sky130_fd_sc_hs_tt_1.80v_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_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00281	0.00271	0.00282	0.00294	0.00294	0.28945
sky130_fd_sc_hs__a2111oi_2	0.00534	0.00517	0.00433	0.00435	0.00435	0.51511
sky130_fd_sc_hs__a2111oi_4	0.01061	0.01037	0.00847	0.00834	0.00851	0.95160

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2111oi_1	0.00000	0.01841	0.07688
sky130_fd_sc_hs__a2111oi_2	0.00000	0.03473	0.15376
sky130_fd_sc_hs__a2111oi_4	0.00000	0.06945	0.30752

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)	0.19907	1.13893	9.35838
	A2->Y (FR)	0.23670	1.20014	9.56598
	B1->Y (FR)	0.21908	1.19071	10.06920
	C1->Y (FR)	0.18820	1.18645	10.50760
	D1->Y (FR)	0.14096	1.14255	10.45570
sky130_fd_sc_hs__a2111oi_2	A1->Y (FR)	0.18553	0.98138	9.28753
	A2->Y (FR)	0.23270	1.03695	9.41409
	B1->Y (FR)	0.20592	1.02023	9.80971
	C1->Y (FR)	0.17242	1.01886	10.38250
	D1->Y (FR)	0.10472	0.95550	10.30560
sky130_fd_sc_hs__a2111oi_4	A1->Y (FR)	0.17735	0.83576	9.10430
	A2->Y (FR)	0.22832	0.89919	9.32074
	B1->Y (FR)	0.20225	0.88859	9.80089
	C1->Y (FR)	0.16424	0.88387	10.38070
	D1->Y (FR)	0.09737	0.82685	10.36620

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111oi_1	A1->Y (RF)	0.02944	0.32062	2.60221
	A2->Y (RF)	0.03284	0.29191	2.30571
	B1->Y (RF)	0.02346	0.25733	2.04726
	C1->Y (RF)	0.02343	0.24975	2.02976
	D1->Y (RF)	0.02022	0.23982	2.00933
sky130_fd_sc_hs__a2111oi_2	A1->Y (RF)	0.02569	0.28524	2.64006
	A2->Y (RF)	0.03107	0.25790	2.29279
	B1->Y (RF)	0.03500	0.34688	3.35515
	C1->Y (RF)	0.03334	0.33230	3.32329
	D1->Y (RF)	0.02469	0.31357	3.29399
sky130_fd_sc_hs__a2111oi_4	A1->Y (RF)	0.02683	0.25816	2.72214
	A2->Y (RF)	0.03151	0.21703	2.17293
	B1->Y (RF)	0.03141	0.28731	3.10464
	C1->Y (RF)	0.02964	0.27099	3.07213
	D1->Y (RF)	0.02170	0.25507	3.11198

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111oi_1	A1	0.00054	0.00030	0.00714
	A1	0.00959	0.00931	0.01623
	A2	0.00099	0.00083	0.00770
	A2	0.01120	0.01104	0.01793
	B1	0.00042	0.00027	0.00840
	B1	0.00815	0.00801	0.01618
	C1	0.00039	0.00034	0.00850
	C1	0.00707	0.00702	0.01517
	D1	0.00028	0.00086	0.01422
	D1	0.00593	0.00653	0.01989
sky130_fd_sc_hs__a2111oi_2	A1	0.00022	-0.00022	0.01292
	A1	0.01730	0.01692	0.03010
	A2	0.00189	0.00146	0.01460
	A2	0.02123	0.02084	0.03400
	B1	0.00105	0.00088	0.01070
	B1	0.01421	0.01402	0.02391
	C1	0.00116	0.00109	0.01098
	C1	0.01190	0.01182	0.02175
	D1	0.00096	0.00188	0.01918
	D1	0.00940	0.01034	0.02766

sky130_fd_sc_hs__a2111oi_4	**A1**	-0.00050	-0.00136	0.02366
	A1	0.03380	0.03296	0.05811
	A2	0.00251	0.00172	0.02689
	A2	0.04135	0.04054	0.06589
	B1	0.00132	0.00102	0.02054
	B1	0.02756	0.02727	0.04674
	C1	0.00142	0.00140	0.02116
	C1	0.02284	0.02284	0.04264
	D1	0.00101	0.00315	0.03643
	D1	0.01782	0.01977	0.05328

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**A1**	0.01273	0.01266	0.01994
	A1	0.00389	0.00381	0.01115
	A2	0.01392	0.01377	0.02016
	A2	0.00387	0.00373	0.01016
	B1	0.00976	0.00995	0.01826
	B1	0.00213	0.00229	0.01065
	C1	0.00769	0.00801	0.01598
	C1	0.00106	0.00136	0.00935
	D1	0.00559	0.00607	0.01389
	D1	-0.00006	0.00041	0.00822

sky130_fd_sc_hs__a2111oi_2	**A1**	0.02394	0.02380	0.03760
	A1	0.00733	0.00719	0.02105
	A2	0.02624	0.02590	0.03825
	A2	0.00725	0.00688	0.01933
	B1	0.01677	0.01689	0.02748
	B1	0.00385	0.00389	0.01452
	C1	0.01244	0.01264	0.02288
	C1	0.00178	0.00199	0.01215
	D1	0.00703	0.00783	0.01782
	D1	-0.00140	-0.00064	0.00932
sky130_fd_sc_hs__a2111oi_4	**A1**	0.04678	0.04640	0.07332
	A1	0.01347	0.01301	0.03998
	A2	0.05146	0.05090	0.07603
	A2	0.01335	0.01267	0.03799
	B1	0.03280	0.03289	0.05462
	B1	0.00700	0.00709	0.02887
	C1	0.02396	0.02456	0.04532
	C1	0.00274	0.00327	0.02406
	D1	0.01392	0.01562	0.03561
	D1	-0.00286	-0.00125	0.01867

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)**	0.00164	0.00165	0.00163
	(A2 * B1 * D1 * !Y)	-0.00199	-0.00207	-0.00207
	(A2 * B1 * C1 * !D1 * !Y)	0.00164	0.00165	0.00163
	(A2 * B1 * C1 * !D1 * !Y)	-0.00199	-0.00206	-0.00207
	(A2 * B1 * !C1 * !D1 * !Y)	0.00164	0.00165	0.00163
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00197	-0.00207	-0.00207
	(A2 * !B1 * C1 * D1 * !Y)	0.00163	0.00164	0.00163
	(A2 * !B1 * C1 * D1 * !Y)	-0.00185	-0.00201	-0.00201
	(A2 * !B1 * C1 * !D1 * !Y)	0.00162	0.00164	0.00163
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00185	-0.00202	-0.00201
	(A2 * !B1 * !C1 * D1 * !Y)	0.00163	0.00164	0.00163
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00180	-0.00198	-0.00197
	(!A2 * B1 * D1 * !Y)	0.00156	0.00158	0.00157
	(!A2 * B1 * D1 * !Y)	-0.00210	-0.00212	-0.00211
	(!A2 * B1 * C1 * !D1 * !Y)	0.00156	0.00158	0.00156
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00211	-0.00212	-0.00211
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00156	0.00158	0.00156
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00211	-0.00212	-0.00211
	(!A2 * !B1 * C1 * D1 * !Y)	0.00157	0.00158	0.00157
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00211	-0.00212	-0.00211
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00156	0.00158	0.00157
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00211	-0.00211	-0.00211
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00156	0.00158	0.00157
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00211	-0.00211	-0.00211
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00054	0.00054	0.00052
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00241	-0.00241	-0.00244

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	0.00324	0.00329	0.00325
	(A2 * B1 * D1 * !Y)	-0.00396	-0.00417	-0.00413
	(A2 * B1 * C1 * !D1 * !Y)	0.00324	0.00329	0.00325
	(A2 * B1 * C1 * !D1 * !Y)	-0.00395	-0.00417	-0.00413
	(A2 * B1 * !C1 * !D1 * !Y)	0.00325	0.00329	0.00325
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00389	-0.00416	-0.00413
	(A2 * !B1 * C1 * D1 * !Y)	0.00325	0.00329	0.00325
	(A2 * !B1 * C1 * D1 * !Y)	-0.00368	-0.00402	-0.00399
	(A2 * !B1 * C1 * !D1 * !Y)	0.00326	0.00329	0.00325
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00368	-0.00403	-0.00399
	(A2 * !B1 * !C1 * D1 * !Y)	0.00329	0.00329	0.00326
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00361	-0.00396	-0.00393
	(!A2 * B1 * D1 * !Y)	0.00311	0.00314	0.00312
	(!A2 * B1 * D1 * !Y)	-0.00419	-0.00422	-0.00421
	(!A2 * B1 * C1 * !D1 * !Y)	0.00311	0.00312	0.00311
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00422	-0.00422	-0.00421
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00311	0.00314	0.00312
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00420	-0.00423	-0.00421
	(!A2 * !B1 * C1 * D1 * !Y)	0.00312	0.00315	0.00312
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00422	-0.00423	-0.00421
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00310	0.00312	0.00311
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00420	-0.00422	-0.00421
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00310	0.00314	0.00311
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00420	-0.00423	-0.00421
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00110	0.00111	0.00106
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00478	-0.00480	-0.00489

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	0.00651	0.00661	0.00654
	(A2 * B1 * D1 * !Y)	-0.00793	-0.00834	-0.00827
	(A2 * B1 * C1 * !D1 * !Y)	0.00651	0.00661	0.00654
	(A2 * B1 * C1 * !D1 * !Y)	-0.00792	-0.00834	-0.00826
	(A2 * B1 * !C1 * !D1 * !Y)	0.00653	0.00661	0.00654
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00783	-0.00833	-0.00827
	(A2 * !B1 * C1 * D1 * !Y)	0.00654	0.00660	0.00653
	(A2 * !B1 * C1 * D1 * !Y)	-0.00742	-0.00808	-0.00801
	(A2 * !B1 * C1 * !D1 * !Y)	0.00655	0.00660	0.00654
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00742	-0.00810	-0.00801
	(A2 * !B1 * !C1 * D1 * !Y)	0.00661	0.00660	0.00654
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00727	-0.00794	-0.00788
	(!A2 * B1 * D1 * !Y)	0.00624	0.00633	0.00627
	(!A2 * B1 * D1 * !Y)	-0.00842	-0.00850	-0.00844
	(!A2 * B1 * C1 * !D1 * !Y)	0.00629	0.00634	0.00632
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00841	-0.00847	-0.00844
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00623	0.00628	0.00626
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00842	-0.00846	-0.00844
	(!A2 * !B1 * C1 * D1 * !Y)	0.00623	0.00627	0.00626
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00843	-0.00846	-0.00844
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00622	0.00626	0.00625
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00843	-0.00846	-0.00844
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00621	0.00629	0.00624
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00843	-0.00849	-0.00844
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00212	0.00212	0.00203
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00967	-0.00971	-0.00987

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)**	-0.00163	-0.00163	-0.00163
	(A2 * B1 * D1 * !Y)	0.00206	0.00207	0.00207
	(A2 * B1 * C1 * !D1 * !Y)	-0.00163	-0.00163	-0.00163
	(A2 * B1 * C1 * !D1 * !Y)	0.00206	0.00206	0.00207
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00163	-0.00163	-0.00163
	(A2 * B1 * !C1 * !D1 * !Y)	0.00206	0.00207	0.00207
	(A2 * !B1 * C1 * D1 * !Y)	-0.00162	-0.00163	-0.00163
	(A2 * !B1 * C1 * D1 * !Y)	0.00200	0.00201	0.00201
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00162	-0.00163	-0.00163
	(A2 * !B1 * C1 * !D1 * !Y)	0.00200	0.00202	0.00201
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00162	-0.00163	-0.00162
	(A2 * !B1 * !C1 * D1 * !Y)	0.00196	0.00198	0.00197
	(!A2 * B1 * D1 * !Y)	-0.00152	-0.00156	-0.00157
	(!A2 * B1 * D1 * !Y)	0.00211	0.00212	0.00212
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00151	-0.00156	-0.00156
	(!A2 * B1 * C1 * !D1 * !Y)	0.00211	0.00212	0.00212
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00152	-0.00157	-0.00156
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00212	0.00214	0.00212
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00151	-0.00157	-0.00157
	(!A2 * !B1 * C1 * D1 * !Y)	0.00211	0.00214	0.00212
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00152	-0.00156	-0.00157
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00212	0.00211	0.00212
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00152	-0.00156	-0.00157
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00212	0.00211	0.00212
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00051	-0.00052	-0.00051
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00244	0.00248	0.00245

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	-0.00324	-0.00326	-0.00325
	(A2 * B1 * D1 * !Y)	0.00411	0.00417	0.00413
	(A2 * B1 * C1 * !D1 * !Y)	-0.00323	-0.00326	-0.00325
	(A2 * B1 * C1 * !D1 * !Y)	0.00410	0.00417	0.00413
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00324	-0.00326	-0.00325
	(A2 * B1 * !C1 * !D1 * !Y)	0.00411	0.00417	0.00413
	(A2 * !B1 * C1 * D1 * !Y)	-0.00324	-0.00326	-0.00325
	(A2 * !B1 * C1 * D1 * !Y)	0.00398	0.00402	0.00399
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00324	-0.00326	-0.00325
	(A2 * !B1 * C1 * !D1 * !Y)	0.00398	0.00403	0.00399
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00324	-0.00327	-0.00325
	(A2 * !B1 * !C1 * D1 * !Y)	0.00392	0.00396	0.00393
	(!A2 * B1 * D1 * !Y)	-0.00299	-0.00314	-0.00312
	(!A2 * B1 * D1 * !Y)	0.00420	0.00426	0.00422
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00300	-0.00312	-0.00311
	(!A2 * B1 * C1 * !D1 * !Y)	0.00423	0.00425	0.00422
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00299	-0.00314	-0.00312
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00421	0.00426	0.00422
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00300	-0.00315	-0.00312
	(!A2 * !B1 * C1 * D1 * !Y)	0.00423	0.00425	0.00422
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00299	-0.00312	-0.00311
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00421	0.00426	0.00422
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00299	-0.00314	-0.00311
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00421	0.00426	0.00422
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00102	-0.00105	-0.00103
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00487	0.00497	0.00490

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	-0.00651	-0.00656	-0.00652
	(A2 * B1 * D1 * !Y)	0.00828	0.00835	0.00827
	(A2 * B1 * C1 * !D1 * !Y)	-0.00651	-0.00656	-0.00652
	(A2 * B1 * C1 * !D1 * !Y)	0.00827	0.00835	0.00826
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00653	-0.00656	-0.00652
	(A2 * B1 * !C1 * !D1 * !Y)	0.00827	0.00837	0.00827
	(A2 * !B1 * C1 * D1 * !Y)	-0.00652	-0.00655	-0.00652
	(A2 * !B1 * C1 * D1 * !Y)	0.00800	0.00808	0.00801
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00653	-0.00656	-0.00652
	(A2 * !B1 * C1 * !D1 * !Y)	0.00803	0.00810	0.00801
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00654	-0.00656	-0.00652
	(A2 * !B1 * !C1 * D1 * !Y)	0.00789	0.00794	0.00788
	(!A2 * B1 * D1 * !Y)	-0.00600	-0.00633	-0.00627
	(!A2 * B1 * D1 * !Y)	0.00842	0.00852	0.00847
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00604	-0.00634	-0.00632
	(!A2 * B1 * C1 * !D1 * !Y)	0.00848	0.00852	0.00847
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00601	-0.00628	-0.00626
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00845	0.00854	0.00847
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00603	-0.00627	-0.00626
	(!A2 * !B1 * C1 * D1 * !Y)	0.00848	0.00852	0.00847
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00601	-0.00626	-0.00625
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00844	0.00850	0.00847
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00600	-0.00629	-0.00624
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00844	0.00852	0.00847
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00197	-0.00201	-0.00198
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00984	0.01004	0.00989

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)**	0.00173	0.00174	0.00172
	(A1 * B1 * D1 * !Y)	-0.00200	-0.00209	-0.00208
	(A1 * B1 * C1 * !D1 * !Y)	0.00173	0.00174	0.00172
	(A1 * B1 * C1 * !D1 * !Y)	-0.00199	-0.00209	-0.00208
	(A1 * B1 * !C1 * !D1 * !Y)	0.00173	0.00174	0.00172
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00197	-0.00209	-0.00208
	(A1 * !B1 * C1 * D1 * !Y)	0.00173	0.00173	0.00172
	(A1 * !B1 * C1 * D1 * !Y)	-0.00187	-0.00203	-0.00202
	(A1 * !B1 * C1 * !D1 * !Y)	0.00173	0.00173	0.00172
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00187	-0.00202	-0.00202
	(A1 * !B1 * !C1 * D1 * !Y)	0.00174	0.00173	0.00172
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00183	-0.00198	-0.00198
	(!A1 * B1 * !Y)	0.00165	0.00167	0.00165
	(!A1 * B1 * !Y)	-0.00212	-0.00214	-0.00212
	(!A1 * !B1 * C1 * !Y)	0.00165	0.00168	0.00166
	(!A1 * !B1 * C1 * !Y)	-0.00212	-0.00213	-0.00212
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00165	0.00166	0.00166
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00212	-0.00213	-0.00212
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00165	0.00166	0.00166
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00212	-0.00213	-0.00212

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00327	0.00331	0.00327
	(A1 * B1 * D1 * !Y)	-0.00395	-0.00415	-0.00412
	(A1 * B1 * C1 * !D1 * !Y)	0.00327	0.00331	0.00327
	(A1 * B1 * C1 * !D1 * !Y)	-0.00395	-0.00415	-0.00412
	(A1 * B1 * !C1 * !D1 * !Y)	0.00327	0.00331	0.00327
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00389	-0.00415	-0.00412
	(A1 * !B1 * C1 * D1 * !Y)	0.00328	0.00330	0.00327
	(A1 * !B1 * C1 * D1 * !Y)	-0.00369	-0.00402	-0.00399
	(A1 * !B1 * C1 * !D1 * !Y)	0.00328	0.00331	0.00327
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00369	-0.00402	-0.00399
	(A1 * !B1 * !C1 * D1 * !Y)	0.00331	0.00331	0.00328
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00363	-0.00395	-0.00392
	(!A1 * B1 * !Y)	0.00312	0.00315	0.00313
	(!A1 * B1 * !Y)	-0.00418	-0.00421	-0.00419
	(!A1 * !B1 * C1 * !Y)	0.00312	0.00315	0.00313
	(!A1 * !B1 * C1 * !Y)	-0.00418	-0.00421	-0.00419
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00312	0.00313	0.00314
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00418	-0.00418	-0.00419
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00312	0.00317	0.00314
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00418	-0.00422	-0.00419

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00657	0.00665	0.00657
	(A1 * B1 * D1 * !Y)	-0.00793	-0.00830	-0.00826
	(A1 * B1 * C1 * !D1 * !Y)	0.00657	0.00665	0.00657
	(A1 * B1 * C1 * !D1 * !Y)	-0.00793	-0.00830	-0.00826
	(A1 * B1 * !C1 * !D1 * !Y)	0.00658	0.00665	0.00658
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00783	-0.00828	-0.00826
	(A1 * !B1 * C1 * D1 * !Y)	0.00660	0.00664	0.00657
	(A1 * !B1 * C1 * D1 * !Y)	-0.00744	-0.00804	-0.00800
	(A1 * !B1 * C1 * !D1 * !Y)	0.00660	0.00665	0.00658
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00743	-0.00803	-0.00800
	(A1 * !B1 * !C1 * D1 * !Y)	0.00666	0.00664	0.00658
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00729	-0.00788	-0.00787
	(!A1 * B1 * !Y)	0.00624	0.00633	0.00626
	(!A1 * B1 * !Y)	-0.00842	-0.00846	-0.00843
	(!A1 * !B1 * C1 * !Y)	0.00628	0.00636	0.00628
	(!A1 * !B1 * C1 * !Y)	-0.00842	-0.00849	-0.00843
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00632	0.00635	0.00631
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00842	-0.00845	-0.00843
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00632	0.00637	0.00632
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00844	-0.00847	-0.00842

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)**	-0.00172	-0.00173	-0.00172
	(A1 * B1 * D1 * !Y)	0.00207	0.00210	0.00208
	(A1 * B1 * C1 * !D1 * !Y)	-0.00172	-0.00173	-0.00172
	(A1 * B1 * C1 * !D1 * !Y)	0.00207	0.00210	0.00208
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00172	-0.00173	-0.00172
	(A1 * B1 * !C1 * !D1 * !Y)	0.00207	0.00209	0.00208
	(A1 * !B1 * C1 * D1 * !Y)	-0.00172	-0.00172	-0.00172
	(A1 * !B1 * C1 * D1 * !Y)	0.00201	0.00203	0.00202
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00172	-0.00172	-0.00172
	(A1 * !B1 * C1 * !D1 * !Y)	0.00201	0.00202	0.00202
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00171	-0.00171	-0.00172
	(A1 * !B1 * !C1 * D1 * !Y)	0.00197	0.00198	0.00198
	(!A1 * B1 * !Y)	-0.00161	-0.00166	-0.00165
	(!A1 * B1 * !Y)	0.00212	0.00215	0.00213
	(!A1 * !B1 * C1 * !Y)	-0.00161	-0.00165	-0.00166
	(!A1 * !B1 * C1 * !Y)	0.00212	0.00213	0.00213
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00161	-0.00165	-0.00166
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00212	0.00213	0.00213
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00156	-0.00166	-0.00166
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00218	0.00215	0.00213

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00325	-0.00328	-0.00327
	(A1 * B1 * D1 * !Y)	0.00409	0.00416	0.00412
	(A1 * B1 * C1 * !D1 * !Y)	-0.00327	-0.00328	-0.00327
	(A1 * B1 * C1 * !D1 * !Y)	0.00412	0.00416	0.00412
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00326	-0.00328	-0.00327
	(A1 * B1 * !C1 * !D1 * !Y)	0.00410	0.00416	0.00412
	(A1 * !B1 * C1 * D1 * !Y)	-0.00326	-0.00328	-0.00327
	(A1 * !B1 * C1 * D1 * !Y)	0.00397	0.00402	0.00399
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00326	-0.00328	-0.00327
	(A1 * !B1 * C1 * !D1 * !Y)	0.00397	0.00402	0.00399
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00326	-0.00328	-0.00327
	(A1 * !B1 * !C1 * D1 * !Y)	0.00391	0.00395	0.00392
	(!A1 * B1 * !Y)	-0.00303	-0.00315	-0.00313
	(!A1 * B1 * !Y)	0.00419	0.00427	0.00420
	(!A1 * !B1 * C1 * !Y)	-0.00303	-0.00315	-0.00313
	(!A1 * !B1 * C1 * !Y)	0.00419	0.00427	0.00420
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00303	-0.00313	-0.00314
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00419	0.00427	0.00421
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00291	-0.00316	-0.00314
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00433	0.00424	0.00421

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00657	-0.00658	-0.00656
	(A1 * B1 * D1 * !Y)	0.00826	0.00830	0.00826
	(A1 * B1 * C1 * !D1 * !Y)	-0.00657	-0.00658	-0.00656
	(A1 * B1 * C1 * !D1 * !Y)	0.00826	0.00830	0.00826
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00657	-0.00657	-0.00656
	(A1 * B1 * !C1 * !D1 * !Y)	0.00826	0.00828	0.00826
	(A1 * !B1 * C1 * D1 * !Y)	-0.00657	-0.00658	-0.00656
	(A1 * !B1 * C1 * D1 * !Y)	0.00802	0.00804	0.00800
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00657	-0.00658	-0.00656
	(A1 * !B1 * C1 * !D1 * !Y)	0.00802	0.00803	0.00800
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00658	-0.00657	-0.00656
	(A1 * !B1 * !C1 * D1 * !Y)	0.00789	0.00788	0.00787
	(!A1 * B1 * !Y)	-0.00607	-0.00629	-0.00626
	(!A1 * B1 * !Y)	0.00842	0.00846	0.00845
	(!A1 * !B1 * C1 * !Y)	-0.00607	-0.00633	-0.00628
	(!A1 * !B1 * C1 * !Y)	0.00842	0.00857	0.00845
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00607	-0.00628	-0.00631
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00842	0.00846	0.00846
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00581	-0.00633	-0.00632
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00875	0.00853	0.00845

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)**	0.00171	0.00172	0.00170
	(A1 * A2 * C1 * D1 * !Y)	-0.00148	-0.00149	-0.00148
	(A1 * A2 * C1 * !D1 * !Y)	0.00183	0.00179	0.00171
	(A1 * A2 * C1 * !D1 * !Y)	-0.00144	-0.00145	-0.00144
	(A1 * A2 * !C1 * D1 * !Y)	0.00170	0.00174	0.00170
	(A1 * A2 * !C1 * D1 * !Y)	-0.00136	-0.00136	-0.00136
	(A1 * A2 * !C1 * !D1 * !Y)	0.00169	0.00170	0.00169
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00110	-0.00111	-0.00110
	(A1 * !A2 * C1 * D1 * !Y)	0.00167	0.00170	0.00168
	(A1 * !A2 * C1 * D1 * !Y)	-0.00197	-0.00204	-0.00204
	(A1 * !A2 * C1 * !D1 * !Y)	0.00184	0.00170	0.00168
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00180	-0.00205	-0.00204
	(A1 * !A2 * !C1 * D1 * !Y)	0.00177	0.00170	0.00168
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00172	-0.00199	-0.00196
	(!A1 * C1 * D1 * !Y)	0.00168	0.00170	0.00168
	(!A1 * C1 * D1 * !Y)	-0.00197	-0.00206	-0.00204
	(!A1 * C1 * !D1 * !Y)	0.00183	0.00170	0.00168
	(!A1 * C1 * !D1 * !Y)	-0.00182	-0.00204	-0.00204
	(!A1 * !C1 * D1 * !Y)	0.00176	0.00170	0.00168
	(!A1 * !C1 * D1 * !Y)	-0.00172	-0.00199	-0.00196

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	0.00192	0.00195	0.00192
	(A1 * A2 * C1 * D1 * !Y)	-0.00291	-0.00291	-0.00292
	(A1 * A2 * C1 * !D1 * !Y)	0.00206	0.00202	0.00193
	(A1 * A2 * C1 * !D1 * !Y)	-0.00284	-0.00286	-0.00283
	(A1 * A2 * !C1 * D1 * !Y)	0.00193	0.00196	0.00194
	(A1 * A2 * !C1 * D1 * !Y)	-0.00275	-0.00276	-0.00274
	(A1 * A2 * !C1 * !D1 * !Y)	0.00191	0.00193	0.00191
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00220	-0.00223	-0.00220
	(A1 * !A2 * C1 * D1 * !Y)	0.00192	0.00192	0.00191
	(A1 * !A2 * C1 * D1 * !Y)	-0.00394	-0.00410	-0.00408
	(A1 * !A2 * C1 * !D1 * !Y)	0.00211	0.00192	0.00191
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00373	-0.00410	-0.00409
	(A1 * !A2 * !C1 * D1 * !Y)	0.00205	0.00192	0.00191
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00352	-0.00393	-0.00392
	(!A1 * C1 * D1 * !Y)	0.00192	0.00192	0.00191
	(!A1 * C1 * D1 * !Y)	-0.00395	-0.00410	-0.00408
	(!A1 * C1 * !D1 * !Y)	0.00210	0.00192	0.00191
	(!A1 * C1 * !D1 * !Y)	-0.00374	-0.00410	-0.00409
	(!A1 * !C1 * D1 * !Y)	0.00205	0.00192	0.00191
	(!A1 * !C1 * D1 * !Y)	-0.00353	-0.00393	-0.00393

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	0.00371	0.00373	0.00368
	(A1 * A2 * C1 * D1 * !Y)	-0.00596	-0.00600	-0.00596
	(A1 * A2 * C1 * !D1 * !Y)	0.00408	0.00395	0.00373
	(A1 * A2 * C1 * !D1 * !Y)	-0.00577	-0.00582	-0.00577
	(A1 * A2 * !C1 * D1 * !Y)	0.00373	0.00379	0.00375
	(A1 * A2 * !C1 * D1 * !Y)	-0.00554	-0.00557	-0.00553
	(A1 * A2 * !C1 * !D1 * !Y)	0.00368	0.00371	0.00368
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00457	-0.00461	-0.00457
	(A1 * !A2 * C1 * D1 * !Y)	0.00368	0.00368	0.00367
	(A1 * !A2 * C1 * D1 * !Y)	-0.00803	-0.00842	-0.00837
	(A1 * !A2 * C1 * !D1 * !Y)	0.00421	0.00369	0.00367
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00746	-0.00841	-0.00838
	(A1 * !A2 * !C1 * D1 * !Y)	0.00400	0.00370	0.00368
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00712	-0.00806	-0.00802
	(!A1 * C1 * D1 * !Y)	0.00369	0.00369	0.00367
	(!A1 * C1 * D1 * !Y)	-0.00805	-0.00843	-0.00837
	(!A1 * C1 * !D1 * !Y)	0.00418	0.00369	0.00367
	(!A1 * C1 * !D1 * !Y)	-0.00751	-0.00839	-0.00839
	(!A1 * !C1 * D1 * !Y)	0.00398	0.00369	0.00368
	(!A1 * !C1 * D1 * !Y)	-0.00716	-0.00806	-0.00802

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)**	-0.00170	-0.00171	-0.00170
	(A1 * A2 * C1 * D1 * !Y)	0.00148	0.00149	0.00148
	(A1 * A2 * C1 * !D1 * !Y)	-0.00170	-0.00170	-0.00170
	(A1 * A2 * C1 * !D1 * !Y)	0.00144	0.00145	0.00144
	(A1 * A2 * !C1 * D1 * !Y)	-0.00169	-0.00169	-0.00169
	(A1 * A2 * !C1 * D1 * !Y)	0.00136	0.00136	0.00136
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00159	-0.00160	-0.00161
	(A1 * A2 * !C1 * !D1 * !Y)	0.00119	0.00120	0.00118
	(A1 * !A2 * C1 * D1 * !Y)	-0.00167	-0.00168	-0.00168
	(A1 * !A2 * C1 * D1 * !Y)	0.00203	0.00204	0.00204
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00168	-0.00168	-0.00168
	(A1 * !A2 * C1 * !D1 * !Y)	0.00204	0.00205	0.00204
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00168	-0.00169	-0.00167
	(A1 * !A2 * !C1 * D1 * !Y)	0.00197	0.00199	0.00196
	(!A1 * C1 * D1 * !Y)	-0.00167	-0.00169	-0.00168
	(!A1 * C1 * D1 * !Y)	0.00203	0.00206	0.00204
	(!A1 * C1 * !D1 * !Y)	-0.00168	-0.00168	-0.00168
	(!A1 * C1 * !D1 * !Y)	0.00204	0.00204	0.00204
	(!A1 * !C1 * D1 * !Y)	-0.00167	-0.00169	-0.00167
	(!A1 * !C1 * D1 * !Y)	0.00195	0.00199	0.00196

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	-0.00190	-0.00190	-0.00191
	(A1 * A2 * C1 * D1 * !Y)	0.00291	0.00291	0.00292
	(A1 * A2 * C1 * !D1 * !Y)	-0.00191	-0.00192	-0.00191
	(A1 * A2 * C1 * !D1 * !Y)	0.00284	0.00286	0.00283
	(A1 * A2 * !C1 * D1 * !Y)	-0.00193	-0.00194	-0.00193
	(A1 * A2 * !C1 * D1 * !Y)	0.00275	0.00276	0.00274
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00173	-0.00174	-0.00172
	(A1 * A2 * !C1 * !D1 * !Y)	0.00240	0.00242	0.00239
	(A1 * !A2 * C1 * D1 * !Y)	-0.00191	-0.00191	-0.00190
	(A1 * !A2 * C1 * D1 * !Y)	0.00408	0.00410	0.00408
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00191	-0.00191	-0.00190
	(A1 * !A2 * C1 * !D1 * !Y)	0.00408	0.00410	0.00409
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00191	-0.00191	-0.00190
	(A1 * !A2 * !C1 * D1 * !Y)	0.00391	0.00393	0.00392
	(!A1 * C1 * D1 * !Y)	-0.00191	-0.00191	-0.00190
	(!A1 * C1 * D1 * !Y)	0.00408	0.00410	0.00408
	(!A1 * C1 * !D1 * !Y)	-0.00191	-0.00191	-0.00190
	(!A1 * C1 * !D1 * !Y)	0.00408	0.00410	0.00409
	(!A1 * !C1 * D1 * !Y)	-0.00191	-0.00191	-0.00190
	(!A1 * !C1 * D1 * !Y)	0.00391	0.00393	0.00393

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	-0.00366	-0.00368	-0.00367
	(A1 * A2 * C1 * D1 * !Y)	0.00596	0.00600	0.00596
	(A1 * A2 * C1 * !D1 * !Y)	-0.00366	-0.00369	-0.00367
	(A1 * A2 * C1 * !D1 * !Y)	0.00577	0.00582	0.00577
	(A1 * A2 * !C1 * D1 * !Y)	-0.00371	-0.00373	-0.00371
	(A1 * A2 * !C1 * D1 * !Y)	0.00554	0.00557	0.00553
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00331	-0.00334	-0.00332
	(A1 * A2 * !C1 * !D1 * !Y)	0.00485	0.00491	0.00489
	(A1 * !A2 * C1 * D1 * !Y)	-0.00367	-0.00368	-0.00366
	(A1 * !A2 * C1 * D1 * !Y)	0.00839	0.00844	0.00837
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00364	-0.00368	-0.00366
	(A1 * !A2 * C1 * !D1 * !Y)	0.00832	0.00844	0.00838
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00366	-0.00369	-0.00366
	(A1 * !A2 * !C1 * D1 * !Y)	0.00797	0.00806	0.00802
	(!A1 * C1 * D1 * !Y)	-0.00367	-0.00368	-0.00366
	(!A1 * C1 * D1 * !Y)	0.00837	0.00844	0.00837
	(!A1 * C1 * !D1 * !Y)	-0.00365	-0.00367	-0.00366
	(!A1 * C1 * !D1 * !Y)	0.00835	0.00839	0.00839
	(!A1 * !C1 * D1 * !Y)	-0.00367	-0.00369	-0.00366
	(!A1 * !C1 * D1 * !Y)	0.00799	0.00806	0.00802

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)**	0.00192	0.00192	0.00183
	(A1 * B1 * D1 * !Y)	-0.00127	-0.00127	-0.00127
	(A1 * B1 * !D1 * !Y)	0.00178	0.00180	0.00177
	(A1 * B1 * !D1 * !Y)	-0.00105	-0.00106	-0.00105
	(A1 * A2 * !B1 * D1 * !Y)	0.00203	0.00184	0.00178
	(A1 * A2 * !B1 * D1 * !Y)	-0.00128	-0.00137	-0.00136
	(A1 * A2 * !B1 * !D1 * !Y)	0.00180	0.00181	0.00177
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00104	-0.00104	-0.00104
	(A1 * !A2 * !B1 * D1 * !Y)	0.00219	0.00181	0.00177
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00158	-0.00198	-0.00199
	(!A1 * B1 * D1 * !Y)	0.00194	0.00195	0.00184
	(!A1 * B1 * D1 * !Y)	-0.00128	-0.00128	-0.00127
	(!A1 * B1 * !D1 * !Y)	0.00179	0.00180	0.00177
	(!A1 * B1 * !D1 * !Y)	-0.00104	-0.00105	-0.00105
	(!A1 * !B1 * D1 * !Y)	0.00218	0.00181	0.00177
	(!A1 * !B1 * D1 * !Y)	-0.00158	-0.00198	-0.00199

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00201	0.00208	0.00193
	(A1 * B1 * D1 * !Y)	-0.00267	-0.00268	-0.00268
	(A1 * B1 * !D1 * !Y)	0.00183	0.00185	0.00183
	(A1 * B1 * !D1 * !Y)	-0.00227	-0.00229	-0.00227
	(A1 * A2 * !B1 * D1 * !Y)	0.00227	0.00192	0.00185
	(A1 * A2 * !B1 * D1 * !Y)	-0.00282	-0.00290	-0.00287
	(A1 * A2 * !B1 * !D1 * !Y)	0.00185	0.00187	0.00183
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00225	-0.00227	-0.00225
	(A1 * !A2 * !B1 * D1 * !Y)	0.00270	0.00187	0.00182
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00331	-0.00420	-0.00421
	(!A1 * B1 * D1 * !Y)	0.00209	0.00216	0.00198
	(!A1 * B1 * D1 * !Y)	-0.00271	-0.00271	-0.00270
	(!A1 * B1 * !D1 * !Y)	0.00184	0.00186	0.00183
	(!A1 * B1 * !D1 * !Y)	-0.00227	-0.00229	-0.00228
	(!A1 * !B1 * D1 * !Y)	0.00270	0.00187	0.00182
	(!A1 * !B1 * D1 * !Y)	-0.00331	-0.00419	-0.00421

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00405	0.00409	0.00377
	(A1 * B1 * D1 * !Y)	-0.00527	-0.00533	-0.00528
	(A1 * B1 * !D1 * !Y)	0.00360	0.00363	0.00355
	(A1 * B1 * !D1 * !Y)	-0.00444	-0.00447	-0.00446
	(A1 * A2 * !B1 * D1 * !Y)	0.00463	0.00376	0.00359
	(A1 * A2 * !B1 * D1 * !Y)	-0.00531	-0.00564	-0.00559
	(A1 * A2 * !B1 * !D1 * !Y)	0.00367	0.00368	0.00357
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00440	-0.00441	-0.00442
	(A1 * !A2 * !B1 * D1 * !Y)	0.00545	0.00365	0.00351
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00633	-0.00821	-0.00827
	(!A1 * B1 * D1 * !Y)	0.00419	0.00423	0.00385
	(!A1 * B1 * D1 * !Y)	-0.00534	-0.00538	-0.00532
	(!A1 * B1 * !D1 * !Y)	0.00363	0.00366	0.00356
	(!A1 * B1 * !D1 * !Y)	-0.00442	-0.00445	-0.00446
	(!A1 * !B1 * D1 * !Y)	0.00545	0.00365	0.00351
	(!A1 * !B1 * D1 * !Y)	-0.00633	-0.00819	-0.00827

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)**	-0.00177	-0.00177	-0.00177
	(A1 * B1 * D1 * !Y)	0.00127	0.00127	0.00127
	(A1 * B1 * !D1 * !Y)	-0.00175	-0.00176	-0.00175
	(A1 * B1 * !D1 * !Y)	0.00107	0.00108	0.00108
	(A1 * A2 * !B1 * D1 * !Y)	-0.00177	-0.00178	-0.00177
	(A1 * A2 * !B1 * D1 * !Y)	0.00137	0.00137	0.00136
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00165	-0.00167	-0.00175
	(A1 * A2 * !B1 * !D1 * !Y)	0.00113	0.00114	0.00107
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00175	-0.00176	-0.00175
	(A1 * !A2 * !B1 * D1 * !Y)	0.00198	0.00199	0.00199
	(!A1 * B1 * D1 * !Y)	-0.00177	-0.00177	-0.00177
	(!A1 * B1 * D1 * !Y)	0.00128	0.00128	0.00127
	(!A1 * B1 * !D1 * !Y)	-0.00175	-0.00176	-0.00175
	(!A1 * B1 * !D1 * !Y)	0.00107	0.00108	0.00108
	(!A1 * !B1 * D1 * !Y)	-0.00175	-0.00176	-0.00175
	(!A1 * !B1 * D1 * !Y)	0.00198	0.00199	0.00199

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00184	-0.00184	-0.00184
	(A1 * B1 * D1 * !Y)	0.00267	0.00268	0.00268
	(A1 * B1 * !D1 * !Y)	-0.00179	-0.00180	-0.00176
	(A1 * B1 * !D1 * !Y)	0.00231	0.00232	0.00234
	(A1 * A2 * !B1 * D1 * !Y)	-0.00184	-0.00185	-0.00184
	(A1 * A2 * !B1 * D1 * !Y)	0.00288	0.00290	0.00287
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00162	-0.00165	-0.00175
	(A1 * A2 * !B1 * !D1 * !Y)	0.00236	0.00239	0.00233
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00180	-0.00181	-0.00180
	(A1 * !A2 * !B1 * D1 * !Y)	0.00417	0.00420	0.00421
	(!A1 * B1 * D1 * !Y)	-0.00185	-0.00185	-0.00184
	(!A1 * B1 * D1 * !Y)	0.00271	0.00271	0.00270
	(!A1 * B1 * !D1 * !Y)	-0.00178	-0.00179	-0.00176
	(!A1 * B1 * !D1 * !Y)	0.00231	0.00233	0.00235
	(!A1 * !B1 * D1 * !Y)	-0.00181	-0.00181	-0.00180
	(!A1 * !B1 * D1 * !Y)	0.00418	0.00419	0.00421

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00357	-0.00360	-0.00358
	(A1 * B1 * D1 * !Y)	0.00527	0.00533	0.00528
	(A1 * B1 * !D1 * !Y)	-0.00349	-0.00349	-0.00344
	(A1 * B1 * !D1 * !Y)	0.00457	0.00458	0.00459
	(A1 * A2 * !B1 * D1 * !Y)	-0.00357	-0.00358	-0.00356
	(A1 * A2 * !B1 * D1 * !Y)	0.00561	0.00564	0.00559
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00325	-0.00329	-0.00342
	(A1 * A2 * !B1 * !D1 * !Y)	0.00457	0.00463	0.00453
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00349	-0.00349	-0.00347
	(A1 * !A2 * !B1 * D1 * !Y)	0.00819	0.00822	0.00827
	(!A1 * B1 * D1 * !Y)	-0.00359	-0.00360	-0.00358
	(!A1 * B1 * D1 * !Y)	0.00534	0.00538	0.00532
	(!A1 * B1 * !D1 * !Y)	-0.00346	-0.00349	-0.00344
	(!A1 * B1 * !D1 * !Y)	0.00453	0.00460	0.00460
	(!A1 * !B1 * D1 * !Y)	-0.00349	-0.00348	-0.00347
	(!A1 * !B1 * D1 * !Y)	0.00820	0.00819	0.00827

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	0.00196	0.00198	0.00197
	(A1 * C1 * !Y)	-0.00097	-0.00097	-0.00097
	(A1 * B1 * !C1 * !Y)	0.00196	0.00198	0.00197
	(A1 * B1 * !C1 * !Y)	-0.00097	-0.00097	-0.00096
	(A1 * A2 * !B1 * !C1 * !Y)	0.00197	0.00199	0.00197
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00097	-0.00097	-0.00096
	(!A1 * C1 * !Y)	0.00196	0.00198	0.00197
	(!A1 * C1 * !Y)	-0.00097	-0.00097	-0.00097
	(!A1 * B1 * !C1 * !Y)	0.00196	0.00198	0.00197
	(!A1 * B1 * !C1 * !Y)	-0.00097	-0.00097	-0.00096

sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	0.00223	0.00225	0.00223
	(A1 * C1 * !Y)	-0.00197	-0.00198	-0.00196
	(A1 * B1 * !C1 * !Y)	0.00223	0.00225	0.00223
	(A1 * B1 * !C1 * !Y)	-0.00196	-0.00197	-0.00196
	(A1 * A2 * !B1 * !C1 * !Y)	0.00224	0.00225	0.00223
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00197	-0.00197	-0.00196
	(!A1 * C1 * !Y)	0.00223	0.00225	0.00223
	(!A1 * C1 * !Y)	-0.00197	-0.00198	-0.00196
	(!A1 * B1 * !C1 * !Y)	0.00224	0.00225	0.00223
	(!A1 * B1 * !C1 * !Y)	-0.00197	-0.00198	-0.00196
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	0.00445	0.00446	0.00442
	(A1 * C1 * !Y)	-0.00390	-0.00389	-0.00385
	(A1 * B1 * !C1 * !Y)	0.00445	0.00446	0.00442
	(A1 * B1 * !C1 * !Y)	-0.00389	-0.00388	-0.00384
	(A1 * A2 * !B1 * !C1 * !Y)	0.00444	0.00449	0.00442
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00388	-0.00391	-0.00384
	(!A1 * C1 * !Y)	0.00445	0.00446	0.00442
	(!A1 * C1 * !Y)	-0.00390	-0.00389	-0.00386
	(!A1 * B1 * !C1 * !Y)	0.00444	0.00446	0.00442
	(!A1 * B1 * !C1 * !Y)	-0.00389	-0.00389	-0.00385

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

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

sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	-0.00191	-0.00192	-0.00196
	(A1 * C1 * !Y)	0.00102	0.00102	0.00098
	(A1 * B1 * !C1 * !Y)	-0.00182	-0.00184	-0.00195
	(A1 * B1 * !C1 * !Y)	0.00105	0.00106	0.00098
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00164	-0.00166	-0.00190
	(A1 * A2 * !B1 * !C1 * !Y)	0.00118	0.00119	0.00101
	(!A1 * C1 * !Y)	-0.00191	-0.00192	-0.00196
	(!A1 * C1 * !Y)	0.00102	0.00102	0.00098
	(!A1 * B1 * !C1 * !Y)	-0.00183	-0.00184	-0.00195
	(!A1 * B1 * !C1 * !Y)	0.00105	0.00106	0.00098
sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	-0.00206	-0.00207	-0.00222
	(A1 * C1 * !Y)	0.00213	0.00214	0.00200
	(A1 * B1 * !C1 * !Y)	-0.00187	-0.00190	-0.00218
	(A1 * B1 * !C1 * !Y)	0.00218	0.00221	0.00199
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00151	-0.00155	-0.00208
	(A1 * A2 * !B1 * !C1 * !Y)	0.00243	0.00244	0.00206
	(!A1 * C1 * !Y)	-0.00205	-0.00207	-0.00222
	(!A1 * C1 * !Y)	0.00212	0.00214	0.00201
	(!A1 * B1 * !C1 * !Y)	-0.00187	-0.00190	-0.00218
	(!A1 * B1 * !C1 * !Y)	0.00219	0.00221	0.00200
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	-0.00412	-0.00415	-0.00440
	(A1 * C1 * !Y)	0.00414	0.00414	0.00393
	(A1 * B1 * !C1 * !Y)	-0.00373	-0.00379	-0.00432
	(A1 * B1 * !C1 * !Y)	0.00429	0.00433	0.00394
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00306	-0.00312	-0.00413
	(A1 * A2 * !B1 * !C1 * !Y)	0.00472	0.00475	0.00405
	(!A1 * C1 * !Y)	-0.00412	-0.00415	-0.00440
	(!A1 * C1 * !Y)	0.00415	0.00415	0.00393
	(!A1 * B1 * !C1 * !Y)	-0.00374	-0.00379	-0.00432
	(!A1 * B1 * !C1 * !Y)	0.00430	0.00434	0.00394

SKY130_FD_SC_HS__A2111Ox

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00257	0.00270	0.00258	0.00263	0.00259	1.18813
sky130_fd_sc_hs__a2111o_2	0.00286	0.00298	0.00281	0.00289	0.00302	2.29289
sky130_fd_sc_hs__a2111o_4	0.00485	0.00478	0.00497	0.00498	0.00491	4.36102

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2111o_1	0.00000	0.05454	0.20404
sky130_fd_sc_hs__a2111o_2	0.00000	0.04629	0.18349
sky130_fd_sc_hs__a2111o_4	0.00000	0.13695	0.42294

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)	0.07989	0.59193	6.04909
	A2->X (RR)	0.08380	0.58771	6.02452
	B1->X (RR)	0.06519	0.55184	5.83817
	C1->X (RR)	0.06336	0.53868	5.75907
	D1->X (RR)	0.05747	0.52043	5.73835
sky130_fd_sc_hs__a2111o_2	A1->X (RR)	0.08197	0.51887	6.08896
	A2->X (RR)	0.08593	0.50905	6.05264
	B1->X (RR)	0.06469	0.47373	5.87555
	C1->X (RR)	0.06202	0.45953	5.79102
	D1->X (RR)	0.05762	0.44461	5.76296
sky130_fd_sc_hs__a2111o_4	A1->X (RR)	0.08885	0.46193	6.15945
	A2->X (RR)	0.09416	0.45460	6.11628
	B1->X (RR)	0.06384	0.39934	5.86052
	C1->X (RR)	0.06198	0.38754	5.77457
	D1->X (RR)	0.05601	0.36948	5.74562

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111o_1	A1->X (FF)	0.26689	0.70250	4.98326
	A2->X (FF)	0.28912	0.73674	5.03600
	B1->X (FF)	0.26660	0.71976	5.21086
	C1->X (FF)	0.23845	0.72008	5.30760
	D1->X (FF)	0.19471	0.69634	5.27034
sky130_fd_sc_hs__a2111o_2	A1->X (FF)	0.31605	0.74472	5.11352
	A2->X (FF)	0.33480	0.77727	5.17572
	B1->X (FF)	0.31274	0.75801	5.35963
	C1->X (FF)	0.28192	0.75630	5.47848
	D1->X (FF)	0.23976	0.73618	5.44702
sky130_fd_sc_hs__a2111o_4	A1->X (FF)	0.33905	0.72914	5.18361
	A2->X (FF)	0.38269	0.78721	5.27279
	B1->X (FF)	0.36200	0.77290	5.50374
	C1->X (FF)	0.32929	0.77292	5.65460
	D1->X (FF)	0.26044	0.72900	5.58438

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111o_1	A1	0.01512	0.01570	0.04071
	A1	0.00696	0.00755	0.03303
	A2	0.01599	0.01634	0.03833
	A2	0.00695	0.00730	0.02976
	B1	0.01225	0.01329	0.03909
	B1	0.00534	0.00638	0.03225
	C1	0.01041	0.01145	0.03582
	C1	0.00443	0.00597	0.02999
	D1	0.00848	0.00980	0.04121
	D1	0.00342	0.00475	0.03632
sky130_fd_sc_hs__a2111o_2	A1	0.01924	0.01998	0.04449
	A1	0.01012	0.01087	0.03629
	A2	0.02044	0.02101	0.04266
	A2	0.01018	0.01081	0.03336
	B1	0.01594	0.01711	0.04237
	B1	0.00823	0.00941	0.03477
	C1	0.01370	0.01504	0.03864
	C1	0.00699	0.00834	0.03216
	D1	0.01178	0.01332	0.04287
	D1	0.00597	0.00756	0.03737

sky130_fd_sc_hs__a2111o_4	**A1**	0.03615	0.03750	0.08502
	A1	0.02024	0.02170	0.07080
	A2	0.03832	0.03932	0.08075
	A2	0.02020	0.02134	0.06438
	B1	0.03065	0.03302	0.08299
	B1	0.01667	0.01910	0.06946
	C1	0.02668	0.02926	0.07451
	C1	0.01476	0.01744	0.06318
	D1	0.02155	0.02462	0.08225
	D1	0.01175	0.01489	0.07309

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**A1**	0.00459	0.00434	0.02756
	A1	0.01287	0.01265	0.03475
	A2	0.00527	0.00498	0.02674
	A2	0.01441	0.01416	0.03499
	B1	0.00450	0.00460	0.02862
	B1	0.01146	0.01157	0.03487
	C1	0.00451	0.00493	0.02699
	C1	0.01051	0.01095	0.03285
	D1	0.00453	0.00607	0.03639
	D1	0.00960	0.01113	0.04097

sky130_fd_sc_hs__a2111o_2	**A1**	0.00916	0.00774	0.02869
	A1	0.01845	0.01706	0.03797
	A2	0.00978	0.00813	0.02865
	A2	0.02015	0.01873	0.03888
	B1	0.00872	0.00789	0.03034
	B1	0.01871	0.01732	0.03746
	C1	0.00863	0.00812	0.02920
	C1	0.01776	0.01656	0.03578
	D1	0.00852	0.00906	0.03766
	D1	0.01661	0.01633	0.04244
sky130_fd_sc_hs__a2111o_4	**A1**	0.01849	0.01506	0.05764
	A1	0.03475	0.03132	0.07172
	A2	0.02076	0.01649	0.05857
	A2	0.03906	0.03494	0.07325
	B1	0.01719	0.01496	0.06228
	B1	0.03674	0.03271	0.07043
	C1	0.02100	0.01660	0.05745
	C1	0.03491	0.03089	0.06636
	D1	0.01720	0.01755	0.07488
	D1	0.03246	0.03058	0.07907

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)**	0.00168	0.00169	0.00168
	(A2 * B1 * D1 * X)	-0.00179	-0.00185	-0.00186
	(A2 * B1 * C1 * !D1 * X)	0.00168	0.00169	0.00168
	(A2 * B1 * C1 * !D1 * X)	-0.00179	-0.00187	-0.00186
	(A2 * B1 * !C1 * !D1 * X)	0.00168	0.00169	0.00168
	(A2 * B1 * !C1 * !D1 * X)	-0.00177	-0.00187	-0.00186
	(A2 * !B1 * C1 * D1 * X)	0.00168	0.00169	0.00167
	(A2 * !B1 * C1 * D1 * X)	-0.00168	-0.00183	-0.00181
	(A2 * !B1 * C1 * !D1 * X)	0.00168	0.00169	0.00168
	(A2 * !B1 * C1 * !D1 * X)	-0.00168	-0.00183	-0.00181
	(A2 * !B1 * !C1 * D1 * X)	0.00170	0.00169	0.00168
	(A2 * !B1 * !C1 * D1 * X)	-0.00164	-0.00180	-0.00178
	(!A2 * B1 * D1 * X)	0.00161	0.00162	0.00161
	(!A2 * B1 * D1 * X)	-0.00189	-0.00190	-0.00189
	(!A2 * B1 * C1 * !D1 * X)	0.00161	0.00162	0.00161
	(!A2 * B1 * C1 * !D1 * X)	-0.00189	-0.00190	-0.00189
	(!A2 * B1 * !C1 * !D1 * X)	0.00161	0.00162	0.00161
	(!A2 * B1 * !C1 * !D1 * X)	-0.00189	-0.00190	-0.00189
	(!A2 * !B1 * C1 * D1 * X)	0.00160	0.00162	0.00161
	(!A2 * !B1 * C1 * D1 * X)	-0.00189	-0.00190	-0.00189
	(!A2 * !B1 * C1 * !D1 * X)	0.00161	0.00163	0.00161
	(!A2 * !B1 * C1 * !D1 * X)	-0.00189	-0.00191	-0.00189
	(!A2 * !B1 * !C1 * D1 * X)	0.00161	0.00162	0.00161
	(!A2 * !B1 * !C1 * D1 * X)	-0.00189	-0.00190	-0.00189
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00069	0.00069	0.00067
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00219	-0.00220	-0.00222

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	0.00171	0.00173	0.00172
	(A2 * B1 * D1 * X)	-0.00201	-0.00211	-0.00210
	(A2 * B1 * C1 * !D1 * X)	0.00171	0.00173	0.00172
	(A2 * B1 * C1 * !D1 * X)	-0.00201	-0.00211	-0.00210
	(A2 * B1 * !C1 * !D1 * X)	0.00171	0.00173	0.00172
	(A2 * B1 * !C1 * !D1 * X)	-0.00199	-0.00211	-0.00210
	(A2 * !B1 * C1 * D1 * X)	0.00171	0.00173	0.00172
	(A2 * !B1 * C1 * D1 * X)	-0.00189	-0.00205	-0.00204
	(A2 * !B1 * C1 * !D1 * X)	0.00171	0.00173	0.00172
	(A2 * !B1 * C1 * !D1 * X)	-0.00189	-0.00205	-0.00204
	(A2 * !B1 * !C1 * D1 * X)	0.00172	0.00173	0.00172
	(A2 * !B1 * !C1 * D1 * X)	-0.00185	-0.00202	-0.00200
	(!A2 * B1 * D1 * X)	0.00165	0.00165	0.00165
	(!A2 * B1 * D1 * X)	-0.00214	-0.00214	-0.00214
	(!A2 * B1 * C1 * !D1 * X)	0.00165	0.00167	0.00165
	(!A2 * B1 * C1 * !D1 * X)	-0.00214	-0.00216	-0.00214
	(!A2 * B1 * !C1 * !D1 * X)	0.00165	0.00167	0.00165
	(!A2 * B1 * !C1 * !D1 * X)	-0.00214	-0.00216	-0.00214
	(!A2 * !B1 * C1 * D1 * X)	0.00165	0.00167	0.00165
	(!A2 * !B1 * C1 * D1 * X)	-0.00214	-0.00215	-0.00214
	(!A2 * !B1 * C1 * !D1 * X)	0.00165	0.00167	0.00165
	(!A2 * !B1 * C1 * !D1 * X)	-0.00214	-0.00216	-0.00214
	(!A2 * !B1 * !C1 * D1 * X)	0.00165	0.00167	0.00165
	(!A2 * !B1 * !C1 * D1 * X)	-0.00213	-0.00215	-0.00214
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00058	0.00058	0.00056
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00247	-0.00249	-0.00250

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	0.00285	0.00289	0.00286
	(A2 * B1 * D1 * X)	-0.00362	-0.00381	-0.00378
	(A2 * B1 * C1 * !D1 * X)	0.00285	0.00289	0.00286
	(A2 * B1 * C1 * !D1 * X)	-0.00362	-0.00381	-0.00378
	(A2 * B1 * !C1 * !D1 * X)	0.00286	0.00289	0.00286
	(A2 * B1 * !C1 * !D1 * X)	-0.00355	-0.00381	-0.00378
	(A2 * !B1 * C1 * D1 * X)	0.00285	0.00289	0.00286
	(A2 * !B1 * C1 * D1 * X)	-0.00337	-0.00368	-0.00366
	(A2 * !B1 * C1 * !D1 * X)	0.00286	0.00289	0.00286
	(A2 * !B1 * C1 * !D1 * X)	-0.00337	-0.00368	-0.00366
	(A2 * !B1 * !C1 * D1 * X)	0.00290	0.00289	0.00287
	(A2 * !B1 * !C1 * D1 * X)	-0.00330	-0.00362	-0.00361
	(!A2 * B1 * D1 * X)	0.00277	0.00280	0.00278
	(!A2 * B1 * D1 * X)	-0.00385	-0.00388	-0.00385
	(!A2 * B1 * C1 * !D1 * X)	0.00277	0.00280	0.00278
	(!A2 * B1 * C1 * !D1 * X)	-0.00385	-0.00388	-0.00385
	(!A2 * B1 * !C1 * !D1 * X)	0.00277	0.00279	0.00277
	(!A2 * B1 * !C1 * !D1 * X)	-0.00385	-0.00387	-0.00385
	(!A2 * !B1 * C1 * D1 * X)	0.00277	0.00278	0.00278
	(!A2 * !B1 * C1 * D1 * X)	-0.00385	-0.00386	-0.00385
	(!A2 * !B1 * C1 * !D1 * X)	0.00277	0.00280	0.00277
	(!A2 * !B1 * C1 * !D1 * X)	-0.00385	-0.00388	-0.00385
	(!A2 * !B1 * !C1 * D1 * X)	0.00277	0.00280	0.00278
	(!A2 * !B1 * !C1 * D1 * X)	-0.00385	-0.00388	-0.00385
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00100	0.00101	0.00095
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00438	-0.00441	-0.00447

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)**	-0.00167	-0.00167	-0.00167
	(A2 * B1 * D1 * X)	0.00185	0.00185	0.00186
	(A2 * B1 * C1 * !D1 * X)	-0.00167	-0.00168	-0.00167
	(A2 * B1 * C1 * !D1 * X)	0.00185	0.00187	0.00186
	(A2 * B1 * !C1 * !D1 * X)	-0.00167	-0.00168	-0.00167
	(A2 * B1 * !C1 * !D1 * X)	0.00185	0.00188	0.00186
	(A2 * !B1 * C1 * D1 * X)	-0.00167	-0.00168	-0.00167
	(A2 * !B1 * C1 * D1 * X)	0.00180	0.00183	0.00181
	(A2 * !B1 * C1 * !D1 * X)	-0.00167	-0.00168	-0.00167
	(A2 * !B1 * C1 * !D1 * X)	0.00180	0.00183	0.00181
	(A2 * !B1 * !C1 * D1 * X)	-0.00167	-0.00168	-0.00167
	(A2 * !B1 * !C1 * D1 * X)	0.00178	0.00180	0.00178
	(!A2 * B1 * D1 * X)	-0.00159	-0.00162	-0.00161
	(!A2 * B1 * D1 * X)	0.00189	0.00190	0.00190
	(!A2 * B1 * C1 * !D1 * X)	-0.00158	-0.00162	-0.00161
	(!A2 * B1 * C1 * !D1 * X)	0.00189	0.00190	0.00190
	(!A2 * B1 * !C1 * !D1 * X)	-0.00158	-0.00162	-0.00161
	(!A2 * B1 * !C1 * !D1 * X)	0.00189	0.00191	0.00190
	(!A2 * !B1 * C1 * D1 * X)	-0.00158	-0.00162	-0.00161
	(!A2 * !B1 * C1 * D1 * X)	0.00189	0.00190	0.00190
	(!A2 * !B1 * C1 * !D1 * X)	-0.00158	-0.00162	-0.00161
	(!A2 * !B1 * C1 * !D1 * X)	0.00189	0.00191	0.00190
	(!A2 * !B1 * !C1 * D1 * X)	-0.00158	-0.00162	-0.00161
	(!A2 * !B1 * !C1 * D1 * X)	0.00189	0.00191	0.00190
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00067	-0.00068	-0.00066
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00222	0.00226	0.00222

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	-0.00171	-0.00172	-0.00171
	(A2 * B1 * D1 * X)	0.00209	0.00211	0.00210
	(A2 * B1 * C1 * !D1 * X)	-0.00171	-0.00172	-0.00171
	(A2 * B1 * C1 * !D1 * X)	0.00209	0.00211	0.00210
	(A2 * B1 * !C1 * !D1 * X)	-0.00171	-0.00172	-0.00171
	(A2 * B1 * !C1 * !D1 * X)	0.00209	0.00211	0.00210
	(A2 * !B1 * C1 * D1 * X)	-0.00171	-0.00172	-0.00171
	(A2 * !B1 * C1 * D1 * X)	0.00203	0.00205	0.00204
	(A2 * !B1 * C1 * !D1 * X)	-0.00171	-0.00172	-0.00171
	(A2 * !B1 * C1 * !D1 * X)	0.00203	0.00205	0.00204
	(A2 * !B1 * !C1 * D1 * X)	-0.00171	-0.00172	-0.00171
	(A2 * !B1 * !C1 * D1 * X)	0.00200	0.00202	0.00200
	(!A2 * B1 * D1 * X)	-0.00160	-0.00165	-0.00165
	(!A2 * B1 * D1 * X)	0.00214	0.00215	0.00215
	(!A2 * B1 * C1 * !D1 * X)	-0.00160	-0.00165	-0.00165
	(!A2 * B1 * C1 * !D1 * X)	0.00214	0.00216	0.00215
	(!A2 * B1 * !C1 * !D1 * X)	-0.00160	-0.00166	-0.00165
	(!A2 * B1 * !C1 * !D1 * X)	0.00214	0.00218	0.00215
	(!A2 * !B1 * C1 * D1 * X)	-0.00160	-0.00165	-0.00165
	(!A2 * !B1 * C1 * D1 * X)	0.00214	0.00216	0.00215
	(!A2 * !B1 * C1 * !D1 * X)	-0.00160	-0.00165	-0.00165
	(!A2 * !B1 * C1 * !D1 * X)	0.00214	0.00216	0.00215
	(!A2 * !B1 * !C1 * D1 * X)	-0.00160	-0.00166	-0.00165
	(!A2 * !B1 * !C1 * D1 * X)	0.00214	0.00218	0.00215
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00054	-0.00056	-0.00055
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00249	0.00253	0.00251

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	-0.00285	-0.00287	-0.00286
	(A2 * B1 * D1 * X)	0.00376	0.00381	0.00378
	(A2 * B1 * C1 * !D1 * X)	-0.00285	-0.00287	-0.00286
	(A2 * B1 * C1 * !D1 * X)	0.00376	0.00381	0.00378
	(A2 * B1 * !C1 * !D1 * X)	-0.00285	-0.00287	-0.00286
	(A2 * B1 * !C1 * !D1 * X)	0.00375	0.00381	0.00378
	(A2 * !B1 * C1 * D1 * X)	-0.00285	-0.00287	-0.00286
	(A2 * !B1 * C1 * D1 * X)	0.00364	0.00368	0.00366
	(A2 * !B1 * C1 * !D1 * X)	-0.00285	-0.00287	-0.00286
	(A2 * !B1 * C1 * !D1 * X)	0.00365	0.00368	0.00366
	(A2 * !B1 * !C1 * D1 * X)	-0.00285	-0.00286	-0.00285
	(A2 * !B1 * !C1 * D1 * X)	0.00359	0.00362	0.00361
	(!A2 * B1 * D1 * X)	-0.00264	-0.00278	-0.00278
	(!A2 * B1 * D1 * X)	0.00385	0.00390	0.00387
	(!A2 * B1 * C1 * !D1 * X)	-0.00264	-0.00278	-0.00278
	(!A2 * B1 * C1 * !D1 * X)	0.00385	0.00390	0.00387
	(!A2 * B1 * !C1 * !D1 * X)	-0.00264	-0.00277	-0.00277
	(!A2 * B1 * !C1 * !D1 * X)	0.00385	0.00391	0.00387
	(!A2 * !B1 * C1 * D1 * X)	-0.00264	-0.00278	-0.00278
	(!A2 * !B1 * C1 * D1 * X)	0.00385	0.00390	0.00387
	(!A2 * !B1 * C1 * !D1 * X)	-0.00263	-0.00278	-0.00277
	(!A2 * !B1 * C1 * !D1 * X)	0.00385	0.00390	0.00387
	(!A2 * !B1 * !C1 * D1 * X)	-0.00263	-0.00277	-0.00278
	(!A2 * !B1 * !C1 * D1 * X)	0.00385	0.00390	0.00387
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00092	-0.00093	-0.00092
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00446	0.00452	0.00448

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)**	0.00154	0.00155	0.00153
	(A1 * B1 * D1 * X)	-0.00187	-0.00194	-0.00193
	(A1 * B1 * C1 * !D1 * X)	0.00154	0.00155	0.00153
	(A1 * B1 * C1 * !D1 * X)	-0.00187	-0.00194	-0.00193
	(A1 * B1 * !C1 * !D1 * X)	0.00153	0.00155	0.00153
	(A1 * B1 * !C1 * !D1 * X)	-0.00182	-0.00194	-0.00193
	(A1 * !B1 * C1 * D1 * X)	0.00153	0.00154	0.00153
	(A1 * !B1 * C1 * D1 * X)	-0.00173	-0.00188	-0.00187
	(A1 * !B1 * C1 * !D1 * X)	0.00153	0.00154	0.00153
	(A1 * !B1 * C1 * !D1 * X)	-0.00173	-0.00188	-0.00187
	(A1 * !B1 * !C1 * D1 * X)	0.00155	0.00154	0.00153
	(A1 * !B1 * !C1 * D1 * X)	-0.00168	-0.00186	-0.00184
	(!A1 * B1 * X)	0.00146	0.00148	0.00147
	(!A1 * B1 * X)	-0.00197	-0.00198	-0.00197
	(!A1 * !B1 * C1 * X)	0.00146	0.00148	0.00146
	(!A1 * !B1 * C1 * X)	-0.00196	-0.00198	-0.00197
	(!A1 * !B1 * !C1 * D1 * X)	0.00146	0.00148	0.00147
	(!A1 * !B1 * !C1 * D1 * X)	-0.00196	-0.00198	-0.00197
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00129	0.00131	0.00129
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00215	-0.00216	-0.00215

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00172	0.00174	0.00173
	(A1 * B1 * D1 * X)	-0.00201	-0.00211	-0.00210
	(A1 * B1 * C1 * !D1 * X)	0.00172	0.00174	0.00173
	(A1 * B1 * C1 * !D1 * X)	-0.00201	-0.00211	-0.00210
	(A1 * B1 * !C1 * !D1 * X)	0.00172	0.00174	0.00173
	(A1 * B1 * !C1 * !D1 * X)	-0.00200	-0.00210	-0.00210
	(A1 * !B1 * C1 * D1 * X)	0.00172	0.00174	0.00173
	(A1 * !B1 * C1 * D1 * X)	-0.00189	-0.00205	-0.00204
	(A1 * !B1 * C1 * !D1 * X)	0.00172	0.00174	0.00173
	(A1 * !B1 * C1 * !D1 * X)	-0.00188	-0.00205	-0.00204
	(A1 * !B1 * !C1 * D1 * X)	0.00173	0.00174	0.00173
	(A1 * !B1 * !C1 * D1 * X)	-0.00183	-0.00200	-0.00200
	(!A1 * B1 * X)	0.00165	0.00167	0.00165
	(!A1 * B1 * X)	-0.00215	-0.00216	-0.00215
	(!A1 * !B1 * C1 * X)	0.00166	0.00168	0.00166
	(!A1 * !B1 * C1 * X)	-0.00214	-0.00216	-0.00215
	(!A1 * !B1 * !C1 * D1 * X)	0.00165	0.00167	0.00165
	(!A1 * !B1 * !C1 * D1 * X)	-0.00214	-0.00216	-0.00215
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00153	0.00156	0.00154
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00226	-0.00228	-0.00227

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00294	0.00297	0.00294
	(A1 * B1 * D1 * X)	-0.00365	-0.00383	-0.00380
	(A1 * B1 * C1 * !D1 * X)	0.00294	0.00297	0.00294
	(A1 * B1 * C1 * !D1 * X)	-0.00365	-0.00383	-0.00380
	(A1 * B1 * !C1 * !D1 * X)	0.00294	0.00297	0.00294
	(A1 * B1 * !C1 * !D1 * X)	-0.00357	-0.00383	-0.00381
	(A1 * !B1 * C1 * D1 * X)	0.00295	0.00297	0.00294
	(A1 * !B1 * C1 * D1 * X)	-0.00341	-0.00370	-0.00368
	(A1 * !B1 * C1 * !D1 * X)	0.00295	0.00297	0.00294
	(A1 * !B1 * C1 * !D1 * X)	-0.00341	-0.00370	-0.00368
	(A1 * !B1 * !C1 * D1 * X)	0.00299	0.00297	0.00294
	(A1 * !B1 * !C1 * D1 * X)	-0.00334	-0.00364	-0.00363
	(!A1 * B1 * X)	0.00283	0.00285	0.00283
	(!A1 * B1 * X)	-0.00387	-0.00389	-0.00388
	(!A1 * !B1 * C1 * X)	0.00284	0.00287	0.00283
	(!A1 * !B1 * C1 * X)	-0.00387	-0.00390	-0.00388
	(!A1 * !B1 * !C1 * D1 * X)	0.00284	0.00287	0.00284
	(!A1 * !B1 * !C1 * D1 * X)	-0.00388	-0.00390	-0.00388
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00283	0.00287	0.00283
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00388	-0.00390	-0.00388

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)**	-0.00152	-0.00153	-0.00153
	(A1 * B1 * D1 * X)	0.00192	0.00194	0.00193
	(A1 * B1 * C1 * !D1 * X)	-0.00152	-0.00153	-0.00153
	(A1 * B1 * C1 * !D1 * X)	0.00192	0.00194	0.00193
	(A1 * B1 * !C1 * !D1 * X)	-0.00152	-0.00153	-0.00153
	(A1 * B1 * !C1 * !D1 * X)	0.00192	0.00194	0.00193
	(A1 * !B1 * C1 * D1 * X)	-0.00152	-0.00153	-0.00153
	(A1 * !B1 * C1 * D1 * X)	0.00187	0.00188	0.00187
	(A1 * !B1 * C1 * !D1 * X)	-0.00152	-0.00153	-0.00153
	(A1 * !B1 * C1 * !D1 * X)	0.00187	0.00188	0.00187
	(A1 * !B1 * !C1 * D1 * X)	-0.00152	-0.00153	-0.00152
	(A1 * !B1 * !C1 * D1 * X)	0.00183	0.00186	0.00184
	(!A1 * B1 * X)	-0.00144	-0.00147	-0.00147
	(!A1 * B1 * X)	0.00197	0.00198	0.00198
	(!A1 * !B1 * C1 * X)	-0.00143	-0.00147	-0.00146
	(!A1 * !B1 * C1 * X)	0.00196	0.00199	0.00198
	(!A1 * !B1 * !C1 * D1 * X)	-0.00143	-0.00147	-0.00147
	(!A1 * !B1 * !C1 * D1 * X)	0.00197	0.00198	0.00198
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00119	-0.00129	-0.00129
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00222	0.00219	0.00216

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00172	-0.00173	-0.00172
	(A1 * B1 * D1 * X)	0.00209	0.00211	0.00210
	(A1 * B1 * C1 * !D1 * X)	-0.00172	-0.00173	-0.00172
	(A1 * B1 * C1 * !D1 * X)	0.00209	0.00211	0.00210
	(A1 * B1 * !C1 * !D1 * X)	-0.00172	-0.00172	-0.00172
	(A1 * B1 * !C1 * !D1 * X)	0.00209	0.00210	0.00210
	(A1 * !B1 * C1 * D1 * X)	-0.00172	-0.00173	-0.00172
	(A1 * !B1 * C1 * D1 * X)	0.00203	0.00205	0.00204
	(A1 * !B1 * C1 * !D1 * X)	-0.00172	-0.00173	-0.00172
	(A1 * !B1 * C1 * !D1 * X)	0.00203	0.00205	0.00204
	(A1 * !B1 * !C1 * D1 * X)	-0.00172	-0.00172	-0.00172
	(A1 * !B1 * !C1 * D1 * X)	0.00200	0.00200	0.00200
	(!A1 * B1 * X)	-0.00161	-0.00166	-0.00165
	(!A1 * B1 * X)	0.00215	0.00216	0.00216
	(!A1 * !B1 * C1 * X)	-0.00162	-0.00166	-0.00166
	(!A1 * !B1 * C1 * X)	0.00215	0.00216	0.00216
	(!A1 * !B1 * !C1 * D1 * X)	-0.00161	-0.00166	-0.00165
	(!A1 * !B1 * !C1 * D1 * X)	0.00215	0.00216	0.00216
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00143	-0.00154	-0.00154
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00235	0.00230	0.00228

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00294	-0.00294	-0.00293
	(A1 * B1 * D1 * X)	0.00381	0.00383	0.00380
	(A1 * B1 * C1 * !D1 * X)	-0.00294	-0.00294	-0.00293
	(A1 * B1 * C1 * !D1 * X)	0.00380	0.00383	0.00380
	(A1 * B1 * !C1 * !D1 * X)	-0.00293	-0.00294	-0.00293
	(A1 * B1 * !C1 * !D1 * X)	0.00381	0.00383	0.00381
	(A1 * !B1 * C1 * D1 * X)	-0.00293	-0.00294	-0.00293
	(A1 * !B1 * C1 * D1 * X)	0.00366	0.00370	0.00368
	(A1 * !B1 * C1 * !D1 * X)	-0.00293	-0.00294	-0.00293
	(A1 * !B1 * C1 * !D1 * X)	0.00367	0.00370	0.00368
	(A1 * !B1 * !C1 * D1 * X)	-0.00293	-0.00294	-0.00293
	(A1 * !B1 * !C1 * D1 * X)	0.00362	0.00364	0.00363
	(!A1 * B1 * X)	-0.00272	-0.00282	-0.00283
	(!A1 * B1 * X)	0.00387	0.00391	0.00389
	(!A1 * !B1 * C1 * X)	-0.00272	-0.00283	-0.00283
	(!A1 * !B1 * C1 * X)	0.00387	0.00391	0.00389
	(!A1 * !B1 * !C1 * D1 * X)	-0.00272	-0.00282	-0.00284
	(!A1 * !B1 * !C1 * D1 * X)	0.00388	0.00392	0.00389
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00259	-0.00282	-0.00283
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00404	0.00393	0.00390

