	0.00802
	(!CLK * !SCE * !SET_B * Q)	0.00433	0.00423	0.00558
	(!CLK * !SCD * SCE)	0.00044	0.00044	0.00043
	(!CLK * !SCD * SCE)	-0.00085	-0.00086	-0.00088

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	0.00080	0.00082	0.00081
	(CLK * SCD * SCE)	-0.00041	-0.00042	-0.00041
	(CLK * !SCE)	0.00292	0.00279	0.00492
	(CLK * !SCE)	0.00083	0.00069	0.00282
	(CLK * !SCD * SCE)	0.00045	0.00045	0.00043
	(CLK * !SCD * SCE)	-0.00085	-0.00086	-0.00087
	(!CLK * SCD * SCE)	0.00080	0.00082	0.00081
	(!CLK * SCD * SCE)	-0.00041	-0.00042	-0.00041
	(!CLK * !SCE * SET_B)	0.00820	0.00808	0.00943
	(!CLK * !SCE * SET_B)	0.00589	0.00577	0.00712
	(!CLK * !SCE * !SET_B * Q)	0.00672	0.00663	0.00797
	(!CLK * !SCE * !SET_B * Q)	0.00435	0.00424	0.00559
	(!CLK * !SCD * SCE)	0.00045	0.00045	0.00043
	(!CLK * !SCD * SCE)	-0.00085	-0.00086	-0.00087

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	-0.00077	-0.00078	-0.00080
	(CLK * SCD * SCE)	0.00045	0.00045	0.00043
	(CLK * !SCE)	0.00050	0.00049	0.00298
	(CLK * !SCE)	0.00258	0.00258	0.00507
	(CLK * !SCD * SCE)	-0.00042	-0.00042	-0.00042
	(CLK * !SCD * SCE)	0.00088	0.00087	0.00087
	(!CLK * SCD * SCE)	-0.00077	-0.00078	-0.00080
	(!CLK * SCD * SCE)	0.00045	0.00045	0.00043
	(!CLK * !SCE * SET_B)	0.00488	0.00484	0.00706
	(!CLK * !SCE * SET_B)	0.00716	0.00713	0.00934
	(!CLK * !SCE * !SET_B * Q)	0.00303	0.00298	0.00507
	(!CLK * !SCE * !SET_B * Q)	0.00538	0.00533	0.00742
	(!CLK * !SCD * SCE)	-0.00042	-0.00042	-0.00042
	(!CLK * !SCD * SCE)	0.00088	0.00087	0.00087
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	-0.00076	-0.00078	-0.00080
	(CLK * SCD * SCE)	0.00045	0.00045	0.00043
	(CLK * !SCE)	0.00053	0.00052	0.00301
	(CLK * !SCE)	0.00262	0.00262	0.00511
	(CLK * !SCD * SCE)	-0.00042	-0.00042	-0.00042
	(CLK * !SCD * SCE)	0.00088	0.00088	0.00088
	(!CLK * SCD * SCE)	-0.00077	-0.00077	-0.00080
	(!CLK * SCD * SCE)	0.00045	0.00044	0.00043
	(!CLK * !SCE * SET_B)	0.00568	0.00565	0.00781
	(!CLK * !SCE * SET_B)	0.00805	0.00803	0.01019
	(!CLK * !SCE * !SET_B * Q)	0.00375	0.00370	0.00572
	(!CLK * !SCE * !SET_B * Q)	0.00619	0.00615	0.00816
	(!CLK * !SCD * SCE)	-0.00042	-0.00042	-0.00042
	(!CLK * !SCD * SCE)	0.00088	0.00088	0.00088

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	-0.00076	-0.00078	-0.00080
	(CLK * SCD * SCE)	0.00045	0.00045	0.00043
	(CLK * !SCE)	0.00062	0.00061	0.00307
	(CLK * !SCE)	0.00271	0.00270	0.00517
	(CLK * !SCD * SCE)	-0.00042	-0.00042	-0.00042
	(CLK * !SCD * SCE)	0.00087	0.00087	0.00087
	(!CLK * SCD * SCE)	-0.00076	-0.00077	-0.00080
	(!CLK * SCD * SCE)	0.00045	0.00045	0.00043
	(!CLK * !SCE * SET_B)	0.00575	0.00572	0.00788
	(!CLK * !SCE * SET_B)	0.00807	0.00804	0.01020
	(!CLK * !SCE * !SET_B * Q)	0.00385	0.00381	0.00582
	(!CLK * !SCE * !SET_B * Q)	0.00623	0.00619	0.00820
	(!CLK * !SCD * SCE)	-0.00042	-0.00042	-0.00042
	(!CLK * !SCD * SCE)	0.00088	0.00087	0.00087

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00401	0.00385	0.00481
	(CLK * D * SCE)	0.00110	0.00094	0.00189
	(CLK * !D * SCE)	0.00451	0.00437	0.00521
	(CLK * !D * SCE)	0.00151	0.00136	0.00221
	(!CLK * D * SCE * SET_B)	0.00831	0.00817	0.00885
	(!CLK * D * SCE * SET_B)	0.00520	0.00506	0.00574
	(!CLK * D * SCE * !SET_B * Q)	0.00690	0.00677	0.00748
	(!CLK * D * SCE * !SET_B * Q)	0.00373	0.00359	0.00431
	(!CLK * !D * SCE * SET_B)	0.00882	0.00868	0.00930
	(!CLK * !D * SCE * SET_B)	0.00562	0.00548	0.00611
	(!CLK * !D * SCE * !SET_B * Q)	0.00740	0.00728	0.00792
	(!CLK * !D * SCE * !SET_B * Q)	0.00414	0.00402	0.00467
	!SCE	0.00098	0.00090	0.00088
	!SCE	-0.00074	-0.00083	-0.00084
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00395	0.00380	0.00475
	(CLK * D * SCE)	0.00107	0.00091	0.00186
	(CLK * !D * SCE)	0.00446	0.00432	0.00515
	(CLK * !D * SCE)	0.00148	0.00133	0.00218
	(!CLK * D * SCE * SET_B)	0.00931	0.00918	0.00983
	(!CLK * D * SCE * SET_B)	0.00614	0.00601	0.00666
	(!CLK * D * SCE * !SET_B * Q)	0.00781	0.00769	0.00836
	(!CLK * D * SCE * !SET_B * Q)	0.00458	0.00445	0.00513
	(!CLK * !D * SCE * SET_B)	0.00982	0.00969	0.01028
	(!CLK * !D * SCE * SET_B)	0.00656	0.00643	0.00702
	(!CLK * !D * SCE * !SET_B * Q)	0.00831	0.00821	0.00881
	(!CLK * !D * SCE * !SET_B * Q)	0.00499	0.00487	0.00549
	!SCE	0.00095	0.00087	0.00086
	!SCE	-0.00074	-0.00083	-0.00084

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.00408	0.00393	0.00487
	(CLK * D * SCE)	0.00117	0.00101	0.00195
	(CLK * !D * SCE)	0.00459	0.00444	0.00527
	(CLK * !D * SCE)	0.00158	0.00143	0.00228
	(!CLK * D * SCE * SET_B)	0.00926	0.00913	0.00978
	(!CLK * D * SCE * SET_B)	0.00612	0.00599	0.00664
	(!CLK * D * SCE * !SET_B * Q)	0.00778	0.00766	0.00833
	(!CLK * D * SCE * !SET_B * Q)	0.00458	0.00446	0.00513
	(!CLK * !D * SCE * SET_B)	0.00977	0.00964	0.01023
	(!CLK * !D * SCE * SET_B)	0.00654	0.00641	0.00700
	(!CLK * !D * SCE * !SET_B * Q)	0.00829	0.00818	0.00878
	(!CLK * !D * SCE * !SET_B * Q)	0.00500	0.00488	0.00549
	!SCE	0.00098	0.00089	0.00088
	!SCE	-0.00074	-0.00083	-0.00084

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00121	0.00107	0.00209
	(CLK * D * SCE)	0.00414	0.00400	0.00499
	(CLK * !D * SCE)	0.00093	0.00079	0.00188
	(CLK * !D * SCE)	0.00394	0.00380	0.00487
	(!CLK * D * SCE * SET_B)	0.00566	0.00553	0.00645
	(!CLK * D * SCE * SET_B)	0.00878	0.00864	0.00955
	(!CLK * D * SCE * !SET_B * Q)	0.00381	0.00368	0.00450
	(!CLK * D * SCE * !SET_B * Q)	0.00700	0.00687	0.00766
	(!CLK * !D * SCE * SET_B)	0.00539	0.00525	0.00624
	(!CLK * !D * SCE * SET_B)	0.00859	0.00845	0.00943
	(!CLK * !D * SCE * !SET_B * Q)	0.00354	0.00341	0.00427
	(!CLK * !D * SCE * !SET_B * Q)	0.00680	0.00667	0.00752
	!SCE	-0.00086	-0.00087	-0.00088
	!SCE	0.00085	0.00085	0.00085
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00129	0.00115	0.00217
	(CLK * D * SCE)	0.00419	0.00405	0.00505
	(CLK * !D * SCE)	0.00101	0.00088	0.00196
	(CLK * !D * SCE)	0.00399	0.00386	0.00492
	(!CLK * D * SCE * SET_B)	0.00650	0.00637	0.00725
	(!CLK * D * SCE * SET_B)	0.00968	0.00956	0.01041
	(!CLK * D * SCE * !SET_B * Q)	0.00457	0.00445	0.00522
	(!CLK * D * SCE * !SET_B * Q)	0.00782	0.00770	0.00845
	(!CLK * !D * SCE * SET_B)	0.00623	0.00611	0.00704
	(!CLK * !D * SCE * SET_B)	0.00950	0.00938	0.01029
	(!CLK * !D * SCE * !SET_B * Q)	0.00430	0.00418	0.00500
	(!CLK * !D * SCE * !SET_B * Q)	0.00763	0.00751	0.00831
	!SCE	-0.00083	-0.00085	-0.00085
	!SCE	0.00084	0.00085	0.00085

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.00133	0.00119	0.00220
	(CLK * D * SCE)	0.00426	0.00411	0.00510
	(CLK * !D * SCE)	0.00105	0.00092	0.00199
	(CLK * !D * SCE)	0.00406	0.00392	0.00498
	(!CLK * D * SCE * SET_B)	0.00654	0.00641	0.00728
	(!CLK * D * SCE * SET_B)	0.00969	0.00956	0.01042
	(!CLK * D * SCE * !SET_B * Q)	0.00463	0.00450	0.00529
	(!CLK * D * SCE * !SET_B * Q)	0.00785	0.00772	0.00847
	(!CLK * !D * SCE * SET_B)	0.00627	0.00614	0.00707
	(!CLK * !D * SCE * SET_B)	0.00950	0.00938	0.01029
	(!CLK * !D * SCE * !SET_B * Q)	0.00436	0.00423	0.00505
	(!CLK * !D * SCE * !SET_B * Q)	0.00766	0.00753	0.00834
	!SCE	-0.00085	-0.00087	-0.00087
	!SCE	0.00085	0.00085	0.00085

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00351	0.00329	0.00572
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00026	-0.00051	0.00192
	(CLK * D * !SCD)	0.00530	0.00504	0.00746
	(CLK * D * !SCD)	0.00260	0.00231	0.00472
	(CLK * !D * SCD)	0.00622	0.00597	0.00970
	(CLK * !D * SCD)	0.00151	0.00123	0.00498
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00351	0.00329	0.00572
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00026	-0.00052	0.00192
	(!CLK * D * !SCD * SET_B)	0.00953	0.00937	0.01181
	(!CLK * D * !SCD * SET_B)	0.00702	0.00685	0.00926
	(!CLK * D * !SCD * !SET_B * Q)	0.00768	0.00753	0.01000
	(!CLK * D * !SCD * !SET_B * Q)	0.00524	0.00506	0.00752
	(!CLK * !D * SCD * SET_B)	0.01062	0.01031	0.01377
	(!CLK * !D * SCD * SET_B)	0.00570	0.00539	0.00887
	(!CLK * !D * SCD * !SET_B * Q)	0.00921	0.00892	0.01240
	(!CLK * !D * SCD * !SET_B * Q)	0.00422	0.00393	0.00743
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00347	0.00328	0.00570
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00010	-0.00029	0.00215

sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00352	0.00330	0.00572
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00026	-0.00052	0.00192
	(CLK * D * !SCD)	0.00537	0.00511	0.00755
	(CLK * D * !SCD)	0.00265	0.00238	0.00481
	(CLK * !D * SCD)	0.00619	0.00593	0.00967
	(CLK * !D * SCD)	0.00148	0.00121	0.00495
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00352	0.00329	0.00572
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00026	-0.00052	0.00192
	(!CLK * D * !SCD * SET_B)	0.01035	0.01020	0.01267
	(!CLK * D * !SCD * SET_B)	0.00793	0.00776	0.01021
	(!CLK * D * !SCD * !SET_B * Q)	0.00842	0.00827	0.01073
	(!CLK * D * !SCD * !SET_B * Q)	0.00607	0.00590	0.00832
	(!CLK * !D * SCD * SET_B)	0.01165	0.01135	0.01475
	(!CLK * !D * SCD * SET_B)	0.00663	0.00634	0.00975
	(!CLK * !D * SCD * !SET_B * Q)	0.01015	0.00987	0.01327
	(!CLK * !D * SCD * !SET_B * Q)	0.00507	0.00479	0.00822
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00348	0.00329	0.00572
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00009	-0.00029	0.00215

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00355	0.00332	0.00575
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00026	-0.00053	0.00191
	(CLK * D * !SCD)	0.00545	0.00519	0.00760
	(CLK * D * !SCD)	0.00270	0.00242	0.00482
	(CLK * !D * SCD)	0.00634	0.00605	0.00978
	(CLK * !D * SCD)	0.00156	0.00130	0.00503
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00355	0.00332	0.00575
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00026	-0.00053	0.00191
	(!CLK * D * !SCD * SET_B)	0.01044	0.01026	0.01271
	(!CLK * D * !SCD * SET_B)	0.00792	0.00773	0.01015
	(!CLK * D * !SCD * !SET_B * Q)	0.00852	0.00837	0.01085
	(!CLK * D * !SCD * !SET_B * Q)	0.00608	0.00590	0.00836
	(!CLK * !D * SCD * SET_B)	0.01161	0.01130	0.01471
	(!CLK * !D * SCD * SET_B)	0.00662	0.00632	0.00973
	(!CLK * !D * SCD * !SET_B * Q)	0.01014	0.00985	0.01326
	(!CLK * !D * SCD * !SET_B * Q)	0.00508	0.00479	0.00822
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00351	0.00331	0.00574
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00010	-0.00030	0.00214

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00015	-0.00013	0.00272
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00363	0.00366	0.00651
	(CLK * D * !SCD)	0.00275	0.00264	0.00541
	(CLK * D * !SCD)	0.00546	0.00537	0.00810
	(CLK * !D * SCD)	0.00078	0.00065	0.00469
	(CLK * !D * SCD)	0.00549	0.00537	0.00942
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00015	-0.00012	0.00272
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00363	0.00367	0.00651
	(!CLK * D * !SCD * SET_B)	0.00712	0.00710	0.00977
	(!CLK * D * !SCD * SET_B)	0.00964	0.00962	0.01227
	(!CLK * D * !SCD * !SET_B * Q)	0.00570	0.00568	0.00838
	(!CLK * D * !SCD * !SET_B * Q)	0.00816	0.00815	0.01083
	(!CLK * !D * SCD * SET_B)	0.00515	0.00500	0.00886
	(!CLK * !D * SCD * SET_B)	0.01007	0.00992	0.01378
	(!CLK * !D * SCD * !SET_B * Q)	0.00331	0.00318	0.00693
	(!CLK * !D * SCD * !SET_B * Q)	0.00828	0.00816	0.01190
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00008	0.00011	0.00288
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00366	0.00369	0.00645

sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00016	-0.00014	0.00271
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00364	0.00366	0.00651
	(CLK * D * !SCD)	0.00270	0.00259	0.00537
	(CLK * D * !SCD)	0.00544	0.00533	0.00807
	(CLK * !D * SCD)	0.00081	0.00068	0.00473
	(CLK * !D * SCD)	0.00553	0.00541	0.00945
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00015	-0.00012	0.00272
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00363	0.00369	0.00651
	(!CLK * D * !SCD * SET_B)	0.00813	0.00811	0.01078
	(!CLK * D * !SCD * SET_B)	0.01057	0.01055	0.01320
	(!CLK * D * !SCD * !SET_B * Q)	0.00662	0.00661	0.00930
	(!CLK * D * !SCD * !SET_B * Q)	0.00901	0.00900	0.01167
	(!CLK * !D * SCD * SET_B)	0.00596	0.00581	0.00962
	(!CLK * !D * SCD * SET_B)	0.01097	0.01082	0.01463
	(!CLK * !D * SCD * !SET_B * Q)	0.00403	0.00389	0.00760
	(!CLK * !D * SCD * !SET_B * Q)	0.00910	0.00896	0.01268
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00007	0.00009	0.00287
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00366	0.00368	0.00645

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00019	-0.00017	0.00268
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00365	0.00367	0.00652
	(CLK * D * !SCD)	0.00278	0.00267	0.00544
	(CLK * D * !SCD)	0.00554	0.00544	0.00817
	(CLK * !D * SCD)	0.00087	0.00074	0.00477
	(CLK * !D * SCD)	0.00563	0.00550	0.00952
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00018	-0.00015	0.00269
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00364	0.00368	0.00652
	(!CLK * D * !SCD * SET_B)	0.00803	0.00801	0.01068
	(!CLK * D * !SCD * SET_B)	0.01057	0.01054	0.01320
	(!CLK * D * !SCD * !SET_B * Q)	0.00655	0.00654	0.00922
	(!CLK * D * !SCD * !SET_B * Q)	0.00903	0.00902	0.01168
	(!CLK * !D * SCD * SET_B)	0.00601	0.00586	0.00966
	(!CLK * !D * SCD * SET_B)	0.01098	0.01084	0.01466
	(!CLK * !D * SCD * !SET_B * Q)	0.00410	0.00395	0.00766
	(!CLK * !D * SCD * !SET_B * Q)	0.00915	0.00901	0.01272
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00005	0.00007	0.00284
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00367	0.00368	0.00646

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	0.00161	0.00163	0.00162
	(CLK * Q)	-0.00150	-0.00151	-0.00150
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00176	0.00177	0.00176
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00136	-0.00136	-0.00136
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00329	0.00321	0.00400
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00006	-0.00003	0.00076
sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	0.00179	0.00181	0.00180
	(CLK * Q)	-0.00146	-0.00147	-0.00146
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00196	0.00198	0.00196
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00130	-0.00131	-0.00130
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00346	0.00340	0.00416
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00009	-0.00001	0.00078

sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	0.00166	0.00168	0.00167
	(CLK * Q)	-0.00153	-0.00155	-0.00154
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00183	0.00183	0.00183
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00137	-0.00137	-0.00137
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00337	0.00330	0.00407
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00005	-0.00004	0.00074

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	-0.00158	-0.00162	-0.00161
	(CLK * Q)	0.00152	0.00152	0.00152
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00172	-0.00177	-0.00176
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00138	0.00139	0.00137
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00004	-0.00007	0.00088
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00319	0.00317	0.00411

sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	-0.00176	-0.00180	-0.00180
	(CLK * Q)	0.00148	0.00149	0.00147
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00193	-0.00196	-0.00196
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00131	0.00131	0.00131
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00008	-0.00011	0.00083
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00329	0.00327	0.00419
sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	-0.00163	-0.00166	-0.00166
	(CLK * Q)	0.00156	0.00155	0.00155
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00179	-0.00182	-0.00183
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00139	0.00138	0.00138
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00002	-0.00006	0.00088
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00329	0.00326	0.00419

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)**	0.00973	0.00937	0.01197
	(D * SCD * SCE * Q)	0.00685	0.00647	0.00908
	(D * !SCE * Q)	0.00973	0.00938	0.01197
	(D * !SCE * Q)	0.00684	0.00647	0.00908
	(D * !SCD * SCE * SET_B * !Q)	0.00961	0.00925	0.01183
	(D * !SCD * SCE * SET_B * !Q)	0.00672	0.00635	0.00893
	(D * !SCD * SCE * !SET_B * Q)	0.01699	0.01673	0.01974
	(D * !SCD * SCE * !SET_B * Q)	0.01385	0.01358	0.01659
	(!D * SCD * SCE * Q)	0.00973	0.00938	0.01197
	(!D * SCD * SCE * Q)	0.00684	0.00647	0.00908
	(!D * !SCE * SET_B * !Q)	0.00961	0.00925	0.01183
	(!D * !SCE * SET_B * !Q)	0.00672	0.00635	0.00893
	(!D * !SCE * !SET_B * Q)	0.01699	0.01673	0.01972
	(!D * !SCE * !SET_B * Q)	0.01385	0.01358	0.01657
	(!D * !SCD * SCE * SET_B * !Q)	0.00961	0.00924	0.01183
	(!D * !SCD * SCE * SET_B * !Q)	0.00672	0.00636	0.00893
	(!D * !SCD * SCE * !SET_B * Q)	0.01703	0.01673	0.01973
	(!D * !SCD * SCE * !SET_B * Q)	0.01389	0.01359	0.01658

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * Q)**	0.01120	0.01079	0.01323
	(D * SCD * SCE * Q)	0.00834	0.00792	0.01036
	(D * !SCE * Q)	0.01120	0.01079	0.01323
	(D * !SCE * Q)	0.00834	0.00791	0.01036
	(D * !SCD * SCE * SET_B * !Q)	0.01139	0.01098	0.01340
	(D * !SCD * SCE * SET_B * !Q)	0.00851	0.00809	0.01052
	(D * !SCD * SCE * !SET_B * Q)	0.02412	0.02392	0.02718
	(D * !SCD * SCE * !SET_B * Q)	0.02095	0.02073	0.02401
	(!D * SCD * SCE * Q)	0.01120	0.01079	0.01323
	(!D * SCD * SCE * Q)	0.00834	0.00792	0.01036
	(!D * !SCE * SET_B * !Q)	0.01139	0.01097	0.01340
	(!D * !SCE * SET_B * !Q)	0.00851	0.00809	0.01052
	(!D * !SCE * !SET_B * Q)	0.02412	0.02392	0.02714
	(!D * !SCE * !SET_B * Q)	0.02094	0.02073	0.02395
	(!D * !SCD * SCE * SET_B * !Q)	0.01139	0.01098	0.01341
	(!D * !SCD * SCE * SET_B * !Q)	0.00851	0.00809	0.01053
	(!D * !SCD * SCE * !SET_B * Q)	0.02419	0.02394	0.02719
	(!D * !SCD * SCE * !SET_B * Q)	0.02101	0.02076	0.02401

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * Q)**	0.01106	0.01066	0.01311
	(D * SCD * SCE * Q)	0.00819	0.00778	0.01024
	(D * !SCE * Q)	0.01106	0.01066	0.01311
	(D * !SCE * Q)	0.00819	0.00778	0.01024
	(D * !SCD * SCE * SET_B * !Q)	0.01129	0.01089	0.01333
	(D * !SCD * SCE * SET_B * !Q)	0.00841	0.00800	0.01045
	(D * !SCD * SCE * !SET_B * Q)	0.02367	0.02349	0.02678
	(D * !SCD * SCE * !SET_B * Q)	0.02054	0.02036	0.02364
	(!D * SCD * SCE * Q)	0.01106	0.01066	0.01311
	(!D * SCD * SCE * Q)	0.00819	0.00778	0.01024
	(!D * !SCE * SET_B * !Q)	0.01129	0.01089	0.01333
	(!D * !SCE * SET_B * !Q)	0.00841	0.00800	0.01045
	(!D * !SCE * !SET_B * Q)	0.02367	0.02349	0.02690
	(!D * !SCE * !SET_B * Q)	0.02054	0.02035	0.02376
	(!D * !SCD * SCE * SET_B * !Q)	0.01129	0.01089	0.01333
	(!D * !SCD * SCE * SET_B * !Q)	0.00841	0.00800	0.01045
	(!D * !SCD * SCE * !SET_B * Q)	0.02374	0.02352	0.02690
	(!D * !SCD * SCE * !SET_B * Q)	0.02061	0.02038	0.02376