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)**	0.00157	0.00157	0.00157
	(A1 * A2 * C1 * D1 * X)	-0.00131	-0.00133	-0.00132
	(A1 * A2 * C1 * !D1 * X)	0.00174	0.00166	0.00159
	(A1 * A2 * C1 * !D1 * X)	-0.00129	-0.00130	-0.00129
	(A1 * A2 * !C1 * D1 * X)	0.00158	0.00159	0.00157
	(A1 * A2 * !C1 * D1 * X)	-0.00122	-0.00124	-0.00123
	(A1 * A2 * !C1 * !D1 * X)	0.00156	0.00156	0.00156
	(A1 * A2 * !C1 * !D1 * X)	-0.00099	-0.00100	-0.00100
	(A1 * !A2 * C1 * D1 * X)	0.00156	0.00157	0.00156
	(A1 * !A2 * C1 * D1 * X)	-0.00177	-0.00183	-0.00182
	(A1 * !A2 * C1 * !D1 * X)	0.00176	0.00158	0.00156
	(A1 * !A2 * C1 * !D1 * X)	-0.00158	-0.00183	-0.00183
	(A1 * !A2 * !C1 * D1 * X)	0.00170	0.00157	0.00156
	(A1 * !A2 * !C1 * D1 * X)	-0.00152	-0.00176	-0.00176
	(!A1 * C1 * D1 * X)	0.00156	0.00158	0.00156
	(!A1 * C1 * D1 * X)	-0.00177	-0.00183	-0.00182
	(!A1 * C1 * !D1 * X)	0.00177	0.00158	0.00156
	(!A1 * C1 * !D1 * X)	-0.00157	-0.00183	-0.00183
	(!A1 * !C1 * D1 * X)	0.00170	0.00157	0.00156
	(!A1 * !C1 * D1 * X)	-0.00151	-0.00176	-0.00175

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	0.00167	0.00168	0.00166
	(A1 * A2 * C1 * D1 * X)	-0.00148	-0.00149	-0.00148
	(A1 * A2 * C1 * !D1 * X)	0.00179	0.00175	0.00168
	(A1 * A2 * C1 * !D1 * X)	-0.00144	-0.00144	-0.00143
	(A1 * A2 * !C1 * D1 * X)	0.00166	0.00171	0.00167
	(A1 * A2 * !C1 * D1 * X)	-0.00136	-0.00136	-0.00136
	(A1 * A2 * !C1 * !D1 * X)	0.00166	0.00168	0.00166
	(A1 * A2 * !C1 * !D1 * X)	-0.00110	-0.00111	-0.00110
	(A1 * !A2 * C1 * D1 * X)	0.00166	0.00169	0.00166
	(A1 * !A2 * C1 * D1 * X)	-0.00197	-0.00204	-0.00204
	(A1 * !A2 * C1 * !D1 * X)	0.00181	0.00169	0.00166
	(A1 * !A2 * C1 * !D1 * X)	-0.00182	-0.00206	-0.00204
	(A1 * !A2 * !C1 * D1 * X)	0.00174	0.00169	0.00166
	(A1 * !A2 * !C1 * D1 * X)	-0.00172	-0.00195	-0.00196
	(!A1 * C1 * D1 * X)	0.00165	0.00169	0.00166
	(!A1 * C1 * D1 * X)	-0.00197	-0.00205	-0.00204
	(!A1 * C1 * !D1 * X)	0.00182	0.00169	0.00166
	(!A1 * C1 * !D1 * X)	-0.00180	-0.00206	-0.00204
	(!A1 * !C1 * D1 * X)	0.00175	0.00169	0.00166
	(!A1 * !C1 * D1 * X)	-0.00172	-0.00199	-0.00196

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	0.00309	0.00313	0.00307
	(A1 * A2 * C1 * D1 * X)	-0.00272	-0.00274	-0.00271
	(A1 * A2 * C1 * !D1 * X)	0.00326	0.00320	0.00308
	(A1 * A2 * C1 * !D1 * X)	-0.00265	-0.00266	-0.00264
	(A1 * A2 * !C1 * D1 * X)	0.00308	0.00311	0.00309
	(A1 * A2 * !C1 * D1 * X)	-0.00257	-0.00258	-0.00256
	(A1 * A2 * !C1 * !D1 * X)	0.00309	0.00310	0.00307
	(A1 * A2 * !C1 * !D1 * X)	-0.00210	-0.00210	-0.00208
	(A1 * !A2 * C1 * D1 * X)	0.00305	0.00307	0.00306
	(A1 * !A2 * C1 * D1 * X)	-0.00361	-0.00377	-0.00375
	(A1 * !A2 * C1 * !D1 * X)	0.00336	0.00307	0.00306
	(A1 * !A2 * C1 * !D1 * X)	-0.00338	-0.00377	-0.00376
	(A1 * !A2 * !C1 * D1 * X)	0.00326	0.00312	0.00306
	(A1 * !A2 * !C1 * D1 * X)	-0.00319	-0.00364	-0.00362
	(!A1 * C1 * D1 * X)	0.00306	0.00308	0.00306
	(!A1 * C1 * D1 * X)	-0.00362	-0.00373	-0.00375
	(!A1 * C1 * !D1 * X)	0.00330	0.00308	0.00306
	(!A1 * C1 * !D1 * X)	-0.00335	-0.00377	-0.00376
	(!A1 * !C1 * D1 * X)	0.00325	0.00312	0.00306
	(!A1 * !C1 * D1 * X)	-0.00320	-0.00364	-0.00362

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)**	-0.00156	-0.00157	-0.00156
	(A1 * A2 * C1 * D1 * X)	0.00131	0.00133	0.00132
	(A1 * A2 * C1 * !D1 * X)	-0.00156	-0.00157	-0.00156
	(A1 * A2 * C1 * !D1 * X)	0.00129	0.00130	0.00129
	(A1 * A2 * !C1 * D1 * X)	-0.00155	-0.00157	-0.00156
	(A1 * A2 * !C1 * D1 * X)	0.00122	0.00124	0.00123
	(A1 * A2 * !C1 * !D1 * X)	-0.00148	-0.00149	-0.00149
	(A1 * A2 * !C1 * !D1 * X)	0.00108	0.00108	0.00106
	(A1 * !A2 * C1 * D1 * X)	-0.00156	-0.00156	-0.00155
	(A1 * !A2 * C1 * D1 * X)	0.00182	0.00183	0.00182
	(A1 * !A2 * C1 * !D1 * X)	-0.00155	-0.00156	-0.00155
	(A1 * !A2 * C1 * !D1 * X)	0.00181	0.00183	0.00183
	(A1 * !A2 * !C1 * D1 * X)	-0.00155	-0.00155	-0.00155
	(A1 * !A2 * !C1 * D1 * X)	0.00175	0.00176	0.00176
	(!A1 * C1 * D1 * X)	-0.00156	-0.00156	-0.00155
	(!A1 * C1 * D1 * X)	0.00182	0.00183	0.00182
	(!A1 * C1 * !D1 * X)	-0.00155	-0.00156	-0.00155
	(!A1 * C1 * !D1 * X)	0.00181	0.00183	0.00183
	(!A1 * !C1 * D1 * X)	-0.00155	-0.00155	-0.00155
	(!A1 * !C1 * D1 * X)	0.00174	0.00176	0.00175

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	-0.00166	-0.00167	-0.00166
	(A1 * A2 * C1 * D1 * X)	0.00148	0.00149	0.00148
	(A1 * A2 * C1 * !D1 * X)	-0.00166	-0.00167	-0.00166
	(A1 * A2 * C1 * !D1 * X)	0.00144	0.00144	0.00143
	(A1 * A2 * !C1 * D1 * X)	-0.00166	-0.00166	-0.00166
	(A1 * A2 * !C1 * D1 * X)	0.00136	0.00136	0.00136
	(A1 * A2 * !C1 * !D1 * X)	-0.00156	-0.00158	-0.00158
	(A1 * A2 * !C1 * !D1 * X)	0.00119	0.00120	0.00118
	(A1 * !A2 * C1 * D1 * X)	-0.00166	-0.00166	-0.00166
	(A1 * !A2 * C1 * D1 * X)	0.00203	0.00204	0.00204
	(A1 * !A2 * C1 * !D1 * X)	-0.00166	-0.00167	-0.00166
	(A1 * !A2 * C1 * !D1 * X)	0.00203	0.00206	0.00204
	(A1 * !A2 * !C1 * D1 * X)	-0.00166	-0.00165	-0.00166
	(A1 * !A2 * !C1 * D1 * X)	0.00197	0.00195	0.00196
	(!A1 * C1 * D1 * X)	-0.00165	-0.00166	-0.00166
	(!A1 * C1 * D1 * X)	0.00203	0.00205	0.00204
	(!A1 * C1 * !D1 * X)	-0.00166	-0.00167	-0.00166
	(!A1 * C1 * !D1 * X)	0.00203	0.00206	0.00204
	(!A1 * !C1 * D1 * X)	-0.00166	-0.00167	-0.00166
	(!A1 * !C1 * D1 * X)	0.00197	0.00199	0.00196

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	-0.00306	-0.00307	-0.00306
	(A1 * A2 * C1 * D1 * X)	0.00272	0.00274	0.00271
	(A1 * A2 * C1 * !D1 * X)	-0.00306	-0.00307	-0.00306
	(A1 * A2 * C1 * !D1 * X)	0.00265	0.00266	0.00264
	(A1 * A2 * !C1 * D1 * X)	-0.00307	-0.00308	-0.00307
	(A1 * A2 * !C1 * D1 * X)	0.00257	0.00258	0.00256
	(A1 * A2 * !C1 * !D1 * X)	-0.00289	-0.00291	-0.00288
	(A1 * A2 * !C1 * !D1 * X)	0.00227	0.00228	0.00225
	(A1 * !A2 * C1 * D1 * X)	-0.00305	-0.00307	-0.00305
	(A1 * !A2 * C1 * D1 * X)	0.00373	0.00378	0.00375
	(A1 * !A2 * C1 * !D1 * X)	-0.00305	-0.00306	-0.00305
	(A1 * !A2 * C1 * !D1 * X)	0.00376	0.00378	0.00376
	(A1 * !A2 * !C1 * D1 * X)	-0.00305	-0.00307	-0.00304
	(A1 * !A2 * !C1 * D1 * X)	0.00360	0.00364	0.00362
	(!A1 * C1 * D1 * X)	-0.00305	-0.00304	-0.00305
	(!A1 * C1 * D1 * X)	0.00375	0.00373	0.00375
	(!A1 * C1 * !D1 * X)	-0.00305	-0.00306	-0.00305
	(!A1 * C1 * !D1 * X)	0.00376	0.00378	0.00376
	(!A1 * !C1 * D1 * X)	-0.00305	-0.00307	-0.00304
	(!A1 * !C1 * D1 * X)	0.00360	0.00364	0.00362

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)**	0.00169	0.00170	0.00163
	(A1 * B1 * D1 * X)	-0.00115	-0.00116	-0.00116
	(A1 * B1 * !D1 * X)	0.00158	0.00161	0.00157
	(A1 * B1 * !D1 * X)	-0.00098	-0.00099	-0.00098
	(A1 * A2 * !B1 * D1 * X)	0.00183	0.00163	0.00158
	(A1 * A2 * !B1 * D1 * X)	-0.00115	-0.00125	-0.00125
	(A1 * A2 * !B1 * !D1 * X)	0.00159	0.00162	0.00158
	(A1 * A2 * !B1 * !D1 * X)	-0.00096	-0.00098	-0.00097
	(A1 * !A2 * !B1 * D1 * X)	0.00198	0.00162	0.00157
	(A1 * !A2 * !B1 * D1 * X)	-0.00139	-0.00179	-0.00181
	(!A1 * B1 * D1 * X)	0.00170	0.00171	0.00164
	(!A1 * B1 * D1 * X)	-0.00116	-0.00118	-0.00117
	(!A1 * B1 * !D1 * X)	0.00159	0.00162	0.00157
	(!A1 * B1 * !D1 * X)	-0.00097	-0.00099	-0.00098
	(!A1 * !B1 * D1 * X)	0.00198	0.00162	0.00157
	(!A1 * !B1 * D1 * X)	-0.00139	-0.00179	-0.00181

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00180	0.00179	0.00170
	(A1 * B1 * D1 * X)	-0.00137	-0.00137	-0.00137
	(A1 * B1 * !D1 * X)	0.00166	0.00168	0.00165
	(A1 * B1 * !D1 * X)	-0.00115	-0.00116	-0.00116
	(A1 * A2 * !B1 * D1 * X)	0.00190	0.00171	0.00166
	(A1 * A2 * !B1 * D1 * X)	-0.00136	-0.00145	-0.00145
	(A1 * A2 * !B1 * !D1 * X)	0.00167	0.00169	0.00166
	(A1 * A2 * !B1 * !D1 * X)	-0.00113	-0.00114	-0.00114
	(A1 * !A2 * !B1 * D1 * X)	0.00207	0.00169	0.00165
	(A1 * !A2 * !B1 * D1 * X)	-0.00170	-0.00210	-0.00211
	(!A1 * B1 * D1 * X)	0.00182	0.00181	0.00172
	(!A1 * B1 * D1 * X)	-0.00139	-0.00139	-0.00139
	(!A1 * B1 * !D1 * X)	0.00167	0.00168	0.00165
	(!A1 * B1 * !D1 * X)	-0.00116	-0.00117	-0.00117
	(!A1 * !B1 * D1 * X)	0.00207	0.00169	0.00165
	(!A1 * !B1 * D1 * X)	-0.00170	-0.00210	-0.00211

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00322	0.00330	0.00313
	(A1 * B1 * D1 * X)	-0.00251	-0.00252	-0.00251
	(A1 * B1 * !D1 * X)	0.00300	0.00303	0.00299
	(A1 * B1 * !D1 * X)	-0.00215	-0.00216	-0.00215
	(A1 * A2 * !B1 * D1 * X)	0.00343	0.00311	0.00302
	(A1 * A2 * !B1 * D1 * X)	-0.00255	-0.00270	-0.00268
	(A1 * A2 * !B1 * !D1 * X)	0.00305	0.00306	0.00300
	(A1 * A2 * !B1 * !D1 * X)	-0.00214	-0.00213	-0.00213
	(A1 * !A2 * !B1 * D1 * X)	0.00390	0.00306	0.00299
	(A1 * !A2 * !B1 * D1 * X)	-0.00297	-0.00383	-0.00388
	(!A1 * B1 * D1 * X)	0.00327	0.00335	0.00316
	(!A1 * B1 * D1 * X)	-0.00254	-0.00256	-0.00254
	(!A1 * B1 * !D1 * X)	0.00302	0.00305	0.00300
	(!A1 * B1 * !D1 * X)	-0.00214	-0.00215	-0.00215
	(!A1 * !B1 * D1 * X)	0.00389	0.00306	0.00299
	(!A1 * !B1 * D1 * X)	-0.00297	-0.00383	-0.00388

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)**	-0.00156	-0.00157	-0.00156
	(A1 * B1 * D1 * X)	0.00115	0.00116	0.00116
	(A1 * B1 * !D1 * X)	-0.00155	-0.00156	-0.00155
	(A1 * B1 * !D1 * X)	0.00099	0.00100	0.00101
	(A1 * A2 * !B1 * D1 * X)	-0.00157	-0.00157	-0.00156
	(A1 * A2 * !B1 * D1 * X)	0.00125	0.00125	0.00125
	(A1 * A2 * !B1 * !D1 * X)	-0.00148	-0.00148	-0.00155
	(A1 * A2 * !B1 * !D1 * X)	0.00104	0.00104	0.00100
	(A1 * !A2 * !B1 * D1 * X)	-0.00155	-0.00156	-0.00155
	(A1 * !A2 * !B1 * D1 * X)	0.00180	0.00181	0.00182
	(!A1 * B1 * D1 * X)	-0.00156	-0.00157	-0.00156
	(!A1 * B1 * D1 * X)	0.00116	0.00118	0.00117
	(!A1 * B1 * !D1 * X)	-0.00155	-0.00156	-0.00155
	(!A1 * B1 * !D1 * X)	0.00100	0.00100	0.00101
	(!A1 * !B1 * D1 * X)	-0.00155	-0.00156	-0.00155
	(!A1 * !B1 * D1 * X)	0.00180	0.00181	0.00182

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00165	-0.00165	-0.00165
	(A1 * B1 * D1 * X)	0.00137	0.00137	0.00137
	(A1 * B1 * !D1 * X)	-0.00164	-0.00164	-0.00163
	(A1 * B1 * !D1 * X)	0.00118	0.00119	0.00119
	(A1 * A2 * !B1 * D1 * X)	-0.00165	-0.00165	-0.00164
	(A1 * A2 * !B1 * D1 * X)	0.00145	0.00145	0.00145
	(A1 * A2 * !B1 * !D1 * X)	-0.00154	-0.00155	-0.00163
	(A1 * A2 * !B1 * !D1 * X)	0.00122	0.00123	0.00116
	(A1 * !A2 * !B1 * D1 * X)	-0.00164	-0.00164	-0.00163
	(A1 * !A2 * !B1 * D1 * X)	0.00210	0.00211	0.00211
	(!A1 * B1 * D1 * X)	-0.00165	-0.00165	-0.00165
	(!A1 * B1 * D1 * X)	0.00139	0.00139	0.00139
	(!A1 * B1 * !D1 * X)	-0.00164	-0.00164	-0.00163
	(!A1 * B1 * !D1 * X)	0.00120	0.00120	0.00120
	(!A1 * !B1 * D1 * X)	-0.00164	-0.00164	-0.00163
	(!A1 * !B1 * D1 * X)	0.00210	0.00211	0.00211

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00300	-0.00301	-0.00300
	(A1 * B1 * D1 * X)	0.00251	0.00252	0.00251
	(A1 * B1 * !D1 * X)	-0.00296	-0.00297	-0.00293
	(A1 * B1 * !D1 * X)	0.00218	0.00219	0.00221
	(A1 * A2 * !B1 * D1 * X)	-0.00300	-0.00301	-0.00300
	(A1 * A2 * !B1 * D1 * X)	0.00269	0.00270	0.00268
	(A1 * A2 * !B1 * !D1 * X)	-0.00284	-0.00286	-0.00292
	(A1 * A2 * !B1 * !D1 * X)	0.00224	0.00225	0.00220
	(A1 * !A2 * !B1 * D1 * X)	-0.00296	-0.00298	-0.00295
	(A1 * !A2 * !B1 * D1 * X)	0.00384	0.00389	0.00388
	(!A1 * B1 * D1 * X)	-0.00300	-0.00301	-0.00300
	(!A1 * B1 * D1 * X)	0.00254	0.00256	0.00254
	(!A1 * B1 * !D1 * X)	-0.00296	-0.00297	-0.00293
	(!A1 * B1 * !D1 * X)	0.00219	0.00220	0.00222
	(!A1 * !B1 * D1 * X)	-0.00296	-0.00298	-0.00295
	(!A1 * !B1 * D1 * X)	0.00384	0.00389	0.00388

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	0.00168	0.00170	0.00168
	(A1 * C1 * X)	-0.00092	-0.00093	-0.00092
	(A1 * B1 * !C1 * X)	0.00167	0.00170	0.00168
	(A1 * B1 * !C1 * X)	-0.00091	-0.00093	-0.00092
	(A1 * A2 * !B1 * !C1 * X)	0.00168	0.00170	0.00168
	(A1 * A2 * !B1 * !C1 * X)	-0.00092	-0.00093	-0.00092
	(!A1 * C1 * X)	0.00168	0.00170	0.00168
	(!A1 * C1 * X)	-0.00092	-0.00093	-0.00092
	(!A1 * B1 * !C1 * X)	0.00168	0.00170	0.00168
	(!A1 * B1 * !C1 * X)	-0.00092	-0.00093	-0.00092

sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	0.00202	0.00204	0.00202
	(A1 * C1 * X)	-0.00099	-0.00100	-0.00099
	(A1 * B1 * !C1 * X)	0.00202	0.00204	0.00202
	(A1 * B1 * !C1 * X)	-0.00099	-0.00100	-0.00099
	(A1 * A2 * !B1 * !C1 * X)	0.00202	0.00204	0.00202
	(A1 * A2 * !B1 * !C1 * X)	-0.00099	-0.00100	-0.00099
	(!A1 * C1 * X)	0.00202	0.00204	0.00202
	(!A1 * C1 * X)	-0.00099	-0.00100	-0.00099
	(!A1 * B1 * !C1 * X)	0.00202	0.00204	0.00202
	(!A1 * B1 * !C1 * X)	-0.00099	-0.00100	-0.00099
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	0.00328	0.00330	0.00328
	(A1 * C1 * X)	-0.00188	-0.00189	-0.00187
	(A1 * B1 * !C1 * X)	0.00329	0.00330	0.00328
	(A1 * B1 * !C1 * X)	-0.00189	-0.00189	-0.00187
	(A1 * A2 * !B1 * !C1 * X)	0.00329	0.00331	0.00328
	(A1 * A2 * !B1 * !C1 * X)	-0.00189	-0.00189	-0.00187
	(!A1 * C1 * X)	0.00329	0.00330	0.00328
	(!A1 * C1 * X)	-0.00190	-0.00189	-0.00188
	(!A1 * B1 * !C1 * X)	0.00329	0.00330	0.00328
	(!A1 * B1 * !C1 * X)	-0.00189	-0.00189	-0.00187

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

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

sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	-0.00163	-0.00164	-0.00168
	(A1 * C1 * X)	0.00097	0.00097	0.00093
	(A1 * B1 * !C1 * X)	-0.00157	-0.00158	-0.00167
	(A1 * B1 * !C1 * X)	0.00100	0.00100	0.00093
	(A1 * A2 * !B1 * !C1 * X)	-0.00140	-0.00141	-0.00162
	(A1 * A2 * !B1 * !C1 * X)	0.00111	0.00111	0.00096
	(!A1 * C1 * X)	-0.00163	-0.00164	-0.00168
	(!A1 * C1 * X)	0.00097	0.00097	0.00093
	(!A1 * B1 * !C1 * X)	-0.00157	-0.00158	-0.00167
	(!A1 * B1 * !C1 * X)	0.00100	0.00100	0.00093
sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	-0.00196	-0.00198	-0.00201
	(A1 * C1 * X)	0.00105	0.00105	0.00101
	(A1 * B1 * !C1 * X)	-0.00188	-0.00190	-0.00200
	(A1 * B1 * !C1 * X)	0.00109	0.00109	0.00101
	(A1 * A2 * !B1 * !C1 * X)	-0.00169	-0.00170	-0.00195
	(A1 * A2 * !B1 * !C1 * X)	0.00121	0.00121	0.00104
	(!A1 * C1 * X)	-0.00197	-0.00198	-0.00201
	(!A1 * C1 * X)	0.00105	0.00105	0.00101
	(!A1 * B1 * !C1 * X)	-0.00188	-0.00189	-0.00200
	(!A1 * B1 * !C1 * X)	0.00109	0.00109	0.00101
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	-0.00310	-0.00313	-0.00326
	(A1 * C1 * X)	0.00204	0.00204	0.00191
	(A1 * B1 * !C1 * X)	-0.00295	-0.00297	-0.00322
	(A1 * B1 * !C1 * X)	0.00209	0.00210	0.00190
	(A1 * A2 * !B1 * !C1 * X)	-0.00262	-0.00265	-0.00313
	(A1 * A2 * !B1 * !C1 * X)	0.00231	0.00232	0.00197
	(!A1 * C1 * X)	-0.00310	-0.00313	-0.00326
	(!A1 * C1 * X)	0.00204	0.00204	0.00192
	(!A1 * B1 * !C1 * X)	-0.00295	-0.00297	-0.00322
	(!A1 * B1 * !C1 * X)	0.00210	0.00211	0.00191

SKY130_FD_SC_HS__A211OIx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00286	0.00271	0.00285	0.00290	0.38797
sky130_fd_sc_hs__a211oi_2	0.00523	0.00548	0.00440	0.00419	0.72654
sky130_fd_sc_hs__a211oi_4	0.01053	0.01054	0.00839	0.00852	1.26939

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a211oi_1	0.00000	0.02851	0.07688
sky130_fd_sc_hs__a211oi_2	0.00000	0.05424	0.15376
sky130_fd_sc_hs__a211oi_4	0.00000	0.10848	0.30752

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)	0.13051	1.00802	9.68310
	A2->Y (FR)	0.15658	1.05649	9.89931
	B1->Y (FR)	0.13845	1.06967	10.54700
	C1->Y (FR)	0.10657	1.04453	10.59500
sky130_fd_sc_hs__a211oi_2	A1->Y (FR)	0.11636	0.86518	9.78611
	A2->Y (FR)	0.15021	0.89804	9.81086
	B1->Y (FR)	0.12853	0.91563	10.49320
	C1->Y (FR)	0.08334	0.87831	10.53330
sky130_fd_sc_hs__a211oi_4	A1->Y (FR)	0.11226	0.72746	9.31773
	A2->Y (FR)	0.14998	0.77655	9.54105
	B1->Y (FR)	0.12466	0.79181	10.26750
	C1->Y (FR)	0.08086	0.76182	10.37850

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211oi_1	A1->Y (RF)	0.02851	0.34476	3.25451
	A2->Y (RF)	0.03169	0.31534	2.91055
	B1->Y (RF)	0.02204	0.27484	2.60148
	C1->Y (RF)	0.01901	0.26694	2.59746
sky130_fd_sc_hs__a211oi_2	A1->Y (RF)	0.02540	0.31087	3.43597
	A2->Y (RF)	0.03126	0.28415	3.03924
	B1->Y (RF)	0.03233	0.36996	4.23797
	C1->Y (RF)	0.02265	0.34428	4.11528
sky130_fd_sc_hs__a211oi_4	A1->Y (RF)	0.02583	0.27281	3.38931
	A2->Y (RF)	0.03068	0.23100	2.75451
	B1->Y (RF)	0.03140	0.31903	4.09361
	C1->Y (RF)	0.02209	0.29740	4.06185

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.00047	0.00027	0.00711
	A1	0.00803	0.00784	0.01467
	A2	0.00089	0.00075	0.00767
	A2	0.00954	0.00943	0.01632
	B1	0.00034	0.00035	0.00856
	B1	0.00661	0.00662	0.01489
	C1	0.00011	0.00079	0.01428
	C1	0.00542	0.00610	0.01961
sky130_fd_sc_hs__a211oi_2	A1	-0.00021	-0.00048	0.01251
	A1	0.01426	0.01399	0.02698
	A2	0.00164	0.00126	0.01441
	A2	0.01857	0.01818	0.03146
	B1	0.00077	0.00074	0.01016
	B1	0.01132	0.01131	0.02077
	C1	0.00056	0.00164	0.01853
	C1	0.00870	0.00978	0.02669
sky130_fd_sc_hs__a211oi_4	A1	-0.00089	-0.00147	0.02414
	A1	0.02792	0.02733	0.05311
	A2	0.00209	0.00140	0.02742
	A2	0.03569	0.03508	0.06110
	B1	0.00108	0.00114	0.02047
	B1	0.02161	0.02168	0.04108
	C1	0.00070	0.00300	0.03628
	C1	0.01657	0.01891	0.05233

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.01008	0.01008	0.01680
	A1	0.00266	0.00266	0.00935
	A2	0.01120	0.01115	0.01697
	A2	0.00262	0.00255	0.00840
	B1	0.00708	0.00732	0.01501
	B1	0.00084	0.00107	0.00877
	C1	0.00504	0.00550	0.01280
	C1	-0.00027	0.00016	0.00748
sky130_fd_sc_hs__a211oi_2	A1	0.01880	0.01893	0.03176
	A1	0.00460	0.00468	0.01735
	A2	0.02136	0.02123	0.03245
	A2	0.00458	0.00435	0.01551
	B1	0.01233	0.01247	0.02223
	B1	0.00187	0.00201	0.01143
	C1	0.00679	0.00745	0.01705
	C1	-0.00133	-0.00071	0.00866
sky130_fd_sc_hs__a211oi_4	A1	0.03724	0.03726	0.06230
	A1	0.00904	0.00909	0.03417
	A2	0.04221	0.04191	0.06536
	A2	0.00897	0.00859	0.03187
	B1	0.02299	0.02341	0.04244
	B1	0.00266	0.00308	0.02210
	C1	0.01272	0.01401	0.03264
	C1	-0.00314	-0.00194	0.01674

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)**	0.00163	0.00166	0.00164
	(A2 * B1 * C1 * !Y)	-0.00197	-0.00206	-0.00206
	(A2 * B1 * !C1 * !Y)	0.00167	0.00166	0.00164
	(A2 * B1 * !C1 * !Y)	-0.00196	-0.00208	-0.00206
	(A2 * !B1 * C1 * !Y)	0.00167	0.00165	0.00164
	(A2 * !B1 * C1 * !Y)	-0.00181	-0.00201	-0.00200
	(!A2 * B1 * C1 * !Y)	0.00157	0.00159	0.00157
	(!A2 * B1 * C1 * !Y)	-0.00210	-0.00212	-0.00211
	(!A2 * B1 * !C1 * !Y)	0.00157	0.00159	0.00157
	(!A2 * B1 * !C1 * !Y)	-0.00210	-0.00212	-0.00210
	(!A2 * !B1 * C1 * !Y)	0.00156	0.00158	0.00157
	(!A2 * !B1 * C1 * !Y)	-0.00210	-0.00212	-0.00210
	(!A2 * !B1 * !C1 * Y)	0.00051	0.00051	0.00049
	(!A2 * !B1 * !C1 * Y)	-0.00243	-0.00243	-0.00246
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	0.00335	0.00338	0.00334
	(A2 * B1 * C1 * !Y)	-0.00391	-0.00410	-0.00407
	(A2 * B1 * !C1 * !Y)	0.00337	0.00338	0.00334
	(A2 * B1 * !C1 * !Y)	-0.00387	-0.00410	-0.00407
	(A2 * !B1 * C1 * !Y)	0.00342	0.00338	0.00334
	(A2 * !B1 * C1 * !Y)	-0.00367	-0.00399	-0.00396
	(!A2 * B1 * C1 * !Y)	0.00319	0.00321	0.00321
	(!A2 * B1 * C1 * !Y)	-0.00413	-0.00415	-0.00414
	(!A2 * B1 * !C1 * !Y)	0.00319	0.00322	0.00320
	(!A2 * B1 * !C1 * !Y)	-0.00413	-0.00416	-0.00414
	(!A2 * !B1 * C1 * !Y)	0.00320	0.00322	0.00320
	(!A2 * !B1 * C1 * !Y)	-0.00414	-0.00416	-0.00414
	(!A2 * !B1 * !C1 * Y)	0.00121	0.00122	0.00116
	(!A2 * !B1 * !C1 * Y)	-0.00469	-0.00473	-0.00480

sky130_fd_sc_hs__a211oi_4	**(A2 * B1 * C1 * !Y)**	0.00649	0.00657	0.00650
	(A2 * B1 * C1 * !Y)	-0.00789	-0.00832	-0.00825
	(A2 * B1 * !C1 * !Y)	0.00657	0.00657	0.00650
	(A2 * B1 * !C1 * !Y)	-0.00777	-0.00832	-0.00825
	(A2 * !B1 * C1 * !Y)	0.00666	0.00658	0.00651
	(A2 * !B1 * C1 * !Y)	-0.00731	-0.00809	-0.00801
	(!A2 * B1 * C1 * !Y)	0.00628	0.00631	0.00629
	(!A2 * B1 * C1 * !Y)	-0.00845	-0.00845	-0.00843
	(!A2 * B1 * !C1 * !Y)	0.00620	0.00624	0.00622
	(!A2 * B1 * !C1 * !Y)	-0.00842	-0.00844	-0.00843
	(!A2 * !B1 * C1 * !Y)	0.00619	0.00623	0.00621
	(!A2 * !B1 * C1 * !Y)	-0.00841	-0.00845	-0.00843
	(!A2 * !B1 * !C1 * Y)	0.00210	0.00211	0.00202
	(!A2 * !B1 * !C1 * Y)	-0.00963	-0.00971	-0.00984

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)**	-0.00163	-0.00163	-0.00164
	(A2 * B1 * C1 * !Y)	0.00206	0.00206	0.00206
	(A2 * B1 * !C1 * !Y)	-0.00163	-0.00164	-0.00164
	(A2 * B1 * !C1 * !Y)	0.00206	0.00208	0.00206
	(A2 * !B1 * C1 * !Y)	-0.00163	-0.00164	-0.00163
	(A2 * !B1 * C1 * !Y)	0.00199	0.00201	0.00200
	(!A2 * B1 * C1 * !Y)	-0.00153	-0.00157	-0.00157
	(!A2 * B1 * C1 * !Y)	0.00210	0.00212	0.00211
	(!A2 * B1 * !C1 * !Y)	-0.00152	-0.00158	-0.00157
	(!A2 * B1 * !C1 * !Y)	0.00210	0.00214	0.00211
	(!A2 * !B1 * C1 * !Y)	-0.00152	-0.00157	-0.00157
	(!A2 * !B1 * C1 * !Y)	0.00210	0.00212	0.00211
	(!A2 * !B1 * !C1 * Y)	-0.00048	-0.00049	-0.00048
	(!A2 * !B1 * !C1 * Y)	0.00246	0.00250	0.00246
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	-0.00334	-0.00336	-0.00334
	(A2 * B1 * C1 * !Y)	0.00406	0.00411	0.00407
	(A2 * B1 * !C1 * !Y)	-0.00334	-0.00336	-0.00334
	(A2 * B1 * !C1 * !Y)	0.00407	0.00411	0.00407
	(A2 * !B1 * C1 * !Y)	-0.00334	-0.00336	-0.00334
	(A2 * !B1 * C1 * !Y)	0.00396	0.00399	0.00396
	(!A2 * B1 * C1 * !Y)	-0.00307	-0.00321	-0.00321
	(!A2 * B1 * C1 * !Y)	0.00413	0.00418	0.00415
	(!A2 * B1 * !C1 * !Y)	-0.00308	-0.00322	-0.00320
	(!A2 * B1 * !C1 * !Y)	0.00414	0.00419	0.00416
	(!A2 * !B1 * C1 * !Y)	-0.00308	-0.00322	-0.00320
	(!A2 * !B1 * C1 * !Y)	0.00414	0.00419	0.00416
	(!A2 * !B1 * !C1 * Y)	-0.00113	-0.00115	-0.00113
	(!A2 * !B1 * !C1 * Y)	0.00479	0.00489	0.00481

sky130_fd_sc_hs__a211oi_4	**(A2 * B1 * C1 * !Y)**	-0.00649	-0.00652	-0.00649
	(A2 * B1 * C1 * !Y)	0.00826	0.00833	0.00825
	(A2 * B1 * !C1 * !Y)	-0.00650	-0.00653	-0.00649
	(A2 * B1 * !C1 * !Y)	0.00826	0.00835	0.00825
	(A2 * !B1 * C1 * !Y)	-0.00650	-0.00653	-0.00649
	(A2 * !B1 * C1 * !Y)	0.00802	0.00809	0.00801
	(!A2 * B1 * C1 * !Y)	-0.00600	-0.00631	-0.00629
	(!A2 * B1 * C1 * !Y)	0.00846	0.00851	0.00845
	(!A2 * B1 * !C1 * !Y)	-0.00597	-0.00624	-0.00622
	(!A2 * B1 * !C1 * !Y)	0.00843	0.00848	0.00845
	(!A2 * !B1 * C1 * !Y)	-0.00596	-0.00623	-0.00621
	(!A2 * !B1 * C1 * !Y)	0.00842	0.00850	0.00845
	(!A2 * !B1 * !C1 * Y)	-0.00196	-0.00200	-0.00196
	(!A2 * !B1 * !C1 * Y)	0.00980	0.01001	0.00985

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)**	0.00165	0.00168	0.00166
	(A1 * B1 * C1 * !Y)	-0.00200	-0.00209	-0.00208
	(A1 * B1 * !C1 * !Y)	0.00168	0.00168	0.00166
	(A1 * B1 * !C1 * !Y)	-0.00196	-0.00208	-0.00208
	(A1 * !B1 * C1 * !Y)	0.00170	0.00167	0.00166
	(A1 * !B1 * C1 * !Y)	-0.00184	-0.00202	-0.00202
	(!A1 * B1 * !Y)	0.00158	0.00160	0.00158
	(!A1 * B1 * !Y)	-0.00212	-0.00213	-0.00212
	(!A1 * !B1 * C1 * !Y)	0.00158	0.00160	0.00158
	(!A1 * !B1 * C1 * !Y)	-0.00212	-0.00213	-0.00212
	(!A1 * !B1 * !C1 * Y)	0.00159	0.00160	0.00159
	(!A1 * !B1 * !C1 * Y)	-0.00211	-0.00213	-0.00212

sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	0.00343	0.00346	0.00342
	(A1 * B1 * C1 * !Y)	-0.00404	-0.00421	-0.00419
	(A1 * B1 * !C1 * !Y)	0.00347	0.00346	0.00342
	(A1 * B1 * !C1 * !Y)	-0.00398	-0.00422	-0.00420
	(A1 * !B1 * C1 * !Y)	0.00351	0.00346	0.00343
	(A1 * !B1 * C1 * !Y)	-0.00374	-0.00408	-0.00407
	(!A1 * B1 * !Y)	0.00330	0.00331	0.00329
	(!A1 * B1 * !Y)	-0.00428	-0.00430	-0.00429
	(!A1 * !B1 * C1 * !Y)	0.00332	0.00333	0.00332
	(!A1 * !B1 * C1 * !Y)	-0.00428	-0.00429	-0.00428
	(!A1 * !B1 * !C1 * Y)	0.00305	0.00307	0.00305
	(!A1 * !B1 * !C1 * Y)	-0.00455	-0.00456	-0.00454
sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	0.00668	0.00675	0.00667
	(A1 * B1 * C1 * !Y)	-0.00800	-0.00837	-0.00833
	(A1 * B1 * !C1 * !Y)	0.00677	0.00675	0.00667
	(A1 * B1 * !C1 * !Y)	-0.00785	-0.00835	-0.00833
	(A1 * !B1 * C1 * !Y)	0.00680	0.00677	0.00668
	(A1 * !B1 * C1 * !Y)	-0.00734	-0.00811	-0.00809
	(!A1 * B1 * !Y)	0.00637	0.00640	0.00637
	(!A1 * B1 * !Y)	-0.00851	-0.00855	-0.00852
	(!A1 * !B1 * C1 * !Y)	0.00638	0.00645	0.00638
	(!A1 * !B1 * C1 * !Y)	-0.00851	-0.00857	-0.00851
	(!A1 * !B1 * !C1 * Y)	0.00637	0.00647	0.00641
	(!A1 * !B1 * !C1 * Y)	-0.00848	-0.00856	-0.00851

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)**	-0.00165	-0.00166	-0.00166
	(A1 * B1 * C1 * !Y)	0.00207	0.00209	0.00208
	(A1 * B1 * !C1 * !Y)	-0.00165	-0.00166	-0.00166
	(A1 * B1 * !C1 * !Y)	0.00207	0.00208	0.00208
	(A1 * !B1 * C1 * !Y)	-0.00165	-0.00166	-0.00165
	(A1 * !B1 * C1 * !Y)	0.00201	0.00202	0.00202
	(!A1 * B1 * !Y)	-0.00155	-0.00159	-0.00158
	(!A1 * B1 * !Y)	0.00212	0.00214	0.00213
	(!A1 * !B1 * C1 * !Y)	-0.00154	-0.00159	-0.00158
	(!A1 * !B1 * C1 * !Y)	0.00212	0.00214	0.00213
	(!A1 * !B1 * !C1 * Y)	-0.00149	-0.00159	-0.00159
	(!A1 * !B1 * !C1 * Y)	0.00219	0.00215	0.00213
sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	-0.00342	-0.00343	-0.00342
	(A1 * B1 * C1 * !Y)	0.00420	0.00421	0.00419
	(A1 * B1 * !C1 * !Y)	-0.00342	-0.00344	-0.00342
	(A1 * B1 * !C1 * !Y)	0.00420	0.00423	0.00420
	(A1 * !B1 * C1 * !Y)	-0.00343	-0.00343	-0.00342
	(A1 * !B1 * C1 * !Y)	0.00408	0.00408	0.00407
	(!A1 * B1 * !Y)	-0.00319	-0.00331	-0.00329
	(!A1 * B1 * !Y)	0.00428	0.00433	0.00430
	(!A1 * !B1 * C1 * !Y)	-0.00318	-0.00331	-0.00332
	(!A1 * !B1 * C1 * !Y)	0.00428	0.00433	0.00430
	(!A1 * !B1 * !C1 * Y)	-0.00284	-0.00307	-0.00305
	(!A1 * !B1 * !C1 * Y)	0.00465	0.00459	0.00455

sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	-0.00667	-0.00668	-0.00666
	(A1 * B1 * C1 * !Y)	0.00834	0.00837	0.00833
	(A1 * B1 * !C1 * !Y)	-0.00667	-0.00667	-0.00666
	(A1 * B1 * !C1 * !Y)	0.00834	0.00835	0.00833
	(A1 * !B1 * C1 * !Y)	-0.00667	-0.00668	-0.00666
	(A1 * !B1 * C1 * !Y)	0.00810	0.00811	0.00809
	(!A1 * B1 * !Y)	-0.00617	-0.00640	-0.00637
	(!A1 * B1 * !Y)	0.00851	0.00866	0.00854
	(!A1 * !B1 * C1 * !Y)	-0.00616	-0.00642	-0.00638
	(!A1 * !B1 * C1 * !Y)	0.00851	0.00866	0.00854
	(!A1 * !B1 * !C1 * Y)	-0.00588	-0.00643	-0.00641
	(!A1 * !B1 * !C1 * Y)	0.00886	0.00862	0.00854

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)	0.00196	0.00191	0.00180
	(A1 * A2 * C1 * !Y)	-0.00142	-0.00142	-0.00141
	(A1 * A2 * !C1 * !Y)	0.00175	0.00177	0.00174
	(A1 * A2 * !C1 * !Y)	-0.00108	-0.00109	-0.00109
	(A1 * !A2 * C1 * !Y)	0.00211	0.00176	0.00173
	(A1 * !A2 * C1 * !Y)	-0.00163	-0.00204	-0.00204
	(!A1 * C1 * !Y)	0.00210	0.00176	0.00173
	(!A1 * C1 * !Y)	-0.00164	-0.00204	-0.00204
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	0.00239	0.00238	0.00218
	(A1 * A2 * C1 * !Y)	-0.00273	-0.00273	-0.00272
	(A1 * A2 * !C1 * !Y)	0.00205	0.00206	0.00203
	(A1 * A2 * !C1 * !Y)	-0.00213	-0.00215	-0.00215
	(A1 * !A2 * C1 * !Y)	0.00284	0.00204	0.00201
	(A1 * !A2 * C1 * !Y)	-0.00318	-0.00401	-0.00403
	(!A1 * C1 * !Y)	0.00284	0.00204	0.00201
	(!A1 * C1 * !Y)	-0.00318	-0.00401	-0.00403
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	0.00446	0.00432	0.00393
	(A1 * A2 * C1 * !Y)	-0.00564	-0.00564	-0.00562
	(A1 * A2 * !C1 * !Y)	0.00371	0.00374	0.00365
	(A1 * A2 * !C1 * !Y)	-0.00444	-0.00448	-0.00447
	(A1 * !A2 * C1 * !Y)	0.00539	0.00370	0.00362
	(A1 * !A2 * C1 * !Y)	-0.00654	-0.00828	-0.00833
	(!A1 * C1 * !Y)	0.00530	0.00370	0.00362
	(!A1 * C1 * !Y)	-0.00652	-0.00829	-0.00833

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)	-0.00173	-0.00173	-0.00173
	(A1 * A2 * C1 * !Y)	0.00142	0.00142	0.00141
	(A1 * A2 * !C1 * !Y)	-0.00169	-0.00171	-0.00171
	(A1 * A2 * !C1 * !Y)	0.00113	0.00114	0.00113
	(A1 * !A2 * C1 * !Y)	-0.00172	-0.00172	-0.00172
	(A1 * !A2 * C1 * !Y)	0.00203	0.00204	0.00204
	(!A1 * C1 * !Y)	-0.00172	-0.00172	-0.00172
	(!A1 * C1 * !Y)	0.00203	0.00204	0.00204
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	-0.00206	-0.00206	-0.00205
	(A1 * A2 * C1 * !Y)	0.00273	0.00273	0.00272
	(A1 * A2 * !C1 * !Y)	-0.00195	-0.00197	-0.00195
	(A1 * A2 * !C1 * !Y)	0.00219	0.00223	0.00223
	(A1 * !A2 * C1 * !Y)	-0.00201	-0.00201	-0.00199
	(A1 * !A2 * C1 * !Y)	0.00401	0.00404	0.00403
	(!A1 * C1 * !Y)	-0.00201	-0.00201	-0.00199
	(!A1 * C1 * !Y)	0.00401	0.00403	0.00403
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	-0.00367	-0.00367	-0.00366
	(A1 * A2 * C1 * !Y)	0.00564	0.00564	0.00562
	(A1 * A2 * !C1 * !Y)	-0.00350	-0.00353	-0.00352
	(A1 * A2 * !C1 * !Y)	0.00459	0.00464	0.00464
	(A1 * !A2 * C1 * !Y)	-0.00361	-0.00361	-0.00358
	(A1 * !A2 * C1 * !Y)	0.00830	0.00832	0.00833
	(!A1 * C1 * !Y)	-0.00361	-0.00361	-0.00358
	(!A1 * C1 * !Y)	0.00831	0.00832	0.00833

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	0.00204	0.00206	0.00204
	(A1 * B1 * !Y)	-0.00097	-0.00097	-0.00096
	(A1 * A2 * !B1 * !Y)	0.00205	0.00206	0.00204
	(A1 * A2 * !B1 * !Y)	-0.00097	-0.00097	-0.00096
	(!A1 * B1 * !Y)	0.00204	0.00206	0.00204
	(!A1 * B1 * !Y)	-0.00097	-0.00097	-0.00096
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	0.00215	0.00217	0.00215
	(A1 * B1 * !Y)	-0.00197	-0.00199	-0.00197
	(A1 * A2 * !B1 * !Y)	0.00215	0.00217	0.00215
	(A1 * A2 * !B1 * !Y)	-0.00197	-0.00198	-0.00197
	(!A1 * B1 * !Y)	0.00215	0.00217	0.00215
	(!A1 * B1 * !Y)	-0.00198	-0.00199	-0.00198
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	0.00435	0.00439	0.00435
	(A1 * B1 * !Y)	-0.00398	-0.00400	-0.00396
	(A1 * A2 * !B1 * !Y)	0.00436	0.00439	0.00435
	(A1 * A2 * !B1 * !Y)	-0.00399	-0.00399	-0.00395
	(!A1 * B1 * !Y)	0.00435	0.00439	0.00435
	(!A1 * B1 * !Y)	-0.00398	-0.00401	-0.00398

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	-0.00198	-0.00199	-0.00203
	(A1 * B1 * !Y)	0.00102	0.00102	0.00098
	(A1 * A2 * !B1 * !Y)	-0.00183	-0.00185	-0.00201
	(A1 * A2 * !B1 * !Y)	0.00110	0.00111	0.00099
	(!A1 * B1 * !Y)	-0.00197	-0.00199	-0.00203
	(!A1 * B1 * !Y)	0.00102	0.00102	0.00098
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	-0.00198	-0.00199	-0.00214
	(A1 * B1 * !Y)	0.00214	0.00215	0.00201
	(A1 * A2 * !B1 * !Y)	-0.00172	-0.00175	-0.00208
	(A1 * A2 * !B1 * !Y)	0.00226	0.00228	0.00202
	(!A1 * B1 * !Y)	-0.00197	-0.00199	-0.00214
	(!A1 * B1 * !Y)	0.00214	0.00215	0.00202
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	-0.00401	-0.00407	-0.00432
	(A1 * B1 * !Y)	0.00423	0.00427	0.00404
	(A1 * A2 * !B1 * !Y)	-0.00349	-0.00354	-0.00420
	(A1 * A2 * !B1 * !Y)	0.00454	0.00456	0.00407
	(!A1 * B1 * !Y)	-0.00402	-0.00407	-0.00432
	(!A1 * B1 * !Y)	0.00426	0.00429	0.00405

SKY130_FD_SC_HS__A211Ox

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00264	0.00249	0.00268	0.00265	1.20689
sky130_fd_sc_hs__a211o_2	0.00288	0.00287	0.00284	0.00274	2.27983
sky130_fd_sc_hs__a211o_4	0.00490	0.00502	0.00530	0.00481	4.37854

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a211o_1	0.00000	0.08545	0.20405
sky130_fd_sc_hs__a211o_2	0.00000	0.10456	0.21147
sky130_fd_sc_hs__a211o_4	0.00000	0.21181	0.42295

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)	0.07434	0.56847	6.08950
	A2->X (RR)	0.07772	0.56547	6.05397
	B1->X (RR)	0.06156	0.53527	5.88772
	C1->X (RR)	0.05699	0.51845	5.87703
sky130_fd_sc_hs__a211o_2	A1->X (RR)	0.07471	0.48847	5.96627
	A2->X (RR)	0.07846	0.48064	5.92590
	B1->X (RR)	0.06049	0.45281	5.77232
	C1->X (RR)	0.05648	0.43898	5.75489
sky130_fd_sc_hs__a211o_4	A1->X (RR)	0.07807	0.42339	6.05497
	A2->X (RR)	0.08296	0.42041	6.02566
	B1->X (RR)	0.05871	0.37537	5.80389
	C1->X (RR)	0.05683	0.36892	5.83604

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211o_1	A1->X (FF)	0.18134	0.59823	4.82489
	A2->X (FF)	0.20816	0.63631	4.91741
	B1->X (FF)	0.18739	0.64198	5.14189
	C1->X (FF)	0.15679	0.62750	5.13221
sky130_fd_sc_hs__a211o_2	A1->X (FF)	0.23410	0.64799	4.98355
	A2->X (FF)	0.26788	0.69264	5.08187
	B1->X (FF)	0.24712	0.70494	5.33428
	C1->X (FF)	0.21344	0.69166	5.30803
sky130_fd_sc_hs__a211o_4	A1->X (FF)	0.21869	0.58417	4.92823
	A2->X (FF)	0.23479	0.61350	4.98119
	B1->X (FF)	0.21690	0.62262	5.17048
	C1->X (FF)	0.18204	0.60682	5.15687

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.01294	0.01350	0.03981
	A1	0.00616	0.00674	0.03349
	A2	0.01387	0.01412	0.03727
	A2	0.00614	0.00639	0.03000
	B1	0.01037	0.01155	0.04008
	B1	0.00457	0.00575	0.03475
	C1	0.00854	0.01008	0.04654
	C1	0.00364	0.00519	0.04166
sky130_fd_sc_hs__a211o_2	A1	0.01605	0.01661	0.04185
	A1	0.00870	0.00928	0.03548
	A2	0.01728	0.01762	0.04009
	A2	0.00867	0.00905	0.03247
	B1	0.01345	0.01491	0.04196
	B1	0.00716	0.00863	0.03591
	C1	0.01157	0.01330	0.04822
	C1	0.00618	0.00795	0.04312
sky130_fd_sc_hs__a211o_4	A1	0.03004	0.03186	0.08561
	A1	0.01669	0.01860	0.07413
	A2	0.03249	0.03393	0.08129
	A2	0.01676	0.01826	0.06741
	B1	0.02476	0.02750	0.08200
	B1	0.01334	0.01617	0.07103
	C1	0.02015	0.02368	0.09378
	C1	0.01111	0.01466	0.08508

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.00423	0.00429	0.02712
	A1	0.01107	0.01115	0.03296
	A2	0.00472	0.00482	0.02651
	A2	0.01250	0.01259	0.03367
	B1	0.00379	0.00458	0.03167
	B1	0.00960	0.01036	0.03660
	C1	0.00372	0.00583	0.04179
	C1	0.00860	0.01071	0.04557
sky130_fd_sc_hs__a211o_2	A1	0.00785	0.00716	0.02850
	A1	0.01529	0.01462	0.03568
	A2	0.00863	0.00764	0.03025
	A2	0.01725	0.01631	0.03725
	B1	0.00742	0.00764	0.03344
	B1	0.01373	0.01396	0.03859
	C1	0.00733	0.00872	0.04346
	C1	0.01271	0.01411	0.04769
sky130_fd_sc_hs__a211o_4	A1	0.01517	0.01398	0.06352
	A1	0.02867	0.02744	0.07519
	A2	0.01574	0.01443	0.06289
	A2	0.03153	0.03025	0.07557
	B1	0.01418	0.01456	0.06501
	B1	0.02563	0.02595	0.07336
	C1	0.01416	0.01720	0.08411
	C1	0.02317	0.02595	0.09267

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)**	0.00146	0.00146	0.00145
	(A2 * B1 * C1 * X)	-0.00185	-0.00193	-0.00191
	(A2 * B1 * !C1 * X)	0.00153	0.00146	0.00145
	(A2 * B1 * !C1 * X)	-0.00177	-0.00193	-0.00192
	(A2 * !B1 * C1 * X)	0.00153	0.00146	0.00145
	(A2 * !B1 * C1 * X)	-0.00167	-0.00187	-0.00186
	(!A2 * B1 * C1 * X)	0.00139	0.00141	0.00139
	(!A2 * B1 * C1 * X)	-0.00197	-0.00196	-0.00196
	(!A2 * B1 * !C1 * X)	0.00139	0.00140	0.00139
	(!A2 * B1 * !C1 * X)	-0.00196	-0.00197	-0.00196
	(!A2 * !B1 * C1 * X)	0.00139	0.00140	0.00139
	(!A2 * !B1 * C1 * X)	-0.00196	-0.00197	-0.00196
	(!A2 * !B1 * !C1 * !X)	0.00043	0.00042	0.00041
	(!A2 * !B1 * !C1 * !X)	-0.00231	-0.00231	-0.00234
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	0.00178	0.00179	0.00177
	(A2 * B1 * C1 * X)	-0.00176	-0.00185	-0.00184
	(A2 * B1 * !C1 * X)	0.00182	0.00179	0.00177
	(A2 * B1 * !C1 * X)	-0.00170	-0.00185	-0.00184
	(A2 * !B1 * C1 * X)	0.00184	0.00179	0.00177
	(A2 * !B1 * C1 * X)	-0.00160	-0.00179	-0.00179
	(!A2 * B1 * C1 * X)	0.00168	0.00170	0.00169
	(!A2 * B1 * C1 * X)	-0.00186	-0.00188	-0.00187
	(!A2 * B1 * !C1 * X)	0.00169	0.00171	0.00170
	(!A2 * B1 * !C1 * X)	-0.00187	-0.00189	-0.00187
	(!A2 * !B1 * C1 * X)	0.00169	0.00171	0.00170
	(!A2 * !B1 * C1 * X)	-0.00187	-0.00188	-0.00187
	(!A2 * !B1 * !C1 * !X)	0.00052	0.00052	0.00051
	(!A2 * !B1 * !C1 * !X)	-0.00231	-0.00231	-0.00234

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	0.00284	0.00286	0.00283
	(A2 * B1 * C1 * X)	-0.00366	-0.00383	-0.00381
	(A2 * B1 * !C1 * X)	0.00290	0.00286	0.00283
	(A2 * B1 * !C1 * X)	-0.00356	-0.00383	-0.00381
	(A2 * !B1 * C1 * X)	0.00295	0.00286	0.00283
	(A2 * !B1 * C1 * X)	-0.00337	-0.00373	-0.00371
	(!A2 * B1 * C1 * X)	0.00271	0.00275	0.00272
	(!A2 * B1 * C1 * X)	-0.00389	-0.00391	-0.00390
	(!A2 * B1 * !C1 * X)	0.00271	0.00275	0.00273
	(!A2 * B1 * !C1 * X)	-0.00389	-0.00391	-0.00390
	(!A2 * !B1 * C1 * X)	0.00272	0.00274	0.00273
	(!A2 * !B1 * C1 * X)	-0.00388	-0.00391	-0.00389
	(!A2 * !B1 * !C1 * !X)	0.00084	0.00084	0.00082
	(!A2 * !B1 * !C1 * !X)	-0.00448	-0.00450	-0.00457

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)**	-0.00144	-0.00145	-0.00145
	(A2 * B1 * C1 * X)	0.00191	0.00193	0.00191
	(A2 * B1 * !C1 * X)	-0.00144	-0.00145	-0.00145
	(A2 * B1 * !C1 * X)	0.00191	0.00193	0.00192
	(A2 * !B1 * C1 * X)	-0.00144	-0.00145	-0.00144
	(A2 * !B1 * C1 * X)	0.00185	0.00187	0.00186
	(!A2 * B1 * C1 * X)	-0.00136	-0.00139	-0.00139
	(!A2 * B1 * C1 * X)	0.00197	0.00196	0.00197
	(!A2 * B1 * !C1 * X)	-0.00136	-0.00139	-0.00139
	(!A2 * B1 * !C1 * X)	0.00197	0.00197	0.00197
	(!A2 * !B1 * C1 * X)	-0.00135	-0.00140	-0.00139
	(!A2 * !B1 * C1 * X)	0.00197	0.00199	0.00197
	(!A2 * !B1 * !C1 * !X)	-0.00040	-0.00041	-0.00040
	(!A2 * !B1 * !C1 * !X)	0.00234	0.00238	0.00235
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	-0.00177	-0.00178	-0.00177
	(A2 * B1 * C1 * X)	0.00183	0.00185	0.00184
	(A2 * B1 * !C1 * X)	-0.00177	-0.00178	-0.00177
	(A2 * B1 * !C1 * X)	0.00183	0.00185	0.00184
	(A2 * !B1 * C1 * X)	-0.00176	-0.00177	-0.00176
	(A2 * !B1 * C1 * X)	0.00178	0.00179	0.00179
	(!A2 * B1 * C1 * X)	-0.00165	-0.00169	-0.00169
	(!A2 * B1 * C1 * X)	0.00186	0.00188	0.00188
	(!A2 * B1 * !C1 * X)	-0.00166	-0.00170	-0.00170
	(!A2 * B1 * !C1 * X)	0.00188	0.00190	0.00188
	(!A2 * !B1 * C1 * X)	-0.00165	-0.00170	-0.00170
	(!A2 * !B1 * C1 * X)	0.00188	0.00191	0.00188
	(!A2 * !B1 * !C1 * !X)	-0.00050	-0.00050	-0.00049
	(!A2 * !B1 * !C1 * !X)	0.00235	0.00236	0.00234

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	-0.00283	-0.00284	-0.00283
	(A2 * B1 * C1 * X)	0.00381	0.00383	0.00381
	(A2 * B1 * !C1 * X)	-0.00283	-0.00284	-0.00283
	(A2 * B1 * !C1 * X)	0.00381	0.00383	0.00381
	(A2 * !B1 * C1 * X)	-0.00281	-0.00283	-0.00281
	(A2 * !B1 * C1 * X)	0.00370	0.00373	0.00371
	(!A2 * B1 * C1 * X)	-0.00263	-0.00271	-0.00272
	(!A2 * B1 * C1 * X)	0.00390	0.00391	0.00391
	(!A2 * B1 * !C1 * X)	-0.00262	-0.00271	-0.00273
	(!A2 * B1 * !C1 * X)	0.00389	0.00391	0.00391
	(!A2 * !B1 * C1 * X)	-0.00262	-0.00271	-0.00273
	(!A2 * !B1 * C1 * X)	0.00389	0.00392	0.00391
	(!A2 * !B1 * !C1 * !X)	-0.00079	-0.00080	-0.00079
	(!A2 * !B1 * !C1 * !X)	0.00457	0.00462	0.00459

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)**	0.00149	0.00150	0.00148
	(A1 * B1 * C1 * X)	-0.00183	-0.00191	-0.00189
	(A1 * B1 * !C1 * X)	0.00154	0.00150	0.00148
	(A1 * B1 * !C1 * X)	-0.00176	-0.00191	-0.00190
	(A1 * !B1 * C1 * X)	0.00154	0.00149	0.00148
	(A1 * !B1 * C1 * X)	-0.00166	-0.00185	-0.00185
	(!A1 * B1 * X)	0.00142	0.00143	0.00142
	(!A1 * B1 * X)	-0.00193	-0.00194	-0.00194
	(!A1 * !B1 * C1 * X)	0.00142	0.00144	0.00142
	(!A1 * !B1 * C1 * X)	-0.00193	-0.00193	-0.00194
	(!A1 * !B1 * !C1 * !X)	0.00128	0.00131	0.00129
	(!A1 * !B1 * !C1 * !X)	-0.00206	-0.00208	-0.00207

sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	0.00191	0.00192	0.00189
	(A1 * B1 * C1 * X)	-0.00177	-0.00186	-0.00185
	(A1 * B1 * !C1 * X)	0.00195	0.00192	0.00189
	(A1 * B1 * !C1 * X)	-0.00172	-0.00184	-0.00185
	(A1 * !B1 * C1 * X)	0.00196	0.00191	0.00189
	(A1 * !B1 * C1 * X)	-0.00163	-0.00181	-0.00180
	(!A1 * B1 * X)	0.00181	0.00183	0.00182
	(!A1 * B1 * X)	-0.00188	-0.00189	-0.00188
	(!A1 * !B1 * C1 * X)	0.00181	0.00183	0.00182
	(!A1 * !B1 * C1 * X)	-0.00188	-0.00189	-0.00188
	(!A1 * !B1 * !C1 * !X)	0.00154	0.00156	0.00155
	(!A1 * !B1 * !C1 * !X)	-0.00214	-0.00215	-0.00215
sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	0.00339	0.00343	0.00339
	(A1 * B1 * C1 * X)	-0.00354	-0.00370	-0.00369
	(A1 * B1 * !C1 * X)	0.00343	0.00343	0.00339
	(A1 * B1 * !C1 * X)	-0.00347	-0.00370	-0.00369
	(A1 * !B1 * C1 * X)	0.00348	0.00343	0.00339
	(A1 * !B1 * C1 * X)	-0.00327	-0.00362	-0.00360
	(!A1 * B1 * X)	0.00327	0.00328	0.00327
	(!A1 * B1 * X)	-0.00376	-0.00377	-0.00377
	(!A1 * !B1 * C1 * X)	0.00326	0.00331	0.00328
	(!A1 * !B1 * C1 * X)	-0.00375	-0.00379	-0.00377
	(!A1 * !B1 * !C1 * !X)	0.00320	0.00324	0.00321
	(!A1 * !B1 * !C1 * !X)	-0.00382	-0.00385	-0.00383

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)**	-0.00147	-0.00149	-0.00148
	(A1 * B1 * C1 * X)	0.00188	0.00191	0.00189
	(A1 * B1 * !C1 * X)	-0.00147	-0.00148	-0.00148
	(A1 * B1 * !C1 * X)	0.00189	0.00191	0.00190
	(A1 * !B1 * C1 * X)	-0.00147	-0.00148	-0.00147
	(A1 * !B1 * C1 * X)	0.00184	0.00185	0.00185
	(!A1 * B1 * X)	-0.00138	-0.00143	-0.00142
	(!A1 * B1 * X)	0.00193	0.00195	0.00194
	(!A1 * !B1 * C1 * X)	-0.00139	-0.00142	-0.00142
	(!A1 * !B1 * C1 * X)	0.00195	0.00193	0.00194
	(!A1 * !B1 * !C1 * !X)	-0.00121	-0.00129	-0.00129
	(!A1 * !B1 * !C1 * !X)	0.00215	0.00211	0.00208
sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	-0.00189	-0.00190	-0.00189
	(A1 * B1 * C1 * X)	0.00184	0.00186	0.00185
	(A1 * B1 * !C1 * X)	-0.00189	-0.00189	-0.00189
	(A1 * B1 * !C1 * X)	0.00184	0.00184	0.00185
	(A1 * !B1 * C1 * X)	-0.00188	-0.00189	-0.00189
	(A1 * !B1 * C1 * X)	0.00179	0.00181	0.00180
	(!A1 * B1 * X)	-0.00178	-0.00182	-0.00182
	(!A1 * B1 * X)	0.00188	0.00190	0.00189
	(!A1 * !B1 * C1 * X)	-0.00177	-0.00182	-0.00182
	(!A1 * !B1 * C1 * X)	0.00188	0.00190	0.00189
	(!A1 * !B1 * !C1 * !X)	-0.00145	-0.00155	-0.00155
	(!A1 * !B1 * !C1 * !X)	0.00222	0.00219	0.00216

sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	-0.00338	-0.00339	-0.00339
	(A1 * B1 * C1 * X)	0.00367	0.00370	0.00369
	(A1 * B1 * !C1 * X)	-0.00339	-0.00339	-0.00338
	(A1 * B1 * !C1 * X)	0.00368	0.00370	0.00369
	(A1 * !B1 * C1 * X)	-0.00338	-0.00338	-0.00337
	(A1 * !B1 * C1 * X)	0.00359	0.00362	0.00360
	(!A1 * B1 * X)	-0.00318	-0.00328	-0.00327
	(!A1 * B1 * X)	0.00376	0.00380	0.00378
	(!A1 * !B1 * C1 * X)	-0.00318	-0.00331	-0.00328
	(!A1 * !B1 * C1 * X)	0.00376	0.00380	0.00378
	(!A1 * !B1 * !C1 * !X)	-0.00301	-0.00324	-0.00321
	(!A1 * !B1 * !C1 * !X)	0.00396	0.00387	0.00385

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)	0.00197	0.00188	0.00181
	(A1 * A2 * C1 * X)	-0.00126	-0.00128	-0.00128
	(A1 * A2 * !C1 * X)	0.00174	0.00178	0.00173
	(A1 * A2 * !C1 * X)	-0.00097	-0.00100	-0.00099
	(A1 * !A2 * C1 * X)	0.00210	0.00176	0.00172
	(A1 * !A2 * C1 * X)	-0.00144	-0.00182	-0.00183
	(!A1 * C1 * X)	0.00209	0.00176	0.00172
	(!A1 * C1 * X)	-0.00145	-0.00181	-0.00183
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	0.00203	0.00199	0.00189
	(A1 * A2 * C1 * X)	-0.00126	-0.00129	-0.00128
	(A1 * A2 * !C1 * X)	0.00181	0.00183	0.00180
	(A1 * A2 * !C1 * X)	-0.00098	-0.00099	-0.00099
	(A1 * !A2 * C1 * X)	0.00216	0.00182	0.00178
	(A1 * !A2 * C1 * X)	-0.00143	-0.00182	-0.00183
	(!A1 * C1 * X)	0.00214	0.00182	0.00178
	(!A1 * C1 * X)	-0.00144	-0.00182	-0.00183
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	0.00364	0.00354	0.00333
	(A1 * A2 * C1 * X)	-0.00268	-0.00267	-0.00267
	(A1 * A2 * !C1 * X)	0.00323	0.00324	0.00318
	(A1 * A2 * !C1 * X)	-0.00211	-0.00210	-0.00210
	(A1 * !A2 * C1 * X)	0.00391	0.00322	0.00315
	(A1 * !A2 * C1 * X)	-0.00298	-0.00379	-0.00380
	(!A1 * C1 * X)	0.00392	0.00323	0.00315
	(!A1 * C1 * X)	-0.00296	-0.00379	-0.00380

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)	-0.00172	-0.00173	-0.00173
	(A1 * A2 * C1 * X)	0.00127	0.00128	0.00128
	(A1 * A2 * !C1 * X)	-0.00169	-0.00169	-0.00170
	(A1 * A2 * !C1 * X)	0.00103	0.00103	0.00103
	(A1 * !A2 * C1 * X)	-0.00170	-0.00171	-0.00170
	(A1 * !A2 * C1 * X)	0.00182	0.00184	0.00184
	(!A1 * C1 * X)	-0.00170	-0.00171	-0.00170
	(!A1 * C1 * X)	0.00182	0.00184	0.00184
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	-0.00181	-0.00182	-0.00181
	(A1 * A2 * C1 * X)	0.00128	0.00129	0.00128
	(A1 * A2 * !C1 * X)	-0.00176	-0.00177	-0.00177
	(A1 * A2 * !C1 * X)	0.00104	0.00104	0.00103
	(A1 * !A2 * C1 * X)	-0.00177	-0.00177	-0.00176
	(A1 * !A2 * C1 * X)	0.00182	0.00184	0.00184
	(!A1 * C1 * X)	-0.00177	-0.00177	-0.00176
	(!A1 * C1 * X)	0.00183	0.00184	0.00184
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	-0.00318	-0.00318	-0.00318
	(A1 * A2 * C1 * X)	0.00268	0.00267	0.00267
	(A1 * A2 * !C1 * X)	-0.00311	-0.00313	-0.00312
	(A1 * A2 * !C1 * X)	0.00219	0.00220	0.00218
	(A1 * !A2 * C1 * X)	-0.00312	-0.00314	-0.00312
	(A1 * !A2 * C1 * X)	0.00377	0.00382	0.00381
	(!A1 * C1 * X)	-0.00313	-0.00313	-0.00312
	(!A1 * C1 * X)	0.00381	0.00381	0.00381

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	0.00187	0.00191	0.00188
	(A1 * B1 * X)	-0.00090	-0.00093	-0.00091
	(A1 * A2 * !B1 * X)	0.00187	0.00191	0.00188
	(A1 * A2 * !B1 * X)	-0.00090	-0.00092	-0.00091
	(!A1 * B1 * X)	0.00187	0.00191	0.00188
	(!A1 * B1 * X)	-0.00091	-0.00093	-0.00091
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	0.00190	0.00191	0.00190
	(A1 * B1 * X)	-0.00095	-0.00096	-0.00095
	(A1 * A2 * !B1 * X)	0.00190	0.00192	0.00190
	(A1 * A2 * !B1 * X)	-0.00095	-0.00095	-0.00094
	(!A1 * B1 * X)	0.00190	0.00191	0.00190
	(!A1 * B1 * X)	-0.00095	-0.00096	-0.00095
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	0.00307	0.00310	0.00308
	(A1 * B1 * X)	-0.00183	-0.00185	-0.00183
	(A1 * A2 * !B1 * X)	0.00307	0.00310	0.00308
	(A1 * A2 * !B1 * X)	-0.00182	-0.00184	-0.00182
	(!A1 * B1 * X)	0.00307	0.00310	0.00307
	(!A1 * B1 * X)	-0.00185	-0.00186	-0.00184

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	-0.00183	-0.00183	-0.00187
	(A1 * B1 * X)	0.00095	0.00095	0.00092
	(A1 * A2 * !B1 * X)	-0.00169	-0.00170	-0.00185
	(A1 * A2 * !B1 * X)	0.00104	0.00104	0.00094
	(!A1 * B1 * X)	-0.00183	-0.00183	-0.00187
	(!A1 * B1 * X)	0.00095	0.00095	0.00093
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	-0.00185	-0.00186	-0.00189
	(A1 * B1 * X)	0.00100	0.00100	0.00096
	(A1 * A2 * !B1 * X)	-0.00173	-0.00174	-0.00187
	(A1 * A2 * !B1 * X)	0.00108	0.00108	0.00097
	(!A1 * B1 * X)	-0.00185	-0.00186	-0.00189
	(!A1 * B1 * X)	0.00100	0.00100	0.00096
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	-0.00295	-0.00297	-0.00306
	(A1 * B1 * X)	0.00195	0.00195	0.00186
	(A1 * A2 * !B1 * X)	-0.00270	-0.00272	-0.00301
	(A1 * A2 * !B1 * X)	0.00210	0.00210	0.00188
	(!A1 * B1 * X)	-0.00295	-0.00297	-0.00306
	(!A1 * B1 * X)	0.00196	0.00197	0.00187

SKY130_FD_SC_HS__A21BOIx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00280	0.00272	0.00258	0.56994
sky130_fd_sc_hs__a21boi_2	0.00532	0.00515	0.00254	1.10651
sky130_fd_sc_hs__a21boi_4	0.01055	0.01049	0.00374	1.97576

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21boi_1	0.00000	0.26534	0.50408
sky130_fd_sc_hs__a21boi_2	0.00000	0.18623	0.31750
sky130_fd_sc_hs__a21boi_4	0.00000	0.61298	1.12904

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)	0.07198	0.88207	10.07120
	A2->Y (FR)	0.09086	0.92634	10.36000
	B1_N->Y (RR)	0.09149	0.69962	6.33267
sky130_fd_sc_hs__a21boi_2	A1->Y (FR)	0.06604	0.76981	10.33930
	A2->Y (FR)	0.08545	0.78643	10.31230
	B1_N->Y (RR)	0.08626	0.56897	6.23926
sky130_fd_sc_hs__a21boi_4	A1->Y (FR)	0.06672	0.66291	10.11450
	A2->Y (FR)	0.08504	0.67241	9.93167
	B1_N->Y (RR)	0.07914	0.50973	6.61595

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21boi_1	A1->Y (RF)	0.02607	0.38656	4.32981
	A2->Y (RF)	0.02929	0.35296	3.87711
	B1_N->Y (FF)	0.06491	0.37847	2.90982
sky130_fd_sc_hs__a21boi_2	A1->Y (RF)	0.02442	0.35030	4.64676
	A2->Y (RF)	0.02920	0.31730	4.11346
	B1_N->Y (FF)	0.07035	0.39032	3.06868
sky130_fd_sc_hs__a21boi_4	A1->Y (RF)	0.02549	0.30640	4.66587
	A2->Y (RF)	0.03012	0.25947	3.86419
	B1_N->Y (FF)	0.07351	0.36139	2.74379

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.00107	0.00105	0.00736
	A1	0.00563	0.00559	0.01189
	A2	0.00168	0.00166	0.00805
	A2	0.00728	0.00728	0.01367
	B1_N	0.00846	0.01029	0.05544
	B1_N	0.00564	0.00746	0.05277
sky130_fd_sc_hs__a21boi_2	A1	0.00226	0.00228	0.01412
	A1	0.01107	0.01112	0.02304
	A2	0.00411	0.00402	0.01610
	A2	0.01508	0.01503	0.02717
	B1_N	0.01273	0.01474	0.06289
	B1_N	0.01152	0.01353	0.06195
sky130_fd_sc_hs__a21boi_4	A1	0.00464	0.00474	0.02799
	A1	0.02256	0.02270	0.04598
	A2	0.00758	0.00743	0.03124
	A2	0.02989	0.02980	0.05361
	B1_N	0.01890	0.02198	0.10040
	B1_N	0.02217	0.02505	0.10394

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.00610	0.00622	0.01227
	A1	0.00161	0.00172	0.00748
	A2	0.00720	0.00725	0.01243
	A2	0.00159	0.00159	0.00656
	B1_N	0.00485	0.00760	0.04855
	B1_N	0.00752	0.01026	0.05121
sky130_fd_sc_hs__a21boi_2	A1	0.01109	0.01138	0.02282
	A1	0.00236	0.00257	0.01318
	A2	0.01332	0.01330	0.02276
	A2	0.00231	0.00229	0.01171
	B1_N	0.00927	0.01218	0.05484
	B1_N	0.01016	0.01301	0.05566
sky130_fd_sc_hs__a21boi_4	A1	0.02165	0.02226	0.04383
	A1	0.00391	0.00448	0.02542
	A2	0.02649	0.02654	0.04724
	A2	0.00409	0.00407	0.02405
	B1_N	0.01899	0.02402	0.09643
	B1_N	0.01852	0.02349	0.09593

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)	0.00191	0.00171	0.00168
	(A2 * !B1_N * !Y)	-0.00191	-0.00215	-0.00216
	(!A2 * B1_N * Y)	0.00065	0.00065	0.00063
	(!A2 * B1_N * Y)	-0.00242	-0.00242	-0.00245
	(!A2 * !B1_N * !Y)	0.00160	0.00163	0.00161
	(!A2 * !B1_N * !Y)	-0.00217	-0.00218	-0.00218
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	0.00378	0.00337	0.00332
	(A2 * !B1_N * !Y)	-0.00361	-0.00417	-0.00417
	(!A2 * B1_N * Y)	0.00115	0.00116	0.00111
	(!A2 * B1_N * Y)	-0.00479	-0.00483	-0.00490
	(!A2 * !B1_N * !Y)	0.00316	0.00319	0.00317
	(!A2 * !B1_N * !Y)	-0.00420	-0.00422	-0.00421
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	0.00756	0.00665	0.00653
	(A2 * !B1_N * !Y)	-0.00723	-0.00840	-0.00840
	(!A2 * B1_N * Y)	0.00215	0.00217	0.00207
	(!A2 * B1_N * Y)	-0.00968	-0.00975	-0.00988
	(!A2 * !B1_N * !Y)	0.00624	0.00631	0.00625
	(!A2 * !B1_N * !Y)	-0.00849	-0.00853	-0.00848

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)	-0.00168	-0.00169	-0.00168
	(A2 * !B1_N * !Y)	0.00215	0.00217	0.00216
	(!A2 * B1_N * Y)	-0.00061	-0.00062	-0.00061
	(!A2 * B1_N * Y)	0.00246	0.00250	0.00246
	(!A2 * !B1_N * !Y)	-0.00156	-0.00162	-0.00161
	(!A2 * !B1_N * !Y)	0.00218	0.00218	0.00218
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	-0.00330	-0.00332	-0.00330
	(A2 * !B1_N * !Y)	0.00414	0.00419	0.00417
	(!A2 * B1_N * Y)	-0.00107	-0.00110	-0.00108
	(!A2 * B1_N * Y)	0.00489	0.00500	0.00492
	(!A2 * !B1_N * !Y)	-0.00305	-0.00319	-0.00317
	(!A2 * !B1_N * !Y)	0.00420	0.00425	0.00422
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	-0.00652	-0.00654	-0.00649
	(A2 * !B1_N * !Y)	0.00840	0.00847	0.00840
	(!A2 * B1_N * Y)	-0.00200	-0.00205	-0.00200
	(!A2 * B1_N * Y)	0.00985	0.01007	0.00991
	(!A2 * !B1_N * !Y)	-0.00605	-0.00631	-0.00625
	(!A2 * !B1_N * !Y)	0.00852	0.00857	0.00851

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)	0.00199	0.00178	0.00175
	(A1 * !B1_N * !Y)	-0.00180	-0.00208	-0.00208
	(!A1 * B1_N * Y)	0.00167	0.00169	0.00168
	(!A1 * B1_N * Y)	-0.00210	-0.00212	-0.00211
	(!A1 * !B1_N * !Y)	0.00168	0.00170	0.00168
	(!A1 * !B1_N * !Y)	-0.00210	-0.00212	-0.00211
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	0.00372	0.00332	0.00326
	(A1 * !B1_N * !Y)	-0.00363	-0.00416	-0.00416
	(!A1 * B1_N * Y)	0.00315	0.00318	0.00315
	(!A1 * B1_N * Y)	-0.00420	-0.00422	-0.00420
	(!A1 * !B1_N * !Y)	0.00315	0.00319	0.00315
	(!A1 * !B1_N * !Y)	-0.00420	-0.00423	-0.00420
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	0.00768	0.00672	0.00660
	(A1 * !B1_N * !Y)	-0.00716	-0.00836	-0.00836
	(!A1 * B1_N * Y)	0.00605	0.00615	0.00609
	(!A1 * B1_N * Y)	-0.00869	-0.00877	-0.00872
	(!A1 * !B1_N * !Y)	0.00637	0.00643	0.00637
	(!A1 * !B1_N * !Y)	-0.00843	-0.00846	-0.00844

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)	-0.00174	-0.00175	-0.00174
	(A1 * !B1_N * !Y)	0.00207	0.00209	0.00208
	(!A1 * B1_N * Y)	-0.00157	-0.00167	-0.00168
	(!A1 * B1_N * Y)	0.00218	0.00214	0.00213
	(!A1 * !B1_N * !Y)	-0.00163	-0.00169	-0.00168
	(!A1 * !B1_N * !Y)	0.00210	0.00213	0.00211
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	-0.00326	-0.00326	-0.00325
	(A1 * !B1_N * !Y)	0.00416	0.00418	0.00416
	(!A1 * B1_N * Y)	-0.00291	-0.00314	-0.00315
	(!A1 * B1_N * Y)	0.00433	0.00425	0.00421
	(!A1 * !B1_N * !Y)	-0.00301	-0.00314	-0.00315
	(!A1 * !B1_N * !Y)	0.00420	0.00424	0.00421
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	-0.00657	-0.00659	-0.00657
	(A1 * !B1_N * !Y)	0.00832	0.00837	0.00836
	(!A1 * B1_N * Y)	-0.00562	-0.00610	-0.00609
	(!A1 * B1_N * Y)	0.00901	0.00884	0.00876
	(!A1 * !B1_N * !Y)	-0.00614	-0.00634	-0.00637
	(!A1 * !B1_N * !Y)	0.00843	0.00846	0.00846

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)	0.00516	0.00698	0.05192
	(A1 * A2 * !Y)	0.00083	0.00265	0.04760
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00606	0.00772	0.05574
	(A1 * A2 * !Y)	0.00183	0.00347	0.05150
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.00932	0.01183	0.08974
	(A1 * A2 * !Y)	0.00305	0.00552	0.08349

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)	0.00101	0.00375	0.04895
	(A1 * A2 * !Y)	0.00530	0.00806	0.05325
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00307	0.00559	0.05368
	(A1 * A2 * !Y)	0.00727	0.00981	0.05790
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.00661	0.01107	0.09054
	(A1 * A2 * !Y)	0.01279	0.01730	0.09674

SKY130_FD_SC_HS__A21BOx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00260	0.00250	0.00219	1.07961
sky130_fd_sc_hs__a21bo_2	0.00277	0.00262	0.00228	1.99972
sky130_fd_sc_hs__a21bo_4	0.00480	0.00509	0.00264	3.77629

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21bo_1	0.00000	0.35542	0.59042
sky130_fd_sc_hs__a21bo_2	0.00000	0.38724	0.61226
sky130_fd_sc_hs__a21bo_4	0.00000	0.43333	0.54501

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)	0.07393	0.57216	6.06598
	A2->X (RR)	0.07710	0.57169	6.03769
	B1_N->X (FR)	0.10867	0.73444	8.13407
sky130_fd_sc_hs__a21bo_2	A1->X (RR)	0.07041	0.47638	5.80879
	A2->X (RR)	0.07379	0.47113	5.76426
	B1_N->X (FR)	0.11249	0.63952	7.92327
sky130_fd_sc_hs__a21bo_4	A1->X (RR)	0.07281	0.41107	5.91957
	A2->X (RR)	0.07853	0.41154	5.89706
	B1_N->X (FR)	0.12735	0.60792	8.13955

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21bo_1	A1->X (FF)	0.11826	0.51755	4.57537
	A2->X (FF)	0.13587	0.54814	4.64241
	B1_N->X (RF)	0.13609	0.35863	2.10567
sky130_fd_sc_hs__a21bo_2	A1->X (FF)	0.14810	0.53886	4.53141
	A2->X (FF)	0.16939	0.57350	4.61996
	B1_N->X (RF)	0.17568	0.37992	1.95101
sky130_fd_sc_hs__a21bo_4	A1->X (FF)	0.14182	0.49079	4.46722
	A2->X (FF)	0.15539	0.51862	4.52374
	B1_N->X (RF)	0.15949	0.33453	1.85729

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.00946	0.01077	0.04024
	A1	0.00515	0.00646	0.03633
	A2	0.01050	0.01137	0.03771
	A2	0.00516	0.00603	0.03280
	B1_N	0.00764	0.01052	0.05724
	B1_N	0.01073	0.01367	0.06045
sky130_fd_sc_hs__a21bo_2	A1	0.01236	0.01377	0.04260
	A1	0.00785	0.00930	0.03831
	A2	0.01335	0.01439	0.04040
	A2	0.00781	0.00887	0.03514
	B1_N	0.01197	0.01472	0.05998
	B1_N	0.01408	0.01684	0.06364
sky130_fd_sc_hs__a21bo_4	A1	0.02282	0.02566	0.08434
	A1	0.01498	0.01789	0.07658
	A2	0.02551	0.02744	0.07987
	A2	0.01502	0.01697	0.06959
	B1_N	0.02141	0.02482	0.07648
	B1_N	0.02281	0.02636	0.08004

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.00511	0.00572	0.03388
	A1	0.00944	0.00998	0.03791
	A2	0.00528	0.00590	0.03235
	A2	0.01059	0.01121	0.03724
	B1_N	0.01082	0.01274	0.05654
	B1_N	0.00916	0.01097	0.05299
sky130_fd_sc_hs__a21bo_2	A1	0.00786	0.00839	0.03504
	A1	0.01238	0.01280	0.03955
	A2	0.00862	0.00899	0.03480
	A2	0.01411	0.01444	0.04002
	B1_N	0.01545	0.01683	0.05774
	B1_N	0.01320	0.01451	0.05549
sky130_fd_sc_hs__a21bo_4	A1	0.01564	0.01657	0.07138
	A1	0.02352	0.02444	0.07838
	A2	0.01616	0.01736	0.06827
	A2	0.02659	0.02742	0.07858
	B1_N	0.02609	0.02763	0.07487
	B1_N	0.02442	0.02591	0.07272

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)	0.00176	0.00149	0.00145
	(A2 * !B1_N * X)	-0.00173	-0.00203	-0.00204
	(!A2 * B1_N * !X)	0.00054	0.00054	0.00052
	(!A2 * B1_N * !X)	-0.00229	-0.00229	-0.00231
	(!A2 * !B1_N * X)	0.00138	0.00140	0.00139
	(!A2 * !B1_N * X)	-0.00206	-0.00208	-0.00206
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	0.00199	0.00175	0.00172
	(A2 * !B1_N * X)	-0.00169	-0.00199	-0.00200
	(!A2 * B1_N * !X)	0.00067	0.00067	0.00065
	(!A2 * B1_N * !X)	-0.00227	-0.00228	-0.00230
	(!A2 * !B1_N * X)	0.00164	0.00166	0.00165
	(!A2 * !B1_N * X)	-0.00201	-0.00202	-0.00202
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	0.00328	0.00283	0.00277
	(A2 * !B1_N * X)	-0.00324	-0.00380	-0.00382
	(!A2 * B1_N * !X)	0.00085	0.00086	0.00082
	(!A2 * B1_N * !X)	-0.00440	-0.00442	-0.00448
	(!A2 * !B1_N * X)	0.00266	0.00267	0.00266
	(!A2 * !B1_N * X)	-0.00386	-0.00387	-0.00386

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)	-0.00144	-0.00145	-0.00144
	(A2 * !B1_N * X)	0.00203	0.00205	0.00205
	(!A2 * B1_N * !X)	-0.00051	-0.00052	-0.00050
	(!A2 * B1_N * !X)	0.00232	0.00236	0.00233
	(!A2 * !B1_N * X)	-0.00136	-0.00139	-0.00139
	(!A2 * !B1_N * X)	0.00208	0.00208	0.00207
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	-0.00171	-0.00172	-0.00171
	(A2 * !B1_N * X)	0.00199	0.00200	0.00200
	(!A2 * B1_N * !X)	-0.00064	-0.00065	-0.00063
	(!A2 * B1_N * !X)	0.00232	0.00235	0.00232
	(!A2 * !B1_N * X)	-0.00161	-0.00164	-0.00165
	(!A2 * !B1_N * X)	0.00203	0.00202	0.00202
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	-0.00275	-0.00276	-0.00274
	(A2 * !B1_N * X)	0.00381	0.00383	0.00383
	(!A2 * B1_N * !X)	-0.00079	-0.00081	-0.00079
	(!A2 * B1_N * !X)	0.00448	0.00457	0.00450
	(!A2 * !B1_N * X)	-0.00253	-0.00266	-0.00266
	(!A2 * !B1_N * X)	0.00386	0.00394	0.00387

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)	0.00193	0.00172	0.00169
	(A1 * !B1_N * X)	-0.00161	-0.00187	-0.00188
	(!A1 * B1_N * !X)	0.00163	0.00165	0.00163
	(!A1 * B1_N * !X)	-0.00188	-0.00190	-0.00189
	(!A1 * !B1_N * X)	0.00162	0.00163	0.00162
	(!A1 * !B1_N * X)	-0.00189	-0.00190	-0.00189
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	0.00197	0.00172	0.00168
	(A1 * !B1_N * X)	-0.00163	-0.00194	-0.00195
	(!A1 * B1_N * !X)	0.00161	0.00162	0.00162
	(!A1 * B1_N * !X)	-0.00196	-0.00197	-0.00197
	(!A1 * !B1_N * X)	0.00161	0.00164	0.00162
	(!A1 * !B1_N * X)	-0.00197	-0.00198	-0.00197
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	0.00384	0.00346	0.00340
	(A1 * !B1_N * X)	-0.00328	-0.00379	-0.00380
	(!A1 * B1_N * !X)	0.00327	0.00331	0.00328
	(!A1 * B1_N * !X)	-0.00381	-0.00384	-0.00382
	(!A1 * !B1_N * X)	0.00325	0.00329	0.00326
	(!A1 * !B1_N * X)	-0.00382	-0.00384	-0.00383

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)	-0.00168	-0.00169	-0.00167
	(A1 * !B1_N * X)	0.00187	0.00190	0.00188
	(!A1 * B1_N * !X)	-0.00152	-0.00162	-0.00163
	(!A1 * B1_N * !X)	0.00198	0.00192	0.00191
	(!A1 * !B1_N * X)	-0.00159	-0.00163	-0.00162
	(!A1 * !B1_N * X)	0.00189	0.00191	0.00190
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	-0.00167	-0.00168	-0.00166
	(A1 * !B1_N * X)	0.00194	0.00196	0.00195
	(!A1 * B1_N * !X)	-0.00151	-0.00161	-0.00161
	(!A1 * B1_N * !X)	0.00204	0.00200	0.00198
	(!A1 * !B1_N * X)	-0.00156	-0.00161	-0.00162
	(!A1 * !B1_N * X)	0.00197	0.00199	0.00198
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	-0.00339	-0.00339	-0.00338
	(A1 * !B1_N * X)	0.00378	0.00379	0.00380
	(!A1 * B1_N * !X)	-0.00306	-0.00331	-0.00328
	(!A1 * B1_N * !X)	0.00397	0.00387	0.00384
	(!A1 * !B1_N * X)	-0.00317	-0.00329	-0.00326
	(!A1 * !B1_N * X)	0.00382	0.00387	0.00384

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)	0.00430	0.00623	0.05024
	(A1 * A2 * X)	0.00063	0.00255	0.04657
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00486	0.00662	0.05055
	(A1 * A2 * X)	0.00102	0.00277	0.04671
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00651	0.00819	0.05509
	(A1 * A2 * X)	0.00210	0.00374	0.05067

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)	0.00125	0.00400	0.04826
	(A1 * A2 * X)	0.00490	0.00766	0.05191
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00153	0.00418	0.04843
	(A1 * A2 * X)	0.00534	0.00801	0.05225
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00247	0.00490	0.05184
	(A1 * A2 * X)	0.00685	0.00932	0.05625

SKY130_FD_SC_HS__A21OIx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00290	0.00272	0.00283	0.56287
sky130_fd_sc_hs__a21oi_2	0.00527	0.00548	0.00423	0.98999
sky130_fd_sc_hs__a21oi_4	0.01073	0.01047	0.00835	1.87717

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21oi_1	0.00000	0.04141	0.07688
sky130_fd_sc_hs__a21oi_2	0.00000	0.08003	0.15376
sky130_fd_sc_hs__a21oi_4	0.00000	0.16006	0.30753

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)	0.07189	0.87989	9.99921
	A2->Y (FR)	0.08925	0.92125	10.27600
	B1->Y (FR)	0.06906	0.92440	10.65010
sky130_fd_sc_hs__a21oi_2	A1->Y (FR)	0.06945	0.79105	10.31850
	A2->Y (FR)	0.09146	0.80020	10.14710
	B1->Y (FR)	0.03805	0.77957	10.58120
sky130_fd_sc_hs__a21oi_4	A1->Y (FR)	0.06448	0.66904	10.08650
	A2->Y (FR)	0.08387	0.67497	9.87626
	B1->Y (FR)	0.03462	0.66530	10.40780

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21oi_1	A1->Y (RF)	0.02625	0.38421	4.28102
	A2->Y (RF)	0.02895	0.35127	3.84446
	B1->Y (RF)	0.01680	0.30004	3.39560
sky130_fd_sc_hs__a21oi_2	A1->Y (RF)	0.02499	0.33924	4.34845
	A2->Y (RF)	0.03106	0.30747	3.82004
	B1->Y (RF)	0.02080	0.38304	5.07631
sky130_fd_sc_hs__a21oi_4	A1->Y (RF)	0.02443	0.29911	4.49796
	A2->Y (RF)	0.02857	0.25209	3.70219
	B1->Y (RF)	0.02102	0.34311	5.31573

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	-0.00028	-0.00031	0.00603
	A1	0.00583	0.00579	0.01216
	A2	0.00014	0.00013	0.00662
	A2	0.00732	0.00732	0.01385
	B1	-0.00061	0.00023	0.01356
	B1	0.00427	0.00511	0.01857
sky130_fd_sc_hs__a21oi_2	A1	-0.00066	-0.00069	0.01125
	A1	0.01076	0.01078	0.02273
	A2	0.00093	0.00080	0.01299
	A2	0.01498	0.01488	0.02717
	B1	-0.00004	0.00157	0.01783
	B1	0.00753	0.00915	0.02555
sky130_fd_sc_hs__a21oi_4	A1	-0.00215	-0.00197	0.02262
	A1	0.02126	0.02151	0.04613
	A2	0.00109	0.00107	0.02680
	A2	0.02913	0.02918	0.05489
	B1	-0.00041	0.00217	0.03322
	B1	0.01474	0.01728	0.04873

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	0.00754	0.00763	0.01375
	A1	0.00150	0.00159	0.00738
	A2	0.00865	0.00871	0.01368
	A2	0.00150	0.00149	0.00650
	B1	0.00454	0.00498	0.01169
	B1	-0.00033	0.00008	0.00681
sky130_fd_sc_hs__a21oi_2	A1	0.01365	0.01401	0.02602
	A1	0.00233	0.00262	0.01356
	A2	0.01650	0.01644	0.02635
	A2	0.00239	0.00230	0.01225
	B1	0.00577	0.00654	0.01591
	B1	-0.00179	-0.00113	0.00763
sky130_fd_sc_hs__a21oi_4	A1	0.02732	0.02793	0.04962
	A1	0.00415	0.00472	0.02562
	A2	0.03195	0.03199	0.05271
	A2	0.00395	0.00387	0.02376
	B1	0.01192	0.01315	0.03367
	B1	-0.00320	-0.00207	0.01455

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	0.00195	0.00174	0.00171
	(A2 * B1 * !Y)	-0.00178	-0.00206	-0.00206
	(!A2 * B1 * !Y)	0.00163	0.00166	0.00164
	(!A2 * B1 * !Y)	-0.00209	-0.00211	-0.00210
	(!A2 * !B1 * Y)	0.00052	0.00052	0.00050
	(!A2 * !B1 * Y)	-0.00248	-0.00249	-0.00251
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	0.00393	0.00345	0.00339
	(A2 * B1 * !Y)	-0.00343	-0.00406	-0.00404
	(!A2 * B1 * !Y)	0.00318	0.00320	0.00319
	(!A2 * B1 * !Y)	-0.00412	-0.00414	-0.00413
	(!A2 * !B1 * Y)	0.00112	0.00112	0.00107
	(!A2 * !B1 * Y)	-0.00472	-0.00475	-0.00483
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	0.00792	0.00694	0.00683
	(A2 * B1 * !Y)	-0.00683	-0.00812	-0.00807
	(!A2 * B1 * !Y)	0.00651	0.00655	0.00653
	(!A2 * B1 * !Y)	-0.00822	-0.00823	-0.00821
	(!A2 * !B1 * Y)	0.00211	0.00212	0.00202
	(!A2 * !B1 * Y)	-0.00976	-0.00983	-0.00994

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	-0.00170	-0.00171	-0.00170
	(A2 * B1 * !Y)	0.00205	0.00208	0.00206
	(!A2 * B1 * !Y)	-0.00159	-0.00164	-0.00164
	(!A2 * B1 * !Y)	0.00210	0.00211	0.00211
	(!A2 * !B1 * Y)	-0.00049	-0.00050	-0.00049
	(!A2 * !B1 * Y)	0.00250	0.00255	0.00251
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	-0.00339	-0.00341	-0.00338
	(A2 * B1 * !Y)	0.00404	0.00407	0.00404
	(!A2 * B1 * !Y)	-0.00303	-0.00320	-0.00319
	(!A2 * B1 * !Y)	0.00415	0.00417	0.00413
	(!A2 * !B1 * Y)	-0.00103	-0.00106	-0.00104
	(!A2 * !B1 * Y)	0.00481	0.00491	0.00484
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	-0.00679	-0.00686	-0.00681
	(A2 * B1 * !Y)	0.00800	0.00814	0.00807
	(!A2 * B1 * !Y)	-0.00629	-0.00655	-0.00653
	(!A2 * B1 * !Y)	0.00822	0.00826	0.00824
	(!A2 * !B1 * Y)	-0.00196	-0.00197	-0.00196
	(!A2 * !B1 * Y)	0.00991	0.00997	0.00996

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	0.00195	0.00174	0.00172
	(A1 * B1 * !Y)	-0.00177	-0.00206	-0.00206
	(!A1 * B1 * !Y)	0.00164	0.00166	0.00164
	(!A1 * B1 * !Y)	-0.00210	-0.00211	-0.00210
	(!A1 * !B1 * Y)	0.00165	0.00166	0.00164
	(!A1 * !B1 * Y)	-0.00210	-0.00211	-0.00210
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	0.00406	0.00357	0.00351
	(A1 * B1 * !Y)	-0.00343	-0.00408	-0.00405
	(!A1 * B1 * !Y)	0.00335	0.00338	0.00336
	(!A1 * B1 * !Y)	-0.00413	-0.00415	-0.00413
	(!A1 * !B1 * Y)	0.00322	0.00325	0.00322
	(!A1 * !B1 * Y)	-0.00427	-0.00429	-0.00426
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	0.00775	0.00679	0.00666
	(A1 * B1 * !Y)	-0.00705	-0.00831	-0.00829
	(!A1 * B1 * !Y)	0.00641	0.00647	0.00640
	(!A1 * B1 * !Y)	-0.00845	-0.00849	-0.00845
	(!A1 * !B1 * Y)	0.00633	0.00638	0.00632
	(!A1 * !B1 * Y)	-0.00851	-0.00854	-0.00849

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	-0.00171	-0.00172	-0.00171
	(A1 * B1 * !Y)	0.00205	0.00207	0.00206
	(!A1 * B1 * !Y)	-0.00160	-0.00164	-0.00164
	(!A1 * B1 * !Y)	0.00210	0.00212	0.00211
	(!A1 * !B1 * Y)	-0.00154	-0.00165	-0.00164
	(!A1 * !B1 * Y)	0.00217	0.00213	0.00211
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	-0.00351	-0.00352	-0.00350
	(A1 * B1 * !Y)	0.00405	0.00408	0.00405
	(!A1 * B1 * !Y)	-0.00318	-0.00336	-0.00336
	(!A1 * B1 * !Y)	0.00415	0.00422	0.00415
	(!A1 * !B1 * Y)	-0.00294	-0.00323	-0.00322
	(!A1 * !B1 * Y)	0.00442	0.00431	0.00427
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	-0.00665	-0.00666	-0.00663
	(A1 * B1 * !Y)	0.00829	0.00832	0.00829
	(!A1 * B1 * !Y)	-0.00613	-0.00635	-0.00640
	(!A1 * B1 * !Y)	0.00845	0.00849	0.00848
	(!A1 * !B1 * Y)	-0.00583	-0.00635	-0.00632
	(!A1 * !B1 * Y)	0.00882	0.00860	0.00852

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	0.00201	0.00202	0.00200
	(A1 * A2 * !Y)	-0.00099	-0.00099	-0.00098
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	0.00220	0.00225	0.00221
	(A1 * A2 * !Y)	-0.00201	-0.00206	-0.00202
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	0.00429	0.00432	0.00428
	(A1 * A2 * !Y)	-0.00393	-0.00393	-0.00390

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	-0.00187	-0.00189	-0.00198
	(A1 * A2 * !Y)	0.00108	0.00108	0.00100
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	-0.00198	-0.00198	-0.00219
	(A1 * A2 * !Y)	0.00222	0.00221	0.00207
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	-0.00382	-0.00388	-0.00424
	(A1 * A2 * !Y)	0.00427	0.00429	0.00399

SKY130_FD_SC_HS__A21Ox

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00243	0.00249	0.00249	1.20509
sky130_fd_sc_hs__a21o_2	0.00271	0.00261	0.00275	2.30327
sky130_fd_sc_hs__a21o_4	0.00491	0.00469	0.00501	4.38035

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21o_1	0.00000	0.13148	0.20405
sky130_fd_sc_hs__a21o_2	0.00000	0.16331	0.21148
sky130_fd_sc_hs__a21o_4	0.00000	0.32992	0.42295

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)	0.06948	0.54910	6.09315
	A2->X (RR)	0.07360	0.54997	6.06258
	B1->X (RR)	0.05209	0.50603	5.94083
sky130_fd_sc_hs__a21o_2	A1->X (RR)	0.06801	0.46175	5.93285
	A2->X (RR)	0.07146	0.45672	5.88636
	B1->X (RR)	0.05075	0.41997	5.77045
sky130_fd_sc_hs__a21o_4	A1->X (RR)	0.07808	0.41598	6.11521
	A2->X (RR)	0.08298	0.41230	6.06739
	B1->X (RR)	0.05285	0.36006	5.90143

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21o_1	A1->X (FF)	0.11260	0.52355	4.86885
	A2->X (FF)	0.13230	0.55573	4.94091
	B1->X (FF)	0.11071	0.55175	4.90037
sky130_fd_sc_hs__a21o_2	A1->X (FF)	0.13783	0.53244	4.78927
	A2->X (FF)	0.15859	0.56572	4.87449
	B1->X (FF)	0.13903	0.57159	4.90181
sky130_fd_sc_hs__a21o_4	A1->X (FF)	0.14234	0.50816	4.88452
	A2->X (FF)	0.16324	0.54225	4.96457
	B1->X (FF)	0.13988	0.54323	5.01428

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.01035	0.01163	0.04111
	A1	0.00515	0.00643	0.03635
	A2	0.01161	0.01240	0.03870
	A2	0.00515	0.00593	0.03269
	B1	0.00753	0.00922	0.05143
	B1	0.00335	0.00506	0.04774
sky130_fd_sc_hs__a21o_2	A1	0.01359	0.01500	0.04451
	A1	0.00790	0.00932	0.03982
	A2	0.01478	0.01578	0.04239
	A2	0.00788	0.00889	0.03559
	B1	0.01076	0.01260	0.05542
	B1	0.00613	0.00801	0.05104
sky130_fd_sc_hs__a21o_4	A1	0.02605	0.02861	0.08522
	A1	0.01517	0.01779	0.07610
	A2	0.02800	0.02972	0.08029
	A2	0.01515	0.01689	0.06924
	B1	0.02003	0.02377	0.10715
	B1	0.01127	0.01510	0.10022

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.00370	0.00432	0.03304
	A1	0.00896	0.00952	0.03754
	A2	0.00386	0.00448	0.03048
	A2	0.01031	0.01093	0.03691
	B1	0.00350	0.00590	0.04142
	B1	0.00766	0.01007	0.04553
sky130_fd_sc_hs__a21o_2	A1	0.00648	0.00729	0.03650
	A1	0.01223	0.01273	0.04016
	A2	0.00708	0.00759	0.03550
	A2	0.01395	0.01440	0.04056
	B1	0.00607	0.00873	0.04772
	B1	0.01068	0.01318	0.05220
sky130_fd_sc_hs__a21o_4	A1	0.01329	0.01447	0.06846
	A1	0.02425	0.02506	0.07747
	A2	0.01505	0.01560	0.06586
	A2	0.02787	0.02837	0.07801
	B1	0.01236	0.01743	0.09474
	B1	0.02111	0.02591	0.10230

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	0.00165	0.00140	0.00137
	(A2 * B1 * X)	-0.00159	-0.00188	-0.00189
	(!A2 * B1 * X)	0.00131	0.00132	0.00131
	(!A2 * B1 * X)	-0.00193	-0.00193	-0.00192
	(!A2 * !B1 * !X)	0.00046	0.00046	0.00044
	(!A2 * !B1 * !X)	-0.00216	-0.00216	-0.00219
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	0.00191	0.00167	0.00164
	(A2 * B1 * X)	-0.00160	-0.00190	-0.00191
	(!A2 * B1 * X)	0.00156	0.00157	0.00157
	(!A2 * B1 * X)	-0.00194	-0.00196	-0.00195
	(!A2 * !B1 * !X)	0.00056	0.00056	0.00054
	(!A2 * !B1 * !X)	-0.00223	-0.00224	-0.00226
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	0.00350	0.00301	0.00295
	(A2 * B1 * X)	-0.00313	-0.00377	-0.00378
	(!A2 * B1 * X)	0.00285	0.00286	0.00286
	(!A2 * B1 * X)	-0.00384	-0.00385	-0.00384
	(!A2 * !B1 * !X)	0.00100	0.00101	0.00096
	(!A2 * !B1 * !X)	-0.00444	-0.00447	-0.00454

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	-0.00136	-0.00137	-0.00136
	(A2 * B1 * X)	0.00188	0.00190	0.00189
	(!A2 * B1 * X)	-0.00128	-0.00131	-0.00131
	(!A2 * B1 * X)	0.00194	0.00193	0.00193
	(!A2 * !B1 * !X)	-0.00043	-0.00044	-0.00043
	(!A2 * !B1 * !X)	0.00219	0.00223	0.00220
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	-0.00163	-0.00163	-0.00162
	(A2 * B1 * X)	0.00190	0.00191	0.00191
	(!A2 * B1 * X)	-0.00152	-0.00156	-0.00157
	(!A2 * B1 * X)	0.00196	0.00196	0.00196
	(!A2 * !B1 * !X)	-0.00053	-0.00054	-0.00053
	(!A2 * !B1 * !X)	0.00228	0.00231	0.00227
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	-0.00292	-0.00294	-0.00293
	(A2 * B1 * X)	0.00375	0.00380	0.00378
	(!A2 * B1 * X)	-0.00271	-0.00286	-0.00286
	(!A2 * B1 * X)	0.00384	0.00390	0.00386
	(!A2 * !B1 * !X)	-0.00092	-0.00095	-0.00093
	(!A2 * !B1 * !X)	0.00453	0.00463	0.00456

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	0.00197	0.00175	0.00171
	(A1 * B1 * X)	-0.00158	-0.00186	-0.00186
	(!A1 * B1 * X)	0.00166	0.00167	0.00166
	(!A1 * B1 * X)	-0.00189	-0.00190	-0.00190
	(!A1 * !B1 * !X)	0.00166	0.00167	0.00166
	(!A1 * !B1 * !X)	-0.00189	-0.00190	-0.00189
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	0.00199	0.00176	0.00172
	(A1 * B1 * X)	-0.00161	-0.00190	-0.00191
	(!A1 * B1 * X)	0.00166	0.00168	0.00165
	(!A1 * B1 * X)	-0.00194	-0.00196	-0.00195
	(!A1 * !B1 * !X)	0.00165	0.00166	0.00166
	(!A1 * !B1 * !X)	-0.00194	-0.00195	-0.00194
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	0.00344	0.00296	0.00290
	(A1 * B1 * X)	-0.00316	-0.00377	-0.00378
	(!A1 * B1 * X)	0.00278	0.00281	0.00280
	(!A1 * B1 * X)	-0.00382	-0.00385	-0.00383
	(!A1 * !B1 * !X)	0.00279	0.00282	0.00279
	(!A1 * !B1 * !X)	-0.00384	-0.00386	-0.00384

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	-0.00171	-0.00172	-0.00170
	(A1 * B1 * X)	0.00185	0.00188	0.00186
	(!A1 * B1 * X)	-0.00162	-0.00167	-0.00166
	(!A1 * B1 * X)	0.00189	0.00192	0.00190
	(!A1 * !B1 * !X)	-0.00156	-0.00166	-0.00166
	(!A1 * !B1 * !X)	0.00196	0.00192	0.00190
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	-0.00171	-0.00172	-0.00171
	(A1 * B1 * X)	0.00190	0.00191	0.00191
	(!A1 * B1 * X)	-0.00161	-0.00166	-0.00165
	(!A1 * B1 * X)	0.00194	0.00197	0.00195
	(!A1 * !B1 * !X)	-0.00155	-0.00165	-0.00166
	(!A1 * !B1 * !X)	0.00201	0.00197	0.00196
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	-0.00288	-0.00289	-0.00287
	(A1 * B1 * X)	0.00377	0.00379	0.00378
	(!A1 * B1 * X)	-0.00267	-0.00278	-0.00280
	(!A1 * B1 * X)	0.00383	0.00387	0.00385
	(!A1 * !B1 * !X)	-0.00256	-0.00278	-0.00279
	(!A1 * !B1 * !X)	0.00398	0.00389	0.00386

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	0.00164	0.00166	0.00164
	(A1 * A2 * X)	-0.00093	-0.00094	-0.00093
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	0.00195	0.00197	0.00195
	(A1 * A2 * X)	-0.00092	-0.00093	-0.00092
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	0.00341	0.00345	0.00340
	(A1 * A2 * X)	-0.00194	-0.00195	-0.00192

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	-0.00153	-0.00154	-0.00163
	(A1 * A2 * X)	0.00103	0.00103	0.00096
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	-0.00183	-0.00184	-0.00193
	(A1 * A2 * X)	0.00102	0.00102	0.00095
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	-0.00315	-0.00319	-0.00337
	(A1 * A2 * X)	0.00211	0.00213	0.00196

SKY130_FD_SC_HS__A221OIx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00279	0.00274	0.00284	0.00293	0.00293	0.36697
sky130_fd_sc_hs__a221oi_2	0.00591	0.00533	0.00581	0.00528	0.00540	0.61654
sky130_fd_sc_hs__a221oi_4	0.01089	0.01081	0.01079	0.01048	0.01069	1.09245

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a221oi_1	0.00000	0.03808	0.07688
sky130_fd_sc_hs__a221oi_2	0.00000	0.07616	0.15376
sky130_fd_sc_hs__a221oi_4	0.00000	0.15232	0.30753

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)	0.19151	1.09478	9.75335
	A2->Y (FR)	0.21500	1.12351	9.79925
	B1->Y (FR)	0.16472	1.08916	10.32810
	B2->Y (FR)	0.19137	1.12580	10.44340
	C1->Y (FR)	0.14308	1.08800	10.58050
sky130_fd_sc_hs__a221oi_2	A1->Y (FR)	0.17713	0.90551	9.12540
	A2->Y (FR)	0.22563	0.99349	9.65489
	B1->Y (FR)	0.16027	0.93444	10.04210
	B2->Y (FR)	0.19659	0.99329	10.29970
	C1->Y (FR)	0.13997	0.95799	10.52360
sky130_fd_sc_hs__a221oi_4	A1->Y (FR)	0.19793	0.83514	9.31891
	A2->Y (FR)	0.23774	0.88648	9.48224
	B1->Y (FR)	0.16423	0.82262	9.89418
	B2->Y (FR)	0.20695	0.88596	10.21360
	C1->Y (FR)	0.14943	0.86392	10.60520

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221oi_1	A1->Y (RF)	0.03064	0.35049	3.14287
	A2->Y (RF)	0.03376	0.32032	2.80547
	B1->Y (RF)	0.03258	0.34390	3.18502
	B2->Y (RF)	0.03657	0.31698	2.85850
	C1->Y (RF)	0.02038	0.26670	2.48882
sky130_fd_sc_hs__a221oi_2	A1->Y (RF)	0.02714	0.29614	2.93207
	A2->Y (RF)	0.03250	0.27591	2.65413
	B1->Y (RF)	0.02848	0.28110	2.89134
	B2->Y (RF)	0.03292	0.26204	2.61989
	C1->Y (RF)	0.01810	0.21530	2.27901
sky130_fd_sc_hs__a221oi_4	A1->Y (RF)	0.02926	0.27296	3.02249
	A2->Y (RF)	0.03379	0.23036	2.43620
	B1->Y (RF)	0.03388	0.26136	3.01738
	B2->Y (RF)	0.03833	0.22144	2.42513
	C1->Y (RF)	0.01623	0.16464	2.04299

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221oi_1	A1	0.00126	0.00101	0.00764
	A1	0.01006	0.00983	0.01649
	A2	0.00158	0.00142	0.00809
	A2	0.01160	0.01145	0.01815
	B1	0.00127	0.00110	0.00855
	B1	0.00771	0.00756	0.01506
	B2	0.00171	0.00159	0.00902
	B2	0.00934	0.00923	0.01668
	C1	0.00096	0.00167	0.01632
	C1	0.00634	0.00706	0.02172
sky130_fd_sc_hs__a221oi_2	A1	0.00067	0.00023	0.01451
	A1	0.01873	0.01831	0.03263
	A2	0.00236	0.00191	0.01551
	A2	0.02207	0.02163	0.03522
	B1	0.00075	0.00053	0.01585
	B1	0.01389	0.01367	0.02903
	B2	0.00204	0.00182	0.01731
	B2	0.01698	0.01677	0.03226
	C1	0.00024	0.00263	0.03097
	C1	0.01074	0.01313	0.04155

sky130_fd_sc_hs__a221oi_4	**A1**	0.00054	-0.00042	0.02563
	A1	0.03609	0.03517	0.06140
	A2	0.00320	0.00235	0.02877
	A2	0.04751	0.04657	0.07224
	B1	0.00045	0.00000	0.02776
	B1	0.02695	0.02656	0.05450
	B2	0.00330	0.00290	0.03027
	B2	0.03436	0.03399	0.06148
	C1	-0.00062	0.00320	0.05794
	C1	0.02008	0.02383	0.07862

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221oi_1	**A1**	0.01297	0.01294	0.01987
	A1	0.00440	0.00438	0.01129
	A2	0.01420	0.01409	0.02010
	A2	0.00436	0.00424	0.01029
	B1	0.00804	0.00817	0.01505
	B1	0.00167	0.00180	0.00864
	B2	0.00926	0.00930	0.01523
	B2	0.00166	0.00165	0.00759
	C1	0.00501	0.00543	0.01329
	C1	-0.00037	0.00003	0.00791

sky130_fd_sc_hs__a221oi_2	**A1**	0.02439	0.02435	0.03879
	A1	0.00677	0.00674	0.02119
	A2	0.02647	0.02622	0.03831
	A2	0.00706	0.00676	0.01894
	B1	0.01534	0.01579	0.02984
	B1	0.00236	0.00275	0.01682
	B2	0.01741	0.01749	0.02969
	B2	0.00247	0.00251	0.01476
	C1	0.00897	0.01009	0.02619
	C1	-0.00150	-0.00043	0.01569
sky130_fd_sc_hs__a221oi_4	**A1**	0.04896	0.04892	0.07541
	A1	0.01432	0.01417	0.04079
	A2	0.05358	0.05291	0.07786
	A2	0.01419	0.01352	0.03848
	B1	0.03061	0.03138	0.05809
	B1	0.00446	0.00522	0.03194
	B2	0.03550	0.03555	0.06039
	B2	0.00452	0.00459	0.02940
	C1	0.01866	0.02101	0.05292
	C1	-0.00198	0.00027	0.03220

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)**	0.00162	0.00163	0.00162
	(A2 * B1 * B2 * C1 * !Y)	-0.00196	-0.00206	-0.00204
	(A2 * B1 * B2 * !C1 * !Y)	0.00163	0.00163	0.00162
	(A2 * B1 * B2 * !C1 * !Y)	-0.00194	-0.00205	-0.00204
	(A2 * B1 * !B2 * C1 * !Y)	0.00164	0.00163	0.00162
	(A2 * B1 * !B2 * C1 * !Y)	-0.00185	-0.00200	-0.00199
	(A2 * !B1 * C1 * !Y)	0.00165	0.00163	0.00162
	(A2 * !B1 * C1 * !Y)	-0.00185	-0.00199	-0.00199
	(!A2 * B1 * B2 * C1 * !Y)	0.00154	0.00156	0.00155
	(!A2 * B1 * B2 * C1 * !Y)	-0.00208	-0.00210	-0.00209
	(!A2 * B1 * B2 * !C1 * !Y)	0.00155	0.00157	0.00156
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00208	-0.00210	-0.00209
	(!A2 * B1 * !B2 * C1 * !Y)	0.00155	0.00157	0.00156
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00208	-0.00209	-0.00209
	(!A2 * B1 * !B2 * !C1 * Y)	0.00052	0.00052	0.00051
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00238	-0.00238	-0.00241
	(!A2 * !B1 * C1 * !Y)	0.00155	0.00157	0.00156
	(!A2 * !B1 * C1 * !Y)	-0.00208	-0.00209	-0.00209
	(!A2 * !B1 * !C1 * Y)	0.00052	0.00052	0.00051
	(!A2 * !B1 * !C1 * Y)	-0.00238	-0.00238	-0.00241

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	0.00343	0.00348	0.00344
	(A2 * B1 * B2 * C1 * !Y)	-0.00411	-0.00434	-0.00431
	(A2 * B1 * B2 * !C1 * !Y)	0.00347	0.00348	0.00344
	(A2 * B1 * B2 * !C1 * !Y)	-0.00406	-0.00434	-0.00431
	(A2 * B1 * !B2 * C1 * !Y)	0.00349	0.00348	0.00344
	(A2 * B1 * !B2 * C1 * !Y)	-0.00389	-0.00422	-0.00420
	(A2 * !B1 * C1 * !Y)	0.00349	0.00348	0.00344
	(A2 * !B1 * C1 * !Y)	-0.00389	-0.00422	-0.00420
	(!A2 * B1 * B2 * C1 * !Y)	0.00333	0.00338	0.00335
	(!A2 * B1 * B2 * C1 * !Y)	-0.00440	-0.00444	-0.00442
	(!A2 * B1 * B2 * !C1 * !Y)	0.00332	0.00333	0.00332
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00442	-0.00442	-0.00442
	(!A2 * B1 * !B2 * C1 * !Y)	0.00332	0.00335	0.00332
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00442	-0.00444	-0.00442
	(!A2 * B1 * !B2 * !C1 * Y)	0.00118	0.00119	0.00114
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00514	-0.00517	-0.00524
	(!A2 * !B1 * C1 * !Y)	0.00331	0.00335	0.00332
	(!A2 * !B1 * C1 * !Y)	-0.00441	-0.00444	-0.00442
	(!A2 * !B1 * !C1 * Y)	0.00118	0.00119	0.00114
	(!A2 * !B1 * !C1 * Y)	-0.00514	-0.00517	-0.00524

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	0.00665	0.00671	0.00664
	(A2 * B1 * B2 * C1 * !Y)	-0.00792	-0.00835	-0.00829
	(A2 * B1 * B2 * !C1 * !Y)	0.00676	0.00672	0.00664
	(A2 * B1 * B2 * !C1 * !Y)	-0.00766	-0.00833	-0.00827
	(A2 * B1 * !B2 * C1 * !Y)	0.00676	0.00672	0.00664
	(A2 * B1 * !B2 * C1 * !Y)	-0.00735	-0.00813	-0.00805
	(A2 * !B1 * C1 * !Y)	0.00678	0.00672	0.00664
	(A2 * !B1 * C1 * !Y)	-0.00734	-0.00812	-0.00805
	(!A2 * B1 * B2 * C1 * !Y)	0.00639	0.00647	0.00642
	(!A2 * B1 * B2 * C1 * !Y)	-0.00843	-0.00845	-0.00845
	(!A2 * B1 * B2 * !C1 * !Y)	0.00635	0.00638	0.00635
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00843	-0.00845	-0.00842
	(!A2 * B1 * !B2 * C1 * !Y)	0.00640	0.00648	0.00642
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00852	-0.00858	-0.00853
	(!A2 * B1 * !B2 * !C1 * Y)	0.00212	0.00213	0.00203
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00992	-0.00997	-0.01009
	(!A2 * !B1 * C1 * !Y)	0.00637	0.00643	0.00638
	(!A2 * !B1 * C1 * !Y)	-0.00854	-0.00857	-0.00853
	(!A2 * !B1 * !C1 * Y)	0.00212	0.00214	0.00204
	(!A2 * !B1 * !C1 * Y)	-0.00989	-0.00997	-0.01008

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)**	-0.00161	-0.00162	-0.00162
	(A2 * B1 * B2 * C1 * !Y)	0.00203	0.00206	0.00204
	(A2 * B1 * B2 * !C1 * !Y)	-0.00161	-0.00162	-0.00162
	(A2 * B1 * B2 * !C1 * !Y)	0.00203	0.00205	0.00204
	(A2 * B1 * !B2 * C1 * !Y)	-0.00161	-0.00162	-0.00162
	(A2 * B1 * !B2 * C1 * !Y)	0.00198	0.00200	0.00199
	(A2 * !B1 * C1 * !Y)	-0.00161	-0.00162	-0.00162
	(A2 * !B1 * C1 * !Y)	0.00197	0.00199	0.00199
	(!A2 * B1 * B2 * C1 * !Y)	-0.00151	-0.00155	-0.00155
	(!A2 * B1 * B2 * C1 * !Y)	0.00208	0.00210	0.00209
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00151	-0.00156	-0.00156
	(!A2 * B1 * B2 * !C1 * !Y)	0.00209	0.00210	0.00209
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00151	-0.00155	-0.00156
	(!A2 * B1 * !B2 * C1 * !Y)	0.00210	0.00209	0.00209
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00050	-0.00051	-0.00050
	(!A2 * B1 * !B2 * !C1 * Y)	0.00241	0.00245	0.00241
	(!A2 * !B1 * C1 * !Y)	-0.00151	-0.00155	-0.00156
	(!A2 * !B1 * C1 * !Y)	0.00210	0.00209	0.00209
	(!A2 * !B1 * !C1 * Y)	-0.00050	-0.00051	-0.00050
	(!A2 * !B1 * !C1 * Y)	0.00240	0.00245	0.00241

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	-0.00342	-0.00345	-0.00343
	(A2 * B1 * B2 * C1 * !Y)	0.00428	0.00434	0.00431
	(A2 * B1 * B2 * !C1 * !Y)	-0.00344	-0.00345	-0.00343
	(A2 * B1 * B2 * !C1 * !Y)	0.00431	0.00434	0.00431
	(A2 * B1 * !B2 * C1 * !Y)	-0.00343	-0.00345	-0.00343
	(A2 * B1 * !B2 * C1 * !Y)	0.00418	0.00422	0.00420
	(A2 * !B1 * C1 * !Y)	-0.00343	-0.00345	-0.00343
	(A2 * !B1 * C1 * !Y)	0.00419	0.00422	0.00420
	(!A2 * B1 * B2 * C1 * !Y)	-0.00320	-0.00335	-0.00335
	(!A2 * B1 * B2 * C1 * !Y)	0.00441	0.00447	0.00443
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00321	-0.00333	-0.00332
	(!A2 * B1 * B2 * !C1 * !Y)	0.00444	0.00446	0.00443
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00321	-0.00335	-0.00332
	(!A2 * B1 * !B2 * C1 * !Y)	0.00444	0.00447	0.00443
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00110	-0.00113	-0.00111
	(!A2 * B1 * !B2 * !C1 * Y)	0.00523	0.00533	0.00525
	(!A2 * !B1 * C1 * !Y)	-0.00321	-0.00335	-0.00332
	(!A2 * !B1 * C1 * !Y)	0.00444	0.00446	0.00443
	(!A2 * !B1 * !C1 * Y)	-0.00110	-0.00113	-0.00111
	(!A2 * !B1 * !C1 * Y)	0.00523	0.00533	0.00525

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	-0.00661	-0.00666	-0.00663
	(A2 * B1 * B2 * C1 * !Y)	0.00825	0.00835	0.00829
	(A2 * B1 * B2 * !C1 * !Y)	-0.00661	-0.00665	-0.00663
	(A2 * B1 * B2 * !C1 * !Y)	0.00823	0.00833	0.00827
	(A2 * B1 * !B2 * C1 * !Y)	-0.00663	-0.00666	-0.00662
	(A2 * B1 * !B2 * C1 * !Y)	0.00806	0.00813	0.00805
	(A2 * !B1 * C1 * !Y)	-0.00663	-0.00666	-0.00662
	(A2 * !B1 * C1 * !Y)	0.00806	0.00812	0.00805
	(!A2 * B1 * B2 * C1 * !Y)	-0.00614	-0.00641	-0.00642
	(!A2 * B1 * B2 * C1 * !Y)	0.00843	0.00845	0.00847
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00615	-0.00638	-0.00635
	(!A2 * B1 * B2 * !C1 * !Y)	0.00843	0.00850	0.00845
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00616	-0.00647	-0.00642
	(!A2 * B1 * !B2 * C1 * !Y)	0.00857	0.00862	0.00856
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00197	-0.00202	-0.00198
	(!A2 * B1 * !B2 * !C1 * Y)	0.01005	0.01026	0.01010
	(!A2 * !B1 * C1 * !Y)	-0.00616	-0.00643	-0.00638
	(!A2 * !B1 * C1 * !Y)	0.00857	0.00861	0.00856
	(!A2 * !B1 * !C1 * Y)	-0.00198	-0.00202	-0.00198
	(!A2 * !B1 * !C1 * Y)	0.01005	0.01026	0.01010

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)**	0.00172	0.00174	0.00172
	(A1 * B1 * B2 * C1 * !Y)	-0.00198	-0.00209	-0.00208
	(A1 * B1 * B2 * !C1 * !Y)	0.00173	0.00174	0.00172
	(A1 * B1 * B2 * !C1 * !Y)	-0.00196	-0.00209	-0.00208
	(A1 * B1 * !B2 * C1 * !Y)	0.00175	0.00174	0.00173
	(A1 * B1 * !B2 * C1 * !Y)	-0.00188	-0.00202	-0.00202
	(A1 * !B1 * C1 * !Y)	0.00175	0.00174	0.00173
	(A1 * !B1 * C1 * !Y)	-0.00187	-0.00202	-0.00202
	(!A1 * B1 * B2 * !Y)	0.00165	0.00167	0.00165
	(!A1 * B1 * B2 * !Y)	-0.00212	-0.00214	-0.00213
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00165	0.00167	0.00165
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00212	-0.00214	-0.00213
	(!A1 * B1 * !B2 * !C1 * Y)	0.00166	0.00166	0.00166
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00212	-0.00212	-0.00212
	(!A1 * !B1 * !C1 * Y)	0.00166	0.00166	0.00166
	(!A1 * !B1 * !C1 * Y)	-0.00212	-0.00212	-0.00212

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00328	0.00332	0.00328
	(A1 * B1 * B2 * C1 * !Y)	-0.00381	-0.00405	-0.00401
	(A1 * B1 * B2 * !C1 * !Y)	0.00331	0.00332	0.00328
	(A1 * B1 * B2 * !C1 * !Y)	-0.00376	-0.00404	-0.00400
	(A1 * B1 * !B2 * C1 * !Y)	0.00334	0.00332	0.00328
	(A1 * B1 * !B2 * C1 * !Y)	-0.00359	-0.00393	-0.00390
	(A1 * !B1 * C1 * !Y)	0.00334	0.00332	0.00328
	(A1 * !B1 * C1 * !Y)	-0.00359	-0.00393	-0.00390
	(!A1 * B1 * B2 * !Y)	0.00315	0.00317	0.00316
	(!A1 * B1 * B2 * !Y)	-0.00410	-0.00411	-0.00411
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00314	0.00318	0.00316
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00409	-0.00412	-0.00410
	(!A1 * B1 * !B2 * !C1 * Y)	0.00301	0.00304	0.00301
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00424	-0.00427	-0.00425
	(!A1 * !B1 * !C1 * Y)	0.00300	0.00304	0.00301
	(!A1 * !B1 * !C1 * Y)	-0.00424	-0.00427	-0.00425

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	0.00674	0.00679	0.00671
	(A1 * B1 * B2 * C1 * !Y)	-0.00797	-0.00836	-0.00833
	(A1 * B1 * B2 * !C1 * !Y)	0.00686	0.00680	0.00672
	(A1 * B1 * B2 * !C1 * !Y)	-0.00770	-0.00832	-0.00830
	(A1 * B1 * !B2 * C1 * !Y)	0.00684	0.00680	0.00671
	(A1 * B1 * !B2 * C1 * !Y)	-0.00740	-0.00812	-0.00810
	(A1 * !B1 * C1 * !Y)	0.00682	0.00680	0.00671
	(A1 * !B1 * C1 * !Y)	-0.00737	-0.00812	-0.00810
	(!A1 * B1 * B2 * !Y)	0.00644	0.00651	0.00646
	(!A1 * B1 * B2 * !Y)	-0.00847	-0.00849	-0.00849
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00644	0.00652	0.00646
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00857	-0.00863	-0.00858
	(!A1 * B1 * !B2 * !C1 * Y)	0.00607	0.00609	0.00610
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00896	-0.00897	-0.00898
	(!A1 * !B1 * !C1 * Y)	0.00608	0.00613	0.00610
	(!A1 * !B1 * !C1 * Y)	-0.00896	-0.00900	-0.00898

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)**	-0.00172	-0.00173	-0.00172
	(A1 * B1 * B2 * C1 * !Y)	0.00207	0.00209	0.00208
	(A1 * B1 * B2 * !C1 * !Y)	-0.00172	-0.00173	-0.00172
	(A1 * B1 * B2 * !C1 * !Y)	0.00207	0.00209	0.00208
	(A1 * B1 * !B2 * C1 * !Y)	-0.00172	-0.00172	-0.00172
	(A1 * B1 * !B2 * C1 * !Y)	0.00201	0.00202	0.00202
	(A1 * !B1 * C1 * !Y)	-0.00172	-0.00172	-0.00172
	(A1 * !B1 * C1 * !Y)	0.00201	0.00202	0.00202
	(!A1 * B1 * B2 * !Y)	-0.00161	-0.00166	-0.00165
	(!A1 * B1 * B2 * !Y)	0.00212	0.00214	0.00213
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00162	-0.00166	-0.00165
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00214	0.00214	0.00213
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00157	-0.00166	-0.00166
	(!A1 * B1 * !B2 * !C1 * Y)	0.00221	0.00215	0.00213
	(!A1 * !B1 * !C1 * Y)	-0.00157	-0.00166	-0.00166
	(!A1 * !B1 * !C1 * Y)	0.00221	0.00215	0.00213

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00327	-0.00329	-0.00327
	(A1 * B1 * B2 * C1 * !Y)	0.00401	0.00405	0.00401
	(A1 * B1 * B2 * !C1 * !Y)	-0.00327	-0.00329	-0.00327
	(A1 * B1 * B2 * !C1 * !Y)	0.00400	0.00404	0.00400
	(A1 * B1 * !B2 * C1 * !Y)	-0.00327	-0.00329	-0.00327
	(A1 * B1 * !B2 * C1 * !Y)	0.00389	0.00393	0.00390
	(A1 * !B1 * C1 * !Y)	-0.00327	-0.00329	-0.00327
	(A1 * !B1 * C1 * !Y)	0.00389	0.00393	0.00390
	(!A1 * B1 * B2 * !Y)	-0.00305	-0.00317	-0.00316
	(!A1 * B1 * B2 * !Y)	0.00410	0.00418	0.00412
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00305	-0.00318	-0.00316
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00410	0.00418	0.00412
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00281	-0.00304	-0.00301
	(!A1 * B1 * !B2 * !C1 * Y)	0.00437	0.00430	0.00426
	(!A1 * !B1 * !C1 * Y)	-0.00281	-0.00304	-0.00301
	(!A1 * !B1 * !C1 * Y)	0.00437	0.00430	0.00426

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	-0.00667	-0.00671	-0.00670
	(A1 * B1 * B2 * C1 * !Y)	0.00827	0.00836	0.00833
	(A1 * B1 * B2 * !C1 * !Y)	-0.00669	-0.00671	-0.00670
	(A1 * B1 * B2 * !C1 * !Y)	0.00827	0.00832	0.00830
	(A1 * B1 * !B2 * C1 * !Y)	-0.00668	-0.00671	-0.00669
	(A1 * B1 * !B2 * C1 * !Y)	0.00807	0.00812	0.00810
	(A1 * !B1 * C1 * !Y)	-0.00668	-0.00671	-0.00669
	(A1 * !B1 * C1 * !Y)	0.00807	0.00812	0.00810
	(!A1 * B1 * B2 * !Y)	-0.00625	-0.00645	-0.00646
	(!A1 * B1 * B2 * !Y)	0.00848	0.00849	0.00851
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00624	-0.00651	-0.00646
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00858	0.00873	0.00861
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00562	-0.00609	-0.00610
	(!A1 * B1 * !B2 * !C1 * Y)	0.00925	0.00908	0.00901
	(!A1 * !B1 * !C1 * Y)	-0.00563	-0.00610	-0.00610
	(!A1 * !B1 * !C1 * Y)	0.00925	0.00908	0.00901

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)**	0.00176	0.00174	0.00169
	(A1 * A2 * B2 * C1 * !Y)	-0.00150	-0.00152	-0.00150
	(A1 * A2 * B2 * !C1 * !Y)	0.00166	0.00168	0.00166
	(A1 * A2 * B2 * !C1 * !Y)	-0.00112	-0.00113	-0.00113
	(A1 * A2 * !B2 * C1 * !Y)	0.00161	0.00163	0.00161
	(A1 * A2 * !B2 * C1 * !Y)	-0.00140	-0.00142	-0.00140
	(A1 * A2 * !B2 * !C1 * !Y)	0.00159	0.00162	0.00160
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00111	-0.00113	-0.00112
	(A1 * !A2 * B2 * C1 * !Y)	0.00193	0.00168	0.00166
	(A1 * !A2 * B2 * C1 * !Y)	-0.00176	-0.00207	-0.00206
	(A1 * !A2 * !B2 * C1 * !Y)	0.00159	0.00161	0.00159
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00209	-0.00211	-0.00210
	(A1 * !A2 * !B2 * !C1 * Y)	0.00051	0.00052	0.00050
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00243	-0.00244	-0.00246
	(!A1 * B2 * C1 * !Y)	0.00192	0.00168	0.00166
	(!A1 * B2 * C1 * !Y)	-0.00177	-0.00207	-0.00206
	(!A1 * !B2 * C1 * !Y)	0.00158	0.00160	0.00158
	(!A1 * !B2 * C1 * !Y)	-0.00210	-0.00211	-0.00210
	(!A1 * !B2 * !C1 * Y)	0.00051	0.00052	0.00050
	(!A1 * !B2 * !C1 * Y)	-0.00243	-0.00244	-0.00246

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	0.00359	0.00365	0.00345
	(A1 * A2 * B2 * C1 * !Y)	-0.00303	-0.00304	-0.00302
	(A1 * A2 * B2 * !C1 * !Y)	0.00337	0.00340	0.00336
	(A1 * A2 * B2 * !C1 * !Y)	-0.00234	-0.00235	-0.00234
	(A1 * A2 * !B2 * C1 * !Y)	0.00331	0.00334	0.00327
	(A1 * A2 * !B2 * C1 * !Y)	-0.00282	-0.00286	-0.00282
	(A1 * A2 * !B2 * !C1 * !Y)	0.00324	0.00326	0.00323
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00233	-0.00234	-0.00233
	(A1 * !A2 * B2 * C1 * !Y)	0.00399	0.00339	0.00335
	(A1 * !A2 * B2 * C1 * !Y)	-0.00353	-0.00428	-0.00427
	(A1 * !A2 * !B2 * C1 * !Y)	0.00319	0.00323	0.00321
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00433	-0.00437	-0.00435
	(A1 * !A2 * !B2 * !C1 * Y)	0.00106	0.00106	0.00102
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00507	-0.00510	-0.00514
	(!A1 * B2 * C1 * !Y)	0.00398	0.00335	0.00335
	(!A1 * B2 * C1 * !Y)	-0.00354	-0.00426	-0.00427
	(!A1 * !B2 * C1 * !Y)	0.00320	0.00324	0.00321
	(!A1 * !B2 * C1 * !Y)	-0.00433	-0.00437	-0.00435
	(!A1 * !B2 * !C1 * Y)	0.00107	0.00106	0.00102
	(!A1 * !B2 * !C1 * Y)	-0.00508	-0.00510	-0.00514

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	0.00725	0.00716	0.00678
	(A1 * A2 * B2 * C1 * !Y)	-0.00578	-0.00579	-0.00575
	(A1 * A2 * B2 * !C1 * !Y)	0.00667	0.00675	0.00663
	(A1 * A2 * B2 * !C1 * !Y)	-0.00437	-0.00442	-0.00442
	(A1 * A2 * !B2 * C1 * !Y)	0.00649	0.00655	0.00645
	(A1 * A2 * !B2 * C1 * !Y)	-0.00535	-0.00544	-0.00539
	(A1 * A2 * !B2 * !C1 * !Y)	0.00638	0.00640	0.00633
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00439	-0.00439	-0.00441
	(A1 * !A2 * B2 * C1 * !Y)	0.00803	0.00667	0.00660
	(A1 * !A2 * B2 * C1 * !Y)	-0.00658	-0.00820	-0.00820
	(A1 * !A2 * !B2 * C1 * !Y)	0.00630	0.00632	0.00631
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00847	-0.00848	-0.00846
	(A1 * !A2 * !B2 * !C1 * Y)	0.00212	0.00211	0.00201
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00980	-0.00984	-0.00996
	(!A1 * B2 * C1 * !Y)	0.00799	0.00665	0.00660
	(!A1 * B2 * C1 * !Y)	-0.00662	-0.00821	-0.00820
	(!A1 * !B2 * C1 * !Y)	0.00629	0.00632	0.00630
	(!A1 * !B2 * C1 * !Y)	-0.00846	-0.00848	-0.00846
	(!A1 * !B2 * !C1 * Y)	0.00213	0.00212	0.00202
	(!A1 * !B2 * !C1 * Y)	-0.00980	-0.00984	-0.00996

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)**	-0.00167	-0.00168	-0.00167
	(A1 * A2 * B2 * C1 * !Y)	0.00150	0.00152	0.00150
	(A1 * A2 * B2 * !C1 * !Y)	-0.00157	-0.00159	-0.00160
	(A1 * A2 * B2 * !C1 * !Y)	0.00119	0.00121	0.00119
	(A1 * A2 * !B2 * C1 * !Y)	-0.00155	-0.00161	-0.00161
	(A1 * A2 * !B2 * C1 * !Y)	0.00140	0.00142	0.00140
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00155	-0.00160	-0.00160
	(A1 * A2 * !B2 * !C1 * !Y)	0.00113	0.00113	0.00112
	(A1 * !A2 * B2 * C1 * !Y)	-0.00166	-0.00166	-0.00165
	(A1 * !A2 * B2 * C1 * !Y)	0.00206	0.00207	0.00206
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00155	-0.00159	-0.00159
	(A1 * !A2 * !B2 * C1 * !Y)	0.00211	0.00211	0.00210
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00049	-0.00050	-0.00049
	(A1 * !A2 * !B2 * !C1 * Y)	0.00246	0.00250	0.00247
	(!A1 * B2 * C1 * !Y)	-0.00166	-0.00166	-0.00165
	(!A1 * B2 * C1 * !Y)	0.00206	0.00207	0.00206
	(!A1 * !B2 * C1 * !Y)	-0.00155	-0.00159	-0.00158
	(!A1 * !B2 * C1 * !Y)	0.00211	0.00211	0.00210
	(!A1 * !B2 * !C1 * Y)	-0.00049	-0.00050	-0.00049
	(!A1 * !B2 * !C1 * Y)	0.00246	0.00250	0.00247

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	-0.00338	-0.00338	-0.00337
	(A1 * A2 * B2 * C1 * !Y)	0.00303	0.00304	0.00302
	(A1 * A2 * B2 * !C1 * !Y)	-0.00325	-0.00328	-0.00326
	(A1 * A2 * B2 * !C1 * !Y)	0.00242	0.00244	0.00245
	(A1 * A2 * !B2 * C1 * !Y)	-0.00314	-0.00327	-0.00327
	(A1 * A2 * !B2 * C1 * !Y)	0.00282	0.00286	0.00282
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00313	-0.00326	-0.00323
	(A1 * A2 * !B2 * !C1 * !Y)	0.00234	0.00234	0.00233
	(A1 * !A2 * B2 * C1 * !Y)	-0.00334	-0.00336	-0.00333
	(A1 * !A2 * B2 * C1 * !Y)	0.00427	0.00430	0.00427
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00309	-0.00323	-0.00321
	(A1 * !A2 * !B2 * C1 * !Y)	0.00433	0.00438	0.00436
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00099	-0.00099	-0.00099
	(A1 * !A2 * !B2 * !C1 * Y)	0.00513	0.00514	0.00515
	(!A1 * B2 * C1 * !Y)	-0.00333	-0.00335	-0.00333
	(!A1 * B2 * C1 * !Y)	0.00425	0.00430	0.00427
	(!A1 * !B2 * C1 * !Y)	-0.00309	-0.00323	-0.00321
	(!A1 * !B2 * C1 * !Y)	0.00433	0.00438	0.00436
	(!A1 * !B2 * !C1 * Y)	-0.00099	-0.00100	-0.00099
	(!A1 * !B2 * !C1 * Y)	0.00513	0.00515	0.00515

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	-0.00664	-0.00665	-0.00662
	(A1 * A2 * B2 * C1 * !Y)	0.00578	0.00579	0.00575
	(A1 * A2 * B2 * !C1 * !Y)	-0.00648	-0.00653	-0.00645
	(A1 * A2 * B2 * !C1 * !Y)	0.00464	0.00470	0.00461
	(A1 * A2 * !B2 * C1 * !Y)	-0.00608	-0.00644	-0.00642
	(A1 * A2 * !B2 * C1 * !Y)	0.00535	0.00544	0.00539
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00611	-0.00637	-0.00633
	(A1 * A2 * !B2 * !C1 * !Y)	0.00443	0.00443	0.00441
	(A1 * !A2 * B2 * C1 * !Y)	-0.00658	-0.00658	-0.00655
	(A1 * !A2 * B2 * C1 * !Y)	0.00819	0.00820	0.00820
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00608	-0.00632	-0.00631
	(A1 * !A2 * !B2 * C1 * !Y)	0.00849	0.00851	0.00848
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00195	-0.00196	-0.00196
	(A1 * !A2 * !B2 * !C1 * Y)	0.00993	0.00996	0.00997
	(!A1 * B2 * C1 * !Y)	-0.00656	-0.00659	-0.00655
	(!A1 * B2 * C1 * !Y)	0.00816	0.00821	0.00820
	(!A1 * !B2 * C1 * !Y)	-0.00606	-0.00632	-0.00630
	(!A1 * !B2 * C1 * !Y)	0.00846	0.00851	0.00848
	(!A1 * !B2 * !C1 * Y)	-0.00196	-0.00197	-0.00196
	(!A1 * !B2 * !C1 * Y)	0.00993	0.00996	0.00997

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)**	0.00183	0.00180	0.00174
	(A1 * A2 * B1 * C1 * !Y)	-0.00155	-0.00157	-0.00155
	(A1 * A2 * B1 * !C1 * !Y)	0.00173	0.00174	0.00171
	(A1 * A2 * B1 * !C1 * !Y)	-0.00118	-0.00118	-0.00118
	(A1 * A2 * !B1 * C1 * !Y)	0.00167	0.00168	0.00166
	(A1 * A2 * !B1 * C1 * !Y)	-0.00144	-0.00145	-0.00145
	(A1 * A2 * !B1 * !C1 * !Y)	0.00164	0.00168	0.00164
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00116	-0.00118	-0.00117
	(A1 * !A2 * B1 * C1 * !Y)	0.00201	0.00174	0.00171
	(A1 * !A2 * B1 * C1 * !Y)	-0.00180	-0.00213	-0.00212
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00164	0.00166	0.00164
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00216	-0.00217	-0.00216
	(A1 * !A2 * !B1 * !C1 * Y)	0.00152	0.00153	0.00153
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00227	-0.00228	-0.00228
	(!A1 * B1 * C1 * !Y)	0.00201	0.00174	0.00171
	(!A1 * B1 * C1 * !Y)	-0.00180	-0.00213	-0.00212
	(!A1 * !B1 * !C1 * Y)	0.00151	0.00153	0.00152
	(!A1 * !B1 * !C1 * Y)	-0.00227	-0.00229	-0.00228

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00344	0.00351	0.00334
	(A1 * A2 * B1 * C1 * !Y)	-0.00285	-0.00286	-0.00284
	(A1 * A2 * B1 * !C1 * !Y)	0.00326	0.00331	0.00327
	(A1 * A2 * B1 * !C1 * !Y)	-0.00213	-0.00216	-0.00215
	(A1 * A2 * !B1 * C1 * !Y)	0.00317	0.00316	0.00315
	(A1 * A2 * !B1 * C1 * !Y)	-0.00264	-0.00267	-0.00265
	(A1 * A2 * !B1 * !C1 * !Y)	0.00312	0.00314	0.00313
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00212	-0.00213	-0.00214
	(A1 * !A2 * B1 * C1 * !Y)	0.00382	0.00328	0.00326
	(A1 * !A2 * B1 * C1 * !Y)	-0.00336	-0.00399	-0.00401
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00310	0.00314	0.00311
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00407	-0.00411	-0.00408
	(A1 * !A2 * !B1 * !C1 * Y)	0.00300	0.00304	0.00301
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00418	-0.00421	-0.00419
	(!A1 * B1 * C1 * !Y)	0.00381	0.00328	0.00326
	(!A1 * B1 * C1 * !Y)	-0.00336	-0.00401	-0.00401
	(!A1 * !B1 * !C1 * Y)	0.00300	0.00300	0.00301
	(!A1 * !B1 * !C1 * Y)	-0.00418	-0.00418	-0.00419

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.00731	0.00718	0.00680
	(A1 * A2 * B1 * C1 * !Y)	-0.00578	-0.00579	-0.00576
	(A1 * A2 * B1 * !C1 * !Y)	0.00668	0.00677	0.00665
	(A1 * A2 * B1 * !C1 * !Y)	-0.00438	-0.00443	-0.00442
	(A1 * A2 * !B1 * C1 * !Y)	0.00645	0.00661	0.00641
	(A1 * A2 * !B1 * C1 * !Y)	-0.00538	-0.00546	-0.00539
	(A1 * A2 * !B1 * !C1 * !Y)	0.00636	0.00636	0.00633
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00437	-0.00437	-0.00441
	(A1 * !A2 * B1 * C1 * !Y)	0.00810	0.00672	0.00662
	(A1 * !A2 * B1 * C1 * !Y)	-0.00660	-0.00820	-0.00820
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00635	0.00637	0.00635
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00844	-0.00847	-0.00845
	(A1 * !A2 * !B1 * !C1 * Y)	0.00634	0.00640	0.00634
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00846	-0.00850	-0.00845
	(!A1 * B1 * C1 * !Y)	0.00808	0.00671	0.00661
	(!A1 * B1 * C1 * !Y)	-0.00662	-0.00820	-0.00820
	(!A1 * !B1 * !C1 * Y)	0.00634	0.00641	0.00634
	(!A1 * !B1 * !C1 * Y)	-0.00846	-0.00850	-0.00845

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)**	-0.00172	-0.00173	-0.00172
	(A1 * A2 * B1 * C1 * !Y)	0.00155	0.00157	0.00155
	(A1 * A2 * B1 * !C1 * !Y)	-0.00165	-0.00166	-0.00166
	(A1 * A2 * B1 * !C1 * !Y)	0.00124	0.00125	0.00123
	(A1 * A2 * !B1 * C1 * !Y)	-0.00161	-0.00165	-0.00166
	(A1 * A2 * !B1 * C1 * !Y)	0.00144	0.00145	0.00145
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00160	-0.00165	-0.00164
	(A1 * A2 * !B1 * !C1 * !Y)	0.00117	0.00118	0.00117
	(A1 * !A2 * B1 * C1 * !Y)	-0.00171	-0.00171	-0.00170
	(A1 * !A2 * B1 * C1 * !Y)	0.00212	0.00213	0.00212
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00159	-0.00163	-0.00164
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00216	0.00217	0.00217
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00141	-0.00153	-0.00153
	(A1 * !A2 * !B1 * !C1 * Y)	0.00236	0.00232	0.00228
	(!A1 * B1 * C1 * !Y)	-0.00171	-0.00171	-0.00170
	(!A1 * B1 * C1 * !Y)	0.00212	0.00213	0.00212
	(!A1 * !B1 * !C1 * Y)	-0.00141	-0.00153	-0.00152
	(!A1 * !B1 * !C1 * Y)	0.00236	0.00232	0.00228

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00328	-0.00329	-0.00328
	(A1 * A2 * B1 * C1 * !Y)	0.00285	0.00286	0.00284
	(A1 * A2 * B1 * !C1 * !Y)	-0.00313	-0.00316	-0.00316
	(A1 * A2 * B1 * !C1 * !Y)	0.00224	0.00226	0.00225
	(A1 * A2 * !B1 * C1 * !Y)	-0.00304	-0.00315	-0.00315
	(A1 * A2 * !B1 * C1 * !Y)	0.00264	0.00267	0.00265
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00303	-0.00314	-0.00313
	(A1 * A2 * !B1 * !C1 * !Y)	0.00213	0.00216	0.00214
	(A1 * !A2 * B1 * C1 * !Y)	-0.00325	-0.00324	-0.00324
	(A1 * !A2 * B1 * C1 * !Y)	0.00400	0.00399	0.00401
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00302	-0.00314	-0.00311
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00408	0.00412	0.00409
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00279	-0.00304	-0.00301
	(A1 * !A2 * !B1 * !C1 * Y)	0.00434	0.00422	0.00420
	(!A1 * B1 * C1 * !Y)	-0.00325	-0.00326	-0.00324
	(!A1 * B1 * C1 * !Y)	0.00400	0.00403	0.00401
	(!A1 * !B1 * !C1 * Y)	-0.00279	-0.00300	-0.00301
	(!A1 * !B1 * !C1 * Y)	0.00434	0.00422	0.00420

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00665	-0.00666	-0.00664
	(A1 * A2 * B1 * C1 * !Y)	0.00578	0.00579	0.00576
	(A1 * A2 * B1 * !C1 * !Y)	-0.00649	-0.00653	-0.00646
	(A1 * A2 * B1 * !C1 * !Y)	0.00465	0.00470	0.00462
	(A1 * A2 * !B1 * C1 * !Y)	-0.00614	-0.00640	-0.00641
	(A1 * A2 * !B1 * C1 * !Y)	0.00538	0.00546	0.00539
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00612	-0.00633	-0.00633
	(A1 * A2 * !B1 * !C1 * !Y)	0.00441	0.00442	0.00442
	(A1 * !A2 * B1 * C1 * !Y)	-0.00657	-0.00662	-0.00656
	(A1 * !A2 * B1 * C1 * !Y)	0.00814	0.00823	0.00820
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00610	-0.00634	-0.00635
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00844	0.00848	0.00847
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00583	-0.00637	-0.00634
	(A1 * !A2 * !B1 * !C1 * Y)	0.00878	0.00852	0.00847
	(!A1 * B1 * C1 * !Y)	-0.00657	-0.00662	-0.00657
	(!A1 * B1 * C1 * !Y)	0.00815	0.00823	0.00820
	(!A1 * !B1 * !C1 * Y)	-0.00583	-0.00638	-0.00634
	(!A1 * !B1 * !C1 * Y)	0.00878	0.00852	0.00847