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)**	0.00982	0.00963	0.01280
	(D * SCD * SCE * SET_B * !Q)	0.01254	0.01233	0.01551
	(D * SCD * SCE * Q)	0.00549	0.00541	0.00858
	(D * SCD * SCE * Q)	0.00839	0.00831	0.01147
	(D * !SCE * SET_B * !Q)	0.00979	0.00960	0.01277
	(D * !SCE * SET_B * !Q)	0.01251	0.01230	0.01549
	(D * !SCE * Q)	0.00549	0.00541	0.00858
	(D * !SCE * Q)	0.00839	0.00831	0.01147
	(D * !SCD * SCE * SET_B * Q)	0.01101	0.01100	0.01443
	(D * !SCD * SCE * SET_B * Q)	0.01412	0.01410	0.01754
	(D * !SCD * SCE * SET_B * !Q)	0.00567	0.00555	0.00875
	(D * !SCD * SCE * SET_B * !Q)	0.00857	0.00844	0.01165
	(D * !SCD * SCE * !SET_B * Q)	0.00910	0.00910	0.01253
	(D * !SCD * SCE * !SET_B * Q)	0.01226	0.01225	0.01568
	(!D * SCD * SCE * SET_B * !Q)	0.00985	0.00966	0.01283
	(!D * SCD * SCE * SET_B * !Q)	0.01256	0.01235	0.01553
	(!D * SCD * SCE * Q)	0.00549	0.00541	0.00858
	(!D * SCD * SCE * Q)	0.00839	0.00831	0.01147
	(!D * !SCE * SET_B * Q)	0.01099	0.01098	0.01439
	(!D * !SCE * SET_B * Q)	0.01408	0.01406	0.01748
	(!D * !SCE * SET_B * !Q)	0.00567	0.00555	0.00875
	(!D * !SCE * SET_B * !Q)	0.00857	0.00844	0.01165
	(!D * !SCE * !SET_B * Q)	0.00911	0.00910	0.01253
	(!D * !SCE * !SET_B * Q)	0.01227	0.01225	0.01568
	(!D * !SCD * SCE * SET_B * Q)	0.01100	0.01096	0.01441
	(!D * !SCD * SCE * SET_B * Q)	0.01410	0.01405	0.01750
	(!D * !SCD * SCE * SET_B * !Q)	0.00567	0.00555	0.00875
	(!D * !SCD * SCE * SET_B * !Q)	0.00857	0.00844	0.01165
	(!D * !SCD * SCE * !SET_B * Q)	0.00912	0.00907	0.01252
	(!D * !SCD * SCE * !SET_B * Q)	0.01228	0.01222	0.01567

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * SET_B * !Q)**	0.01155	0.01138	0.01444
	(D * SCD * SCE * SET_B * !Q)	0.01414	0.01396	0.01703
	(D * SCD * SCE * Q)	0.00637	0.00631	0.00941
	(D * SCD * SCE * Q)	0.00923	0.00918	0.01228
	(D * !SCE * SET_B * !Q)	0.01152	0.01136	0.01441
	(D * !SCE * SET_B * !Q)	0.01412	0.01395	0.01701
	(D * !SCE * Q)	0.00637	0.00631	0.00941
	(D * !SCE * Q)	0.00923	0.00918	0.01228
	(D * !SCD * SCE * SET_B * Q)	0.01294	0.01292	0.01641
	(D * !SCD * SCE * SET_B * Q)	0.01607	0.01605	0.01954
	(D * !SCD * SCE * SET_B * !Q)	0.00623	0.00613	0.00924
	(D * !SCD * SCE * SET_B * !Q)	0.00912	0.00900	0.01212
	(D * !SCD * SCE * !SET_B * Q)	0.01090	0.01094	0.01429
	(D * !SCD * SCE * !SET_B * Q)	0.01407	0.01412	0.01748
	(!D * SCD * SCE * SET_B * !Q)	0.01158	0.01142	0.01447
	(!D * SCD * SCE * SET_B * !Q)	0.01416	0.01400	0.01706
	(!D * SCD * SCE * Q)	0.00637	0.00631	0.00941
	(!D * SCD * SCE * Q)	0.00923	0.00918	0.01228
	(!D * !SCE * SET_B * Q)	0.01293	0.01294	0.01639
	(!D * !SCE * SET_B * Q)	0.01604	0.01605	0.01950
	(!D * !SCE * SET_B * !Q)	0.00623	0.00613	0.00924
	(!D * !SCE * SET_B * !Q)	0.00912	0.00900	0.01212
	(!D * !SCE * !SET_B * Q)	0.01092	0.01094	0.01429
	(!D * !SCE * !SET_B * Q)	0.01411	0.01413	0.01748
	(!D * !SCD * SCE * SET_B * Q)	0.01294	0.01295	0.01629
	(!D * !SCD * SCE * SET_B * Q)	0.01607	0.01608	0.01942
	(!D * !SCD * SCE * SET_B * !Q)	0.00623	0.00613	0.00924
	(!D * !SCD * SCE * SET_B * !Q)	0.00912	0.00901	0.01212
	(!D * !SCD * SCE * !SET_B * Q)	0.01093	0.01091	0.01430
	(!D * !SCD * SCE * !SET_B * Q)	0.01412	0.01410	0.01750

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * SET_B * !Q)**	0.01125	0.01110	0.01415
	(D * SCD * SCE * SET_B * !Q)	0.01391	0.01375	0.01681
	(D * SCD * SCE * Q)	0.00624	0.00618	0.00923
	(D * SCD * SCE * Q)	0.00911	0.00905	0.01211
	(D * !SCE * SET_B * !Q)	0.01122	0.01107	0.01413
	(D * !SCE * SET_B * !Q)	0.01388	0.01372	0.01679
	(D * !SCE * Q)	0.00624	0.00618	0.00923
	(D * !SCE * Q)	0.00911	0.00905	0.01211
	(D * !SCD * SCE * SET_B * Q)	0.01268	0.01266	0.01606
	(D * !SCD * SCE * SET_B * Q)	0.01577	0.01575	0.01916
	(D * !SCD * SCE * SET_B * !Q)	0.00607	0.00597	0.00908
	(D * !SCD * SCE * SET_B * !Q)	0.00895	0.00884	0.01196
	(D * !SCD * SCE * !SET_B * Q)	0.01066	0.01069	0.01407
	(D * !SCD * SCE * !SET_B * Q)	0.01379	0.01384	0.01721
	(!D * SCD * SCE * SET_B * !Q)	0.01128	0.01113	0.01419
	(!D * SCD * SCE * SET_B * !Q)	0.01393	0.01377	0.01683
	(!D * SCD * SCE * Q)	0.00624	0.00618	0.00923
	(!D * SCD * SCE * Q)	0.00911	0.00905	0.01211
	(!D * !SCE * SET_B * Q)	0.01266	0.01268	0.01602
	(!D * !SCE * SET_B * Q)	0.01574	0.01575	0.01910
	(!D * !SCE * SET_B * !Q)	0.00607	0.00597	0.00908
	(!D * !SCE * SET_B * !Q)	0.00895	0.00884	0.01196
	(!D * !SCE * !SET_B * Q)	0.01068	0.01069	0.01406
	(!D * !SCE * !SET_B * Q)	0.01382	0.01384	0.01721
	(!D * !SCD * SCE * SET_B * Q)	0.01268	0.01266	0.01605
	(!D * !SCD * SCE * SET_B * Q)	0.01576	0.01574	0.01914
	(!D * !SCD * SCE * SET_B * !Q)	0.00607	0.00595	0.00908
	(!D * !SCD * SCE * SET_B * !Q)	0.00895	0.00883	0.01196
	(!D * !SCD * SCE * !SET_B * Q)	0.01068	0.01067	0.01407
	(!D * !SCD * SCE * !SET_B * Q)	0.01383	0.01381	0.01721

SKY130_FD_SC_HS__SDFXBPx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT				OUTPUT	
D	SCD	SCE	CLK	Q	Q_N
0	0	x	R	0	1
0	1	0	R	0	1
x	1	1	R	1	0
1	x	0	R	1	0
1	0	1	R	0	1
x	x	x	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfxbp_1	41.55840
sky130_fd_sc_hs__sdfxbp_2	44.75520

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)	
	D	SCD	SCE	CLK	Q	Q_N
sky130_fd_sc_hs__sdfxbp_1	0.00184	0.00185	0.00395	0.00286	0.78346	0.75792
sky130_fd_sc_hs__sdfxbp_2	0.00182	0.00182	0.00401	0.00285	1.54345	1.53716

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfxbp_1	0.00000	0.37083	0.53963
sky130_fd_sc_hs__sdfxbp_2	0.00000	0.37067	0.51238

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)	0.30081	0.96857	7.23399
sky130_fd_sc_hs__sdfxbp_2	CLK->Q (RR)	0.29210	0.84620	7.22427

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxbp_1	CLK->Q (RF)	0.32502	0.68955	2.71508
sky130_fd_sc_hs__sdfxbp_2	CLK->Q (RF)	0.34983	0.69480	2.74372

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)	0.38532	1.05701	7.30314
sky130_fd_sc_hs__sdfxbp_2	CLK->Q_N (RR)	0.44481	0.98807	7.38024

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)	0.34911	0.68481	2.65278
sky130_fd_sc_hs__sdfxbp_2	CLK->Q_N (RF)	0.37701	0.68595	2.80653

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)	-0.08377	-0.18079	-1.01942
	setup	CLK (R)	0.19302	0.24652	1.19822
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.08197	-0.18123	-1.01703
	setup	CLK (R)	0.19602	0.25052	1.19079

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)	-0.09948	-0.24745	-1.60424
	setup	CLK (R)	0.37215	0.45197	2.82712
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.09996	-0.24303	-1.61070
	setup	CLK (R)	0.37559	0.45903	2.83135

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)	-0.08377	-0.18079	-1.01942
	setup	CLK (R)	0.19302	0.24652	1.19822
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.08197	-0.18123	-1.01703
	setup	CLK (R)	0.19602	0.25052	1.19079

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)	-0.09948	-0.24745	-1.60424
	setup	CLK (R)	0.37215	0.45197	2.82712
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.09996	-0.24303	-1.61070
	setup	CLK (R)	0.37559	0.45903	2.83135

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)	-0.10501	-0.19636	-1.19417
	setup	CLK (R)	0.22321	0.26874	1.36090
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.10377	-0.19431	-1.18478
	setup	CLK (R)	0.22002	0.26613	1.34482

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)	-0.14270	-0.31262	-2.21478
	setup	CLK (R)	0.46501	0.55161	3.27657
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.13992	-0.30943	-2.25724
	setup	CLK (R)	0.46914	0.55864	3.27951

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)	-0.10501	-0.19636	-1.19417
	hold	CLK (R)	-0.10855	-0.20107	-1.20396
	setup	CLK (R)	0.22200	0.26433	1.34766
	setup	CLK (R)	0.22321	0.26874	1.36090
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.10377	-0.19431	-1.18478
	hold	CLK (R)	-0.10694	-0.19874	-1.19474
	setup	CLK (R)	0.21984	0.26433	1.33294
	setup	CLK (R)	0.22002	0.26613	1.34482

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)	-0.15695	-0.32704	-2.35146
	hold	CLK (R)	-0.14270	-0.31262	-2.21478
	setup	CLK (R)	0.46081	0.55161	3.27657
	setup	CLK (R)	0.46501	0.55114	3.27444
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.15451	-0.32571	-2.36584
	hold	CLK (R)	-0.13992	-0.30943	-2.25724
	setup	CLK (R)	0.46830	0.55601	3.27951
	setup	CLK (R)	0.46914	0.55864	3.27528

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)	-0.09265	-0.19251	-0.19265
	setup	CLK (R)	0.44878	0.44008	1.26492
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.09202	-0.19342	-0.20464
	setup	CLK (R)	0.45452	0.45014	1.25386

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)	-0.12505	-0.27750	-1.96339
	setup	CLK (R)	0.39606	0.48074	3.05150
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.12562	-0.27774	-1.99221
	setup	CLK (R)	0.40358	0.48867	3.06107

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)	-0.13997	-0.21444	-0.19265
	hold	CLK (R)	-0.09265	-0.19251	-1.08239
	setup	CLK (R)	0.44878	0.44008	0.63874
	setup	CLK (R)	0.20845	0.26433	1.26492
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.13845	-0.21864	-0.20464
	hold	CLK (R)	-0.09202	-0.19342	-1.07679
	setup	CLK (R)	0.45452	0.45014	0.63842
	setup	CLK (R)	0.20569	0.26239	1.25386

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)	-0.17669	-0.33877	-2.28080
	hold	CLK (R)	-0.12505	-0.27750	-1.96339
	setup	CLK (R)	0.28856	0.39769	2.36592
	setup	CLK (R)	0.39606	0.48074	3.05150
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.17986	-0.34181	-2.28907
	hold	CLK (R)	-0.12562	-0.27774	-1.99221
	setup	CLK (R)	0.29166	0.40237	2.37414
	setup	CLK (R)	0.40358	0.48867	3.06107

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 ()	0.14494	0.77881	16.50020
	min_pulse_width	CLK ()	0.10731	0.77881	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.14494	0.77881	16.50020
	min_pulse_width	CLK ()	0.11020	0.77881	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 ()	0.26650	0.77881	16.50020
	min_pulse_width	CLK ()	0.36491	0.77881	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.26939	0.77881	16.50020
	min_pulse_width	CLK ()	0.37359	0.77881	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	0.00989	0.00985	0.01131
	CLK	0.00844	0.00840	0.00984
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01185	0.01214	0.01360
	CLK	0.01040	0.01065	0.01211

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.01013	0.01020	0.01174
	CLK	0.00868	0.00875	0.01028
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01202	0.01242	0.01395
	CLK	0.01057	0.01094	0.01248

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.01013	0.01020	0.01191
	CLK	0.00868	0.00875	0.01045
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01203	0.01236	0.01411
	CLK	0.01058	0.01091	0.01265

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.00987	0.00982	0.01114
	CLK	0.00842	0.00837	0.00968
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01184	0.01209	0.01348
	CLK	0.01040	0.01064	0.01197

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	0.00087	0.00088	0.00087
	(CLK * SCD * SCE)	-0.00041	-0.00042	-0.00041
	(CLK * !SCE)	0.00290	0.00277	0.00490
	(CLK * !SCE)	0.00071	0.00057	0.00271
	(CLK * !SCD * SCE)	0.00052	0.00052	0.00050
	(CLK * !SCD * SCE)	-0.00084	-0.00085	-0.00086
	(!CLK * SCD * SCE)	0.00087	0.00088	0.00087
	(!CLK * SCD * SCE)	-0.00041	-0.00042	-0.00041
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00672	0.00658	0.00834
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00452	0.00439	0.00615
	(!CLK * !SCD * SCE)	0.00052	0.00052	0.00050
	(!CLK * !SCD * SCE)	-0.00084	-0.00085	-0.00087
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	0.00088	0.00089	0.00088
	(CLK * SCD * SCE)	-0.00040	-0.00041	-0.00040
	(CLK * !SCE)	0.00284	0.00271	0.00484
	(CLK * !SCE)	0.00067	0.00054	0.00267
	(CLK * !SCD * SCE)	0.00054	0.00054	0.00052
	(CLK * !SCD * SCE)	-0.00082	-0.00083	-0.00085
	(!CLK * SCD * SCE)	0.00088	0.00089	0.00088
	(!CLK * SCD * SCE)	-0.00040	-0.00041	-0.00040
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00675	0.00662	0.00838
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00458	0.00445	0.00621
	(!CLK * !SCD * SCE)	0.00054	0.00053	0.00052
	(!CLK * !SCD * SCE)	-0.00082	-0.00083	-0.00085

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	-0.00082	-0.00084	-0.00086
	(CLK * SCD * SCE)	0.00045	0.00045	0.00043
	(CLK * !SCE)	0.00065	0.00064	0.00312
	(CLK * !SCE)	0.00285	0.00284	0.00531
	(CLK * !SCD * SCE)	-0.00049	-0.00049	-0.00049
	(CLK * !SCD * SCE)	0.00087	0.00086	0.00086
	(!CLK * SCD * SCE)	-0.00083	-0.00084	-0.00086
	(!CLK * SCD * SCE)	0.00045	0.00045	0.00042
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00480	0.00476	0.00741
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00700	0.00695	0.00960
	(!CLK * !SCD * SCE)	-0.00049	-0.00049	-0.00049
	(!CLK * !SCD * SCE)	0.00087	0.00086	0.00087
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	-0.00083	-0.00085	-0.00087
	(CLK * SCD * SCE)	0.00044	0.00044	0.00042
	(CLK * !SCE)	0.00074	0.00072	0.00320
	(CLK * !SCE)	0.00290	0.00290	0.00537
	(CLK * !SCD * SCE)	-0.00051	-0.00051	-0.00051
	(CLK * !SCD * SCE)	0.00085	0.00085	0.00085
	(!CLK * SCD * SCE)	-0.00084	-0.00085	-0.00087
	(!CLK * SCD * SCE)	0.00044	0.00044	0.00041
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00480	0.00477	0.00741
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00698	0.00694	0.00958
	(!CLK * !SCD * SCE)	-0.00050	-0.00051	-0.00051
	(!CLK * !SCD * SCE)	0.00084	0.00085	0.00085

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.00399	0.00385	0.00478
	(CLK * D * SCE)	0.00122	0.00107	0.00201
	(CLK * !D * SCE)	0.00450	0.00437	0.00520
	(CLK * !D * SCE)	0.00163	0.00149	0.00233
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00780	0.00767	0.00852
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00502	0.00488	0.00575
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00831	0.00818	0.00896
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00544	0.00531	0.00609
	!SCE	0.00080	0.00072	0.00071
	!SCE	-0.00074	-0.00083	-0.00084
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.00392	0.00378	0.00471
	(CLK * D * SCE)	0.00118	0.00103	0.00198
	(CLK * !D * SCE)	0.00442	0.00429	0.00513
	(CLK * !D * SCE)	0.00160	0.00146	0.00230
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00782	0.00769	0.00856
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00508	0.00495	0.00581
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00833	0.00821	0.00899
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00550	0.00538	0.00616
	!SCE	0.00078	0.00070	0.00068
	!SCE	-0.00075	-0.00084	-0.00085

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.00144	0.00131	0.00231
	(CLK * D * SCE)	0.00423	0.00410	0.00508
	(CLK * !D * SCE)	0.00116	0.00103	0.00210
	(CLK * !D * SCE)	0.00403	0.00391	0.00496
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00556	0.00543	0.00662
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00836	0.00822	0.00939
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00530	0.00517	0.00641
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00817	0.00804	0.00927
	!SCE	-0.00068	-0.00070	-0.00070
	!SCE	0.00085	0.00085	0.00085
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.00151	0.00139	0.00239
	(CLK * D * SCE)	0.00426	0.00414	0.00512
	(CLK * !D * SCE)	0.00123	0.00111	0.00218
	(CLK * !D * SCE)	0.00406	0.00394	0.00499
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00556	0.00543	0.00662
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00830	0.00818	0.00935
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00530	0.00517	0.00641
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00812	0.00800	0.00923
	!SCE	-0.00065	-0.00067	-0.00067
	!SCE	0.00086	0.00086	0.00086

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)**	0.00371	0.00346	0.00592
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00024	-0.00051	0.00195
	(CLK * D * !SCD)	0.00551	0.00527	0.00771
	(CLK * D * !SCD)	0.00268	0.00243	0.00484
	(CLK * !D * SCD)	0.00653	0.00623	0.00997
	(CLK * !D * SCD)	0.00159	0.00129	0.00506
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00371	0.00346	0.00591
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00024	-0.00052	0.00195
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00953	0.00937	0.01180
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00670	0.00654	0.00893
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01034	0.01006	0.01372
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00540	0.00512	0.00880
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00358	0.00342	0.00581
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00015	-0.00033	0.00209

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00386	0.00360	0.00603
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00018	-0.00046	0.00198
	(CLK * D * !SCD)	0.00572	0.00548	0.00789
	(CLK * D * !SCD)	0.00279	0.00251	0.00491
	(CLK * !D * SCD)	0.00663	0.00633	0.01004
	(CLK * !D * SCD)	0.00163	0.00132	0.00506
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00386	0.00360	0.00603
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00018	-0.00046	0.00198
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00967	0.00951	0.01191
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00673	0.00656	0.00892
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01054	0.01025	0.01388
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00554	0.00524	0.00890
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00371	0.00353	0.00593
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00011	-0.00028	0.00210

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)**	-0.00029	-0.00028	0.00258
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00366	0.00367	0.00653
	(CLK * D * !SCD)	0.00266	0.00254	0.00533
	(CLK * D * !SCD)	0.00550	0.00540	0.00814
	(CLK * !D * SCD)	0.00090	0.00074	0.00478
	(CLK * !D * SCD)	0.00583	0.00568	0.00971
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00029	-0.00029	0.00257
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00366	0.00367	0.00653
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00645	0.00639	0.00912
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00929	0.00925	0.01194
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00505	0.00487	0.00895
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00996	0.00979	0.01389
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00003	0.00001	0.00282
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00376	0.00374	0.00656

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00032	-0.00032	0.00252
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00371	0.00372	0.00657
	(CLK * D * !SCD)	0.00259	0.00246	0.00523
	(CLK * D * !SCD)	0.00554	0.00541	0.00816
	(CLK * !D * SCD)	0.00096	0.00079	0.00480
	(CLK * !D * SCD)	0.00595	0.00579	0.00980
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00032	-0.00032	0.00252
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00371	0.00372	0.00656
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00647	0.00641	0.00912
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00942	0.00936	0.01206
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00504	0.00484	0.00892
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01002	0.00983	0.01390
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00001	-0.00002	0.00278
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00383	0.00381	0.00661

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)	0.00911	0.00874	0.01147
	(D * SCD * SCE * Q * !Q_N)	0.00621	0.00583	0.00857
	(D * !SCE * Q * !Q_N)	0.00910	0.00874	0.01147
	(D * !SCE * Q * !Q_N)	0.00620	0.00582	0.00857
	(D * !SCD * SCE * !Q * Q_N)	0.00900	0.00862	0.01135
	(D * !SCD * SCE * !Q * Q_N)	0.00610	0.00570	0.00844
	(!D * SCD * SCE * Q * !Q_N)	0.00911	0.00874	0.01147
	(!D * SCD * SCE * Q * !Q_N)	0.00621	0.00583	0.00857
	(!D * !SCE * !Q * Q_N)	0.00899	0.00862	0.01135
	(!D * !SCE * !Q * Q_N)	0.00609	0.00570	0.00844
	(!D * !SCD * SCE * !Q * Q_N)	0.00900	0.00862	0.01135
	(!D * !SCD * SCE * !Q * Q_N)	0.00610	0.00571	0.00845
sky130_fd_sc_hs__sdfxbp_2	(D * SCD * SCE * Q * !Q_N)	0.00931	0.00893	0.01164
	(D * SCD * SCE * Q * !Q_N)	0.00641	0.00602	0.00873
	(D * !SCE * Q * !Q_N)	0.00930	0.00893	0.01164
	(D * !SCE * Q * !Q_N)	0.00640	0.00602	0.00873
	(D * !SCD * SCE * !Q * Q_N)	0.00921	0.00882	0.01151
	(D * !SCD * SCE * !Q * Q_N)	0.00631	0.00592	0.00861
	(!D * SCD * SCE * Q * !Q_N)	0.00931	0.00893	0.01164
	(!D * SCD * SCE * Q * !Q_N)	0.00641	0.00602	0.00874
	(!D * !SCE * !Q * Q_N)	0.00921	0.00882	0.01151
	(!D * !SCE * !Q * Q_N)	0.00631	0.00591	0.00860
	(!D * !SCD * SCE * !Q * Q_N)	0.00921	0.00882	0.01151
	(!D * !SCD * SCE * !Q * Q_N)	0.00631	0.00592	0.00861

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)**	0.00517	0.00503	0.00823
	(D * SCD * SCE * Q * !Q_N)	0.00808	0.00794	0.01114
	(D * SCD * SCE * !Q * Q_N)	0.00884	0.00859	0.01182
	(D * SCD * SCE * !Q * Q_N)	0.01175	0.01149	0.01473
	(D * !SCE * Q * !Q_N)	0.00517	0.00503	0.00823
	(D * !SCE * Q * !Q_N)	0.00808	0.00794	0.01114
	(D * !SCE * !Q * Q_N)	0.00880	0.00856	0.01180
	(D * !SCE * !Q * Q_N)	0.01172	0.01146	0.01471
	(D * !SCD * SCE * Q * !Q_N)	0.01014	0.01004	0.01356
	(D * !SCD * SCE * Q * !Q_N)	0.01307	0.01295	0.01649
	(D * !SCD * SCE * !Q * Q_N)	0.00521	0.00507	0.00827
	(D * !SCD * SCE * !Q * Q_N)	0.00813	0.00798	0.01118
	(!D * SCD * SCE * Q * !Q_N)	0.00517	0.00503	0.00823
	(!D * SCD * SCE * Q * !Q_N)	0.00808	0.00794	0.01114
	(!D * SCD * SCE * !Q * Q_N)	0.00887	0.00862	0.01185
	(!D * SCD * SCE * !Q * Q_N)	0.01176	0.01151	0.01475
	(!D * !SCE * Q * !Q_N)	0.01012	0.01002	0.01353
	(!D * !SCE * Q * !Q_N)	0.01303	0.01292	0.01644
	(!D * !SCE * !Q * Q_N)	0.00521	0.00506	0.00827
	(!D * !SCE * !Q * Q_N)	0.00812	0.00797	0.01118
	(!D * !SCD * SCE * Q * !Q_N)	0.01014	0.01003	0.01356
	(!D * !SCD * SCE * Q * !Q_N)	0.01307	0.01294	0.01648
	(!D * !SCD * SCE * !Q * Q_N)	0.00521	0.00507	0.00827
	(!D * !SCD * SCE * !Q * Q_N)	0.00813	0.00798	0.01118

sky130_fd_sc_hs__sdfxbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.00525	0.00514	0.00830
	(D * SCD * SCE * Q * !Q_N)	0.00816	0.00805	0.01121
	(D * SCD * SCE * !Q * Q_N)	0.00900	0.00878	0.01199
	(D * SCD * SCE * !Q * Q_N)	0.01190	0.01168	0.01489
	(D * !SCE * Q * !Q_N)	0.00525	0.00514	0.00830
	(D * !SCE * Q * !Q_N)	0.00816	0.00805	0.01121
	(D * !SCE * !Q * Q_N)	0.00896	0.00875	0.01196
	(D * !SCE * !Q * Q_N)	0.01187	0.01165	0.01487
	(D * !SCD * SCE * Q * !Q_N)	0.01014	0.01007	0.01354
	(D * !SCD * SCE * Q * !Q_N)	0.01307	0.01299	0.01646
	(D * !SCD * SCE * !Q * Q_N)	0.00527	0.00516	0.00834
	(D * !SCD * SCE * !Q * Q_N)	0.00818	0.00806	0.01124
	(!D * SCD * SCE * Q * !Q_N)	0.00525	0.00514	0.00830
	(!D * SCD * SCE * Q * !Q_N)	0.00816	0.00805	0.01121
	(!D * SCD * SCE * !Q * Q_N)	0.00902	0.00881	0.01202
	(!D * SCD * SCE * !Q * Q_N)	0.01192	0.01170	0.01491
	(!D * !SCE * Q * !Q_N)	0.01012	0.01003	0.01352
	(!D * !SCE * Q * !Q_N)	0.01303	0.01293	0.01642
	(!D * !SCE * !Q * Q_N)	0.00527	0.00515	0.00833
	(!D * !SCE * !Q * Q_N)	0.00818	0.00805	0.01124
	(!D * !SCD * SCE * Q * !Q_N)	0.01014	0.01006	0.01354
	(!D * !SCD * SCE * Q * !Q_N)	0.01306	0.01297	0.01646
	(!D * !SCD * SCE * !Q * Q_N)	0.00527	0.00516	0.00833
	(!D * !SCD * SCE * !Q * Q_N)	0.00818	0.00806	0.01124

SKY130_FD_SC_HS__SDFXTPx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT				OUTPUT
D	SCD	SCE	CLK	Q
0	0	x	R	0
0	1	0	R	0
x	1	1	R	1
1	x	0	R	1
1	0	1	R	0
x	x	x	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfxtp_1	36.76320
sky130_fd_sc_hs__sdfxtp_2	39.96000
sky130_fd_sc_hs__sdfxtp_4	41.55840

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	D	SCD	SCE	CLK	Q
sky130_fd_sc_hs__sdfxtp_1	0.00186	0.00195	0.00410	0.00283	0.77138
sky130_fd_sc_hs__sdfxtp_2	0.00189	0.00191	0.00397	0.00286	1.51614
sky130_fd_sc_hs__sdfxtp_4	0.00187	0.00189	0.00409	0.00284	2.91374

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfxtp_1	0.00000	0.32346	0.51306
sky130_fd_sc_hs__sdfxtp_2	0.00000	0.30897	0.45789
sky130_fd_sc_hs__sdfxtp_4	0.00000	0.42724	0.64558

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)**	0.27824	0.94392	7.15838
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RR)**	0.28238	0.83547	7.14680
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RR)**	0.33826	0.80812	7.32372

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxtp_1	**CLK->Q (RF)**	0.30756	0.65916	2.64345
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RF)**	0.32197	0.65095	2.68196
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RF)**	0.32177	0.61869	2.72132

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)	-0.08295	-0.18266	-1.03718
	setup	CLK (R)	0.19688	0.25052	1.21445
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.08811	-0.18687	-1.04797
	setup	CLK (R)	0.20672	0.25839	1.22379
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.08307	-0.18132	-1.02738
	setup	CLK (R)	0.19697	0.24731	1.19380

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)	-0.10137	-0.25029	-1.54596
	setup	CLK (R)	0.38255	0.46379	2.86196
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.10509	-0.25492	-1.61309
	setup	CLK (R)	0.40405	0.48047	2.90439
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.10677	-0.25132	-1.73953
	setup	CLK (R)	0.37860	0.45903	2.83914

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)	-0.08295	-0.18266	-1.03718
	setup	CLK (R)	0.19688	0.25052	1.21445
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.08811	-0.18687	-1.04797
	setup	CLK (R)	0.20672	0.25839	1.22379
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.08307	-0.18132	-1.02738
	setup	CLK (R)	0.19697	0.24731	1.19380

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)	-0.10137	-0.25029	-1.54596
	setup	CLK (R)	0.38255	0.46379	2.86196
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.10509	-0.25492	-1.61309
	setup	CLK (R)	0.40405	0.48047	2.90439
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.10677	-0.25132	-1.73953
	setup	CLK (R)	0.37860	0.45903	2.83914

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)	-0.10598	-0.19831	-1.20918
	setup	CLK (R)	0.22624	0.27070	1.37567
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.11019	-0.19904	-1.21509
	setup	CLK (R)	0.23789	0.27827	1.38143
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.10358	-0.19693	-1.19475
	setup	CLK (R)	0.22448	0.26833	1.35728

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)	-0.14708	-0.31543	-2.21586
	setup	CLK (R)	0.47574	0.56573	3.31189
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.15013	-0.31656	-2.27265
	setup	CLK (R)	0.49521	0.58208	3.34015
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.15033	-0.31822	-2.37423
	setup	CLK (R)	0.47502	0.56137	3.28903

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)	-0.10598	-0.19831	-1.20918
	hold	CLK (R)	-0.11079	-0.20286	-1.21984
	setup	CLK (R)	0.22481	0.27016	1.35970
	setup	CLK (R)	0.22624	0.27070	1.37567
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.11019	-0.19904	-1.21509
	hold	CLK (R)	-0.11375	-0.20622	-1.22455
	setup	CLK (R)	0.23789	0.27620	1.36901
	setup	CLK (R)	0.23541	0.27827	1.38143
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.10358	-0.19693	-1.19475
	hold	CLK (R)	-0.10974	-0.20036	-1.20532
	setup	CLK (R)	0.22341	0.26495	1.34397
	setup	CLK (R)	0.22448	0.26833	1.35728

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)	-0.16057	-0.33424	-2.35109
	hold	CLK (R)	-0.14708	-0.31543	-2.21586
	setup	CLK (R)	0.47350	0.56474	3.31189
	setup	CLK (R)	0.47574	0.56573	3.31040
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.16324	-0.33444	-2.37151
	hold	CLK (R)	-0.15013	-0.31656	-2.27265
	setup	CLK (R)	0.49260	0.58107	3.34015
	setup	CLK (R)	0.49521	0.58208	3.33914
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.16293	-0.33542	-2.45732
	hold	CLK (R)	-0.15033	-0.31822	-2.37423
	setup	CLK (R)	0.47246	0.55996	3.28903
	setup	CLK (R)	0.47502	0.56137	3.28539

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)	-0.09576	-0.19661	-0.19795
	setup	CLK (R)	0.46062	0.45483	1.28442
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.09662	-0.19732	-0.17729
	setup	CLK (R)	0.48396	0.47426	1.28550
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.09513	-0.19287	-0.29162
	setup	CLK (R)	0.46153	0.45141	1.26485

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)	-0.13032	-0.28537	-1.94491
	setup	CLK (R)	0.40815	0.49373	3.08932
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.13043	-0.28798	-1.99776
	setup	CLK (R)	0.42737	0.51145	3.12136
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.13478	-0.28837	-2.08929
	setup	CLK (R)	0.40352	0.49357	3.06689

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)	-0.14556	-0.22353	-0.19795
	hold	CLK (R)	-0.09576	-0.19661	-1.09936
	setup	CLK (R)	0.46062	0.45483	1.21435
	setup	CLK (R)	0.21134	0.26833	1.28442
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.15076	-0.22458	-0.17729
	hold	CLK (R)	-0.09662	-0.19732	-1.10435
	setup	CLK (R)	0.48396	0.47426	1.08470
	setup	CLK (R)	0.22088	0.27427	1.28550
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.14787	-0.22854	-0.29162
	hold	CLK (R)	-0.09513	-0.19287	-1.08427
	setup	CLK (R)	0.46153	0.45141	0.66597
	setup	CLK (R)	0.20835	0.26833	1.26485

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)	-0.18447	-0.34746	-2.31447
	hold	CLK (R)	-0.13032	-0.28537	-1.94491
	setup	CLK (R)	0.29407	0.40794	2.40355
	setup	CLK (R)	0.40815	0.49373	3.08932
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.18271	-0.34474	-2.29362
	hold	CLK (R)	-0.13043	-0.28798	-1.99776
	setup	CLK (R)	0.30231	0.40914	2.38179
	setup	CLK (R)	0.42737	0.51145	3.12136
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.18225	-0.34512	-2.30271
	hold	CLK (R)	-0.13478	-0.28837	-2.08929
	setup	CLK (R)	0.29275	0.40479	2.38743
	setup	CLK (R)	0.40352	0.49357	3.06689

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 ()	0.13625	0.77881	16.50020
	min_pulse_width	CLK ()	0.10441	0.77881	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.14494	0.77881	16.50020
	min_pulse_width	CLK ()	0.11020	0.77881	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.18256	0.77881	16.50020
	min_pulse_width	CLK ()	0.11310	0.77881	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 ()	0.26650	0.77881	16.50020
	min_pulse_width	CLK ()	0.36780	0.77881	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.28387	0.77881	16.50020
	min_pulse_width	CLK ()	0.38228	0.77881	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.26650	0.77881	16.50020
	min_pulse_width	CLK ()	0.37359	0.77881	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	0.01531	0.01511	0.01794
	CLK	0.01244	0.01224	0.01509
sky130_fd_sc_hs__sdfxtp_2	CLK	0.01752	0.01755	0.02035
	CLK	0.01461	0.01466	0.01750
sky130_fd_sc_hs__sdfxtp_4	CLK	0.02180	0.02215	0.02516
	CLK	0.01893	0.01927	0.02257

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	CLK	0.01604	0.01602	0.01926
	CLK	0.01317	0.01313	0.01634
sky130_fd_sc_hs__sdfxtp_2	CLK	0.01809	0.01842	0.02156
	CLK	0.01519	0.01542	0.01860
sky130_fd_sc_hs__sdfxtp_4	CLK	0.02249	0.02360	0.02701
	CLK	0.01961	0.02040	0.02370

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	0.00089	0.00091	0.00089
	(CLK * SCD * SCE)	-0.00041	-0.00041	-0.00040
	(CLK * !SCE)	0.00291	0.00278	0.00490
	(CLK * !SCE)	0.00066	0.00052	0.00264
	(CLK * !SCD * SCE)	0.00054	0.00054	0.00052
	(CLK * !SCD * SCE)	-0.00084	-0.00085	-0.00086
	(!CLK * SCD * SCE)	0.00089	0.00090	0.00089
	(!CLK * SCD * SCE)	-0.00041	-0.00041	-0.00041
	(!CLK * !SCE)	0.00686	0.00673	0.00848
	(!CLK * !SCE)	0.00461	0.00447	0.00623
	(!CLK * !SCD * SCE)	0.00054	0.00054	0.00053
	(!CLK * !SCD * SCE)	-0.00084	-0.00085	-0.00086
sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	0.00092	0.00093	0.00092
	(CLK * SCD * SCE)	-0.00041	-0.00041	-0.00041
	(CLK * !SCE)	0.00315	0.00301	0.00508
	(CLK * !SCE)	0.00085	0.00072	0.00278
	(CLK * !SCD * SCE)	0.00056	0.00056	0.00054
	(CLK * !SCD * SCE)	-0.00085	-0.00086	-0.00087
	(!CLK * SCD * SCE)	0.00092	0.00093	0.00092
	(!CLK * SCD * SCE)	-0.00041	-0.00041	-0.00041
	(!CLK * !SCE)	0.00744	0.00730	0.00901
	(!CLK * !SCE)	0.00514	0.00501	0.00672
	(!CLK * !SCD * SCE)	0.00056	0.00056	0.00055
	(!CLK * !SCD * SCE)	-0.00085	-0.00086	-0.00087

sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	0.00091	0.00092	0.00091
	(CLK * SCD * SCE)	-0.00040	-0.00041	-0.00040
	(CLK * !SCE)	0.00292	0.00279	0.00491
	(CLK * !SCE)	0.00067	0.00054	0.00266
	(CLK * !SCD * SCE)	0.00056	0.00056	0.00054
	(CLK * !SCD * SCE)	-0.00084	-0.00085	-0.00086
	(!CLK * SCD * SCE)	0.00091	0.00092	0.00091
	(!CLK * SCD * SCE)	-0.00040	-0.00041	-0.00040
	(!CLK * !SCE)	0.00689	0.00676	0.00850
	(!CLK * !SCE)	0.00465	0.00451	0.00626
	(!CLK * !SCD * SCE)	0.00056	0.00056	0.00055
	(!CLK * !SCD * SCE)	-0.00083	-0.00084	-0.00086

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	-0.00085	-0.00087	-0.00089
	(CLK * SCD * SCE)	0.00044	0.00044	0.00042
	(CLK * !SCE)	0.00071	0.00070	0.00317
	(CLK * !SCE)	0.00297	0.00295	0.00542
	(CLK * !SCD * SCE)	-0.00051	-0.00051	-0.00051
	(CLK * !SCD * SCE)	0.00087	0.00086	0.00086
	(!CLK * SCD * SCE)	-0.00085	-0.00087	-0.00089
	(!CLK * SCD * SCE)	0.00044	0.00044	0.00042
	(!CLK * !SCE)	0.00465	0.00462	0.00728
	(!CLK * !SCE)	0.00691	0.00686	0.00953
	(!CLK * !SCD * SCE)	-0.00051	-0.00051	-0.00051
	(!CLK * !SCD * SCE)	0.00087	0.00086	0.00086

sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	-0.00088	-0.00090	-0.00092
	(CLK * SCD * SCE)	0.00044	0.00044	0.00042
	(CLK * !SCE)	0.00075	0.00073	0.00317
	(CLK * !SCE)	0.00305	0.00303	0.00547
	(CLK * !SCD * SCE)	-0.00053	-0.00053	-0.00053
	(CLK * !SCD * SCE)	0.00088	0.00087	0.00087
	(!CLK * SCD * SCE)	-0.00088	-0.00090	-0.00092
	(!CLK * SCD * SCE)	0.00044	0.00044	0.00042
	(!CLK * !SCE)	0.00479	0.00473	0.00734
	(!CLK * !SCE)	0.00708	0.00702	0.00963
	(!CLK * !SCD * SCE)	-0.00053	-0.00053	-0.00053
	(!CLK * !SCD * SCE)	0.00087	0.00087	0.00087
sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	-0.00086	-0.00088	-0.00090
	(CLK * SCD * SCE)	0.00044	0.00044	0.00042
	(CLK * !SCE)	0.00069	0.00067	0.00314
	(CLK * !SCE)	0.00294	0.00292	0.00539
	(CLK * !SCD * SCE)	-0.00053	-0.00053	-0.00053
	(CLK * !SCD * SCE)	0.00086	0.00086	0.00086
	(!CLK * SCD * SCE)	-0.00087	-0.00088	-0.00090
	(!CLK * SCD * SCE)	0.00044	0.00044	0.00042
	(!CLK * !SCE)	0.00494	0.00489	0.00751
	(!CLK * !SCE)	0.00719	0.00713	0.00975
	(!CLK * !SCD * SCE)	-0.00053	-0.00053	-0.00053
	(!CLK * !SCD * SCE)	0.00086	0.00086	0.00086

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

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

sky130_fd_sc_hs__sdfxtp_1	**(CLK * D * SCE)**	0.00407	0.00392	0.00485
	(CLK * D * SCE)	0.00120	0.00104	0.00197
	(CLK * !D * SCE)	0.00458	0.00444	0.00526
	(CLK * !D * SCE)	0.00161	0.00146	0.00230
	(!CLK * D * SCE)	0.00802	0.00787	0.00873
	(!CLK * D * SCE)	0.00514	0.00500	0.00585
	(!CLK * !D * SCE)	0.00852	0.00839	0.00917
	(!CLK * !D * SCE)	0.00556	0.00542	0.00621
	!SCE	0.00081	0.00074	0.00072
	!SCE	-0.00079	-0.00088	-0.00089
sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCE)**	0.00419	0.00404	0.00496
	(CLK * D * SCE)	0.00134	0.00118	0.00211
	(CLK * !D * SCE)	0.00470	0.00456	0.00537
	(CLK * !D * SCE)	0.00175	0.00161	0.00243
	(!CLK * D * SCE)	0.00847	0.00833	0.00917
	(!CLK * D * SCE)	0.00562	0.00548	0.00632
	(!CLK * !D * SCE)	0.00898	0.00885	0.00961
	(!CLK * !D * SCE)	0.00604	0.00590	0.00667
	!SCE	0.00082	0.00074	0.00073
	!SCE	-0.00074	-0.00083	-0.00084
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCE)**	0.00404	0.00390	0.00483
	(CLK * D * SCE)	0.00123	0.00107	0.00201
	(CLK * !D * SCE)	0.00455	0.00441	0.00524
	(CLK * !D * SCE)	0.00164	0.00149	0.00234
	(!CLK * D * SCE)	0.00801	0.00787	0.00872
	(!CLK * D * SCE)	0.00520	0.00505	0.00590
	(!CLK * !D * SCE)	0.00852	0.00839	0.00916
	(!CLK * !D * SCE)	0.00561	0.00547	0.00625
	!SCE	0.00079	0.00072	0.00070
	!SCE	-0.00077	-0.00086	-0.00086

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	(CLK * D * SCE)	0.00146	0.00132	0.00231
	(CLK * D * SCE)	0.00434	0.00421	0.00518
	(CLK * !D * SCE)	0.00118	0.00104	0.00209
	(CLK * !D * SCE)	0.00414	0.00401	0.00505
	(!CLK * D * SCE)	0.00538	0.00523	0.00643
	(!CLK * D * SCE)	0.00827	0.00812	0.00930
	(!CLK * !D * SCE)	0.00511	0.00497	0.00622
	(!CLK * !D * SCE)	0.00808	0.00794	0.00918
	!SCE	-0.00070	-0.00071	-0.00072
	!SCE	0.00089	0.00090	0.00090
sky130_fd_sc_hs__sdfxtp_2	(CLK * D * SCE)	0.00156	0.00142	0.00241
	(CLK * D * SCE)	0.00442	0.00428	0.00526
	(CLK * !D * SCE)	0.00128	0.00114	0.00220
	(CLK * !D * SCE)	0.00422	0.00409	0.00512
	(!CLK * D * SCE)	0.00557	0.00543	0.00658
	(!CLK * D * SCE)	0.00843	0.00829	0.00943
	(!CLK * !D * SCE)	0.00531	0.00516	0.00639
	(!CLK * !D * SCE)	0.00825	0.00811	0.00932
	!SCE	-0.00070	-0.00072	-0.00072
	!SCE	0.00085	0.00085	0.00085

sky130_fd_sc_hs__sdfxtp_4	(CLK * D * SCE)	0.00145	0.00131	0.00231
	(CLK * D * SCE)	0.00427	0.00414	0.00512
	(CLK * !D * SCE)	0.00116	0.00104	0.00210
	(CLK * !D * SCE)	0.00407	0.00395	0.00500
	(!CLK * D * SCE)	0.00567	0.00554	0.00670
	(!CLK * D * SCE)	0.00850	0.00836	0.00951
	(!CLK * !D * SCE)	0.00541	0.00527	0.00649
	(!CLK * !D * SCE)	0.00832	0.00818	0.00939
	!SCE	-0.00068	-0.00069	-0.00070
	!SCE	0.00087	0.00088	0.00088

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)	0.00393	0.00366	0.00607
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00024	-0.00054	0.00189
	(CLK * D * !SCD)	0.00579	0.00553	0.00798
	(CLK * D * !SCD)	0.00278	0.00249	0.00492
	(CLK * !D * SCD)	0.00675	0.00643	0.01013
	(CLK * !D * SCD)	0.00156	0.00123	0.00496
	(!CLK * D * SCD)	0.00393	0.00366	0.00607
	(!CLK * D * SCD)	-0.00024	-0.00054	0.00189
	(!CLK * D * !SCD)	0.00960	0.00943	0.01182
	(!CLK * D * !SCD)	0.00659	0.00641	0.00876
	(!CLK * !D * SCD)	0.01070	0.01039	0.01402
	(!CLK * !D * SCD)	0.00551	0.00519	0.00884
	(!CLK * !D * !SCD)	0.00378	0.00359	0.00598
	(!CLK * !D * !SCD)	-0.00017	-0.00036	0.00201

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00377	0.00352	0.00596
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00024	-0.00052	0.00193
	(CLK * D * !SCD)	0.00571	0.00548	0.00788
	(CLK * D * !SCD)	0.00287	0.00261	0.00501
	(CLK * !D * SCD)	0.00679	0.00649	0.01020
	(CLK * !D * SCD)	0.00174	0.00143	0.00517
	(!CLK * D * SCD)	0.00377	0.00351	0.00596
	(!CLK * D * SCD)	-0.00024	-0.00052	0.00193
	(!CLK * D * !SCD)	0.00962	0.00947	0.01188
	(!CLK * D * !SCD)	0.00678	0.00662	0.00900
	(!CLK * !D * SCD)	0.01107	0.01080	0.01442
	(!CLK * !D * SCD)	0.00603	0.00574	0.00939
	(!CLK * !D * !SCD)	0.00366	0.00350	0.00589
	(!CLK * !D * !SCD)	-0.00013	-0.00031	0.00209
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00392	0.00365	0.00606
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00024	-0.00054	0.00189
	(CLK * D * !SCD)	0.00575	0.00549	0.00793
	(CLK * D * !SCD)	0.00273	0.00244	0.00487
	(CLK * !D * SCD)	0.00676	0.00644	0.01014
	(CLK * !D * SCD)	0.00160	0.00127	0.00499
	(!CLK * D * SCD)	0.00392	0.00365	0.00606
	(!CLK * D * SCD)	-0.00023	-0.00054	0.00189
	(!CLK * D * !SCD)	0.00987	0.00969	0.01207
	(!CLK * D * !SCD)	0.00685	0.00666	0.00901
	(!CLK * !D * SCD)	0.01073	0.01042	0.01404
	(!CLK * !D * SCD)	0.00557	0.00526	0.00889
	(!CLK * !D * !SCD)	0.00378	0.00359	0.00596
	(!CLK * !D * !SCD)	-0.00016	-0.00036	0.00201

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)	-0.00031	-0.00032	0.00252
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00386	0.00386	0.00670
	(CLK * D * !SCD)	0.00268	0.00253	0.00530
	(CLK * D * !SCD)	0.00570	0.00558	0.00829
	(CLK * !D * SCD)	0.00094	0.00076	0.00476
	(CLK * !D * SCD)	0.00612	0.00594	0.00995
	(!CLK * D * SCD)	-0.00030	-0.00032	0.00252
	(!CLK * D * SCD)	0.00386	0.00386	0.00670
	(!CLK * D * !SCD)	0.00660	0.00652	0.00923
	(!CLK * D * !SCD)	0.00962	0.00955	0.01224
	(!CLK * !D * SCD)	0.00489	0.00468	0.00876
	(!CLK * !D * SCD)	0.01006	0.00986	0.01395
	(!CLK * !D * !SCD)	0.00002	-0.00002	0.00277
	(!CLK * !D * !SCD)	0.00397	0.00394	0.00673