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)	0.00198	0.00200	0.00198
	(A1 * B1 * B2 * !Y)	-0.00107	-0.00108	-0.00107
	(A1 * A2 * B1 * !B2 * !Y)	0.00198	0.00200	0.00198
	(A1 * A2 * B1 * !B2 * !Y)	-0.00107	-0.00108	-0.00107
	(A1 * A2 * !B1 * !Y)	0.00199	0.00200	0.00198
	(A1 * A2 * !B1 * !Y)	-0.00108	-0.00108	-0.00107
	(!A1 * B1 * B2 * !Y)	0.00198	0.00200	0.00198
	(!A1 * B1 * B2 * !Y)	-0.00107	-0.00108	-0.00107
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	0.00373	0.00375	0.00372
	(A1 * B1 * B2 * !Y)	-0.00197	-0.00197	-0.00196
	(A1 * A2 * B1 * !B2 * !Y)	0.00373	0.00375	0.00372
	(A1 * A2 * B1 * !B2 * !Y)	-0.00197	-0.00197	-0.00195
	(A1 * A2 * !B1 * !Y)	0.00373	0.00378	0.00372
	(A1 * A2 * !B1 * !Y)	-0.00197	-0.00199	-0.00195
	(!A1 * B1 * B2 * !Y)	0.00373	0.00375	0.00372
	(!A1 * B1 * B2 * !Y)	-0.00198	-0.00198	-0.00196
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	0.00732	0.00742	0.00735
	(A1 * B1 * B2 * !Y)	-0.00392	-0.00396	-0.00392
	(A1 * A2 * B1 * !B2 * !Y)	0.00733	0.00748	0.00735
	(A1 * A2 * B1 * !B2 * !Y)	-0.00392	-0.00399	-0.00392
	(A1 * A2 * !B1 * !Y)	0.00733	0.00748	0.00735
	(A1 * A2 * !B1 * !Y)	-0.00392	-0.00399	-0.00392
	(!A1 * B1 * B2 * !Y)	0.00733	0.00748	0.00735
	(!A1 * B1 * B2 * !Y)	-0.00394	-0.00401	-0.00394

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)	-0.00185	-0.00187	-0.00197
	(A1 * B1 * B2 * !Y)	0.00117	0.00118	0.00110
	(A1 * A2 * B1 * !B2 * !Y)	-0.00166	-0.00169	-0.00192
	(A1 * A2 * B1 * !B2 * !Y)	0.00129	0.00130	0.00112
	(A1 * A2 * !B1 * !Y)	-0.00166	-0.00169	-0.00192
	(A1 * A2 * !B1 * !Y)	0.00129	0.00130	0.00112
	(!A1 * B1 * B2 * !Y)	-0.00185	-0.00187	-0.00197
	(!A1 * B1 * B2 * !Y)	0.00118	0.00119	0.00110
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	-0.00346	-0.00351	-0.00369
	(A1 * B1 * B2 * !Y)	0.00216	0.00218	0.00201
	(A1 * A2 * B1 * !B2 * !Y)	-0.00315	-0.00320	-0.00362
	(A1 * A2 * B1 * !B2 * !Y)	0.00234	0.00236	0.00203
	(A1 * A2 * !B1 * !Y)	-0.00316	-0.00320	-0.00362
	(A1 * A2 * !B1 * !Y)	0.00234	0.00236	0.00203
	(!A1 * B1 * B2 * !Y)	-0.00347	-0.00351	-0.00369
	(!A1 * B1 * B2 * !Y)	0.00217	0.00218	0.00201
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	-0.00691	-0.00696	-0.00730
	(A1 * B1 * B2 * !Y)	0.00426	0.00427	0.00401
	(A1 * A2 * B1 * !B2 * !Y)	-0.00629	-0.00634	-0.00716
	(A1 * A2 * B1 * !B2 * !Y)	0.00471	0.00471	0.00412
	(A1 * A2 * !B1 * !Y)	-0.00629	-0.00634	-0.00716
	(A1 * A2 * !B1 * !Y)	0.00471	0.00471	0.00412
	(!A1 * B1 * B2 * !Y)	-0.00691	-0.00696	-0.00730
	(!A1 * B1 * B2 * !Y)	0.00428	0.00429	0.00402

SKY130_FD_SC_HS__A221Ox

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00262	0.00271	0.00260	0.00260	0.00257	1.21466
sky130_fd_sc_hs__a221o_2	0.00274	0.00281	0.00281	0.00283	0.00273	2.28844
sky130_fd_sc_hs__a221o_4	0.00484	0.00484	0.00499	0.00509	0.00494	3.52353

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a221o_1	0.00000	0.11471	0.20405
sky130_fd_sc_hs__a221o_2	0.00000	0.13998	0.21147
sky130_fd_sc_hs__a221o_4	0.00000	0.28335	0.42295

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)	0.08196	0.59328	6.15015
	A2->X (RR)	0.08582	0.58568	6.08215
	B1->X (RR)	0.07877	0.57284	5.99012
	B2->X (RR)	0.08257	0.56874	5.96978
	C1->X (RR)	0.05969	0.52895	5.86491
sky130_fd_sc_hs__a221o_2	A1->X (RR)	0.08464	0.52014	6.11175
	A2->X (RR)	0.08867	0.50889	6.04051
	B1->X (RR)	0.08205	0.50375	5.97001
	B2->X (RR)	0.08568	0.49499	5.93890
	C1->X (RR)	0.06109	0.45753	5.83252
sky130_fd_sc_hs__a221o_4	A1->X (RR)	0.10289	0.49687	5.96086
	A2->X (RR)	0.10806	0.46695	5.77586
	B1->X (RR)	0.09668	0.46830	5.72226
	B2->X (RR)	0.09698	0.43224	5.60673
	C1->X (RR)	0.05789	0.37489	5.44260

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221o_1	A1->X (FF)	0.22852	0.66239	4.92439
	A2->X (FF)	0.24883	0.69059	4.97997
	B1->X (FF)	0.20936	0.66372	5.13428
	B2->X (FF)	0.22570	0.69367	5.19849
	C1->X (FF)	0.17719	0.66601	5.18776
sky130_fd_sc_hs__a221o_2	A1->X (FF)	0.28621	0.71809	5.13610
	A2->X (FF)	0.30764	0.74854	5.21526
	B1->X (FF)	0.27459	0.73195	5.39924
	B2->X (FF)	0.28612	0.75820	5.47077
	C1->X (FF)	0.23816	0.73074	5.45339
sky130_fd_sc_hs__a221o_4	A1->X (FF)	0.29477	0.66280	4.49306
	A2->X (FF)	0.32178	0.70450	4.63058
	B1->X (FF)	0.27724	0.67887	4.81952
	B2->X (FF)	0.29986	0.71751	4.91170
	C1->X (FF)	0.23873	0.68243	4.88932

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221o_1	A1	0.01534	0.01577	0.04229
	A1	0.00726	0.00769	0.03463
	A2	0.01649	0.01661	0.03593
	A2	0.00728	0.00741	0.02717
	B1	0.01126	0.01229	0.03670
	B1	0.00521	0.00624	0.03111
	B2	0.01231	0.01288	0.03449
	B2	0.00529	0.00586	0.02793
	C1	0.00860	0.01015	0.04583
	C1	0.00347	0.00503	0.04077
sky130_fd_sc_hs__a221o_2	A1	0.01864	0.01909	0.04416
	A1	0.01012	0.01062	0.03657
	A2	0.01991	0.02004	0.03857
	A2	0.01015	0.01032	0.02978
	B1	0.01471	0.01588	0.03962
	B1	0.00807	0.00927	0.03397
	B2	0.01590	0.01671	0.03801
	B2	0.00821	0.00906	0.03131
	C1	0.01183	0.01361	0.04806
	C1	0.00632	0.00812	0.04271

sky130_fd_sc_hs__a221o_4	**A1**	0.03701	0.03836	0.08773
	A1	0.02144	0.02283	0.07390
	A2	0.03910	0.03978	0.07775
	A2	0.02150	0.02221	0.06067
	B1	0.02837	0.03042	0.07498
	B1	0.01684	0.01894	0.06406
	B2	0.03078	0.03224	0.07234
	B2	0.01693	0.01840	0.05939
	C1	0.02160	0.02504	0.08991
	C1	0.01232	0.01578	0.08135

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221o_1	**A1**	0.00445	0.00445	0.02723
	A1	0.01267	0.01270	0.03476
	A2	0.00468	0.00443	0.02622
	A2	0.01398	0.01373	0.03445
	B1	0.00444	0.00469	0.02986
	B1	0.01053	0.01077	0.03508
	B2	0.00481	0.00508	0.02857
	B2	0.01182	0.01209	0.03495
	C1	0.00400	0.00606	0.04398
	C1	0.00912	0.01117	0.04802

sky130_fd_sc_hs__a221o_2	**A1**	0.00863	0.00809	0.02886
	A1	0.01868	0.01759	0.03744
	A2	0.00911	0.00816	0.02916
	A2	0.01894	0.01803	0.03801
	B1	0.00858	0.00816	0.03188
	B1	0.01750	0.01630	0.03670
	B2	0.00904	0.00868	0.03396
	B2	0.01896	0.01785	0.03769
	C1	0.00795	0.00967	0.04528
	C1	0.01343	0.01516	0.05077
sky130_fd_sc_hs__a221o_4	**A1**	0.01578	0.01445	0.05696
	A1	0.03484	0.03217	0.07121
	A2	0.02034	0.01694	0.05531
	A2	0.03836	0.03512	0.07319
	B1	0.01587	0.01471	0.05778
	B1	0.03247	0.02955	0.06712
	B2	0.01700	0.01553	0.05777
	B2	0.03577	0.03291	0.06960
	C1	0.01473	0.01784	0.08365
	C1	0.02401	0.02700	0.09187

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)**	0.00147	0.00148	0.00146
	(A2 * B1 * B2 * C1 * X)	-0.00184	-0.00193	-0.00192
	(A2 * B1 * B2 * !C1 * X)	0.00149	0.00148	0.00146
	(A2 * B1 * B2 * !C1 * X)	-0.00181	-0.00194	-0.00192
	(A2 * B1 * !B2 * C1 * X)	0.00150	0.00148	0.00147
	(A2 * B1 * !B2 * C1 * X)	-0.00172	-0.00188	-0.00188
	(A2 * !B1 * C1 * X)	0.00150	0.00148	0.00147
	(A2 * !B1 * C1 * X)	-0.00172	-0.00188	-0.00188
	(!A2 * B1 * B2 * C1 * X)	0.00140	0.00142	0.00141
	(!A2 * B1 * B2 * C1 * X)	-0.00197	-0.00198	-0.00197
	(!A2 * B1 * B2 * !C1 * X)	0.00140	0.00142	0.00141
	(!A2 * B1 * B2 * !C1 * X)	-0.00197	-0.00198	-0.00197
	(!A2 * B1 * !B2 * C1 * X)	0.00141	0.00141	0.00141
	(!A2 * B1 * !B2 * C1 * X)	-0.00197	-0.00198	-0.00197
	(!A2 * B1 * !B2 * !C1 * !X)	0.00047	0.00048	0.00046
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00227	-0.00229	-0.00230
	(!A2 * !B1 * C1 * X)	0.00140	0.00141	0.00141
	(!A2 * !B1 * C1 * X)	-0.00197	-0.00198	-0.00197
	(!A2 * !B1 * !C1 * !X)	0.00047	0.00048	0.00046
	(!A2 * !B1 * !C1 * !X)	-0.00227	-0.00229	-0.00230

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	0.00167	0.00168	0.00166
	(A2 * B1 * B2 * C1 * X)	-0.00183	-0.00192	-0.00191
	(A2 * B1 * B2 * !C1 * X)	0.00170	0.00168	0.00167
	(A2 * B1 * B2 * !C1 * X)	-0.00179	-0.00192	-0.00191
	(A2 * B1 * !B2 * C1 * X)	0.00170	0.00168	0.00167
	(A2 * B1 * !B2 * C1 * X)	-0.00170	-0.00187	-0.00186
	(A2 * !B1 * C1 * X)	0.00170	0.00168	0.00167
	(A2 * !B1 * C1 * X)	-0.00170	-0.00187	-0.00186
	(!A2 * B1 * B2 * C1 * X)	0.00158	0.00160	0.00159
	(!A2 * B1 * B2 * C1 * X)	-0.00195	-0.00196	-0.00196
	(!A2 * B1 * B2 * !C1 * X)	0.00158	0.00158	0.00159
	(!A2 * B1 * B2 * !C1 * X)	-0.00195	-0.00196	-0.00196
	(!A2 * B1 * !B2 * C1 * X)	0.00160	0.00162	0.00160
	(!A2 * B1 * !B2 * C1 * X)	-0.00195	-0.00197	-0.00196
	(!A2 * B1 * !B2 * !C1 * !X)	0.00053	0.00053	0.00051
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00229	-0.00230	-0.00232
	(!A2 * !B1 * C1 * X)	0.00160	0.00161	0.00160
	(!A2 * !B1 * C1 * X)	-0.00195	-0.00196	-0.00196
	(!A2 * !B1 * !C1 * !X)	0.00053	0.00053	0.00051
	(!A2 * !B1 * !C1 * !X)	-0.00229	-0.00230	-0.00232

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	0.00330	0.00330	0.00326
	(A2 * B1 * B2 * C1 * X)	-0.00358	-0.00377	-0.00374
	(A2 * B1 * B2 * !C1 * X)	0.00330	0.00330	0.00327
	(A2 * B1 * B2 * !C1 * X)	-0.00356	-0.00377	-0.00374
	(A2 * B1 * !B2 * C1 * X)	0.00332	0.00330	0.00326
	(A2 * B1 * !B2 * C1 * X)	-0.00344	-0.00370	-0.00367
	(A2 * !B1 * C1 * X)	0.00332	0.00330	0.00326
	(A2 * !B1 * C1 * X)	-0.00344	-0.00370	-0.00367
	(!A2 * B1 * B2 * C1 * X)	0.00312	0.00315	0.00312
	(!A2 * B1 * B2 * C1 * X)	-0.00384	-0.00386	-0.00384
	(!A2 * B1 * B2 * !C1 * X)	0.00313	0.00314	0.00313
	(!A2 * B1 * B2 * !C1 * X)	-0.00384	-0.00385	-0.00384
	(!A2 * B1 * !B2 * C1 * X)	0.00312	0.00315	0.00312
	(!A2 * B1 * !B2 * C1 * X)	-0.00383	-0.00385	-0.00384
	(!A2 * B1 * !B2 * !C1 * !X)	0.00148	0.00148	0.00143
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00425	-0.00427	-0.00433
	(!A2 * !B1 * C1 * X)	0.00312	0.00315	0.00312
	(!A2 * !B1 * C1 * X)	-0.00384	-0.00386	-0.00384
	(!A2 * !B1 * !C1 * !X)	0.00148	0.00147	0.00143
	(!A2 * !B1 * !C1 * !X)	-0.00425	-0.00426	-0.00433

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)**	-0.00146	-0.00146	-0.00146
	(A2 * B1 * B2 * C1 * X)	0.00192	0.00193	0.00192
	(A2 * B1 * B2 * !C1 * X)	-0.00146	-0.00147	-0.00146
	(A2 * B1 * B2 * !C1 * X)	0.00192	0.00194	0.00192
	(A2 * B1 * !B2 * C1 * X)	-0.00146	-0.00146	-0.00146
	(A2 * B1 * !B2 * C1 * X)	0.00187	0.00188	0.00188
	(A2 * !B1 * C1 * X)	-0.00146	-0.00146	-0.00146
	(A2 * !B1 * C1 * X)	0.00187	0.00188	0.00188
	(!A2 * B1 * B2 * C1 * X)	-0.00137	-0.00140	-0.00141
	(!A2 * B1 * B2 * C1 * X)	0.00197	0.00198	0.00198
	(!A2 * B1 * B2 * !C1 * X)	-0.00137	-0.00141	-0.00141
	(!A2 * B1 * B2 * !C1 * X)	0.00199	0.00199	0.00198
	(!A2 * B1 * !B2 * C1 * X)	-0.00137	-0.00141	-0.00141
	(!A2 * B1 * !B2 * C1 * X)	0.00199	0.00201	0.00198
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00045	-0.00046	-0.00045
	(!A2 * B1 * !B2 * !C1 * !X)	0.00230	0.00234	0.00231
	(!A2 * !B1 * C1 * X)	-0.00137	-0.00141	-0.00141
	(!A2 * !B1 * C1 * X)	0.00199	0.00201	0.00198
	(!A2 * !B1 * !C1 * !X)	-0.00045	-0.00046	-0.00045
	(!A2 * !B1 * !C1 * !X)	0.00230	0.00234	0.00231

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	-0.00166	-0.00167	-0.00166
	(A2 * B1 * B2 * C1 * X)	0.00190	0.00192	0.00191
	(A2 * B1 * B2 * !C1 * X)	-0.00166	-0.00167	-0.00166
	(A2 * B1 * B2 * !C1 * X)	0.00190	0.00192	0.00191
	(A2 * B1 * !B2 * C1 * X)	-0.00166	-0.00166	-0.00166
	(A2 * B1 * !B2 * C1 * X)	0.00185	0.00187	0.00186
	(A2 * !B1 * C1 * X)	-0.00166	-0.00166	-0.00166
	(A2 * !B1 * C1 * X)	0.00185	0.00187	0.00186
	(!A2 * B1 * B2 * C1 * X)	-0.00156	-0.00159	-0.00159
	(!A2 * B1 * B2 * C1 * X)	0.00197	0.00196	0.00196
	(!A2 * B1 * B2 * !C1 * X)	-0.00155	-0.00158	-0.00159
	(!A2 * B1 * B2 * !C1 * X)	0.00197	0.00197	0.00196
	(!A2 * B1 * !B2 * C1 * X)	-0.00155	-0.00159	-0.00160
	(!A2 * B1 * !B2 * C1 * X)	0.00197	0.00197	0.00196
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00050	-0.00050	-0.00050
	(!A2 * B1 * !B2 * !C1 * !X)	0.00232	0.00235	0.00233
	(!A2 * !B1 * C1 * X)	-0.00155	-0.00159	-0.00160
	(!A2 * !B1 * C1 * X)	0.00197	0.00197	0.00197
	(!A2 * !B1 * !C1 * !X)	-0.00050	-0.00050	-0.00050
	(!A2 * !B1 * !C1 * !X)	0.00232	0.00235	0.00233

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	-0.00326	-0.00328	-0.00326
	(A2 * B1 * B2 * C1 * X)	0.00372	0.00377	0.00374
	(A2 * B1 * B2 * !C1 * X)	-0.00326	-0.00328	-0.00327
	(A2 * B1 * B2 * !C1 * X)	0.00372	0.00377	0.00374
	(A2 * B1 * !B2 * C1 * X)	-0.00325	-0.00327	-0.00325
	(A2 * B1 * !B2 * C1 * X)	0.00365	0.00370	0.00367
	(A2 * !B1 * C1 * X)	-0.00325	-0.00327	-0.00325
	(A2 * !B1 * C1 * X)	0.00365	0.00370	0.00367
	(!A2 * B1 * B2 * C1 * X)	-0.00301	-0.00315	-0.00312
	(!A2 * B1 * B2 * C1 * X)	0.00384	0.00386	0.00384
	(!A2 * B1 * B2 * !C1 * X)	-0.00300	-0.00314	-0.00313
	(!A2 * B1 * B2 * !C1 * X)	0.00384	0.00391	0.00385
	(!A2 * B1 * !B2 * C1 * X)	-0.00300	-0.00315	-0.00312
	(!A2 * B1 * !B2 * C1 * X)	0.00384	0.00387	0.00385
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00139	-0.00140	-0.00139
	(!A2 * B1 * !B2 * !C1 * !X)	0.00433	0.00436	0.00435
	(!A2 * !B1 * C1 * X)	-0.00300	-0.00315	-0.00312
	(!A2 * !B1 * C1 * X)	0.00384	0.00387	0.00385
	(!A2 * !B1 * !C1 * !X)	-0.00139	-0.00140	-0.00139
	(!A2 * !B1 * !C1 * !X)	0.00433	0.00436	0.00435

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)**	0.00169	0.00171	0.00169
	(A1 * B1 * B2 * C1 * X)	-0.00177	-0.00188	-0.00187
	(A1 * B1 * B2 * !C1 * X)	0.00171	0.00171	0.00169
	(A1 * B1 * B2 * !C1 * X)	-0.00175	-0.00188	-0.00187
	(A1 * B1 * !B2 * C1 * X)	0.00173	0.00171	0.00170
	(A1 * B1 * !B2 * C1 * X)	-0.00168	-0.00182	-0.00182
	(A1 * !B1 * C1 * X)	0.00173	0.00171	0.00170
	(A1 * !B1 * C1 * X)	-0.00168	-0.00184	-0.00182
	(!A1 * B1 * B2 * X)	0.00163	0.00165	0.00163
	(!A1 * B1 * B2 * X)	-0.00190	-0.00192	-0.00191
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00162	0.00165	0.00163
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00191	-0.00192	-0.00191
	(!A1 * B1 * !B2 * !C1 * !X)	0.00139	0.00139	0.00139
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00215	-0.00216	-0.00216
	(!A1 * !B1 * !C1 * !X)	0.00139	0.00141	0.00139
	(!A1 * !B1 * !C1 * !X)	-0.00215	-0.00217	-0.00216

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	0.00186	0.00187	0.00186
	(A1 * B1 * B2 * C1 * X)	-0.00176	-0.00187	-0.00185
	(A1 * B1 * B2 * !C1 * X)	0.00187	0.00187	0.00186
	(A1 * B1 * B2 * !C1 * X)	-0.00173	-0.00186	-0.00185
	(A1 * B1 * !B2 * C1 * X)	0.00189	0.00187	0.00186
	(A1 * B1 * !B2 * C1 * X)	-0.00166	-0.00181	-0.00181
	(A1 * !B1 * C1 * X)	0.00189	0.00187	0.00186
	(A1 * !B1 * C1 * X)	-0.00166	-0.00181	-0.00181
	(!A1 * B1 * B2 * X)	0.00178	0.00180	0.00179
	(!A1 * B1 * B2 * X)	-0.00189	-0.00190	-0.00190
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00179	0.00180	0.00179
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00189	-0.00190	-0.00189
	(!A1 * B1 * !B2 * !C1 * !X)	0.00154	0.00155	0.00155
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00213	-0.00214	-0.00214
	(!A1 * !B1 * !C1 * !X)	0.00154	0.00155	0.00155
	(!A1 * !B1 * !C1 * !X)	-0.00213	-0.00214	-0.00214

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	0.00326	0.00326	0.00322
	(A1 * B1 * B2 * C1 * X)	-0.00355	-0.00374	-0.00371
	(A1 * B1 * B2 * !C1 * X)	0.00327	0.00326	0.00322
	(A1 * B1 * B2 * !C1 * X)	-0.00352	-0.00374	-0.00371
	(A1 * B1 * !B2 * C1 * X)	0.00329	0.00326	0.00322
	(A1 * B1 * !B2 * C1 * X)	-0.00340	-0.00367	-0.00364
	(A1 * !B1 * C1 * X)	0.00329	0.00326	0.00322
	(A1 * !B1 * C1 * X)	-0.00340	-0.00367	-0.00364
	(!A1 * B1 * B2 * X)	0.00308	0.00309	0.00308
	(!A1 * B1 * B2 * X)	-0.00381	-0.00382	-0.00381
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00308	0.00310	0.00308
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00381	-0.00382	-0.00381
	(!A1 * B1 * !B2 * !C1 * !X)	0.00302	0.00305	0.00302
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00389	-0.00391	-0.00389
	(!A1 * !B1 * !C1 * !X)	0.00302	0.00305	0.00302
	(!A1 * !B1 * !C1 * !X)	-0.00389	-0.00391	-0.00389

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)**	-0.00169	-0.00170	-0.00169
	(A1 * B1 * B2 * C1 * X)	0.00186	0.00188	0.00187
	(A1 * B1 * B2 * !C1 * X)	-0.00169	-0.00170	-0.00169
	(A1 * B1 * B2 * !C1 * X)	0.00186	0.00188	0.00187
	(A1 * B1 * !B2 * C1 * X)	-0.00169	-0.00169	-0.00169
	(A1 * B1 * !B2 * C1 * X)	0.00182	0.00182	0.00182
	(A1 * !B1 * C1 * X)	-0.00169	-0.00170	-0.00169
	(A1 * !B1 * C1 * X)	0.00182	0.00184	0.00182
	(!A1 * B1 * B2 * X)	-0.00160	-0.00163	-0.00163
	(!A1 * B1 * B2 * X)	0.00190	0.00192	0.00192
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00161	-0.00163	-0.00163
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00192	0.00192	0.00192
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00130	-0.00139	-0.00139
	(!A1 * B1 * !B2 * !C1 * !X)	0.00225	0.00220	0.00217
	(!A1 * !B1 * !C1 * !X)	-0.00130	-0.00139	-0.00139
	(!A1 * !B1 * !C1 * !X)	0.00225	0.00220	0.00217

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00185	-0.00186	-0.00185
	(A1 * B1 * B2 * C1 * X)	0.00184	0.00187	0.00185
	(A1 * B1 * B2 * !C1 * X)	-0.00185	-0.00186	-0.00185
	(A1 * B1 * B2 * !C1 * X)	0.00184	0.00186	0.00185
	(A1 * B1 * !B2 * C1 * X)	-0.00185	-0.00185	-0.00185
	(A1 * B1 * !B2 * C1 * X)	0.00180	0.00181	0.00181
	(A1 * !B1 * C1 * X)	-0.00185	-0.00185	-0.00185
	(A1 * !B1 * C1 * X)	0.00180	0.00181	0.00181
	(!A1 * B1 * B2 * X)	-0.00174	-0.00180	-0.00179
	(!A1 * B1 * B2 * X)	0.00189	0.00192	0.00190
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00174	-0.00180	-0.00179
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00189	0.00192	0.00190
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00144	-0.00155	-0.00155
	(!A1 * B1 * !B2 * !C1 * !X)	0.00221	0.00217	0.00215
	(!A1 * !B1 * !C1 * !X)	-0.00144	-0.00155	-0.00155
	(!A1 * !B1 * !C1 * !X)	0.00221	0.00217	0.00215

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	-0.00322	-0.00324	-0.00322
	(A1 * B1 * B2 * C1 * X)	0.00369	0.00374	0.00371
	(A1 * B1 * B2 * !C1 * X)	-0.00322	-0.00324	-0.00322
	(A1 * B1 * B2 * !C1 * X)	0.00369	0.00374	0.00371
	(A1 * B1 * !B2 * C1 * X)	-0.00320	-0.00323	-0.00321
	(A1 * B1 * !B2 * C1 * X)	0.00362	0.00367	0.00364
	(A1 * !B1 * C1 * X)	-0.00320	-0.00323	-0.00321
	(A1 * !B1 * C1 * X)	0.00362	0.00367	0.00364
	(!A1 * B1 * B2 * X)	-0.00299	-0.00309	-0.00308
	(!A1 * B1 * B2 * X)	0.00381	0.00384	0.00382
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00298	-0.00310	-0.00308
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00382	0.00384	0.00382
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00283	-0.00304	-0.00302
	(!A1 * B1 * !B2 * !C1 * !X)	0.00400	0.00393	0.00390
	(!A1 * !B1 * !C1 * !X)	-0.00283	-0.00304	-0.00302
	(!A1 * !B1 * !C1 * !X)	0.00400	0.00393	0.00390

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)**	0.00159	0.00160	0.00153
	(A1 * A2 * B2 * C1 * X)	-0.00138	-0.00140	-0.00139
	(A1 * A2 * B2 * !C1 * X)	0.00148	0.00150	0.00148
	(A1 * A2 * B2 * !C1 * X)	-0.00107	-0.00108	-0.00107
	(A1 * A2 * !B2 * C1 * X)	0.00146	0.00146	0.00144
	(A1 * A2 * !B2 * C1 * X)	-0.00128	-0.00130	-0.00129
	(A1 * A2 * !B2 * !C1 * X)	0.00142	0.00145	0.00142
	(A1 * A2 * !B2 * !C1 * X)	-0.00106	-0.00107	-0.00107
	(A1 * !A2 * B2 * C1 * X)	0.00179	0.00150	0.00147
	(A1 * !A2 * B2 * C1 * X)	-0.00159	-0.00193	-0.00193
	(A1 * !A2 * !B2 * C1 * X)	0.00140	0.00141	0.00140
	(A1 * !A2 * !B2 * C1 * X)	-0.00195	-0.00196	-0.00195
	(A1 * !A2 * !B2 * !C1 * !X)	0.00045	0.00045	0.00044
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00228	-0.00229	-0.00231
	(!A1 * B2 * C1 * X)	0.00178	0.00150	0.00147
	(!A1 * B2 * C1 * X)	-0.00158	-0.00193	-0.00193
	(!A1 * !B2 * C1 * X)	0.00140	0.00142	0.00141
	(!A1 * !B2 * C1 * X)	-0.00195	-0.00196	-0.00195
	(!A1 * !B2 * !C1 * !X)	0.00045	0.00045	0.00044
	(!A1 * !B2 * !C1 * !X)	-0.00228	-0.00229	-0.00231

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	0.00190	0.00191	0.00183
	(A1 * A2 * B2 * C1 * X)	-0.00141	-0.00140	-0.00141
	(A1 * A2 * B2 * !C1 * X)	0.00178	0.00180	0.00178
	(A1 * A2 * B2 * !C1 * X)	-0.00109	-0.00110	-0.00109
	(A1 * A2 * !B2 * C1 * X)	0.00174	0.00177	0.00172
	(A1 * A2 * !B2 * C1 * X)	-0.00130	-0.00132	-0.00131
	(A1 * A2 * !B2 * !C1 * X)	0.00172	0.00175	0.00171
	(A1 * A2 * !B2 * !C1 * X)	-0.00108	-0.00110	-0.00109
	(A1 * !A2 * B2 * C1 * X)	0.00209	0.00180	0.00177
	(A1 * !A2 * B2 * C1 * X)	-0.00161	-0.00196	-0.00195
	(A1 * !A2 * !B2 * C1 * X)	0.00170	0.00172	0.00170
	(A1 * !A2 * !B2 * C1 * X)	-0.00197	-0.00198	-0.00197
	(A1 * !A2 * !B2 * !C1 * !X)	0.00054	0.00054	0.00052
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00240	-0.00241	-0.00243
	(!A1 * B2 * C1 * X)	0.00209	0.00180	0.00177
	(!A1 * B2 * C1 * X)	-0.00161	-0.00196	-0.00195
	(!A1 * !B2 * C1 * X)	0.00170	0.00171	0.00170
	(!A1 * !B2 * C1 * X)	-0.00197	-0.00198	-0.00197
	(!A1 * !B2 * !C1 * !X)	0.00054	0.00054	0.00052
	(!A1 * !B2 * !C1 * !X)	-0.00240	-0.00241	-0.00243

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	0.00339	0.00340	0.00324
	(A1 * A2 * B2 * C1 * X)	-0.00289	-0.00289	-0.00288
	(A1 * A2 * B2 * !C1 * X)	0.00317	0.00320	0.00316
	(A1 * A2 * B2 * !C1 * X)	-0.00218	-0.00221	-0.00220
	(A1 * A2 * !B2 * C1 * X)	0.00314	0.00313	0.00311
	(A1 * A2 * !B2 * C1 * X)	-0.00267	-0.00270	-0.00268
	(A1 * A2 * !B2 * !C1 * X)	0.00305	0.00310	0.00304
	(A1 * A2 * !B2 * !C1 * X)	-0.00218	-0.00222	-0.00220
	(A1 * !A2 * B2 * C1 * X)	0.00381	0.00317	0.00314
	(A1 * !A2 * B2 * C1 * X)	-0.00317	-0.00385	-0.00388
	(A1 * !A2 * !B2 * C1 * X)	0.00305	0.00306	0.00305
	(A1 * !A2 * !B2 * C1 * X)	-0.00392	-0.00393	-0.00392
	(A1 * !A2 * !B2 * !C1 * !X)	0.00116	0.00117	0.00111
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00456	-0.00460	-0.00466
	(!A1 * B2 * C1 * X)	0.00381	0.00317	0.00314
	(!A1 * B2 * C1 * X)	-0.00316	-0.00386	-0.00388
	(!A1 * !B2 * C1 * X)	0.00305	0.00306	0.00305
	(!A1 * !B2 * C1 * X)	-0.00391	-0.00393	-0.00392
	(!A1 * !B2 * !C1 * !X)	0.00116	0.00117	0.00111
	(!A1 * !B2 * !C1 * !X)	-0.00456	-0.00460	-0.00466

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)**	-0.00148	-0.00149	-0.00148
	(A1 * A2 * B2 * C1 * X)	0.00138	0.00140	0.00139
	(A1 * A2 * B2 * !C1 * X)	-0.00142	-0.00143	-0.00142
	(A1 * A2 * B2 * !C1 * X)	0.00112	0.00113	0.00113
	(A1 * A2 * !B2 * C1 * X)	-0.00138	-0.00142	-0.00144
	(A1 * A2 * !B2 * C1 * X)	0.00128	0.00130	0.00129
	(A1 * A2 * !B2 * !C1 * X)	-0.00138	-0.00142	-0.00142
	(A1 * A2 * !B2 * !C1 * X)	0.00108	0.00107	0.00107
	(A1 * !A2 * B2 * C1 * X)	-0.00147	-0.00147	-0.00146
	(A1 * !A2 * B2 * C1 * X)	0.00193	0.00193	0.00193
	(A1 * !A2 * !B2 * C1 * X)	-0.00138	-0.00141	-0.00140
	(A1 * !A2 * !B2 * C1 * X)	0.00196	0.00199	0.00196
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00043	-0.00044	-0.00043
	(A1 * !A2 * !B2 * !C1 * !X)	0.00231	0.00234	0.00231
	(!A1 * B2 * C1 * X)	-0.00147	-0.00147	-0.00146
	(!A1 * B2 * C1 * X)	0.00193	0.00193	0.00193
	(!A1 * !B2 * C1 * X)	-0.00138	-0.00141	-0.00141
	(!A1 * !B2 * C1 * X)	0.00196	0.00196	0.00196
	(!A1 * !B2 * !C1 * !X)	-0.00043	-0.00044	-0.00043
	(!A1 * !B2 * !C1 * !X)	0.00231	0.00234	0.00231

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	-0.00178	-0.00178	-0.00179
	(A1 * A2 * B2 * C1 * X)	0.00141	0.00140	0.00141
	(A1 * A2 * B2 * !C1 * X)	-0.00173	-0.00174	-0.00173
	(A1 * A2 * B2 * !C1 * X)	0.00114	0.00115	0.00114
	(A1 * A2 * !B2 * C1 * X)	-0.00167	-0.00172	-0.00172
	(A1 * A2 * !B2 * C1 * X)	0.00130	0.00132	0.00131
	(A1 * A2 * !B2 * !C1 * X)	-0.00167	-0.00171	-0.00171
	(A1 * A2 * !B2 * !C1 * X)	0.00110	0.00110	0.00109
	(A1 * !A2 * B2 * C1 * X)	-0.00176	-0.00177	-0.00176
	(A1 * !A2 * B2 * C1 * X)	0.00195	0.00196	0.00195
	(A1 * !A2 * !B2 * C1 * X)	-0.00165	-0.00169	-0.00170
	(A1 * !A2 * !B2 * C1 * X)	0.00199	0.00198	0.00198
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00050	-0.00052	-0.00051
	(A1 * !A2 * !B2 * !C1 * !X)	0.00242	0.00246	0.00243
	(!A1 * B2 * C1 * X)	-0.00176	-0.00177	-0.00176
	(!A1 * B2 * C1 * X)	0.00195	0.00196	0.00195
	(!A1 * !B2 * C1 * X)	-0.00165	-0.00169	-0.00170
	(!A1 * !B2 * C1 * X)	0.00199	0.00198	0.00198
	(!A1 * !B2 * !C1 * !X)	-0.00050	-0.00052	-0.00051
	(!A1 * !B2 * !C1 * !X)	0.00242	0.00246	0.00243

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	-0.00319	-0.00319	-0.00318
	(A1 * A2 * B2 * C1 * X)	0.00289	0.00289	0.00288
	(A1 * A2 * B2 * !C1 * X)	-0.00307	-0.00309	-0.00306
	(A1 * A2 * B2 * !C1 * X)	0.00228	0.00230	0.00231
	(A1 * A2 * !B2 * C1 * X)	-0.00295	-0.00310	-0.00309
	(A1 * A2 * !B2 * C1 * X)	0.00267	0.00270	0.00268
	(A1 * A2 * !B2 * !C1 * X)	-0.00293	-0.00308	-0.00304
	(A1 * A2 * !B2 * !C1 * X)	0.00221	0.00222	0.00220
	(A1 * !A2 * B2 * C1 * X)	-0.00311	-0.00312	-0.00310
	(A1 * !A2 * B2 * C1 * X)	0.00385	0.00388	0.00388
	(A1 * !A2 * !B2 * C1 * X)	-0.00290	-0.00303	-0.00305
	(A1 * !A2 * !B2 * C1 * X)	0.00392	0.00393	0.00394
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00107	-0.00111	-0.00108
	(A1 * !A2 * !B2 * !C1 * !X)	0.00465	0.00472	0.00467
	(!A1 * B2 * C1 * X)	-0.00311	-0.00312	-0.00310
	(!A1 * B2 * C1 * X)	0.00385	0.00388	0.00388
	(!A1 * !B2 * C1 * X)	-0.00290	-0.00303	-0.00305
	(!A1 * !B2 * C1 * X)	0.00391	0.00393	0.00394
	(!A1 * !B2 * !C1 * !X)	-0.00107	-0.00111	-0.00108
	(!A1 * !B2 * !C1 * !X)	0.00465	0.00472	0.00467

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)**	0.00166	0.00165	0.00157
	(A1 * A2 * B1 * C1 * X)	-0.00136	-0.00138	-0.00136
	(A1 * A2 * B1 * !C1 * X)	0.00155	0.00155	0.00153
	(A1 * A2 * B1 * !C1 * X)	-0.00105	-0.00105	-0.00104
	(A1 * A2 * !B1 * C1 * X)	0.00149	0.00152	0.00148
	(A1 * A2 * !B1 * C1 * X)	-0.00127	-0.00127	-0.00127
	(A1 * A2 * !B1 * !C1 * X)	0.00147	0.00150	0.00147
	(A1 * A2 * !B1 * !C1 * X)	-0.00103	-0.00105	-0.00104
	(A1 * !A2 * B1 * C1 * X)	0.00186	0.00155	0.00152
	(A1 * !A2 * B1 * C1 * X)	-0.00154	-0.00189	-0.00189
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00145	0.00146	0.00145
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00191	-0.00192	-0.00192
	(A1 * !A2 * !B1 * !C1 * !X)	0.00131	0.00133	0.00132
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00205	-0.00207	-0.00206
	(!A1 * B1 * C1 * X)	0.00186	0.00155	0.00152
	(!A1 * B1 * C1 * X)	-0.00153	-0.00189	-0.00189
	(!A1 * !B1 * !C1 * !X)	0.00131	0.00133	0.00132
	(!A1 * !B1 * !C1 * !X)	-0.00205	-0.00207	-0.00206

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	0.00194	0.00195	0.00187
	(A1 * A2 * B1 * C1 * X)	-0.00130	-0.00132	-0.00131
	(A1 * A2 * B1 * !C1 * X)	0.00184	0.00185	0.00182
	(A1 * A2 * B1 * !C1 * X)	-0.00100	-0.00100	-0.00099
	(A1 * A2 * !B1 * C1 * X)	0.00179	0.00180	0.00178
	(A1 * A2 * !B1 * C1 * X)	-0.00121	-0.00122	-0.00122
	(A1 * A2 * !B1 * !C1 * X)	0.00175	0.00179	0.00175
	(A1 * A2 * !B1 * !C1 * X)	-0.00098	-0.00100	-0.00099
	(A1 * !A2 * B1 * C1 * X)	0.00212	0.00185	0.00182
	(A1 * !A2 * B1 * C1 * X)	-0.00148	-0.00182	-0.00183
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00175	0.00176	0.00175
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00185	-0.00185	-0.00185
	(A1 * !A2 * !B1 * !C1 * !X)	0.00153	0.00155	0.00153
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00207	-0.00208	-0.00207
	(!A1 * B1 * C1 * X)	0.00212	0.00185	0.00182
	(!A1 * B1 * C1 * X)	-0.00148	-0.00182	-0.00182
	(!A1 * !B1 * !C1 * !X)	0.00153	0.00155	0.00153
	(!A1 * !B1 * !C1 * !X)	-0.00207	-0.00208	-0.00207

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	0.00370	0.00370	0.00358
	(A1 * A2 * B1 * C1 * X)	-0.00275	-0.00279	-0.00276
	(A1 * A2 * B1 * !C1 * X)	0.00350	0.00352	0.00349
	(A1 * A2 * B1 * !C1 * X)	-0.00207	-0.00209	-0.00209
	(A1 * A2 * !B1 * C1 * X)	0.00345	0.00346	0.00341
	(A1 * A2 * !B1 * C1 * X)	-0.00256	-0.00258	-0.00256
	(A1 * A2 * !B1 * !C1 * X)	0.00341	0.00344	0.00341
	(A1 * A2 * !B1 * !C1 * X)	-0.00206	-0.00208	-0.00208
	(A1 * !A2 * B1 * C1 * X)	0.00407	0.00353	0.00347
	(A1 * !A2 * B1 * C1 * X)	-0.00305	-0.00376	-0.00376
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00336	0.00337	0.00336
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00380	-0.00381	-0.00380
	(A1 * !A2 * !B1 * !C1 * !X)	0.00329	0.00334	0.00330
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00388	-0.00391	-0.00389
	(!A1 * B1 * C1 * X)	0.00407	0.00353	0.00347
	(!A1 * B1 * C1 * X)	-0.00305	-0.00376	-0.00376
	(!A1 * !B1 * !C1 * !X)	0.00329	0.00328	0.00330
	(!A1 * !B1 * !C1 * !X)	-0.00388	-0.00388	-0.00389

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)**	-0.00153	-0.00154	-0.00153
	(A1 * A2 * B1 * C1 * X)	0.00136	0.00138	0.00136
	(A1 * A2 * B1 * !C1 * X)	-0.00148	-0.00149	-0.00148
	(A1 * A2 * B1 * !C1 * X)	0.00109	0.00109	0.00109
	(A1 * A2 * !B1 * C1 * X)	-0.00145	-0.00147	-0.00148
	(A1 * A2 * !B1 * C1 * X)	0.00127	0.00127	0.00127
	(A1 * A2 * !B1 * !C1 * X)	-0.00144	-0.00147	-0.00147
	(A1 * A2 * !B1 * !C1 * X)	0.00105	0.00105	0.00105
	(A1 * !A2 * B1 * C1 * X)	-0.00152	-0.00152	-0.00151
	(A1 * !A2 * B1 * C1 * X)	0.00189	0.00189	0.00189
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00142	-0.00146	-0.00145
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00191	0.00193	0.00192
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00123	-0.00132	-0.00132
	(A1 * !A2 * !B1 * !C1 * !X)	0.00215	0.00208	0.00206
	(!A1 * B1 * C1 * X)	-0.00152	-0.00152	-0.00151
	(!A1 * B1 * C1 * X)	0.00189	0.00189	0.00189
	(!A1 * !B1 * !C1 * !X)	-0.00123	-0.00132	-0.00132
	(!A1 * !B1 * !C1 * !X)	0.00215	0.00208	0.00206

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00183	-0.00184	-0.00183
	(A1 * A2 * B1 * C1 * X)	0.00130	0.00132	0.00131
	(A1 * A2 * B1 * !C1 * X)	-0.00177	-0.00178	-0.00177
	(A1 * A2 * B1 * !C1 * X)	0.00104	0.00104	0.00104
	(A1 * A2 * !B1 * C1 * X)	-0.00172	-0.00176	-0.00178
	(A1 * A2 * !B1 * C1 * X)	0.00121	0.00122	0.00122
	(A1 * A2 * !B1 * !C1 * X)	-0.00171	-0.00176	-0.00175
	(A1 * A2 * !B1 * !C1 * X)	0.00099	0.00100	0.00099
	(A1 * !A2 * B1 * C1 * X)	-0.00181	-0.00181	-0.00180
	(A1 * !A2 * B1 * C1 * X)	0.00183	0.00182	0.00183
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00170	-0.00175	-0.00175
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00185	0.00188	0.00186
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00142	-0.00153	-0.00153
	(A1 * !A2 * !B1 * !C1 * !X)	0.00215	0.00209	0.00208
	(!A1 * B1 * C1 * X)	-0.00181	-0.00181	-0.00180
	(!A1 * B1 * C1 * X)	0.00183	0.00182	0.00182
	(!A1 * !B1 * !C1 * !X)	-0.00142	-0.00153	-0.00153
	(!A1 * !B1 * !C1 * !X)	0.00215	0.00209	0.00208

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00351	-0.00354	-0.00351
	(A1 * A2 * B1 * C1 * X)	0.00275	0.00279	0.00276
	(A1 * A2 * B1 * !C1 * X)	-0.00338	-0.00341	-0.00339
	(A1 * A2 * B1 * !C1 * X)	0.00217	0.00219	0.00220
	(A1 * A2 * !B1 * C1 * X)	-0.00332	-0.00341	-0.00341
	(A1 * A2 * !B1 * C1 * X)	0.00256	0.00258	0.00256
	(A1 * A2 * !B1 * !C1 * X)	-0.00328	-0.00342	-0.00340
	(A1 * A2 * !B1 * !C1 * X)	0.00208	0.00210	0.00209
	(A1 * !A2 * B1 * C1 * X)	-0.00344	-0.00346	-0.00344
	(A1 * !A2 * B1 * C1 * X)	0.00373	0.00377	0.00376
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00327	-0.00337	-0.00336
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00380	0.00383	0.00382
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00310	-0.00331	-0.00329
	(A1 * !A2 * !B1 * !C1 * !X)	0.00399	0.00392	0.00390
	(!A1 * B1 * C1 * X)	-0.00344	-0.00346	-0.00344
	(!A1 * B1 * C1 * X)	0.00373	0.00377	0.00376
	(!A1 * !B1 * !C1 * !X)	-0.00310	-0.00328	-0.00329
	(!A1 * !B1 * !C1 * !X)	0.00399	0.00392	0.00390

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)	0.00186	0.00188	0.00185
	(A1 * B1 * B2 * X)	-0.00092	-0.00093	-0.00092
	(A1 * A2 * B1 * !B2 * X)	0.00184	0.00188	0.00185
	(A1 * A2 * B1 * !B2 * X)	-0.00091	-0.00093	-0.00092
	(A1 * A2 * !B1 * X)	0.00184	0.00188	0.00185
	(A1 * A2 * !B1 * X)	-0.00091	-0.00093	-0.00092
	(!A1 * B1 * B2 * X)	0.00184	0.00188	0.00185
	(!A1 * B1 * B2 * X)	-0.00092	-0.00094	-0.00092
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	0.00193	0.00195	0.00194
	(A1 * B1 * B2 * X)	-0.00092	-0.00093	-0.00092
	(A1 * A2 * B1 * !B2 * X)	0.00194	0.00195	0.00194
	(A1 * A2 * B1 * !B2 * X)	-0.00092	-0.00092	-0.00092
	(A1 * A2 * !B1 * X)	0.00194	0.00196	0.00194
	(A1 * A2 * !B1 * X)	-0.00092	-0.00092	-0.00092
	(!A1 * B1 * B2 * X)	0.00194	0.00196	0.00194
	(!A1 * B1 * B2 * X)	-0.00092	-0.00093	-0.00092
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	0.00329	0.00330	0.00328
	(A1 * B1 * B2 * X)	-0.00197	-0.00197	-0.00195
	(A1 * A2 * B1 * !B2 * X)	0.00326	0.00333	0.00328
	(A1 * A2 * B1 * !B2 * X)	-0.00193	-0.00198	-0.00194
	(A1 * A2 * !B1 * X)	0.00326	0.00333	0.00328
	(A1 * A2 * !B1 * X)	-0.00193	-0.00198	-0.00194
	(!A1 * B1 * B2 * X)	0.00325	0.00332	0.00327
	(!A1 * B1 * B2 * X)	-0.00197	-0.00201	-0.00198

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)	-0.00173	-0.00175	-0.00183
	(A1 * B1 * B2 * X)	0.00102	0.00102	0.00094
	(A1 * A2 * B1 * !B2 * X)	-0.00159	-0.00159	-0.00180
	(A1 * A2 * B1 * !B2 * X)	0.00110	0.00109	0.00096
	(A1 * A2 * !B1 * X)	-0.00159	-0.00159	-0.00180
	(A1 * A2 * !B1 * X)	0.00110	0.00109	0.00096
	(!A1 * B1 * B2 * X)	-0.00173	-0.00175	-0.00183
	(!A1 * B1 * B2 * X)	0.00102	0.00103	0.00094
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	-0.00182	-0.00184	-0.00193
	(A1 * B1 * B2 * X)	0.00102	0.00102	0.00094
	(A1 * A2 * B1 * !B2 * X)	-0.00168	-0.00170	-0.00189
	(A1 * A2 * B1 * !B2 * X)	0.00110	0.00110	0.00096
	(A1 * A2 * !B1 * X)	-0.00169	-0.00170	-0.00189
	(A1 * A2 * !B1 * X)	0.00110	0.00110	0.00096
	(!A1 * B1 * B2 * X)	-0.00182	-0.00184	-0.00192
	(!A1 * B1 * B2 * X)	0.00102	0.00103	0.00094
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	-0.00302	-0.00305	-0.00324
	(A1 * B1 * B2 * X)	0.00218	0.00218	0.00200
	(A1 * A2 * B1 * !B2 * X)	-0.00272	-0.00275	-0.00318
	(A1 * A2 * B1 * !B2 * X)	0.00237	0.00238	0.00203
	(A1 * A2 * !B1 * X)	-0.00271	-0.00275	-0.00318
	(A1 * A2 * !B1 * X)	0.00236	0.00238	0.00203
	(!A1 * B1 * B2 * X)	-0.00302	-0.00304	-0.00324
	(!A1 * B1 * B2 * X)	0.00221	0.00222	0.00203

SKY130_FD_SC_HS__A222OIx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00265	0.00250	0.00259	0.00262	0.00262	0.00271	0.32955
sky130_fd_sc_hs__a222oi_2	0.00533	0.00472	0.00526	0.00484	0.00478	0.00541	0.57144

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222oi_1	0.00000	0.10280	0.39322
sky130_fd_sc_hs__a222oi_2	0.00000	0.20559	0.78644

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)	0.23570	1.15729	9.68014
	A2->Y (FR)	0.25788	1.18580	9.73734
	B1->Y (FR)	0.20765	1.14695	10.25740
	B2->Y (FR)	0.23361	1.18418	10.35780
	C1->Y (FR)	0.15672	1.11310	10.40320
	C2->Y (FR)	0.18049	1.13832	10.43110
sky130_fd_sc_hs__a222oi_2	A1->Y (FR)	0.22956	0.98459	9.31442
	A2->Y (FR)	0.26135	1.03045	9.48673
	B1->Y (FR)	0.19835	0.96595	9.79832
	B2->Y (FR)	0.23704	1.04215	10.26280
	C1->Y (FR)	0.14448	0.96185	10.30900
	C2->Y (FR)	0.17755	0.99346	10.33330

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222oi_1	A1->Y (RF)	0.04549	0.37721	3.17132
	A2->Y (RF)	0.04891	0.34978	2.87935
	B1->Y (RF)	0.04054	0.35385	3.10137
	B2->Y (RF)	0.04554	0.33169	2.81094
	C1->Y (RF)	0.03021	0.33879	3.07173
	C2->Y (RF)	0.03373	0.31353	2.78282
sky130_fd_sc_hs__a222oi_2	A1->Y (RF)	0.04351	0.32658	3.01996
	A2->Y (RF)	0.04735	0.30543	2.76656
	B1->Y (RF)	0.04088	0.30970	2.99037
	B2->Y (RF)	0.04538	0.29236	2.75098
	C1->Y (RF)	0.02503	0.26963	2.78919
	C2->Y (RF)	0.02967	0.25213	2.53984

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.00097	0.00076	0.00752
	A1	0.01024	0.01002	0.01688
	A2	0.00129	0.00116	0.00808
	A2	0.01151	0.01140	0.01836
	B1	0.00100	0.00085	0.00870
	B1	0.00804	0.00788	0.01548
	B2	0.00134	0.00124	0.00904
	B2	0.00943	0.00933	0.01713
	C1	0.00087	0.00144	0.01551
	C1	0.00601	0.00659	0.02066
	C2	0.00126	0.00187	0.01621
	C2	0.00741	0.00803	0.02222
sky130_fd_sc_hs__a222oi_2	A1	0.00082	0.00040	0.01471
	A1	0.01934	0.01892	0.03334
	A2	0.00194	0.00159	0.01595
	A2	0.02184	0.02152	0.03606
	B1	0.00087	0.00061	0.01664
	B1	0.01509	0.01484	0.03101
	B2	0.00184	0.00162	0.01695
	B2	0.01759	0.01738	0.03271
	C1	0.00068	0.00218	0.02958
	C1	0.01047	0.01199	0.03948
	C2	0.00159	0.00298	0.03087
	C2	0.01386	0.01524	0.04323

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.01480	0.01486	0.02224
	A1	0.00574	0.00577	0.01320
	A2	0.01577	0.01570	0.02195
	A2	0.00571	0.00564	0.01192
	B1	0.01015	0.01035	0.01777
	B1	0.00317	0.00336	0.01079
	B2	0.01125	0.01131	0.01753
	B2	0.00319	0.00322	0.00949
	C1	0.00592	0.00626	0.01348
	C1	0.00078	0.00111	0.00834
	C2	0.00696	0.00715	0.01342
	C2	0.00076	0.00092	0.00717
sky130_fd_sc_hs__a222oi_2	A1	0.02787	0.02795	0.04338
	A1	0.00977	0.00981	0.02537
	A2	0.02939	0.02933	0.04229
	A2	0.00979	0.00969	0.02273
	B1	0.01926	0.01967	0.03496
	B1	0.00517	0.00556	0.02088
	B2	0.02123	0.02132	0.03387
	B2	0.00551	0.00560	0.01816
	C1	0.01040	0.01132	0.02616
	C1	0.00062	0.00149	0.01633
	C2	0.01293	0.01337	0.02638
	C2	0.00055	0.00094	0.01398

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)**	0.00147	0.00147	0.00145
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00183	-0.00192	-0.00191
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00147	0.00147	0.00145
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00181	-0.00192	-0.00191
	(A2 * B1 * B2 * !C1 * !Y)	0.00147	0.00147	0.00145
	(A2 * B1 * B2 * !C1 * !Y)	-0.00181	-0.00193	-0.00191
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00152	0.00147	0.00145
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00172	-0.00188	-0.00187
	(A2 * !B1 * C1 * C2 * !Y)	0.00152	0.00147	0.00145
	(A2 * !B1 * C1 * C2 * !Y)	-0.00171	-0.00188	-0.00187
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00138	0.00139	0.00138
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00196	-0.00197	-0.00196
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00138	0.00140	0.00139
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00196	-0.00197	-0.00196
	(!A2 * B1 * B2 * !C1 * !Y)	0.00138	0.00140	0.00139
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00195	-0.00197	-0.00196
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00138	0.00140	0.00139
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00196	-0.00197	-0.00196
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00050	0.00050	0.00049
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00223	-0.00224	-0.00225
	(!A2 * B1 * !B2 * !C1 * Y)	0.00050	0.00050	0.00049
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00223	-0.00224	-0.00225
	(!A2 * !B1 * C1 * C2 * !Y)	0.00139	0.00140	0.00139
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00196	-0.00197	-0.00196
	(!A2 * !B1 * C1 * !C2 * Y)	0.00050	0.00049	0.00049
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00223	-0.00222	-0.00225
	(!A2 * !B1 * !C1 * Y)	0.00050	0.00049	0.00049
	(!A2 * !B1 * !C1 * Y)	-0.00223	-0.00222	-0.00225

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	0.00300	0.00303	0.00300
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00368	-0.00389	-0.00388
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00305	0.00304	0.00300
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00361	-0.00390	-0.00388
	(A2 * B1 * B2 * !C1 * !Y)	0.00305	0.00304	0.00300
	(A2 * B1 * B2 * !C1 * !Y)	-0.00361	-0.00389	-0.00388
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00314	0.00305	0.00301
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00343	-0.00380	-0.00379
	(A2 * !B1 * C1 * C2 * !Y)	0.00315	0.00305	0.00301
	(A2 * !B1 * C1 * C2 * !Y)	-0.00341	-0.00381	-0.00379
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00290	0.00293	0.00291
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00397	-0.00401	-0.00398
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00291	0.00292	0.00291
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00399	-0.00400	-0.00398
	(!A2 * B1 * B2 * !C1 * !Y)	0.00288	0.00291	0.00288
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00399	-0.00400	-0.00398
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00291	0.00293	0.00291
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00399	-0.00401	-0.00398
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00099	0.00099	0.00095
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00467	-0.00468	-0.00473
	(!A2 * B1 * !B2 * !C1 * Y)	0.00099	0.00099	0.00095
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00467	-0.00468	-0.00473
	(!A2 * !B1 * C1 * C2 * !Y)	0.00289	0.00290	0.00289
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00399	-0.00399	-0.00398
	(!A2 * !B1 * C1 * !C2 * Y)	0.00099	0.00099	0.00095
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00467	-0.00468	-0.00473
	(!A2 * !B1 * !C1 * Y)	0.00099	0.00099	0.00095
	(!A2 * !B1 * !C1 * Y)	-0.00467	-0.00468	-0.00473

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)	-0.00146	-0.00146	-0.00145
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00192	0.00192	0.00191
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00145	-0.00146	-0.00145
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00192	0.00192	0.00191
	(A2 * B1 * B2 * !C1 * !Y)	-0.00145	-0.00146	-0.00145
	(A2 * B1 * B2 * !C1 * !Y)	0.00192	0.00193	0.00191
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00145	-0.00145	-0.00144
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00187	0.00189	0.00187
	(A2 * !B1 * C1 * C2 * !Y)	-0.00145	-0.00145	-0.00144
	(A2 * !B1 * C1 * C2 * !Y)	0.00187	0.00189	0.00187
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00136	-0.00139	-0.00138
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00197	0.00198	0.00197
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00135	-0.00139	-0.00139
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00197	0.00197	0.00197
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00135	-0.00139	-0.00139
	(!A2 * B1 * B2 * !C1 * !Y)	0.00197	0.00198	0.00197
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00135	-0.00139	-0.00139
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00197	0.00198	0.00197
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00048	-0.00048	-0.00048
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00225	0.00229	0.00226
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00048	-0.00048	-0.00048
	(!A2 * B1 * !B2 * !C1 * Y)	0.00225	0.00229	0.00226
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00135	-0.00139	-0.00139
	(!A2 * !B1 * C1 * C2 * !Y)	0.00197	0.00198	0.00197
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00048	-0.00048	-0.00048
	(!A2 * !B1 * C1 * !C2 * Y)	0.00225	0.00229	0.00226
	(!A2 * !B1 * !C1 * Y)	-0.00048	-0.00049	-0.00048
	(!A2 * !B1 * !C1 * Y)	0.00225	0.00229	0.00226

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	-0.00300	-0.00301	-0.00300
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00388	0.00389	0.00388
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00299	-0.00301	-0.00300
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00386	0.00390	0.00388
	(A2 * B1 * B2 * !C1 * !Y)	-0.00299	-0.00300	-0.00300
	(A2 * B1 * B2 * !C1 * !Y)	0.00386	0.00389	0.00388
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00299	-0.00300	-0.00298
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00377	0.00380	0.00379
	(A2 * !B1 * C1 * C2 * !Y)	-0.00298	-0.00300	-0.00298
	(A2 * !B1 * C1 * C2 * !Y)	0.00377	0.00381	0.00379
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00279	-0.00291	-0.00291
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00397	0.00403	0.00399
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00280	-0.00292	-0.00291
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00401	0.00402	0.00400
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00280	-0.00291	-0.00288
	(!A2 * B1 * B2 * !C1 * !Y)	0.00401	0.00402	0.00400
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00280	-0.00292	-0.00291
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00401	0.00402	0.00400
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00093	-0.00095	-0.00093
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00472	0.00481	0.00474
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00093	-0.00095	-0.00093
	(!A2 * B1 * !B2 * !C1 * Y)	0.00472	0.00481	0.00474
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00279	-0.00290	-0.00289
	(!A2 * !B1 * C1 * C2 * !Y)	0.00399	0.00403	0.00400
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00093	-0.00095	-0.00093
	(!A2 * !B1 * C1 * !C2 * Y)	0.00471	0.00481	0.00474
	(!A2 * !B1 * !C1 * Y)	-0.00093	-0.00095	-0.00093
	(!A2 * !B1 * !C1 * Y)	0.00471	0.00481	0.00474

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)	0.00151	0.00152	0.00150
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00182	-0.00192	-0.00191
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00152	0.00152	0.00151
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00180	-0.00192	-0.00191
	(A1 * B1 * B2 * !C1 * !Y)	0.00152	0.00152	0.00151
	(A1 * B1 * B2 * !C1 * !Y)	-0.00180	-0.00192	-0.00191
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00156	0.00152	0.00151
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00171	-0.00188	-0.00187
	(A1 * !B1 * C1 * C2 * !Y)	0.00156	0.00152	0.00151
	(A1 * !B1 * C1 * C2 * !Y)	-0.00171	-0.00188	-0.00187
	(!A1 * B1 * B2 * !Y)	0.00144	0.00146	0.00144
	(!A1 * B1 * B2 * !Y)	-0.00195	-0.00197	-0.00196
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00144	0.00146	0.00145
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00195	-0.00197	-0.00196
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00144	0.00146	0.00145
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00195	-0.00197	-0.00196
	(!A1 * B1 * !B2 * !C1 * Y)	0.00144	0.00146	0.00145
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00195	-0.00197	-0.00196
	(!A1 * !B1 * C1 * !C2 * Y)	0.00144	0.00145	0.00145
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00195	-0.00196	-0.00196
	(!A1 * !B1 * !C1 * Y)	0.00144	0.00145	0.00145
	(!A1 * !B1 * !C1 * Y)	-0.00195	-0.00196	-0.00196

	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00283	0.00285	0.00282
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00344	-0.00364	-0.00362
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00285	0.00286	0.00283
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00340	-0.00364	-0.00362
	(A1 * B1 * B2 * !C1 * !Y)	0.00285	0.00286	0.00283
	(A1 * B1 * B2 * !C1 * !Y)	-0.00340	-0.00364	-0.00362
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00293	0.00286	0.00283
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00326	-0.00356	-0.00354
	(A1 * !B1 * C1 * C2 * !Y)	0.00293	0.00286	0.00283
	(A1 * !B1 * C1 * C2 * !Y)	-0.00325	-0.00356	-0.00354
	(!A1 * B1 * B2 * !Y)	0.00270	0.00274	0.00271
sky130_fd_sc_hs__a222oi_2	**(!A1 * B1 * B2 * !Y)**	-0.00369	-0.00371	-0.00370
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00270	0.00275	0.00271
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00369	-0.00371	-0.00369
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00261	0.00262	0.00262
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00378	-0.00380	-0.00379
	(!A1 * B1 * !B2 * !C1 * Y)	0.00261	0.00262	0.00262
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00378	-0.00380	-0.00379
	(!A1 * !B1 * C1 * !C2 * Y)	0.00261	0.00263	0.00262
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00379	-0.00380	-0.00379
	(!A1 * !B1 * !C1 * Y)	0.00261	0.00263	0.00262
	(!A1 * !B1 * !C1 * Y)	-0.00379	-0.00380	-0.00379

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)**	-0.00150	-0.00151	-0.00150
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00190	0.00192	0.00191
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00150	-0.00151	-0.00150
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00190	0.00192	0.00191
	(A1 * B1 * B2 * !C1 * !Y)	-0.00150	-0.00151	-0.00150
	(A1 * B1 * B2 * !C1 * !Y)	0.00190	0.00192	0.00191
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00150	-0.00151	-0.00150
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00186	0.00189	0.00187
	(A1 * !B1 * C1 * C2 * !Y)	-0.00150	-0.00151	-0.00150
	(A1 * !B1 * C1 * C2 * !Y)	0.00186	0.00189	0.00187
	(!A1 * B1 * B2 * !Y)	-0.00141	-0.00145	-0.00144
	(!A1 * B1 * B2 * !Y)	0.00195	0.00198	0.00197
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00141	-0.00145	-0.00145
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00197	0.00198	0.00197
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00136	-0.00145	-0.00145
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00204	0.00199	0.00197
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00136	-0.00145	-0.00145
	(!A1 * B1 * !B2 * !C1 * Y)	0.00204	0.00199	0.00197
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00136	-0.00145	-0.00145
	(!A1 * !B1 * C1 * !C2 * Y)	0.00204	0.00199	0.00197
	(!A1 * !B1 * !C1 * Y)	-0.00136	-0.00145	-0.00145
	(!A1 * !B1 * !C1 * Y)	0.00204	0.00199	0.00197

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	-0.00282	-0.00283	-0.00282
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00362	0.00364	0.00362
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00281	-0.00283	-0.00282
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00361	0.00364	0.00362
	(A1 * B1 * B2 * !C1 * !Y)	-0.00281	-0.00283	-0.00282
	(A1 * B1 * B2 * !C1 * !Y)	0.00361	0.00364	0.00362
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00281	-0.00282	-0.00281
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00353	0.00356	0.00354
	(A1 * !B1 * C1 * C2 * !Y)	-0.00281	-0.00282	-0.00281
	(A1 * !B1 * C1 * C2 * !Y)	0.00353	0.00356	0.00354
	(!A1 * B1 * B2 * !Y)	-0.00263	-0.00271	-0.00271
	(!A1 * B1 * B2 * !Y)	0.00370	0.00371	0.00371
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00262	-0.00270	-0.00271
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00370	0.00371	0.00372
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00242	-0.00262	-0.00262
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00394	0.00384	0.00380
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00242	-0.00262	-0.00262
	(!A1 * B1 * !B2 * !C1 * Y)	0.00394	0.00384	0.00380
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00242	-0.00263	-0.00262
	(!A1 * !B1 * C1 * !C2 * Y)	0.00394	0.00384	0.00380
	(!A1 * !B1 * !C1 * Y)	-0.00242	-0.00263	-0.00262
	(!A1 * !B1 * !C1 * Y)	0.00394	0.00384	0.00380

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)**	0.00150	0.00151	0.00148
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00135	-0.00138	-0.00136
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00145	0.00147	0.00145
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00105	-0.00106	-0.00106
	(A1 * A2 * B2 * !C1 * !Y)	0.00145	0.00147	0.00145
	(A1 * A2 * B2 * !C1 * !Y)	-0.00105	-0.00106	-0.00106
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00140	0.00143	0.00140
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00130	-0.00131	-0.00129
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00139	0.00142	0.00139
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00105	-0.00106	-0.00105
	(A1 * A2 * !B2 * !C1 * !Y)	0.00139	0.00142	0.00139
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00105	-0.00106	-0.00105
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00176	0.00147	0.00144
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00153	-0.00189	-0.00190
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00138	0.00139	0.00139
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00192	-0.00193	-0.00192
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00046	0.00047	0.00045
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00221	-0.00222	-0.00224
	(A1 * !A2 * !B2 * !C1 * Y)	0.00046	0.00047	0.00045
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00221	-0.00222	-0.00224
	(!A1 * B2 * C1 * C2 * !Y)	0.00176	0.00147	0.00144
	(!A1 * B2 * C1 * C2 * !Y)	-0.00155	-0.00190	-0.00190
	(!A1 * !B2 * C1 * C2 * !Y)	0.00138	0.00140	0.00138
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00192	-0.00193	-0.00192
	(!A1 * !B2 * C1 * !C2 * Y)	0.00046	0.00047	0.00045
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00221	-0.00222	-0.00224
	(!A1 * !B2 * !C1 * Y)	0.00046	0.00047	0.00045
	(!A1 * !B2 * !C1 * Y)	-0.00221	-0.00222	-0.00224

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	0.00313	0.00316	0.00307
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00277	-0.00275	-0.00275
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00302	0.00305	0.00301
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00220	-0.00221	-0.00219
	(A1 * A2 * B2 * !C1 * !Y)	0.00302	0.00305	0.00301
	(A1 * A2 * B2 * !C1 * !Y)	-0.00220	-0.00221	-0.00219
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00295	0.00297	0.00294
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00260	-0.00265	-0.00261
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00292	0.00294	0.00292
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00217	-0.00219	-0.00219
	(A1 * A2 * !B2 * !C1 * !Y)	0.00291	0.00293	0.00290
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00219	-0.00219	-0.00219
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00371	0.00306	0.00300
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00313	-0.00390	-0.00391
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00289	0.00292	0.00290
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00396	-0.00399	-0.00396
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00096	0.00096	0.00092
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00468	-0.00470	-0.00473
	(A1 * !A2 * !B2 * !C1 * Y)	0.00096	0.00096	0.00092
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00468	-0.00470	-0.00473
	(!A1 * B2 * C1 * C2 * !Y)	0.00369	0.00306	0.00300
	(!A1 * B2 * C1 * C2 * !Y)	-0.00316	-0.00390	-0.00391
	(!A1 * !B2 * C1 * C2 * !Y)	0.00290	0.00290	0.00290
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00397	-0.00397	-0.00396
	(!A1 * !B2 * C1 * !C2 * Y)	0.00096	0.00096	0.00092
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00468	-0.00470	-0.00473
	(!A1 * !B2 * !C1 * Y)	0.00096	0.00096	0.00092
	(!A1 * !B2 * !C1 * Y)	-0.00468	-0.00470	-0.00473

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)	-0.00146	-0.00147	-0.00146
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00135	0.00138	0.00136
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00136	-0.00137	-0.00139
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00114	0.00114	0.00112
	(A1 * A2 * B2 * !C1 * !Y)	-0.00136	-0.00137	-0.00139
	(A1 * A2 * B2 * !C1 * !Y)	0.00114	0.00114	0.00112
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00137	-0.00142	-0.00140
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00130	0.00131	0.00129
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00136	-0.00140	-0.00139
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00106	0.00106	0.00106
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00136	-0.00140	-0.00139
	(A1 * A2 * !B2 * !C1 * !Y)	0.00105	0.00106	0.00106
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00144	-0.00143	-0.00142
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00190	0.00189	0.00190
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00134	-0.00138	-0.00139
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00193	0.00194	0.00193
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00044	-0.00045	-0.00044
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00224	0.00227	0.00224
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00044	-0.00045	-0.00044
	(A1 * !A2 * !B2 * !C1 * Y)	0.00224	0.00227	0.00224
	(!A1 * B2 * C1 * C2 * !Y)	-0.00144	-0.00143	-0.00143
	(!A1 * B2 * C1 * C2 * !Y)	0.00190	0.00190	0.00190
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00134	-0.00138	-0.00138
	(!A1 * !B2 * C1 * C2 * !Y)	0.00193	0.00194	0.00193
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00044	-0.00045	-0.00044
	(!A1 * !B2 * C1 * !C2 * Y)	0.00224	0.00227	0.00224
	(!A1 * !B2 * !C1 * Y)	-0.00044	-0.00045	-0.00044
	(!A1 * !B2 * !C1 * Y)	0.00224	0.00227	0.00224

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	-0.00303	-0.00302	-0.00303
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00277	0.00275	0.00275
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00286	-0.00289	-0.00290
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00231	0.00234	0.00231
	(A1 * A2 * B2 * !C1 * !Y)	-0.00286	-0.00289	-0.00290
	(A1 * A2 * B2 * !C1 * !Y)	0.00231	0.00233	0.00231
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00282	-0.00295	-0.00294
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00260	0.00265	0.00261
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00282	-0.00293	-0.00292
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00220	0.00220	0.00219
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00282	-0.00293	-0.00290
	(A1 * A2 * !B2 * !C1 * !Y)	0.00220	0.00220	0.00219
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00296	-0.00298	-0.00295
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00388	0.00391	0.00391
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00279	-0.00291	-0.00289
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00399	0.00400	0.00398
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00089	-0.00092	-0.00090
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00471	0.00480	0.00474
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00089	-0.00092	-0.00090
	(A1 * !A2 * !B2 * !C1 * Y)	0.00471	0.00480	0.00474
	(!A1 * B2 * C1 * C2 * !Y)	-0.00296	-0.00298	-0.00295
	(!A1 * B2 * C1 * C2 * !Y)	0.00388	0.00392	0.00391
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00278	-0.00290	-0.00289
	(!A1 * !B2 * C1 * C2 * !Y)	0.00397	0.00400	0.00398
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00091	-0.00092	-0.00090
	(!A1 * !B2 * C1 * !C2 * Y)	0.00475	0.00480	0.00474
	(!A1 * !B2 * !C1 * Y)	-0.00091	-0.00092	-0.00090
	(!A1 * !B2 * !C1 * Y)	0.00475	0.00480	0.00474

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)	0.00162	0.00164	0.00161
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00138	-0.00138	-0.00137
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00159	0.00160	0.00158
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00106	-0.00107	-0.00106
	(A1 * A2 * B1 * !C1 * !Y)	0.00160	0.00160	0.00158
	(A1 * A2 * B1 * !C1 * !Y)	-0.00107	-0.00107	-0.00106
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00154	0.00157	0.00154
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00130	-0.00131	-0.00129
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00152	0.00155	0.00152
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00105	-0.00106	-0.00106
	(A1 * A2 * !B1 * !C1 * !Y)	0.00152	0.00155	0.00152
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00105	-0.00106	-0.00106
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00192	0.00161	0.00157
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00154	-0.00189	-0.00191
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00151	0.00152	0.00151
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00192	-0.00194	-0.00193
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00134	0.00135	0.00134
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00210	-0.00211	-0.00210
	(A1 * !A2 * !B1 * !C1 * Y)	0.00134	0.00135	0.00134
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00210	-0.00211	-0.00210
	(!A1 * B1 * C1 * C2 * !Y)	0.00192	0.00161	0.00157
	(!A1 * B1 * C1 * C2 * !Y)	-0.00154	-0.00189	-0.00191
	(!A1 * !B1 * C1 * !C2 * Y)	0.00134	0.00135	0.00134
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00210	-0.00211	-0.00210
	(!A1 * !B1 * !C1 * Y)	0.00134	0.00135	0.00134
	(!A1 * !B1 * !C1 * Y)	-0.00210	-0.00211	-0.00210

	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00305	0.00309	0.00298
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00256	-0.00256	-0.00255
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00296	0.00297	0.00294
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00199	-0.00200	-0.00199
	(A1 * A2 * B1 * !C1 * !Y)	0.00293	0.00297	0.00294
	(A1 * A2 * B1 * !C1 * !Y)	-0.00197	-0.00200	-0.00199
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00285	0.00286	0.00284
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00242	-0.00246	-0.00243
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00285	0.00287	0.00284
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00197	-0.00199	-0.00198
	(A1 * A2 * !B1 * !C1 * !Y)	0.00285	0.00287	0.00284
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00197	-0.00199	-0.00198
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00367	0.00298	0.00292
sky130_fd_sc_hs__a222oi_2	**(A1 * !A2 * B1 * C1 * C2 * !Y)**	-0.00280	-0.00360	-0.00364
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00280	0.00284	0.00282
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00368	-0.00371	-0.00370
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00268	0.00270	0.00269
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00381	-0.00383	-0.00383
	(A1 * !A2 * !B1 * !C1 * Y)	0.00268	0.00270	0.00269
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00381	-0.00383	-0.00383
	(!A1 * B1 * C1 * C2 * !Y)	0.00368	0.00297	0.00292
	(!A1 * B1 * C1 * C2 * !Y)	-0.00283	-0.00360	-0.00364
	(!A1 * !B1 * C1 * !C2 * Y)	0.00268	0.00270	0.00269
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00381	-0.00383	-0.00383
	(!A1 * !B1 * !C1 * Y)	0.00268	0.00270	0.00269
	(!A1 * !B1 * !C1 * Y)	-0.00381	-0.00383	-0.00383