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00030	-0.00029	0.00256
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00371	0.00373	0.00658
	(CLK * D * !SCD)	0.00288	0.00276	0.00553
	(CLK * D * !SCD)	0.00574	0.00563	0.00836
	(CLK * !D * SCD)	0.00099	0.00082	0.00483
	(CLK * !D * SCD)	0.00603	0.00587	0.00987
	(!CLK * D * SCD)	-0.00030	-0.00029	0.00256
	(!CLK * D * SCD)	0.00371	0.00372	0.00658
	(!CLK * D * !SCD)	0.00714	0.00709	0.00980
	(!CLK * D * !SCD)	0.01000	0.00995	0.01264
	(!CLK * !D * SCD)	0.00502	0.00484	0.00890
	(!CLK * !D * SCD)	0.01005	0.00988	0.01394
	(!CLK * !D * !SCD)	0.00000	-0.00002	0.00278
	(!CLK * !D * !SCD)	0.00380	0.00377	0.00658
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00029	-0.00030	0.00253
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00386	0.00387	0.00670
	(CLK * D * !SCD)	0.00270	0.00255	0.00533
	(CLK * D * !SCD)	0.00573	0.00561	0.00832
	(CLK * !D * SCD)	0.00094	0.00076	0.00475
	(CLK * !D * SCD)	0.00609	0.00591	0.00991
	(!CLK * D * SCD)	-0.00029	-0.00030	0.00253
	(!CLK * D * SCD)	0.00387	0.00386	0.00670
	(!CLK * D * !SCD)	0.00664	0.00657	0.00927
	(!CLK * D * !SCD)	0.00968	0.00961	0.01229
	(!CLK * !D * SCD)	0.00519	0.00498	0.00903
	(!CLK * !D * SCD)	0.01033	0.01013	0.01419
	(!CLK * !D * !SCD)	0.00004	0.00000	0.00279
	(!CLK * !D * !SCD)	0.00398	0.00395	0.00674

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)	0.00901	0.00865	0.01137
	(D * SCD * SCE * Q)	0.00615	0.00576	0.00851
	(D * !SCE * Q)	0.00900	0.00864	0.01137
	(D * !SCE * Q)	0.00613	0.00576	0.00850
	(D * !SCD * SCE * !Q)	0.00899	0.00861	0.01134
	(D * !SCD * SCE * !Q)	0.00612	0.00573	0.00846
	(!D * SCD * SCE * Q)	0.00901	0.00865	0.01137
	(!D * SCD * SCE * Q)	0.00615	0.00576	0.00850
	(!D * !SCE * !Q)	0.00899	0.00861	0.01135
	(!D * !SCE * !Q)	0.00611	0.00573	0.00848
	(!D * !SCD * SCE * !Q)	0.00899	0.00861	0.01135
	(!D * !SCD * SCE * !Q)	0.00612	0.00574	0.00848
sky130_fd_sc_hs__sdfxtp_2	(D * SCD * SCE * Q)	0.00918	0.00881	0.01147
	(D * SCD * SCE * Q)	0.00628	0.00590	0.00856
	(D * !SCE * Q)	0.00917	0.00880	0.01146
	(D * !SCE * Q)	0.00627	0.00589	0.00856
	(D * !SCD * SCE * !Q)	0.00925	0.00886	0.01154
	(D * !SCD * SCE * !Q)	0.00635	0.00595	0.00863
	(!D * SCD * SCE * Q)	0.00918	0.00881	0.01147
	(!D * SCD * SCE * Q)	0.00628	0.00590	0.00856
	(!D * !SCE * !Q)	0.00925	0.00886	0.01154
	(!D * !SCE * !Q)	0.00635	0.00595	0.00863
	(!D * !SCD * SCE * !Q)	0.00925	0.00886	0.01155
	(!D * !SCD * SCE * !Q)	0.00635	0.00595	0.00865

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.00912	0.00875	0.01147
	(D * SCD * SCE * Q)	0.00624	0.00586	0.00859
	(D * !SCE * Q)	0.00911	0.00875	0.01147
	(D * !SCE * Q)	0.00623	0.00585	0.00859
	(D * !SCD * SCE * !Q)	0.00906	0.00868	0.01140
	(D * !SCD * SCE * !Q)	0.00618	0.00579	0.00852
	(!D * SCD * SCE * Q)	0.00912	0.00875	0.01147
	(!D * SCD * SCE * Q)	0.00624	0.00586	0.00859
	(!D * !SCE * !Q)	0.00906	0.00868	0.01141
	(!D * !SCE * !Q)	0.00618	0.00579	0.00852
	(!D * !SCD * SCE * !Q)	0.00906	0.00868	0.01141
	(!D * !SCD * SCE * !Q)	0.00618	0.00579	0.00852

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)**	0.00526	0.00513	0.00833
	(D * SCD * SCE * Q)	0.00814	0.00801	0.01121
	(D * SCD * SCE * !Q)	0.00897	0.00873	0.01197
	(D * SCD * SCE * !Q)	0.01185	0.01160	0.01484
	(D * !SCE * Q)	0.00526	0.00513	0.00833
	(D * !SCE * Q)	0.00814	0.00801	0.01121
	(D * !SCE * !Q)	0.00894	0.00870	0.01195
	(D * !SCE * !Q)	0.01182	0.01157	0.01483
	(D * !SCD * SCE * Q)	0.01001	0.00990	0.01342
	(D * !SCD * SCE * Q)	0.01291	0.01279	0.01632
	(D * !SCD * SCE * !Q)	0.00521	0.00506	0.00827
	(D * !SCD * SCE * !Q)	0.00809	0.00794	0.01115
	(!D * SCD * SCE * Q)	0.00526	0.00513	0.00833
	(!D * SCD * SCE * Q)	0.00814	0.00801	0.01121
	(!D * SCD * SCE * !Q)	0.00900	0.00875	0.01200
	(!D * SCD * SCE * !Q)	0.01187	0.01161	0.01487
	(!D * !SCE * Q)	0.00999	0.00988	0.01339
	(!D * !SCE * Q)	0.01287	0.01276	0.01627
	(!D * !SCE * !Q)	0.00520	0.00506	0.00826
	(!D * !SCE * !Q)	0.00808	0.00794	0.01115
	(!D * !SCD * SCE * Q)	0.01001	0.00990	0.01342
	(!D * !SCD * SCE * Q)	0.01290	0.01278	0.01631
	(!D * !SCD * SCE * !Q)	0.00521	0.00506	0.00827
	(!D * !SCD * SCE * !Q)	0.00809	0.00794	0.01115

sky130_fd_sc_hs__sdfxtp_2	**(D * SCD * SCE * Q)**	0.00549	0.00534	0.00852
	(D * SCD * SCE * Q)	0.00840	0.00824	0.01141
	(D * SCD * SCE * !Q)	0.00951	0.00922	0.01245
	(D * SCD * SCE * !Q)	0.01241	0.01212	0.01535
	(D * !SCE * Q)	0.00549	0.00534	0.00852
	(D * !SCE * Q)	0.00840	0.00824	0.01141
	(D * !SCE * !Q)	0.00947	0.00919	0.01243
	(D * !SCE * !Q)	0.01239	0.01209	0.01533
	(D * !SCD * SCE * Q)	0.01031	0.01018	0.01368
	(D * !SCD * SCE * Q)	0.01324	0.01310	0.01661
	(D * !SCD * SCE * !Q)	0.00535	0.00517	0.00838
	(D * !SCD * SCE * !Q)	0.00826	0.00808	0.01129
	(!D * SCD * SCE * Q)	0.00549	0.00534	0.00852
	(!D * SCD * SCE * Q)	0.00840	0.00824	0.01142
	(!D * SCD * SCE * !Q)	0.00953	0.00924	0.01248
	(!D * SCD * SCE * !Q)	0.01243	0.01212	0.01537
	(!D * !SCE * Q)	0.01030	0.01017	0.01366
	(!D * !SCE * Q)	0.01321	0.01307	0.01657
	(!D * !SCE * !Q)	0.00534	0.00517	0.00837
	(!D * !SCE * !Q)	0.00825	0.00807	0.01128
	(!D * !SCD * SCE * Q)	0.01031	0.01018	0.01367
	(!D * !SCD * SCE * Q)	0.01323	0.01308	0.01659
	(!D * !SCD * SCE * !Q)	0.00535	0.00517	0.00838
	(!D * !SCD * SCE * !Q)	0.00826	0.00808	0.01129

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.00523	0.00509	0.00828
	(D * SCD * SCE * Q)	0.00812	0.00798	0.01117
	(D * SCD * SCE * !Q)	0.00901	0.00875	0.01198
	(D * SCD * SCE * !Q)	0.01190	0.01162	0.01487
	(D * !SCE * Q)	0.00523	0.00509	0.00828
	(D * !SCE * Q)	0.00812	0.00798	0.01117
	(D * !SCE * !Q)	0.00898	0.00872	0.01196
	(D * !SCE * !Q)	0.01187	0.01160	0.01485
	(D * !SCD * SCE * Q)	0.01030	0.01019	0.01371
	(D * !SCD * SCE * Q)	0.01321	0.01309	0.01662
	(D * !SCD * SCE * !Q)	0.00521	0.00506	0.00827
	(D * !SCD * SCE * !Q)	0.00810	0.00795	0.01116
	(!D * SCD * SCE * Q)	0.00523	0.00509	0.00828
	(!D * SCD * SCE * Q)	0.00812	0.00798	0.01117
	(!D * SCD * SCE * !Q)	0.00904	0.00878	0.01201
	(!D * SCD * SCE * !Q)	0.01192	0.01165	0.01489
	(!D * !SCE * Q)	0.01027	0.01017	0.01369
	(!D * !SCE * Q)	0.01317	0.01305	0.01658
	(!D * !SCE * !Q)	0.00521	0.00505	0.00826
	(!D * !SCE * !Q)	0.00810	0.00794	0.01115
	(!D * !SCD * SCE * Q)	0.01030	0.01019	0.01369
	(!D * !SCD * SCE * Q)	0.01320	0.01308	0.01659
	(!D * !SCD * SCE * !Q)	0.00521	0.00506	0.00826
	(!D * !SCD * SCE * !Q)	0.00810	0.00795	0.01116

SKY130_FD_SC_HS__SDLCLKPx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT			OUTPUT
GATE	SCE	CLK	GCLK
x	x	x	-

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdlclkp_1	25.57440
sky130_fd_sc_hs__sdlclkp_2	27.17280
sky130_fd_sc_hs__sdlclkp_4	31.96800

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	GATE	SCE	CLK	GCLK
sky130_fd_sc_hs__sdlclkp_1	0.00229	0.00209	0.00450	0.75991
sky130_fd_sc_hs__sdlclkp_2	0.00229	0.00208	0.00477	1.50399
sky130_fd_sc_hs__sdlclkp_4	0.00217	0.00197	0.00486	2.91681

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdlclkp_1	0.00000	0.32178	0.50287
sky130_fd_sc_hs__sdlclkp_2	0.00000	0.29916	0.44477
sky130_fd_sc_hs__sdlclkp_4	0.00000	0.31051	0.49363

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)	0.09939	0.75673	7.08218
sky130_fd_sc_hs__sdlclkp_2	CLK->GCLK (RR)	0.10242	0.66290	7.12249
sky130_fd_sc_hs__sdlclkp_4	CLK->GCLK (RR)	0.13297	0.65070	7.47454

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdlclkp_1	CLK->GCLK (FF)	0.12491	0.64516	4.24229
sky130_fd_sc_hs__sdlclkp_2	CLK->GCLK (FF)	0.14489	0.68054	4.63737
sky130_fd_sc_hs__sdlclkp_4	CLK->GCLK (FF)	0.19191	0.74970	5.16895

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)	-0.06020	-0.14666	-0.90796
	setup	CLK (R)	0.19858	0.26506	2.38816
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.05956	-0.14666	-0.90413
	setup	CLK (R)	0.19154	0.24350	1.99767
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.05968	-0.14915	-0.91731
	setup	CLK (R)	0.18986	0.22725	1.64936

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)	-0.22538	-0.33827	-2.47734
	setup	CLK (R)	0.29070	0.40832	2.89355
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.22399	-0.33215	-2.46943
	setup	CLK (R)	0.28108	0.39184	2.88409
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.23536	-0.34161	-2.48877
	setup	CLK (R)	0.28607	0.38011	2.91953

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)	-0.06020	-0.14666	-0.90796
	setup	CLK (R)	0.19858	0.26506	2.38816
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.05956	-0.14666	-0.90413
	setup	CLK (R)	0.19154	0.24350	1.99767
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.05968	-0.14915	-0.91731
	setup	CLK (R)	0.18986	0.22725	1.64936

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)	-0.22538	-0.33827	-2.47734
	setup	CLK (R)	0.29070	0.40832	2.89355
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.22399	-0.33215	-2.46943
	setup	CLK (R)	0.28108	0.39184	2.88409
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.23536	-0.34161	-2.48877
	setup	CLK (R)	0.28607	0.38011	2.91953

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)	-0.06356	-0.15909	-0.93243
	setup	CLK (R)	0.20342	0.27471	2.41491
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.06339	-0.15661	-0.92605
	setup	CLK (R)	0.19817	0.25110	2.04498
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.06508	-0.15909	-0.94026
	setup	CLK (R)	0.19442	0.23864	1.70252

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)	-0.24108	-0.36726	-2.82689
	setup	CLK (R)	0.30763	0.43991	3.01521
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.23772	-0.36306	-2.81659
	setup	CLK (R)	0.29587	0.41993	2.90728
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.25021	-0.37261	-2.83591
	setup	CLK (R)	0.30231	0.41299	2.93713

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)	-0.06356	-0.15909	-0.93243
	setup	CLK (R)	0.20342	0.27471	2.41491
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.06339	-0.15661	-0.92605
	setup	CLK (R)	0.19817	0.25110	2.04498
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.06508	-0.15909	-0.94026
	setup	CLK (R)	0.19442	0.23864	1.70252

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)	-0.24108	-0.36726	-2.82689
	setup	CLK (R)	0.30763	0.43991	3.01521
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.23772	-0.36306	-2.81659
	setup	CLK (R)	0.29587	0.41993	2.90728
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.25021	-0.37261	-2.83591
	setup	CLK (R)	0.30231	0.41299	2.93713

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 ()	0.07257	0.77881	16.50020
sky130_fd_sc_hs__sdlclkp_2	min_pulse_width	CLK ()	0.07836	0.77881	16.50020
sky130_fd_sc_hs__sdlclkp_4	min_pulse_width	CLK ()	0.10731	0.77881	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 ()	0.29544	0.77881	16.50020
	min_pulse_width	CLK ()	0.28387	0.77881	16.50020
sky130_fd_sc_hs__sdlclkp_2	min_pulse_width	CLK ()	0.28676	0.77881	16.50020
	min_pulse_width	CLK ()	0.27808	0.77881	16.50020
sky130_fd_sc_hs__sdlclkp_4	min_pulse_width	CLK ()	0.28676	0.77881	16.50020
	min_pulse_width	CLK ()	0.27808	0.77881	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	0.01132	0.01114	0.01878
	CLK	0.00675	0.00656	0.01423
sky130_fd_sc_hs__sdlclkp_2	CLK	0.01351	0.01348	0.02018
	CLK	0.00867	0.00864	0.01538
sky130_fd_sc_hs__sdlclkp_4	CLK	0.01749	0.01780	0.02395
	CLK	0.01255	0.01287	0.01928

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	CLK	0.01319	0.01356	0.02304
	CLK	0.01746	0.01782	0.02725
sky130_fd_sc_hs__sdlclkp_2	CLK	0.01464	0.01521	0.02419
	CLK	0.01916	0.01971	0.02834
sky130_fd_sc_hs__sdlclkp_4	CLK	0.01897	0.01999	0.02862
	CLK	0.02362	0.02463	0.03255

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	0.00097	0.00098	0.00098
	(CLK * SCE)	-0.00051	-0.00051	-0.00051
	(CLK * !SCE)	0.00315	0.00296	0.00649
	(CLK * !SCE)	0.00076	0.00056	0.00410
	(!CLK * SCE * !GCLK)	0.00095	0.00095	0.00095
	(!CLK * SCE * !GCLK)	-0.00054	-0.00054	-0.00054
	(!CLK * !SCE * !GCLK)	0.00797	0.00771	0.01034
	(!CLK * !SCE * !GCLK)	0.00584	0.00559	0.00822
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	0.00097	0.00097	0.00097
	(CLK * SCE)	-0.00051	-0.00051	-0.00051
	(CLK * !SCE)	0.00311	0.00297	0.00646
	(CLK * !SCE)	0.00074	0.00058	0.00408
	(!CLK * SCE * !GCLK)	0.00094	0.00095	0.00095
	(!CLK * SCE * !GCLK)	-0.00054	-0.00054	-0.00054
	(!CLK * !SCE * !GCLK)	0.00784	0.00759	0.01024
	(!CLK * !SCE * !GCLK)	0.00575	0.00549	0.00814
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	0.00094	0.00093	0.00094
	(CLK * SCE)	-0.00050	-0.00049	-0.00049
	(CLK * !SCE)	0.00302	0.00284	0.00634
	(CLK * !SCE)	0.00076	0.00056	0.00407
	(!CLK * SCE * !GCLK)	0.00092	0.00092	0.00092
	(!CLK * SCE * !GCLK)	-0.00052	-0.00051	-0.00051
	(!CLK * !SCE * !GCLK)	0.00788	0.00763	0.01025
	(!CLK * !SCE * !GCLK)	0.00588	0.00563	0.00825

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	-0.00094	-0.00094	-0.00097
	(CLK * SCE)	0.00055	0.00055	0.00053
	(CLK * !SCE)	0.00059	0.00073	0.00465
	(CLK * !SCE)	0.00297	0.00312	0.00704
	(!CLK * SCE * !GCLK)	-0.00091	-0.00091	-0.00094
	(!CLK * SCE * !GCLK)	0.00058	0.00057	0.00055
	(!CLK * !SCE * !GCLK)	0.00678	0.00676	0.01063
	(!CLK * !SCE * !GCLK)	0.00890	0.00888	0.01275
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	-0.00093	-0.00093	-0.00096
	(CLK * SCE)	0.00055	0.00055	0.00053
	(CLK * !SCE)	0.00061	0.00075	0.00468
	(CLK * !SCE)	0.00298	0.00313	0.00705
	(!CLK * SCE * !GCLK)	-0.00091	-0.00091	-0.00094
	(!CLK * SCE * !GCLK)	0.00058	0.00057	0.00055
	(!CLK * !SCE * !GCLK)	0.00681	0.00680	0.01067
	(!CLK * !SCE * !GCLK)	0.00890	0.00889	0.01276
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	-0.00089	-0.00089	-0.00092
	(CLK * SCE)	0.00054	0.00053	0.00051
	(CLK * !SCE)	0.00080	0.00095	0.00485
	(CLK * !SCE)	0.00306	0.00322	0.00712
	(!CLK * SCE * !GCLK)	-0.00088	-0.00088	-0.00091
	(!CLK * SCE * !GCLK)	0.00055	0.00055	0.00053
	(!CLK * !SCE * !GCLK)	0.00703	0.00700	0.01086
	(!CLK * !SCE * !GCLK)	0.00903	0.00900	0.01287

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	0.00095	0.00084	0.00082
	(CLK * GATE)	-0.00086	-0.00098	-0.00100
	(CLK * !GATE)	0.00396	0.00382	0.00557
	(CLK * !GATE)	0.00118	0.00102	0.00280
	(!CLK * GATE * !GCLK)	0.00095	0.00084	0.00082
	(!CLK * GATE * !GCLK)	-0.00086	-0.00099	-0.00100
	(!CLK * !GATE * !GCLK)	0.00878	0.00862	0.01004
	(!CLK * !GATE * !GCLK)	0.00626	0.00610	0.00753
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	0.00095	0.00083	0.00081
	(CLK * GATE)	-0.00086	-0.00098	-0.00100
	(CLK * !GATE)	0.00392	0.00378	0.00554
	(CLK * !GATE)	0.00116	0.00101	0.00278
	(!CLK * GATE * !GCLK)	0.00094	0.00083	0.00081
	(!CLK * GATE * !GCLK)	-0.00086	-0.00098	-0.00100
	(!CLK * !GATE * !GCLK)	0.00866	0.00850	0.00991
	(!CLK * !GATE * !GCLK)	0.00618	0.00601	0.00744
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	0.00091	0.00079	0.00077
	(CLK * GATE)	-0.00084	-0.00096	-0.00098
	(CLK * !GATE)	0.00385	0.00371	0.00546
	(CLK * !GATE)	0.00118	0.00104	0.00280
	(!CLK * GATE * !GCLK)	0.00091	0.00079	0.00077
	(!CLK * GATE * !GCLK)	-0.00084	-0.00097	-0.00098
	(!CLK * !GATE * !GCLK)	0.00870	0.00854	0.00994
	(!CLK * !GATE * !GCLK)	0.00630	0.00614	0.00756

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	-0.00080	-0.00081	-0.00080
	(CLK * GATE)	0.00100	0.00101	0.00101
	(CLK * !GATE)	0.00062	0.00050	0.00220
	(CLK * !GATE)	0.00340	0.00329	0.00498
	(!CLK * GATE * !GCLK)	-0.00080	-0.00081	-0.00080
	(!CLK * GATE * !GCLK)	0.00100	0.00101	0.00101
	(!CLK * !GATE * !GCLK)	0.00677	0.00662	0.00827
	(!CLK * !GATE * !GCLK)	0.00929	0.00914	0.01079
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	-0.00080	-0.00080	-0.00079
	(CLK * GATE)	0.00100	0.00101	0.00101
	(CLK * !GATE)	0.00065	0.00053	0.00222
	(CLK * !GATE)	0.00341	0.00330	0.00499
	(!CLK * GATE * !GCLK)	-0.00080	-0.00080	-0.00080
	(!CLK * GATE * !GCLK)	0.00100	0.00101	0.00101
	(!CLK * !GATE * !GCLK)	0.00681	0.00666	0.00831
	(!CLK * !GATE * !GCLK)	0.00929	0.00914	0.01079
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	-0.00076	-0.00076	-0.00076
	(CLK * GATE)	0.00098	0.00099	0.00099
	(CLK * !GATE)	0.00083	0.00072	0.00240
	(CLK * !GATE)	0.00349	0.00338	0.00506
	(!CLK * GATE * !GCLK)	-0.00076	-0.00076	-0.00076
	(!CLK * GATE * !GCLK)	0.00098	0.00099	0.00099
	(!CLK * !GATE * !GCLK)	0.00703	0.00688	0.00852
	(!CLK * !GATE * !GCLK)	0.00942	0.00927	0.01092

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(!GATE * !SCE * !GCLK)	0.00706	0.00684	0.01111
	(!GATE * !SCE * !GCLK)	0.00270	0.00246	0.00676
sky130_fd_sc_hs__sdlclkp_2	(!GATE * !SCE * !GCLK)	0.00713	0.00692	0.01122
	(!GATE * !SCE * !GCLK)	0.00255	0.00232	0.00662
sky130_fd_sc_hs__sdlclkp_4	(!GATE * !SCE * !GCLK)	0.00724	0.00704	0.01130
	(!GATE * !SCE * !GCLK)	0.00255	0.00232	0.00660

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(GATE * SCE * !GCLK)	0.00790	0.00788	0.01316
	(GATE * SCE * !GCLK)	0.01261	0.01258	0.01785
	(GATE * !SCE * !GCLK)	0.00789	0.00787	0.01313
	(GATE * !SCE * !GCLK)	0.01259	0.01258	0.01783
	(!GATE * SCE * !GCLK)	0.00793	0.00791	0.01318
	(!GATE * SCE * !GCLK)	0.01262	0.01260	0.01787
	(!GATE * !SCE * !GCLK)	0.00313	0.00318	0.00820
	(!GATE * !SCE * !GCLK)	0.00747	0.00755	0.01256
sky130_fd_sc_hs__sdlclkp_2	(GATE * SCE * !GCLK)	0.00766	0.00762	0.01292
	(GATE * SCE * !GCLK)	0.01263	0.01261	0.01790
	(GATE * !SCE * !GCLK)	0.00764	0.00762	0.01290
	(GATE * !SCE * !GCLK)	0.01262	0.01258	0.01787
	(!GATE * SCE * !GCLK)	0.00768	0.00766	0.01294
	(!GATE * SCE * !GCLK)	0.01265	0.01263	0.01791
	(!GATE * !SCE * !GCLK)	0.00297	0.00303	0.00805
	(!GATE * !SCE * !GCLK)	0.00755	0.00764	0.01266
sky130_fd_sc_hs__sdlclkp_4	(GATE * SCE * !GCLK)	0.00795	0.00790	0.01317
	(GATE * SCE * !GCLK)	0.01301	0.01297	0.01823
	(GATE * !SCE * !GCLK)	0.00794	0.00789	0.01315
	(GATE * !SCE * !GCLK)	0.01300	0.01294	0.01821
	(!GATE * SCE * !GCLK)	0.00798	0.00794	0.01320
	(!GATE * SCE * !GCLK)	0.01303	0.01297	0.01825
	(!GATE * !SCE * !GCLK)	0.00313	0.00317	0.00818
	(!GATE * !SCE * !GCLK)	0.00781	0.00787	0.01289

SKY130_FD_SC_HS__SEDFXBPx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT					OUTPUT	
D	DE	SCD	SCE	CLK	Q	Q_N
x	0	x	0	R	IQ	IQ_N
x	x	0	1	R	0	1
x	x	1	1	R	1	0
0	1	0	x	R	0	1
0	1	1	0	R	0	1
1	1	x	0	R	1	0
x	x	x	x	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__sedfxbp_1	54.34560
sky130_fd_sc_hs__sedfxbp_2	57.54240

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)	
	D	DE	SCD	SCE	CLK	Q	Q_N
sky130_fd_sc_hs__sedfxbp_1	0.00194	0.00370	0.00170	0.00374	0.00270	0.77268	0.77641
sky130_fd_sc_hs__sedfxbp_2	0.00203	0.00375	0.00173	0.00381	0.00271	1.37152	1.40809

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sedfxbp_1	0.00000	0.41768	0.76010
sky130_fd_sc_hs__sedfxbp_2	0.00000	0.42759	0.75269

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)	0.27266	0.95402	7.18731
sky130_fd_sc_hs__sedfxbp_2	CLK->Q (RR)	0.27923	0.86481	7.14044

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxbp_1	CLK->Q (RF)	0.26803	0.68922	2.81281
sky130_fd_sc_hs__sedfxbp_2	CLK->Q (RF)	0.31188	0.70704	2.60529

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)	0.39806	1.05776	7.35540
sky130_fd_sc_hs__sedfxbp_2	CLK->Q_N (RR)	0.48185	1.01994	7.30460

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)	0.38904	0.76527	2.81329
sky130_fd_sc_hs__sedfxbp_2	CLK->Q_N (RF)	0.42892	0.76501	2.69188

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)	-0.21404	-0.32797	-1.59984
	setup	CLK (R)	0.27157	0.36235	1.66899
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.21726	-0.33140	-1.60726
	setup	CLK (R)	0.27292	0.36459	1.67135

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)	-0.60448	-0.72079	-3.52401
	setup	CLK (R)	0.76156	0.83081	3.80740
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.60064	-0.71954	-3.52854
	setup	CLK (R)	0.75473	0.82727	3.75736

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)	-0.21404	-0.32797	-1.59984
	setup	CLK (R)	0.27157	0.36235	1.66899
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.21726	-0.33140	-1.60726
	setup	CLK (R)	0.27292	0.36459	1.67135

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)	-0.60448	-0.72079	-3.52401
	setup	CLK (R)	0.76156	0.83081	3.80740
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.60064	-0.71954	-3.52854
	setup	CLK (R)	0.75473	0.82727	3.75736

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)	-0.05381	-0.06935	-0.28857
	setup	CLK (R)	0.81357	0.80774	1.65667
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.05553	-0.07056	-0.29087
	setup	CLK (R)	0.80340	0.80439	1.63392

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)	-0.31121	-0.47427	-2.48063
	setup	CLK (R)	0.66286	0.77141	3.74355
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.31089	-0.47303	-2.48402
	setup	CLK (R)	0.65916	0.77071	3.74694

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)	-0.05381	-0.06935	-0.28857
	hold	CLK (R)	-0.23536	-0.28893	-0.63672
	setup	CLK (R)	0.26882	0.34354	1.63022
	setup	CLK (R)	0.81357	0.80774	1.65667
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.05553	-0.07056	-0.29087
	hold	CLK (R)	-0.23170	-0.28893	-0.64128
	setup	CLK (R)	0.27099	0.34579	1.63392
	setup	CLK (R)	0.80340	0.80439	1.38360

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)	-0.61611	-0.74253	-3.69652
	hold	CLK (R)	-0.31121	-0.47427	-2.48063
	setup	CLK (R)	0.66286	0.77141	3.74355
	setup	CLK (R)	0.33965	0.49146	2.50330
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.61146	-0.74591	-3.70342
	hold	CLK (R)	-0.31089	-0.47303	-2.48402
	setup	CLK (R)	0.65916	0.77071	3.74694
	setup	CLK (R)	0.33892	0.49062	2.50123

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)	-0.12271	-0.21664	-1.23751
	setup	CLK (R)	0.16085	0.24241	1.29411
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.12609	-0.21819	-1.24850
	setup	CLK (R)	0.16449	0.24413	1.29973

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)	-0.38804	-0.50719	-3.15742
	setup	CLK (R)	0.51660	0.60239	3.53474
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.38923	-0.50500	-3.17303
	setup	CLK (R)	0.51432	0.59988	3.46811

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)	-0.12271	-0.21664	-1.23751
	setup	CLK (R)	0.16085	0.24241	1.29411
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.12609	-0.21819	-1.24850
	setup	CLK (R)	0.16449	0.24413	1.29973

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)	-0.38804	-0.50719	-3.15742
	setup	CLK (R)	0.51660	0.60239	3.53474
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.38923	-0.50500	-3.17303
	setup	CLK (R)	0.51432	0.59988	3.46811

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)	0.00144	0.02798	0.29501
	setup	CLK (R)	0.53488	0.52045	1.50349
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	0.00171	0.02492	0.29541
	setup	CLK (R)	0.53279	0.51977	1.26337

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)	-0.22161	-0.39073	-2.43577
	setup	CLK (R)	0.54201	0.61101	3.21873
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.22787	-0.39917	-2.47169
	setup	CLK (R)	0.53673	0.60802	3.18765

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)	-0.40653	-0.42351	-0.42811
	hold	CLK (R)	0.00144	0.02798	0.29501
	hold	CLK (R)	-0.10759	-0.20694	-1.10331
	hold	CLK (R)	-0.16195	-0.21038	-0.39652
	setup	CLK (R)	0.53488	0.51977	1.50349
	setup	CLK (R)	0.14770	0.23334	1.16845
	setup	CLK (R)	0.14770	0.23334	1.16781
	setup	CLK (R)	0.53350	0.52045	1.47063
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.40777	-0.42777	-0.48147
	hold	CLK (R)	0.00171	0.02492	0.29541
	hold	CLK (R)	-0.10788	-0.20913	-1.11323
	hold	CLK (R)	-0.16667	-0.21377	-0.42174
	setup	CLK (R)	0.53143	0.51977	1.25397
	setup	CLK (R)	0.14641	0.23401	1.17115
	setup	CLK (R)	0.14612	0.23401	1.17131
	setup	CLK (R)	0.53279	0.51977	1.26337

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)	-0.22845	-0.39832	-2.45691
	hold	CLK (R)	-0.38144	-0.49173	-2.87796
	hold	CLK (R)	-0.37557	-0.48579	-2.89220
	hold	CLK (R)	-0.22161	-0.39073	-2.43577
	setup	CLK (R)	0.28499	0.42909	2.50776
	setup	CLK (R)	0.42752	0.51618	2.94203
	setup	CLK (R)	0.54201	0.61101	3.21873
	setup	CLK (R)	0.24827	0.40742	2.45971
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.23223	-0.40578	-2.49168
	hold	CLK (R)	-0.37761	-0.48859	-2.89550
	hold	CLK (R)	-0.37359	-0.48622	-2.90278
	hold	CLK (R)	-0.22787	-0.39917	-2.47169
	setup	CLK (R)	0.28985	0.43525	2.53687
	setup	CLK (R)	0.42651	0.51783	2.95342
	setup	CLK (R)	0.53673	0.60802	3.18765
	setup	CLK (R)	0.25309	0.41643	2.49189

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 ()	0.12178	0.77881	16.50020
	min_pulse_width	CLK ()	0.12178	0.77881	16.50020
	min_pulse_width	CLK ()	0.21729	0.77881	16.50020
	min_pulse_width	CLK ()	0.12178	0.77881	16.50020
	min_pulse_width	CLK ()	0.21729	0.77881	16.50020
	min_pulse_width	CLK ()	0.12178	0.77881	16.50020
	min_pulse_width	CLK ()	0.21440	0.77881	16.50020
	min_pulse_width	CLK ()	0.21440	0.77881	16.50020
	min_pulse_width	CLK ()	0.12178	0.77881	16.50020
	min_pulse_width	CLK ()	0.21729	0.77881	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.13625	0.77881	16.50020
	min_pulse_width	CLK ()	0.13625	0.77881	16.50020
	min_pulse_width	CLK ()	0.29255	0.77881	16.50020
	min_pulse_width	CLK ()	0.13625	0.77881	16.50020
	min_pulse_width	CLK ()	0.29255	0.77881	16.50020
	min_pulse_width	CLK ()	0.13625	0.77881	16.50020
	min_pulse_width	CLK ()	0.29255	0.77881	16.50020
	min_pulse_width	CLK ()	0.29255	0.77881	16.50020
	min_pulse_width	CLK ()	0.13625	0.77881	16.50020
	min_pulse_width	CLK ()	0.29255	0.77881	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 ()	0.21729	0.77881	16.50020
	min_pulse_width	CLK ()	0.23466	0.77881	16.50020
	min_pulse_width	CLK ()	0.40254	0.77881	16.50020
	min_pulse_width	CLK ()	0.21729	0.77881	16.50020
	min_pulse_width	CLK ()	0.40254	0.77881	16.50020
	min_pulse_width	CLK ()	0.21729	0.77881	16.50020
	min_pulse_width	CLK ()	0.44885	0.77881	16.50020
	min_pulse_width	CLK ()	0.40254	0.77881	16.50020
	min_pulse_width	CLK ()	0.21729	0.77881	16.50020
	min_pulse_width	CLK ()	0.40254	0.77881	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.22019	0.77881	16.50020
	min_pulse_width	CLK ()	0.23756	0.77881	16.50020
	min_pulse_width	CLK ()	0.39385	0.77881	16.50020
	min_pulse_width	CLK ()	0.21729	0.77881	16.50020
	min_pulse_width	CLK ()	0.39385	0.77881	16.50020
	min_pulse_width	CLK ()	0.21729	0.77881	16.50020
	min_pulse_width	CLK ()	0.43727	0.77881	16.50020
	min_pulse_width	CLK ()	0.39385	0.77881	16.50020
	min_pulse_width	CLK ()	0.21729	0.77881	16.50020
	min_pulse_width	CLK ()	0.39385	0.77881	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	0.01218	0.01217	0.01364
	CLK	0.01046	0.01045	0.01189
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01388	0.01404	0.01554
	CLK	0.01217	0.01233	0.01385

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.01104	0.01092	0.01217
	CLK	0.00999	0.00986	0.01109
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01273	0.01289	0.01409
	CLK	0.01166	0.01183	0.01304

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.01106	0.01094	0.01230
	CLK	0.01000	0.00989	0.01123
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01274	0.01289	0.01434
	CLK	0.01168	0.01183	0.01328

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.01215	0.01214	0.01343
	CLK	0.01042	0.01041	0.01171
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01384	0.01400	0.01533
	CLK	0.01213	0.01229	0.01362

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.00336	0.00318	0.00524
	(DE * SCE)	0.00127	0.00109	0.00316
	(CLK * DE * !SCE)	0.00690	0.00675	0.00823
	(CLK * DE * !SCE)	0.00419	0.00405	0.00552
	(CLK * !DE * !SCE)	0.00077	0.00078	0.00077
	(CLK * !DE * !SCE)	-0.00056	-0.00057	-0.00056
	(!DE * SCE)	0.00077	0.00078	0.00077
	(!DE * SCE)	-0.00056	-0.00057	-0.00056
	(!CLK * DE * !SCE * Q * !Q_N)	0.01187	0.01173	0.01306
	(!CLK * DE * !SCE * Q * !Q_N)	0.00916	0.00903	0.01035
	(!CLK * DE * !SCE * !Q * Q_N)	0.01159	0.01148	0.01271
	(!CLK * DE * !SCE * !Q * Q_N)	0.00885	0.00874	0.00997
	(!CLK * !DE * !SCE)	0.00077	0.00078	0.00077
	(!CLK * !DE * !SCE)	-0.00056	-0.00057	-0.00056
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.00341	0.00322	0.00530
	(DE * SCE)	0.00124	0.00105	0.00314
	(CLK * DE * !SCE)	0.00702	0.00687	0.00834
	(CLK * DE * !SCE)	0.00421	0.00406	0.00553
	(CLK * !DE * !SCE)	0.00080	0.00081	0.00080
	(CLK * !DE * !SCE)	-0.00059	-0.00060	-0.00059
	(!DE * SCE)	0.00080	0.00082	0.00081
	(!DE * SCE)	-0.00059	-0.00060	-0.00059
	(!CLK * DE * !SCE * Q * !Q_N)	0.01194	0.01180	0.01312
	(!CLK * DE * !SCE * Q * !Q_N)	0.00912	0.00899	0.01031
	(!CLK * DE * !SCE * !Q * Q_N)	0.01164	0.01152	0.01276
	(!CLK * DE * !SCE * !Q * Q_N)	0.00879	0.00868	0.00992
	(!CLK * !DE * !SCE)	0.00080	0.00081	0.00080
	(!CLK * !DE * !SCE)	-0.00059	-0.00060	-0.00059

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.00123	0.00118	0.00365
	(DE * SCE)	0.00336	0.00330	0.00576
	(CLK * DE * !SCE)	0.00228	0.00217	0.00435
	(CLK * DE * !SCE)	0.00500	0.00490	0.00708
	(CLK * !DE * !SCE)	-0.00025	-0.00024	-0.00024
	(CLK * !DE * !SCE)	0.00116	0.00116	0.00116
	(!DE * SCE)	-0.00024	-0.00024	-0.00024
	(!DE * SCE)	0.00116	0.00116	0.00116
	(!CLK * DE * !SCE * Q * !Q_N)	0.00681	0.00675	0.00943
	(!CLK * DE * !SCE * Q * !Q_N)	0.00952	0.00945	0.01214
	(!CLK * DE * !SCE * !Q * Q_N)	0.00731	0.00725	0.01004
	(!CLK * DE * !SCE * !Q * Q_N)	0.01005	0.00998	0.01278
	(!CLK * !DE * !SCE)	-0.00025	-0.00024	-0.00024
	(!CLK * !DE * !SCE)	0.00116	0.00116	0.00116
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.00107	0.00102	0.00349
	(DE * SCE)	0.00328	0.00322	0.00569
	(CLK * DE * !SCE)	0.00218	0.00206	0.00424
	(CLK * DE * !SCE)	0.00501	0.00490	0.00708
	(CLK * !DE * !SCE)	-0.00025	-0.00025	-0.00025
	(CLK * !DE * !SCE)	0.00122	0.00122	0.00121
	(!DE * SCE)	-0.00025	-0.00025	-0.00025
	(!DE * SCE)	0.00122	0.00122	0.00122
	(!CLK * DE * !SCE * Q * !Q_N)	0.00668	0.00661	0.00929
	(!CLK * DE * !SCE * Q * !Q_N)	0.00950	0.00942	0.01210
	(!CLK * DE * !SCE * !Q * Q_N)	0.00719	0.00713	0.00990
	(!CLK * DE * !SCE * !Q * Q_N)	0.01003	0.00997	0.01274
	(!CLK * !DE * !SCE)	-0.00025	-0.00025	-0.00025
	(!CLK * !DE * !SCE)	0.00122	0.00122	0.00121

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.00625	0.00593	0.00934
	SCE	0.00170	0.00136	0.00477
	(CLK * !SCE)	0.00966	0.00936	0.01253
	(CLK * !SCE)	0.00448	0.00416	0.00735
	(!CLK * D * !SCE * Q * !Q_N)	0.00384	0.00358	0.00597
	(!CLK * D * !SCE * Q * !Q_N)	0.00005	-0.00021	0.00219
	(!CLK * D * !SCE * !Q * Q_N)	0.01462	0.01434	0.01748
	(!CLK * D * !SCE * !Q * Q_N)	0.00944	0.00915	0.01230
	(!CLK * !D * !SCE * Q * !Q_N)	0.01135	0.01117	0.01351
	(!CLK * !D * !SCE * Q * !Q_N)	0.00900	0.00879	0.01113
	(!CLK * !D * !SCE * !Q * Q_N)	0.00379	0.00361	0.00601
	(!CLK * !D * !SCE * !Q * Q_N)	0.00005	-0.00014	0.00226
sky130_fd_sc_hs__sedfxbp_2	SCE	0.00627	0.00595	0.00937
	SCE	0.00163	0.00130	0.00473
	(CLK * !SCE)	0.00976	0.00947	0.01264
	(CLK * !SCE)	0.00448	0.00417	0.00736
	(!CLK * D * !SCE * Q * !Q_N)	0.00381	0.00356	0.00597
	(!CLK * D * !SCE * Q * !Q_N)	-0.00001	-0.00029	0.00213
	(!CLK * D * !SCE * !Q * Q_N)	0.01461	0.01433	0.01749
	(!CLK * D * !SCE * !Q * Q_N)	0.00933	0.00904	0.01220
	(!CLK * !D * !SCE * Q * !Q_N)	0.01124	0.01105	0.01341
	(!CLK * !D * !SCE * Q * !Q_N)	0.00886	0.00865	0.01101
	(!CLK * !D * !SCE * !Q * Q_N)	0.00379	0.00361	0.00602
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00001	-0.00020	0.00222

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.00181	0.00168	0.00555
	SCE	0.00637	0.00625	0.01009
	(CLK * !SCE)	0.00695	0.00687	0.00951
	(CLK * !SCE)	0.00930	0.00924	0.01190
	(!CLK * D * !SCE * Q * !Q_N)	-0.00001	-0.00005	0.00269
	(!CLK * D * !SCE * Q * !Q_N)	0.00376	0.00372	0.00647
	(!CLK * D * !SCE * !Q * Q_N)	0.00783	0.00770	0.01173
	(!CLK * D * !SCE * !Q * Q_N)	0.01302	0.01289	0.01689
	(!CLK * !D * !SCE * Q * !Q_N)	0.01192	0.01185	0.01447
	(!CLK * !D * !SCE * Q * !Q_N)	0.01427	0.01422	0.01686
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00010	-0.00015	0.00262
	(!CLK * !D * !SCE * !Q * Q_N)	0.00362	0.00360	0.00638
sky130_fd_sc_hs__sedfxbp_2	SCE	0.00164	0.00151	0.00540
	SCE	0.00629	0.00616	0.01003
	(CLK * !SCE)	0.00700	0.00692	0.00957
	(CLK * !SCE)	0.00937	0.00931	0.01199
	(!CLK * D * !SCE * Q * !Q_N)	-0.00004	-0.00008	0.00267
	(!CLK * D * !SCE * Q * !Q_N)	0.00379	0.00376	0.00651
	(!CLK * D * !SCE * !Q * Q_N)	0.00770	0.00758	0.01161
	(!CLK * D * !SCE * !Q * Q_N)	0.01299	0.01286	0.01687
	(!CLK * !D * !SCE * Q * !Q_N)	0.01192	0.01184	0.01447
	(!CLK * !D * !SCE * Q * !Q_N)	0.01428	0.01422	0.01688
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00015	-0.00020	0.00258
	(!CLK * !D * !SCE * !Q * Q_N)	0.00364	0.00362	0.00640

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.00381	0.00371	0.00459
	(CLK * SCE)	0.00163	0.00152	0.00241
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00879	0.00868	0.00951
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00661	0.00650	0.00732
	!SCE	0.00072	0.00063	0.00062
	!SCE	-0.00075	-0.00084	-0.00085
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.00389	0.00379	0.00467
	(CLK * SCE)	0.00166	0.00155	0.00244
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00877	0.00866	0.00949
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00654	0.00643	0.00726
	!SCE	0.00071	0.00063	0.00061
	!SCE	-0.00079	-0.00088	-0.00088

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.00196	0.00187	0.00288
	(CLK * SCE)	0.00414	0.00406	0.00506
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00694	0.00684	0.00807
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00912	0.00902	0.01024
	!SCE	-0.00059	-0.00061	-0.00061
	!SCE	0.00086	0.00087	0.00087
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.00193	0.00185	0.00286
	(CLK * SCE)	0.00417	0.00408	0.00508
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00690	0.00679	0.00803
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00913	0.00903	0.01025
	!SCE	-0.00058	-0.00060	-0.00060
	!SCE	0.00089	0.00090	0.00090

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D)	0.00575	0.00552	0.00996
	(CLK * D)	0.00178	0.00154	0.00598
	(CLK * !D)	0.00600	0.00577	0.01020
	(CLK * !D)	0.00204	0.00179	0.00622
	(!CLK * D * SCD * Q * !Q_N)	0.00338	0.00325	0.00567
	(!CLK * D * SCD * Q * !Q_N)	0.00003	-0.00012	0.00231
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00325	0.00312	0.00554
	(!CLK * D * DE * SCD * !Q * Q_N)	-0.00010	-0.00025	0.00219
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01094	0.01077	0.01342
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00819	0.00802	0.01063
	(!CLK * D * !SCD * Q * !Q_N)	0.01095	0.01078	0.01344
	(!CLK * D * !SCD * Q * !Q_N)	0.00820	0.00802	0.01066
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01074	0.01054	0.01462
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00677	0.00657	0.01064
sky130_fd_sc_hs__sedfxbp_1	**(!CLK * D * !DE * !SCD * !Q * Q_N)**	0.00368	0.00358	0.00599
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00031	0.00018	0.00259
	(!CLK * !D * SCD * !Q * Q_N)	0.01073	0.01055	0.01461
	(!CLK * !D * SCD * !Q * Q_N)	0.00677	0.00657	0.01064
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01100	0.01080	0.01485
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00704	0.00683	0.01087
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00381	0.00370	0.00612
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00044	0.00031	0.00272
	(!CLK * !D * !SCD * !Q * Q_N)	0.00368	0.00358	0.00599
	(!CLK * !D * !SCD * !Q * Q_N)	0.00031	0.00018	0.00260
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00338	0.00325	0.00567
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00003	-0.00012	0.00231
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01096	0.01078	0.01344
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00820	0.00802	0.01065

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.00584	0.00560	0.01002
	(CLK * D)	0.00175	0.00149	0.00592
	(CLK * !D)	0.00607	0.00583	0.01023
	(CLK * !D)	0.00198	0.00172	0.00614
	(!CLK * D * SCD * Q * !Q_N)	0.00344	0.00330	0.00570
	(!CLK * D * SCD * Q * !Q_N)	-0.00000	-0.00017	0.00225
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00333	0.00318	0.00558
	(!CLK * D * DE * SCD * !Q * Q_N)	-0.00012	-0.00028	0.00213
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01103	0.01085	0.01346
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00820	0.00802	0.01060
	(!CLK * D * !SCD * Q * !Q_N)	0.01100	0.01082	0.01344
	(!CLK * D * !SCD * Q * !Q_N)	0.00816	0.00798	0.01057
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01072	0.01050	0.01459
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00663	0.00640	0.01049
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00379	0.00367	0.00607
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00032	0.00018	0.00258
	(!CLK * !D * SCD * !Q * Q_N)	0.01072	0.01051	0.01458
	(!CLK * !D * SCD * !Q * Q_N)	0.00663	0.00641	0.01048
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01101	0.01079	0.01483
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00692	0.00669	0.01074
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00391	0.00379	0.00619
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00044	0.00030	0.00269
	(!CLK * !D * !SCD * !Q * Q_N)	0.00380	0.00367	0.00607
	(!CLK * !D * !SCD * !Q * Q_N)	0.00032	0.00018	0.00258
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00344	0.00330	0.00570
	(!CLK * !D * !DE * SCD * Q * !Q_N)	-0.00001	-0.00017	0.00224
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01100	0.01080	0.01343
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00817	0.00798	0.01057