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)	-0.00160	-0.00160	-0.00159
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00138	0.00138	0.00137
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00149	-0.00150	-0.00152
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00114	0.00114	0.00112
	(A1 * A2 * B1 * !C1 * !Y)	-0.00149	-0.00150	-0.00152
	(A1 * A2 * B1 * !C1 * !Y)	0.00114	0.00114	0.00112
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00151	-0.00155	-0.00154
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00130	0.00131	0.00129
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00149	-0.00152	-0.00152
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00107	0.00106	0.00106
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00149	-0.00152	-0.00152
	(A1 * A2 * !B1 * !C1 * !Y)	0.00107	0.00106	0.00106
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00156	-0.00156	-0.00155
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00191	0.00189	0.00191
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00148	-0.00152	-0.00151
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00194	0.00196	0.00194
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00125	-0.00135	-0.00134
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00218	0.00213	0.00211
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00125	-0.00135	-0.00134
	(A1 * !A2 * !B1 * !C1 * Y)	0.00218	0.00213	0.00211
	(!A1 * B1 * C1 * C2 * !Y)	-0.00156	-0.00156	-0.00155
	(!A1 * B1 * C1 * C2 * !Y)	0.00191	0.00189	0.00191
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00125	-0.00135	-0.00134
	(!A1 * !B1 * C1 * !C2 * Y)	0.00218	0.00213	0.00211
	(!A1 * !B1 * !C1 * Y)	-0.00125	-0.00135	-0.00134
	(!A1 * !B1 * !C1 * Y)	0.00218	0.00213	0.00211

	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00295	-0.00296	-0.00295
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00256	0.00256	0.00255
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00278	-0.00281	-0.00282
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00210	0.00212	0.00210
	(A1 * A2 * B1 * !C1 * !Y)	-0.00278	-0.00281	-0.00282
	(A1 * A2 * B1 * !C1 * !Y)	0.00210	0.00212	0.00210
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00275	-0.00286	-0.00284
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00242	0.00246	0.00243
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00273	-0.00283	-0.00284
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00198	0.00201	0.00199
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00273	-0.00282	-0.00284
	(A1 * A2 * !B1 * !C1 * !Y)	0.00198	0.00199	0.00199
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00289	-0.00290	-0.00288
sky130_fd_sc_hs__a222oi_2	**(A1 * !A2 * B1 * C1 * C2 * !Y)**	0.00360	0.00363	0.00364
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00271	-0.00282	-0.00282
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00370	0.00376	0.00372
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00246	-0.00269	-0.00269
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00398	0.00386	0.00383
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00246	-0.00269	-0.00269
	(A1 * !A2 * !B1 * !C1 * Y)	0.00398	0.00386	0.00383
	(!A1 * B1 * C1 * C2 * !Y)	-0.00289	-0.00291	-0.00288
	(!A1 * B1 * C1 * C2 * !Y)	0.00361	0.00365	0.00364
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00246	-0.00269	-0.00269
	(!A1 * !B1 * C1 * !C2 * Y)	0.00398	0.00386	0.00383
	(!A1 * !B1 * !C1 * Y)	-0.00246	-0.00269	-0.00269
	(!A1 * !B1 * !C1 * Y)	0.00398	0.00386	0.00383

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)	0.00173	0.00175	0.00173
	(A1 * B1 * B2 * C2 * !Y)	-0.00093	-0.00094	-0.00093
	(A1 * B1 * B2 * !C2 * !Y)	0.00167	0.00170	0.00167
	(A1 * B1 * B2 * !C2 * !Y)	-0.00093	-0.00094	-0.00093
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00173	0.00175	0.00173
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00093	-0.00094	-0.00093
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00168	0.00169	0.00168
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00093	-0.00093	-0.00093
	(A1 * A2 * !B1 * C2 * !Y)	0.00173	0.00175	0.00173
	(A1 * A2 * !B1 * C2 * !Y)	-0.00093	-0.00094	-0.00093
	(A1 * A2 * !B1 * !C2 * !Y)	0.00167	0.00170	0.00167
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00093	-0.00094	-0.00093
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00052	0.00052	0.00051
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00227	-0.00228	-0.00229
	(A1 * !A2 * !B1 * !C2 * Y)	0.00052	0.00052	0.00051
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00227	-0.00228	-0.00229
	(!A1 * B1 * B2 * C2 * !Y)	0.00173	0.00175	0.00173
	(!A1 * B1 * B2 * C2 * !Y)	-0.00093	-0.00094	-0.00093
	(!A1 * B1 * B2 * !C2 * !Y)	0.00167	0.00170	0.00167
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00093	-0.00093	-0.00093
	(!A1 * B1 * !B2 * !C2 * Y)	0.00052	0.00052	0.00051
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00227	-0.00228	-0.00229
	(!A1 * !B1 * !C2 * Y)	0.00052	0.00052	0.00051
	(!A1 * !B1 * !C2 * Y)	-0.00227	-0.00228	-0.00229

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	0.00307	0.00309	0.00306
	(A1 * B1 * B2 * C2 * !Y)	-0.00183	-0.00183	-0.00182
	(A1 * B1 * B2 * !C2 * !Y)	0.00292	0.00295	0.00293
	(A1 * B1 * B2 * !C2 * !Y)	-0.00180	-0.00182	-0.00181
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00305	0.00309	0.00306
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00181	-0.00183	-0.00181
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00292	0.00296	0.00293
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00179	-0.00182	-0.00181
	(A1 * A2 * !B1 * C2 * !Y)	0.00305	0.00309	0.00306
	(A1 * A2 * !B1 * C2 * !Y)	-0.00181	-0.00183	-0.00181
	(A1 * A2 * !B1 * !C2 * !Y)	0.00293	0.00299	0.00293
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00181	-0.00182	-0.00181
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00092	0.00093	0.00089
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00421	-0.00425	-0.00429
	(A1 * !A2 * !B1 * !C2 * Y)	0.00092	0.00093	0.00089
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00421	-0.00425	-0.00429
	(!A1 * B1 * B2 * C2 * !Y)	0.00305	0.00309	0.00306
	(!A1 * B1 * B2 * C2 * !Y)	-0.00181	-0.00184	-0.00182
	(!A1 * B1 * B2 * !C2 * !Y)	0.00293	0.00296	0.00294
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00181	-0.00182	-0.00181
	(!A1 * B1 * !B2 * !C2 * Y)	0.00092	0.00093	0.00089
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00421	-0.00425	-0.00429
	(!A1 * !B1 * !C2 * Y)	0.00092	0.00093	0.00089
	(!A1 * !B1 * !C2 * Y)	-0.00421	-0.00425	-0.00429

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)**	-0.00161	-0.00162	-0.00172
	(A1 * B1 * B2 * C2 * !Y)	0.00105	0.00105	0.00096
	(A1 * B1 * B2 * !C2 * !Y)	-0.00164	-0.00169	-0.00167
	(A1 * B1 * B2 * !C2 * !Y)	0.00093	0.00094	0.00093
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00142	-0.00143	-0.00168
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00117	0.00117	0.00099
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00164	-0.00168	-0.00168
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00093	0.00093	0.00093
	(A1 * A2 * !B1 * C2 * !Y)	-0.00141	-0.00143	-0.00168
	(A1 * A2 * !B1 * C2 * !Y)	0.00117	0.00117	0.00099
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00164	-0.00169	-0.00167
	(A1 * A2 * !B1 * !C2 * !Y)	0.00093	0.00094	0.00093
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00051	-0.00051	-0.00050
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00230	0.00232	0.00230
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00051	-0.00051	-0.00050
	(A1 * !A2 * !B1 * !C2 * Y)	0.00230	0.00232	0.00230
	(!A1 * B1 * B2 * C2 * !Y)	-0.00159	-0.00162	-0.00172
	(!A1 * B1 * B2 * C2 * !Y)	0.00104	0.00105	0.00096
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00164	-0.00168	-0.00167
	(!A1 * B1 * B2 * !C2 * !Y)	0.00093	0.00093	0.00093
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00051	-0.00051	-0.00050
	(!A1 * B1 * !B2 * !C2 * Y)	0.00230	0.00232	0.00230
	(!A1 * !B1 * !C2 * Y)	-0.00051	-0.00051	-0.00050
	(!A1 * !B1 * !C2 * Y)	0.00230	0.00233	0.00230

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	-0.00280	-0.00284	-0.00303
	(A1 * B1 * B2 * C2 * !Y)	0.00202	0.00203	0.00187
	(A1 * B1 * B2 * !C2 * !Y)	-0.00286	-0.00295	-0.00293
	(A1 * B1 * B2 * !C2 * !Y)	0.00180	0.00182	0.00181
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00249	-0.00253	-0.00296
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00222	0.00223	0.00191
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00285	-0.00296	-0.00293
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00180	0.00182	0.00181
	(A1 * A2 * !B1 * C2 * !Y)	-0.00249	-0.00253	-0.00296
	(A1 * A2 * !B1 * C2 * !Y)	0.00222	0.00223	0.00190
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00287	-0.00295	-0.00293
	(A1 * A2 * !B1 * !C2 * !Y)	0.00182	0.00182	0.00181
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00087	-0.00089	-0.00087
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00428	0.00435	0.00430
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00087	-0.00086	-0.00087
	(A1 * !A2 * !B1 * !C2 * Y)	0.00428	0.00428	0.00430
	(!A1 * B1 * B2 * C2 * !Y)	-0.00280	-0.00284	-0.00303
	(!A1 * B1 * B2 * C2 * !Y)	0.00203	0.00204	0.00187
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00287	-0.00296	-0.00294
	(!A1 * B1 * B2 * !C2 * !Y)	0.00182	0.00183	0.00182
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00087	-0.00089	-0.00087
	(!A1 * B1 * !B2 * !C2 * Y)	0.00428	0.00435	0.00430
	(!A1 * !B1 * !C2 * Y)	-0.00087	-0.00087	-0.00087
	(!A1 * !B1 * !C2 * Y)	0.00428	0.00428	0.00430

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)**	0.00181	0.00182	0.00180
	(A1 * B1 * B2 * C1 * !Y)	-0.00096	-0.00096	-0.00095
	(A1 * B1 * B2 * !C1 * !Y)	0.00174	0.00177	0.00174
	(A1 * B1 * B2 * !C1 * !Y)	-0.00095	-0.00095	-0.00095
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00181	0.00182	0.00180
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00096	-0.00096	-0.00095
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00174	0.00178	0.00174
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00094	-0.00095	-0.00094
	(A1 * A2 * !B1 * C1 * !Y)	0.00181	0.00182	0.00180
	(A1 * A2 * !B1 * C1 * !Y)	-0.00096	-0.00096	-0.00095
	(A1 * A2 * !B1 * !C1 * !Y)	0.00174	0.00178	0.00174
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00094	-0.00095	-0.00094
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00137	0.00138	0.00137
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00214	-0.00215	-0.00215
	(A1 * !A2 * !B1 * !C1 * Y)	0.00137	0.00137	0.00137
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00214	-0.00215	-0.00215
	(!A1 * B1 * B2 * C1 * !Y)	0.00181	0.00182	0.00180
	(!A1 * B1 * B2 * C1 * !Y)	-0.00096	-0.00096	-0.00095
	(!A1 * B1 * B2 * !C1 * !Y)	0.00174	0.00178	0.00174
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00094	-0.00096	-0.00095
	(!A1 * B1 * !B2 * !C1 * Y)	0.00137	0.00138	0.00137
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00214	-0.00215	-0.00215
	(!A1 * !B1 * !C1 * Y)	0.00136	0.00138	0.00136
	(!A1 * !B1 * !C1 * Y)	-0.00214	-0.00216	-0.00214

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00362	0.00364	0.00361
	(A1 * B1 * B2 * C1 * !Y)	-0.00190	-0.00190	-0.00189
	(A1 * B1 * B2 * !C1 * !Y)	0.00349	0.00356	0.00350
	(A1 * B1 * B2 * !C1 * !Y)	-0.00188	-0.00188	-0.00188
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00363	0.00367	0.00361
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00190	-0.00192	-0.00188
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00350	0.00357	0.00350
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00187	-0.00189	-0.00188
	(A1 * A2 * !B1 * C1 * !Y)	0.00362	0.00367	0.00361
	(A1 * A2 * !B1 * C1 * !Y)	-0.00190	-0.00192	-0.00188
	(A1 * A2 * !B1 * !C1 * !Y)	0.00350	0.00357	0.00350
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00187	-0.00189	-0.00188
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00274	0.00275	0.00273
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00430	-0.00431	-0.00430
	(A1 * !A2 * !B1 * !C1 * Y)	0.00274	0.00276	0.00273
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00430	-0.00432	-0.00430
	(!A1 * B1 * B2 * C1 * !Y)	0.00362	0.00367	0.00361
	(!A1 * B1 * B2 * C1 * !Y)	-0.00191	-0.00192	-0.00189
	(!A1 * B1 * B2 * !C1 * !Y)	0.00350	0.00357	0.00350
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00187	-0.00190	-0.00188
	(!A1 * B1 * !B2 * !C1 * Y)	0.00274	0.00272	0.00273
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00430	-0.00429	-0.00430
	(!A1 * !B1 * !C1 * Y)	0.00274	0.00276	0.00273
	(!A1 * !B1 * !C1 * Y)	-0.00430	-0.00432	-0.00430

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)**	-0.00167	-0.00169	-0.00179
	(A1 * B1 * B2 * C1 * !Y)	0.00106	0.00106	0.00098
	(A1 * B1 * B2 * !C1 * !Y)	-0.00172	-0.00175	-0.00174
	(A1 * B1 * B2 * !C1 * !Y)	0.00095	0.00095	0.00095
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00149	-0.00151	-0.00175
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00119	0.00119	0.00100
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00172	-0.00175	-0.00174
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00095	0.00095	0.00095
	(A1 * A2 * !B1 * C1 * !Y)	-0.00149	-0.00151	-0.00175
	(A1 * A2 * !B1 * C1 * !Y)	0.00119	0.00119	0.00100
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00172	-0.00175	-0.00174
	(A1 * A2 * !B1 * !C1 * !Y)	0.00095	0.00095	0.00095
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00128	-0.00138	-0.00137
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00222	0.00217	0.00215
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00128	-0.00137	-0.00137
	(A1 * !A2 * !B1 * !C1 * Y)	0.00222	0.00217	0.00215
	(!A1 * B1 * B2 * C1 * !Y)	-0.00167	-0.00169	-0.00179
	(!A1 * B1 * B2 * C1 * !Y)	0.00106	0.00107	0.00098
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00172	-0.00175	-0.00174
	(!A1 * B1 * B2 * !C1 * !Y)	0.00095	0.00096	0.00095
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00128	-0.00138	-0.00137
	(!A1 * B1 * !B2 * !C1 * Y)	0.00222	0.00217	0.00215
	(!A1 * !B1 * !C1 * Y)	-0.00128	-0.00138	-0.00136
	(!A1 * !B1 * !C1 * Y)	0.00222	0.00217	0.00215

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00334	-0.00339	-0.00358
	(A1 * B1 * B2 * C1 * !Y)	0.00208	0.00210	0.00194
	(A1 * B1 * B2 * !C1 * !Y)	-0.00344	-0.00349	-0.00350
	(A1 * B1 * B2 * !C1 * !Y)	0.00189	0.00188	0.00188
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00303	-0.00308	-0.00351
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00228	0.00230	0.00198
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00344	-0.00351	-0.00350
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00189	0.00189	0.00188
	(A1 * A2 * !B1 * C1 * !Y)	-0.00304	-0.00308	-0.00351
	(A1 * A2 * !B1 * C1 * !Y)	0.00228	0.00230	0.00198
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00344	-0.00351	-0.00350
	(A1 * A2 * !B1 * !C1 * !Y)	0.00189	0.00189	0.00188
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00257	-0.00273	-0.00273
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00444	0.00433	0.00430
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00257	-0.00273	-0.00273
	(A1 * !A2 * !B1 * !C1 * Y)	0.00443	0.00433	0.00430
	(!A1 * B1 * B2 * C1 * !Y)	-0.00334	-0.00339	-0.00358
	(!A1 * B1 * B2 * C1 * !Y)	0.00209	0.00211	0.00194
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00343	-0.00351	-0.00350
	(!A1 * B1 * B2 * !C1 * !Y)	0.00190	0.00190	0.00189
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00257	-0.00272	-0.00273
	(!A1 * B1 * !B2 * !C1 * Y)	0.00443	0.00433	0.00430
	(!A1 * !B1 * !C1 * Y)	-0.00257	-0.00273	-0.00273
	(!A1 * !B1 * !C1 * Y)	0.00443	0.00432	0.00431

SKY130_FD_SC_HS__A222Ox

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00256	0.00261	0.00265	0.00255	0.00263	0.00269	1.19170
sky130_fd_sc_hs__a222o_2	0.00260	0.00246	0.00258	0.00254	0.00260	0.00274	2.00960

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222o_1	0.00000	0.13953	0.40065
sky130_fd_sc_hs__a222o_2	0.00000	0.17626	0.40808

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)	0.09687	0.62755	6.19852
	A2->X (RR)	0.10095	0.61768	6.13546
	B1->X (RR)	0.08974	0.60401	6.03455
	B2->X (RR)	0.09309	0.59663	6.00595
	C1->X (RR)	0.07788	0.57286	5.97607
	C2->X (RR)	0.08135	0.56717	5.94946
sky130_fd_sc_hs__a222o_2	A1->X (RR)	0.11376	0.58955	6.12034
	A2->X (RR)	0.11900	0.56760	6.07888
	B1->X (RR)	0.10029	0.55399	5.99294
	B2->X (RR)	0.10376	0.54286	5.97055
	C1->X (RR)	0.08673	0.52595	5.95012
	C2->X (RR)	0.09083	0.51636	5.90195

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222o_1	A1->X (FF)	0.28152	0.74778	5.12204
	A2->X (FF)	0.30032	0.77340	5.19171
	B1->X (FF)	0.26127	0.74851	5.37800
	B2->X (FF)	0.27364	0.77472	5.44395
	C1->X (FF)	0.19499	0.70603	5.33347
	C2->X (FF)	0.21011	0.73051	5.37774
sky130_fd_sc_hs__a222o_2	A1->X (FF)	0.33433	0.77057	4.94445
	A2->X (FF)	0.33883	0.79034	5.00674
	B1->X (FF)	0.31317	0.77912	5.18540
	B2->X (FF)	0.31416	0.78476	5.19087
	C1->X (FF)	0.24475	0.73134	5.05144
	C2->X (FF)	0.26760	0.76342	5.15645

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.01809	0.01811	0.04358
	A1	0.00880	0.00882	0.03471
	A2	0.01917	0.01891	0.03740
	A2	0.00882	0.00856	0.02749
	B1	0.01398	0.01489	0.03963
	B1	0.00659	0.00751	0.03272
	B2	0.01490	0.01545	0.03708
	B2	0.00671	0.00726	0.02936
	C1	0.00895	0.01038	0.04378
	C1	0.00353	0.00499	0.03884
	C2	0.00991	0.01085	0.04187
	C2	0.00360	0.00455	0.03603
sky130_fd_sc_hs__a222o_2	A1	0.02120	0.02184	0.04148
	A1	0.01219	0.01284	0.03334
	A2	0.02224	0.02278	0.04586
	A2	0.01209	0.01266	0.03662
	B1	0.01653	0.01758	0.03999
	B1	0.00952	0.01059	0.03310
	B2	0.01842	0.01913	0.04071
	B2	0.00951	0.01034	0.03046
	C1	0.01214	0.01328	0.04161
	C1	0.00706	0.00821	0.03671
	C2	0.01319	0.01380	0.03943
	C2	0.00701	0.00764	0.03348

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.00495	0.00486	0.02505
	A1	0.01442	0.01434	0.03443
	A2	0.00525	0.00492	0.02487
	A2	0.01573	0.01538	0.03485
	B1	0.00487	0.00489	0.02950
	B1	0.01231	0.01234	0.03677
	B2	0.00528	0.00541	0.02863
	B2	0.01349	0.01363	0.03680
	C1	0.00476	0.00646	0.04180
	C1	0.01015	0.01185	0.04661
	C2	0.00518	0.00694	0.04153
	C2	0.01143	0.01319	0.04717
sky130_fd_sc_hs__a222o_2	A1	0.00786	0.00693	0.02975
	A1	0.01703	0.01609	0.03729
	A2	0.01013	0.00916	0.03243
	A2	0.02169	0.02023	0.04072
	B1	0.00782	0.00764	0.03175
	B1	0.01929	0.01786	0.03755
	B2	0.01018	0.00937	0.03065
	B2	0.01922	0.01848	0.03958
	C1	0.00764	0.00902	0.03942
	C1	0.01274	0.01405	0.04348
	C2	0.00819	0.00936	0.04051
	C2	0.01431	0.01547	0.04519

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)**	0.00146	0.00148	0.00146
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00181	-0.00191	-0.00190
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00147	0.00148	0.00146
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00179	-0.00191	-0.00190
	(A2 * B1 * B2 * !C1 * X)	0.00147	0.00148	0.00146
	(A2 * B1 * B2 * !C1 * X)	-0.00179	-0.00191	-0.00190
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00151	0.00148	0.00147
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00170	-0.00184	-0.00186
	(A2 * !B1 * C1 * C2 * X)	0.00151	0.00148	0.00147
	(A2 * !B1 * C1 * C2 * X)	-0.00171	-0.00187	-0.00186
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00140	0.00141	0.00140
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00194	-0.00195	-0.00194
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00139	0.00140	0.00140
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00194	-0.00194	-0.00194
	(!A2 * B1 * B2 * !C1 * X)	0.00139	0.00141	0.00140
	(!A2 * B1 * B2 * !C1 * X)	-0.00194	-0.00195	-0.00194
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00140	0.00141	0.00140
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00193	-0.00195	-0.00194
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00048	0.00049	0.00047
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00222	-0.00225	-0.00226
	(!A2 * B1 * !B2 * !C1 * !X)	0.00048	0.00049	0.00047
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00222	-0.00225	-0.00226
	(!A2 * !B1 * C1 * C2 * X)	0.00140	0.00141	0.00140
	(!A2 * !B1 * C1 * C2 * X)	-0.00193	-0.00195	-0.00194
	(!A2 * !B1 * C1 * !C2 * !X)	0.00049	0.00049	0.00047
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00223	-0.00225	-0.00226
	(!A2 * !B1 * !C1 * !X)	0.00049	0.00049	0.00047
	(!A2 * !B1 * !C1 * !X)	-0.00223	-0.00225	-0.00226

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	0.00157	0.00158	0.00157
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00182	-0.00190	-0.00188
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00159	0.00158	0.00157
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00178	-0.00188	-0.00188
	(A2 * B1 * B2 * !C1 * X)	0.00159	0.00159	0.00157
	(A2 * B1 * B2 * !C1 * X)	-0.00178	-0.00188	-0.00188
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00163	0.00159	0.00157
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00168	-0.00183	-0.00184
	(A2 * !B1 * C1 * C2 * X)	0.00163	0.00159	0.00157
	(A2 * !B1 * C1 * C2 * X)	-0.00168	-0.00184	-0.00184
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00151	0.00153	0.00152
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00191	-0.00192	-0.00191
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00152	0.00153	0.00152
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00190	-0.00192	-0.00190
	(!A2 * B1 * B2 * !C1 * X)	0.00152	0.00153	0.00152
	(!A2 * B1 * B2 * !C1 * X)	-0.00190	-0.00192	-0.00190
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00152	0.00153	0.00151
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00193	-0.00194	-0.00192
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00057	0.00057	0.00053
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00228	-0.00229	-0.00233
	(!A2 * B1 * !B2 * !C1 * !X)	0.00057	0.00057	0.00053
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00228	-0.00229	-0.00233
	(!A2 * !B1 * C1 * C2 * X)	0.00151	0.00153	0.00152
	(!A2 * !B1 * C1 * C2 * X)	-0.00192	-0.00194	-0.00192
	(!A2 * !B1 * C1 * !C2 * !X)	0.00057	0.00057	0.00053
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00228	-0.00229	-0.00233
	(!A2 * !B1 * !C1 * !X)	0.00057	0.00057	0.00053
	(!A2 * !B1 * !C1 * !X)	-0.00228	-0.00229	-0.00233

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)	-0.00146	-0.00146	-0.00146
	(A2 * B1 * B2 * C1 * C2 * X)	0.00189	0.00191	0.00190
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00145	-0.00146	-0.00146
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00189	0.00191	0.00190
	(A2 * B1 * B2 * !C1 * X)	-0.00146	-0.00146	-0.00146
	(A2 * B1 * B2 * !C1 * X)	0.00189	0.00191	0.00190
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00145	-0.00145	-0.00145
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00184	0.00184	0.00186
	(A2 * !B1 * C1 * C2 * X)	-0.00145	-0.00146	-0.00145
	(A2 * !B1 * C1 * C2 * X)	0.00184	0.00187	0.00186
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00137	-0.00141	-0.00140
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00195	0.00196	0.00195
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00137	-0.00140	-0.00140
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00195	0.00194	0.00195
	(!A2 * B1 * B2 * !C1 * X)	-0.00137	-0.00140	-0.00140
	(!A2 * B1 * B2 * !C1 * X)	0.00195	0.00195	0.00195
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00137	-0.00140	-0.00140
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00195	0.00195	0.00195
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00047	-0.00047	-0.00046
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00227	0.00228	0.00226
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00047	-0.00047	-0.00046
	(!A2 * B1 * !B2 * !C1 * !X)	0.00227	0.00228	0.00226
	(!A2 * !B1 * C1 * C2 * X)	-0.00136	-0.00140	-0.00140
	(!A2 * !B1 * C1 * C2 * X)	0.00194	0.00196	0.00195
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00047	-0.00047	-0.00046
	(!A2 * !B1 * C1 * !C2 * !X)	0.00227	0.00228	0.00226
	(!A2 * !B1 * !C1 * !X)	-0.00047	-0.00047	-0.00046
	(!A2 * !B1 * !C1 * !X)	0.00227	0.00228	0.00226

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	-0.00156	-0.00157	-0.00157
	(A2 * B1 * B2 * C1 * C2 * X)	0.00187	0.00190	0.00188
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00156	-0.00157	-0.00157
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00187	0.00188	0.00188
	(A2 * B1 * B2 * !C1 * X)	-0.00156	-0.00157	-0.00157
	(A2 * B1 * B2 * !C1 * X)	0.00187	0.00188	0.00188
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00156	-0.00156	-0.00156
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00183	0.00183	0.00184
	(A2 * !B1 * C1 * C2 * X)	-0.00156	-0.00156	-0.00156
	(A2 * !B1 * C1 * C2 * X)	0.00183	0.00184	0.00184
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00146	-0.00153	-0.00152
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00192	0.00193	0.00192
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00146	-0.00153	-0.00152
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00191	0.00193	0.00191
	(!A2 * B1 * B2 * !C1 * X)	-0.00145	-0.00153	-0.00152
	(!A2 * B1 * B2 * !C1 * X)	0.00191	0.00193	0.00191
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00144	-0.00152	-0.00151
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00193	0.00195	0.00193
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00051	-0.00052	-0.00051
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00234	0.00236	0.00234
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00051	-0.00052	-0.00051
	(!A2 * B1 * !B2 * !C1 * !X)	0.00234	0.00236	0.00234
	(!A2 * !B1 * C1 * C2 * X)	-0.00144	-0.00152	-0.00152
	(!A2 * !B1 * C1 * C2 * X)	0.00193	0.00195	0.00193
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00051	-0.00052	-0.00051
	(!A2 * !B1 * C1 * !C2 * !X)	0.00234	0.00236	0.00234
	(!A2 * !B1 * !C1 * !X)	-0.00051	-0.00052	-0.00051
	(!A2 * !B1 * !C1 * !X)	0.00234	0.00236	0.00234

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)	0.00163	0.00165	0.00163
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00175	-0.00185	-0.00183
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00164	0.00165	0.00163
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00173	-0.00184	-0.00183
	(A1 * B1 * B2 * !C1 * X)	0.00164	0.00165	0.00163
	(A1 * B1 * B2 * !C1 * X)	-0.00173	-0.00184	-0.00183
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00168	0.00165	0.00164
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00166	-0.00180	-0.00180
	(A1 * !B1 * C1 * C2 * X)	0.00168	0.00165	0.00164
	(A1 * !B1 * C1 * C2 * X)	-0.00166	-0.00180	-0.00180
	(!A1 * B1 * B2 * X)	0.00157	0.00158	0.00157
	(!A1 * B1 * B2 * X)	-0.00187	-0.00188	-0.00187
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00157	0.00158	0.00157
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00187	-0.00188	-0.00187
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00134	0.00136	0.00134
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00210	-0.00212	-0.00210
	(!A1 * B1 * !B2 * !C1 * !X)	0.00134	0.00136	0.00134
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00210	-0.00212	-0.00210
	(!A1 * !B1 * C1 * !C2 * !X)	0.00134	0.00136	0.00134
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00210	-0.00212	-0.00210
	(!A1 * !B1 * !C1 * !X)	0.00134	0.00136	0.00134
	(!A1 * !B1 * !C1 * !X)	-0.00210	-0.00212	-0.00210

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * C2 * X)**	0.00154	0.00154	0.00153
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00182	-0.00190	-0.00189
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00155	0.00154	0.00153
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00179	-0.00189	-0.00189
	(A1 * B1 * B2 * !C1 * X)	0.00155	0.00154	0.00153
	(A1 * B1 * B2 * !C1 * X)	-0.00179	-0.00189	-0.00189
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00159	0.00155	0.00154
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00169	-0.00185	-0.00184
	(A1 * !B1 * C1 * C2 * X)	0.00158	0.00155	0.00154
	(A1 * !B1 * C1 * C2 * X)	-0.00169	-0.00185	-0.00184
	(!A1 * B1 * B2 * X)	0.00148	0.00148	0.00147
	(!A1 * B1 * B2 * X)	-0.00191	-0.00192	-0.00191
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00148	0.00149	0.00148
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00191	-0.00192	-0.00191
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00147	0.00150	0.00148
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00191	-0.00193	-0.00192
	(!A1 * B1 * !B2 * !C1 * !X)	0.00147	0.00150	0.00148
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00191	-0.00193	-0.00192
	(!A1 * !B1 * C1 * !C2 * !X)	0.00147	0.00147	0.00146
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00192	-0.00192	-0.00192
	(!A1 * !B1 * !C1 * !X)	0.00147	0.00147	0.00146
	(!A1 * !B1 * !C1 * !X)	-0.00192	-0.00192	-0.00192

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)**	-0.00162	-0.00164	-0.00163
	(A1 * B1 * B2 * C1 * C2 * X)	0.00182	0.00185	0.00183
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00162	-0.00163	-0.00163
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00182	0.00185	0.00183
	(A1 * B1 * B2 * !C1 * X)	-0.00162	-0.00163	-0.00163
	(A1 * B1 * B2 * !C1 * X)	0.00182	0.00185	0.00183
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00162	-0.00164	-0.00162
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00178	0.00181	0.00180
	(A1 * !B1 * C1 * C2 * X)	-0.00162	-0.00164	-0.00162
	(A1 * !B1 * C1 * C2 * X)	0.00178	0.00181	0.00180
	(!A1 * B1 * B2 * X)	-0.00154	-0.00158	-0.00157
	(!A1 * B1 * B2 * X)	0.00187	0.00189	0.00188
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00153	-0.00158	-0.00157
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00187	0.00190	0.00188
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00124	-0.00134	-0.00134
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00218	0.00214	0.00211
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00124	-0.00134	-0.00134
	(!A1 * B1 * !B2 * !C1 * !X)	0.00218	0.00214	0.00211
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00124	-0.00134	-0.00134
	(!A1 * !B1 * C1 * !C2 * !X)	0.00218	0.00214	0.00211
	(!A1 * !B1 * !C1 * !X)	-0.00124	-0.00134	-0.00134
	(!A1 * !B1 * !C1 * !X)	0.00218	0.00214	0.00211

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * C2 * X)**	-0.00152	-0.00153	-0.00153
	(A1 * B1 * B2 * C1 * C2 * X)	0.00188	0.00190	0.00189
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00152	-0.00153	-0.00153
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00188	0.00190	0.00189
	(A1 * B1 * B2 * !C1 * X)	-0.00152	-0.00153	-0.00153
	(A1 * B1 * B2 * !C1 * X)	0.00188	0.00190	0.00189
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00152	-0.00154	-0.00152
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00183	0.00186	0.00184
	(A1 * !B1 * C1 * C2 * X)	-0.00152	-0.00154	-0.00152
	(A1 * !B1 * C1 * C2 * X)	0.00183	0.00186	0.00184
	(!A1 * B1 * B2 * X)	-0.00141	-0.00148	-0.00147
	(!A1 * B1 * B2 * X)	0.00191	0.00193	0.00192
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00142	-0.00147	-0.00148
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00193	0.00194	0.00192
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00137	-0.00147	-0.00148
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00198	0.00195	0.00193
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00137	-0.00147	-0.00148
	(!A1 * B1 * !B2 * !C1 * !X)	0.00198	0.00195	0.00193
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00136	-0.00147	-0.00146
	(!A1 * !B1 * C1 * !C2 * !X)	0.00197	0.00195	0.00193
	(!A1 * !B1 * !C1 * !X)	-0.00136	-0.00147	-0.00146
	(!A1 * !B1 * !C1 * !X)	0.00197	0.00195	0.00193

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)**	0.00154	0.00157	0.00154
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00140	-0.00142	-0.00140
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00152	0.00154	0.00152
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00111	-0.00112	-0.00112
	(A1 * A2 * B2 * !C1 * X)	0.00152	0.00154	0.00152
	(A1 * A2 * B2 * !C1 * X)	-0.00111	-0.00112	-0.00112
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00148	0.00150	0.00148
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00135	-0.00137	-0.00135
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00146	0.00148	0.00146
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00111	-0.00112	-0.00111
	(A1 * A2 * !B2 * !C1 * X)	0.00146	0.00149	0.00146
	(A1 * A2 * !B2 * !C1 * X)	-0.00111	-0.00112	-0.00111
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00181	0.00155	0.00152
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00164	-0.00197	-0.00197
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00146	0.00147	0.00146
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00199	-0.00200	-0.00199
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00051	0.00051	0.00049
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00232	-0.00233	-0.00235
	(A1 * !A2 * !B2 * !C1 * !X)	0.00051	0.00051	0.00049
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00232	-0.00233	-0.00235
	(!A1 * B2 * C1 * C2 * X)	0.00181	0.00155	0.00152
	(!A1 * B2 * C1 * C2 * X)	-0.00164	-0.00197	-0.00197
	(!A1 * !B2 * C1 * C2 * X)	0.00146	0.00146	0.00146
	(!A1 * !B2 * C1 * C2 * X)	-0.00199	-0.00200	-0.00199
	(!A1 * !B2 * C1 * !C2 * !X)	0.00051	0.00051	0.00049
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00232	-0.00233	-0.00235
	(!A1 * !B2 * !C1 * !X)	0.00051	0.00051	0.00049
	(!A1 * !B2 * !C1 * !X)	-0.00232	-0.00233	-0.00235

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	0.00153	0.00154	0.00150
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00132	-0.00133	-0.00132
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00148	0.00149	0.00147
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00102	-0.00103	-0.00102
	(A1 * A2 * B2 * !C1 * X)	0.00148	0.00149	0.00147
	(A1 * A2 * B2 * !C1 * X)	-0.00102	-0.00103	-0.00102
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00143	0.00145	0.00143
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00126	-0.00126	-0.00125
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00142	0.00144	0.00142
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00102	-0.00103	-0.00102
	(A1 * A2 * !B2 * !C1 * X)	0.00142	0.00143	0.00142
	(A1 * A2 * !B2 * !C1 * X)	-0.00102	-0.00103	-0.00102
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00183	0.00150	0.00147
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00144	-0.00185	-0.00185
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00139	0.00141	0.00139
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00189	-0.00190	-0.00189
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00048	0.00048	0.00047
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00217	-0.00218	-0.00220
	(A1 * !A2 * !B2 * !C1 * !X)	0.00048	0.00048	0.00047
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00217	-0.00218	-0.00220
	(!A1 * B2 * C1 * C2 * X)	0.00181	0.00150	0.00147
	(!A1 * B2 * C1 * C2 * X)	-0.00146	-0.00185	-0.00185
	(!A1 * !B2 * C1 * C2 * X)	0.00140	0.00140	0.00140
	(!A1 * !B2 * C1 * C2 * X)	-0.00188	-0.00189	-0.00189
	(!A1 * !B2 * C1 * !C2 * !X)	0.00049	0.00049	0.00048
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00216	-0.00217	-0.00219
	(!A1 * !B2 * !C1 * !X)	0.00049	0.00049	0.00048
	(!A1 * !B2 * !C1 * !X)	-0.00216	-0.00217	-0.00219

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)	-0.00152	-0.00154	-0.00153
	(A1 * A2 * B2 * C1 * C2 * X)	0.00140	0.00142	0.00140
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00144	-0.00144	-0.00144
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00119	0.00119	0.00119
	(A1 * A2 * B2 * !C1 * X)	-0.00144	-0.00144	-0.00144
	(A1 * A2 * B2 * !C1 * X)	0.00119	0.00119	0.00119
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00144	-0.00148	-0.00148
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00135	0.00137	0.00135
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00143	-0.00146	-0.00146
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00112	0.00112	0.00111
	(A1 * A2 * !B2 * !C1 * X)	-0.00143	-0.00146	-0.00146
	(A1 * A2 * !B2 * !C1 * X)	0.00112	0.00112	0.00111
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00151	-0.00151	-0.00150
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00197	0.00197	0.00197
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00142	-0.00145	-0.00146
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00201	0.00201	0.00201
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00049	-0.00049	-0.00048
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00236	0.00238	0.00235
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00049	-0.00049	-0.00048
	(A1 * !A2 * !B2 * !C1 * !X)	0.00236	0.00238	0.00235
	(!A1 * B2 * C1 * C2 * X)	-0.00151	-0.00151	-0.00150
	(!A1 * B2 * C1 * C2 * X)	0.00197	0.00197	0.00197
	(!A1 * !B2 * C1 * C2 * X)	-0.00142	-0.00145	-0.00146
	(!A1 * !B2 * C1 * C2 * X)	0.00201	0.00201	0.00201
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00049	-0.00049	-0.00048
	(!A1 * !B2 * C1 * !C2 * !X)	0.00236	0.00238	0.00235
	(!A1 * !B2 * !C1 * !X)	-0.00049	-0.00049	-0.00048
	(!A1 * !B2 * !C1 * !X)	0.00236	0.00238	0.00235

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	-0.00148	-0.00149	-0.00148
	(A1 * A2 * B2 * C1 * C2 * X)	0.00132	0.00133	0.00132
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00140	-0.00141	-0.00141
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00110	0.00111	0.00109
	(A1 * A2 * B2 * !C1 * X)	-0.00140	-0.00141	-0.00141
	(A1 * A2 * B2 * !C1 * X)	0.00110	0.00111	0.00109
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00139	-0.00142	-0.00143
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00126	0.00126	0.00125
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00138	-0.00142	-0.00142
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00103	0.00103	0.00102
	(A1 * A2 * !B2 * !C1 * X)	-0.00138	-0.00142	-0.00142
	(A1 * A2 * !B2 * !C1 * X)	0.00103	0.00103	0.00102
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00146	-0.00146	-0.00145
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00185	0.00186	0.00185
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00136	-0.00140	-0.00139
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00190	0.00190	0.00190
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00046	-0.00046	-0.00046
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00220	0.00221	0.00220
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00046	-0.00046	-0.00046
	(A1 * !A2 * !B2 * !C1 * !X)	0.00220	0.00221	0.00220
	(!A1 * B2 * C1 * C2 * X)	-0.00146	-0.00146	-0.00145
	(!A1 * B2 * C1 * C2 * X)	0.00185	0.00186	0.00185
	(!A1 * !B2 * C1 * C2 * X)	-0.00136	-0.00140	-0.00140
	(!A1 * !B2 * C1 * C2 * X)	0.00190	0.00190	0.00190
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00047	-0.00048	-0.00047
	(!A1 * !B2 * C1 * !C2 * !X)	0.00220	0.00221	0.00220
	(!A1 * !B2 * !C1 * !X)	-0.00047	-0.00048	-0.00047
	(!A1 * !B2 * !C1 * !X)	0.00220	0.00221	0.00220

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)	0.00148	0.00151	0.00148
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00134	-0.00135	-0.00134
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00147	0.00148	0.00146
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00105	-0.00105	-0.00105
	(A1 * A2 * B1 * !C1 * X)	0.00147	0.00148	0.00146
	(A1 * A2 * B1 * !C1 * X)	-0.00105	-0.00105	-0.00105
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00142	0.00143	0.00142
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00129	-0.00131	-0.00129
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00141	0.00143	0.00141
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00104	-0.00105	-0.00104
	(A1 * A2 * !B1 * !C1 * X)	0.00141	0.00143	0.00141
	(A1 * A2 * !B1 * !C1 * X)	-0.00104	-0.00105	-0.00104
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00174	0.00149	0.00146
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00154	-0.00188	-0.00188
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00139	0.00141	0.00140
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00190	-0.00192	-0.00191
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00133	0.00135	0.00134
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00197	-0.00198	-0.00197
	(A1 * !A2 * !B1 * !C1 * !X)	0.00133	0.00134	0.00134
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00197	-0.00197	-0.00197
	(!A1 * B1 * C1 * C2 * X)	0.00174	0.00149	0.00146
	(!A1 * B1 * C1 * C2 * X)	-0.00154	-0.00188	-0.00188
	(!A1 * !B1 * C1 * !C2 * !X)	0.00133	0.00135	0.00134
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00197	-0.00198	-0.00197
	(!A1 * !B1 * !C1 * !X)	0.00133	0.00134	0.00134
	(!A1 * !B1 * !C1 * !X)	-0.00197	-0.00197	-0.00197

	(A1 * A2 * B1 * C1 * C2 * X)	0.00155	0.00155	0.00152
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00132	-0.00133	-0.00132
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00150	0.00151	0.00149
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00103	-0.00103	-0.00103
	(A1 * A2 * B1 * !C1 * X)	0.00150	0.00151	0.00149
	(A1 * A2 * B1 * !C1 * X)	-0.00103	-0.00103	-0.00103
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00145	0.00145	0.00145
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00124	-0.00125	-0.00125
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00144	0.00146	0.00144
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00102	-0.00103	-0.00102
	(A1 * A2 * !B1 * !C1 * X)	0.00143	0.00146	0.00143
	(A1 * A2 * !B1 * !C1 * X)	-0.00101	-0.00103	-0.00102
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00183	0.00152	0.00148
sky130_fd_sc_hs__a222o_2	**(A1 * !A2 * B1 * C1 * C2 * X)**	-0.00148	-0.00185	-0.00185
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00142	0.00143	0.00142
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00188	-0.00189	-0.00189
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00137	0.00139	0.00138
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00188	-0.00190	-0.00189
	(A1 * !A2 * !B1 * !C1 * !X)	0.00137	0.00139	0.00138
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00188	-0.00190	-0.00189
	(!A1 * B1 * C1 * C2 * X)	0.00185	0.00152	0.00148
	(!A1 * B1 * C1 * C2 * X)	-0.00146	-0.00183	-0.00185
	(!A1 * !B1 * C1 * !C2 * !X)	0.00142	0.00143	0.00142
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00188	-0.00189	-0.00188
	(!A1 * !B1 * !C1 * !X)	0.00142	0.00143	0.00142
	(!A1 * !B1 * !C1 * !X)	-0.00188	-0.00189	-0.00188

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)	-0.00147	-0.00148	-0.00147
	(A1 * A2 * B1 * C1 * C2 * X)	0.00134	0.00135	0.00134
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00138	-0.00139	-0.00138
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00112	0.00112	0.00112
	(A1 * A2 * B1 * !C1 * X)	-0.00138	-0.00139	-0.00138
	(A1 * A2 * B1 * !C1 * X)	0.00112	0.00112	0.00112
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00139	-0.00143	-0.00142
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00129	0.00131	0.00129
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00138	-0.00141	-0.00141
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00105	0.00105	0.00105
	(A1 * A2 * !B1 * !C1 * X)	-0.00138	-0.00141	-0.00141
	(A1 * A2 * !B1 * !C1 * X)	0.00105	0.00105	0.00105
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00145	-0.00146	-0.00144
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00188	0.00188	0.00188
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00137	-0.00141	-0.00140
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00192	0.00194	0.00192
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00125	-0.00134	-0.00134
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00205	0.00200	0.00198
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00125	-0.00134	-0.00134
	(A1 * !A2 * !B1 * !C1 * !X)	0.00205	0.00200	0.00198
	(!A1 * B1 * C1 * C2 * X)	-0.00145	-0.00146	-0.00144
	(!A1 * B1 * C1 * C2 * X)	0.00188	0.00188	0.00188
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00125	-0.00134	-0.00134
	(!A1 * !B1 * C1 * !C2 * !X)	0.00205	0.00200	0.00198
	(!A1 * !B1 * !C1 * !X)	-0.00125	-0.00134	-0.00134
	(!A1 * !B1 * !C1 * !X)	0.00205	0.00200	0.00198

	(A1 * A2 * B1 * C1 * C2 * X)	-0.00150	-0.00151	-0.00150
	(A1 * A2 * B1 * C1 * C2 * X)	0.00132	0.00133	0.00132
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00141	-0.00142	-0.00143
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00111	0.00112	0.00109
	(A1 * A2 * B1 * !C1 * X)	-0.00141	-0.00142	-0.00143
	(A1 * A2 * B1 * !C1 * X)	0.00111	0.00112	0.00109
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00140	-0.00144	-0.00145
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00124	0.00125	0.00125
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00139	-0.00143	-0.00144
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00102	0.00103	0.00102
	(A1 * A2 * !B1 * !C1 * X)	-0.00139	-0.00143	-0.00143
	(A1 * A2 * !B1 * !C1 * X)	0.00102	0.00103	0.00102
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00148	-0.00148	-0.00147
sky130_fd_sc_hs__a222o_2	**(A1 * !A2 * B1 * C1 * C2 * X)**	0.00185	0.00186	0.00185
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00138	-0.00142	-0.00142
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00189	0.00190	0.00190
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00128	-0.00138	-0.00138
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00197	0.00191	0.00190
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00128	-0.00138	-0.00138
	(A1 * !A2 * !B1 * !C1 * !X)	0.00197	0.00191	0.00190
	(!A1 * B1 * C1 * C2 * X)	-0.00148	-0.00147	-0.00147
	(!A1 * B1 * C1 * C2 * X)	0.00185	0.00183	0.00185
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00132	-0.00142	-0.00142
	(!A1 * !B1 * C1 * !C2 * !X)	0.00196	0.00191	0.00189
	(!A1 * !B1 * !C1 * !X)	-0.00132	-0.00142	-0.00142
	(!A1 * !B1 * !C1 * !X)	0.00196	0.00191	0.00189

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)	0.00175	0.00177	0.00176
	(A1 * B1 * B2 * C2 * X)	-0.00098	-0.00100	-0.00099
	(A1 * B1 * B2 * !C2 * X)	0.00169	0.00172	0.00169
	(A1 * B1 * B2 * !C2 * X)	-0.00098	-0.00099	-0.00098
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00176	0.00177	0.00176
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00099	-0.00099	-0.00098
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00170	0.00170	0.00171
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00098	-0.00098	-0.00098
	(A1 * A2 * !B1 * C2 * X)	0.00176	0.00177	0.00176
	(A1 * A2 * !B1 * C2 * X)	-0.00099	-0.00099	-0.00098
	(A1 * A2 * !B1 * !C2 * X)	0.00170	0.00173	0.00171
	(A1 * A2 * !B1 * !C2 * X)	-0.00098	-0.00099	-0.00098
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00054	0.00054	0.00052
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00235	-0.00236	-0.00238
	(A1 * !A2 * !B1 * !C2 * !X)	0.00054	0.00054	0.00052
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00235	-0.00236	-0.00238
	(!A1 * B1 * B2 * C2 * X)	0.00176	0.00177	0.00176
	(!A1 * B1 * B2 * C2 * X)	-0.00099	-0.00100	-0.00099
	(!A1 * B1 * B2 * !C2 * X)	0.00171	0.00172	0.00171
	(!A1 * B1 * B2 * !C2 * X)	-0.00098	-0.00099	-0.00099
	(!A1 * B1 * !B2 * !C2 * !X)	0.00054	0.00054	0.00052
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00235	-0.00236	-0.00238
	(!A1 * !B1 * !C2 * !X)	0.00054	0.00054	0.00052
	(!A1 * !B1 * !C2 * !X)	-0.00235	-0.00236	-0.00238

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	0.00171	0.00173	0.00171
	(A1 * B1 * B2 * C2 * X)	-0.00093	-0.00093	-0.00092
	(A1 * B1 * B2 * !C2 * X)	0.00165	0.00168	0.00165
	(A1 * B1 * B2 * !C2 * X)	-0.00092	-0.00093	-0.00092
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00171	0.00173	0.00171
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00093	-0.00093	-0.00092
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00165	0.00168	0.00166
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00092	-0.00093	-0.00092
	(A1 * A2 * !B1 * C2 * X)	0.00171	0.00173	0.00171
	(A1 * A2 * !B1 * C2 * X)	-0.00093	-0.00093	-0.00092
	(A1 * A2 * !B1 * !C2 * X)	0.00165	0.00167	0.00166
	(A1 * A2 * !B1 * !C2 * X)	-0.00092	-0.00093	-0.00092
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00053	0.00053	0.00051
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00224	-0.00224	-0.00227
	(A1 * !A2 * !B1 * !C2 * !X)	0.00053	0.00053	0.00051
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00224	-0.00224	-0.00227
	(!A1 * B1 * B2 * C2 * X)	0.00171	0.00173	0.00171
	(!A1 * B1 * B2 * C2 * X)	-0.00093	-0.00094	-0.00093
	(!A1 * B1 * B2 * !C2 * X)	0.00166	0.00168	0.00166
	(!A1 * B1 * B2 * !C2 * X)	-0.00092	-0.00093	-0.00092
	(!A1 * B1 * !B2 * !C2 * !X)	0.00053	0.00053	0.00051
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00224	-0.00224	-0.00227
	(!A1 * !B1 * !C2 * !X)	0.00053	0.00053	0.00051
	(!A1 * !B1 * !C2 * !X)	-0.00224	-0.00224	-0.00227

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)**	-0.00159	-0.00160	-0.00174
	(A1 * B1 * B2 * C2 * X)	0.00114	0.00114	0.00102
	(A1 * B1 * B2 * !C2 * X)	-0.00167	-0.00171	-0.00169
	(A1 * B1 * B2 * !C2 * X)	0.00099	0.00099	0.00098
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00144	-0.00145	-0.00170
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00123	0.00123	0.00103
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00167	-0.00170	-0.00171
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00099	0.00099	0.00098
	(A1 * A2 * !B1 * C2 * X)	-0.00144	-0.00145	-0.00170
	(A1 * A2 * !B1 * C2 * X)	0.00123	0.00123	0.00103
	(A1 * A2 * !B1 * !C2 * X)	-0.00167	-0.00171	-0.00171
	(A1 * A2 * !B1 * !C2 * X)	0.00099	0.00099	0.00098
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00051	-0.00053	-0.00051
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00238	0.00240	0.00238
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00051	-0.00053	-0.00051
	(A1 * !A2 * !B1 * !C2 * !X)	0.00238	0.00240	0.00238
	(!A1 * B1 * B2 * C2 * X)	-0.00159	-0.00160	-0.00174
	(!A1 * B1 * B2 * C2 * X)	0.00114	0.00114	0.00102
	(!A1 * B1 * B2 * !C2 * X)	-0.00167	-0.00171	-0.00171
	(!A1 * B1 * B2 * !C2 * X)	0.00099	0.00099	0.00099
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00051	-0.00053	-0.00051
	(!A1 * B1 * !B2 * !C2 * !X)	0.00238	0.00240	0.00238
	(!A1 * !B1 * !C2 * !X)	-0.00051	-0.00053	-0.00051
	(!A1 * !B1 * !C2 * !X)	0.00238	0.00240	0.00238

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	-0.00158	-0.00160	-0.00170
	(A1 * B1 * B2 * C2 * X)	0.00103	0.00103	0.00095
	(A1 * B1 * B2 * !C2 * X)	-0.00162	-0.00167	-0.00165
	(A1 * B1 * B2 * !C2 * X)	0.00093	0.00093	0.00092
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00142	-0.00143	-0.00166
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00116	0.00116	0.00098
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00162	-0.00166	-0.00166
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00093	0.00093	0.00092
	(A1 * A2 * !B1 * C2 * X)	-0.00142	-0.00143	-0.00166
	(A1 * A2 * !B1 * C2 * X)	0.00116	0.00116	0.00098
	(A1 * A2 * !B1 * !C2 * X)	-0.00162	-0.00166	-0.00166
	(A1 * A2 * !B1 * !C2 * X)	0.00093	0.00093	0.00092
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00051	-0.00052	-0.00050
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00227	0.00229	0.00227
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00051	-0.00052	-0.00050
	(A1 * !A2 * !B1 * !C2 * !X)	0.00227	0.00229	0.00227
	(!A1 * B1 * B2 * C2 * X)	-0.00158	-0.00160	-0.00170
	(!A1 * B1 * B2 * C2 * X)	0.00104	0.00104	0.00095
	(!A1 * B1 * B2 * !C2 * X)	-0.00162	-0.00166	-0.00166
	(!A1 * B1 * B2 * !C2 * X)	0.00093	0.00093	0.00092
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00051	-0.00052	-0.00050
	(!A1 * B1 * !B2 * !C2 * !X)	0.00227	0.00229	0.00227
	(!A1 * !B1 * !C2 * !X)	-0.00051	-0.00052	-0.00050
	(!A1 * !B1 * !C2 * !X)	0.00227	0.00229	0.00227

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)**	0.00177	0.00177	0.00176
	(A1 * B1 * B2 * C1 * X)	-0.00095	-0.00095	-0.00094
	(A1 * B1 * B2 * !C1 * X)	0.00169	0.00173	0.00170
	(A1 * B1 * B2 * !C1 * X)	-0.00094	-0.00095	-0.00094
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00177	0.00177	0.00176
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00095	-0.00095	-0.00094
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00170	0.00173	0.00170
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00094	-0.00095	-0.00094
	(A1 * A2 * !B1 * C1 * X)	0.00177	0.00177	0.00176
	(A1 * A2 * !B1 * C1 * X)	-0.00095	-0.00095	-0.00094
	(A1 * A2 * !B1 * !C1 * X)	0.00169	0.00173	0.00170
	(A1 * A2 * !B1 * !C1 * X)	-0.00093	-0.00095	-0.00094
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00136	0.00138	0.00136
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00209	-0.00211	-0.00210
	(A1 * !A2 * !B1 * !C1 * !X)	0.00136	0.00138	0.00136
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00209	-0.00211	-0.00210
	(!A1 * B1 * B2 * C1 * X)	0.00177	0.00177	0.00176
	(!A1 * B1 * B2 * C1 * X)	-0.00095	-0.00096	-0.00095
	(!A1 * B1 * B2 * !C1 * X)	0.00170	0.00173	0.00170
	(!A1 * B1 * B2 * !C1 * X)	-0.00094	-0.00095	-0.00094
	(!A1 * B1 * !B2 * !C1 * !X)	0.00136	0.00137	0.00136
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00209	-0.00210	-0.00210
	(!A1 * !B1 * !C1 * !X)	0.00136	0.00138	0.00136
	(!A1 * !B1 * !C1 * !X)	-0.00209	-0.00211	-0.00210

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	0.00182	0.00183	0.00181
	(A1 * B1 * B2 * C1 * X)	-0.00095	-0.00096	-0.00095
	(A1 * B1 * B2 * !C1 * X)	0.00175	0.00178	0.00175
	(A1 * B1 * B2 * !C1 * X)	-0.00094	-0.00094	-0.00094
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00182	0.00183	0.00181
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00095	-0.00096	-0.00095
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00175	0.00179	0.00175
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00094	-0.00094	-0.00094
	(A1 * A2 * !B1 * C1 * X)	0.00182	0.00183	0.00181
	(A1 * A2 * !B1 * C1 * X)	-0.00095	-0.00096	-0.00095
	(A1 * A2 * !B1 * !C1 * X)	0.00175	0.00179	0.00175
	(A1 * A2 * !B1 * !C1 * X)	-0.00094	-0.00094	-0.00094
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00134	0.00135	0.00134
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00218	-0.00218	-0.00218
	(A1 * !A2 * !B1 * !C1 * !X)	0.00134	0.00135	0.00134
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00218	-0.00218	-0.00218
	(!A1 * B1 * B2 * C1 * X)	0.00182	0.00183	0.00181
	(!A1 * B1 * B2 * C1 * X)	-0.00096	-0.00096	-0.00095
	(!A1 * B1 * B2 * !C1 * X)	0.00175	0.00179	0.00175
	(!A1 * B1 * B2 * !C1 * X)	-0.00094	-0.00095	-0.00094
	(!A1 * B1 * !B2 * !C1 * !X)	0.00134	0.00135	0.00134
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00218	-0.00218	-0.00218
	(!A1 * !B1 * !C1 * !X)	0.00134	0.00135	0.00134
	(!A1 * !B1 * !C1 * !X)	-0.00218	-0.00218	-0.00218

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)**	-0.00158	-0.00160	-0.00174
	(A1 * B1 * B2 * C1 * X)	0.00109	0.00109	0.00098
	(A1 * B1 * B2 * !C1 * X)	-0.00167	-0.00171	-0.00170
	(A1 * B1 * B2 * !C1 * X)	0.00095	0.00095	0.00094
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00143	-0.00145	-0.00170
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00119	0.00119	0.00099
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00167	-0.00171	-0.00170
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00095	0.00095	0.00094
	(A1 * A2 * !B1 * C1 * X)	-0.00143	-0.00145	-0.00170
	(A1 * A2 * !B1 * C1 * X)	0.00119	0.00119	0.00099
	(A1 * A2 * !B1 * !C1 * X)	-0.00167	-0.00171	-0.00170
	(A1 * A2 * !B1 * !C1 * X)	0.00095	0.00095	0.00094
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00128	-0.00137	-0.00136
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00218	0.00212	0.00210
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00128	-0.00137	-0.00136
	(A1 * !A2 * !B1 * !C1 * !X)	0.00218	0.00212	0.00210
	(!A1 * B1 * B2 * C1 * X)	-0.00158	-0.00160	-0.00174
	(!A1 * B1 * B2 * C1 * X)	0.00110	0.00110	0.00098
	(!A1 * B1 * B2 * !C1 * X)	-0.00167	-0.00171	-0.00170
	(!A1 * B1 * B2 * !C1 * X)	0.00095	0.00095	0.00094
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00128	-0.00137	-0.00136
	(!A1 * B1 * !B2 * !C1 * !X)	0.00218	0.00212	0.00210
	(!A1 * !B1 * !C1 * !X)	-0.00128	-0.00137	-0.00136
	(!A1 * !B1 * !C1 * !X)	0.00218	0.00212	0.00210

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00169	-0.00170	-0.00180
	(A1 * B1 * B2 * C1 * X)	0.00106	0.00106	0.00097
	(A1 * B1 * B2 * !C1 * X)	-0.00173	-0.00175	-0.00175
	(A1 * B1 * B2 * !C1 * X)	0.00095	0.00094	0.00094
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00152	-0.00153	-0.00176
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00118	0.00118	0.00100
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00172	-0.00175	-0.00175
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00095	0.00094	0.00094
	(A1 * A2 * !B1 * C1 * X)	-0.00152	-0.00153	-0.00176
	(A1 * A2 * !B1 * C1 * X)	0.00118	0.00118	0.00100
	(A1 * A2 * !B1 * !C1 * X)	-0.00172	-0.00175	-0.00175
	(A1 * A2 * !B1 * !C1 * X)	0.00095	0.00094	0.00094
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00125	-0.00135	-0.00134
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00227	0.00221	0.00219
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00125	-0.00135	-0.00134
	(A1 * !A2 * !B1 * !C1 * !X)	0.00227	0.00221	0.00219
	(!A1 * B1 * B2 * C1 * X)	-0.00168	-0.00169	-0.00180
	(!A1 * B1 * B2 * C1 * X)	0.00106	0.00106	0.00097
	(!A1 * B1 * B2 * !C1 * X)	-0.00172	-0.00175	-0.00175
	(!A1 * B1 * B2 * !C1 * X)	0.00095	0.00095	0.00095
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00125	-0.00135	-0.00134
	(!A1 * B1 * !B2 * !C1 * !X)	0.00227	0.00221	0.00219
	(!A1 * !B1 * !C1 * !X)	-0.00125	-0.00135	-0.00134
	(!A1 * !B1 * !C1 * !X)	0.00227	0.00221	0.00219

SKY130_FD_SC_HS__A22OIx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00277	0.00275	0.00287	0.00289	0.56320
sky130_fd_sc_hs__a22oi_2	0.00607	0.00532	0.00579	0.00529	0.98159
sky130_fd_sc_hs__a22oi_4	0.01064	0.01050	0.01075	0.01058	1.80351

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a22oi_1	0.00000	0.04641	0.15376
sky130_fd_sc_hs__a22oi_2	0.00000	0.09282	0.30752
sky130_fd_sc_hs__a22oi_4	0.00000	0.18564	0.61505

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)	0.09963	0.93419	10.30670
	A2->Y (FR)	0.11713	0.95722	10.36820
	B1->Y (FR)	0.07228	0.92177	10.59000
	B2->Y (FR)	0.08999	0.95114	10.74170
sky130_fd_sc_hs__a22oi_2	A1->Y (FR)	0.10522	0.79670	9.88712
	A2->Y (FR)	0.12627	0.83221	10.11220
	B1->Y (FR)	0.07420	0.79565	10.33610
	B2->Y (FR)	0.09761	0.83429	10.62690
sky130_fd_sc_hs__a22oi_4	A1->Y (FR)	0.09742	0.68024	9.64058
	A2->Y (FR)	0.12241	0.71591	9.87133
	B1->Y (FR)	0.06906	0.68860	10.15680
	B2->Y (FR)	0.09486	0.73055	10.48180

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22oi_1	A1->Y (RF)	0.03332	0.39761	4.32173
	A2->Y (RF)	0.03719	0.36319	3.86387
	B1->Y (RF)	0.02291	0.38411	4.36002
	B2->Y (RF)	0.02675	0.35373	3.93477
sky130_fd_sc_hs__a22oi_2	A1->Y (RF)	0.03456	0.33926	4.13164
	A2->Y (RF)	0.03828	0.31502	3.76170
	B1->Y (RF)	0.02248	0.31740	4.10842
	B2->Y (RF)	0.02752	0.29530	3.73357
sky130_fd_sc_hs__a22oi_4	A1->Y (RF)	0.03515	0.31088	4.37124
	A2->Y (RF)	0.03954	0.26495	3.62600
	B1->Y (RF)	0.02168	0.28644	4.37117
	B2->Y (RF)	0.02643	0.24044	3.58628

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	-0.00021	-0.00030	0.00613
	A1	0.00705	0.00697	0.01347
	A2	0.00035	0.00028	0.00685
	A2	0.00884	0.00862	0.01538
	B1	-0.00030	0.00037	0.01228
	B1	0.00465	0.00532	0.01723
	B2	0.00008	0.00066	0.01257
	B2	0.00626	0.00686	0.01882
sky130_fd_sc_hs__a22oi_2	A1	0.00010	-0.00008	0.01356
	A1	0.01539	0.01520	0.02894
	A2	0.00148	0.00130	0.01504
	A2	0.01831	0.01812	0.03188
	B1	-0.00029	0.00213	0.02612
	B1	0.01004	0.01246	0.03655
	B2	0.00155	0.00371	0.02737
	B2	0.01367	0.01562	0.03966
sky130_fd_sc_hs__a22oi_4	A1	-0.00178	-0.00199	0.02440
	A1	0.02709	0.02695	0.05344
	A2	0.00121	0.00096	0.02761
	A2	0.03469	0.03428	0.06131
	B1	-0.00226	0.00124	0.04606
	B1	0.01709	0.02058	0.06587
	B2	0.00093	0.00393	0.04844
	B2	0.02488	0.02785	0.07242

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	0.01001	0.01017	0.01610
	A1	0.00286	0.00293	0.00896
	A2	0.01124	0.01123	0.01640
	A2	0.00280	0.00278	0.00797
	B1	0.00469	0.00507	0.01113
	B1	-0.00024	0.00012	0.00595
	B2	0.00603	0.00622	0.01140
	B2	-0.00021	-0.00005	0.00499
sky130_fd_sc_hs__a22oi_2	A1	0.02013	0.02030	0.03297
	A1	0.00506	0.00520	0.01752
	A2	0.02187	0.02191	0.03240
	A2	0.00513	0.00510	0.01564
	B1	0.00999	0.01083	0.02380
	B1	-0.00029	0.00046	0.01301
	B2	0.01211	0.01250	0.02325
	B2	-0.00014	0.00016	0.01098
sky130_fd_sc_hs__a22oi_4	A1	0.03811	0.03877	0.06347
	A1	0.00967	0.01021	0.03356
	A2	0.04293	0.04296	0.06430
	A2	0.00955	0.00950	0.03100
	B1	0.01822	0.01973	0.04302
	B1	-0.00112	0.00029	0.02343
	B2	0.02335	0.02407	0.04560
	B2	-0.00085	-0.00018	0.02070

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)	0.00183	0.00165	0.00162
	(A2 * B1 * B2 * !Y)	-0.00179	-0.00204	-0.00204
	(!A2 * B1 * B2 * !Y)	0.00157	0.00158	0.00157
	(!A2 * B1 * B2 * !Y)	-0.00209	-0.00209	-0.00208
	(!A2 * B1 * !B2 * Y)	0.00056	0.00056	0.00054
	(!A2 * B1 * !B2 * Y)	-0.00237	-0.00237	-0.00240
	(!A2 * !B1 * Y)	0.00056	0.00056	0.00054
	(!A2 * !B1 * Y)	-0.00237	-0.00237	-0.00240
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	0.00415	0.00362	0.00354
	(A2 * B1 * B2 * !Y)	-0.00363	-0.00434	-0.00435
	(!A2 * B1 * B2 * !Y)	0.00338	0.00340	0.00339
	(!A2 * B1 * B2 * !Y)	-0.00446	-0.00447	-0.00445
	(!A2 * B1 * !B2 * Y)	0.00112	0.00112	0.00107
	(!A2 * B1 * !B2 * Y)	-0.00530	-0.00533	-0.00537
	(!A2 * !B1 * Y)	0.00112	0.00112	0.00107
	(!A2 * !B1 * Y)	-0.00530	-0.00533	-0.00537
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	0.00765	0.00670	0.00658
	(A2 * B1 * B2 * !Y)	-0.00701	-0.00828	-0.00827
	(!A2 * B1 * B2 * !Y)	0.00626	0.00631	0.00627
	(!A2 * B1 * B2 * !Y)	-0.00845	-0.00849	-0.00844
	(!A2 * B1 * !B2 * Y)	0.00212	0.00213	0.00203
	(!A2 * B1 * !B2 * Y)	-0.00972	-0.00978	-0.00989
	(!A2 * !B1 * Y)	0.00213	0.00213	0.00204
	(!A2 * !B1 * Y)	-0.00971	-0.00977	-0.00989

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)	-0.00162	-0.00162	-0.00162
	(A2 * B1 * B2 * !Y)	0.00203	0.00205	0.00204
	(!A2 * B1 * B2 * !Y)	-0.00151	-0.00156	-0.00157
	(!A2 * B1 * B2 * !Y)	0.00209	0.00209	0.00209
	(!A2 * B1 * !B2 * Y)	-0.00052	-0.00053	-0.00052
	(!A2 * B1 * !B2 * Y)	0.00240	0.00245	0.00241
	(!A2 * !B1 * Y)	-0.00052	-0.00053	-0.00052
	(!A2 * !B1 * Y)	0.00240	0.00245	0.00241
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	-0.00353	-0.00354	-0.00352
	(A2 * B1 * B2 * !Y)	0.00432	0.00436	0.00435
	(!A2 * B1 * B2 * !Y)	-0.00330	-0.00340	-0.00339
	(!A2 * B1 * B2 * !Y)	0.00447	0.00449	0.00447
	(!A2 * B1 * !B2 * Y)	-0.00105	-0.00105	-0.00105
	(!A2 * B1 * !B2 * Y)	0.00535	0.00537	0.00538
	(!A2 * !B1 * Y)	-0.00105	-0.00105	-0.00105
	(!A2 * !B1 * Y)	0.00535	0.00537	0.00538
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	-0.00656	-0.00658	-0.00654
	(A2 * B1 * B2 * !Y)	0.00826	0.00831	0.00827
	(!A2 * B1 * B2 * !Y)	-0.00604	-0.00630	-0.00627
	(!A2 * B1 * B2 * !Y)	0.00848	0.00852	0.00847
	(!A2 * B1 * !B2 * Y)	-0.00197	-0.00198	-0.00198
	(!A2 * B1 * !B2 * Y)	0.00986	0.00992	0.00991
	(!A2 * !B1 * Y)	-0.00198	-0.00199	-0.00198
	(!A2 * !B1 * Y)	0.00986	0.00991	0.00991

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)	0.00194	0.00175	0.00172
	(A1 * B1 * B2 * !Y)	-0.00184	-0.00212	-0.00212
	(!A1 * B1 * B2 * !Y)	0.00164	0.00166	0.00165
	(!A1 * B1 * B2 * !Y)	-0.00215	-0.00217	-0.00216
	(!A1 * B1 * !B2 * Y)	0.00165	0.00167	0.00166
	(!A1 * B1 * !B2 * Y)	-0.00216	-0.00217	-0.00216
	(!A1 * !B1 * Y)	0.00164	0.00166	0.00165
	(!A1 * !B1 * Y)	-0.00216	-0.00218	-0.00216
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	0.00369	0.00331	0.00325
	(A1 * B1 * B2 * !Y)	-0.00348	-0.00404	-0.00404
	(!A1 * B1 * B2 * !Y)	0.00311	0.00312	0.00311
	(!A1 * B1 * B2 * !Y)	-0.00412	-0.00413	-0.00412
	(!A1 * B1 * !B2 * Y)	0.00299	0.00302	0.00300
	(!A1 * B1 * !B2 * Y)	-0.00422	-0.00424	-0.00422
	(!A1 * !B1 * Y)	0.00299	0.00302	0.00300
	(!A1 * !B1 * Y)	-0.00422	-0.00424	-0.00422
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	0.00767	0.00675	0.00662
	(A1 * B1 * B2 * !Y)	-0.00704	-0.00829	-0.00830
	(!A1 * B1 * B2 * !Y)	0.00631	0.00642	0.00635
	(!A1 * B1 * B2 * !Y)	-0.00843	-0.00852	-0.00847
	(!A1 * B1 * !B2 * Y)	0.00633	0.00635	0.00633
	(!A1 * B1 * !B2 * Y)	-0.00848	-0.00848	-0.00847
	(!A1 * !B1 * Y)	0.00632	0.00637	0.00632
	(!A1 * !B1 * Y)	-0.00848	-0.00851	-0.00847

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)	-0.00171	-0.00172	-0.00171
	(A1 * B1 * B2 * !Y)	0.00211	0.00213	0.00212
	(!A1 * B1 * B2 * !Y)	-0.00160	-0.00165	-0.00165
	(!A1 * B1 * B2 * !Y)	0.00216	0.00218	0.00217
	(!A1 * B1 * !B2 * Y)	-0.00155	-0.00165	-0.00166
	(!A1 * B1 * !B2 * Y)	0.00222	0.00219	0.00217
	(!A1 * !B1 * Y)	-0.00155	-0.00165	-0.00165
	(!A1 * !B1 * Y)	0.00222	0.00219	0.00217
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	-0.00323	-0.00325	-0.00324
	(A1 * B1 * B2 * !Y)	0.00400	0.00405	0.00404
	(!A1 * B1 * B2 * !Y)	-0.00301	-0.00312	-0.00311
	(!A1 * B1 * B2 * !Y)	0.00412	0.00415	0.00413
	(!A1 * B1 * !B2 * Y)	-0.00278	-0.00302	-0.00300
	(!A1 * B1 * !B2 * Y)	0.00438	0.00427	0.00423
	(!A1 * !B1 * Y)	-0.00278	-0.00302	-0.00300
	(!A1 * !B1 * Y)	0.00438	0.00427	0.00423
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	-0.00661	-0.00660	-0.00658
	(A1 * B1 * B2 * !Y)	0.00829	0.00829	0.00830
	(!A1 * B1 * B2 * !Y)	-0.00609	-0.00630	-0.00635
	(!A1 * B1 * B2 * !Y)	0.00847	0.00852	0.00850
	(!A1 * B1 * !B2 * Y)	-0.00581	-0.00635	-0.00633
	(!A1 * B1 * !B2 * Y)	0.00882	0.00858	0.00850
	(!A1 * !B1 * Y)	-0.00581	-0.00635	-0.00632
	(!A1 * !B1 * Y)	0.00882	0.00858	0.00850

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)	0.00186	0.00188	0.00186
	(A1 * A2 * B2 * !Y)	-0.00100	-0.00101	-0.00100
	(A1 * A2 * !B2 * !Y)	0.00180	0.00182	0.00180
	(A1 * A2 * !B2 * !Y)	-0.00099	-0.00101	-0.00100
	(A1 * !A2 * !B2 * Y)	0.00051	0.00051	0.00049
	(A1 * !A2 * !B2 * Y)	-0.00248	-0.00248	-0.00250
	(!A1 * !B2 * Y)	0.00051	0.00051	0.00049
	(!A1 * !B2 * Y)	-0.00247	-0.00248	-0.00250
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	0.00397	0.00401	0.00398
	(A1 * A2 * B2 * !Y)	-0.00194	-0.00196	-0.00194
	(A1 * A2 * !B2 * !Y)	0.00384	0.00387	0.00385
	(A1 * A2 * !B2 * !Y)	-0.00193	-0.00194	-0.00193
	(A1 * !A2 * !B2 * Y)	0.00120	0.00120	0.00116
	(A1 * !A2 * !B2 * Y)	-0.00492	-0.00495	-0.00500
	(!A1 * !B2 * Y)	0.00120	0.00120	0.00116
	(!A1 * !B2 * Y)	-0.00492	-0.00495	-0.00500
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	0.00735	0.00750	0.00738
	(A1 * A2 * B2 * !Y)	-0.00390	-0.00398	-0.00391
	(A1 * A2 * !B2 * !Y)	0.00706	0.00713	0.00708
	(A1 * A2 * !B2 * !Y)	-0.00390	-0.00392	-0.00390
	(A1 * !A2 * !B2 * Y)	0.00211	0.00212	0.00201
	(A1 * !A2 * !B2 * Y)	-0.00977	-0.00981	-0.00993
	(!A1 * !B2 * Y)	0.00212	0.00212	0.00202
	(!A1 * !B2 * Y)	-0.00977	-0.00981	-0.00993