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxbp_1	**(CLK * D)**	0.00364	0.00405	0.00893
	(CLK * D)	0.00641	0.00681	0.01167
	(CLK * !D)	0.00364	0.00404	0.00892
	(CLK * !D)	0.00640	0.00681	0.01167
	(!CLK * D * SCD * Q * !Q_N)	0.00006	0.00009	0.00291
	(!CLK * D * SCD * Q * !Q_N)	0.00340	0.00345	0.00626
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00018	0.00022	0.00304
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00353	0.00358	0.00639
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00855	0.00892	0.01376
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01132	0.01168	0.01652
	(!CLK * D * !SCD * Q * !Q_N)	0.00856	0.00892	0.01374
	(!CLK * D * !SCD * Q * !Q_N)	0.01132	0.01169	0.01649
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00594	0.00583	0.01136
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00990	0.00981	0.01533
	(!CLK * D * !DE * !SCD * !Q * Q_N)	-0.00018	-0.00016	0.00263
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00320	0.00323	0.00602
	(!CLK * !D * SCD * !Q * Q_N)	0.00594	0.00584	0.01137
	(!CLK * !D * SCD * !Q * Q_N)	0.00990	0.00982	0.01533
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00570	0.00560	0.01114
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00966	0.00957	0.01512
	(!CLK * !D * DE * !SCD * Q * !Q_N)	-0.00030	-0.00028	0.00250
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00308	0.00311	0.00589
	(!CLK * !D * !SCD * !Q * Q_N)	-0.00017	-0.00016	0.00263
	(!CLK * !D * !SCD * !Q * Q_N)	0.00321	0.00324	0.00602
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00006	0.00009	0.00291
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00340	0.00345	0.00626
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00856	0.00894	0.01374
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01132	0.01171	0.01649

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.00380	0.00419	0.00907
	(CLK * D)	0.00664	0.00705	0.01189
	(CLK * !D)	0.00380	0.00419	0.00907
	(CLK * !D)	0.00664	0.00704	0.01189
	(!CLK * D * SCD * Q * !Q_N)	0.00013	0.00015	0.00296
	(!CLK * D * SCD * Q * !Q_N)	0.00357	0.00360	0.00640
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00024	0.00027	0.00307
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00368	0.00372	0.00652
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00861	0.00896	0.01379
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01144	0.01180	0.01662
	(!CLK * D * !SCD * Q * !Q_N)	0.00866	0.00901	0.01382
	(!CLK * D * !SCD * Q * !Q_N)	0.01150	0.01185	0.01665
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00595	0.00584	0.01135
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01002	0.00994	0.01543
	(!CLK * D * !DE * !SCD * !Q * Q_N)	-0.00016	-0.00015	0.00262
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00332	0.00333	0.00611
	(!CLK * !D * SCD * !Q * Q_N)	0.00596	0.00585	0.01134
	(!CLK * !D * SCD * !Q * Q_N)	0.01004	0.00994	0.01544
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00568	0.00558	0.01110
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00976	0.00968	0.01518
	(!CLK * !D * DE * !SCD * Q * !Q_N)	-0.00027	-0.00027	0.00251
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00321	0.00322	0.00600
	(!CLK * !D * !SCD * !Q * Q_N)	-0.00015	-0.00015	0.00262
	(!CLK * !D * !SCD * !Q * Q_N)	0.00332	0.00333	0.00611
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00012	0.00015	0.00296
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00356	0.00360	0.00640
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00866	0.00901	0.01382
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01150	0.01186	0.01665

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)	0.00984	0.00948	0.01210
	(SCD * SCE * Q * !Q_N)	0.00706	0.00668	0.00931
	(D * !SCE * Q * !Q_N)	0.00984	0.00947	0.01210
	(D * !SCE * Q * !Q_N)	0.00705	0.00667	0.00931
	(D * !DE * !SCE * !Q * Q_N)	0.00982	0.00943	0.01211
	(D * !DE * !SCE * !Q * Q_N)	0.00704	0.00663	0.00932
	(!SCD * SCE * !Q * Q_N)	0.00983	0.00944	0.01212
	(!SCD * SCE * !Q * Q_N)	0.00705	0.00664	0.00933
	(!D * !SCE * !Q * Q_N)	0.00983	0.00943	0.01212
	(!D * !SCE * !Q * Q_N)	0.00704	0.00663	0.00932
	(!D * !DE * !SCE * Q * !Q_N)	0.00984	0.00947	0.01210
	(!D * !DE * !SCE * Q * !Q_N)	0.00705	0.00667	0.00931
sky130_fd_sc_hs__sedfxbp_2	(SCD * SCE * Q * !Q_N)	0.00979	0.00942	0.01206
	(SCD * SCE * Q * !Q_N)	0.00701	0.00662	0.00928
	(D * !SCE * Q * !Q_N)	0.00978	0.00940	0.01207
	(D * !SCE * Q * !Q_N)	0.00700	0.00661	0.00928
	(D * !DE * !SCE * !Q * Q_N)	0.00985	0.00944	0.01214
	(D * !DE * !SCE * !Q * Q_N)	0.00707	0.00665	0.00936
	(!SCD * SCE * !Q * Q_N)	0.00986	0.00946	0.01217
	(!SCD * SCE * !Q * Q_N)	0.00708	0.00666	0.00938
	(!D * !SCE * !Q * Q_N)	0.00985	0.00945	0.01214
	(!D * !SCE * !Q * Q_N)	0.00707	0.00665	0.00936
	(!D * !DE * !SCE * Q * !Q_N)	0.00978	0.00940	0.01205
	(!D * !DE * !SCE * Q * !Q_N)	0.00700	0.00661	0.00927

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)	0.00539	0.00525	0.00843
	(SCD * SCE * Q * !Q_N)	0.00819	0.00804	0.01121
	(SCD * SCE * !Q * Q_N)	0.01036	0.01016	0.01327
	(SCD * SCE * !Q * Q_N)	0.01316	0.01295	0.01606
	(D * DE * !SCE * !Q * Q_N)	0.01033	0.01013	0.01322
	(D * DE * !SCE * !Q * Q_N)	0.01312	0.01291	0.01602
	(D * !SCE * Q * !Q_N)	0.00540	0.00525	0.00843
	(D * !SCE * Q * !Q_N)	0.00819	0.00804	0.01122
	(D * !DE * !SCE * !Q * Q_N)	0.00538	0.00528	0.00838
	(D * !DE * !SCE * !Q * Q_N)	0.00818	0.00806	0.01117
	(!SCD * SCE * Q * !Q_N)	0.01123	0.01115	0.01469
	(!SCD * SCE * Q * !Q_N)	0.01403	0.01395	0.01750
	(!SCD * SCE * !Q * Q_N)	0.00538	0.00527	0.00838
	(!SCD * SCE * !Q * Q_N)	0.00818	0.00806	0.01117
	(!D * DE * !SCE * Q * !Q_N)	0.01125	0.01115	0.01471
	(!D * DE * !SCE * Q * !Q_N)	0.01404	0.01394	0.01750
	(!D * !SCE * !Q * Q_N)	0.00538	0.00528	0.00838
	(!D * !SCE * !Q * Q_N)	0.00818	0.00806	0.01118
	(!D * !DE * !SCE * Q * !Q_N)	0.00540	0.00525	0.00843
	(!D * !DE * !SCE * Q * !Q_N)	0.00819	0.00804	0.01122

sky130_fd_sc_hs__sedfxbp_2	**(SCD * SCE * Q * !Q_N)**	0.00548	0.00536	0.00853
	(SCD * SCE * Q * !Q_N)	0.00827	0.00815	0.01132
	(SCD * SCE * !Q * Q_N)	0.01028	0.01003	0.01319
	(SCD * SCE * !Q * Q_N)	0.01306	0.01281	0.01598
	(D * DE * !SCE * !Q * Q_N)	0.01025	0.01001	0.01316
	(D * DE * !SCE * !Q * Q_N)	0.01303	0.01278	0.01594
	(D * !SCE * Q * !Q_N)	0.00549	0.00537	0.00854
	(D * !SCE * Q * !Q_N)	0.00828	0.00816	0.01132
	(D * !DE * !SCE * !Q * Q_N)	0.00539	0.00526	0.00841
	(D * !DE * !SCE * !Q * Q_N)	0.00818	0.00805	0.01120
	(!SCD * SCE * Q * !Q_N)	0.01127	0.01123	0.01475
	(!SCD * SCE * Q * !Q_N)	0.01407	0.01402	0.01756
	(!SCD * SCE * !Q * Q_N)	0.00539	0.00525	0.00840
	(!SCD * SCE * !Q * Q_N)	0.00817	0.00805	0.01119
	(!D * DE * !SCE * Q * !Q_N)	0.01130	0.01125	0.01473
	(!D * DE * !SCE * Q * !Q_N)	0.01408	0.01403	0.01751
	(!D * !SCE * !Q * Q_N)	0.00540	0.00526	0.00841
	(!D * !SCE * !Q * Q_N)	0.00818	0.00805	0.01120
	(!D * !DE * !SCE * Q * !Q_N)	0.00549	0.00537	0.00854
	(!D * !DE * !SCE * Q * !Q_N)	0.00828	0.00816	0.01132

SKY130_FD_SC_HS__SEDFXTPx

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT					OUTPUT
D	DE	SCD	SCE	CLK	Q
x	0	x	0	R	IQ
x	x	0	1	R	0
x	x	1	1	R	1
0	1	0	x	R	0
0	1	1	0	R	0
1	1	x	0	R	1
x	x	x	x	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__sedfxtp_1	51.14880
sky130_fd_sc_hs__sedfxtp_2	54.34560
sky130_fd_sc_hs__sedfxtp_4	55.94400

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	D	DE	SCD	SCE	CLK	Q
sky130_fd_sc_hs__sedfxtp_1	0.00195	0.00377	0.00175	0.00369	0.00269	0.77667
sky130_fd_sc_hs__sedfxtp_2	0.00205	0.00380	0.00177	0.00374	0.00271	1.52895
sky130_fd_sc_hs__sedfxtp_4	0.00205	0.00378	0.00177	0.00372	0.00281	2.95682

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sedfxtp_1	0.00000	0.42833	0.81030
sky130_fd_sc_hs__sedfxtp_2	0.00000	0.44265	0.83473
sky130_fd_sc_hs__sedfxtp_4	0.00000	0.47129	0.88360

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)**	0.26657	0.94535	7.20856
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RR)**	0.27312	0.84864	7.21291
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RR)**	0.30595	0.80753	7.33275

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxtp_1	**CLK->Q (RF)**	0.25116	0.65357	2.72271
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RF)**	0.29535	0.69162	2.81910
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RF)**	0.39719	0.79827	3.05991

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)	-0.21074	-0.32775	-1.60096
	setup	CLK (R)	0.27259	0.36059	1.67027
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.21451	-0.33127	-1.61065
	setup	CLK (R)	0.27373	0.36263	1.67371
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.21667	-0.33073	-1.62933
	setup	CLK (R)	0.26867	0.36263	1.68051

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)	-0.60300	-0.72125	-3.52795
	setup	CLK (R)	0.75891	0.83046	3.81185
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.60115	-0.71571	-3.52179
	setup	CLK (R)	0.75672	0.82840	3.78650
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.60775	-0.72020	-3.54572
	setup	CLK (R)	0.74899	0.82554	3.73574

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)	-0.05216	-0.06768	-0.29089
	setup	CLK (R)	0.80822	0.80678	1.81133
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.05550	-0.07056	-0.28896
	setup	CLK (R)	0.80681	0.80273	1.63674
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.05150	-0.07056	-0.29613
	setup	CLK (R)	0.79601	0.79563	1.64413

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)	-0.31021	-0.47518	-2.49149
	setup	CLK (R)	0.66580	0.77697	3.74924
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.31569	-0.47652	-2.49037
	setup	CLK (R)	0.66274	0.77141	3.74876
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.31505	-0.47879	-2.49524
	setup	CLK (R)	0.66387	0.77926	3.76435

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)	-0.05216	-0.06768	-0.29089
	hold	CLK (R)	-0.23408	-0.29452	-0.64723
	setup	CLK (R)	0.27070	0.34513	1.63320
	setup	CLK (R)	0.80822	0.80678	1.81133
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.05550	-0.07056	-0.28896
	hold	CLK (R)	-0.23429	-0.28498	-0.63713
	setup	CLK (R)	0.27038	0.34701	1.63674
	setup	CLK (R)	0.80681	0.80273	1.63545
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.05150	-0.07056	-0.29613
	hold	CLK (R)	-0.23202	-0.28893	-0.64968
	setup	CLK (R)	0.27013	0.34607	1.64413
	setup	CLK (R)	0.79601	0.79563	1.19467

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)	-0.61477	-0.74987	-3.70280
	hold	CLK (R)	-0.31021	-0.47518	-2.49149
	setup	CLK (R)	0.66580	0.77697	3.74924
	setup	CLK (R)	0.33857	0.49405	2.51125
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.61357	-0.74491	-3.70084
	hold	CLK (R)	-0.31569	-0.47652	-2.49037
	setup	CLK (R)	0.66274	0.77141	3.74876
	setup	CLK (R)	0.34148	0.49484	2.50798
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.61713	-0.74847	-3.72406
	hold	CLK (R)	-0.31505	-0.47879	-2.49524
	setup	CLK (R)	0.66387	0.77926	3.76435
	setup	CLK (R)	0.34269	0.49323	2.51096

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)	-0.12499	-0.21990	-1.24693
	setup	CLK (R)	0.16111	0.24411	1.30556
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.12379	-0.21946	-1.24457
	setup	CLK (R)	0.16314	0.24460	1.30017
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.12744	-0.22113	-1.26863
	setup	CLK (R)	0.16199	0.24294	1.31429

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)	-0.38963	-0.50872	-3.17263
	setup	CLK (R)	0.51976	0.60799	3.58870
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.38511	-0.50527	-3.15536
	setup	CLK (R)	0.51411	0.60029	3.52159
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.39133	-0.51212	-3.20540
	setup	CLK (R)	0.50817	0.59703	3.44578

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)	0.00613	0.02751	0.29976
	setup	CLK (R)	0.54087	0.52949	1.59696
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	0.00365	0.02964	0.30284
	setup	CLK (R)	0.53272	0.52045	1.43053
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	0.00418	0.02751	0.29386
	setup	CLK (R)	0.52643	0.51977	1.18966

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)	-0.22340	-0.39748	-2.47233
	setup	CLK (R)	0.53837	0.61255	3.23784
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.22612	-0.39644	-2.47058
	setup	CLK (R)	0.53218	0.60570	3.20318
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.22819	-0.40041	-2.47911
	setup	CLK (R)	0.53015	0.60308	3.16764

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)	-0.41209	-0.42945	-0.42342
	hold	CLK (R)	0.00613	0.02751	0.29976
	hold	CLK (R)	-0.10590	-0.20754	-1.10502
	hold	CLK (R)	-0.16602	-0.22140	-0.42401
	setup	CLK (R)	0.53721	0.52709	1.59696
	setup	CLK (R)	0.14602	0.23401	1.17066
	setup	CLK (R)	0.14591	0.23401	1.17073
	setup	CLK (R)	0.54087	0.52949	1.59572
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.40438	-0.42642	-0.41692
	hold	CLK (R)	0.00365	0.02964	0.30284
	hold	CLK (R)	-0.10995	-0.20818	-1.11096
	hold	CLK (R)	-0.16455	-0.21038	-0.41354
	setup	CLK (R)	0.53272	0.52045	1.43053
	setup	CLK (R)	0.14517	0.23393	1.16864
	setup	CLK (R)	0.14506	0.23378	1.16884
	setup	CLK (R)	0.53156	0.52045	1.42020
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.41313	-0.43216	-0.49410
	hold	CLK (R)	0.00418	0.02751	0.29386
	hold	CLK (R)	-0.11055	-0.21022	-1.13273
	hold	CLK (R)	-0.16721	-0.21411	-0.42936
	setup	CLK (R)	0.52616	0.51577	0.97635
	setup	CLK (R)	0.14583	0.23401	1.18966
	setup	CLK (R)	0.14575	0.23401	1.18935
	setup	CLK (R)	0.52643	0.51977	0.97340

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)	-0.23207	-0.40510	-2.49091
	hold	CLK (R)	-0.38136	-0.48944	-2.88736
	hold	CLK (R)	-0.37603	-0.48666	-2.90036
	hold	CLK (R)	-0.22340	-0.39748	-2.47233
	setup	CLK (R)	0.28731	0.43488	2.54072
	setup	CLK (R)	0.43008	0.51834	2.95562
	setup	CLK (R)	0.53837	0.61255	3.23784
	setup	CLK (R)	0.25117	0.41478	2.49199
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.23087	-0.40614	-2.49095
	hold	CLK (R)	-0.37847	-0.48565	-2.87619
	hold	CLK (R)	-0.37055	-0.48257	-2.89420
	hold	CLK (R)	-0.22612	-0.39644	-2.47058
	setup	CLK (R)	0.28852	0.43525	2.53691
	setup	CLK (R)	0.42539	0.51548	2.94620
	setup	CLK (R)	0.53218	0.60570	3.20318
	setup	CLK (R)	0.25144	0.41465	2.48851
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.23616	-0.40841	-2.50307
	hold	CLK (R)	-0.38359	-0.49311	-2.91138
	hold	CLK (R)	-0.37787	-0.48839	-2.91962
	hold	CLK (R)	-0.22819	-0.40041	-2.47911
	setup	CLK (R)	0.28377	0.43427	2.54118
	setup	CLK (R)	0.43065	0.51931	2.96693
	setup	CLK (R)	0.53015	0.60308	3.16764
	setup	CLK (R)	0.25265	0.41454	2.49287

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 ()**	0.11889	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.11889	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.20282	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.11889	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.20282	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.11889	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.19993	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.19993	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.11889	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.20282	0.77881	16.50020
sky130_fd_sc_hs__sedfxtp_2	**min_pulse_width**	**CLK ()**	0.13046	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.13046	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.27518	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.13046	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.27518	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.13046	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.27229	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.27229	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.13046	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.27518	0.77881	16.50020
sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK ()**	0.15651	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.15651	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.40832	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.15651	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.40832	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.15651	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.40543	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.40543	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.15651	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.40832	0.77881	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 ()	0.21729	0.77881	16.50020
	min_pulse_width	CLK ()	0.23466	0.77881	16.50020
	min_pulse_width	CLK ()	0.39675	0.77881	16.50020
	min_pulse_width	CLK ()	0.21729	0.77881	16.50020
	min_pulse_width	CLK ()	0.39675	0.77881	16.50020
	min_pulse_width	CLK ()	0.21729	0.77881	16.50020
	min_pulse_width	CLK ()	0.44016	0.77881	16.50020
	min_pulse_width	CLK ()	0.39675	0.77881	16.50020
	min_pulse_width	CLK ()	0.21729	0.77881	16.50020
	min_pulse_width	CLK ()	0.39675	0.77881	16.50020
sky130_fd_sc_hs__sedfxtp_2	min_pulse_width	CLK ()	0.21729	0.77881	16.50020
	min_pulse_width	CLK ()	0.23466	0.77881	16.50020
	min_pulse_width	CLK ()	0.39385	0.77881	16.50020
	min_pulse_width	CLK ()	0.21729	0.77881	16.50020
	min_pulse_width	CLK ()	0.39385	0.77881	16.50020
	min_pulse_width	CLK ()	0.21729	0.77881	16.50020
	min_pulse_width	CLK ()	0.43727	0.77881	16.50020
	min_pulse_width	CLK ()	0.39385	0.77881	16.50020
	min_pulse_width	CLK ()	0.21729	0.77881	16.50020
	min_pulse_width	CLK ()	0.39385	0.77881	16.50020

sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK ()**	0.21440	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.22887	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.37938	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.21440	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.37938	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.21440	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.41990	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.37938	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.21440	0.77881	16.50020
	min_pulse_width	**CLK ()**	0.37938	0.77881	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	0.02115	0.02104	0.02391
	CLK	0.01781	0.01770	0.02062
sky130_fd_sc_hs__sedfxtp_2	CLK	0.02316	0.02330	0.02623
	CLK	0.01977	0.01992	0.02297
sky130_fd_sc_hs__sedfxtp_4	CLK	0.02690	0.02744	0.03069
	CLK	0.02344	0.02398	0.02741

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	CLK	0.01910	0.01885	0.02146
	CLK	0.01694	0.01669	0.01929
sky130_fd_sc_hs__sedfxtp_2	CLK	0.02102	0.02105	0.02397
	CLK	0.01886	0.01890	0.02161
sky130_fd_sc_hs__sedfxtp_4	CLK	0.02425	0.02460	0.02809
	CLK	0.02199	0.02234	0.02527

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.00332	0.00314	0.00521
	(DE * SCE)	0.00122	0.00105	0.00313
	(CLK * DE * !SCE)	0.00689	0.00675	0.00823
	(CLK * DE * !SCE)	0.00416	0.00402	0.00550
	(CLK * !DE * !SCE)	0.00077	0.00078	0.00077
	(CLK * !DE * !SCE)	-0.00057	-0.00058	-0.00057
	(!DE * SCE)	0.00078	0.00079	0.00078
	(!DE * SCE)	-0.00057	-0.00058	-0.00057
	(!CLK * DE * !SCE * Q)	0.01188	0.01176	0.01308
	(!CLK * DE * !SCE * Q)	0.00915	0.00903	0.01035
	(!CLK * DE * !SCE * !Q)	0.01158	0.01147	0.01272
	(!CLK * DE * !SCE * !Q)	0.00883	0.00872	0.00997
	(!CLK * !DE * !SCE)	0.00077	0.00078	0.00077
	(!CLK * !DE * !SCE)	-0.00057	-0.00058	-0.00057
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.00343	0.00324	0.00531
	(DE * SCE)	0.00123	0.00105	0.00311
	(CLK * DE * !SCE)	0.00700	0.00685	0.00832
	(CLK * DE * !SCE)	0.00416	0.00401	0.00548
	(CLK * !DE * !SCE)	0.00081	0.00082	0.00081
	(CLK * !DE * !SCE)	-0.00060	-0.00061	-0.00060
	(!DE * SCE)	0.00081	0.00082	0.00081
	(!DE * SCE)	-0.00060	-0.00061	-0.00060
	(!CLK * DE * !SCE * Q)	0.01197	0.01184	0.01315
	(!CLK * DE * !SCE * Q)	0.00913	0.00900	0.01031
	(!CLK * DE * !SCE * !Q)	0.01171	0.01159	0.01282
	(!CLK * DE * !SCE * !Q)	0.00884	0.00873	0.00995
	(!CLK * !DE * !SCE)	0.00080	0.00082	0.00081
	(!CLK * !DE * !SCE)	-0.00060	-0.00061	-0.00060

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.00344	0.00325	0.00532
	(DE * SCE)	0.00124	0.00105	0.00313
	(CLK * DE * !SCE)	0.00705	0.00690	0.00836
	(CLK * DE * !SCE)	0.00421	0.00406	0.00552
	(CLK * !DE * !SCE)	0.00081	0.00082	0.00081
	(CLK * !DE * !SCE)	-0.00060	-0.00061	-0.00060
	(!DE * SCE)	0.00081	0.00082	0.00081
	(!DE * SCE)	-0.00060	-0.00061	-0.00060
	(!CLK * DE * !SCE * Q)	0.01189	0.01176	0.01307
	(!CLK * DE * !SCE * Q)	0.00904	0.00892	0.01023
	(!CLK * DE * !SCE * !Q)	0.01160	0.01147	0.01271
	(!CLK * DE * !SCE * !Q)	0.00873	0.00861	0.00985
	(!CLK * !DE * !SCE)	0.00081	0.00082	0.00081
	(!CLK * !DE * !SCE)	-0.00060	-0.00061	-0.00060