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)	-0.00168	-0.00171	-0.00184
	(A1 * A2 * B2 * !Y)	0.00114	0.00115	0.00103
	(A1 * A2 * !B2 * !Y)	-0.00175	-0.00180	-0.00180
	(A1 * A2 * !B2 * !Y)	0.00100	0.00101	0.00100
	(A1 * !A2 * !B2 * Y)	-0.00049	-0.00048	-0.00048
	(A1 * !A2 * !B2 * Y)	0.00251	0.00250	0.00250
	(!A1 * !B2 * Y)	-0.00049	-0.00048	-0.00048
	(!A1 * !B2 * Y)	0.00251	0.00250	0.00250
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	-0.00366	-0.00371	-0.00394
	(A1 * A2 * B2 * !Y)	0.00219	0.00220	0.00200
	(A1 * A2 * !B2 * !Y)	-0.00372	-0.00387	-0.00385
	(A1 * A2 * !B2 * !Y)	0.00193	0.00194	0.00193
	(A1 * !A2 * !B2 * Y)	-0.00114	-0.00113	-0.00113
	(A1 * !A2 * !B2 * Y)	0.00502	0.00502	0.00501
	(!A1 * !B2 * Y)	-0.00114	-0.00113	-0.00113
	(!A1 * !B2 * Y)	0.00502	0.00501	0.00501
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	-0.00678	-0.00686	-0.00731
	(A1 * A2 * B2 * !Y)	0.00439	0.00442	0.00402
	(A1 * A2 * !B2 * !Y)	-0.00685	-0.00713	-0.00708
	(A1 * A2 * !B2 * !Y)	0.00390	0.00392	0.00390
	(A1 * !A2 * !B2 * Y)	-0.00195	-0.00197	-0.00196
	(A1 * !A2 * !B2 * Y)	0.00990	0.00996	0.00994
	(!A1 * !B2 * Y)	-0.00196	-0.00197	-0.00196
	(!A1 * !B2 * Y)	0.00990	0.00995	0.00994

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)	0.00204	0.00205	0.00203
	(A1 * A2 * B1 * !Y)	-0.00102	-0.00102	-0.00101
	(A1 * A2 * !B1 * !Y)	0.00196	0.00200	0.00197
	(A1 * A2 * !B1 * !Y)	-0.00100	-0.00101	-0.00101
	(A1 * !A2 * !B1 * Y)	0.00166	0.00168	0.00166
	(A1 * !A2 * !B1 * Y)	-0.00223	-0.00224	-0.00223
	(!A1 * !B1 * Y)	0.00166	0.00168	0.00166
	(!A1 * !B1 * Y)	-0.00223	-0.00225	-0.00223
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	0.00350	0.00355	0.00352
	(A1 * A2 * B1 * !Y)	-0.00194	-0.00197	-0.00195
	(A1 * A2 * !B1 * !Y)	0.00336	0.00340	0.00337
	(A1 * A2 * !B1 * !Y)	-0.00193	-0.00194	-0.00194
	(A1 * !A2 * !B1 * Y)	0.00297	0.00302	0.00299
	(A1 * !A2 * !B1 * Y)	-0.00418	-0.00421	-0.00418
	(!A1 * !B1 * Y)	0.00297	0.00302	0.00299
	(!A1 * !B1 * Y)	-0.00418	-0.00421	-0.00418
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	0.00735	0.00751	0.00738
	(A1 * A2 * B1 * !Y)	-0.00391	-0.00399	-0.00392
	(A1 * A2 * !B1 * !Y)	0.00704	0.00720	0.00707
	(A1 * A2 * !B1 * !Y)	-0.00389	-0.00392	-0.00391
	(A1 * !A2 * !B1 * Y)	0.00633	0.00632	0.00632
	(A1 * !A2 * !B1 * Y)	-0.00843	-0.00842	-0.00843
	(!A1 * !B1 * Y)	0.00633	0.00640	0.00632
	(!A1 * !B1 * Y)	-0.00844	-0.00845	-0.00843

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)	-0.00185	-0.00187	-0.00201
	(A1 * A2 * B1 * !Y)	0.00115	0.00116	0.00104
	(A1 * A2 * !B1 * !Y)	-0.00192	-0.00196	-0.00197
	(A1 * A2 * !B1 * !Y)	0.00100	0.00101	0.00101
	(A1 * !A2 * !B1 * Y)	-0.00155	-0.00166	-0.00166
	(A1 * !A2 * !B1 * Y)	0.00231	0.00225	0.00224
	(!A1 * !B1 * Y)	-0.00155	-0.00166	-0.00166
	(!A1 * !B1 * Y)	0.00231	0.00225	0.00224
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	-0.00320	-0.00324	-0.00348
	(A1 * A2 * B1 * !Y)	0.00219	0.00221	0.00200
	(A1 * A2 * !B1 * !Y)	-0.00327	-0.00338	-0.00337
	(A1 * A2 * !B1 * !Y)	0.00194	0.00194	0.00194
	(A1 * !A2 * !B1 * Y)	-0.00278	-0.00301	-0.00299
	(A1 * !A2 * !B1 * Y)	0.00432	0.00423	0.00420
	(!A1 * !B1 * Y)	-0.00278	-0.00301	-0.00299
	(!A1 * !B1 * Y)	0.00432	0.00423	0.00420
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	-0.00679	-0.00685	-0.00731
	(A1 * A2 * B1 * !Y)	0.00442	0.00442	0.00403
	(A1 * A2 * !B1 * !Y)	-0.00687	-0.00709	-0.00707
	(A1 * A2 * !B1 * !Y)	0.00390	0.00392	0.00391
	(A1 * !A2 * !B1 * Y)	-0.00581	-0.00629	-0.00632
	(A1 * !A2 * !B1 * Y)	0.00874	0.00846	0.00845
	(!A1 * !B1 * Y)	-0.00581	-0.00629	-0.00632
	(!A1 * !B1 * Y)	0.00874	0.00845	0.00845

SKY130_FD_SC_HS__A22Ox

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00270	0.00249	0.00264	0.00271	1.17812
sky130_fd_sc_hs__a22o_2	0.00282	0.00261	0.00277	0.00271	2.27828
sky130_fd_sc_hs__a22o_4	0.00480	0.00505	0.00480	0.00527	4.60520

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a22o_1	0.00000	0.15501	0.40066
sky130_fd_sc_hs__a22o_2	0.00000	0.19969	0.40809
sky130_fd_sc_hs__a22o_4	0.00000	0.40302	0.81617

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)	0.08345	0.59226	6.19049
	A2->X (RR)	0.08943	0.58255	6.16463
	B1->X (RR)	0.06994	0.55634	6.15617
	B2->X (RR)	0.07395	0.55428	6.13193
sky130_fd_sc_hs__a22o_2	A1->X (RR)	0.08397	0.51267	6.16039
	A2->X (RR)	0.08914	0.49712	6.10777
	B1->X (RR)	0.07063	0.47810	6.10084
	B2->X (RR)	0.07418	0.47162	6.06926
sky130_fd_sc_hs__a22o_4	A1->X (RR)	0.08138	0.42822	6.20770
	A2->X (RR)	0.08646	0.42336	6.16566
	B1->X (RR)	0.07020	0.39792	6.11666
	B2->X (RR)	0.07443	0.39440	6.11143

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22o_1	A1->X (FF)	0.14027	0.55873	4.82539
	A2->X (FF)	0.15258	0.58899	4.91653
	B1->X (FF)	0.12134	0.56366	4.90916
	B2->X (FF)	0.13022	0.58052	4.92986
sky130_fd_sc_hs__a22o_2	A1->X (FF)	0.17089	0.57819	4.86747
	A2->X (FF)	0.18526	0.61091	4.97911
	B1->X (FF)	0.15410	0.59307	4.96741
	B2->X (FF)	0.16176	0.60860	4.99940
sky130_fd_sc_hs__a22o_4	A1->X (FF)	0.16593	0.54829	5.09017
	A2->X (FF)	0.17669	0.57094	5.15045
	B1->X (FF)	0.14807	0.56246	5.13481
	B2->X (FF)	0.15120	0.56706	5.14316

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.01261	0.01360	0.03738
	A1	0.00596	0.00696	0.03114
	A2	0.01381	0.01447	0.04128
	A2	0.00597	0.00663	0.03384
	B1	0.00812	0.00972	0.04654
	B1	0.00363	0.00523	0.04246
	B2	0.00913	0.01032	0.04488
	B2	0.00357	0.00476	0.03975
sky130_fd_sc_hs__a22o_2	A1	0.01562	0.01659	0.04023
	A1	0.00872	0.00976	0.03423
	A2	0.01679	0.01766	0.04405
	A2	0.00865	0.00955	0.03681
	B1	0.01102	0.01278	0.04872
	B1	0.00627	0.00804	0.04490
	B2	0.01211	0.01343	0.04743
	B2	0.00624	0.00757	0.04252
sky130_fd_sc_hs__a22o_4	A1	0.03062	0.03279	0.09262
	A1	0.01776	0.02003	0.08145
	A2	0.03314	0.03500	0.08796
	A2	0.01780	0.01987	0.07432
	B1	0.02157	0.02459	0.09893
	B1	0.01302	0.01607	0.09218
	B2	0.02368	0.02589	0.09862
	B2	0.01269	0.01498	0.08937

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.00348	0.00368	0.03180
	A1	0.01017	0.01033	0.03752
	A2	0.00420	0.00476	0.03254
	A2	0.01199	0.01253	0.03951
	B1	0.00349	0.00597	0.04597
	B1	0.00798	0.01039	0.05008
	B2	0.00379	0.00618	0.04451
	B2	0.00930	0.01153	0.04999
sky130_fd_sc_hs__a22o_2	A1	0.00643	0.00674	0.03324
	A1	0.01336	0.01358	0.03984
	A2	0.00766	0.00822	0.03676
	A2	0.01574	0.01628	0.04291
	B1	0.00635	0.00906	0.04912
	B1	0.01109	0.01358	0.05283
	B2	0.00683	0.00911	0.04821
	B2	0.01263	0.01490	0.05361
sky130_fd_sc_hs__a22o_4	A1	0.01282	0.01420	0.06907
	A1	0.02581	0.02667	0.08202
	A2	0.01328	0.01423	0.06889
	A2	0.02861	0.02956	0.08219
	B1	0.01287	0.01709	0.08416
	B1	0.02139	0.02544	0.09267
	B2	0.01371	0.01775	0.08997
	B2	0.02458	0.02854	0.10033

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)	0.00197	0.00174	0.00171
	(A2 * B1 * B2 * X)	-0.00154	-0.00182	-0.00183
	(!A2 * B1 * B2 * X)	0.00165	0.00164	0.00165
	(!A2 * B1 * B2 * X)	-0.00186	-0.00185	-0.00186
	(!A2 * B1 * !B2 * !X)	0.00056	0.00055	0.00052
	(!A2 * B1 * !B2 * !X)	-0.00234	-0.00234	-0.00239
	(!A2 * !B1 * !X)	0.00056	0.00055	0.00052
	(!A2 * !B1 * !X)	-0.00234	-0.00234	-0.00239
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	0.00213	0.00191	0.00188
	(A2 * B1 * B2 * X)	-0.00152	-0.00180	-0.00182
	(!A2 * B1 * B2 * X)	0.00181	0.00184	0.00182
	(!A2 * B1 * B2 * X)	-0.00183	-0.00185	-0.00184
	(!A2 * B1 * !B2 * !X)	0.00061	0.00061	0.00057
	(!A2 * B1 * !B2 * !X)	-0.00235	-0.00235	-0.00241
	(!A2 * !B1 * !X)	0.00061	0.00061	0.00057
	(!A2 * !B1 * !X)	-0.00235	-0.00235	-0.00241
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	0.00332	0.00285	0.00278
	(A2 * B1 * B2 * X)	-0.00313	-0.00376	-0.00380
	(!A2 * B1 * B2 * X)	0.00265	0.00267	0.00266
	(!A2 * B1 * B2 * X)	-0.00385	-0.00388	-0.00386
	(!A2 * B1 * !B2 * !X)	0.00084	0.00085	0.00082
	(!A2 * B1 * !B2 * !X)	-0.00440	-0.00443	-0.00448
	(!A2 * !B1 * !X)	0.00084	0.00085	0.00082
	(!A2 * !B1 * !X)	-0.00439	-0.00443	-0.00448

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)	-0.00169	-0.00170	-0.00169
	(A2 * B1 * B2 * X)	0.00182	0.00184	0.00183
	(!A2 * B1 * B2 * X)	-0.00156	-0.00164	-0.00165
	(!A2 * B1 * B2 * X)	0.00186	0.00190	0.00187
	(!A2 * B1 * !B2 * !X)	-0.00051	-0.00052	-0.00051
	(!A2 * B1 * !B2 * !X)	0.00241	0.00244	0.00240
	(!A2 * !B1 * !X)	-0.00051	-0.00052	-0.00051
	(!A2 * !B1 * !X)	0.00240	0.00244	0.00240
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	-0.00187	-0.00187	-0.00186
	(A2 * B1 * B2 * X)	0.00180	0.00182	0.00182
	(!A2 * B1 * B2 * X)	-0.00173	-0.00183	-0.00182
	(!A2 * B1 * B2 * X)	0.00184	0.00187	0.00185
	(!A2 * B1 * !B2 * !X)	-0.00054	-0.00056	-0.00054
	(!A2 * B1 * !B2 * !X)	0.00240	0.00246	0.00242
	(!A2 * !B1 * !X)	-0.00055	-0.00056	-0.00055
	(!A2 * !B1 * !X)	0.00242	0.00246	0.00242
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	-0.00275	-0.00275	-0.00274
	(A2 * B1 * B2 * X)	0.00377	0.00378	0.00380
	(!A2 * B1 * B2 * X)	-0.00255	-0.00267	-0.00266
	(!A2 * B1 * B2 * X)	0.00387	0.00391	0.00388
	(!A2 * B1 * !B2 * !X)	-0.00079	-0.00081	-0.00079
	(!A2 * B1 * !B2 * !X)	0.00447	0.00456	0.00449
	(!A2 * !B1 * !X)	-0.00079	-0.00081	-0.00079
	(!A2 * !B1 * !X)	0.00447	0.00456	0.00449

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)	0.00194	0.00172	0.00168
	(A1 * B1 * B2 * X)	-0.00155	-0.00182	-0.00184
	(!A1 * B1 * B2 * X)	0.00162	0.00161	0.00161
	(!A1 * B1 * B2 * X)	-0.00186	-0.00186	-0.00186
	(!A1 * B1 * !B2 * !X)	0.00162	0.00164	0.00162
	(!A1 * B1 * !B2 * !X)	-0.00187	-0.00188	-0.00187
	(!A1 * !B1 * !X)	0.00161	0.00161	0.00161
	(!A1 * !B1 * !X)	-0.00187	-0.00187	-0.00187
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	0.00199	0.00176	0.00173
	(A1 * B1 * B2 * X)	-0.00160	-0.00188	-0.00190
	(!A1 * B1 * B2 * X)	0.00167	0.00168	0.00167
	(!A1 * B1 * B2 * X)	-0.00192	-0.00193	-0.00192
	(!A1 * B1 * !B2 * !X)	0.00167	0.00168	0.00166
	(!A1 * B1 * !B2 * !X)	-0.00193	-0.00193	-0.00192
	(!A1 * !B1 * !X)	0.00165	0.00166	0.00166
	(!A1 * !B1 * !X)	-0.00191	-0.00192	-0.00192
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	0.00386	0.00344	0.00337
	(A1 * B1 * B2 * X)	-0.00311	-0.00372	-0.00372
	(!A1 * B1 * B2 * X)	0.00326	0.00327	0.00326
	(!A1 * B1 * B2 * X)	-0.00378	-0.00379	-0.00378
	(!A1 * B1 * !B2 * !X)	0.00317	0.00318	0.00319
	(!A1 * B1 * !B2 * !X)	-0.00384	-0.00385	-0.00385
	(!A1 * !B1 * !X)	0.00316	0.00321	0.00319
	(!A1 * !B1 * !X)	-0.00384	-0.00387	-0.00385

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)	-0.00167	-0.00168	-0.00166
	(A1 * B1 * B2 * X)	0.00183	0.00184	0.00184
	(!A1 * B1 * B2 * X)	-0.00155	-0.00161	-0.00161
	(!A1 * B1 * B2 * X)	0.00186	0.00188	0.00187
	(!A1 * B1 * !B2 * !X)	-0.00151	-0.00161	-0.00162
	(!A1 * B1 * !B2 * !X)	0.00191	0.00189	0.00187
	(!A1 * !B1 * !X)	-0.00151	-0.00161	-0.00161
	(!A1 * !B1 * !X)	0.00191	0.00189	0.00187
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	-0.00171	-0.00172	-0.00171
	(A1 * B1 * B2 * X)	0.00189	0.00191	0.00190
	(!A1 * B1 * B2 * X)	-0.00159	-0.00166	-0.00167
	(!A1 * B1 * B2 * X)	0.00192	0.00194	0.00193
	(!A1 * B1 * !B2 * !X)	-0.00155	-0.00166	-0.00166
	(!A1 * B1 * !B2 * !X)	0.00196	0.00195	0.00193
	(!A1 * !B1 * !X)	-0.00156	-0.00166	-0.00166
	(!A1 * !B1 * !X)	0.00196	0.00195	0.00193
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	-0.00335	-0.00337	-0.00334
	(A1 * B1 * B2 * X)	0.00370	0.00374	0.00372
	(!A1 * B1 * B2 * X)	-0.00315	-0.00327	-0.00326
	(!A1 * B1 * B2 * X)	0.00379	0.00383	0.00381
	(!A1 * B1 * !B2 * !X)	-0.00299	-0.00318	-0.00319
	(!A1 * B1 * !B2 * !X)	0.00399	0.00390	0.00387
	(!A1 * !B1 * !X)	-0.00299	-0.00321	-0.00319
	(!A1 * !B1 * !X)	0.00399	0.00390	0.00387

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)	0.00163	0.00165	0.00164
	(A1 * A2 * B2 * X)	-0.00091	-0.00092	-0.00091
	(A1 * A2 * !B2 * X)	0.00158	0.00159	0.00158
	(A1 * A2 * !B2 * X)	-0.00090	-0.00091	-0.00091
	(A1 * !A2 * !B2 * !X)	0.00047	0.00048	0.00046
	(A1 * !A2 * !B2 * !X)	-0.00218	-0.00219	-0.00220
	(!A1 * !B2 * !X)	0.00050	0.00050	0.00048
	(!A1 * !B2 * !X)	-0.00218	-0.00219	-0.00220
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	0.00183	0.00185	0.00183
	(A1 * A2 * B2 * X)	-0.00090	-0.00091	-0.00090
	(A1 * A2 * !B2 * X)	0.00177	0.00177	0.00177
	(A1 * A2 * !B2 * X)	-0.00089	-0.00090	-0.00090
	(A1 * !A2 * !B2 * !X)	0.00052	0.00052	0.00050
	(A1 * !A2 * !B2 * !X)	-0.00222	-0.00223	-0.00225
	(!A1 * !B2 * !X)	0.00053	0.00053	0.00051
	(!A1 * !B2 * !X)	-0.00222	-0.00223	-0.00225
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	0.00304	0.00307	0.00304
	(A1 * A2 * B2 * X)	-0.00179	-0.00181	-0.00179
	(A1 * A2 * !B2 * X)	0.00293	0.00299	0.00294
	(A1 * A2 * !B2 * X)	-0.00177	-0.00180	-0.00178
	(A1 * !A2 * !B2 * !X)	0.00088	0.00089	0.00085
	(A1 * !A2 * !B2 * !X)	-0.00422	-0.00425	-0.00429
	(!A1 * !B2 * !X)	0.00088	0.00089	0.00085
	(!A1 * !B2 * !X)	-0.00422	-0.00425	-0.00429

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)	-0.00151	-0.00153	-0.00162
	(A1 * A2 * B2 * X)	0.00102	0.00102	0.00094
	(A1 * A2 * !B2 * X)	-0.00154	-0.00158	-0.00158
	(A1 * A2 * !B2 * X)	0.00091	0.00092	0.00091
	(A1 * !A2 * !B2 * !X)	-0.00045	-0.00046	-0.00045
	(A1 * !A2 * !B2 * !X)	0.00220	0.00224	0.00221
	(!A1 * !B2 * !X)	-0.00047	-0.00048	-0.00047
	(!A1 * !B2 * !X)	0.00220	0.00224	0.00221
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	-0.00170	-0.00172	-0.00182
	(A1 * A2 * B2 * X)	0.00101	0.00101	0.00093
	(A1 * A2 * !B2 * X)	-0.00172	-0.00177	-0.00177
	(A1 * A2 * !B2 * X)	0.00090	0.00090	0.00090
	(A1 * !A2 * !B2 * !X)	-0.00049	-0.00050	-0.00049
	(A1 * !A2 * !B2 * !X)	0.00225	0.00228	0.00226
	(!A1 * !B2 * !X)	-0.00050	-0.00051	-0.00050
	(!A1 * !B2 * !X)	0.00225	0.00228	0.00226
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	-0.00276	-0.00280	-0.00301
	(A1 * A2 * B2 * X)	0.00200	0.00202	0.00184
	(A1 * A2 * !B2 * X)	-0.00283	-0.00296	-0.00294
	(A1 * A2 * !B2 * X)	0.00178	0.00180	0.00179
	(A1 * !A2 * !B2 * !X)	-0.00082	-0.00085	-0.00083
	(A1 * !A2 * !B2 * !X)	0.00429	0.00435	0.00430
	(!A1 * !B2 * !X)	-0.00082	-0.00085	-0.00083
	(!A1 * !B2 * !X)	0.00429	0.00435	0.00430

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)	0.00172	0.00173	0.00171
	(A1 * A2 * B1 * X)	-0.00100	-0.00100	-0.00099
	(A1 * A2 * !B1 * X)	0.00166	0.00167	0.00166
	(A1 * A2 * !B1 * X)	-0.00098	-0.00099	-0.00099
	(A1 * !A2 * !B1 * !X)	0.00141	0.00143	0.00142
	(A1 * !A2 * !B1 * !X)	-0.00196	-0.00198	-0.00196
	(!A1 * !B1 * !X)	0.00150	0.00151	0.00151
	(!A1 * !B1 * !X)	-0.00195	-0.00196	-0.00196
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	0.00180	0.00181	0.00180
	(A1 * A2 * B1 * X)	-0.00095	-0.00095	-0.00094
	(A1 * A2 * !B1 * X)	0.00172	0.00176	0.00172
	(A1 * A2 * !B1 * X)	-0.00093	-0.00095	-0.00094
	(A1 * !A2 * !B1 * !X)	0.00157	0.00159	0.00158
	(A1 * !A2 * !B1 * !X)	-0.00188	-0.00189	-0.00189
	(!A1 * !B1 * !X)	0.00161	0.00162	0.00162
	(!A1 * !B1 * !X)	-0.00188	-0.00189	-0.00188
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	0.00332	0.00334	0.00331
	(A1 * A2 * B1 * X)	-0.00199	-0.00199	-0.00197
	(A1 * A2 * !B1 * X)	0.00323	0.00329	0.00322
	(A1 * A2 * !B1 * X)	-0.00194	-0.00198	-0.00195
	(A1 * !A2 * !B1 * !X)	0.00258	0.00263	0.00260
	(A1 * !A2 * !B1 * !X)	-0.00425	-0.00429	-0.00426
	(!A1 * !B1 * !X)	0.00258	0.00262	0.00259
	(!A1 * !B1 * !X)	-0.00424	-0.00428	-0.00426

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)	-0.00159	-0.00160	-0.00170
	(A1 * A2 * B1 * X)	0.00110	0.00110	0.00102
	(A1 * A2 * !B1 * X)	-0.00162	-0.00166	-0.00166
	(A1 * A2 * !B1 * X)	0.00099	0.00100	0.00099
	(A1 * !A2 * !B1 * !X)	-0.00131	-0.00142	-0.00142
	(A1 * !A2 * !B1 * !X)	0.00205	0.00200	0.00197
	(!A1 * !B1 * !X)	-0.00141	-0.00151	-0.00151
	(!A1 * !B1 * !X)	0.00204	0.00198	0.00196
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	-0.00167	-0.00168	-0.00178
	(A1 * A2 * B1 * X)	0.00106	0.00106	0.00097
	(A1 * A2 * !B1 * X)	-0.00168	-0.00173	-0.00172
	(A1 * A2 * !B1 * X)	0.00094	0.00095	0.00094
	(A1 * !A2 * !B1 * !X)	-0.00146	-0.00158	-0.00158
	(A1 * !A2 * !B1 * !X)	0.00197	0.00191	0.00190
	(!A1 * !B1 * !X)	-0.00151	-0.00162	-0.00162
	(!A1 * !B1 * !X)	0.00196	0.00191	0.00189
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	-0.00305	-0.00307	-0.00328
	(A1 * A2 * B1 * X)	0.00221	0.00220	0.00202
	(A1 * A2 * !B1 * X)	-0.00314	-0.00322	-0.00322
	(A1 * A2 * !B1 * X)	0.00197	0.00198	0.00196
	(A1 * !A2 * !B1 * !X)	-0.00242	-0.00261	-0.00260
	(A1 * !A2 * !B1 * !X)	0.00441	0.00430	0.00427
	(!A1 * !B1 * !X)	-0.00242	-0.00261	-0.00259
	(!A1 * !B1 * !X)	0.00441	0.00430	0.00427

SKY130_FD_SC_HS__A2BB2OIx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00234	0.00253	0.00271	0.00290	0.53217
sky130_fd_sc_hs__a2bb2oi_2	0.00256	0.00266	0.00529	0.00533	1.06838
sky130_fd_sc_hs__a2bb2oi_4	0.00404	0.00424	0.01051	0.01071	1.99798

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2bb2oi_1	0.00000	0.10374	0.25706
sky130_fd_sc_hs__a2bb2oi_2	0.00000	0.13958	0.31750
sky130_fd_sc_hs__a2bb2oi_4	0.00000	0.27266	0.63500

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)	0.10426	0.74923	6.25819
	A2_N->Y (RR)	0.09860	0.72464	6.21617
	B1->Y (FR)	0.09602	0.94501	10.32980
	B2->Y (FR)	0.07477	0.88626	9.92494
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (RR)	0.09493	0.59487	6.08539
	A2_N->Y (RR)	0.09038	0.57815	6.05807
	B1->Y (FR)	0.08798	0.79261	10.28470
	B2->Y (FR)	0.06525	0.76020	10.11060
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (RR)	0.11627	0.57214	6.66318
	A2_N->Y (RR)	0.10537	0.54146	6.59958
	B1->Y (FR)	0.08768	0.68954	10.27040
	B2->Y (FR)	0.06363	0.65333	9.97482

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)	0.10518	0.43363	3.10186
	A2_N->Y (FF)	0.09390	0.43070	3.05047
	B1->Y (RF)	0.02912	0.34403	3.68969
	B2->Y (RF)	0.02605	0.37686	4.12480
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (FF)	0.13338	0.47219	3.39817
	A2_N->Y (FF)	0.12122	0.47596	3.31539
	B1->Y (RF)	0.02998	0.31614	4.04377
	B2->Y (RF)	0.02455	0.34825	4.56971
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (FF)	0.13252	0.44035	3.02455
	A2_N->Y (FF)	0.11448	0.43540	3.12733
	B1->Y (RF)	0.02924	0.26075	3.90196
	B2->Y (RF)	0.02467	0.30629	4.68402

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	0.01027	0.01136	0.03862
	A1_N	0.00664	0.00772	0.03515
	A2_N	0.00847	0.00967	0.04518
	A2_N	0.00573	0.00692	0.04256
	B1	0.00180	0.00177	0.00836
	B1	0.00736	0.00736	0.01397
	B2	0.00113	0.00109	0.00758
	B2	0.00575	0.00572	0.01220
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.01521	0.01655	0.04813
	A1_N	0.01272	0.01406	0.04604
	A2_N	0.01313	0.01446	0.05319
	A2_N	0.01168	0.01303	0.05217
	B1	0.00410	0.00399	0.01622
	B1	0.01523	0.01515	0.02744
	B2	0.00226	0.00229	0.01445
	B2	0.01107	0.01112	0.02332
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.02425	0.02572	0.07094
	A1_N	0.02462	0.02601	0.07129
	A2_N	0.01996	0.02232	0.08350
	A2_N	0.02224	0.02425	0.08605
	B1	0.00753	0.00743	0.03170
	B1	0.03001	0.02996	0.05429
	B2	0.00438	0.00452	0.02840
	B2	0.02230	0.02246	0.04639

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	A1_N	0.00545	0.00639	0.03240
	A1_N	0.00893	0.00983	0.03590
	A2_N	0.00539	0.00749	0.03971
	A2_N	0.00799	0.01004	0.04235
	B1	0.00701	0.00704	0.01234
	B1	0.00144	0.00143	0.00657
	B2	0.00602	0.00614	0.01229
	B2	0.00144	0.00155	0.00751
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.00936	0.01060	0.03917
	A1_N	0.01157	0.01269	0.04131
	A2_N	0.00959	0.01195	0.04501
	A2_N	0.01075	0.01294	0.04607
	B1	0.01346	0.01340	0.02317
	B1	0.00227	0.00222	0.01171
	B2	0.01104	0.01123	0.02216
	B2	0.00231	0.00252	0.01337
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.01976	0.02115	0.05761
	A1_N	0.02228	0.02351	0.05997
	A2_N	0.01920	0.02285	0.08319
	A2_N	0.01996	0.02348	0.08378
	B1	0.02656	0.02656	0.04592
	B1	0.00401	0.00401	0.02329
	B2	0.02175	0.02230	0.04411
	B2	0.00403	0.00450	0.02549

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)	0.00161	0.00135	0.00131
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00161	-0.00191	-0.00192
	(!A2_N * B1 * B2 * !Y)	0.00671	0.00768	0.03424
	(!A2_N * B1 * B2 * !Y)	0.00159	0.00254	0.02914
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00204	0.00178	0.00174
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00156	-0.00185	-0.00186
	(!A2_N * B1 * B2 * !Y)	0.00844	0.00948	0.03977
	(!A2_N * B1 * B2 * !Y)	0.00287	0.00389	0.03422
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00251	0.00190	0.00183
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00307	-0.00377	-0.00380
	(!A2_N * B1 * B2 * !Y)	0.01479	0.01576	0.06080
	(!A2_N * B1 * B2 * !Y)	0.00560	0.00654	0.05166

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)	-0.00130	-0.00130	-0.00129
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00191	0.00193	0.00192
	(!A2_N * B1 * B2 * !Y)	0.00175	0.00247	0.02884
	(!A2_N * B1 * B2 * !Y)	0.00684	0.00758	0.03395
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00172	-0.00173	-0.00172
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00185	0.00187	0.00187
	(!A2_N * B1 * B2 * !Y)	0.00304	0.00371	0.03296
	(!A2_N * B1 * B2 * !Y)	0.00857	0.00926	0.03851
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00182	-0.00181	-0.00180
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00380	0.00379	0.00381
	(!A2_N * B1 * B2 * !Y)	0.00699	0.00768	0.05234
	(!A2_N * B1 * B2 * !Y)	0.01610	0.01681	0.06145

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)	0.00154	0.00156	0.00155
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00094	-0.00095	-0.00094
	(!A1_N * B1 * B2 * !Y)	0.00499	0.00616	0.04147
	(!A1_N * B1 * B2 * !Y)	0.00074	0.00189	0.03722
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00174	0.00176	0.00175
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00093	-0.00094	-0.00093
	(!A1_N * B1 * B2 * !Y)	0.00653	0.00777	0.04637
	(!A1_N * B1 * B2 * !Y)	0.00200	0.00323	0.04184
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00249	0.00252	0.00250
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00190	-0.00192	-0.00190
	(!A1_N * B1 * B2 * !Y)	0.01051	0.01190	0.07189
	(!A1_N * B1 * B2 * !Y)	0.00300	0.00435	0.06437

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)	-0.00149	-0.00150	-0.00154
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00098	0.00099	0.00095
	(!A1_N * B1 * B2 * !Y)	0.00169	0.00360	0.03894
	(!A1_N * B1 * B2 * !Y)	0.00591	0.00784	0.04317
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00169	-0.00170	-0.00174
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00098	0.00098	0.00095
	(!A1_N * B1 * B2 * !Y)	0.00326	0.00510	0.04342
	(!A1_N * B1 * B2 * !Y)	0.00774	0.00960	0.04791
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00233	-0.00235	-0.00248
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00206	0.00206	0.00195
	(!A1_N * B1 * B2 * !Y)	0.00646	0.00943	0.07018
	(!A1_N * B1 * B2 * !Y)	0.01390	0.01691	0.07765

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)	0.00165	0.00167	0.00166
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00208	-0.00210	-0.00209
	(!A1_N * !A2_N * B2 * !Y)	0.00198	0.00176	0.00172
	(!A1_N * !A2_N * B2 * !Y)	-0.00178	-0.00207	-0.00207
	(!A1_N * !A2_N * !B2 * !Y)	0.00165	0.00168	0.00166
	(!A1_N * !A2_N * !B2 * !Y)	-0.00209	-0.00210	-0.00209
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00316	0.00321	0.00317
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00422	-0.00426	-0.00423
	(!A1_N * !A2_N * B2 * !Y)	0.00382	0.00339	0.00333
	(!A1_N * !A2_N * B2 * !Y)	-0.00362	-0.00419	-0.00419
	(!A1_N * !A2_N * !B2 * !Y)	0.00316	0.00319	0.00317
	(!A1_N * !A2_N * !B2 * !Y)	-0.00423	-0.00425	-0.00423
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00632	0.00639	0.00637
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00844	-0.00849	-0.00848
	(!A1_N * !A2_N * B2 * !Y)	0.00773	0.00678	0.00665
	(!A1_N * !A2_N * B2 * !Y)	-0.00719	-0.00839	-0.00838
	(!A1_N * !A2_N * !B2 * !Y)	0.00638	0.00643	0.00637
	(!A1_N * !A2_N * !B2 * !Y)	-0.00848	-0.00853	-0.00848

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)	-0.00156	-0.00166	-0.00166
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00215	0.00212	0.00210
	(!A1_N * !A2_N * B2 * !Y)	-0.00172	-0.00173	-0.00172
	(!A1_N * !A2_N * B2 * !Y)	0.00206	0.00208	0.00207
	(!A1_N * !A2_N * !B2 * !Y)	-0.00161	-0.00167	-0.00166
	(!A1_N * !A2_N * !B2 * !Y)	0.00209	0.00211	0.00210
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00294	-0.00321	-0.00317
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00439	0.00429	0.00425
	(!A1_N * !A2_N * B2 * !Y)	-0.00331	-0.00334	-0.00331
	(!A1_N * !A2_N * B2 * !Y)	0.00417	0.00422	0.00419
	(!A1_N * !A2_N * !B2 * !Y)	-0.00306	-0.00319	-0.00317
	(!A1_N * !A2_N * !B2 * !Y)	0.00423	0.00431	0.00425
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00584	-0.00639	-0.00637
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00884	0.00859	0.00851
	(!A1_N * !A2_N * B2 * !Y)	-0.00665	-0.00665	-0.00663
	(!A1_N * !A2_N * B2 * !Y)	0.00838	0.00840	0.00838
	(!A1_N * !A2_N * !B2 * !Y)	-0.00613	-0.00639	-0.00637
	(!A1_N * !A2_N * !B2 * !Y)	0.00848	0.00864	0.00851

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)	0.00070	0.00070	0.00067
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00246	-0.00247	-0.00249
	(!A1_N * !A2_N * B1 * !Y)	0.00196	0.00174	0.00171
	(!A1_N * !A2_N * B1 * !Y)	-0.00191	-0.00220	-0.00220
	(!A1_N * !A2_N * !B1 * !Y)	0.00164	0.00165	0.00164
	(!A1_N * !A2_N * !B1 * !Y)	-0.00222	-0.00223	-0.00223
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00114	0.00116	0.00110
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00478	-0.00482	-0.00489
	(!A1_N * !A2_N * B1 * !Y)	0.00378	0.00337	0.00332
	(!A1_N * !A2_N * B1 * !Y)	-0.00361	-0.00416	-0.00415
	(!A1_N * !A2_N * !B1 * !Y)	0.00315	0.00318	0.00317
	(!A1_N * !A2_N * !B1 * !Y)	-0.00419	-0.00421	-0.00420
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00215	0.00217	0.00207
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00977	-0.00984	-0.00997
	(!A1_N * !A2_N * B1 * !Y)	0.00766	0.00673	0.00661
	(!A1_N * !A2_N * B1 * !Y)	-0.00720	-0.00842	-0.00842
	(!A1_N * !A2_N * !B1 * !Y)	0.00630	0.00639	0.00633
	(!A1_N * !A2_N * !B1 * !Y)	-0.00849	-0.00857	-0.00852

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)	-0.00067	-0.00068	-0.00066
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00250	0.00253	0.00249
	(!A1_N * !A2_N * B1 * !Y)	-0.00171	-0.00172	-0.00171
	(!A1_N * !A2_N * B1 * !Y)	0.00219	0.00222	0.00220
	(!A1_N * !A2_N * !B1 * !Y)	-0.00160	-0.00165	-0.00164
	(!A1_N * !A2_N * !B1 * !Y)	0.00222	0.00223	0.00223
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00107	-0.00109	-0.00107
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00488	0.00498	0.00490
	(!A1_N * !A2_N * B1 * !Y)	-0.00330	-0.00332	-0.00330
	(!A1_N * !A2_N * B1 * !Y)	0.00412	0.00418	0.00415
	(!A1_N * !A2_N * !B1 * !Y)	-0.00305	-0.00318	-0.00317
	(!A1_N * !A2_N * !B1 * !Y)	0.00422	0.00424	0.00421
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00201	-0.00202	-0.00202
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00993	0.00996	0.00999
	(!A1_N * !A2_N * B1 * !Y)	-0.00660	-0.00662	-0.00658
	(!A1_N * !A2_N * B1 * !Y)	0.00841	0.00848	0.00842
	(!A1_N * !A2_N * !B1 * !Y)	-0.00609	-0.00639	-0.00633
	(!A1_N * !A2_N * !B1 * !Y)	0.00856	0.00860	0.00855

SKY130_FD_SC_HS__A2BB2Ox

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00231	0.00238	0.00253	0.00245	1.17832
sky130_fd_sc_hs__a2bb2o_2	0.00243	0.00248	0.00265	0.00284	2.01819
sky130_fd_sc_hs__a2bb2o_4	0.00265	0.00281	0.00479	0.00483	4.36218

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2bb2o_1	0.00000	0.19005	0.34339
sky130_fd_sc_hs__a2bb2o_2	0.00000	0.23407	0.36524
sky130_fd_sc_hs__a2bb2o_4	0.00000	0.35703	0.44338

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)	0.15154	0.76970	8.37789
	A2_N->X (FR)	0.13860	0.76656	8.37337
	B1->X (RR)	0.07673	0.56020	6.08009
	B2->X (RR)	0.07251	0.56005	6.11057
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (FR)	0.15702	0.68513	8.13712
	A2_N->X (FR)	0.14401	0.68212	8.14613
	B1->X (RR)	0.07542	0.47551	5.80889
	B2->X (RR)	0.07260	0.48145	5.85319
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (FR)	0.19507	0.66495	8.48624
	A2_N->X (FR)	0.18371	0.66809	8.49188
	B1->X (RR)	0.08560	0.41761	6.09534
	B2->X (RR)	0.08039	0.42174	6.14670

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)	0.14660	0.39013	2.14940
	A2_N->X (RF)	0.13958	0.36881	2.06042
	B1->X (FF)	0.13791	0.55455	4.75224
	B2->X (FF)	0.11731	0.52065	4.67587
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (RF)	0.17518	0.39128	1.88503
	A2_N->X (RF)	0.16800	0.36592	1.77859
	B1->X (FF)	0.16598	0.56879	4.60674
	B2->X (FF)	0.14668	0.53826	4.52650
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (RF)	0.17125	0.36654	2.19446
	A2_N->X (RF)	0.16292	0.34440	2.09817
	B1->X (FF)	0.16849	0.54704	4.94329
	B2->X (FF)	0.14565	0.51126	4.85530

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	0.00929	0.01021	0.03655
	A1_N	0.01260	0.01354	0.04189
	A2_N	0.00921	0.01134	0.04823
	A2_N	0.01158	0.01373	0.05262
	B1	0.01070	0.01146	0.03776
	B1	0.00518	0.00595	0.03268
	B2	0.00953	0.01078	0.04014
	B2	0.00521	0.00646	0.03624
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.01230	0.01365	0.03923
	A1_N	0.01579	0.01718	0.04354
	A2_N	0.01234	0.01484	0.05187
	A2_N	0.01472	0.01732	0.05525
	B1	0.01385	0.01492	0.04134
	B1	0.00828	0.00937	0.03598
	B2	0.01285	0.01425	0.04360
	B2	0.00829	0.00974	0.03920
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.02070	0.02229	0.05093
	A1_N	0.02340	0.02500	0.05362
	A2_N	0.02056	0.02327	0.06219
	A2_N	0.02190	0.02488	0.06455
	B1	0.02558	0.02743	0.07797
	B1	0.01518	0.01707	0.06931
	B2	0.02346	0.02613	0.08294
	B2	0.01523	0.01797	0.07639

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	A1_N	0.01364	0.01471	0.04159
	A1_N	0.01029	0.01128	0.03805
	A2_N	0.01167	0.01302	0.04885
	A2_N	0.00924	0.01057	0.04623
	B1	0.00530	0.00593	0.03281
	B1	0.01078	0.01136	0.03729
	B2	0.00501	0.00565	0.03453
	B2	0.00935	0.00992	0.03775
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.01700	0.01782	0.04394
	A1_N	0.01341	0.01423	0.04015
	A2_N	0.01503	0.01614	0.05141
	A2_N	0.01250	0.01362	0.04872
	B1	0.00849	0.00889	0.03594
	B1	0.01404	0.01443	0.04037
	B2	0.00792	0.00853	0.03616
	B2	0.01251	0.01294	0.04004
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.02909	0.03031	0.06229
	A1_N	0.02627	0.02743	0.05906
	A2_N	0.02673	0.02829	0.06884
	A2_N	0.02493	0.02644	0.06641
	B1	0.01816	0.01874	0.07016
	B1	0.02848	0.02899	0.07834
	B2	0.01662	0.01775	0.07185
	B2	0.02490	0.02566	0.07796

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)	0.00171	0.00144	0.00141
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00150	-0.00180	-0.00181
	(!A2_N * B1 * B2 * X)	0.00649	0.00744	0.03396
	(!A2_N * B1 * B2 * X)	0.00156	0.00249	0.02905
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00177	0.00149	0.00145
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00159	-0.00190	-0.00191
	(!A2_N * B1 * B2 * X)	0.00664	0.00751	0.03371
	(!A2_N * B1 * B2 * X)	0.00146	0.00232	0.02856
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00194	0.00167	0.00164
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00175	-0.00206	-0.00206
	(!A2_N * B1 * B2 * X)	0.00859	0.00975	0.03979
	(!A2_N * B1 * B2 * X)	0.00276	0.00390	0.03399

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)	-0.00139	-0.00140	-0.00139
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00181	0.00183	0.00182
	(!A2_N * B1 * B2 * X)	0.00172	0.00244	0.02876
	(!A2_N * B1 * B2 * X)	0.00662	0.00736	0.03367
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00144	-0.00144	-0.00144
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00192	0.00193	0.00192
	(!A2_N * B1 * B2 * X)	0.00162	0.00231	0.02827
	(!A2_N * B1 * B2 * X)	0.00676	0.00749	0.03343
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00163	-0.00163	-0.00162
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00207	0.00207	0.00207
	(!A2_N * B1 * B2 * X)	0.00147	0.00210	0.03146
	(!A2_N * B1 * B2 * X)	0.00723	0.00790	0.03725

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)	0.00154	0.00155	0.00154
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00089	-0.00090	-0.00089
	(!A1_N * B1 * B2 * X)	0.00466	0.00589	0.04091
	(!A1_N * B1 * B2 * X)	0.00066	0.00186	0.03689
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00155	0.00157	0.00156
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00089	-0.00090	-0.00089
	(!A1_N * B1 * B2 * X)	0.00477	0.00597	0.04087
	(!A1_N * B1 * B2 * X)	0.00064	0.00183	0.03676
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00184	0.00186	0.00184
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00098	-0.00100	-0.00099
	(!A1_N * B1 * B2 * X)	0.00663	0.00788	0.04552
	(!A1_N * B1 * B2 * X)	0.00183	0.00306	0.04073

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)	-0.00149	-0.00150	-0.00153
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00094	0.00094	0.00091
	(!A1_N * B1 * B2 * X)	0.00167	0.00357	0.03858
	(!A1_N * B1 * B2 * X)	0.00566	0.00758	0.04258
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00150	-0.00151	-0.00155
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00094	0.00094	0.00090
	(!A1_N * B1 * B2 * X)	0.00164	0.00354	0.03845
	(!A1_N * B1 * B2 * X)	0.00574	0.00766	0.04256
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00178	-0.00179	-0.00183
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00105	0.00105	0.00101
	(!A1_N * B1 * B2 * X)	0.00142	0.00320	0.04047
	(!A1_N * B1 * B2 * X)	0.00618	0.00799	0.04524

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)	0.00172	0.00175	0.00173
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00189	-0.00191	-0.00190
	(!A1_N * !A2_N * B2 * X)	0.00202	0.00181	0.00178
	(!A1_N * !A2_N * B2 * X)	-0.00162	-0.00188	-0.00189
	(!A1_N * !A2_N * !B2 * X)	0.00172	0.00175	0.00173
	(!A1_N * !A2_N * !B2 * X)	-0.00189	-0.00191	-0.00190
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00166	0.00168	0.00167
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00193	-0.00194	-0.00193
	(!A1_N * !A2_N * B2 * X)	0.00200	0.00177	0.00174
	(!A1_N * !A2_N * B2 * X)	-0.00163	-0.00190	-0.00192
	(!A1_N * !A2_N * !B2 * X)	0.00165	0.00167	0.00166
	(!A1_N * !A2_N * !B2 * X)	-0.00193	-0.00194	-0.00194
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00282	0.00286	0.00282
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00388	-0.00390	-0.00388
	(!A1_N * !A2_N * B2 * X)	0.00352	0.00300	0.00294
	(!A1_N * !A2_N * B2 * X)	-0.00321	-0.00383	-0.00384
	(!A1_N * !A2_N * !B2 * X)	0.00283	0.00284	0.00283
	(!A1_N * !A2_N * !B2 * X)	-0.00387	-0.00389	-0.00387

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)	-0.00163	-0.00173	-0.00173
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00196	0.00193	0.00191
	(!A1_N * !A2_N * B2 * X)	-0.00177	-0.00178	-0.00177
	(!A1_N * !A2_N * B2 * X)	0.00188	0.00190	0.00189
	(!A1_N * !A2_N * !B2 * X)	-0.00168	-0.00173	-0.00173
	(!A1_N * !A2_N * !B2 * X)	0.00190	0.00193	0.00191
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00156	-0.00167	-0.00167
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00201	0.00196	0.00194
	(!A1_N * !A2_N * B2 * X)	-0.00173	-0.00173	-0.00173
	(!A1_N * !A2_N * B2 * X)	0.00190	0.00192	0.00192
	(!A1_N * !A2_N * !B2 * X)	-0.00162	-0.00166	-0.00166
	(!A1_N * !A2_N * !B2 * X)	0.00193	0.00196	0.00194
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00257	-0.00281	-0.00282
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00404	0.00393	0.00389
	(!A1_N * !A2_N * B2 * X)	-0.00293	-0.00293	-0.00291
	(!A1_N * !A2_N * B2 * X)	0.00384	0.00386	0.00385
	(!A1_N * !A2_N * !B2 * X)	-0.00270	-0.00281	-0.00283
	(!A1_N * !A2_N * !B2 * X)	0.00387	0.00391	0.00389

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)	0.00064	0.00064	0.00062
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00215	-0.00215	-0.00218
	(!A1_N * !A2_N * B1 * X)	0.00166	0.00142	0.00139
	(!A1_N * !A2_N * B1 * X)	-0.00177	-0.00204	-0.00205
	(!A1_N * !A2_N * !B1 * X)	0.00133	0.00134	0.00133
	(!A1_N * !A2_N * !B1 * X)	-0.00206	-0.00207	-0.00206
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00062	0.00062	0.00061
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00233	-0.00233	-0.00236
	(!A1_N * !A2_N * B1 * X)	0.00200	0.00175	0.00171
	(!A1_N * !A2_N * B1 * X)	-0.00171	-0.00202	-0.00203
	(!A1_N * !A2_N * !B1 * X)	0.00162	0.00164	0.00163
	(!A1_N * !A2_N * !B1 * X)	-0.00205	-0.00207	-0.00206
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00105	0.00106	0.00102
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00433	-0.00435	-0.00443
	(!A1_N * !A2_N * B1 * X)	0.00349	0.00300	0.00294
	(!A1_N * !A2_N * B1 * X)	-0.00321	-0.00382	-0.00384
	(!A1_N * !A2_N * !B1 * X)	0.00281	0.00285	0.00282
	(!A1_N * !A2_N * !B1 * X)	-0.00385	-0.00388	-0.00387

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)	-0.00061	-0.00062	-0.00061
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00218	0.00222	0.00219
	(!A1_N * !A2_N * B1 * X)	-0.00138	-0.00138	-0.00137
	(!A1_N * !A2_N * B1 * X)	0.00204	0.00206	0.00205
	(!A1_N * !A2_N * !B1 * X)	-0.00129	-0.00133	-0.00133
	(!A1_N * !A2_N * !B1 * X)	0.00208	0.00208	0.00207
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00060	-0.00061	-0.00059
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00237	0.00240	0.00237
	(!A1_N * !A2_N * B1 * X)	-0.00170	-0.00170	-0.00170
	(!A1_N * !A2_N * B1 * X)	0.00202	0.00203	0.00203
	(!A1_N * !A2_N * !B1 * X)	-0.00159	-0.00163	-0.00163
	(!A1_N * !A2_N * !B1 * X)	0.00205	0.00207	0.00207
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00098	-0.00101	-0.00099
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00442	0.00451	0.00444
	(!A1_N * !A2_N * B1 * X)	-0.00293	-0.00293	-0.00292
	(!A1_N * !A2_N * B1 * X)	0.00384	0.00385	0.00384
	(!A1_N * !A2_N * !B1 * X)	-0.00268	-0.00281	-0.00282
	(!A1_N * !A2_N * !B1 * X)	0.00386	0.00388	0.00389

SKY130_FD_SC_HS__A311OIx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00290	0.00295	0.00286	0.00303	0.00289	0.37238
sky130_fd_sc_hs__a311oi_2	0.00551	0.00530	0.00512	0.00440	0.00429	0.69560
sky130_fd_sc_hs__a311oi_4	0.01066	0.01035	0.01036	0.00827	0.00839	1.23401

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a311oi_1	0.00000	0.03113	0.07878
sky130_fd_sc_hs__a311oi_2	0.00000	0.05901	0.15755
sky130_fd_sc_hs__a311oi_4	0.00000	0.11801	0.31510

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)	0.14518	1.02654	9.62344
	A2->Y (FR)	0.18070	1.09072	9.91774
	A3->Y (FR)	0.19589	1.08986	9.74015
	B1->Y (FR)	0.15628	1.09944	10.58890
	C1->Y (FR)	0.12001	1.06891	10.61840
sky130_fd_sc_hs__a311oi_2	A1->Y (FR)	0.12360	0.86271	9.49785
	A2->Y (FR)	0.15354	0.89772	9.59635
	A3->Y (FR)	0.18195	0.92988	9.62765
	B1->Y (FR)	0.15534	0.94107	10.35410
	C1->Y (FR)	0.11102	0.90336	10.39940
sky130_fd_sc_hs__a311oi_4	A1->Y (FR)	0.11662	0.72284	9.07145
	A2->Y (FR)	0.15125	0.76624	9.26195
	A3->Y (FR)	0.18484	0.81245	9.43867
	B1->Y (FR)	0.15593	0.82711	10.24690
	C1->Y (FR)	0.11142	0.79502	10.34640

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311oi_1	A1->Y (RF)	0.04092	0.41352	3.86655
	A2->Y (RF)	0.04784	0.39151	3.57423
	A3->Y (RF)	0.05068	0.35035	3.05345
	B1->Y (RF)	0.02346	0.27467	2.53079
	C1->Y (RF)	0.02028	0.26617	2.52889
sky130_fd_sc_hs__a311oi_2	A1->Y (RF)	0.03736	0.39846	4.34874
	A2->Y (RF)	0.04421	0.34894	3.68244
	A3->Y (RF)	0.04901	0.31258	3.12114
	B1->Y (RF)	0.03109	0.35672	4.01074
	C1->Y (RF)	0.02284	0.33844	3.98301
sky130_fd_sc_hs__a311oi_4	A1->Y (RF)	0.03752	0.35166	4.31829
	A2->Y (RF)	0.04518	0.30601	3.62217
	A3->Y (RF)	0.04961	0.26041	2.90967
	B1->Y (RF)	0.02826	0.29357	3.72148
	C1->Y (RF)	0.02187	0.29412	3.98650

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311oi_1	A1	0.00064	0.00040	0.00669
	A1	0.00875	0.00852	0.01480
	A2	0.00134	0.00107	0.00737
	A2	0.01057	0.01032	0.01660
	A3	0.00163	0.00144	0.00795
	A3	0.01201	0.01183	0.01831
	B1	0.00041	0.00041	0.00898
	B1	0.00725	0.00725	0.01587
	C1	0.00029	0.00098	0.01470
	C1	0.00604	0.00674	0.02045
sky130_fd_sc_hs__a311oi_2	A1	0.00006	-0.00033	0.01126
	A1	0.01509	0.01466	0.02632
	A2	0.00145	0.00102	0.01312
	A2	0.01853	0.01809	0.03023
	A3	0.00300	0.00260	0.01461
	A3	0.02212	0.02176	0.03375
	B1	0.00088	0.00090	0.01094
	B1	0.01506	0.01499	0.02468
	C1	0.00068	0.00178	0.01956
	C1	0.01247	0.01340	0.03061

sky130_fd_sc_hs__a311oi_4	**A1**	-0.00058	-0.00133	0.02214
	A1	0.02876	0.02792	0.05143
	A2	0.00227	0.00129	0.02547
	A2	0.03588	0.03490	0.05929
	A3	0.00493	0.00415	0.02880
	A3	0.04305	0.04229	0.06698
	B1	0.00106	0.00124	0.02227
	B1	0.02877	0.02871	0.04860
	C1	0.00072	0.00305	0.03741
	C1	0.02394	0.02591	0.05884

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311oi_1	**A1**	0.01075	0.01075	0.01672
	A1	0.00280	0.00274	0.00876
	A2	0.01193	0.01181	0.01694
	A2	0.00277	0.00261	0.00773
	A3	0.01308	0.01293	0.01845
	A3	0.00271	0.00255	0.00810
	B1	0.00779	0.00802	0.01598
	B1	0.00098	0.00118	0.00917
	C1	0.00560	0.00604	0.01360
	C1	-0.00014	0.00026	0.00784

sky130_fd_sc_hs__a311oi_2	**A1**	0.02016	0.02013	0.03110
	A1	0.00551	0.00536	0.01629
	A2	0.02239	0.02211	0.03231
	A2	0.00555	0.00526	0.01526
	A3	0.02459	0.02433	0.03541
	A3	0.00551	0.00518	0.01596
	B1	0.01434	0.01453	0.02460
	B1	0.00165	0.00180	0.01187
	C1	0.00655	0.00720	0.01735
	C1	-0.00146	-0.00086	0.00893
sky130_fd_sc_hs__a311oi_4	**A1**	0.03891	0.03883	0.06000
	A1	0.01024	0.01019	0.03144
	A2	0.04342	0.04291	0.06299
	A2	0.01020	0.00964	0.02957
	A3	0.04818	0.04762	0.06976
	A3	0.01014	0.00948	0.03171
	B1	0.02742	0.02792	0.04833
	B1	0.00263	0.00303	0.02378
	C1	0.01263	0.01390	0.03320
	C1	-0.00302	-0.00181	0.01745

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)**	0.00174	0.00174	0.00172
	(A2 * A3 * B1 * C1 * !Y)	-0.00192	-0.00201	-0.00202
	(A2 * A3 * B1 * !C1 * !Y)	0.00174	0.00174	0.00172
	(A2 * A3 * B1 * !C1 * !Y)	-0.00190	-0.00203	-0.00202
	(A2 * A3 * !B1 * C1 * !Y)	0.00176	0.00173	0.00172
	(A2 * A3 * !B1 * C1 * !Y)	-0.00178	-0.00197	-0.00196
	(A2 * !A3 * B1 * C1 * !Y)	0.00162	0.00163	0.00162
	(A2 * !A3 * B1 * C1 * !Y)	-0.00206	-0.00207	-0.00206
	(A2 * !A3 * B1 * !C1 * !Y)	0.00162	0.00163	0.00162
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00206	-0.00207	-0.00206
	(A2 * !A3 * !B1 * C1 * !Y)	0.00162	0.00163	0.00162
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00206	-0.00207	-0.00206
	(A2 * !A3 * !B1 * !C1 * Y)	0.00052	0.00052	0.00048
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00242	-0.00242	-0.00249
	(!A2 * B1 * C1 * !Y)	0.00164	0.00167	0.00165
	(!A2 * B1 * C1 * !Y)	-0.00206	-0.00207	-0.00206
	(!A2 * B1 * !C1 * !Y)	0.00166	0.00168	0.00166
	(!A2 * B1 * !C1 * !Y)	-0.00207	-0.00207	-0.00206
	(!A2 * !B1 * C1 * !Y)	0.00166	0.00168	0.00166
	(!A2 * !B1 * C1 * !Y)	-0.00207	-0.00206	-0.00206
	(!A2 * !B1 * !C1 * Y)	0.00054	0.00054	0.00051
	(!A2 * !B1 * !C1 * Y)	-0.00246	-0.00247	-0.00250

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	0.00336	0.00339	0.00336
	(A2 * A3 * B1 * C1 * !Y)	-0.00400	-0.00421	-0.00419
	(A2 * A3 * B1 * !C1 * !Y)	0.00337	0.00339	0.00336
	(A2 * A3 * B1 * !C1 * !Y)	-0.00396	-0.00422	-0.00419
	(A2 * A3 * !B1 * C1 * !Y)	0.00342	0.00339	0.00337
	(A2 * A3 * !B1 * C1 * !Y)	-0.00375	-0.00411	-0.00407
	(A2 * !A3 * B1 * C1 * !Y)	0.00320	0.00323	0.00319
	(A2 * !A3 * B1 * C1 * !Y)	-0.00430	-0.00433	-0.00430
	(A2 * !A3 * B1 * !C1 * !Y)	0.00319	0.00322	0.00319
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00429	-0.00433	-0.00430
	(A2 * !A3 * !B1 * C1 * !Y)	0.00320	0.00321	0.00320
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00430	-0.00431	-0.00430
	(A2 * !A3 * !B1 * !C1 * Y)	0.00115	0.00114	0.00105
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00484	-0.00485	-0.00502
	(!A2 * B1 * C1 * !Y)	0.00324	0.00327	0.00325
	(!A2 * B1 * C1 * !Y)	-0.00428	-0.00431	-0.00430
	(!A2 * B1 * !C1 * !Y)	0.00325	0.00327	0.00326
	(!A2 * B1 * !C1 * !Y)	-0.00430	-0.00431	-0.00430
	(!A2 * !B1 * C1 * !Y)	0.00325	0.00326	0.00326
	(!A2 * !B1 * C1 * !Y)	-0.00430	-0.00430	-0.00430
	(!A2 * !B1 * !C1 * Y)	0.00114	0.00113	0.00109
	(!A2 * !B1 * !C1 * Y)	-0.00496	-0.00498	-0.00504

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	0.00656	0.00665	0.00658
	(A2 * A3 * B1 * C1 * !Y)	-0.00791	-0.00837	-0.00830
	(A2 * A3 * B1 * !C1 * !Y)	0.00664	0.00665	0.00658
	(A2 * A3 * B1 * !C1 * !Y)	-0.00790	-0.00838	-0.00830
	(A2 * A3 * !B1 * C1 * !Y)	0.00672	0.00666	0.00659
	(A2 * A3 * !B1 * C1 * !Y)	-0.00744	-0.00815	-0.00807
	(A2 * !A3 * B1 * C1 * !Y)	0.00618	0.00627	0.00621
	(A2 * !A3 * B1 * C1 * !Y)	-0.00848	-0.00856	-0.00851
	(A2 * !A3 * B1 * !C1 * !Y)	0.00617	0.00625	0.00620
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00848	-0.00855	-0.00851
	(A2 * !A3 * !B1 * C1 * !Y)	0.00615	0.00616	0.00617
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00851	-0.00850	-0.00850
	(A2 * !A3 * !B1 * !C1 * Y)	0.00215	0.00215	0.00198
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00955	-0.00961	-0.00990
	(!A2 * B1 * C1 * !Y)	0.00626	0.00634	0.00629
	(!A2 * B1 * C1 * !Y)	-0.00847	-0.00854	-0.00851
	(!A2 * B1 * !C1 * !Y)	0.00629	0.00633	0.00629
	(!A2 * B1 * !C1 * !Y)	-0.00849	-0.00854	-0.00851
	(!A2 * !B1 * C1 * !Y)	0.00626	0.00636	0.00629
	(!A2 * !B1 * C1 * !Y)	-0.00848	-0.00856	-0.00850
	(!A2 * !B1 * !C1 * Y)	0.00217	0.00216	0.00207
	(!A2 * !B1 * !C1 * Y)	-0.00980	-0.00985	-0.00995

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)**	-0.00172	-0.00172	-0.00172
	(A2 * A3 * B1 * C1 * !Y)	0.00201	0.00201	0.00202
	(A2 * A3 * B1 * !C1 * !Y)	-0.00172	-0.00173	-0.00172
	(A2 * A3 * B1 * !C1 * !Y)	0.00201	0.00203	0.00202
	(A2 * A3 * !B1 * C1 * !Y)	-0.00171	-0.00172	-0.00172
	(A2 * A3 * !B1 * C1 * !Y)	0.00195	0.00197	0.00196
	(A2 * !A3 * B1 * C1 * !Y)	-0.00149	-0.00163	-0.00162
	(A2 * !A3 * B1 * C1 * !Y)	0.00206	0.00208	0.00207
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00147	-0.00163	-0.00162
	(A2 * !A3 * B1 * !C1 * !Y)	0.00206	0.00209	0.00207
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00146	-0.00163	-0.00162
	(A2 * !A3 * !B1 * C1 * !Y)	0.00206	0.00209	0.00207
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00049	-0.00050	-0.00048
	(A2 * !A3 * !B1 * !C1 * Y)	0.00249	0.00253	0.00250
	(!A2 * B1 * C1 * !Y)	-0.00160	-0.00167	-0.00165
	(!A2 * B1 * C1 * !Y)	0.00206	0.00210	0.00207
	(!A2 * B1 * !C1 * !Y)	-0.00161	-0.00167	-0.00166
	(!A2 * B1 * !C1 * !Y)	0.00207	0.00210	0.00207
	(!A2 * !B1 * C1 * !Y)	-0.00161	-0.00165	-0.00166
	(!A2 * !B1 * C1 * !Y)	0.00207	0.00206	0.00207
	(!A2 * !B1 * !C1 * Y)	-0.00050	-0.00051	-0.00050
	(!A2 * !B1 * !C1 * Y)	0.00250	0.00254	0.00250

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	-0.00335	-0.00337	-0.00336
	(A2 * A3 * B1 * C1 * !Y)	0.00417	0.00421	0.00419
	(A2 * A3 * B1 * !C1 * !Y)	-0.00335	-0.00337	-0.00335
	(A2 * A3 * B1 * !C1 * !Y)	0.00417	0.00422	0.00419
	(A2 * A3 * !B1 * C1 * !Y)	-0.00335	-0.00337	-0.00336
	(A2 * A3 * !B1 * C1 * !Y)	0.00406	0.00411	0.00407
	(A2 * !A3 * B1 * C1 * !Y)	-0.00288	-0.00321	-0.00319
	(A2 * !A3 * B1 * C1 * !Y)	0.00430	0.00435	0.00431
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00284	-0.00322	-0.00319
	(A2 * !A3 * B1 * !C1 * !Y)	0.00429	0.00433	0.00431
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00281	-0.00321	-0.00320
	(A2 * !A3 * !B1 * C1 * !Y)	0.00430	0.00433	0.00431
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00105	-0.00106	-0.00103
	(A2 * !A3 * !B1 * !C1 * Y)	0.00506	0.00513	0.00505
	(!A2 * B1 * C1 * !Y)	-0.00312	-0.00325	-0.00325
	(!A2 * B1 * C1 * !Y)	0.00428	0.00431	0.00431
	(!A2 * B1 * !C1 * !Y)	-0.00313	-0.00327	-0.00326
	(!A2 * B1 * !C1 * !Y)	0.00431	0.00434	0.00431
	(!A2 * !B1 * C1 * !Y)	-0.00312	-0.00326	-0.00326
	(!A2 * !B1 * C1 * !Y)	0.00430	0.00434	0.00431
	(!A2 * !B1 * !C1 * Y)	-0.00107	-0.00108	-0.00106
	(!A2 * !B1 * !C1 * Y)	0.00506	0.00513	0.00505

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	-0.00656	-0.00660	-0.00656
	(A2 * A3 * B1 * C1 * !Y)	0.00830	0.00837	0.00830
	(A2 * A3 * B1 * !C1 * !Y)	-0.00657	-0.00660	-0.00656
	(A2 * A3 * B1 * !C1 * !Y)	0.00830	0.00839	0.00830
	(A2 * A3 * !B1 * C1 * !Y)	-0.00657	-0.00661	-0.00657
	(A2 * A3 * !B1 * C1 * !Y)	0.00804	0.00815	0.00807
	(A2 * !A3 * B1 * C1 * !Y)	-0.00550	-0.00627	-0.00621
	(A2 * !A3 * B1 * C1 * !Y)	0.00848	0.00858	0.00853
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00546	-0.00625	-0.00620
	(A2 * !A3 * B1 * !C1 * !Y)	0.00854	0.00860	0.00853
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00537	-0.00616	-0.00617
	(A2 * !A3 * !B1 * C1 * !Y)	0.00854	0.00862	0.00853
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00195	-0.00200	-0.00196
	(A2 * !A3 * !B1 * !C1 * Y)	0.00989	0.01012	0.00996
	(!A2 * B1 * C1 * !Y)	-0.00611	-0.00634	-0.00629
	(!A2 * B1 * C1 * !Y)	0.00851	0.00859	0.00853
	(!A2 * B1 * !C1 * !Y)	-0.00609	-0.00633	-0.00629
	(!A2 * B1 * !C1 * !Y)	0.00849	0.00859	0.00853
	(!A2 * !B1 * C1 * !Y)	-0.00612	-0.00634	-0.00629
	(!A2 * !B1 * C1 * !Y)	0.00854	0.00858	0.00853
	(!A2 * !B1 * !C1 * Y)	-0.00204	-0.00202	-0.00202
	(!A2 * !B1 * !C1 * Y)	0.00998	0.00994	0.00997

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)**	0.00180	0.00182	0.00179
	(A1 * A3 * B1 * C1 * !Y)	-0.00191	-0.00202	-0.00202
	(A1 * A3 * B1 * !C1 * !Y)	0.00181	0.00182	0.00179
	(A1 * A3 * B1 * !C1 * !Y)	-0.00190	-0.00203	-0.00202
	(A1 * A3 * !B1 * C1 * !Y)	0.00183	0.00181	0.00179
	(A1 * A3 * !B1 * C1 * !Y)	-0.00179	-0.00197	-0.00196
	(A1 * !A3 * B1 * C1 * !Y)	0.00170	0.00172	0.00171
	(A1 * !A3 * B1 * C1 * !Y)	-0.00206	-0.00207	-0.00206
	(A1 * !A3 * B1 * !C1 * !Y)	0.00172	0.00174	0.00173
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00205	-0.00207	-0.00206
	(A1 * !A3 * !B1 * C1 * !Y)	0.00172	0.00174	0.00173
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00206	-0.00207	-0.00206
	(A1 * !A3 * !B1 * !C1 * Y)	0.00063	0.00063	0.00063
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00228	-0.00227	-0.00227
	(!A1 * A3 * B1 * !Y)	0.00171	0.00173	0.00172
	(!A1 * A3 * B1 * !Y)	-0.00205	-0.00207	-0.00206
	(!A1 * A3 * !B1 * C1 * !Y)	0.00173	0.00175	0.00174
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00206	-0.00207	-0.00206
	(!A1 * A3 * !B1 * !C1 * Y)	0.00151	0.00154	0.00152
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00228	-0.00229	-0.00228
	(!A1 * !A3 * B1 * !Y)	0.00103	0.00104	0.00103
	(!A1 * !A3 * B1 * !Y)	-0.00206	-0.00207	-0.00206
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00103	0.00104	0.00103
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00206	-0.00208	-0.00206
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00074	0.00075	0.00075
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00228	-0.00229	-0.00229

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00331	0.00334	0.00331
	(A1 * A3 * B1 * C1 * !Y)	-0.00395	-0.00416	-0.00414
	(A1 * A3 * B1 * !C1 * !Y)	0.00332	0.00334	0.00331
	(A1 * A3 * B1 * !C1 * !Y)	-0.00392	-0.00416	-0.00414
	(A1 * A3 * !B1 * C1 * !Y)	0.00337	0.00334	0.00331
	(A1 * A3 * !B1 * C1 * !Y)	-0.00371	-0.00405	-0.00403
	(A1 * !A3 * B1 * C1 * !Y)	0.00318	0.00317	0.00318
	(A1 * !A3 * B1 * C1 * !Y)	-0.00426	-0.00425	-0.00425
	(A1 * !A3 * B1 * !C1 * !Y)	0.00318	0.00322	0.00319
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00425	-0.00428	-0.00425
	(A1 * !A3 * !B1 * C1 * !Y)	0.00315	0.00317	0.00316
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00425	-0.00427	-0.00425
	(A1 * !A3 * !B1 * !C1 * Y)	0.00141	0.00140	0.00141
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00427	-0.00426	-0.00426
	(!A1 * A3 * B1 * !Y)	0.00317	0.00320	0.00319
	(!A1 * A3 * B1 * !Y)	-0.00424	-0.00426	-0.00425
	(!A1 * A3 * !B1 * C1 * !Y)	0.00317	0.00320	0.00319
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00424	-0.00426	-0.00425
	(!A1 * A3 * !B1 * !C1 * Y)	0.00317	0.00321	0.00318
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00424	-0.00428	-0.00426
	(!A1 * !A3 * B1 * !Y)	0.00182	0.00185	0.00183
	(!A1 * !A3 * B1 * !Y)	-0.00425	-0.00429	-0.00426
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00183	0.00185	0.00183
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00424	-0.00428	-0.00426
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00167	0.00169	0.00167
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00429	-0.00432	-0.00429

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	0.00659	0.00666	0.00660
	(A1 * A3 * B1 * C1 * !Y)	-0.00787	-0.00831	-0.00824
	(A1 * A3 * B1 * !C1 * !Y)	0.00663	0.00666	0.00660
	(A1 * A3 * B1 * !C1 * !Y)	-0.00780	-0.00831	-0.00824
	(A1 * A3 * !B1 * C1 * !Y)	0.00672	0.00668	0.00660
	(A1 * A3 * !B1 * C1 * !Y)	-0.00738	-0.00809	-0.00801
	(A1 * !A3 * B1 * C1 * !Y)	0.00626	0.00629	0.00626
	(A1 * !A3 * B1 * C1 * !Y)	-0.00845	-0.00847	-0.00845
	(A1 * !A3 * B1 * !C1 * !Y)	0.00626	0.00630	0.00626
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00845	-0.00848	-0.00844
	(A1 * !A3 * !B1 * C1 * !Y)	0.00621	0.00628	0.00624
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00842	-0.00849	-0.00844
	(A1 * !A3 * !B1 * !C1 * Y)	0.00267	0.00268	0.00270
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00841	-0.00844	-0.00844
	(!A1 * A3 * B1 * !Y)	0.00630	0.00640	0.00633
	(!A1 * A3 * B1 * !Y)	-0.00841	-0.00850	-0.00844
	(!A1 * A3 * !B1 * C1 * !Y)	0.00631	0.00637	0.00634
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00842	-0.00847	-0.00844
	(!A1 * A3 * !B1 * !C1 * Y)	0.00631	0.00638	0.00634
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00842	-0.00848	-0.00844
	(!A1 * !A3 * B1 * !Y)	0.00348	0.00353	0.00349
	(!A1 * !A3 * B1 * !Y)	-0.00843	-0.00851	-0.00845
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00348	0.00353	0.00349
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00843	-0.00850	-0.00845
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00320	0.00319	0.00320
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00852	-0.00850	-0.00851

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)**	-0.00179	-0.00180	-0.00179
	(A1 * A3 * B1 * C1 * !Y)	0.00201	0.00202	0.00202
	(A1 * A3 * B1 * !C1 * !Y)	-0.00179	-0.00180	-0.00179
	(A1 * A3 * B1 * !C1 * !Y)	0.00201	0.00203	0.00202
	(A1 * A3 * !B1 * C1 * !Y)	-0.00179	-0.00180	-0.00179
	(A1 * A3 * !B1 * C1 * !Y)	0.00195	0.00197	0.00196
	(A1 * !A3 * B1 * C1 * !Y)	-0.00167	-0.00172	-0.00171
	(A1 * !A3 * B1 * C1 * !Y)	0.00206	0.00208	0.00207
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00167	-0.00173	-0.00173
	(A1 * !A3 * B1 * !C1 * !Y)	0.00205	0.00209	0.00207
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00168	-0.00173	-0.00173
	(A1 * !A3 * !B1 * C1 * !Y)	0.00207	0.00209	0.00207
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00060	-0.00060	-0.00061
	(A1 * !A3 * !B1 * !C1 * Y)	0.00232	0.00234	0.00229
	(!A1 * A3 * B1 * !Y)	-0.00167	-0.00173	-0.00172
	(!A1 * A3 * B1 * !Y)	0.00206	0.00207	0.00207
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00167	-0.00173	-0.00174
	(!A1 * A3 * !B1 * C1 * !Y)	0.00206	0.00207	0.00207
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00138	-0.00151	-0.00152
	(!A1 * A3 * !B1 * !C1 * Y)	0.00237	0.00229	0.00229
	(!A1 * !A3 * B1 * !Y)	-0.00103	-0.00104	-0.00103
	(!A1 * !A3 * B1 * !Y)	0.00207	0.00209	0.00207
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00103	-0.00104	-0.00103
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00207	0.00209	0.00207
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00074	-0.00075	-0.00075
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00238	0.00240	0.00231

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00330	-0.00331	-0.00330
	(A1 * A3 * B1 * C1 * !Y)	0.00413	0.00416	0.00414
	(A1 * A3 * B1 * !C1 * !Y)	-0.00330	-0.00331	-0.00330
	(A1 * A3 * B1 * !C1 * !Y)	0.00413	0.00416	0.00414
	(A1 * A3 * !B1 * C1 * !Y)	-0.00330	-0.00332	-0.00330
	(A1 * A3 * !B1 * C1 * !Y)	0.00402	0.00405	0.00403
	(A1 * !A3 * B1 * C1 * !Y)	-0.00305	-0.00317	-0.00318
	(A1 * !A3 * B1 * C1 * !Y)	0.00427	0.00430	0.00427
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00304	-0.00317	-0.00319
	(A1 * !A3 * B1 * !C1 * !Y)	0.00425	0.00429	0.00427
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00304	-0.00317	-0.00316
	(A1 * !A3 * !B1 * C1 * !Y)	0.00425	0.00428	0.00427
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00134	-0.00134	-0.00136
	(A1 * !A3 * !B1 * !C1 * Y)	0.00439	0.00441	0.00430
	(!A1 * A3 * B1 * !Y)	-0.00308	-0.00320	-0.00319
	(!A1 * A3 * B1 * !Y)	0.00427	0.00426	0.00427
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00308	-0.00319	-0.00319
	(!A1 * A3 * !B1 * C1 * !Y)	0.00427	0.00426	0.00427
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00289	-0.00320	-0.00318
	(!A1 * A3 * !B1 * !C1 * Y)	0.00450	0.00431	0.00427
	(!A1 * !A3 * B1 * !Y)	-0.00182	-0.00185	-0.00183
	(!A1 * !A3 * B1 * !Y)	0.00425	0.00431	0.00427
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00183	-0.00185	-0.00183
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00424	0.00431	0.00427
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00167	-0.00169	-0.00167
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00448	0.00455	0.00435