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

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

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.00116	0.00111	0.00359
	(DE * SCE)	0.00329	0.00324	0.00571
	(CLK * DE * !SCE)	0.00221	0.00211	0.00429
	(CLK * DE * !SCE)	0.00496	0.00487	0.00705
	(CLK * !DE * !SCE)	-0.00025	-0.00025	-0.00025
	(CLK * !DE * !SCE)	0.00117	0.00117	0.00116
	(!DE * SCE)	-0.00025	-0.00025	-0.00024
	(!DE * SCE)	0.00117	0.00117	0.00117
	(!CLK * DE * !SCE * Q)	0.00669	0.00662	0.00931
	(!CLK * DE * !SCE * Q)	0.00943	0.00934	0.01203
	(!CLK * DE * !SCE * !Q)	0.00719	0.00713	0.00992
	(!CLK * DE * !SCE * !Q)	0.00996	0.00989	0.01267
	(!CLK * !DE * !SCE)	-0.00025	-0.00025	-0.00025
	(!CLK * !DE * !SCE)	0.00117	0.00117	0.00116
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.00112	0.00107	0.00353
	(DE * SCE)	0.00336	0.00329	0.00576
	(CLK * DE * !SCE)	0.00217	0.00205	0.00423
	(CLK * DE * !SCE)	0.00502	0.00491	0.00709
	(CLK * !DE * !SCE)	-0.00025	-0.00025	-0.00025
	(CLK * !DE * !SCE)	0.00123	0.00123	0.00123
	(!DE * SCE)	-0.00025	-0.00025	-0.00024
	(!DE * SCE)	0.00124	0.00124	0.00123
	(!CLK * DE * !SCE * Q)	0.00664	0.00656	0.00925
	(!CLK * DE * !SCE * Q)	0.00948	0.00940	0.01209
	(!CLK * DE * !SCE * !Q)	0.00711	0.00705	0.00983
	(!CLK * DE * !SCE * !Q)	0.00998	0.00991	0.01270
	(!CLK * !DE * !SCE)	-0.00025	-0.00025	-0.00025
	(!CLK * !DE * !SCE)	0.00123	0.00123	0.00123

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.00108	0.00102	0.00349
	(DE * SCE)	0.00331	0.00325	0.00572
	(CLK * DE * !SCE)	0.00230	0.00219	0.00435
	(CLK * DE * !SCE)	0.00516	0.00504	0.00722
	(CLK * !DE * !SCE)	-0.00025	-0.00025	-0.00025
	(CLK * !DE * !SCE)	0.00124	0.00124	0.00123
	(!DE * SCE)	-0.00025	-0.00025	-0.00024
	(!DE * SCE)	0.00124	0.00124	0.00124
	(!CLK * DE * !SCE * Q)	0.00671	0.00663	0.00932
	(!CLK * DE * !SCE * Q)	0.00955	0.00946	0.01216
	(!CLK * DE * !SCE * !Q)	0.00721	0.00714	0.00994
	(!CLK * DE * !SCE * !Q)	0.01008	0.01000	0.01280
	(!CLK * !DE * !SCE)	-0.00025	-0.00025	-0.00025
	(!CLK * !DE * !SCE)	0.00124	0.00124	0.00123

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.00625	0.00593	0.00934
	SCE	0.00163	0.00130	0.00472
	(CLK * !SCE)	0.00969	0.00940	0.01256
	(CLK * !SCE)	0.00444	0.00412	0.00731
	(!CLK * D * !SCE * Q)	0.00386	0.00360	0.00600
	(!CLK * D * !SCE * Q)	0.00003	-0.00026	0.00215
	(!CLK * D * !SCE * !Q)	0.01465	0.01436	0.01752
	(!CLK * D * !SCE * !Q)	0.00939	0.00910	0.01225
	(!CLK * !D * !SCE * Q)	0.01126	0.01105	0.01341
	(!CLK * !D * !SCE * Q)	0.00884	0.00862	0.01098
	(!CLK * !D * !SCE * !Q)	0.00382	0.00363	0.00604
	(!CLK * !D * !SCE * !Q)	0.00001	-0.00019	0.00222

sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.00635	0.00603	0.00942
	SCE	0.00163	0.00129	0.00470
	(CLK * !SCE)	0.00982	0.00953	0.01269
	(CLK * !SCE)	0.00447	0.00415	0.00733
	(!CLK * D * !SCE * Q)	0.00389	0.00362	0.00602
	(!CLK * D * !SCE * Q)	-0.00000	-0.00029	0.00212
	(!CLK * D * !SCE * !Q)	0.01475	0.01446	0.01761
	(!CLK * D * !SCE * !Q)	0.00939	0.00909	0.01224
	(!CLK * !D * !SCE * Q)	0.01127	0.01106	0.01342
	(!CLK * !D * !SCE * Q)	0.00883	0.00861	0.01097
	(!CLK * !D * !SCE * !Q)	0.00384	0.00366	0.00606
	(!CLK * !D * !SCE * !Q)	-0.00002	-0.00022	0.00219
sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.00633	0.00601	0.00942
	SCE	0.00164	0.00130	0.00472
	(CLK * !SCE)	0.00984	0.00954	0.01270
	(CLK * !SCE)	0.00451	0.00419	0.00737
	(!CLK * D * !SCE * Q)	0.00388	0.00361	0.00601
	(!CLK * D * !SCE * Q)	0.00000	-0.00028	0.00213
	(!CLK * D * !SCE * !Q)	0.01461	0.01432	0.01748
	(!CLK * D * !SCE * !Q)	0.00928	0.00899	0.01213
	(!CLK * !D * !SCE * Q)	0.01132	0.01111	0.01347
	(!CLK * !D * !SCE * Q)	0.00890	0.00868	0.01104
	(!CLK * !D * !SCE * !Q)	0.00383	0.00365	0.00605
	(!CLK * !D * !SCE * !Q)	-0.00001	-0.00021	0.00220

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

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

sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.00174	0.00162	0.00548
	SCE	0.00637	0.00625	0.01009
	(CLK * !SCE)	0.00691	0.00682	0.00948
	(CLK * !SCE)	0.00931	0.00925	0.01192
	(!CLK * D * !SCE * Q)	-0.00003	-0.00008	0.00267
	(!CLK * D * !SCE * Q)	0.00381	0.00377	0.00651
	(!CLK * D * !SCE * !Q)	0.00772	0.00758	0.01160
	(!CLK * D * !SCE * !Q)	0.01299	0.01285	0.01685
	(!CLK * !D * !SCE * Q)	0.01190	0.01182	0.01445
	(!CLK * !D * !SCE * Q)	0.01431	0.01424	0.01689
	(!CLK * !D * !SCE * !Q)	-0.00012	-0.00018	0.00260
	(!CLK * !D * !SCE * !Q)	0.00367	0.00364	0.00642
sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.00174	0.00161	0.00547
	SCE	0.00646	0.00634	0.01017
	(CLK * !SCE)	0.00694	0.00685	0.00951
	(CLK * !SCE)	0.00935	0.00929	0.01197
	(!CLK * D * !SCE * Q)	-0.00004	-0.00010	0.00265
	(!CLK * D * !SCE * Q)	0.00384	0.00381	0.00655
	(!CLK * D * !SCE * !Q)	0.00767	0.00753	0.01155
	(!CLK * D * !SCE * !Q)	0.01304	0.01289	0.01688
	(!CLK * !D * !SCE * Q)	0.01191	0.01182	0.01446
	(!CLK * !D * !SCE * Q)	0.01432	0.01425	0.01691
	(!CLK * !D * !SCE * !Q)	-0.00014	-0.00020	0.00258
	(!CLK * !D * !SCE * !Q)	0.00371	0.00368	0.00646

sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.00170	0.00157	0.00543
	SCE	0.00640	0.00628	0.01011
	(CLK * !SCE)	0.00698	0.00690	0.00956
	(CLK * !SCE)	0.00938	0.00932	0.01200
	(!CLK * D * !SCE * Q)	-0.00004	-0.00010	0.00266
	(!CLK * D * !SCE * Q)	0.00383	0.00379	0.00654
	(!CLK * D * !SCE * !Q)	0.00777	0.00764	0.01165
	(!CLK * D * !SCE * !Q)	0.01312	0.01297	0.01698
	(!CLK * !D * !SCE * Q)	0.01182	0.01174	0.01438
	(!CLK * !D * !SCE * Q)	0.01423	0.01416	0.01682
	(!CLK * !D * !SCE * !Q)	-0.00013	-0.00019	0.00258
	(!CLK * !D * !SCE * !Q)	0.00370	0.00367	0.00644

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.00381	0.00372	0.00460
	(CLK * SCE)	0.00157	0.00147	0.00237
	(!CLK * SCE)	0.00879	0.00869	0.00952
	(!CLK * SCE)	0.00655	0.00645	0.00728
	!SCE	0.00070	0.00062	0.00061
	!SCE	-0.00081	-0.00089	-0.00090
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.00390	0.00380	0.00468
	(CLK * SCE)	0.00163	0.00152	0.00242
	(!CLK * SCE)	0.00884	0.00873	0.00957
	(!CLK * SCE)	0.00657	0.00647	0.00730
	!SCE	0.00072	0.00064	0.00062
	!SCE	-0.00081	-0.00090	-0.00091
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.00390	0.00381	0.00468
	(CLK * SCE)	0.00165	0.00154	0.00242
	(!CLK * SCE)	0.00870	0.00860	0.00943
	(!CLK * SCE)	0.00644	0.00633	0.00717
	!SCE	0.00072	0.00063	0.00062
	!SCE	-0.00081	-0.00090	-0.00091

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.00197	0.00189	0.00291
	(CLK * SCE)	0.00422	0.00414	0.00514
	(!CLK * SCE)	0.00690	0.00680	0.00803
	(!CLK * SCE)	0.00914	0.00904	0.01027
	!SCE	-0.00058	-0.00059	-0.00060
	!SCE	0.00092	0.00092	0.00092
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.00191	0.00183	0.00284
	(CLK * SCE)	0.00418	0.00410	0.00510
	(!CLK * SCE)	0.00680	0.00670	0.00794
	(!CLK * SCE)	0.00907	0.00898	0.01020
	!SCE	-0.00059	-0.00061	-0.00061
	!SCE	0.00092	0.00093	0.00093
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.00213	0.00204	0.00305
	(CLK * SCE)	0.00439	0.00431	0.00529
	(!CLK * SCE)	0.00698	0.00688	0.00812
	(!CLK * SCE)	0.00924	0.00915	0.01037
	!SCE	-0.00059	-0.00060	-0.00061
	!SCE	0.00092	0.00093	0.00093

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(CLK * D)**	0.00565	0.00543	0.00988
	(CLK * D)	0.00170	0.00146	0.00591
	(CLK * !D)	0.00588	0.00566	0.01009
	(CLK * !D)	0.00192	0.00169	0.00612
	(!CLK * D * SCD * Q)	0.00328	0.00316	0.00557
	(!CLK * D * SCD * Q)	-0.00004	-0.00019	0.00224
	(!CLK * D * DE * SCD * !Q)	0.00318	0.00306	0.00547
	(!CLK * D * DE * SCD * !Q)	-0.00014	-0.00029	0.00214
	(!CLK * D * DE * !SCD * !Q)	0.01092	0.01077	0.01331
	(!CLK * D * DE * !SCD * !Q)	0.00822	0.00805	0.01058
	(!CLK * D * !SCD * Q)	0.01088	0.01072	0.01330
	(!CLK * D * !SCD * Q)	0.00818	0.00800	0.01056
	(!CLK * D * !DE * SCD * !Q)	0.01064	0.01045	0.01453
	(!CLK * D * !DE * SCD * !Q)	0.00668	0.00648	0.01056
	(!CLK * D * !DE * !SCD * !Q)	0.00367	0.00358	0.00598
	(!CLK * D * !DE * !SCD * !Q)	0.00032	0.00021	0.00261
	(!CLK * !D * SCD * !Q)	0.01063	0.01046	0.01453
	(!CLK * !D * SCD * !Q)	0.00668	0.00648	0.01056
	(!CLK * !D * DE * SCD * Q)	0.01091	0.01072	0.01476
	(!CLK * !D * DE * SCD * Q)	0.00695	0.00675	0.01079
	(!CLK * !D * DE * !SCD * Q)	0.00377	0.00368	0.00608
	(!CLK * !D * DE * !SCD * Q)	0.00042	0.00031	0.00271
	(!CLK * !D * !SCD * !Q)	0.00367	0.00358	0.00598
	(!CLK * !D * !SCD * !Q)	0.00032	0.00021	0.00261
	(!CLK * !D * !DE * SCD * Q)	0.00328	0.00316	0.00557
	(!CLK * !D * !DE * SCD * Q)	-0.00004	-0.00019	0.00224
	(!CLK * !D * !DE * !SCD * Q)	0.01089	0.01071	0.01329
	(!CLK * !D * !DE * !SCD * Q)	0.00819	0.00800	0.01057

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.00575	0.00553	0.00996
	(CLK * D)	0.00174	0.00149	0.00593
	(CLK * !D)	0.00575	0.00556	0.00995
	(CLK * !D)	0.00174	0.00152	0.00592
	(!CLK * D * SCD * Q)	0.00333	0.00319	0.00560
	(!CLK * D * SCD * Q)	-0.00005	-0.00019	0.00222
	(!CLK * D * DE * SCD * !Q)	0.00324	0.00310	0.00551
	(!CLK * D * DE * SCD * !Q)	-0.00014	-0.00029	0.00213
	(!CLK * D * DE * !SCD * !Q)	0.01090	0.01072	0.01328
	(!CLK * D * DE * !SCD * !Q)	0.00814	0.00796	0.01049
	(!CLK * D * !SCD * Q)	0.01089	0.01070	0.01329
	(!CLK * D * !SCD * Q)	0.00813	0.00794	0.01050
	(!CLK * D * !DE * SCD * !Q)	0.01070	0.01051	0.01459
	(!CLK * D * !DE * SCD * !Q)	0.00669	0.00648	0.01056
	(!CLK * D * !DE * !SCD * !Q)	0.00371	0.00361	0.00601
	(!CLK * D * !DE * !SCD * !Q)	0.00031	0.00018	0.00259
	(!CLK * !D * SCD * !Q)	0.01070	0.01051	0.01458
	(!CLK * !D * SCD * !Q)	0.00669	0.00648	0.01056
	(!CLK * !D * DE * SCD * Q)	0.01093	0.01073	0.01478
	(!CLK * !D * DE * SCD * Q)	0.00692	0.00670	0.01075
	(!CLK * !D * DE * !SCD * Q)	0.00381	0.00370	0.00611
	(!CLK * !D * DE * !SCD * Q)	0.00040	0.00028	0.00268
	(!CLK * !D * !SCD * !Q)	0.00371	0.00360	0.00601
	(!CLK * !D * !SCD * !Q)	0.00031	0.00019	0.00259
	(!CLK * !D * !DE * SCD * Q)	0.00333	0.00320	0.00560
	(!CLK * !D * !DE * SCD * Q)	-0.00005	-0.00020	0.00222
	(!CLK * !D * !DE * !SCD * Q)	0.01090	0.01069	0.01330
	(!CLK * !D * !DE * !SCD * Q)	0.00814	0.00794	0.01051

sky130_fd_sc_hs__sedfxtp_4	**(CLK * D)**	0.00577	0.00555	0.00994
	(CLK * D)	0.00178	0.00154	0.00594
	(CLK * !D)	0.00576	0.00557	0.00993
	(CLK * !D)	0.00178	0.00157	0.00593
	(!CLK * D * SCD * Q)	0.00331	0.00318	0.00558
	(!CLK * D * SCD * Q)	-0.00005	-0.00020	0.00223
	(!CLK * D * DE * SCD * !Q)	0.00321	0.00308	0.00549
	(!CLK * D * DE * SCD * !Q)	-0.00014	-0.00029	0.00214
	(!CLK * D * DE * !SCD * !Q)	0.01105	0.01088	0.01343
	(!CLK * D * DE * !SCD * !Q)	0.00831	0.00814	0.01067
	(!CLK * D * !SCD * Q)	0.01100	0.01083	0.01341
	(!CLK * D * !SCD * Q)	0.00826	0.00809	0.01065
	(!CLK * D * !DE * SCD * !Q)	0.01057	0.01038	0.01445
	(!CLK * D * !DE * SCD * !Q)	0.00658	0.00638	0.01045
	(!CLK * D * !DE * !SCD * !Q)	0.00369	0.00359	0.00600
	(!CLK * D * !DE * !SCD * !Q)	0.00032	0.00020	0.00260
	(!CLK * !D * SCD * !Q)	0.01056	0.01038	0.01444
	(!CLK * !D * SCD * !Q)	0.00658	0.00638	0.01045
	(!CLK * !D * DE * SCD * Q)	0.01083	0.01063	0.01467
	(!CLK * !D * DE * SCD * Q)	0.00684	0.00663	0.01067
	(!CLK * !D * DE * !SCD * Q)	0.00379	0.00369	0.00609
	(!CLK * !D * DE * !SCD * Q)	0.00041	0.00029	0.00269
	(!CLK * !D * !SCD * !Q)	0.00369	0.00359	0.00600
	(!CLK * !D * !SCD * !Q)	0.00032	0.00020	0.00260
	(!CLK * !D * !DE * SCD * Q)	0.00330	0.00318	0.00558
	(!CLK * !D * !DE * SCD * Q)	-0.00005	-0.00020	0.00223
	(!CLK * !D * !DE * !SCD * Q)	0.01100	0.01082	0.01343
	(!CLK * !D * !DE * !SCD * Q)	0.00827	0.00808	0.01066

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * D)	0.00380	0.00421	0.00909
	(CLK * D)	0.00652	0.00694	0.01178
	(CLK * !D)	0.00382	0.00423	0.00911
	(CLK * !D)	0.00654	0.00695	0.01181
	(!CLK * D * SCD * Q)	0.00020	0.00024	0.00305
	(!CLK * D * SCD * Q)	0.00351	0.00357	0.00637
	(!CLK * D * DE * SCD * !Q)	0.00030	0.00034	0.00315
	(!CLK * D * DE * SCD * !Q)	0.00362	0.00367	0.00648
	(!CLK * D * DE * !SCD * !Q)	0.00871	0.00907	0.01390
	(!CLK * D * DE * !SCD * !Q)	0.01142	0.01179	0.01662
	(!CLK * D * !SCD * Q)	0.00876	0.00913	0.01394
	(!CLK * D * !SCD * Q)	0.01148	0.01185	0.01665
	(!CLK * D * !DE * SCD * !Q)	0.00595	0.00585	0.01137
	(!CLK * D * !DE * SCD * !Q)	0.00990	0.00982	0.01533
	(!CLK * D * !DE * !SCD * !Q)	-0.00012	-0.00010	0.00268
	(!CLK * D * !DE * !SCD * !Q)	0.00323	0.00326	0.00605
	(!CLK * !D * SCD * !Q)	0.00595	0.00586	0.01138
	(!CLK * !D * SCD * !Q)	0.00991	0.00982	0.01533
	(!CLK * !D * DE * SCD * Q)	0.00570	0.00561	0.01115
	(!CLK * !D * DE * SCD * Q)	0.00966	0.00958	0.01512
	(!CLK * !D * DE * !SCD * Q)	-0.00022	-0.00020	0.00258
	(!CLK * !D * DE * !SCD * Q)	0.00313	0.00316	0.00595
	(!CLK * !D * !SCD * !Q)	-0.00012	-0.00010	0.00268
	(!CLK * !D * !SCD * !Q)	0.00324	0.00326	0.00605
	(!CLK * !D * !DE * SCD * Q)	0.00020	0.00024	0.00305
	(!CLK * !D * !DE * SCD * Q)	0.00351	0.00356	0.00637
	(!CLK * !D * !DE * !SCD * Q)	0.00877	0.00914	0.01394
	(!CLK * !D * !DE * !SCD * Q)	0.01149	0.01187	0.01665

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.00381	0.00421	0.00909
	(CLK * D)	0.00658	0.00699	0.01184
	(CLK * !D)	0.00380	0.00420	0.00908
	(CLK * !D)	0.00657	0.00697	0.01183
	(!CLK * D * SCD * Q)	0.00018	0.00021	0.00302
	(!CLK * D * SCD * Q)	0.00355	0.00359	0.00640
	(!CLK * D * DE * SCD * !Q)	0.00027	0.00031	0.00312
	(!CLK * D * DE * SCD * !Q)	0.00364	0.00369	0.00649
	(!CLK * D * DE * !SCD * !Q)	0.00869	0.00905	0.01388
	(!CLK * D * DE * !SCD * !Q)	0.01146	0.01182	0.01664
	(!CLK * D * !SCD * Q)	0.00872	0.00908	0.01388
	(!CLK * D * !SCD * Q)	0.01149	0.01185	0.01665
	(!CLK * D * !DE * SCD * !Q)	0.00587	0.00578	0.01129
	(!CLK * D * !DE * SCD * !Q)	0.00988	0.00980	0.01531
	(!CLK * D * !DE * !SCD * !Q)	-0.00014	-0.00012	0.00266
	(!CLK * D * !DE * !SCD * !Q)	0.00327	0.00329	0.00608
	(!CLK * !D * SCD * !Q)	0.00589	0.00578	0.01129
	(!CLK * !D * SCD * !Q)	0.00989	0.00981	0.01532
	(!CLK * !D * DE * SCD * Q)	0.00567	0.00558	0.01111
	(!CLK * !D * DE * SCD * Q)	0.00968	0.00960	0.01514
	(!CLK * !D * DE * !SCD * Q)	-0.00023	-0.00022	0.00256
	(!CLK * !D * DE * !SCD * Q)	0.00318	0.00320	0.00598
	(!CLK * !D * !SCD * !Q)	-0.00013	-0.00012	0.00266
	(!CLK * !D * !SCD * !Q)	0.00327	0.00329	0.00608
	(!CLK * !D * !DE * SCD * Q)	0.00018	0.00021	0.00302
	(!CLK * !D * !DE * SCD * Q)	0.00355	0.00359	0.00640
	(!CLK * !D * !DE * !SCD * Q)	0.00872	0.00909	0.01389
	(!CLK * !D * !DE * !SCD * Q)	0.01149	0.01187	0.01665

sky130_fd_sc_hs__sedfxtp_4	**(CLK * D)**	0.00384	0.00425	0.00913
	(CLK * D)	0.00659	0.00701	0.01185
	(CLK * !D)	0.00384	0.00424	0.00913
	(CLK * !D)	0.00658	0.00699	0.01185
	(!CLK * D * SCD * Q)	0.00019	0.00023	0.00304
	(!CLK * D * SCD * Q)	0.00354	0.00358	0.00639
	(!CLK * D * DE * SCD * !Q)	0.00029	0.00033	0.00314
	(!CLK * D * DE * SCD * !Q)	0.00363	0.00368	0.00649
	(!CLK * D * DE * !SCD * !Q)	0.00857	0.00894	0.01377
	(!CLK * D * DE * !SCD * !Q)	0.01132	0.01169	0.01651
	(!CLK * D * !SCD * Q)	0.00863	0.00900	0.01381
	(!CLK * D * !SCD * Q)	0.01138	0.01175	0.01654
	(!CLK * D * !DE * SCD * !Q)	0.00605	0.00595	0.01147
	(!CLK * D * !DE * SCD * !Q)	0.01003	0.00995	0.01546
	(!CLK * D * !DE * !SCD * !Q)	-0.00012	-0.00011	0.00267
	(!CLK * D * !DE * !SCD * !Q)	0.00326	0.00328	0.00607
	(!CLK * !D * SCD * !Q)	0.00606	0.00596	0.01148
	(!CLK * !D * SCD * !Q)	0.01004	0.00995	0.01546
	(!CLK * !D * DE * SCD * Q)	0.00582	0.00572	0.01126
	(!CLK * !D * DE * SCD * Q)	0.00980	0.00972	0.01526
	(!CLK * !D * DE * !SCD * Q)	-0.00022	-0.00020	0.00258
	(!CLK * !D * DE * !SCD * Q)	0.00316	0.00319	0.00597
	(!CLK * !D * !SCD * !Q)	-0.00012	-0.00011	0.00267
	(!CLK * !D * !SCD * !Q)	0.00326	0.00328	0.00607
	(!CLK * !D * !DE * SCD * Q)	0.00019	0.00023	0.00304
	(!CLK * !D * !DE * SCD * Q)	0.00354	0.00358	0.00639
	(!CLK * !D * !DE * !SCD * Q)	0.00864	0.00901	0.01381
	(!CLK * !D * !DE * !SCD * Q)	0.01138	0.01176	0.01655