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00659	-0.00662	-0.00658
	(A1 * A3 * B1 * C1 * !Y)	0.00825	0.00831	0.00824
	(A1 * A3 * B1 * !C1 * !Y)	-0.00659	-0.00661	-0.00658
	(A1 * A3 * B1 * !C1 * !Y)	0.00826	0.00831	0.00824
	(A1 * A3 * !B1 * C1 * !Y)	-0.00660	-0.00662	-0.00659
	(A1 * A3 * !B1 * C1 * !Y)	0.00803	0.00809	0.00801
	(A1 * !A3 * B1 * C1 * !Y)	-0.00603	-0.00629	-0.00626
	(A1 * !A3 * B1 * C1 * !Y)	0.00845	0.00851	0.00847
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00603	-0.00630	-0.00626
	(A1 * !A3 * B1 * !C1 * !Y)	0.00845	0.00852	0.00847
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00603	-0.00628	-0.00624
	(A1 * !A3 * !B1 * C1 * !Y)	0.00845	0.00858	0.00847
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00254	-0.00258	-0.00261
	(A1 * !A3 * !B1 * !C1 * Y)	0.00862	0.00874	0.00852
	(!A1 * A3 * B1 * !Y)	-0.00610	-0.00640	-0.00633
	(!A1 * A3 * B1 * !Y)	0.00841	0.00853	0.00847
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00610	-0.00637	-0.00634
	(!A1 * A3 * !B1 * C1 * !Y)	0.00842	0.00853	0.00847
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00566	-0.00638	-0.00634
	(!A1 * A3 * !B1 * !C1 * Y)	0.00894	0.00853	0.00847
	(!A1 * !A3 * B1 * !Y)	-0.00348	-0.00353	-0.00349
	(!A1 * !A3 * B1 * !Y)	0.00843	0.00856	0.00847
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00348	-0.00353	-0.00349
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00843	0.00856	0.00848
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00320	-0.00319	-0.00320
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00888	0.00901	0.00862

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)**	0.00192	0.00192	0.00190
	(A1 * A2 * B1 * C1 * !Y)	-0.00194	-0.00202	-0.00203
	(A1 * A2 * B1 * !C1 * !Y)	0.00192	0.00192	0.00190
	(A1 * A2 * B1 * !C1 * !Y)	-0.00192	-0.00204	-0.00203
	(A1 * A2 * !B1 * C1 * !Y)	0.00194	0.00191	0.00190
	(A1 * A2 * !B1 * C1 * !Y)	-0.00182	-0.00198	-0.00198
	(A1 * !A2 * !B1 * !C1 * Y)	0.00166	0.00168	0.00166
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00224	-0.00225	-0.00224
	(!A2 * B1 * !Y)	0.00183	0.00185	0.00183
	(!A2 * B1 * !Y)	-0.00207	-0.00208	-0.00207
	(!A2 * !B1 * C1 * !Y)	0.00183	0.00185	0.00183
	(!A2 * !B1 * C1 * !Y)	-0.00207	-0.00208	-0.00207
	(!A1 * A2 * B1 * !Y)	0.00178	0.00181	0.00180
	(!A1 * A2 * B1 * !Y)	-0.00206	-0.00208	-0.00207
	(!A1 * A2 * !B1 * C1 * !Y)	0.00179	0.00181	0.00180
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00206	-0.00208	-0.00207
	(!A1 * A2 * !B1 * !C1 * Y)	0.00162	0.00165	0.00163
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00223	-0.00225	-0.00224
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00166	0.00168	0.00166
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00224	-0.00226	-0.00224

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00325	0.00328	0.00324
	(A1 * A2 * B1 * C1 * !Y)	-0.00387	-0.00408	-0.00406
	(A1 * A2 * B1 * !C1 * !Y)	0.00326	0.00328	0.00324
	(A1 * A2 * B1 * !C1 * !Y)	-0.00385	-0.00408	-0.00406
	(A1 * A2 * !B1 * C1 * !Y)	0.00331	0.00328	0.00325
	(A1 * A2 * !B1 * C1 * !Y)	-0.00367	-0.00397	-0.00396
	(A1 * !A2 * !B1 * !C1 * Y)	0.00313	0.00316	0.00313
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00416	-0.00419	-0.00416
	(!A2 * B1 * !Y)	0.00313	0.00315	0.00313
	(!A2 * B1 * !Y)	-0.00415	-0.00418	-0.00416
	(!A2 * !B1 * C1 * !Y)	0.00313	0.00315	0.00313
	(!A2 * !B1 * C1 * !Y)	-0.00415	-0.00417	-0.00416
	(!A1 * A2 * B1 * !Y)	0.00309	0.00310	0.00308
	(!A1 * A2 * B1 * !Y)	-0.00416	-0.00418	-0.00416
	(!A1 * A2 * !B1 * C1 * !Y)	0.00306	0.00310	0.00307
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00414	-0.00417	-0.00416
	(!A1 * A2 * !B1 * !C1 * Y)	0.00305	0.00308	0.00307
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00415	-0.00417	-0.00416
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00313	0.00316	0.00313
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00416	-0.00419	-0.00416

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.00658	0.00665	0.00658
	(A1 * A2 * B1 * C1 * !Y)	-0.00785	-0.00823	-0.00821
	(A1 * A2 * B1 * !C1 * !Y)	0.00661	0.00665	0.00658
	(A1 * A2 * B1 * !C1 * !Y)	-0.00778	-0.00825	-0.00821
	(A1 * A2 * !B1 * C1 * !Y)	0.00672	0.00666	0.00658
	(A1 * A2 * !B1 * C1 * !Y)	-0.00741	-0.00801	-0.00799
	(A1 * !A2 * !B1 * !C1 * Y)	0.00630	0.00628	0.00629
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00841	-0.00840	-0.00841
	(!A2 * B1 * !Y)	0.00621	0.00631	0.00624
	(!A2 * B1 * !Y)	-0.00839	-0.00844	-0.00841
	(!A2 * !B1 * C1 * !Y)	0.00627	0.00635	0.00631
	(!A2 * !B1 * C1 * !Y)	-0.00837	-0.00843	-0.00840
	(!A1 * A2 * B1 * !Y)	0.00623	0.00627	0.00621
	(!A1 * A2 * B1 * !Y)	-0.00843	-0.00845	-0.00841
	(!A1 * A2 * !B1 * C1 * !Y)	0.00612	0.00618	0.00614
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00839	-0.00843	-0.00840
	(!A1 * A2 * !B1 * !C1 * Y)	0.00614	0.00622	0.00617
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00839	-0.00844	-0.00841
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00625	0.00637	0.00629
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00836	-0.00846	-0.00841

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)**	-0.00190	-0.00189	-0.00190
	(A1 * A2 * B1 * C1 * !Y)	0.00202	0.00202	0.00203
	(A1 * A2 * B1 * !C1 * !Y)	-0.00190	-0.00191	-0.00190
	(A1 * A2 * B1 * !C1 * !Y)	0.00202	0.00205	0.00203
	(A1 * A2 * !B1 * C1 * !Y)	-0.00189	-0.00190	-0.00189
	(A1 * A2 * !B1 * C1 * !Y)	0.00197	0.00198	0.00198
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00159	-0.00167	-0.00166
	(A1 * !A2 * !B1 * !C1 * Y)	0.00224	0.00226	0.00225
	(!A2 * B1 * !Y)	-0.00178	-0.00182	-0.00183
	(!A2 * B1 * !Y)	0.00207	0.00208	0.00208
	(!A2 * !B1 * C1 * !Y)	-0.00178	-0.00182	-0.00183
	(!A2 * !B1 * C1 * !Y)	0.00207	0.00208	0.00208
	(!A1 * A2 * B1 * !Y)	-0.00170	-0.00181	-0.00180
	(!A1 * A2 * B1 * !Y)	0.00207	0.00209	0.00208
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00170	-0.00181	-0.00180
	(!A1 * A2 * !B1 * C1 * !Y)	0.00207	0.00210	0.00208
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00152	-0.00165	-0.00163
	(!A1 * A2 * !B1 * !C1 * Y)	0.00224	0.00227	0.00225
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00160	-0.00167	-0.00166
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00224	0.00227	0.00225

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00323	-0.00325	-0.00324
	(A1 * A2 * B1 * C1 * !Y)	0.00405	0.00408	0.00406
	(A1 * A2 * B1 * !C1 * !Y)	-0.00323	-0.00324	-0.00324
	(A1 * A2 * B1 * !C1 * !Y)	0.00405	0.00408	0.00406
	(A1 * A2 * !B1 * C1 * !Y)	-0.00323	-0.00325	-0.00324
	(A1 * A2 * !B1 * C1 * !Y)	0.00395	0.00397	0.00396
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00295	-0.00312	-0.00313
	(A1 * !A2 * !B1 * !C1 * Y)	0.00416	0.00420	0.00417
	(!A2 * B1 * !Y)	-0.00299	-0.00312	-0.00313
	(!A2 * B1 * !Y)	0.00415	0.00419	0.00417
	(!A2 * !B1 * C1 * !Y)	-0.00299	-0.00311	-0.00313
	(!A2 * !B1 * C1 * !Y)	0.00415	0.00417	0.00417
	(!A1 * A2 * B1 * !Y)	-0.00282	-0.00307	-0.00308
	(!A1 * A2 * B1 * !Y)	0.00416	0.00421	0.00417
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00281	-0.00307	-0.00307
	(!A1 * A2 * !B1 * C1 * !Y)	0.00416	0.00421	0.00417
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00280	-0.00306	-0.00307
	(!A1 * A2 * !B1 * !C1 * Y)	0.00417	0.00422	0.00417
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00297	-0.00313	-0.00313
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00416	0.00421	0.00417

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00657	-0.00657	-0.00656
	(A1 * A2 * B1 * C1 * !Y)	0.00822	0.00823	0.00821
	(A1 * A2 * B1 * !C1 * !Y)	-0.00657	-0.00658	-0.00656
	(A1 * A2 * B1 * !C1 * !Y)	0.00822	0.00825	0.00821
	(A1 * A2 * !B1 * C1 * !Y)	-0.00658	-0.00658	-0.00657
	(A1 * A2 * !B1 * C1 * !Y)	0.00801	0.00801	0.00799
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00594	-0.00628	-0.00629
	(A1 * !A2 * !B1 * !C1 * Y)	0.00841	0.00850	0.00843
	(!A2 * B1 * !Y)	-0.00604	-0.00627	-0.00624
	(!A2 * B1 * !Y)	0.00840	0.00844	0.00843
	(!A2 * !B1 * C1 * !Y)	-0.00604	-0.00626	-0.00631
	(!A2 * !B1 * C1 * !Y)	0.00840	0.00844	0.00843
	(!A1 * A2 * B1 * !Y)	-0.00569	-0.00619	-0.00621
	(!A1 * A2 * B1 * !Y)	0.00844	0.00849	0.00843
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00569	-0.00618	-0.00614
	(!A1 * A2 * !B1 * C1 * !Y)	0.00845	0.00849	0.00843
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00566	-0.00620	-0.00617
	(!A1 * A2 * !B1 * !C1 * Y)	0.00848	0.00853	0.00843
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00599	-0.00632	-0.00629
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00841	0.00850	0.00843

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)**	0.00209	0.00204	0.00193
	(A1 * A2 * A3 * C1 * !Y)	-0.00139	-0.00141	-0.00140
	(A1 * A2 * A3 * !C1 * !Y)	0.00186	0.00187	0.00184
	(A1 * A2 * A3 * !C1 * !Y)	-0.00106	-0.00107	-0.00107
	(A1 * A2 * !A3 * C1 * !Y)	0.00220	0.00186	0.00182
	(A1 * A2 * !A3 * C1 * !Y)	-0.00161	-0.00202	-0.00202
	(A1 * !A2 * C1 * !Y)	0.00220	0.00186	0.00182
	(A1 * !A2 * C1 * !Y)	-0.00161	-0.00202	-0.00202
	(!A1 * C1 * !Y)	0.00219	0.00186	0.00182
	(!A1 * C1 * !Y)	-0.00163	-0.00202	-0.00202
sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * A3 * C1 * !Y)**	0.00230	0.00217	0.00198
	(A1 * A2 * A3 * C1 * !Y)	-0.00293	-0.00296	-0.00292
	(A1 * A2 * A3 * !C1 * !Y)	0.00189	0.00191	0.00187
	(A1 * A2 * A3 * !C1 * !Y)	-0.00223	-0.00226	-0.00226
	(A1 * A2 * !A3 * C1 * !Y)	0.00269	0.00187	0.00184
	(A1 * A2 * !A3 * C1 * !Y)	-0.00332	-0.00416	-0.00418
	(A1 * !A2 * C1 * !Y)	0.00269	0.00187	0.00184
	(A1 * !A2 * C1 * !Y)	-0.00333	-0.00415	-0.00418
	(!A1 * C1 * !Y)	0.00268	0.00186	0.00184
	(!A1 * C1 * !Y)	-0.00334	-0.00415	-0.00418
sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	0.00450	0.00424	0.00383
	(A1 * A2 * A3 * C1 * !Y)	-0.00571	-0.00572	-0.00569
	(A1 * A2 * A3 * !C1 * !Y)	0.00364	0.00367	0.00358
	(A1 * A2 * A3 * !C1 * !Y)	-0.00437	-0.00440	-0.00441
	(A1 * A2 * !A3 * C1 * !Y)	0.00526	0.00363	0.00354
	(A1 * A2 * !A3 * C1 * !Y)	-0.00640	-0.00820	-0.00825
	(A1 * !A2 * C1 * !Y)	0.00524	0.00363	0.00354
	(A1 * !A2 * C1 * !Y)	-0.00643	-0.00820	-0.00825
	(!A1 * C1 * !Y)	0.00521	0.00362	0.00354
	(!A1 * C1 * !Y)	-0.00648	-0.00820	-0.00825

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)	-0.00184	-0.00186	-0.00185
	(A1 * A2 * A3 * C1 * !Y)	0.00139	0.00141	0.00140
	(A1 * A2 * A3 * !C1 * !Y)	-0.00179	-0.00181	-0.00181
	(A1 * A2 * A3 * !C1 * !Y)	0.00111	0.00113	0.00111
	(A1 * A2 * !A3 * C1 * !Y)	-0.00181	-0.00182	-0.00181
	(A1 * A2 * !A3 * C1 * !Y)	0.00201	0.00202	0.00202
	(A1 * !A2 * C1 * !Y)	-0.00181	-0.00182	-0.00181
	(A1 * !A2 * C1 * !Y)	0.00201	0.00202	0.00202
	(!A1 * C1 * !Y)	-0.00181	-0.00182	-0.00181
	(!A1 * C1 * !Y)	0.00201	0.00202	0.00202
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * A3 * C1 * !Y)	-0.00187	-0.00189	-0.00187
	(A1 * A2 * A3 * C1 * !Y)	0.00293	0.00296	0.00292
	(A1 * A2 * A3 * !C1 * !Y)	-0.00177	-0.00178	-0.00178
	(A1 * A2 * A3 * !C1 * !Y)	0.00235	0.00236	0.00235
	(A1 * A2 * !A3 * C1 * !Y)	-0.00184	-0.00184	-0.00183
	(A1 * A2 * !A3 * C1 * !Y)	0.00417	0.00418	0.00418
	(A1 * !A2 * C1 * !Y)	-0.00184	-0.00184	-0.00183
	(A1 * !A2 * C1 * !Y)	0.00417	0.00418	0.00418
	(!A1 * C1 * !Y)	-0.00184	-0.00184	-0.00183
	(!A1 * C1 * !Y)	0.00417	0.00417	0.00418

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	-0.00360	-0.00361	-0.00359
	(A1 * A2 * A3 * C1 * !Y)	0.00571	0.00572	0.00569
	(A1 * A2 * A3 * !C1 * !Y)	-0.00336	-0.00340	-0.00343
	(A1 * A2 * A3 * !C1 * !Y)	0.00457	0.00462	0.00458
	(A1 * A2 * !A3 * C1 * !Y)	-0.00351	-0.00354	-0.00350
	(A1 * A2 * !A3 * C1 * !Y)	0.00818	0.00828	0.00825
	(A1 * !A2 * C1 * !Y)	-0.00351	-0.00354	-0.00350
	(A1 * !A2 * C1 * !Y)	0.00818	0.00828	0.00825
	(!A1 * C1 * !Y)	-0.00352	-0.00354	-0.00350
	(!A1 * C1 * !Y)	0.00819	0.00828	0.00825

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)	0.00193	0.00195	0.00193
	(A1 * A2 * B1 * !Y)	-0.00102	-0.00102	-0.00101
	(A1 * A2 * A3 * !B1 * !Y)	0.00194	0.00197	0.00194
	(A1 * A2 * A3 * !B1 * !Y)	-0.00102	-0.00103	-0.00101
	(A1 * !A2 * B1 * !Y)	0.00193	0.00195	0.00193
	(A1 * !A2 * B1 * !Y)	-0.00102	-0.00102	-0.00101
	(!A1 * B1 * !Y)	0.00194	0.00195	0.00193
	(!A1 * B1 * !Y)	-0.00102	-0.00102	-0.00101
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	0.00217	0.00219	0.00217
	(A1 * A2 * B1 * !Y)	-0.00198	-0.00199	-0.00197
	(A1 * A2 * A3 * !B1 * !Y)	0.00218	0.00221	0.00217
	(A1 * A2 * A3 * !B1 * !Y)	-0.00198	-0.00200	-0.00197
	(A1 * !A2 * B1 * !Y)	0.00217	0.00219	0.00217
	(A1 * !A2 * B1 * !Y)	-0.00198	-0.00199	-0.00198
	(!A1 * B1 * !Y)	0.00218	0.00219	0.00217
	(!A1 * B1 * !Y)	-0.00199	-0.00200	-0.00198
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	0.00432	0.00436	0.00432
	(A1 * A2 * B1 * !Y)	-0.00393	-0.00395	-0.00391
	(A1 * A2 * A3 * !B1 * !Y)	0.00434	0.00439	0.00432
	(A1 * A2 * A3 * !B1 * !Y)	-0.00394	-0.00397	-0.00390
	(A1 * !A2 * B1 * !Y)	0.00434	0.00436	0.00432
	(A1 * !A2 * B1 * !Y)	-0.00396	-0.00396	-0.00392
	(!A1 * B1 * !Y)	0.00432	0.00436	0.00432
	(!A1 * B1 * !Y)	-0.00393	-0.00396	-0.00392

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)	-0.00187	-0.00189	-0.00193
	(A1 * A2 * B1 * !Y)	0.00106	0.00107	0.00103
	(A1 * A2 * A3 * !B1 * !Y)	-0.00172	-0.00174	-0.00190
	(A1 * A2 * A3 * !B1 * !Y)	0.00116	0.00117	0.00104
	(A1 * !A2 * B1 * !Y)	-0.00187	-0.00189	-0.00193
	(A1 * !A2 * B1 * !Y)	0.00106	0.00107	0.00103
	(!A1 * B1 * !Y)	-0.00187	-0.00189	-0.00193
	(!A1 * B1 * !Y)	0.00107	0.00107	0.00103
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	-0.00198	-0.00201	-0.00216
	(A1 * A2 * B1 * !Y)	0.00212	0.00215	0.00201
	(A1 * A2 * A3 * !B1 * !Y)	-0.00164	-0.00167	-0.00208
	(A1 * A2 * A3 * !B1 * !Y)	0.00233	0.00235	0.00204
	(A1 * !A2 * B1 * !Y)	-0.00198	-0.00201	-0.00216
	(A1 * !A2 * B1 * !Y)	0.00213	0.00215	0.00202
	(!A1 * B1 * !Y)	-0.00198	-0.00201	-0.00216
	(!A1 * B1 * !Y)	0.00214	0.00215	0.00202
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	-0.00398	-0.00404	-0.00429
	(A1 * A2 * B1 * !Y)	0.00418	0.00422	0.00399
	(A1 * A2 * A3 * !B1 * !Y)	-0.00333	-0.00338	-0.00414
	(A1 * A2 * A3 * !B1 * !Y)	0.00458	0.00460	0.00405
	(A1 * !A2 * B1 * !Y)	-0.00398	-0.00404	-0.00429
	(A1 * !A2 * B1 * !Y)	0.00419	0.00423	0.00400
	(!A1 * B1 * !Y)	-0.00399	-0.00404	-0.00429
	(!A1 * B1 * !Y)	0.00421	0.00423	0.00400

SKY130_FD_SC_HS__A311Ox

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00264	0.00250	0.00251	0.00259	0.00268	1.19199
sky130_fd_sc_hs__a311o_2	0.00273	0.00272	0.00288	0.00292	0.00277	2.01668
sky130_fd_sc_hs__a311o_4	0.00499	0.00465	0.00492	0.00480	0.00479	3.46500

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a311o_1	0.00000	0.09412	0.20405
sky130_fd_sc_hs__a311o_2	0.00000	0.11531	0.21147
sky130_fd_sc_hs__a311o_4	0.00000	0.23348	0.42294

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)	0.09130	0.60103	6.17447
	A2->X (RR)	0.09729	0.60370	6.16316
	A3->X (RR)	0.10131	0.58850	6.04203
	B1->X (RR)	0.06263	0.54396	5.84844
	C1->X (RR)	0.05833	0.52867	5.83507
sky130_fd_sc_hs__a311o_2	A1->X (RR)	0.09882	0.54454	6.03385
	A2->X (RR)	0.10510	0.54321	6.00449
	A3->X (RR)	0.10949	0.52494	5.84949
	B1->X (RR)	0.06585	0.47934	5.67436
	C1->X (RR)	0.06165	0.46647	5.64582
sky130_fd_sc_hs__a311o_4	A1->X (RR)	0.12168	0.51947	6.00402
	A2->X (RR)	0.13198	0.52346	5.98670
	A3->X (RR)	0.13597	0.47792	5.71064
	B1->X (RR)	0.06392	0.39360	5.41281
	C1->X (RR)	0.05891	0.37772	5.38520

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311o_1	A1->X (FF)	0.18183	0.60459	4.80621
	A2->X (FF)	0.20910	0.64319	4.91633
	A3->X (FF)	0.22907	0.67050	4.99215
	B1->X (FF)	0.20709	0.67824	5.28718
	C1->X (FF)	0.17756	0.66452	5.26043
sky130_fd_sc_hs__a311o_2	A1->X (FF)	0.24217	0.64843	4.61247
	A2->X (FF)	0.27844	0.69549	4.73835
	A3->X (FF)	0.30285	0.72663	4.81707
	B1->X (FF)	0.28086	0.73854	5.09857
	C1->X (FF)	0.24615	0.72382	5.07577
sky130_fd_sc_hs__a311o_4	A1->X (FF)	0.25666	0.60799	4.31422
	A2->X (FF)	0.29090	0.65270	4.40221
	A3->X (FF)	0.31942	0.69511	4.55849
	B1->X (FF)	0.29578	0.71016	4.86911
	C1->X (FF)	0.24673	0.68891	4.87970

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311o_1	A1	0.01302	0.01341	0.03762
	A1	0.00602	0.00642	0.03104
	A2	0.01380	0.01374	0.03507
	A2	0.00600	0.00595	0.02770
	A3	0.01482	0.01457	0.03247
	A3	0.00599	0.00573	0.02410
	B1	0.01011	0.01132	0.03922
	B1	0.00435	0.00557	0.03356
	C1	0.00848	0.00999	0.04553
	C1	0.00345	0.00497	0.04061
sky130_fd_sc_hs__a311o_2	A1	0.01677	0.01725	0.04080
	A1	0.00927	0.00995	0.03422
	A2	0.01786	0.01797	0.03888
	A2	0.00926	0.00956	0.03118
	A3	0.01919	0.01909	0.03303
	A3	0.00926	0.00917	0.02324
	B1	0.01406	0.01553	0.04003
	B1	0.00752	0.00902	0.03404
	C1	0.01210	0.01378	0.04505
	C1	0.00652	0.00823	0.04002

sky130_fd_sc_hs__a311o_4	**A1**	0.03319	0.03403	0.08051
	A1	0.01993	0.02083	0.06896
	A2	0.03501	0.03552	0.07648
	A2	0.01980	0.02036	0.06301
	A3	0.03743	0.03770	0.07378
	A3	0.01997	0.02024	0.05694
	B1	0.02880	0.03102	0.07730
	B1	0.01564	0.01799	0.06736
	C1	0.02375	0.02705	0.08637
	C1	0.01260	0.01600	0.07957

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311o_1	**A1**	0.00378	0.00380	0.02344
	A1	0.01085	0.01088	0.02996
	A2	0.00458	0.00456	0.02421
	A2	0.01241	0.01240	0.03138
	A3	0.00498	0.00472	0.02399
	A3	0.01379	0.01352	0.03235
	B1	0.00360	0.00437	0.03198
	B1	0.00937	0.01012	0.03705
	C1	0.00334	0.00547	0.04169
	C1	0.00836	0.01049	0.04611

sky130_fd_sc_hs__a311o_2	**A1**	0.00821	0.00734	0.02787
	A1	0.01579	0.01498	0.03447
	A2	0.00927	0.00810	0.02765
	A2	0.01789	0.01672	0.03623
	A3	0.00952	0.00765	0.02597
	A3	0.01937	0.01760	0.03578
	B1	0.00735	0.00765	0.03260
	B1	0.01602	0.01572	0.03855
	C1	0.00726	0.00879	0.04261
	C1	0.01496	0.01582	0.04714
sky130_fd_sc_hs__a311o_4	**A1**	0.01702	0.01490	0.05540
	A1	0.03046	0.02835	0.06750
	A2	0.01986	0.01719	0.05724
	A2	0.03513	0.03242	0.07056
	A3	0.02060	0.01721	0.05672
	A3	0.03795	0.03454	0.07270
	B1	0.01548	0.01526	0.06090
	B1	0.03556	0.03281	0.06869
	C1	0.01824	0.01930	0.07866
	C1	0.02925	0.03033	0.08951

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)**	0.00162	0.00163	0.00161
	(A2 * A3 * B1 * C1 * X)	-0.00175	-0.00185	-0.00183
	(A2 * A3 * B1 * !C1 * X)	0.00164	0.00163	0.00161
	(A2 * A3 * B1 * !C1 * X)	-0.00172	-0.00185	-0.00183
	(A2 * A3 * !B1 * C1 * X)	0.00167	0.00163	0.00161
	(A2 * A3 * !B1 * C1 * X)	-0.00162	-0.00181	-0.00179
	(A2 * !A3 * B1 * C1 * X)	0.00151	0.00152	0.00152
	(A2 * !A3 * B1 * C1 * X)	-0.00187	-0.00188	-0.00188
	(A2 * !A3 * B1 * !C1 * X)	0.00153	0.00154	0.00153
	(A2 * !A3 * B1 * !C1 * X)	-0.00187	-0.00189	-0.00188
	(A2 * !A3 * !B1 * C1 * X)	0.00153	0.00155	0.00153
	(A2 * !A3 * !B1 * C1 * X)	-0.00187	-0.00189	-0.00188
	(A2 * !A3 * !B1 * !C1 * !X)	0.00064	0.00064	0.00060
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00214	-0.00215	-0.00220
	(!A2 * B1 * C1 * X)	0.00155	0.00156	0.00155
	(!A2 * B1 * C1 * X)	-0.00188	-0.00188	-0.00188
	(!A2 * B1 * !C1 * X)	0.00154	0.00157	0.00155
	(!A2 * B1 * !C1 * X)	-0.00187	-0.00188	-0.00188
	(!A2 * !B1 * C1 * X)	0.00155	0.00157	0.00155
	(!A2 * !B1 * C1 * X)	-0.00187	-0.00189	-0.00188
	(!A2 * !B1 * !C1 * !X)	0.00064	0.00064	0.00062
	(!A2 * !B1 * !C1 * !X)	-0.00218	-0.00219	-0.00221

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	0.00172	0.00173	0.00171
	(A2 * A3 * B1 * C1 * X)	-0.00174	-0.00183	-0.00182
	(A2 * A3 * B1 * !C1 * X)	0.00174	0.00173	0.00171
	(A2 * A3 * B1 * !C1 * X)	-0.00170	-0.00183	-0.00182
	(A2 * A3 * !B1 * C1 * X)	0.00176	0.00172	0.00170
	(A2 * A3 * !B1 * C1 * X)	-0.00160	-0.00179	-0.00178
	(A2 * !A3 * B1 * C1 * X)	0.00160	0.00160	0.00160
	(A2 * !A3 * B1 * C1 * X)	-0.00186	-0.00187	-0.00186
	(A2 * !A3 * B1 * !C1 * X)	0.00160	0.00160	0.00160
	(A2 * !A3 * B1 * !C1 * X)	-0.00186	-0.00187	-0.00186
	(A2 * !A3 * !B1 * C1 * X)	0.00163	0.00163	0.00163
	(A2 * !A3 * !B1 * C1 * X)	-0.00186	-0.00187	-0.00186
	(A2 * !A3 * !B1 * !C1 * !X)	0.00053	0.00053	0.00049
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00219	-0.00220	-0.00227
	(!A2 * B1 * C1 * X)	0.00164	0.00166	0.00165
	(!A2 * B1 * C1 * X)	-0.00185	-0.00186	-0.00186
	(!A2 * B1 * !C1 * X)	0.00164	0.00166	0.00165
	(!A2 * B1 * !C1 * X)	-0.00186	-0.00186	-0.00186
	(!A2 * !B1 * C1 * X)	0.00164	0.00165	0.00165
	(!A2 * !B1 * C1 * X)	-0.00186	-0.00187	-0.00186
	(!A2 * !B1 * !C1 * !X)	0.00055	0.00054	0.00052
	(!A2 * !B1 * !C1 * !X)	-0.00224	-0.00224	-0.00228

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	0.00295	0.00297	0.00294
	(A2 * A3 * B1 * C1 * X)	-0.00364	-0.00382	-0.00380
	(A2 * A3 * B1 * !C1 * X)	0.00296	0.00297	0.00294
	(A2 * A3 * B1 * !C1 * X)	-0.00361	-0.00382	-0.00380
	(A2 * A3 * !B1 * C1 * X)	0.00303	0.00297	0.00294
	(A2 * A3 * !B1 * C1 * X)	-0.00340	-0.00373	-0.00372
	(A2 * !A3 * B1 * C1 * X)	0.00278	0.00279	0.00278
	(A2 * !A3 * B1 * C1 * X)	-0.00390	-0.00391	-0.00390
	(A2 * !A3 * B1 * !C1 * X)	0.00277	0.00279	0.00278
	(A2 * !A3 * B1 * !C1 * X)	-0.00390	-0.00392	-0.00389
	(A2 * !A3 * !B1 * C1 * X)	0.00278	0.00280	0.00278
	(A2 * !A3 * !B1 * C1 * X)	-0.00390	-0.00392	-0.00389
	(A2 * !A3 * !B1 * !C1 * !X)	0.00100	0.00101	0.00092
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00432	-0.00435	-0.00452
	(!A2 * B1 * C1 * X)	0.00284	0.00285	0.00284
	(!A2 * B1 * C1 * X)	-0.00388	-0.00391	-0.00390
	(!A2 * B1 * !C1 * X)	0.00283	0.00285	0.00284
	(!A2 * B1 * !C1 * X)	-0.00389	-0.00391	-0.00389
	(!A2 * !B1 * C1 * X)	0.00283	0.00287	0.00285
	(!A2 * !B1 * C1 * X)	-0.00388	-0.00392	-0.00389
	(!A2 * !B1 * !C1 * !X)	0.00108	0.00108	0.00102
	(!A2 * !B1 * !C1 * !X)	-0.00441	-0.00441	-0.00452

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)**	-0.00162	-0.00162	-0.00161
	(A2 * A3 * B1 * C1 * X)	0.00183	0.00185	0.00183
	(A2 * A3 * B1 * !C1 * X)	-0.00162	-0.00162	-0.00161
	(A2 * A3 * B1 * !C1 * X)	0.00183	0.00185	0.00183
	(A2 * A3 * !B1 * C1 * X)	-0.00161	-0.00162	-0.00160
	(A2 * A3 * !B1 * C1 * X)	0.00179	0.00181	0.00179
	(A2 * !A3 * B1 * C1 * X)	-0.00142	-0.00152	-0.00152
	(A2 * !A3 * B1 * C1 * X)	0.00187	0.00191	0.00188
	(A2 * !A3 * B1 * !C1 * X)	-0.00141	-0.00154	-0.00153
	(A2 * !A3 * B1 * !C1 * X)	0.00187	0.00191	0.00188
	(A2 * !A3 * !B1 * C1 * X)	-0.00140	-0.00154	-0.00153
	(A2 * !A3 * !B1 * C1 * X)	0.00189	0.00189	0.00189
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00060	-0.00060	-0.00060
	(A2 * !A3 * !B1 * !C1 * !X)	0.00220	0.00220	0.00221
	(!A2 * B1 * C1 * X)	-0.00152	-0.00156	-0.00155
	(!A2 * B1 * C1 * X)	0.00188	0.00188	0.00188
	(!A2 * B1 * !C1 * X)	-0.00151	-0.00156	-0.00155
	(!A2 * B1 * !C1 * X)	0.00188	0.00188	0.00188
	(!A2 * !B1 * C1 * X)	-0.00151	-0.00156	-0.00155
	(!A2 * !B1 * C1 * X)	0.00188	0.00189	0.00189
	(!A2 * !B1 * !C1 * !X)	-0.00060	-0.00061	-0.00061
	(!A2 * !B1 * !C1 * !X)	0.00220	0.00221	0.00221

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	-0.00170	-0.00171	-0.00171
	(A2 * A3 * B1 * C1 * X)	0.00181	0.00183	0.00182
	(A2 * A3 * B1 * !C1 * X)	-0.00170	-0.00171	-0.00171
	(A2 * A3 * B1 * !C1 * X)	0.00182	0.00183	0.00182
	(A2 * A3 * !B1 * C1 * X)	-0.00170	-0.00170	-0.00170
	(A2 * A3 * !B1 * C1 * X)	0.00177	0.00179	0.00178
	(A2 * !A3 * B1 * C1 * X)	-0.00148	-0.00160	-0.00160
	(A2 * !A3 * B1 * C1 * X)	0.00186	0.00189	0.00187
	(A2 * !A3 * B1 * !C1 * X)	-0.00147	-0.00160	-0.00160
	(A2 * !A3 * B1 * !C1 * X)	0.00186	0.00189	0.00187
	(A2 * !A3 * !B1 * C1 * X)	-0.00146	-0.00162	-0.00163
	(A2 * !A3 * !B1 * C1 * X)	0.00186	0.00189	0.00187
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00050	-0.00050	-0.00049
	(A2 * !A3 * !B1 * !C1 * !X)	0.00228	0.00230	0.00228
	(!A2 * B1 * C1 * X)	-0.00159	-0.00163	-0.00165
	(!A2 * B1 * C1 * X)	0.00186	0.00186	0.00187
	(!A2 * B1 * !C1 * X)	-0.00158	-0.00163	-0.00165
	(!A2 * B1 * !C1 * X)	0.00186	0.00186	0.00187
	(!A2 * !B1 * C1 * X)	-0.00158	-0.00165	-0.00165
	(!A2 * !B1 * C1 * X)	0.00186	0.00190	0.00187
	(!A2 * !B1 * !C1 * !X)	-0.00051	-0.00051	-0.00051
	(!A2 * !B1 * !C1 * !X)	0.00228	0.00230	0.00229

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	-0.00293	-0.00295	-0.00294
	(A2 * A3 * B1 * C1 * X)	0.00379	0.00382	0.00380
	(A2 * A3 * B1 * !C1 * X)	-0.00293	-0.00294	-0.00294
	(A2 * A3 * B1 * !C1 * X)	0.00379	0.00382	0.00380
	(A2 * A3 * !B1 * C1 * X)	-0.00292	-0.00293	-0.00292
	(A2 * A3 * !B1 * C1 * X)	0.00370	0.00373	0.00372
	(A2 * !A3 * B1 * C1 * X)	-0.00248	-0.00277	-0.00278
	(A2 * !A3 * B1 * C1 * X)	0.00390	0.00393	0.00391
	(A2 * !A3 * B1 * !C1 * X)	-0.00246	-0.00278	-0.00278
	(A2 * !A3 * B1 * !C1 * X)	0.00390	0.00393	0.00391
	(A2 * !A3 * !B1 * C1 * X)	-0.00246	-0.00278	-0.00278
	(A2 * !A3 * !B1 * C1 * X)	0.00390	0.00393	0.00391
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00091	-0.00093	-0.00092
	(A2 * !A3 * !B1 * !C1 * !X)	0.00452	0.00458	0.00454
	(!A2 * B1 * C1 * X)	-0.00270	-0.00285	-0.00284
	(!A2 * B1 * C1 * X)	0.00388	0.00395	0.00391
	(!A2 * B1 * !C1 * X)	-0.00271	-0.00285	-0.00284
	(!A2 * B1 * !C1 * X)	0.00392	0.00395	0.00391
	(!A2 * !B1 * C1 * X)	-0.00271	-0.00285	-0.00285
	(!A2 * !B1 * C1 * X)	0.00392	0.00394	0.00391
	(!A2 * !B1 * !C1 * !X)	-0.00098	-0.00100	-0.00099
	(!A2 * !B1 * !C1 * !X)	0.00452	0.00458	0.00454

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)**	0.00141	0.00142	0.00140
	(A1 * A3 * B1 * C1 * X)	-0.00181	-0.00189	-0.00188
	(A1 * A3 * B1 * !C1 * X)	0.00145	0.00142	0.00140
	(A1 * A3 * B1 * !C1 * X)	-0.00176	-0.00189	-0.00188
	(A1 * A3 * !B1 * C1 * X)	0.00146	0.00141	0.00140
	(A1 * A3 * !B1 * C1 * X)	-0.00165	-0.00183	-0.00183
	(A1 * !A3 * B1 * C1 * X)	0.00134	0.00135	0.00134
	(A1 * !A3 * B1 * C1 * X)	-0.00193	-0.00193	-0.00193
	(A1 * !A3 * B1 * !C1 * X)	0.00134	0.00135	0.00134
	(A1 * !A3 * B1 * !C1 * X)	-0.00193	-0.00194	-0.00193
	(A1 * !A3 * !B1 * C1 * X)	0.00134	0.00136	0.00134
	(A1 * !A3 * !B1 * C1 * X)	-0.00193	-0.00194	-0.00193
	(A1 * !A3 * !B1 * !C1 * !X)	0.00053	0.00053	0.00053
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00201	-0.00202	-0.00201
	(!A1 * A3 * B1 * X)	0.00134	0.00135	0.00134
	(!A1 * A3 * B1 * X)	-0.00192	-0.00194	-0.00193
	(!A1 * A3 * !B1 * C1 * X)	0.00134	0.00136	0.00134
	(!A1 * A3 * !B1 * C1 * X)	-0.00193	-0.00194	-0.00193
	(!A1 * A3 * !B1 * !C1 * !X)	0.00126	0.00128	0.00127
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00201	-0.00202	-0.00201
	(!A1 * !A3 * B1 * X)	0.00077	0.00078	0.00077
	(!A1 * !A3 * B1 * X)	-0.00193	-0.00194	-0.00193
	(!A1 * !A3 * !B1 * C1 * X)	0.00078	0.00078	0.00077
	(!A1 * !A3 * !B1 * C1 * X)	-0.00193	-0.00194	-0.00193
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00063	0.00064	0.00063
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00201	-0.00203	-0.00202

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	0.00171	0.00171	0.00169
	(A1 * A3 * B1 * C1 * X)	-0.00175	-0.00183	-0.00182
	(A1 * A3 * B1 * !C1 * X)	0.00172	0.00171	0.00169
	(A1 * A3 * B1 * !C1 * X)	-0.00170	-0.00183	-0.00182
	(A1 * A3 * !B1 * C1 * X)	0.00175	0.00171	0.00169
	(A1 * A3 * !B1 * C1 * X)	-0.00160	-0.00179	-0.00178
	(A1 * !A3 * B1 * C1 * X)	0.00162	0.00164	0.00162
	(A1 * !A3 * B1 * C1 * X)	-0.00186	-0.00188	-0.00186
	(A1 * !A3 * B1 * !C1 * X)	0.00162	0.00164	0.00162
	(A1 * !A3 * B1 * !C1 * X)	-0.00186	-0.00188	-0.00186
	(A1 * !A3 * !B1 * C1 * X)	0.00161	0.00162	0.00162
	(A1 * !A3 * !B1 * C1 * X)	-0.00186	-0.00187	-0.00186
	(A1 * !A3 * !B1 * !C1 * !X)	0.00063	0.00064	0.00064
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00198	-0.00199	-0.00197
	(!A1 * A3 * B1 * X)	0.00163	0.00165	0.00163
	(!A1 * A3 * B1 * X)	-0.00186	-0.00187	-0.00186
	(!A1 * A3 * !B1 * C1 * X)	0.00163	0.00165	0.00164
	(!A1 * A3 * !B1 * C1 * X)	-0.00186	-0.00187	-0.00186
	(!A1 * A3 * !B1 * !C1 * !X)	0.00152	0.00154	0.00153
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00197	-0.00198	-0.00197
	(!A1 * !A3 * B1 * X)	0.00094	0.00095	0.00094
	(!A1 * !A3 * B1 * X)	-0.00186	-0.00188	-0.00186
	(!A1 * !A3 * !B1 * C1 * X)	0.00094	0.00095	0.00094
	(!A1 * !A3 * !B1 * C1 * X)	-0.00186	-0.00187	-0.00186
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00074	0.00075	0.00075
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00198	-0.00199	-0.00199

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	0.00282	0.00284	0.00281
	(A1 * A3 * B1 * C1 * X)	-0.00359	-0.00379	-0.00376
	(A1 * A3 * B1 * !C1 * X)	0.00282	0.00284	0.00281
	(A1 * A3 * B1 * !C1 * X)	-0.00358	-0.00378	-0.00376
	(A1 * A3 * !B1 * C1 * X)	0.00287	0.00284	0.00281
	(A1 * A3 * !B1 * C1 * X)	-0.00341	-0.00371	-0.00369
	(A1 * !A3 * B1 * C1 * X)	0.00268	0.00270	0.00269
	(A1 * !A3 * B1 * C1 * X)	-0.00384	-0.00385	-0.00383
	(A1 * !A3 * B1 * !C1 * X)	0.00269	0.00270	0.00269
	(A1 * !A3 * B1 * !C1 * X)	-0.00384	-0.00385	-0.00383
	(A1 * !A3 * !B1 * C1 * X)	0.00269	0.00271	0.00269
	(A1 * !A3 * !B1 * C1 * X)	-0.00383	-0.00386	-0.00383
	(A1 * !A3 * !B1 * !C1 * !X)	0.00121	0.00123	0.00124
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00382	-0.00386	-0.00382
	(!A1 * A3 * B1 * X)	0.00269	0.00273	0.00270
	(!A1 * A3 * B1 * X)	-0.00382	-0.00386	-0.00383
	(!A1 * A3 * !B1 * C1 * X)	0.00269	0.00271	0.00270
	(!A1 * A3 * !B1 * C1 * X)	-0.00382	-0.00384	-0.00383
	(!A1 * A3 * !B1 * !C1 * !X)	0.00269	0.00272	0.00270
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00382	-0.00384	-0.00383
	(!A1 * !A3 * B1 * X)	0.00164	0.00166	0.00164
	(!A1 * !A3 * B1 * X)	-0.00383	-0.00386	-0.00383
	(!A1 * !A3 * !B1 * C1 * X)	0.00165	0.00166	0.00164
	(!A1 * !A3 * !B1 * C1 * X)	-0.00383	-0.00386	-0.00383
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00149	0.00149	0.00149
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00386	-0.00386	-0.00386

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)**	-0.00140	-0.00141	-0.00140
	(A1 * A3 * B1 * C1 * X)	0.00187	0.00189	0.00188
	(A1 * A3 * B1 * !C1 * X)	-0.00140	-0.00141	-0.00140
	(A1 * A3 * B1 * !C1 * X)	0.00187	0.00189	0.00188
	(A1 * A3 * !B1 * C1 * X)	-0.00139	-0.00140	-0.00139
	(A1 * A3 * !B1 * C1 * X)	0.00183	0.00183	0.00183
	(A1 * !A3 * B1 * C1 * X)	-0.00131	-0.00135	-0.00134
	(A1 * !A3 * B1 * C1 * X)	0.00194	0.00193	0.00193
	(A1 * !A3 * B1 * !C1 * X)	-0.00131	-0.00135	-0.00134
	(A1 * !A3 * B1 * !C1 * X)	0.00194	0.00194	0.00194
	(A1 * !A3 * !B1 * C1 * X)	-0.00131	-0.00135	-0.00134
	(A1 * !A3 * !B1 * C1 * X)	0.00194	0.00195	0.00194
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00049	-0.00050	-0.00051
	(A1 * !A3 * !B1 * !C1 * !X)	0.00205	0.00207	0.00202
	(!A1 * A3 * B1 * X)	-0.00130	-0.00135	-0.00134
	(!A1 * A3 * B1 * X)	0.00192	0.00194	0.00193
	(!A1 * A3 * !B1 * C1 * X)	-0.00130	-0.00135	-0.00134
	(!A1 * A3 * !B1 * C1 * X)	0.00193	0.00194	0.00194
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00114	-0.00126	-0.00127
	(!A1 * A3 * !B1 * !C1 * !X)	0.00210	0.00202	0.00202
	(!A1 * !A3 * B1 * X)	-0.00077	-0.00078	-0.00077
	(!A1 * !A3 * B1 * X)	0.00193	0.00196	0.00194
	(!A1 * !A3 * !B1 * C1 * X)	-0.00078	-0.00078	-0.00077
	(!A1 * !A3 * !B1 * C1 * X)	0.00193	0.00196	0.00194
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00063	-0.00064	-0.00063
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00210	0.00213	0.00204

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	-0.00169	-0.00170	-0.00169
	(A1 * A3 * B1 * C1 * X)	0.00182	0.00183	0.00182
	(A1 * A3 * B1 * !C1 * X)	-0.00169	-0.00170	-0.00169
	(A1 * A3 * B1 * !C1 * X)	0.00182	0.00183	0.00182
	(A1 * A3 * !B1 * C1 * X)	-0.00168	-0.00169	-0.00169
	(A1 * A3 * !B1 * C1 * X)	0.00177	0.00179	0.00178
	(A1 * !A3 * B1 * C1 * X)	-0.00157	-0.00162	-0.00162
	(A1 * !A3 * B1 * C1 * X)	0.00186	0.00188	0.00187
	(A1 * !A3 * B1 * !C1 * X)	-0.00157	-0.00162	-0.00162
	(A1 * !A3 * B1 * !C1 * X)	0.00186	0.00188	0.00187
	(A1 * !A3 * !B1 * C1 * X)	-0.00157	-0.00162	-0.00162
	(A1 * !A3 * !B1 * C1 * X)	0.00186	0.00188	0.00187
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00060	-0.00061	-0.00061
	(A1 * !A3 * !B1 * !C1 * !X)	0.00203	0.00205	0.00200
	(!A1 * A3 * B1 * X)	-0.00157	-0.00163	-0.00163
	(!A1 * A3 * B1 * X)	0.00186	0.00187	0.00187
	(!A1 * A3 * !B1 * C1 * X)	-0.00157	-0.00163	-0.00164
	(!A1 * A3 * !B1 * C1 * X)	0.00186	0.00187	0.00187
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00138	-0.00151	-0.00153
	(!A1 * A3 * !B1 * !C1 * !X)	0.00207	0.00198	0.00198
	(!A1 * !A3 * B1 * X)	-0.00094	-0.00095	-0.00094
	(!A1 * !A3 * B1 * X)	0.00188	0.00189	0.00187
	(!A1 * !A3 * !B1 * C1 * X)	-0.00094	-0.00095	-0.00094
	(!A1 * !A3 * !B1 * C1 * X)	0.00188	0.00189	0.00187
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00074	-0.00075	-0.00075
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00209	0.00210	0.00201

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	-0.00281	-0.00282	-0.00281
	(A1 * A3 * B1 * C1 * X)	0.00375	0.00379	0.00376
	(A1 * A3 * B1 * !C1 * X)	-0.00281	-0.00282	-0.00281
	(A1 * A3 * B1 * !C1 * X)	0.00375	0.00378	0.00376
	(A1 * A3 * !B1 * C1 * X)	-0.00280	-0.00281	-0.00280
	(A1 * A3 * !B1 * C1 * X)	0.00367	0.00371	0.00369
	(A1 * !A3 * B1 * C1 * X)	-0.00260	-0.00270	-0.00269
	(A1 * !A3 * B1 * C1 * X)	0.00385	0.00387	0.00384
	(A1 * !A3 * B1 * !C1 * X)	-0.00260	-0.00270	-0.00269
	(A1 * !A3 * B1 * !C1 * X)	0.00385	0.00388	0.00385
	(A1 * !A3 * !B1 * C1 * X)	-0.00260	-0.00271	-0.00269
	(A1 * !A3 * !B1 * C1 * X)	0.00385	0.00388	0.00385
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00113	-0.00115	-0.00118
	(A1 * !A3 * !B1 * !C1 * !X)	0.00395	0.00400	0.00388
	(!A1 * A3 * B1 * X)	-0.00258	-0.00273	-0.00270
	(!A1 * A3 * B1 * X)	0.00385	0.00387	0.00385
	(!A1 * A3 * !B1 * C1 * X)	-0.00258	-0.00271	-0.00270
	(!A1 * A3 * !B1 * C1 * X)	0.00385	0.00387	0.00385
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00239	-0.00272	-0.00270
	(!A1 * A3 * !B1 * !C1 * !X)	0.00409	0.00387	0.00385
	(!A1 * !A3 * B1 * X)	-0.00164	-0.00166	-0.00164
	(!A1 * !A3 * B1 * X)	0.00383	0.00389	0.00385
	(!A1 * !A3 * !B1 * C1 * X)	-0.00165	-0.00166	-0.00164
	(!A1 * !A3 * !B1 * C1 * X)	0.00383	0.00389	0.00385
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00149	-0.00149	-0.00149
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00403	0.00410	0.00391

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)**	0.00154	0.00155	0.00154
	(A1 * A2 * B1 * C1 * X)	-0.00176	-0.00186	-0.00185
	(A1 * A2 * B1 * !C1 * X)	0.00156	0.00155	0.00154
	(A1 * A2 * B1 * !C1 * X)	-0.00173	-0.00186	-0.00185
	(A1 * A2 * !B1 * C1 * X)	0.00159	0.00155	0.00154
	(A1 * A2 * !B1 * C1 * X)	-0.00164	-0.00181	-0.00181
	(A1 * !A2 * !B1 * !C1 * !X)	0.00129	0.00131	0.00129
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00208	-0.00210	-0.00209
	(!A2 * B1 * X)	0.00148	0.00149	0.00148
	(!A2 * B1 * X)	-0.00189	-0.00189	-0.00189
	(!A2 * !B1 * C1 * X)	0.00148	0.00150	0.00148
	(!A2 * !B1 * C1 * X)	-0.00189	-0.00190	-0.00189
	(!A1 * A2 * B1 * X)	0.00145	0.00146	0.00145
	(!A1 * A2 * B1 * X)	-0.00189	-0.00190	-0.00189
	(!A1 * A2 * !B1 * C1 * X)	0.00145	0.00146	0.00145
	(!A1 * A2 * !B1 * C1 * X)	-0.00189	-0.00190	-0.00189
	(!A1 * A2 * !B1 * !C1 * !X)	0.00126	0.00127	0.00125
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00209	-0.00210	-0.00208
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00128	0.00130	0.00129
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00208	-0.00210	-0.00209

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	0.00194	0.00195	0.00193
	(A1 * A2 * B1 * C1 * X)	-0.00173	-0.00183	-0.00181
	(A1 * A2 * B1 * !C1 * X)	0.00196	0.00195	0.00193
	(A1 * A2 * B1 * !C1 * X)	-0.00170	-0.00182	-0.00181
	(A1 * A2 * !B1 * C1 * X)	0.00198	0.00194	0.00193
	(A1 * A2 * !B1 * C1 * X)	-0.00160	-0.00177	-0.00177
	(A1 * !A2 * !B1 * !C1 * !X)	0.00153	0.00154	0.00153
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00217	-0.00219	-0.00218
	(!A2 * B1 * X)	0.00184	0.00186	0.00185
	(!A2 * B1 * X)	-0.00185	-0.00186	-0.00185
	(!A2 * !B1 * C1 * X)	0.00184	0.00187	0.00185
	(!A2 * !B1 * C1 * X)	-0.00185	-0.00186	-0.00185
	(!A1 * A2 * B1 * X)	0.00186	0.00187	0.00186
	(!A1 * A2 * B1 * X)	-0.00185	-0.00186	-0.00185
	(!A1 * A2 * !B1 * C1 * X)	0.00187	0.00186	0.00186
	(!A1 * A2 * !B1 * C1 * X)	-0.00185	-0.00185	-0.00185
	(!A1 * A2 * !B1 * !C1 * !X)	0.00150	0.00151	0.00150
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00218	-0.00219	-0.00218
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00152	0.00153	0.00153
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00217	-0.00218	-0.00218

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	0.00323	0.00325	0.00321
	(A1 * A2 * B1 * C1 * X)	-0.00349	-0.00367	-0.00365
	(A1 * A2 * B1 * !C1 * X)	0.00324	0.00325	0.00321
	(A1 * A2 * B1 * !C1 * X)	-0.00347	-0.00367	-0.00365
	(A1 * A2 * !B1 * C1 * X)	0.00330	0.00325	0.00321
	(A1 * A2 * !B1 * C1 * X)	-0.00329	-0.00359	-0.00357
	(A1 * !A2 * !B1 * !C1 * !X)	0.00275	0.00280	0.00277
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00405	-0.00409	-0.00406
	(!A2 * B1 * X)	0.00309	0.00311	0.00311
	(!A2 * B1 * X)	-0.00371	-0.00373	-0.00373
	(!A2 * !B1 * C1 * X)	0.00310	0.00312	0.00311
	(!A2 * !B1 * C1 * X)	-0.00371	-0.00372	-0.00372
	(!A1 * A2 * B1 * X)	0.00309	0.00310	0.00308
	(!A1 * A2 * B1 * X)	-0.00374	-0.00374	-0.00373
	(!A1 * A2 * !B1 * C1 * X)	0.00309	0.00311	0.00308
	(!A1 * A2 * !B1 * C1 * X)	-0.00373	-0.00374	-0.00372
	(!A1 * A2 * !B1 * !C1 * !X)	0.00275	0.00277	0.00274
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00407	-0.00408	-0.00406
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00275	0.00278	0.00277
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00405	-0.00407	-0.00406

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)**	-0.00154	-0.00155	-0.00154
	(A1 * A2 * B1 * C1 * X)	0.00184	0.00186	0.00185
	(A1 * A2 * B1 * !C1 * X)	-0.00154	-0.00155	-0.00154
	(A1 * A2 * B1 * !C1 * X)	0.00184	0.00186	0.00185
	(A1 * A2 * !B1 * C1 * X)	-0.00153	-0.00153	-0.00153
	(A1 * A2 * !B1 * C1 * X)	0.00180	0.00181	0.00181
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00123	-0.00129	-0.00129
	(A1 * !A2 * !B1 * !C1 * !X)	0.00208	0.00211	0.00209
	(!A2 * B1 * X)	-0.00144	-0.00148	-0.00148
	(!A2 * B1 * X)	0.00189	0.00189	0.00190
	(!A2 * !B1 * C1 * X)	-0.00144	-0.00148	-0.00148
	(!A2 * !B1 * C1 * X)	0.00189	0.00190	0.00190
	(!A1 * A2 * B1 * X)	-0.00137	-0.00146	-0.00145
	(!A1 * A2 * B1 * X)	0.00189	0.00192	0.00190
	(!A1 * A2 * !B1 * C1 * X)	-0.00137	-0.00146	-0.00145
	(!A1 * A2 * !B1 * C1 * X)	0.00189	0.00192	0.00190
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00117	-0.00127	-0.00125
	(!A1 * A2 * !B1 * !C1 * !X)	0.00209	0.00211	0.00209
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00125	-0.00129	-0.00129
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00210	0.00211	0.00209

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00193	-0.00194	-0.00193
	(A1 * A2 * B1 * C1 * X)	0.00180	0.00183	0.00181
	(A1 * A2 * B1 * !C1 * X)	-0.00193	-0.00194	-0.00193
	(A1 * A2 * B1 * !C1 * X)	0.00180	0.00183	0.00181
	(A1 * A2 * !B1 * C1 * X)	-0.00192	-0.00193	-0.00192
	(A1 * A2 * !B1 * C1 * X)	0.00176	0.00177	0.00177
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00146	-0.00153	-0.00153
	(A1 * !A2 * !B1 * !C1 * !X)	0.00218	0.00220	0.00219
	(!A2 * B1 * X)	-0.00181	-0.00185	-0.00185
	(!A2 * B1 * X)	0.00185	0.00186	0.00186
	(!A2 * !B1 * C1 * X)	-0.00181	-0.00186	-0.00185
	(!A2 * !B1 * C1 * X)	0.00185	0.00187	0.00186
	(!A1 * A2 * B1 * X)	-0.00173	-0.00185	-0.00186
	(!A1 * A2 * B1 * X)	0.00185	0.00188	0.00186
	(!A1 * A2 * !B1 * C1 * X)	-0.00172	-0.00185	-0.00185
	(!A1 * A2 * !B1 * C1 * X)	0.00185	0.00188	0.00186
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00139	-0.00151	-0.00150
	(!A1 * A2 * !B1 * !C1 * !X)	0.00219	0.00221	0.00219
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00147	-0.00153	-0.00153
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00218	0.00220	0.00219

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00320	-0.00322	-0.00321
	(A1 * A2 * B1 * C1 * X)	0.00363	0.00367	0.00365
	(A1 * A2 * B1 * !C1 * X)	-0.00320	-0.00322	-0.00321
	(A1 * A2 * B1 * !C1 * X)	0.00363	0.00367	0.00365
	(A1 * A2 * !B1 * C1 * X)	-0.00320	-0.00321	-0.00320
	(A1 * A2 * !B1 * C1 * X)	0.00357	0.00359	0.00357
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00263	-0.00276	-0.00277
	(A1 * !A2 * !B1 * !C1 * !X)	0.00406	0.00411	0.00408
	(!A2 * B1 * X)	-0.00301	-0.00311	-0.00311
	(!A2 * B1 * X)	0.00372	0.00376	0.00374
	(!A2 * !B1 * C1 * X)	-0.00300	-0.00310	-0.00311
	(!A2 * !B1 * C1 * X)	0.00372	0.00377	0.00374
	(!A1 * A2 * B1 * X)	-0.00291	-0.00308	-0.00308
	(!A1 * A2 * B1 * X)	0.00374	0.00378	0.00374
	(!A1 * A2 * !B1 * C1 * X)	-0.00290	-0.00307	-0.00308
	(!A1 * A2 * !B1 * C1 * X)	0.00374	0.00378	0.00374
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00256	-0.00273	-0.00274
	(!A1 * A2 * !B1 * !C1 * !X)	0.00409	0.00412	0.00408
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00264	-0.00277	-0.00277
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00407	0.00411	0.00408

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)**	0.00184	0.00174	0.00167
	(A1 * A2 * A3 * C1 * X)	-0.00125	-0.00129	-0.00129
	(A1 * A2 * A3 * !C1 * X)	0.00160	0.00163	0.00159
	(A1 * A2 * A3 * !C1 * X)	-0.00097	-0.00099	-0.00099
	(A1 * A2 * !A3 * C1 * X)	0.00195	0.00162	0.00157
	(A1 * A2 * !A3 * C1 * X)	-0.00145	-0.00182	-0.00184
	(A1 * !A2 * C1 * X)	0.00195	0.00162	0.00157
	(A1 * !A2 * C1 * X)	-0.00145	-0.00182	-0.00184
	(!A1 * C1 * X)	0.00194	0.00162	0.00157
	(!A1 * C1 * X)	-0.00146	-0.00181	-0.00184
sky130_fd_sc_hs__a311o_2	**(A1 * A2 * A3 * C1 * X)**	0.00210	0.00205	0.00195
	(A1 * A2 * A3 * C1 * X)	-0.00125	-0.00130	-0.00129
	(A1 * A2 * A3 * !C1 * X)	0.00187	0.00189	0.00185
	(A1 * A2 * A3 * !C1 * X)	-0.00097	-0.00099	-0.00099
	(A1 * A2 * !A3 * C1 * X)	0.00221	0.00188	0.00184
	(A1 * A2 * !A3 * C1 * X)	-0.00143	-0.00182	-0.00183
	(A1 * !A2 * C1 * X)	0.00221	0.00188	0.00184
	(A1 * !A2 * C1 * X)	-0.00143	-0.00182	-0.00183
	(!A1 * C1 * X)	0.00220	0.00188	0.00184
	(!A1 * C1 * X)	-0.00145	-0.00183	-0.00183
sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	0.00338	0.00327	0.00306
	(A1 * A2 * A3 * C1 * X)	-0.00275	-0.00282	-0.00280
	(A1 * A2 * A3 * !C1 * X)	0.00296	0.00300	0.00295
	(A1 * A2 * A3 * !C1 * X)	-0.00210	-0.00214	-0.00215
	(A1 * A2 * !A3 * C1 * X)	0.00374	0.00299	0.00293
	(A1 * A2 * !A3 * C1 * X)	-0.00293	-0.00377	-0.00382
	(A1 * !A2 * C1 * X)	0.00375	0.00298	0.00293
	(A1 * !A2 * C1 * X)	-0.00293	-0.00377	-0.00382
	(!A1 * C1 * X)	0.00375	0.00298	0.00293
	(!A1 * C1 * X)	-0.00293	-0.00377	-0.00382

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)	-0.00158	-0.00159	-0.00159
	(A1 * A2 * A3 * C1 * X)	0.00128	0.00129	0.00129
	(A1 * A2 * A3 * !C1 * X)	-0.00154	-0.00154	-0.00156
	(A1 * A2 * A3 * !C1 * X)	0.00104	0.00103	0.00102
	(A1 * A2 * !A3 * C1 * X)	-0.00156	-0.00156	-0.00155
	(A1 * A2 * !A3 * C1 * X)	0.00182	0.00184	0.00184
	(A1 * !A2 * C1 * X)	-0.00156	-0.00156	-0.00155
	(A1 * !A2 * C1 * X)	0.00182	0.00184	0.00184
	(!A1 * C1 * X)	-0.00155	-0.00156	-0.00155
	(!A1 * C1 * X)	0.00182	0.00184	0.00184
sky130_fd_sc_hs__a311o_2	(A1 * A2 * A3 * C1 * X)	-0.00187	-0.00187	-0.00187
	(A1 * A2 * A3 * C1 * X)	0.00129	0.00130	0.00129
	(A1 * A2 * A3 * !C1 * X)	-0.00181	-0.00182	-0.00183
	(A1 * A2 * A3 * !C1 * X)	0.00104	0.00104	0.00102
	(A1 * A2 * !A3 * C1 * X)	-0.00182	-0.00183	-0.00182
	(A1 * A2 * !A3 * C1 * X)	0.00183	0.00184	0.00184
	(A1 * !A2 * C1 * X)	-0.00182	-0.00183	-0.00182
	(A1 * !A2 * C1 * X)	0.00183	0.00184	0.00184
	(!A1 * C1 * X)	-0.00182	-0.00183	-0.00182
	(!A1 * C1 * X)	0.00183	0.00184	0.00184

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	-0.00295	-0.00296	-0.00295
	(A1 * A2 * A3 * C1 * X)	0.00281	0.00282	0.00280
	(A1 * A2 * A3 * !C1 * X)	-0.00284	-0.00287	-0.00287
	(A1 * A2 * A3 * !C1 * X)	0.00222	0.00225	0.00223
	(A1 * A2 * !A3 * C1 * X)	-0.00289	-0.00290	-0.00289
	(A1 * A2 * !A3 * C1 * X)	0.00379	0.00380	0.00383
	(A1 * !A2 * C1 * X)	-0.00289	-0.00289	-0.00289
	(A1 * !A2 * C1 * X)	0.00379	0.00379	0.00383
	(!A1 * C1 * X)	-0.00289	-0.00289	-0.00289
	(!A1 * C1 * X)	0.00379	0.00379	0.00383

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)	0.00191	0.00195	0.00191
	(A1 * A2 * B1 * X)	-0.00090	-0.00092	-0.00091
	(A1 * A2 * A3 * !B1 * X)	0.00191	0.00195	0.00191
	(A1 * A2 * A3 * !B1 * X)	-0.00090	-0.00092	-0.00090
	(A1 * !A2 * B1 * X)	0.00191	0.00195	0.00191
	(A1 * !A2 * B1 * X)	-0.00091	-0.00093	-0.00091
	(!A1 * B1 * X)	0.00191	0.00195	0.00191
	(!A1 * B1 * X)	-0.00091	-0.00093	-0.00091
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	0.00189	0.00191	0.00189
	(A1 * A2 * B1 * X)	-0.00097	-0.00097	-0.00096
	(A1 * A2 * A3 * !B1 * X)	0.00189	0.00191	0.00189
	(A1 * A2 * A3 * !B1 * X)	-0.00096	-0.00097	-0.00096
	(A1 * !A2 * B1 * X)	0.00189	0.00191	0.00189
	(A1 * !A2 * B1 * X)	-0.00097	-0.00098	-0.00097
	(!A1 * B1 * X)	0.00189	0.00191	0.00189
	(!A1 * B1 * X)	-0.00097	-0.00098	-0.00097
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	0.00313	0.00314	0.00312
	(A1 * A2 * B1 * X)	-0.00208	-0.00208	-0.00206
	(A1 * A2 * A3 * !B1 * X)	0.00310	0.00317	0.00312
	(A1 * A2 * A3 * !B1 * X)	-0.00204	-0.00208	-0.00205
	(A1 * !A2 * B1 * X)	0.00313	0.00314	0.00312
	(A1 * !A2 * B1 * X)	-0.00208	-0.00208	-0.00206
	(!A1 * B1 * X)	0.00313	0.00314	0.00312
	(!A1 * B1 * X)	-0.00208	-0.00208	-0.00206

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)	-0.00186	-0.00186	-0.00191
	(A1 * A2 * B1 * X)	0.00095	0.00095	0.00092
	(A1 * A2 * A3 * !B1 * X)	-0.00172	-0.00172	-0.00188
	(A1 * A2 * A3 * !B1 * X)	0.00104	0.00104	0.00093
	(A1 * !A2 * B1 * X)	-0.00186	-0.00186	-0.00191
	(A1 * !A2 * B1 * X)	0.00095	0.00095	0.00092
	(!A1 * B1 * X)	-0.00186	-0.00186	-0.00191
	(!A1 * B1 * X)	0.00095	0.00095	0.00092
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	-0.00184	-0.00185	-0.00189
	(A1 * A2 * B1 * X)	0.00101	0.00102	0.00098
	(A1 * A2 * A3 * !B1 * X)	-0.00171	-0.00172	-0.00186
	(A1 * A2 * A3 * !B1 * X)	0.00110	0.00110	0.00099
	(A1 * !A2 * B1 * X)	-0.00184	-0.00185	-0.00189
	(A1 * !A2 * B1 * X)	0.00102	0.00102	0.00098
	(!A1 * B1 * X)	-0.00184	-0.00185	-0.00189
	(!A1 * B1 * X)	0.00102	0.00102	0.00098
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	-0.00294	-0.00297	-0.00310
	(A1 * A2 * B1 * X)	0.00220	0.00222	0.00210
	(A1 * A2 * A3 * !B1 * X)	-0.00264	-0.00268	-0.00304
	(A1 * A2 * A3 * !B1 * X)	0.00239	0.00241	0.00212
	(A1 * !A2 * B1 * X)	-0.00294	-0.00297	-0.00309
	(A1 * !A2 * B1 * X)	0.00220	0.00222	0.00210
	(!A1 * B1 * X)	-0.00294	-0.00297	-0.00309
	(!A1 * B1 * X)	0.00220	0.00223	0.00210

SKY130_FD_SC_HS__A31OIx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00285	0.00293	0.00283	0.00289	0.57486
sky130_fd_sc_hs__a31oi_2	0.00545	0.00530	0.00565	0.00433	1.09732
sky130_fd_sc_hs__a31oi_4	0.01103	0.01046	0.01044	0.00874	1.81186

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a31oi_1	0.00000	0.04404	0.08748
sky130_fd_sc_hs__a31oi_2	0.00000	0.08482	0.17497
sky130_fd_sc_hs__a31oi_4	0.00000	0.16964	0.34993

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)	0.07921	0.89496	10.14310
	A2->Y (FR)	0.10117	0.93684	10.38830
	A3->Y (FR)	0.11189	0.94230	10.30150
	B1->Y (FR)	0.07499	0.93351	10.74570
sky130_fd_sc_hs__a31oi_2	A1->Y (FR)	0.07193	0.77529	10.28380
	A2->Y (FR)	0.08755	0.78669	10.24090
	A3->Y (FR)	0.10043	0.78742	10.03390
	B1->Y (FR)	0.05773	0.78210	10.60640
sky130_fd_sc_hs__a31oi_4	A1->Y (FR)	0.07259	0.66866	9.80278
	A2->Y (FR)	0.09223	0.67710	9.66140
	A3->Y (FR)	0.11325	0.70869	9.84070
	B1->Y (FR)	0.08237	0.71479	10.40050

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31oi_1	A1->Y (RF)	0.03624	0.46487	5.21346
	A2->Y (RF)	0.04323	0.43987	4.81497
	A3->Y (RF)	0.04587	0.39596	4.19265
	B1->Y (RF)	0.01804	0.30632	3.45736
sky130_fd_sc_hs__a31oi_2	A1->Y (RF)	0.03546	0.44026	5.78417
	A2->Y (RF)	0.04035	0.37580	4.82905
	A3->Y (RF)	0.04478	0.34367	4.28554
	B1->Y (RF)	0.02213	0.41093	5.58791
sky130_fd_sc_hs__a31oi_4	A1->Y (RF)	0.03772	0.39435	5.75574
	A2->Y (RF)	0.04521	0.33934	4.83933
	A3->Y (RF)	0.04939	0.29044	4.03417
	B1->Y (RF)	0.02039	0.31670	4.83299

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	0.00005	-0.00004	0.00560
	A1	0.00644	0.00636	0.01204
	A2	0.00077	0.00061	0.00634
	A2	0.00837	0.00821	0.01397
	A3	0.00109	0.00100	0.00683
	A3	0.00983	0.00975	0.01560
	B1	-0.00043	0.00040	0.01382
	B1	0.00481	0.00547	0.01915
sky130_fd_sc_hs__a31oi_2	A1	0.00008	-0.00004	0.01058
	A1	0.01218	0.01205	0.02277
	A2	0.00138	0.00121	0.01223
	A2	0.01554	0.01542	0.02648
	A3	0.00251	0.00231	0.01342
	A3	0.01910	0.01893	0.02995
	B1	0.00070	0.00241	0.01810
	B1	0.00820	0.00996	0.02510
sky130_fd_sc_hs__a31oi_4	A1	-0.00153	-0.00169	0.01953
	A1	0.02326	0.02313	0.04433
	A2	0.00211	0.00155	0.02360
	A2	0.03109	0.03061	0.05257
	A3	0.00473	0.00435	0.02665
	A3	0.03823	0.03788	0.06012
	B1	-0.00021	0.00266	0.03584
	B1	0.01564	0.01856	0.05193

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	0.00824	0.00833	0.01355
	A1	0.00190	0.00197	0.00708
	A2	0.00946	0.00940	0.01371
	A2	0.00190	0.00181	0.00616
	A3	0.01059	0.01057	0.01547
	A3	0.00181	0.00172	0.00641
	B1	0.00513	0.00551	0.01252
	B1	-0.00010	0.00027	0.00716
sky130_fd_sc_hs__a31oi_2	A1	0.01516	0.01527	0.02433
	A1	0.00326	0.00334	0.01247
	A2	0.01733	0.01731	0.02661
	A2	0.00319	0.00306	0.01167
	A3	0.01995	0.01979	0.02901
	A3	0.00325	0.00302	0.01234
	B1	0.00585	0.00642	0.01658
	B1	-0.00165	-0.00115	0.00730
sky130_fd_sc_hs__a31oi_4	A1	0.03065	0.03083	0.04840
	A1	0.00624	0.00625	0.02406
	A2	0.03494	0.03448	0.05318
	A2	0.00603	0.00559	0.02244
	A3	0.03974	0.03932	0.05819
	A3	0.00593	0.00541	0.02444
	B1	0.01244	0.01362	0.03347
	B1	-0.00337	-0.00225	0.01604

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)**	0.00187	0.00172	0.00169
	(A2 * A3 * B1 * !Y)	-0.00178	-0.00202	-0.00202
	(A2 * !A3 * B1 * !Y)	0.00159	0.00159	0.00159
	(A2 * !A3 * B1 * !Y)	-0.00206	-0.00206	-0.00206
	(A2 * !A3 * !B1 * Y)	0.00054	0.00053	0.00050
	(A2 * !A3 * !B1 * Y)	-0.00237	-0.00238	-0.00245
	(!A2 * B1 * !Y)	0.00162	0.00164	0.00163
	(!A2 * B1 * !Y)	-0.00205	-0.00207	-0.00206
	(!A2 * !B1 * Y)	0.00055	0.00055	0.00053
	(!A2 * !B1 * Y)	-0.00242	-0.00243	-0.00246
sky130_fd_sc_hs__a31oi_2	**(A2 * A3 * B1 * !Y)**	0.00374	0.00346	0.00341
	(A2 * A3 * B1 * !Y)	-0.00365	-0.00414	-0.00412
	(A2 * !A3 * B1 * !Y)	0.00323	0.00324	0.00323
	(A2 * !A3 * B1 * !Y)	-0.00421	-0.00421	-0.00420
	(A2 * !A3 * !B1 * Y)	0.00104	0.00105	0.00097
	(A2 * !A3 * !B1 * Y)	-0.00483	-0.00489	-0.00504
	(!A2 * B1 * !Y)	0.00324	0.00327	0.00326
	(!A2 * B1 * !Y)	-0.00419	-0.00422	-0.00420
	(!A2 * !B1 * Y)	0.00103	0.00103	0.00099
	(!A2 * !B1 * Y)	-0.00499	-0.00502	-0.00507
sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	0.00782	0.00715	0.00705
	(A2 * A3 * B1 * !Y)	-0.00714	-0.00818	-0.00813
	(A2 * !A3 * B1 * !Y)	0.00661	0.00670	0.00664
	(A2 * !A3 * B1 * !Y)	-0.00827	-0.00834	-0.00829
	(A2 * !A3 * !B1 * Y)	0.00223	0.00224	0.00205
	(A2 * !A3 * !B1 * Y)	-0.00971	-0.00978	-0.01010
	(!A2 * B1 * !Y)	0.00676	0.00684	0.00677
	(!A2 * B1 * !Y)	-0.00827	-0.00834	-0.00829
	(!A2 * !B1 * Y)	0.00228	0.00229	0.00218
	(!A2 * !B1 * Y)	-0.00996	-0.01003	-0.01014