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(SCD * SCE * Q)	0.00960	0.00923	0.01189
	(SCD * SCE * Q)	0.00684	0.00647	0.00913
	(D * !SCE * Q)	0.00959	0.00922	0.01189
	(D * !SCE * Q)	0.00683	0.00645	0.00913
	(D * !DE * !SCE * !Q)	0.00975	0.00935	0.01207
	(D * !DE * !SCE * !Q)	0.00699	0.00658	0.00930
	(!SCD * SCE * !Q)	0.00976	0.00937	0.01209
	(!SCD * SCE * !Q)	0.00701	0.00660	0.00933
	(!D * !SCE * !Q)	0.00975	0.00935	0.01207
	(!D * !SCE * !Q)	0.00699	0.00658	0.00931
	(!D * !DE * !SCE * Q)	0.00959	0.00922	0.01189
	(!D * !DE * !SCE * Q)	0.00683	0.00645	0.00913
sky130_fd_sc_hs__sedfxtp_2	(SCD * SCE * Q)	0.00971	0.00935	0.01199
	(SCD * SCE * Q)	0.00694	0.00656	0.00922
	(D * !SCE * Q)	0.00971	0.00934	0.01199
	(D * !SCE * Q)	0.00693	0.00655	0.00922
	(D * !DE * !SCE * !Q)	0.00987	0.00947	0.01219
	(D * !DE * !SCE * !Q)	0.00709	0.00668	0.00940
	(!SCD * SCE * !Q)	0.00988	0.00948	0.01219
	(!SCD * SCE * !Q)	0.00710	0.00669	0.00941
	(!D * !SCE * !Q)	0.00987	0.00947	0.01218
	(!D * !SCE * !Q)	0.00709	0.00668	0.00941
	(!D * !DE * !SCE * Q)	0.00971	0.00934	0.01199
	(!D * !DE * !SCE * Q)	0.00693	0.00655	0.00922

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.00971	0.00933	0.01199
	(SCD * SCE * Q)	0.00685	0.00646	0.00912
	(D * !SCE * Q)	0.00970	0.00932	0.01199
	(D * !SCE * Q)	0.00684	0.00645	0.00911
	(D * !DE * !SCE * !Q)	0.00978	0.00937	0.01207
	(D * !DE * !SCE * !Q)	0.00691	0.00649	0.00920
	(!SCD * SCE * !Q)	0.00979	0.00939	0.01209
	(!SCD * SCE * !Q)	0.00692	0.00650	0.00922
	(!D * !SCE * !Q)	0.00978	0.00937	0.01207
	(!D * !SCE * !Q)	0.00691	0.00649	0.00921
	(!D * !DE * !SCE * Q)	0.00970	0.00932	0.01199
	(!D * !DE * !SCE * Q)	0.00684	0.00645	0.00911

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

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

sky130_fd_sc_hs__sedfxtp_1	**(SCD * SCE * Q)**	0.00544	0.00532	0.00850
	(SCD * SCE * Q)	0.00821	0.00808	0.01125
	(SCD * SCE * !Q)	0.01024	0.01006	0.01316
	(SCD * SCE * !Q)	0.01300	0.01281	0.01592
	(D * DE * !SCE * !Q)	0.01021	0.01003	0.01313
	(D * DE * !SCE * !Q)	0.01297	0.01278	0.01590
	(D * !SCE * Q)	0.00545	0.00532	0.00850
	(D * !SCE * Q)	0.00822	0.00809	0.01126
	(D * !DE * !SCE * !Q)	0.00526	0.00518	0.00829
	(D * !DE * !SCE * !Q)	0.00803	0.00793	0.01105
	(!SCD * SCE * Q)	0.01119	0.01113	0.01466
	(!SCD * SCE * Q)	0.01397	0.01390	0.01744
	(!SCD * SCE * !Q)	0.00526	0.00518	0.00828
	(!SCD * SCE * !Q)	0.00803	0.00793	0.01104
	(!D * DE * !SCE * Q)	0.01122	0.01115	0.01468
	(!D * DE * !SCE * Q)	0.01399	0.01391	0.01744
	(!D * !SCE * !Q)	0.00526	0.00518	0.00828
	(!D * !SCE * !Q)	0.00803	0.00793	0.01105
	(!D * !DE * !SCE * Q)	0.00545	0.00532	0.00850
	(!D * !DE * !SCE * Q)	0.00822	0.00809	0.01126

sky130_fd_sc_hs__sedfxtp_2	**(SCD * SCE * Q)**	0.00550	0.00534	0.00853
	(SCD * SCE * Q)	0.00827	0.00813	0.01131
	(SCD * SCE * !Q)	0.01025	0.01004	0.01316
	(SCD * SCE * !Q)	0.01302	0.01281	0.01594
	(D * DE * !SCE * !Q)	0.01022	0.01001	0.01313
	(D * DE * !SCE * !Q)	0.01299	0.01278	0.01589
	(D * !SCE * Q)	0.00550	0.00535	0.00854
	(D * !SCE * Q)	0.00827	0.00813	0.01131
	(D * !DE * !SCE * !Q)	0.00531	0.00519	0.00832
	(D * !DE * !SCE * !Q)	0.00809	0.00797	0.01110
	(!SCD * SCE * Q)	0.01124	0.01114	0.01470
	(!SCD * SCE * Q)	0.01403	0.01393	0.01750
	(!SCD * SCE * !Q)	0.00531	0.00519	0.00831
	(!SCD * SCE * !Q)	0.00809	0.00797	0.01110
	(!D * DE * !SCE * Q)	0.01126	0.01116	0.01472
	(!D * DE * !SCE * Q)	0.01404	0.01393	0.01750
	(!D * !SCE * !Q)	0.00531	0.00520	0.00832
	(!D * !SCE * !Q)	0.00809	0.00797	0.01110
	(!D * !DE * !SCE * Q)	0.00550	0.00535	0.00854
	(!D * !DE * !SCE * Q)	0.00827	0.00813	0.01131

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.00533	0.00518	0.00837
	(SCD * SCE * Q)	0.00821	0.00804	0.01124
	(SCD * SCE * !Q)	0.01006	0.00987	0.01297
	(SCD * SCE * !Q)	0.01294	0.01273	0.01584
	(D * DE * !SCE * !Q)	0.01004	0.00984	0.01294
	(D * DE * !SCE * !Q)	0.01291	0.01270	0.01581
	(D * !SCE * Q)	0.00534	0.00519	0.00837
	(D * !SCE * Q)	0.00822	0.00806	0.01125
	(D * !DE * !SCE * !Q)	0.00524	0.00514	0.00825
	(D * !DE * !SCE * !Q)	0.00812	0.00801	0.01112
	(!SCD * SCE * Q)	0.01102	0.01093	0.01448
	(!SCD * SCE * Q)	0.01390	0.01381	0.01737
	(!SCD * SCE * !Q)	0.00524	0.00513	0.00825
	(!SCD * SCE * !Q)	0.00812	0.00801	0.01112
	(!D * DE * !SCE * Q)	0.01104	0.01093	0.01448
	(!D * DE * !SCE * Q)	0.01392	0.01380	0.01735
	(!D * !SCE * !Q)	0.00524	0.00514	0.00825
	(!D * !SCE * !Q)	0.00812	0.00801	0.01113
	(!D * !DE * !SCE * Q)	0.00534	0.00518	0.00837
	(!D * !DE * !SCE * Q)	0.00822	0.00806	0.01125

SKY130_FD_SC_HS__XNOR2x

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT		OUTPUT
A	B	Y
0	0	1
0	1	0
1	0	0
1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__xnor2_1	11.18880
sky130_fd_sc_hs__xnor2_2	17.58240
sky130_fd_sc_hs__xnor2_4	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	Y
sky130_fd_sc_hs__xnor2_1	0.00483	0.00500	0.37282
sky130_fd_sc_hs__xnor2_2	0.00805	0.00800	0.70111
sky130_fd_sc_hs__xnor2_4	0.01432	0.01462	1.21097

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xnor2_1	0.00000	0.08656	0.24395
sky130_fd_sc_hs__xnor2_2	0.00000	0.08016	0.12939
sky130_fd_sc_hs__xnor2_4	0.00000	0.19651	0.49632

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	0.10227	0.57957	3.57881
	A->Y (FR)	!B	0.14480	1.24224	11.87080
	B->Y (RR)	A	0.09556	0.56286	3.48775
	B->Y (FR)	!A	0.12460	1.20195	11.76110
sky130_fd_sc_hs__xnor2_2	A->Y (RR)	B	0.11233	0.53666	3.61401
	A->Y (FR)	!B	0.14247	1.06975	11.63250
	B->Y (RR)	A	0.10791	0.53141	3.51862
	B->Y (FR)	!A	0.11789	1.02799	11.52040
sky130_fd_sc_hs__xnor2_4	A->Y (RR)	B	0.13262	0.68323	6.45810
	A->Y (FR)	!B	0.14290	0.96461	11.62520
	B->Y (RR)	A	0.12617	0.66607	6.33831
	B->Y (FR)	!A	0.11617	0.92566	11.61090

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	0.13144	0.64509	3.74804
	A->Y (RF)	!B	0.04892	0.49451	4.80529
	B->Y (FF)	A	0.12586	0.63449	3.84185
	B->Y (RF)	!A	0.03940	0.47738	4.74537
sky130_fd_sc_hs__xnor2_2	A->Y (FF)	B	0.15971	0.69629	4.29084
	A->Y (RF)	!B	0.04705	0.43070	4.66540
	B->Y (FF)	A	0.14520	0.65063	4.02444
	B->Y (RF)	!A	0.04152	0.42294	4.69375
sky130_fd_sc_hs__xnor2_4	A->Y (FF)	B	0.14699	0.63520	4.13906
	A->Y (RF)	!B	0.04832	0.38098	4.50695
	B->Y (FF)	A	0.13466	0.59089	3.86970
	B->Y (RF)	!A	0.04221	0.37071	4.54895

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	0.00667	0.00667	0.01017
	A	B	0.00124	0.00124	0.00480
	A	!B	-0.00052	-0.00066	-0.00057
	A	!B	0.00481	0.00470	0.00481
	B	A	0.00616	0.00604	0.01046
	B	A	0.00176	0.00164	0.00616
	B	!A	0.00012	0.00009	0.00065
	B	!A	0.00453	0.00443	0.00507
sky130_fd_sc_hs__xnor2_2	A	B	0.01054	0.01058	0.01291
	A	B	0.00268	0.00268	0.00522
	A	!B	0.00004	-0.00022	-0.00002
	A	!B	0.00943	0.00922	0.00937
	B	A	0.01011	0.00999	0.01261
	B	A	0.00361	0.00351	0.00625
	B	!A	0.00049	0.00038	0.00146
	B	!A	0.00844	0.00833	0.00940
sky130_fd_sc_hs__xnor2_4	A	B	0.01697	0.01709	0.02332
	A	B	0.00284	0.00287	0.00931
	A	!B	-0.00050	-0.00104	-0.00056
	A	!B	0.01736	0.01686	0.01740
	B	A	0.01647	0.01609	0.02319
	B	A	0.00498	0.00463	0.01200
	B	!A	0.00018	-0.00006	0.00223
	B	!A	0.01540	0.01488	0.01741

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	0.00171	0.00201	0.00659
	A	B	0.00714	0.00742	0.01195
	A	!B	0.00615	0.00606	0.00617
	A	!B	0.00070	0.00062	0.00073
	B	A	0.00268	0.00235	0.00718
	B	A	0.00701	0.00667	0.01145
	B	!A	0.00424	0.00421	0.00443
	B	!A	-0.00011	-0.00014	-0.00003
sky130_fd_sc_hs__xnor2_2	A	B	0.00349	0.00365	0.00756
	A	B	0.01139	0.01153	0.01526
	A	!B	0.01167	0.01144	0.01176
	A	!B	0.00215	0.00189	0.00214
	B	A	0.00543	0.00467	0.00822
	B	A	0.01176	0.01096	0.01446
	B	!A	0.00838	0.00833	0.00867
	B	!A	0.00047	0.00036	0.00067
sky130_fd_sc_hs__xnor2_4	A	B	0.00572	0.00605	0.01501
	A	B	0.01990	0.02015	0.02894
	A	!B	0.02148	0.02095	0.02197
	A	!B	0.00332	0.00276	0.00338
	B	A	0.00808	0.00705	0.01601
	B	A	0.01923	0.01812	0.02686
	B	!A	0.01557	0.01535	0.01661
	B	!A	0.00049	0.00030	0.00109

SKY130_FD_SC_HS__XNOR3x

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT			OUTPUT
A	B	C	X
0	0	0	1
0	0	1	0
0	1	0	0
0	1	1	1
1	0	0	0
1	0	1	1
1	1	0	1
1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__xnor3_1	27.17280
sky130_fd_sc_hs__xnor3_2	28.77120
sky130_fd_sc_hs__xnor3_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	X
sky130_fd_sc_hs__xnor3_1	0.00254	0.00680	0.00411	0.75371
sky130_fd_sc_hs__xnor3_2	0.00259	0.00682	0.00415	1.53086
sky130_fd_sc_hs__xnor3_4	0.00257	0.00680	0.00407	2.97079

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xnor3_1	0.00000	0.52214	0.59700
sky130_fd_sc_hs__xnor3_2	0.00000	0.53647	0.62143
sky130_fd_sc_hs__xnor3_4	0.00000	0.56512	0.67030

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)	0.38347	1.29230	9.36605
	B->X (-R)	0.27202	1.12896	8.90193
	C->X (-R)	0.20524	1.05405	8.58565
sky130_fd_sc_hs__xnor3_2	A->X (-R)	0.40706	1.21558	9.50813
	B->X (-R)	0.28723	1.04330	9.03364
	C->X (-R)	0.21642	0.96676	8.72320
sky130_fd_sc_hs__xnor3_4	A->X (-R)	0.46095	1.20608	9.49942
	B->X (-R)	0.34792	1.04099	9.04801
	C->X (-R)	0.26932	0.95852	8.73643

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xnor3_1	A->X (-F)	0.42098	1.11641	5.79740
	B->X (-F)	0.38058	1.05778	5.62868
	C->X (-F)	0.21624	0.81935	4.75251
sky130_fd_sc_hs__xnor3_2	A->X (-F)	0.46139	1.14370	5.91783
	B->X (-F)	0.41954	1.08279	5.80449
	C->X (-F)	0.27694	0.88452	5.06110
sky130_fd_sc_hs__xnor3_4	A->X (-F)	0.53864	1.23110	6.24601
	B->X (-F)	0.51579	1.18858	6.18592
	C->X (-F)	0.40939	1.01720	5.52352

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.01615	0.01607	0.01847
	A	0.01597	0.01614	0.01978
	B	0.01519	0.01559	0.02406
	B	0.01482	0.01551	0.02573
	C	0.00743	0.00725	0.01274
	C	0.00774	0.00857	0.01491
sky130_fd_sc_hs__xnor3_2	A	0.01782	0.01794	0.02032
	A	0.01748	0.01781	0.02163
	B	0.01679	0.01737	0.02591
	B	0.01633	0.01716	0.02741
	C	0.00918	0.00929	0.01450
	C	0.00926	0.01029	0.01677
sky130_fd_sc_hs__xnor3_4	A	0.02193	0.02228	0.02467
	A	0.02137	0.02201	0.02623
	B	0.02062	0.02145	0.03003
	B	0.02019	0.02113	0.03189
	C	0.01305	0.01335	0.01858
	C	0.01304	0.01435	0.02099

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.01498	0.01492	0.01773
	A	0.01624	0.01632	0.01961
	B	0.01386	0.01423	0.02256
	B	0.01533	0.01582	0.02551
	C	0.00792	0.00855	0.01453
	C	0.00676	0.00704	0.01338
sky130_fd_sc_hs__xnor3_2	A	0.01670	0.01681	0.01979
	A	0.01782	0.01799	0.02127
	B	0.01549	0.01592	0.02409
	B	0.01690	0.01748	0.02710
	C	0.00951	0.01028	0.01623
	C	0.00849	0.00881	0.01509
sky130_fd_sc_hs__xnor3_4	A	0.01858	0.01853	0.02418
	A	0.02202	0.02197	0.02537
	B	0.01979	0.01984	0.02811
	B	0.02060	0.02122	0.03096
	C	0.01371	0.01421	0.02081
	C	0.01291	0.01298	0.01924

SKY130_FD_SC_HS__XOR2x

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT		OUTPUT
A	B	X
0	0	0
0	1	1
1	0	1
1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__xor2_1	12.78720
sky130_fd_sc_hs__xor2_2	15.98400
sky130_fd_sc_hs__xor2_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	X
sky130_fd_sc_hs__xor2_1	0.00492	0.00512	0.34435
sky130_fd_sc_hs__xor2_2	0.00755	0.00749	0.65377
sky130_fd_sc_hs__xor2_4	0.01529	0.01504	1.16656

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xor2_1	0.00000	0.03838	0.06819
sky130_fd_sc_hs__xor2_2	0.00000	0.05337	0.07169
sky130_fd_sc_hs__xor2_4	0.00000	0.10532	0.14338

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	0.13022	0.99218	7.14513
	A->X (FR)	B	0.16539	1.28082	11.82680
	B->X (RR)	!A	0.15946	1.01747	7.42931
	B->X (FR)	A	0.13005	1.21603	11.53930
sky130_fd_sc_hs__xor2_2	A->X (RR)	!B	0.10712	0.83612	7.35184
	A->X (FR)	B	0.14562	1.09962	11.79450
	B->X (RR)	!A	0.12851	0.82132	7.29791
	B->X (FR)	A	0.11479	1.06779	11.77300
sky130_fd_sc_hs__xor2_4	A->X (RR)	!B	0.10125	0.69674	7.24053
	A->X (FR)	B	0.14617	0.96035	11.42890
	B->X (RR)	!A	0.11479	0.66848	6.95964
	B->X (FR)	A	0.11629	0.93584	11.56360

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	0.18971	0.67834	3.48976
	A->X (RF)	B	0.04382	0.47019	4.49282
	B->X (FF)	!A	0.17492	0.64128	3.19212
	B->X (RF)	A	0.03571	0.49116	4.81907
sky130_fd_sc_hs__xor2_2	A->X (FF)	!B	0.24733	0.80907	4.72545
	A->X (RF)	B	0.04092	0.42254	4.55764
	B->X (FF)	!A	0.21946	0.76733	4.43225
	B->X (RF)	A	0.03604	0.47899	5.33989
sky130_fd_sc_hs__xor2_4	A->X (FF)	!B	0.24524	0.76657	4.61414
	A->X (RF)	B	0.04202	0.37352	4.40558
	B->X (FF)	!A	0.21072	0.71197	4.29997
	B->X (RF)	A	0.03705	0.41246	5.02894

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	0.00020	0.00013	0.00020
	A	B	0.00578	0.00572	0.00580
	A	!B	0.00779	0.00769	0.00931
	A	!B	0.00219	0.00208	0.00370
	B	A	0.00021	0.00011	0.00019
	B	A	0.00458	0.00449	0.00456
	B	!A	0.00703	0.00629	0.00896
	B	!A	0.00261	0.00189	0.00455
sky130_fd_sc_hs__xor2_2	A	B	0.00087	0.00072	0.00090
	A	B	0.00997	0.00984	0.01002
	A	!B	0.01042	0.01027	0.01233
	A	!B	0.00267	0.00250	0.00457
	B	A	0.00010	-0.00005	0.00015
	B	A	0.00750	0.00736	0.00757
	B	!A	0.01025	0.00921	0.01229
	B	!A	0.00421	0.00315	0.00625
sky130_fd_sc_hs__xor2_4	A	B	0.00117	0.00075	0.00121
	A	B	0.02045	0.01997	0.02048
	A	!B	0.02086	0.02031	0.02414
	A	!B	0.00570	0.00511	0.00897
	B	A	0.00041	0.00009	0.00061
	B	A	0.01593	0.01532	0.01616
	B	!A	0.01849	0.01683	0.02287
	B	!A	0.00703	0.00534	0.01142

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	0.00561	0.00540	0.00546
	A	B	0.00007	-0.00018	-0.00009
	A	!B	0.00142	0.00143	0.00275
	A	!B	0.00697	0.00699	0.00834
	B	A	0.00482	0.00471	0.00498
	B	A	0.00042	0.00030	0.00050
	B	!A	0.00221	0.00224	0.00545
	B	!A	0.00678	0.00680	0.01002
sky130_fd_sc_hs__xor2_2	A	B	0.00958	0.00920	0.00974
	A	B	0.00046	0.00007	0.00028
	A	!B	0.00131	0.00133	0.00305
	A	!B	0.00891	0.00898	0.01054
	B	A	0.00816	0.00788	0.00854
	B	A	0.00079	0.00051	0.00090
	B	!A	0.00234	0.00238	0.00588
	B	!A	0.00876	0.00880	0.01230
sky130_fd_sc_hs__xor2_4	A	B	0.01971	0.01886	0.01979
	A	B	0.00049	-0.00041	0.00013
	A	!B	0.00278	0.00287	0.00609
	A	!B	0.01769	0.01787	0.02077
	B	A	0.01672	0.01606	0.01714
	B	A	0.00112	0.00046	0.00143
	B	!A	0.00524	0.00535	0.01254
	B	!A	0.01739	0.01749	0.02447

SKY130_FD_SC_HS__XOR3x

sky130_fd_sc_hs_tt_1.44v_25C.ccs
Cell Library: Process , Voltage
1.44, Temp 25.00

Truth Table

INPUT			OUTPUT
A	B	C	X
0	0	0	0
0	0	1	1
0	1	0	1
0	1	1	0
1	0	0	1
1	0	1	0
1	1	0	0
1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__xor3_1	30.36960
sky130_fd_sc_hs__xor3_2	31.96800
sky130_fd_sc_hs__xor3_4	35.16480

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	X
sky130_fd_sc_hs__xor3_1	0.00253	0.00698	0.00410	0.76907
sky130_fd_sc_hs__xor3_2	0.00255	0.00707	0.00410	1.51054
sky130_fd_sc_hs__xor3_4	0.00253	0.00716	0.00406	2.97963

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xor3_1	0.00000	0.52215	0.59701
sky130_fd_sc_hs__xor3_2	0.00000	0.53647	0.62144
sky130_fd_sc_hs__xor3_4	0.00000	0.56512	0.67031

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)	0.37195	1.27614	9.35478
	B->X (-R)	0.26098	1.11140	8.85416
	C->X (-R)	0.20339	1.05800	8.62899
sky130_fd_sc_hs__xor3_2	A->X (-R)	0.38726	1.18739	9.34256
	B->X (-R)	0.27919	1.02943	8.85518
	C->X (-R)	0.21718	0.97451	8.65103
sky130_fd_sc_hs__xor3_4	A->X (-R)	0.43837	1.17828	9.55599
	B->X (-R)	0.33524	1.02597	9.06073
	C->X (-R)	0.25908	0.95856	8.85356

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xor3_1	A->X (-F)	0.42277	1.11109	5.71714
	B->X (-F)	0.38222	1.04778	5.55908
	C->X (-F)	0.19865	0.78388	4.61960
sky130_fd_sc_hs__xor3_2	A->X (-F)	0.45798	1.14174	5.88847
	B->X (-F)	0.42287	1.08246	5.79762
	C->X (-F)	0.26847	0.87936	5.03751
sky130_fd_sc_hs__xor3_4	A->X (-F)	0.55044	1.24679	6.29030
	B->X (-F)	0.52753	1.19830	6.22746
	C->X (-F)	0.39981	1.02334	5.59411

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.01719	0.01705	0.01937
	A	0.01591	0.01601	0.01965
	B	0.01621	0.01663	0.02486
	B	0.01466	0.01558	0.02546
	C	0.00753	0.00736	0.01293
	C	0.00766	0.00851	0.01486
sky130_fd_sc_hs__xor3_2	A	0.01894	0.01902	0.02129
	A	0.01752	0.01785	0.02173
	B	0.01799	0.01859	0.02685
	B	0.01622	0.01735	0.02731
	C	0.00930	0.00934	0.01468
	C	0.00950	0.01055	0.01698
sky130_fd_sc_hs__xor3_4	A	0.02290	0.02324	0.02559
	A	0.02157	0.02225	0.02637
	B	0.02200	0.02290	0.03115
	B	0.02004	0.02131	0.03147
	C	0.01299	0.01326	0.01835
	C	0.01313	0.01449	0.02131

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.01618	0.01609	0.01858
	A	0.01627	0.01631	0.01957
	B	0.01459	0.01502	0.02358
	B	0.01520	0.01590	0.02550
	C	0.00842	0.00910	0.01501
	C	0.00671	0.00698	0.01335
sky130_fd_sc_hs__xor3_2	A	0.01784	0.01779	0.02043
	A	0.01785	0.01801	0.02121
	B	0.01631	0.01683	0.02531
	B	0.01673	0.01754	0.02711
	C	0.01015	0.01089	0.01693
	C	0.00838	0.00875	0.01506
sky130_fd_sc_hs__xor3_4	A	0.01913	0.01900	0.02475
	A	0.02255	0.02243	0.02580
	B	0.02140	0.02151	0.02972
	B	0.02128	0.02184	0.03155
	C	0.01409	0.01481	0.02128
	C	0.01295	0.01301	0.01926