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)	-0.00169	-0.00169	-0.00169
	(A2 * A3 * B1 * !Y)	0.00201	0.00202	0.00202
	(A2 * !A3 * B1 * !Y)	-0.00145	-0.00159	-0.00159
	(A2 * !A3 * B1 * !Y)	0.00206	0.00209	0.00207
	(A2 * !A3 * !B1 * Y)	-0.00050	-0.00051	-0.00050
	(A2 * !A3 * !B1 * Y)	0.00245	0.00250	0.00246
	(!A2 * B1 * !Y)	-0.00158	-0.00164	-0.00163
	(!A2 * B1 * !Y)	0.00207	0.00210	0.00207
	(!A2 * !B1 * Y)	-0.00052	-0.00053	-0.00052
	(!A2 * !B1 * Y)	0.00245	0.00250	0.00246
sky130_fd_sc_hs__a31oi_2	(A2 * A3 * B1 * !Y)	-0.00340	-0.00342	-0.00340
	(A2 * A3 * B1 * !Y)	0.00410	0.00415	0.00412
	(A2 * !A3 * B1 * !Y)	-0.00286	-0.00324	-0.00323
	(A2 * !A3 * B1 * !Y)	0.00422	0.00425	0.00422
	(A2 * !A3 * !B1 * Y)	-0.00094	-0.00094	-0.00094
	(A2 * !A3 * !B1 * Y)	0.00505	0.00504	0.00508
	(!A2 * B1 * !Y)	-0.00315	-0.00327	-0.00326
	(!A2 * B1 * !Y)	0.00422	0.00425	0.00422
	(!A2 * !B1 * Y)	-0.00096	-0.00096	-0.00096
	(!A2 * !B1 * Y)	0.00506	0.00507	0.00508

sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	-0.00705	-0.00707	-0.00703
	(A2 * A3 * B1 * !Y)	0.00812	0.00818	0.00813
	(A2 * !A3 * B1 * !Y)	-0.00590	-0.00670	-0.00664
	(A2 * !A3 * B1 * !Y)	0.00833	0.00839	0.00832
	(A2 * !A3 * !B1 * Y)	-0.00204	-0.00205	-0.00205
	(A2 * !A3 * !B1 * Y)	0.01011	0.01018	0.01016
	(!A2 * B1 * !Y)	-0.00653	-0.00684	-0.00677
	(!A2 * B1 * !Y)	0.00827	0.00839	0.00832
	(!A2 * !B1 * Y)	-0.00211	-0.00213	-0.00212
	(!A2 * !B1 * Y)	0.01012	0.01019	0.01016

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)**	0.00198	0.00183	0.00180
	(A1 * A3 * B1 * !Y)	-0.00178	-0.00201	-0.00202
	(A1 * !A3 * B1 * !Y)	0.00173	0.00174	0.00174
	(A1 * !A3 * B1 * !Y)	-0.00206	-0.00206	-0.00206
	(A1 * !A3 * !B1 * Y)	0.00064	0.00064	0.00064
	(A1 * !A3 * !B1 * Y)	-0.00228	-0.00228	-0.00227
	(!A1 * A3 * B1 * !Y)	0.00173	0.00176	0.00174
	(!A1 * A3 * B1 * !Y)	-0.00205	-0.00206	-0.00206
	(!A1 * A3 * !B1 * Y)	0.00151	0.00154	0.00152
	(!A1 * A3 * !B1 * Y)	-0.00226	-0.00228	-0.00227
	(!A1 * !A3 * B1 * !Y)	0.00105	0.00107	0.00106
	(!A1 * !A3 * B1 * !Y)	-0.00206	-0.00207	-0.00206
	(!A1 * !A3 * !B1 * Y)	0.00076	0.00077	0.00076
	(!A1 * !A3 * !B1 * Y)	-0.00228	-0.00230	-0.00229

sky130_fd_sc_hs__a31oi_2	**(A1 * A3 * B1 * !Y)**	0.00347	0.00321	0.00316
	(A1 * A3 * B1 * !Y)	-0.00370	-0.00416	-0.00415
	(A1 * !A3 * B1 * !Y)	0.00301	0.00303	0.00302
	(A1 * !A3 * B1 * !Y)	-0.00423	-0.00424	-0.00423
	(A1 * !A3 * !B1 * Y)	0.00126	0.00127	0.00126
	(A1 * !A3 * !B1 * Y)	-0.00423	-0.00425	-0.00424
	(!A1 * A3 * B1 * !Y)	0.00302	0.00304	0.00304
	(!A1 * A3 * B1 * !Y)	-0.00422	-0.00423	-0.00423
	(!A1 * A3 * !B1 * Y)	0.00299	0.00304	0.00301
	(!A1 * A3 * !B1 * Y)	-0.00422	-0.00424	-0.00424
	(!A1 * !A3 * B1 * !Y)	0.00167	0.00170	0.00168
	(!A1 * !A3 * B1 * !Y)	-0.00422	-0.00426	-0.00423
	(!A1 * !A3 * !B1 * Y)	0.00150	0.00151	0.00150
	(!A1 * !A3 * !B1 * Y)	-0.00427	-0.00429	-0.00428
sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	0.00746	0.00680	0.00670
	(A1 * A3 * B1 * !Y)	-0.00729	-0.00834	-0.00830
	(A1 * !A3 * B1 * !Y)	0.00632	0.00637	0.00634
	(A1 * !A3 * B1 * !Y)	-0.00848	-0.00852	-0.00848
	(A1 * !A3 * !B1 * Y)	0.00273	0.00276	0.00278
	(A1 * !A3 * !B1 * Y)	-0.00854	-0.00859	-0.00854
	(!A1 * A3 * B1 * !Y)	0.00641	0.00650	0.00644
	(!A1 * A3 * B1 * !Y)	-0.00846	-0.00853	-0.00848
	(!A1 * A3 * !B1 * Y)	0.00635	0.00640	0.00638
	(!A1 * A3 * !B1 * Y)	-0.00851	-0.00855	-0.00854
	(!A1 * !A3 * B1 * !Y)	0.00370	0.00372	0.00370
	(!A1 * !A3 * B1 * !Y)	-0.00849	-0.00853	-0.00849
	(!A1 * !A3 * !B1 * Y)	0.00332	0.00333	0.00331
	(!A1 * !A3 * !B1 * Y)	-0.00863	-0.00864	-0.00861

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)	-0.00180	-0.00180	-0.00180
	(A1 * A3 * B1 * !Y)	0.00201	0.00201	0.00202
	(A1 * !A3 * B1 * !Y)	-0.00169	-0.00174	-0.00174
	(A1 * !A3 * B1 * !Y)	0.00207	0.00209	0.00207
	(A1 * !A3 * !B1 * Y)	-0.00061	-0.00062	-0.00062
	(A1 * !A3 * !B1 * Y)	0.00232	0.00236	0.00229
	(!A1 * A3 * B1 * !Y)	-0.00168	-0.00174	-0.00174
	(!A1 * A3 * B1 * !Y)	0.00206	0.00206	0.00207
	(!A1 * A3 * !B1 * Y)	-0.00139	-0.00152	-0.00152
	(!A1 * A3 * !B1 * Y)	0.00236	0.00228	0.00228
	(!A1 * !A3 * B1 * !Y)	-0.00105	-0.00107	-0.00106
	(!A1 * !A3 * B1 * !Y)	0.00207	0.00209	0.00207
	(!A1 * !A3 * !B1 * Y)	-0.00076	-0.00077	-0.00076
	(!A1 * !A3 * !B1 * Y)	0.00237	0.00241	0.00231
sky130_fd_sc_hs__a31oi_2	(A1 * A3 * B1 * !Y)	-0.00315	-0.00316	-0.00315
	(A1 * A3 * B1 * !Y)	0.00413	0.00416	0.00415
	(A1 * !A3 * B1 * !Y)	-0.00291	-0.00303	-0.00302
	(A1 * !A3 * B1 * !Y)	0.00423	0.00427	0.00424
	(A1 * !A3 * !B1 * Y)	-0.00118	-0.00120	-0.00122
	(A1 * !A3 * !B1 * Y)	0.00433	0.00439	0.00429
	(!A1 * A3 * B1 * !Y)	-0.00290	-0.00303	-0.00304
	(!A1 * A3 * B1 * !Y)	0.00423	0.00423	0.00424
	(!A1 * A3 * !B1 * Y)	-0.00274	-0.00302	-0.00301
	(!A1 * A3 * !B1 * Y)	0.00442	0.00424	0.00425
	(!A1 * !A3 * B1 * !Y)	-0.00167	-0.00170	-0.00168
	(!A1 * !A3 * B1 * !Y)	0.00422	0.00429	0.00424
	(!A1 * !A3 * !B1 * Y)	-0.00150	-0.00151	-0.00150
	(!A1 * !A3 * !B1 * Y)	0.00447	0.00453	0.00434

sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	-0.00668	-0.00671	-0.00668
	(A1 * A3 * B1 * !Y)	0.00827	0.00836	0.00830
	(A1 * !A3 * B1 * !Y)	-0.00611	-0.00637	-0.00634
	(A1 * !A3 * B1 * !Y)	0.00849	0.00857	0.00851
	(A1 * !A3 * !B1 * Y)	-0.00258	-0.00263	-0.00268
	(A1 * !A3 * !B1 * Y)	0.00873	0.00886	0.00864
	(!A1 * A3 * B1 * !Y)	-0.00621	-0.00650	-0.00644
	(!A1 * A3 * B1 * !Y)	0.00852	0.00857	0.00851
	(!A1 * A3 * !B1 * Y)	-0.00575	-0.00640	-0.00638
	(!A1 * A3 * !B1 * Y)	0.00907	0.00862	0.00856
	(!A1 * !A3 * B1 * !Y)	-0.00370	-0.00372	-0.00370
	(!A1 * !A3 * B1 * !Y)	0.00849	0.00861	0.00852
	(!A1 * !A3 * !B1 * Y)	-0.00332	-0.00333	-0.00331
	(!A1 * !A3 * !B1 * Y)	0.00898	0.00912	0.00873

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)**	0.00203	0.00189	0.00187
	(A1 * A2 * B1 * !Y)	-0.00186	-0.00209	-0.00208
	(A1 * !A2 * !B1 * Y)	0.00165	0.00167	0.00166
	(A1 * !A2 * !B1 * Y)	-0.00224	-0.00225	-0.00225
	(!A2 * B1 * !Y)	0.00178	0.00179	0.00179
	(!A2 * B1 * !Y)	-0.00211	-0.00212	-0.00212
	(!A1 * A2 * B1 * !Y)	0.00177	0.00177	0.00176
	(!A1 * A2 * B1 * !Y)	-0.00212	-0.00212	-0.00212
	(!A1 * A2 * !B1 * Y)	0.00162	0.00164	0.00163
	(!A1 * A2 * !B1 * Y)	-0.00224	-0.00226	-0.00225
	(!A1 * !A2 * !B1 * Y)	0.00165	0.00168	0.00166
	(!A1 * !A2 * !B1 * Y)	-0.00224	-0.00226	-0.00225

sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	0.00381	0.00353	0.00348
	(A1 * A2 * B1 * !Y)	-0.00366	-0.00410	-0.00411
	(A1 * !A2 * !B1 * Y)	0.00327	0.00332	0.00328
	(A1 * !A2 * !B1 * Y)	-0.00419	-0.00422	-0.00419
	(!A2 * B1 * !Y)	0.00335	0.00339	0.00336
	(!A2 * B1 * !Y)	-0.00418	-0.00419	-0.00419
	(!A1 * A2 * B1 * !Y)	0.00324	0.00329	0.00326
	(!A1 * A2 * B1 * !Y)	-0.00417	-0.00420	-0.00419
	(!A1 * A2 * !B1 * Y)	0.00324	0.00328	0.00326
	(!A1 * A2 * !B1 * Y)	-0.00418	-0.00421	-0.00419
	(!A1 * !A2 * !B1 * Y)	0.00328	0.00329	0.00329
	(!A1 * !A2 * !B1 * Y)	-0.00419	-0.00420	-0.00420
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	0.00736	0.00676	0.00665
	(A1 * A2 * B1 * !Y)	-0.00733	-0.00829	-0.00828
	(A1 * !A2 * !B1 * Y)	0.00634	0.00637	0.00634
	(A1 * !A2 * !B1 * Y)	-0.00845	-0.00848	-0.00846
	(!A2 * B1 * !Y)	0.00637	0.00643	0.00636
	(!A2 * B1 * !Y)	-0.00845	-0.00849	-0.00845
	(!A1 * A2 * B1 * !Y)	0.00625	0.00627	0.00624
	(!A1 * A2 * B1 * !Y)	-0.00847	-0.00847	-0.00845
	(!A1 * A2 * !B1 * Y)	0.00619	0.00627	0.00622
	(!A1 * A2 * !B1 * Y)	-0.00842	-0.00848	-0.00846
	(!A1 * !A2 * !B1 * Y)	0.00626	0.00637	0.00629
	(!A1 * !A2 * !B1 * Y)	-0.00844	-0.00851	-0.00846

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)**	-0.00186	-0.00187	-0.00186
	(A1 * A2 * B1 * !Y)	0.00207	0.00210	0.00208
	(A1 * !A2 * !B1 * Y)	-0.00160	-0.00167	-0.00166
	(A1 * !A2 * !B1 * Y)	0.00224	0.00227	0.00226
	(!A2 * B1 * !Y)	-0.00175	-0.00179	-0.00179
	(!A2 * B1 * !Y)	0.00211	0.00214	0.00213
	(!A1 * A2 * B1 * !Y)	-0.00167	-0.00177	-0.00176
	(!A1 * A2 * B1 * !Y)	0.00212	0.00214	0.00213
	(!A1 * A2 * !B1 * Y)	-0.00154	-0.00164	-0.00163
	(!A1 * A2 * !B1 * Y)	0.00225	0.00228	0.00226
	(!A1 * !A2 * !B1 * Y)	-0.00161	-0.00167	-0.00166
	(!A1 * !A2 * !B1 * Y)	0.00224	0.00227	0.00226
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	-0.00347	-0.00347	-0.00347
	(A1 * A2 * B1 * !Y)	0.00408	0.00410	0.00411
	(A1 * !A2 * !B1 * Y)	-0.00312	-0.00328	-0.00328
	(A1 * !A2 * !B1 * Y)	0.00419	0.00423	0.00421
	(!A2 * B1 * !Y)	-0.00325	-0.00334	-0.00336
	(!A2 * B1 * !Y)	0.00419	0.00419	0.00420
	(!A1 * A2 * B1 * !Y)	-0.00303	-0.00328	-0.00326
	(!A1 * A2 * B1 * !Y)	0.00419	0.00423	0.00420
	(!A1 * A2 * !B1 * Y)	-0.00301	-0.00328	-0.00326
	(!A1 * A2 * !B1 * Y)	0.00422	0.00425	0.00421
	(!A1 * !A2 * !B1 * Y)	-0.00316	-0.00329	-0.00329
	(!A1 * !A2 * !B1 * Y)	0.00419	0.00424	0.00421

sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	-0.00665	-0.00664	-0.00663
	(A1 * A2 * B1 * !Y)	0.00828	0.00829	0.00828
	(A1 * !A2 * !B1 * Y)	-0.00600	-0.00637	-0.00634
	(A1 * !A2 * !B1 * Y)	0.00845	0.00855	0.00848
	(!A2 * B1 * !Y)	-0.00609	-0.00632	-0.00636
	(!A2 * B1 * !Y)	0.00845	0.00849	0.00848
	(!A1 * A2 * B1 * !Y)	-0.00577	-0.00626	-0.00624
	(!A1 * A2 * B1 * !Y)	0.00849	0.00854	0.00848
	(!A1 * A2 * !B1 * Y)	-0.00574	-0.00627	-0.00622
	(!A1 * A2 * !B1 * Y)	0.00852	0.00857	0.00848
	(!A1 * !A2 * !B1 * Y)	-0.00604	-0.00637	-0.00629
	(!A1 * !A2 * !B1 * Y)	0.00845	0.00855	0.00848

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)**	0.00206	0.00209	0.00205
	(A1 * A2 * A3 * !Y)	-0.00098	-0.00099	-0.00097
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * A3 * !Y)**	0.00218	0.00220	0.00218
	(A1 * A2 * A3 * !Y)	-0.00192	-0.00194	-0.00192
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * A3 * !Y)**	0.00452	0.00462	0.00454
	(A1 * A2 * A3 * !Y)	-0.00393	-0.00401	-0.00394

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)	-0.00191	-0.00193	-0.00204
	(A1 * A2 * A3 * !Y)	0.00108	0.00109	0.00100
sky130_fd_sc_hs__a31oi_2	(A1 * A2 * A3 * !Y)	-0.00187	-0.00189	-0.00215
	(A1 * A2 * A3 * !Y)	0.00219	0.00219	0.00198
sky130_fd_sc_hs__a31oi_4	(A1 * A2 * A3 * !Y)	-0.00393	-0.00399	-0.00447
	(A1 * A2 * A3 * !Y)	0.00443	0.00446	0.00406

SKY130_FD_SC_HS__A31Ox

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00254	0.00252	0.00252	0.00273	1.19317
sky130_fd_sc_hs__a31o_2	0.00282	0.00273	0.00274	0.00266	2.30897
sky130_fd_sc_hs__a31o_4	0.00500	0.00486	0.00484	0.00498	4.52615

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a31o_1	0.00000	0.14305	0.20769
sky130_fd_sc_hs__a31o_2	0.00000	0.17922	0.21512
sky130_fd_sc_hs__a31o_4	0.00000	0.36174	0.43023

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)	0.08307	0.57553	6.17257
	A2->X (RR)	0.08911	0.57946	6.15588
	A3->X (RR)	0.09262	0.56661	6.03179
	B1->X (RR)	0.05632	0.52409	5.92715
sky130_fd_sc_hs__a31o_2	A1->X (RR)	0.08594	0.50111	6.09972
	A2->X (RR)	0.09178	0.50048	6.06947
	A3->X (RR)	0.09520	0.48426	5.95390
	B1->X (RR)	0.05394	0.43863	5.82886
sky130_fd_sc_hs__a31o_4	A1->X (RR)	0.09958	0.46326	6.31718
	A2->X (RR)	0.10612	0.45425	6.23852
	A3->X (RR)	0.11070	0.43614	6.12243
	B1->X (RR)	0.05385	0.37210	5.94855

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31o_1	A1->X (FF)	0.11613	0.52033	4.60876
	A2->X (FF)	0.13596	0.55233	4.69540
	A3->X (FF)	0.14749	0.57305	4.78377
	B1->X (FF)	0.12596	0.57130	4.92719
sky130_fd_sc_hs__a31o_2	A1->X (FF)	0.15238	0.55518	4.76107
	A2->X (FF)	0.17747	0.59222	4.86290
	A3->X (FF)	0.18499	0.60374	4.91369
	B1->X (FF)	0.16179	0.61296	5.05395
sky130_fd_sc_hs__a31o_4	A1->X (FF)	0.15050	0.51902	4.83412
	A2->X (FF)	0.16980	0.55119	4.93853
	A3->X (FF)	0.18811	0.57979	5.03886
	B1->X (FF)	0.15917	0.57674	5.14147

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.01065	0.01155	0.03901
	A1	0.00499	0.00592	0.03378
	A2	0.01158	0.01197	0.03648
	A2	0.00500	0.00540	0.03033
	A3	0.01261	0.01281	0.03350
	A3	0.00499	0.00518	0.02634
	B1	0.00816	0.01003	0.05296
	B1	0.00331	0.00520	0.04858
sky130_fd_sc_hs__a31o_2	A1	0.01414	0.01505	0.04181
	A1	0.00801	0.00892	0.03662
	A2	0.01519	0.01570	0.03964
	A2	0.00800	0.00853	0.03342
	A3	0.01636	0.01672	0.03740
	A3	0.00797	0.00833	0.03000
	B1	0.01120	0.01326	0.05466
	B1	0.00621	0.00835	0.04983
sky130_fd_sc_hs__a31o_4	A1	0.02763	0.02960	0.08262
	A1	0.01628	0.01834	0.07242
	A2	0.02958	0.03079	0.07868
	A2	0.01626	0.01753	0.06696
	A3	0.03174	0.03275	0.08138
	A3	0.01624	0.01734	0.06767
	B1	0.01994	0.02421	0.11178
	B1	0.01119	0.01554	0.10492

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.00367	0.00419	0.02804
	A1	0.00938	0.00980	0.03327
	A2	0.00430	0.00469	0.02763
	A2	0.01088	0.01126	0.03378
	A3	0.00454	0.00481	0.02821
	A3	0.01210	0.01235	0.03472
	B1	0.00302	0.00593	0.04975
	B1	0.00785	0.01061	0.05406
sky130_fd_sc_hs__a31o_2	A1	0.00676	0.00703	0.03134
	A1	0.01294	0.01320	0.03642
	A2	0.00773	0.00775	0.03233
	A2	0.01489	0.01490	0.03769
	A3	0.00804	0.00799	0.03224
	A3	0.01632	0.01625	0.03910
	B1	0.00608	0.00876	0.05245
	B1	0.01106	0.01356	0.05631
sky130_fd_sc_hs__a31o_4	A1	0.01408	0.01473	0.06420
	A1	0.02554	0.02571	0.07529
	A2	0.01542	0.01597	0.06294
	A2	0.02879	0.02881	0.07604
	A3	0.01710	0.01694	0.06481
	A3	0.03244	0.03220	0.08007
	B1	0.01276	0.01782	0.10390
	B1	0.02149	0.02643	0.11159

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)**	0.00166	0.00145	0.00142
	(A2 * A3 * B1 * X)	-0.00161	-0.00188	-0.00189
	(A2 * !A3 * B1 * X)	0.00132	0.00132	0.00132
	(A2 * !A3 * B1 * X)	-0.00193	-0.00193	-0.00193
	(A2 * !A3 * !B1 * !X)	0.00043	0.00043	0.00040
	(A2 * !A3 * !B1 * !X)	-0.00220	-0.00220	-0.00226
	(!A2 * B1 * X)	0.00136	0.00137	0.00136
	(!A2 * B1 * X)	-0.00193	-0.00194	-0.00193
	(!A2 * !B1 * !X)	0.00044	0.00044	0.00042
	(!A2 * !B1 * !X)	-0.00224	-0.00224	-0.00227
sky130_fd_sc_hs__a31o_2	**(A2 * A3 * B1 * X)**	0.00201	0.00181	0.00178
	(A2 * A3 * B1 * X)	-0.00155	-0.00182	-0.00183
	(A2 * !A3 * B1 * X)	0.00167	0.00167	0.00167
	(A2 * !A3 * B1 * X)	-0.00186	-0.00186	-0.00186
	(A2 * !A3 * !B1 * !X)	0.00055	0.00055	0.00051
	(A2 * !A3 * !B1 * !X)	-0.00225	-0.00226	-0.00233
	(!A2 * B1 * X)	0.00171	0.00174	0.00172
	(!A2 * B1 * X)	-0.00185	-0.00187	-0.00186
	(!A2 * !B1 * !X)	0.00056	0.00056	0.00054
	(!A2 * !B1 * !X)	-0.00230	-0.00231	-0.00234
sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	0.00344	0.00307	0.00302
	(A2 * A3 * B1 * X)	-0.00324	-0.00379	-0.00379
	(A2 * !A3 * B1 * X)	0.00284	0.00284	0.00284
	(A2 * !A3 * B1 * X)	-0.00387	-0.00388	-0.00387
	(A2 * !A3 * !B1 * !X)	0.00102	0.00102	0.00094
	(A2 * !A3 * !B1 * !X)	-0.00441	-0.00444	-0.00460
	(!A2 * B1 * X)	0.00292	0.00294	0.00293
	(!A2 * B1 * X)	-0.00386	-0.00388	-0.00387
	(!A2 * !B1 * !X)	0.00101	0.00102	0.00098
	(!A2 * !B1 * !X)	-0.00452	-0.00455	-0.00461

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)	-0.00141	-0.00142	-0.00141
	(A2 * A3 * B1 * X)	0.00188	0.00190	0.00189
	(A2 * !A3 * B1 * X)	-0.00121	-0.00132	-0.00132
	(A2 * !A3 * B1 * X)	0.00193	0.00195	0.00194
	(A2 * !A3 * !B1 * !X)	-0.00040	-0.00041	-0.00040
	(A2 * !A3 * !B1 * !X)	0.00227	0.00230	0.00227
	(!A2 * B1 * X)	-0.00132	-0.00136	-0.00136
	(!A2 * B1 * X)	0.00194	0.00194	0.00194
	(!A2 * !B1 * !X)	-0.00041	-0.00042	-0.00041
	(!A2 * !B1 * !X)	0.00226	0.00231	0.00227
sky130_fd_sc_hs__a31o_2	(A2 * A3 * B1 * X)	-0.00178	-0.00179	-0.00178
	(A2 * A3 * B1 * X)	0.00181	0.00183	0.00183
	(A2 * !A3 * B1 * X)	-0.00154	-0.00167	-0.00167
	(A2 * !A3 * B1 * X)	0.00186	0.00188	0.00187
	(A2 * !A3 * !B1 * !X)	-0.00051	-0.00052	-0.00051
	(A2 * !A3 * !B1 * !X)	0.00233	0.00238	0.00234
	(!A2 * B1 * X)	-0.00167	-0.00172	-0.00172
	(!A2 * B1 * X)	0.00187	0.00188	0.00187
	(!A2 * !B1 * !X)	-0.00052	-0.00054	-0.00052
	(!A2 * !B1 * !X)	0.00234	0.00238	0.00235

sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	-0.00300	-0.00302	-0.00300
	(A2 * A3 * B1 * X)	0.00377	0.00381	0.00379
	(A2 * !A3 * B1 * X)	-0.00261	-0.00284	-0.00284
	(A2 * !A3 * B1 * X)	0.00387	0.00392	0.00389
	(A2 * !A3 * !B1 * !X)	-0.00092	-0.00094	-0.00092
	(A2 * !A3 * !B1 * !X)	0.00461	0.00470	0.00462
	(!A2 * B1 * X)	-0.00280	-0.00290	-0.00293
	(!A2 * B1 * X)	0.00386	0.00388	0.00389
	(!A2 * !B1 * !X)	-0.00095	-0.00097	-0.00095
	(!A2 * !B1 * !X)	0.00461	0.00470	0.00463

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)**	0.00163	0.00142	0.00139
	(A1 * A3 * B1 * X)	-0.00161	-0.00188	-0.00188
	(A1 * !A3 * B1 * X)	0.00133	0.00133	0.00133
	(A1 * !A3 * B1 * X)	-0.00193	-0.00193	-0.00192
	(A1 * !A3 * !B1 * !X)	0.00052	0.00052	0.00052
	(A1 * !A3 * !B1 * !X)	-0.00199	-0.00200	-0.00198
	(!A1 * A3 * B1 * X)	0.00133	0.00135	0.00134
	(!A1 * A3 * B1 * X)	-0.00192	-0.00193	-0.00192
	(!A1 * A3 * !B1 * !X)	0.00127	0.00128	0.00127
	(!A1 * A3 * !B1 * !X)	-0.00198	-0.00199	-0.00199
	(!A1 * !A3 * B1 * X)	0.00075	0.00075	0.00075
	(!A1 * !A3 * B1 * X)	-0.00192	-0.00193	-0.00192
	(!A1 * !A3 * !B1 * !X)	0.00062	0.00062	0.00062
	(!A1 * !A3 * !B1 * !X)	-0.00199	-0.00200	-0.00199

sky130_fd_sc_hs__a31o_2	**(A1 * A3 * B1 * X)**	0.00194	0.00175	0.00172
	(A1 * A3 * B1 * X)	-0.00155	-0.00182	-0.00182
	(A1 * !A3 * B1 * X)	0.00164	0.00166	0.00164
	(A1 * !A3 * B1 * X)	-0.00186	-0.00187	-0.00186
	(A1 * !A3 * !B1 * !X)	0.00065	0.00065	0.00065
	(A1 * !A3 * !B1 * !X)	-0.00199	-0.00200	-0.00199
	(!A1 * A3 * B1 * X)	0.00166	0.00167	0.00165
	(!A1 * A3 * B1 * X)	-0.00186	-0.00187	-0.00186
	(!A1 * A3 * !B1 * !X)	0.00152	0.00154	0.00152
	(!A1 * A3 * !B1 * !X)	-0.00199	-0.00200	-0.00199
	(!A1 * !A3 * B1 * X)	0.00098	0.00099	0.00098
	(!A1 * !A3 * B1 * X)	-0.00186	-0.00187	-0.00186
	(!A1 * !A3 * !B1 * !X)	0.00077	0.00077	0.00077
	(!A1 * !A3 * !B1 * !X)	-0.00200	-0.00201	-0.00200
sky130_fd_sc_hs__a31o_4	**(A1 * A3 * B1 * X)**	0.00342	0.00304	0.00299
	(A1 * A3 * B1 * X)	-0.00325	-0.00382	-0.00382
	(A1 * !A3 * B1 * X)	0.00285	0.00289	0.00287
	(A1 * !A3 * B1 * X)	-0.00389	-0.00393	-0.00391
	(A1 * !A3 * !B1 * !X)	0.00131	0.00132	0.00131
	(A1 * !A3 * !B1 * !X)	-0.00394	-0.00396	-0.00392
	(!A1 * A3 * B1 * X)	0.00288	0.00289	0.00289
	(!A1 * A3 * B1 * X)	-0.00390	-0.00391	-0.00391
	(!A1 * A3 * !B1 * !X)	0.00288	0.00291	0.00290
	(!A1 * A3 * !B1 * !X)	-0.00389	-0.00392	-0.00391
	(!A1 * !A3 * B1 * X)	0.00170	0.00172	0.00170
	(!A1 * !A3 * B1 * X)	-0.00390	-0.00394	-0.00391
	(!A1 * !A3 * !B1 * !X)	0.00155	0.00157	0.00155
	(!A1 * !A3 * !B1 * !X)	-0.00395	-0.00399	-0.00396

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)	-0.00139	-0.00139	-0.00138
	(A1 * A3 * B1 * X)	0.00187	0.00189	0.00188
	(A1 * !A3 * B1 * X)	-0.00130	-0.00133	-0.00133
	(A1 * !A3 * B1 * X)	0.00194	0.00194	0.00193
	(A1 * !A3 * !B1 * !X)	-0.00049	-0.00050	-0.00050
	(A1 * !A3 * !B1 * !X)	0.00202	0.00205	0.00200
	(!A1 * A3 * B1 * X)	-0.00129	-0.00134	-0.00134
	(!A1 * A3 * B1 * X)	0.00192	0.00195	0.00193
	(!A1 * A3 * !B1 * !X)	-0.00115	-0.00128	-0.00127
	(!A1 * A3 * !B1 * !X)	0.00208	0.00202	0.00199
	(!A1 * !A3 * B1 * X)	-0.00075	-0.00075	-0.00075
	(!A1 * !A3 * B1 * X)	0.00193	0.00195	0.00193
	(!A1 * !A3 * !B1 * !X)	-0.00062	-0.00062	-0.00062
	(!A1 * !A3 * !B1 * !X)	0.00207	0.00210	0.00202
sky130_fd_sc_hs__a31o_2	(A1 * A3 * B1 * X)	-0.00171	-0.00172	-0.00171
	(A1 * A3 * B1 * X)	0.00181	0.00183	0.00182
	(A1 * !A3 * B1 * X)	-0.00160	-0.00165	-0.00164
	(A1 * !A3 * B1 * X)	0.00187	0.00187	0.00187
	(A1 * !A3 * !B1 * !X)	-0.00061	-0.00062	-0.00063
	(A1 * !A3 * !B1 * !X)	0.00204	0.00206	0.00201
	(!A1 * A3 * B1 * X)	-0.00160	-0.00166	-0.00165
	(!A1 * A3 * B1 * X)	0.00186	0.00188	0.00187
	(!A1 * A3 * !B1 * !X)	-0.00139	-0.00153	-0.00152
	(!A1 * A3 * !B1 * !X)	0.00207	0.00202	0.00200
	(!A1 * !A3 * B1 * X)	-0.00098	-0.00099	-0.00098
	(!A1 * !A3 * B1 * X)	0.00186	0.00189	0.00187
	(!A1 * !A3 * !B1 * !X)	-0.00077	-0.00077	-0.00077
	(!A1 * !A3 * !B1 * !X)	0.00209	0.00212	0.00203

sky130_fd_sc_hs__a31o_4	**(A1 * A3 * B1 * X)**	-0.00297	-0.00299	-0.00297
	(A1 * A3 * B1 * X)	0.00380	0.00385	0.00382
	(A1 * !A3 * B1 * X)	-0.00273	-0.00288	-0.00287
	(A1 * !A3 * B1 * X)	0.00394	0.00395	0.00393
	(A1 * !A3 * !B1 * !X)	-0.00123	-0.00125	-0.00126
	(A1 * !A3 * !B1 * !X)	0.00403	0.00407	0.00397
	(!A1 * A3 * B1 * X)	-0.00277	-0.00288	-0.00289
	(!A1 * A3 * B1 * X)	0.00391	0.00392	0.00392
	(!A1 * A3 * !B1 * !X)	-0.00259	-0.00287	-0.00289
	(!A1 * A3 * !B1 * !X)	0.00413	0.00392	0.00393
	(!A1 * !A3 * B1 * X)	-0.00170	-0.00172	-0.00170
	(!A1 * !A3 * B1 * X)	0.00391	0.00397	0.00393
	(!A1 * !A3 * !B1 * !X)	-0.00155	-0.00157	-0.00155
	(!A1 * !A3 * !B1 * !X)	0.00414	0.00420	0.00403

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)**	0.00173	0.00156	0.00153
	(A1 * A2 * B1 * X)	-0.00160	-0.00185	-0.00186
	(A1 * !A2 * !B1 * !X)	0.00129	0.00130	0.00130
	(A1 * !A2 * !B1 * !X)	-0.00206	-0.00208	-0.00207
	(!A2 * B1 * X)	0.00147	0.00148	0.00147
	(!A2 * B1 * X)	-0.00189	-0.00190	-0.00189
	(!A1 * A2 * B1 * X)	0.00143	0.00145	0.00144
	(!A1 * A2 * B1 * X)	-0.00189	-0.00190	-0.00189
	(!A1 * A2 * !B1 * !X)	0.00127	0.00127	0.00126
	(!A1 * A2 * !B1 * !X)	-0.00207	-0.00207	-0.00207
	(!A1 * !A2 * !B1 * !X)	0.00129	0.00131	0.00129
	(!A1 * !A2 * !B1 * !X)	-0.00206	-0.00208	-0.00207

sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	0.00203	0.00187	0.00184
	(A1 * A2 * B1 * X)	-0.00156	-0.00180	-0.00180
	(A1 * !A2 * !B1 * !X)	0.00152	0.00154	0.00153
	(A1 * !A2 * !B1 * !X)	-0.00207	-0.00209	-0.00208
	(!A2 * B1 * X)	0.00176	0.00179	0.00177
	(!A2 * B1 * X)	-0.00183	-0.00184	-0.00183
	(!A1 * A2 * B1 * X)	0.00175	0.00176	0.00174
	(!A1 * A2 * B1 * X)	-0.00183	-0.00184	-0.00183
	(!A1 * A2 * !B1 * !X)	0.00151	0.00150	0.00150
	(!A1 * A2 * !B1 * !X)	-0.00208	-0.00208	-0.00208
	(!A1 * !A2 * !B1 * !X)	0.00152	0.00153	0.00152
	(!A1 * !A2 * !B1 * !X)	-0.00207	-0.00208	-0.00208
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	0.00338	0.00302	0.00296
	(A1 * A2 * B1 * X)	-0.00328	-0.00383	-0.00383
	(A1 * !A2 * !B1 * !X)	0.00283	0.00287	0.00283
	(A1 * !A2 * !B1 * !X)	-0.00393	-0.00395	-0.00392
	(!A2 * B1 * X)	0.00284	0.00286	0.00284
	(!A2 * B1 * X)	-0.00392	-0.00394	-0.00392
	(!A1 * A2 * B1 * X)	0.00277	0.00278	0.00276
	(!A1 * A2 * B1 * X)	-0.00393	-0.00393	-0.00392
	(!A1 * A2 * !B1 * !X)	0.00279	0.00281	0.00278
	(!A1 * A2 * !B1 * !X)	-0.00393	-0.00395	-0.00392
	(!A1 * !A2 * !B1 * !X)	0.00283	0.00284	0.00283
	(!A1 * !A2 * !B1 * !X)	-0.00393	-0.00394	-0.00393

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)**	-0.00152	-0.00153	-0.00152
	(A1 * A2 * B1 * X)	0.00185	0.00187	0.00186
	(A1 * !A2 * !B1 * !X)	-0.00125	-0.00130	-0.00130
	(A1 * !A2 * !B1 * !X)	0.00208	0.00209	0.00207
	(!A2 * B1 * X)	-0.00143	-0.00146	-0.00147
	(!A2 * B1 * X)	0.00189	0.00190	0.00190
	(!A1 * A2 * B1 * X)	-0.00136	-0.00145	-0.00144
	(!A1 * A2 * B1 * X)	0.00189	0.00192	0.00190
	(!A1 * A2 * !B1 * !X)	-0.00118	-0.00127	-0.00126
	(!A1 * A2 * !B1 * !X)	0.00207	0.00210	0.00207
	(!A1 * !A2 * !B1 * !X)	-0.00126	-0.00130	-0.00129
	(!A1 * !A2 * !B1 * !X)	0.00208	0.00209	0.00207
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	-0.00183	-0.00185	-0.00183
	(A1 * A2 * B1 * X)	0.00179	0.00181	0.00180
	(A1 * !A2 * !B1 * !X)	-0.00147	-0.00153	-0.00153
	(A1 * !A2 * !B1 * !X)	0.00209	0.00211	0.00209
	(!A2 * B1 * X)	-0.00172	-0.00177	-0.00177
	(!A2 * B1 * X)	0.00183	0.00185	0.00184
	(!A1 * A2 * B1 * X)	-0.00164	-0.00176	-0.00174
	(!A1 * A2 * B1 * X)	0.00183	0.00186	0.00184
	(!A1 * A2 * !B1 * !X)	-0.00140	-0.00150	-0.00150
	(!A1 * A2 * !B1 * !X)	0.00208	0.00210	0.00208
	(!A1 * !A2 * !B1 * !X)	-0.00148	-0.00153	-0.00152
	(!A1 * !A2 * !B1 * !X)	0.00209	0.00211	0.00209

sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	-0.00294	-0.00296	-0.00294
	(A1 * A2 * B1 * X)	0.00381	0.00386	0.00383
	(A1 * !A2 * !B1 * !X)	-0.00267	-0.00282	-0.00283
	(A1 * !A2 * !B1 * !X)	0.00394	0.00397	0.00394
	(!A2 * B1 * X)	-0.00271	-0.00282	-0.00284
	(!A2 * B1 * X)	0.00393	0.00396	0.00394
	(!A1 * A2 * B1 * X)	-0.00257	-0.00278	-0.00276
	(!A1 * A2 * B1 * X)	0.00393	0.00396	0.00394
	(!A1 * A2 * !B1 * !X)	-0.00255	-0.00280	-0.00278
	(!A1 * A2 * !B1 * !X)	0.00395	0.00398	0.00394
	(!A1 * !A2 * !B1 * !X)	-0.00269	-0.00282	-0.00283
	(!A1 * !A2 * !B1 * !X)	0.00394	0.00397	0.00394

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)**	0.00203	0.00207	0.00204
	(A1 * A2 * A3 * X)	-0.00090	-0.00093	-0.00091
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * A3 * X)**	0.00193	0.00195	0.00193
	(A1 * A2 * A3 * X)	-0.00089	-0.00090	-0.00089
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * A3 * X)**	0.00335	0.00341	0.00335
	(A1 * A2 * A3 * X)	-0.00194	-0.00197	-0.00193

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)	-0.00191	-0.00193	-0.00202
	(A1 * A2 * A3 * X)	0.00101	0.00102	0.00093
sky130_fd_sc_hs__a31o_2	(A1 * A2 * A3 * X)	-0.00181	-0.00183	-0.00192
	(A1 * A2 * A3 * X)	0.00099	0.00099	0.00091
sky130_fd_sc_hs__a31o_4	(A1 * A2 * A3 * X)	-0.00304	-0.00307	-0.00331
	(A1 * A2 * A3 * X)	0.00219	0.00219	0.00199

SKY130_FD_SC_HS__A32OIx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00291	0.00290	0.00263	0.00297	0.00275	0.56677
sky130_fd_sc_hs__a32oi_2	0.00548	0.00533	0.00524	0.00552	0.00539	1.04310
sky130_fd_sc_hs__a32oi_4	0.01084	0.01052	0.01047	0.01104	0.01067	1.70232

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a32oi_1	0.00000	0.04763	0.15376
sky130_fd_sc_hs__a32oi_2	0.00000	0.09526	0.30753
sky130_fd_sc_hs__a32oi_4	0.00000	0.19052	0.61505

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)	0.11193	0.94751	10.33750
	A2->Y (FR)	0.12770	0.96298	10.34150
	A3->Y (FR)	0.13999	0.97208	10.28690
	B1->Y (FR)	0.07924	0.93608	10.70470
	B2->Y (FR)	0.07562	0.93417	10.70590
sky130_fd_sc_hs__a32oi_2	A1->Y (FR)	0.10064	0.78482	9.86978
	A2->Y (FR)	0.12959	0.83821	10.27500
	A3->Y (FR)	0.14178	0.84590	10.16710
	B1->Y (FR)	0.06859	0.79468	10.53180
	B2->Y (FR)	0.09185	0.82171	10.66490
sky130_fd_sc_hs__a32oi_4	A1->Y (FR)	0.11539	0.71561	9.80549
	A2->Y (FR)	0.13744	0.73217	9.74844
	A3->Y (FR)	0.15536	0.75213	9.74644
	B1->Y (FR)	0.09412	0.71779	10.12650
	B2->Y (FR)	0.12313	0.76377	10.44330

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32oi_1	A1->Y (RF)	0.04740	0.47611	5.15667
	A2->Y (RF)	0.05297	0.45003	4.78241
	A3->Y (RF)	0.05586	0.40418	4.13736
	B1->Y (RF)	0.02465	0.38171	4.30581
	B2->Y (RF)	0.02762	0.34925	3.86546
sky130_fd_sc_hs__a32oi_2	A1->Y (RF)	0.04924	0.44906	5.61481
	A2->Y (RF)	0.05878	0.42593	5.17305
	A3->Y (RF)	0.06172	0.35432	4.13711
	B1->Y (RF)	0.02156	0.33816	4.49386
	B2->Y (RF)	0.02732	0.30510	3.95113
sky130_fd_sc_hs__a32oi_4	A1->Y (RF)	0.05053	0.39136	5.32264
	A2->Y (RF)	0.05905	0.35967	4.75993
	A3->Y (RF)	0.06205	0.28898	3.70281
	B1->Y (RF)	0.02245	0.28185	4.21624
	B2->Y (RF)	0.02730	0.23649	3.43820

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32oi_1	A1	0.00041	0.00025	0.00630
	A1	0.00807	0.00791	0.01402
	A2	0.00092	0.00074	0.00676
	A2	0.00969	0.00937	0.01558
	A3	0.00156	0.00146	0.00771
	A3	0.01127	0.01097	0.01747
	B1	0.00026	0.00091	0.01359
	B1	0.00549	0.00591	0.01889
	B2	0.00074	0.00143	0.01429
	B2	0.00702	0.00771	0.02063
sky130_fd_sc_hs__a32oi_2	A1	-0.00082	-0.00100	0.01011
	A1	0.01416	0.01399	0.02519
	A2	0.00140	0.00096	0.01189
	A2	0.01864	0.01817	0.02919
	A3	0.00222	0.00205	0.01341
	A3	0.02164	0.02148	0.03296
	B1	-0.00117	0.00049	0.02363
	B1	0.00871	0.01039	0.03359
	B2	0.00079	0.00220	0.02548
	B2	0.01302	0.01442	0.03778

sky130_fd_sc_hs__a32oi_4	**A1**	-0.00144	-0.00192	0.02148
	A1	0.02861	0.02796	0.05171
	A2	0.00195	0.00107	0.02476
	A2	0.03642	0.03556	0.05938
	A3	0.00381	0.00345	0.02774
	A3	0.04274	0.04242	0.06676
	B1	-0.00224	0.00124	0.04737
	B1	0.01795	0.02144	0.06821
	B2	0.00121	0.00427	0.04999
	B2	0.02589	0.02898	0.07478

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32oi_1	**A1**	0.01093	0.01099	0.01698
	A1	0.00339	0.00341	0.00896
	A2	0.01211	0.01208	0.01671
	A2	0.00338	0.00332	0.00799
	A3	0.01308	0.01306	0.01831
	A3	0.00333	0.00326	0.00831
	B1	0.00519	0.00548	0.01213
	B1	-0.00004	0.00025	0.00649
	B2	0.00629	0.00647	0.01204
	B2	-0.00005	0.00009	0.00550

sky130_fd_sc_hs__a32oi_2	**A1**	0.02126	0.02141	0.03175
	A1	0.00651	0.00661	0.01670
	A2	0.02367	0.02343	0.03263
	A2	0.00654	0.00629	0.01470
	A3	0.02600	0.02584	0.03566
	A3	0.00649	0.00627	0.01616
	B1	0.00943	0.01012	0.02212
	B1	-0.00045	0.00023	0.01207
	B2	0.01199	0.01230	0.02287
	B2	-0.00038	-0.00012	0.01018
sky130_fd_sc_hs__a32oi_4	**A1**	0.04161	0.04164	0.06334
	A1	0.01208	0.01195	0.03186
	A2	0.04616	0.04564	0.06403
	A2	0.01189	0.01139	0.02889
	A3	0.05081	0.05040	0.07180
	A3	0.01167	0.01120	0.03193
	B1	0.01915	0.02071	0.04420
	B1	-0.00096	0.00051	0.02405
	B2	0.02421	0.02481	0.04676
	B2	-0.00071	-0.00015	0.02146

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)**	0.00191	0.00178	0.00176
	(A2 * A3 * B1 * B2 * !Y)	-0.00181	-0.00201	-0.00202
	(A2 * !A3 * B1 * B2 * !Y)	0.00164	0.00165	0.00165
	(A2 * !A3 * B1 * B2 * !Y)	-0.00206	-0.00206	-0.00206
	(A2 * !A3 * B1 * !B2 * Y)	0.00057	0.00056	0.00053
	(A2 * !A3 * B1 * !B2 * Y)	-0.00241	-0.00241	-0.00249
	(A2 * !A3 * !B1 * Y)	0.00057	0.00056	0.00053
	(A2 * !A3 * !B1 * Y)	-0.00241	-0.00241	-0.00249
	(!A2 * B1 * B2 * !Y)	0.00169	0.00170	0.00169
	(!A2 * B1 * B2 * !Y)	-0.00206	-0.00207	-0.00206
	(!A2 * B1 * !B2 * Y)	0.00055	0.00055	0.00054
	(!A2 * B1 * !B2 * Y)	-0.00246	-0.00247	-0.00249
	(!A2 * !B1 * Y)	0.00055	0.00055	0.00054
	(!A2 * !B1 * Y)	-0.00246	-0.00247	-0.00249
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	0.00376	0.00353	0.00348
	(A2 * A3 * B1 * B2 * !Y)	-0.00361	-0.00402	-0.00403
	(A2 * !A3 * B1 * B2 * !Y)	0.00328	0.00329	0.00328
	(A2 * !A3 * B1 * B2 * !Y)	-0.00411	-0.00412	-0.00411
	(A2 * !A3 * B1 * !B2 * Y)	0.00117	0.00118	0.00108
	(A2 * !A3 * B1 * !B2 * Y)	-0.00471	-0.00476	-0.00493
	(A2 * !A3 * !B1 * Y)	0.00117	0.00118	0.00108
	(A2 * !A3 * !B1 * Y)	-0.00471	-0.00476	-0.00493
	(!A2 * B1 * B2 * !Y)	0.00333	0.00336	0.00335
	(!A2 * B1 * B2 * !Y)	-0.00410	-0.00412	-0.00411
	(!A2 * B1 * !B2 * Y)	0.00120	0.00121	0.00115
	(!A2 * B1 * !B2 * Y)	-0.00483	-0.00487	-0.00494
	(!A2 * !B1 * Y)	0.00121	0.00122	0.00115
	(!A2 * !B1 * Y)	-0.00482	-0.00487	-0.00494

sky130_fd_sc_hs__a32oi_4	(A2 * A3 * B1 * B2 * !Y)	0.00765	0.00698	0.00689
	(A2 * A3 * B1 * B2 * !Y)	-0.00702	-0.00810	-0.00807
	(A2 * !A3 * B1 * B2 * !Y)	0.00645	0.00647	0.00646
	(A2 * !A3 * B1 * B2 * !Y)	-0.00825	-0.00826	-0.00824
	(A2 * !A3 * B1 * !B2 * Y)	0.00211	0.00211	0.00194
	(A2 * !A3 * B1 * !B2 * Y)	-0.00960	-0.00967	-0.00997
	(A2 * !A3 * !B1 * Y)	0.00210	0.00212	0.00195
	(A2 * !A3 * !B1 * Y)	-0.00957	-0.00967	-0.00997
	(!A2 * B1 * B2 * !Y)	0.00658	0.00661	0.00659
	(!A2 * B1 * B2 * !Y)	-0.00825	-0.00827	-0.00824
	(!A2 * B1 * !B2 * Y)	0.00216	0.00217	0.00207
	(!A2 * B1 * !B2 * Y)	-0.00984	-0.00991	-0.01001
	(!A2 * !B1 * Y)	0.00216	0.00218	0.00208
	(!A2 * !B1 * Y)	-0.00981	-0.00990	-0.01001

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)**	-0.00175	-0.00176	-0.00176
	(A2 * A3 * B1 * B2 * !Y)	0.00200	0.00201	0.00202
	(A2 * !A3 * B1 * B2 * !Y)	-0.00150	-0.00165	-0.00165
	(A2 * !A3 * B1 * B2 * !Y)	0.00208	0.00208	0.00207
	(A2 * !A3 * B1 * !B2 * Y)	-0.00052	-0.00052	-0.00051
	(A2 * !A3 * B1 * !B2 * Y)	0.00249	0.00252	0.00249
	(A2 * !A3 * !B1 * Y)	-0.00052	-0.00052	-0.00051
	(A2 * !A3 * !B1 * Y)	0.00248	0.00252	0.00249
	(!A2 * B1 * B2 * !Y)	-0.00164	-0.00169	-0.00169
	(!A2 * B1 * B2 * !Y)	0.00206	0.00207	0.00207
	(!A2 * B1 * !B2 * Y)	-0.00052	-0.00053	-0.00052
	(!A2 * B1 * !B2 * Y)	0.00249	0.00254	0.00250
	(!A2 * !B1 * Y)	-0.00052	-0.00053	-0.00052
	(!A2 * !B1 * Y)	0.00249	0.00254	0.00250
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	-0.00346	-0.00347	-0.00347
	(A2 * A3 * B1 * B2 * !Y)	0.00401	0.00402	0.00403
	(A2 * !A3 * B1 * B2 * !Y)	-0.00288	-0.00329	-0.00328
	(A2 * !A3 * B1 * B2 * !Y)	0.00411	0.00417	0.00413
	(A2 * !A3 * B1 * !B2 * Y)	-0.00108	-0.00108	-0.00108
	(A2 * !A3 * B1 * !B2 * Y)	0.00493	0.00494	0.00495
	(A2 * !A3 * !B1 * Y)	-0.00108	-0.00108	-0.00108
	(A2 * !A3 * !B1 * Y)	0.00492	0.00494	0.00495
	(!A2 * B1 * B2 * !Y)	-0.00322	-0.00336	-0.00335
	(!A2 * B1 * B2 * !Y)	0.00411	0.00415	0.00413
	(!A2 * B1 * !B2 * Y)	-0.00111	-0.00112	-0.00112
	(!A2 * B1 * !B2 * Y)	0.00493	0.00494	0.00495
	(!A2 * !B1 * Y)	-0.00112	-0.00112	-0.00112
	(!A2 * !B1 * Y)	0.00492	0.00494	0.00495

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	-0.00685	-0.00688	-0.00685
	(A2 * A3 * B1 * B2 * !Y)	0.00802	0.00810	0.00807
	(A2 * !A3 * B1 * B2 * !Y)	-0.00562	-0.00647	-0.00646
	(A2 * !A3 * B1 * B2 * !Y)	0.00825	0.00835	0.00827
	(A2 * !A3 * B1 * !B2 * Y)	-0.00194	-0.00194	-0.00194
	(A2 * !A3 * B1 * !B2 * Y)	0.00997	0.00998	0.01002
	(A2 * !A3 * !B1 * Y)	-0.00196	-0.00200	-0.00195
	(A2 * !A3 * !B1 * Y)	0.00998	0.01018	0.01002
	(!A2 * B1 * B2 * !Y)	-0.00637	-0.00661	-0.00659
	(!A2 * B1 * B2 * !Y)	0.00825	0.00831	0.00827
	(!A2 * B1 * !B2 * Y)	-0.00201	-0.00201	-0.00201
	(!A2 * B1 * !B2 * Y)	0.00998	0.00999	0.01003
	(!A2 * !B1 * Y)	-0.00202	-0.00206	-0.00202
	(!A2 * !B1 * Y)	0.01000	0.01019	0.01003

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)**	0.00195	0.00183	0.00181
	(A1 * A3 * B1 * B2 * !Y)	-0.00180	-0.00202	-0.00202
	(A1 * !A3 * B1 * B2 * !Y)	0.00174	0.00175	0.00175
	(A1 * !A3 * B1 * B2 * !Y)	-0.00205	-0.00206	-0.00206
	(A1 * !A3 * B1 * !B2 * Y)	0.00076	0.00076	0.00075
	(A1 * !A3 * B1 * !B2 * Y)	-0.00217	-0.00216	-0.00216
	(A1 * !A3 * !B1 * Y)	0.00076	0.00075	0.00075
	(A1 * !A3 * !B1 * Y)	-0.00217	-0.00216	-0.00216
	(!A1 * A3 * B1 * B2 * !Y)	0.00173	0.00175	0.00174
	(!A1 * A3 * B1 * B2 * !Y)	-0.00206	-0.00207	-0.00206
	(!A1 * A3 * B1 * !B2 * Y)	0.00163	0.00164	0.00163
	(!A1 * A3 * B1 * !B2 * Y)	-0.00216	-0.00218	-0.00217
	(!A1 * A3 * !B1 * Y)	0.00163	0.00164	0.00163
	(!A1 * A3 * !B1 * Y)	-0.00216	-0.00218	-0.00217
	(!A1 * !A3 * B1 * B2 * !Y)	0.00104	0.00105	0.00105
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00206	-0.00207	-0.00206
	(!A1 * !A3 * B1 * !B2 * Y)	0.00088	0.00088	0.00088
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00217	-0.00218	-0.00217
	(!A1 * !A3 * !B1 * Y)	0.00088	0.00088	0.00088
	(!A1 * !A3 * !B1 * Y)	-0.00217	-0.00218	-0.00217

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	0.00372	0.00340	0.00335
	(A1 * A3 * B1 * B2 * !Y)	-0.00363	-0.00417	-0.00417
	(A1 * !A3 * B1 * B2 * !Y)	0.00316	0.00319	0.00317
	(A1 * !A3 * B1 * B2 * !Y)	-0.00426	-0.00429	-0.00427
	(A1 * !A3 * B1 * !B2 * Y)	0.00139	0.00140	0.00141
	(A1 * !A3 * B1 * !B2 * Y)	-0.00431	-0.00433	-0.00431
	(A1 * !A3 * !B1 * Y)	0.00139	0.00140	0.00142
	(A1 * !A3 * !B1 * Y)	-0.00431	-0.00433	-0.00431
	(!A1 * A3 * B1 * B2 * !Y)	0.00323	0.00328	0.00325
	(!A1 * A3 * B1 * B2 * !Y)	-0.00424	-0.00428	-0.00426
	(!A1 * A3 * B1 * !B2 * Y)	0.00317	0.00322	0.00320
	(!A1 * A3 * B1 * !B2 * Y)	-0.00429	-0.00433	-0.00431
	(!A1 * A3 * !B1 * Y)	0.00317	0.00322	0.00320
	(!A1 * A3 * !B1 * Y)	-0.00429	-0.00433	-0.00431
	(!A1 * !A3 * B1 * B2 * !Y)	0.00191	0.00192	0.00191
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00427	-0.00431	-0.00428
	(!A1 * !A3 * B1 * !B2 * Y)	0.00169	0.00170	0.00169
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00436	-0.00436	-0.00435
	(!A1 * !A3 * !B1 * Y)	0.00170	0.00170	0.00170
	(!A1 * !A3 * !B1 * Y)	-0.00436	-0.00436	-0.00435

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	0.00756	0.00682	0.00671
	(A1 * A3 * B1 * B2 * !Y)	-0.00717	-0.00829	-0.00828
	(A1 * !A3 * B1 * B2 * !Y)	0.00628	0.00636	0.00631
	(A1 * !A3 * B1 * B2 * !Y)	-0.00843	-0.00852	-0.00847
	(A1 * !A3 * B1 * !B2 * Y)	0.00267	0.00268	0.00269
	(A1 * !A3 * B1 * !B2 * Y)	-0.00856	-0.00858	-0.00854
	(A1 * !A3 * !B1 * Y)	0.00267	0.00268	0.00270
	(A1 * !A3 * !B1 * Y)	-0.00856	-0.00858	-0.00854
	(!A1 * A3 * B1 * B2 * !Y)	0.00643	0.00649	0.00644
	(!A1 * A3 * B1 * B2 * !Y)	-0.00846	-0.00851	-0.00846
	(!A1 * A3 * B1 * !B2 * Y)	0.00633	0.00639	0.00637
	(!A1 * A3 * B1 * !B2 * Y)	-0.00851	-0.00856	-0.00853
	(!A1 * A3 * !B1 * Y)	0.00633	0.00639	0.00637
	(!A1 * A3 * !B1 * Y)	-0.00851	-0.00856	-0.00853
	(!A1 * !A3 * B1 * B2 * !Y)	0.00360	0.00362	0.00359
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00846	-0.00853	-0.00846
	(!A1 * !A3 * B1 * !B2 * Y)	0.00319	0.00320	0.00318
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00863	-0.00865	-0.00861
	(!A1 * !A3 * !B1 * Y)	0.00320	0.00320	0.00319
	(!A1 * !A3 * !B1 * Y)	-0.00863	-0.00865	-0.00861

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)**	-0.00181	-0.00182	-0.00181
	(A1 * A3 * B1 * B2 * !Y)	0.00201	0.00203	0.00202
	(A1 * !A3 * B1 * B2 * !Y)	-0.00169	-0.00175	-0.00175
	(A1 * !A3 * B1 * B2 * !Y)	0.00207	0.00208	0.00207
	(A1 * !A3 * B1 * !B2 * Y)	-0.00072	-0.00073	-0.00073
	(A1 * !A3 * B1 * !B2 * Y)	0.00220	0.00223	0.00218
	(A1 * !A3 * !B1 * Y)	-0.00072	-0.00073	-0.00073
	(A1 * !A3 * !B1 * Y)	0.00220	0.00223	0.00218
	(!A1 * A3 * B1 * B2 * !Y)	-0.00169	-0.00174	-0.00174
	(!A1 * A3 * B1 * B2 * !Y)	0.00206	0.00208	0.00207
	(!A1 * A3 * B1 * !B2 * Y)	-0.00150	-0.00163	-0.00163
	(!A1 * A3 * B1 * !B2 * Y)	0.00228	0.00219	0.00218
	(!A1 * A3 * !B1 * Y)	-0.00150	-0.00163	-0.00163
	(!A1 * A3 * !B1 * Y)	0.00228	0.00219	0.00218
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00104	-0.00105	-0.00105
	(!A1 * !A3 * B1 * B2 * !Y)	0.00207	0.00209	0.00207
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00088	-0.00088	-0.00088
	(!A1 * !A3 * B1 * !B2 * Y)	0.00228	0.00230	0.00220
	(!A1 * !A3 * !B1 * Y)	-0.00088	-0.00088	-0.00088
	(!A1 * !A3 * !B1 * Y)	0.00228	0.00230	0.00220

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	-0.00333	-0.00336	-0.00333
	(A1 * A3 * B1 * B2 * !Y)	0.00415	0.00424	0.00417
	(A1 * !A3 * B1 * B2 * !Y)	-0.00307	-0.00319	-0.00317
	(A1 * !A3 * B1 * B2 * !Y)	0.00428	0.00432	0.00428
	(A1 * !A3 * B1 * !B2 * Y)	-0.00132	-0.00133	-0.00136
	(A1 * !A3 * B1 * !B2 * Y)	0.00444	0.00449	0.00436
	(A1 * !A3 * !B1 * Y)	-0.00132	-0.00133	-0.00136
	(A1 * !A3 * !B1 * Y)	0.00444	0.00449	0.00436
	(!A1 * A3 * B1 * B2 * !Y)	-0.00307	-0.00325	-0.00324
	(!A1 * A3 * B1 * B2 * !Y)	0.00425	0.00431	0.00428
	(!A1 * A3 * B1 * !B2 * Y)	-0.00282	-0.00320	-0.00320
	(!A1 * A3 * B1 * !B2 * Y)	0.00454	0.00435	0.00432
	(!A1 * A3 * !B1 * Y)	-0.00282	-0.00320	-0.00320
	(!A1 * A3 * !B1 * Y)	0.00454	0.00435	0.00432
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00191	-0.00192	-0.00191
	(!A1 * !A3 * B1 * B2 * !Y)	0.00427	0.00434	0.00430
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00169	-0.00170	-0.00169
	(!A1 * !A3 * B1 * !B2 * Y)	0.00452	0.00460	0.00441
	(!A1 * !A3 * !B1 * Y)	-0.00170	-0.00170	-0.00170
	(!A1 * !A3 * !B1 * Y)	0.00452	0.00460	0.00441

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	-0.00668	-0.00670	-0.00667
	(A1 * A3 * B1 * B2 * !Y)	0.00824	0.00829	0.00828
	(A1 * !A3 * B1 * B2 * !Y)	-0.00614	-0.00636	-0.00631
	(A1 * !A3 * B1 * B2 * !Y)	0.00848	0.00860	0.00850
	(A1 * !A3 * B1 * !B2 * Y)	-0.00253	-0.00256	-0.00260
	(A1 * !A3 * B1 * !B2 * Y)	0.00875	0.00886	0.00863
	(A1 * !A3 * !B1 * Y)	-0.00253	-0.00256	-0.00261
	(A1 * !A3 * !B1 * Y)	0.00875	0.00886	0.00863
	(!A1 * A3 * B1 * B2 * !Y)	-0.00619	-0.00649	-0.00644
	(!A1 * A3 * B1 * B2 * !Y)	0.00846	0.00855	0.00850
	(!A1 * A3 * B1 * !B2 * Y)	-0.00563	-0.00639	-0.00637
	(!A1 * A3 * B1 * !B2 * Y)	0.00910	0.00861	0.00856
	(!A1 * A3 * !B1 * Y)	-0.00563	-0.00639	-0.00637
	(!A1 * A3 * !B1 * Y)	0.00910	0.00861	0.00856
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00360	-0.00362	-0.00359
	(!A1 * !A3 * B1 * B2 * !Y)	0.00846	0.00859	0.00850
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00319	-0.00320	-0.00318
	(!A1 * !A3 * B1 * !B2 * Y)	0.00897	0.00911	0.00873
	(!A1 * !A3 * !B1 * Y)	-0.00320	-0.00320	-0.00319
	(!A1 * !A3 * !B1 * Y)	0.00897	0.00911	0.00873

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)**	0.00183	0.00172	0.00170
	(A1 * A2 * B1 * B2 * !Y)	-0.00184	-0.00204	-0.00204
	(A1 * !A2 * B1 * !B2 * Y)	0.00164	0.00165	0.00164
	(A1 * !A2 * B1 * !B2 * Y)	-0.00208	-0.00209	-0.00208
	(A1 * !A2 * !B1 * Y)	0.00164	0.00165	0.00164
	(A1 * !A2 * !B1 * Y)	-0.00208	-0.00209	-0.00208
	(!A2 * B1 * B2 * !Y)	0.00163	0.00164	0.00164
	(!A2 * B1 * B2 * !Y)	-0.00208	-0.00208	-0.00208
	(!A1 * A2 * B1 * B2 * !Y)	0.00160	0.00161	0.00160
	(!A1 * A2 * B1 * B2 * !Y)	-0.00208	-0.00209	-0.00208
	(!A1 * A2 * B1 * !B2 * Y)	0.00160	0.00161	0.00159
	(!A1 * A2 * B1 * !B2 * Y)	-0.00208	-0.00209	-0.00208
	(!A1 * A2 * !B1 * Y)	0.00160	0.00161	0.00159
	(!A1 * A2 * !B1 * Y)	-0.00208	-0.00209	-0.00208
	(!A1 * !A2 * B1 * !B2 * Y)	0.00164	0.00163	0.00163
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00208	-0.00208	-0.00208
	(!A1 * !A2 * !B1 * Y)	0.00163	0.00166	0.00163
	(!A1 * !A2 * !B1 * Y)	-0.00208	-0.00210	-0.00208

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	0.00374	0.00348	0.00342
	(A1 * A2 * B1 * B2 * !Y)	-0.00362	-0.00413	-0.00412
	(A1 * !A2 * B1 * !B2 * Y)	0.00326	0.00329	0.00326
	(A1 * !A2 * B1 * !B2 * Y)	-0.00421	-0.00424	-0.00422
	(A1 * !A2 * !B1 * Y)	0.00326	0.00329	0.00326
	(A1 * !A2 * !B1 * Y)	-0.00421	-0.00424	-0.00422
	(!A2 * B1 * B2 * !Y)	0.00326	0.00329	0.00327
	(!A2 * B1 * B2 * !Y)	-0.00420	-0.00423	-0.00421
	(!A1 * A2 * B1 * B2 * !Y)	0.00323	0.00327	0.00325
	(!A1 * A2 * B1 * B2 * !Y)	-0.00419	-0.00422	-0.00421
	(!A1 * A2 * B1 * !B2 * Y)	0.00323	0.00327	0.00325
	(!A1 * A2 * B1 * !B2 * Y)	-0.00420	-0.00420	-0.00421
	(!A1 * A2 * !B1 * Y)	0.00323	0.00327	0.00325
	(!A1 * A2 * !B1 * Y)	-0.00420	-0.00420	-0.00421
	(!A1 * !A2 * B1 * !B2 * Y)	0.00326	0.00329	0.00326
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00421	-0.00424	-0.00422
	(!A1 * !A2 * !B1 * Y)	0.00326	0.00329	0.00326
	(!A1 * !A2 * !B1 * Y)	-0.00421	-0.00424	-0.00422

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	0.00739	0.00676	0.00664
	(A1 * A2 * B1 * B2 * !Y)	-0.00727	-0.00833	-0.00832
	(A1 * !A2 * B1 * !B2 * Y)	0.00631	0.00637	0.00634
	(A1 * !A2 * B1 * !B2 * Y)	-0.00850	-0.00854	-0.00852
	(A1 * !A2 * !B1 * Y)	0.00631	0.00637	0.00634
	(A1 * !A2 * !B1 * Y)	-0.00850	-0.00854	-0.00852
	(!A2 * B1 * B2 * !Y)	0.00632	0.00642	0.00635
	(!A2 * B1 * B2 * !Y)	-0.00849	-0.00853	-0.00851
	(!A1 * A2 * B1 * B2 * !Y)	0.00624	0.00632	0.00627
	(!A1 * A2 * B1 * B2 * !Y)	-0.00849	-0.00855	-0.00851
	(!A1 * A2 * B1 * !B2 * Y)	0.00624	0.00632	0.00626
	(!A1 * A2 * B1 * !B2 * Y)	-0.00850	-0.00857	-0.00852
	(!A1 * A2 * !B1 * Y)	0.00624	0.00632	0.00626
	(!A1 * A2 * !B1 * Y)	-0.00850	-0.00857	-0.00852
	(!A1 * !A2 * B1 * !B2 * Y)	0.00631	0.00637	0.00634
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00850	-0.00854	-0.00852
	(!A1 * !A2 * !B1 * Y)	0.00631	0.00637	0.00634
	(!A1 * !A2 * !B1 * Y)	-0.00850	-0.00854	-0.00852

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)**	-0.00169	-0.00170	-0.00169
	(A1 * A2 * B1 * B2 * !Y)	0.00203	0.00205	0.00204
	(A1 * !A2 * B1 * !B2 * Y)	-0.00158	-0.00164	-0.00164
	(A1 * !A2 * B1 * !B2 * Y)	0.00209	0.00210	0.00209
	(A1 * !A2 * !B1 * Y)	-0.00158	-0.00164	-0.00164
	(A1 * !A2 * !B1 * Y)	0.00209	0.00210	0.00209
	(!A2 * B1 * B2 * !Y)	-0.00159	-0.00164	-0.00164
	(!A2 * B1 * B2 * !Y)	0.00209	0.00210	0.00209
	(!A1 * A2 * B1 * B2 * !Y)	-0.00150	-0.00161	-0.00160
	(!A1 * A2 * B1 * B2 * !Y)	0.00208	0.00211	0.00209
	(!A1 * A2 * B1 * !B2 * Y)	-0.00150	-0.00161	-0.00159
	(!A1 * A2 * B1 * !B2 * Y)	0.00208	0.00211	0.00209
	(!A1 * A2 * !B1 * Y)	-0.00150	-0.00161	-0.00159
	(!A1 * A2 * !B1 * Y)	0.00208	0.00211	0.00209
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00159	-0.00163	-0.00163
	(!A1 * !A2 * B1 * !B2 * Y)	0.00209	0.00210	0.00209
	(!A1 * !A2 * !B1 * Y)	-0.00159	-0.00164	-0.00163
	(!A1 * !A2 * !B1 * Y)	0.00209	0.00210	0.00209

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	-0.00340	-0.00342	-0.00340
	(A1 * A2 * B1 * B2 * !Y)	0.00410	0.00413	0.00412
	(A1 * !A2 * B1 * !B2 * Y)	-0.00314	-0.00329	-0.00326
	(A1 * !A2 * B1 * !B2 * Y)	0.00421	0.00426	0.00423
	(A1 * !A2 * !B1 * Y)	-0.00314	-0.00329	-0.00326
	(A1 * !A2 * !B1 * Y)	0.00421	0.00426	0.00423
	(!A2 * B1 * B2 * !Y)	-0.00316	-0.00328	-0.00327
	(!A2 * B1 * B2 * !Y)	0.00421	0.00425	0.00423
	(!A1 * A2 * B1 * B2 * !Y)	-0.00305	-0.00325	-0.00325
	(!A1 * A2 * B1 * B2 * !Y)	0.00423	0.00426	0.00423
	(!A1 * A2 * B1 * !B2 * Y)	-0.00304	-0.00321	-0.00325
	(!A1 * A2 * B1 * !B2 * Y)	0.00424	0.00420	0.00423
	(!A1 * A2 * !B1 * Y)	-0.00304	-0.00321	-0.00325
	(!A1 * A2 * !B1 * Y)	0.00424	0.00420	0.00423
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00315	-0.00329	-0.00326
	(!A1 * !A2 * B1 * !B2 * Y)	0.00421	0.00426	0.00423
	(!A1 * !A2 * !B1 * Y)	-0.00315	-0.00329	-0.00326
	(!A1 * !A2 * !B1 * Y)	0.00421	0.00426	0.00423

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	-0.00661	-0.00662	-0.00661
	(A1 * A2 * B1 * B2 * !Y)	0.00829	0.00833	0.00832
	(A1 * !A2 * B1 * !B2 * Y)	-0.00603	-0.00634	-0.00634
	(A1 * !A2 * B1 * !B2 * Y)	0.00854	0.00861	0.00854
	(A1 * !A2 * !B1 * Y)	-0.00603	-0.00634	-0.00634
	(A1 * !A2 * !B1 * Y)	0.00854	0.00861	0.00854
	(!A2 * B1 * B2 * !Y)	-0.00611	-0.00629	-0.00635
	(!A2 * B1 * B2 * !Y)	0.00854	0.00853	0.00854
	(!A1 * A2 * B1 * B2 * !Y)	-0.00581	-0.00625	-0.00627
	(!A1 * A2 * B1 * B2 * !Y)	0.00856	0.00860	0.00854
	(!A1 * A2 * B1 * !B2 * Y)	-0.00579	-0.00627	-0.00626
	(!A1 * A2 * B1 * !B2 * Y)	0.00858	0.00864	0.00854
	(!A1 * A2 * !B1 * Y)	-0.00579	-0.00627	-0.00626
	(!A1 * A2 * !B1 * Y)	0.00858	0.00864	0.00854
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00606	-0.00634	-0.00634
	(!A1 * !A2 * B1 * !B2 * Y)	0.00854	0.00861	0.00854
	(!A1 * !A2 * !B1 * Y)	-0.00606	-0.00634	-0.00634
	(!A1 * !A2 * !B1 * Y)	0.00854	0.00861	0.00854

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)**	0.00198	0.00201	0.00198
	(A1 * A2 * A3 * B2 * !Y)	-0.00097	-0.00098	-0.00097
	(A1 * A2 * A3 * !B2 * !Y)	0.00192	0.00193	0.00192
	(A1 * A2 * A3 * !B2 * !Y)	-0.00096	-0.00097	-0.00097
	(A1 * A2 * !A3 * !B2 * Y)	0.00055	0.00055	0.00053
	(A1 * A2 * !A3 * !B2 * Y)	-0.00252	-0.00253	-0.00255
	(A1 * !A2 * !B2 * Y)	0.00055	0.00055	0.00053
	(A1 * !A2 * !B2 * Y)	-0.00252	-0.00253	-0.00255
	(!A1 * !B2 * Y)	0.00055	0.00055	0.00053
	(!A1 * !B2 * Y)	-0.00252	-0.00253	-0.00255
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B2 * !Y)**	0.00374	0.00383	0.00376
	(A1 * A2 * A3 * B2 * !Y)	-0.00193	-0.00197	-0.00194
	(A1 * A2 * A3 * !B2 * !Y)	0.00361	0.00364	0.00362
	(A1 * A2 * A3 * !B2 * !Y)	-0.00193	-0.00194	-0.00193
	(A1 * A2 * !A3 * !B2 * Y)	0.00115	0.00115	0.00109
	(A1 * A2 * !A3 * !B2 * Y)	-0.00486	-0.00489	-0.00496
	(A1 * !A2 * !B2 * Y)	0.00115	0.00115	0.00109
	(A1 * !A2 * !B2 * Y)	-0.00486	-0.00489	-0.00496
	(!A1 * !B2 * Y)	0.00115	0.00115	0.00109
	(!A1 * !B2 * Y)	-0.00486	-0.00489	-0.00495
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	0.00757	0.00773	0.00760
	(A1 * A2 * A3 * B2 * !Y)	-0.00392	-0.00401	-0.00393
	(A1 * A2 * A3 * !B2 * !Y)	0.00728	0.00735	0.00731
	(A1 * A2 * A3 * !B2 * !Y)	-0.00391	-0.00396	-0.00392
	(A1 * A2 * !A3 * !B2 * Y)	0.00218	0.00219	0.00208
	(A1 * A2 * !A3 * !B2 * Y)	-0.00989	-0.00995	-0.01007
	(A1 * !A2 * !B2 * Y)	0.00218	0.00219	0.00208
	(A1 * !A2 * !B2 * Y)	-0.00989	-0.00995	-0.01007
	(!A1 * !B2 * Y)	0.00219	0.00220	0.00209
	(!A1 * !B2 * Y)	-0.00989	-0.00995	-0.01007

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)	-0.00178	-0.00180	-0.00196
	(A1 * A2 * A3 * B2 * !Y)	0.00113	0.00114	0.00100
	(A1 * A2 * A3 * !B2 * !Y)	-0.00187	-0.00193	-0.00192
	(A1 * A2 * A3 * !B2 * !Y)	0.00096	0.00097	0.00097
	(A1 * A2 * !A3 * !B2 * Y)	-0.00053	-0.00052	-0.00052
	(A1 * A2 * !A3 * !B2 * Y)	0.00255	0.00255	0.00255
	(A1 * !A2 * !B2 * Y)	-0.00053	-0.00052	-0.00052
	(A1 * !A2 * !B2 * Y)	0.00255	0.00255	0.00255
	(!A1 * !B2 * Y)	-0.00053	-0.00052	-0.00052
	(!A1 * !B2 * Y)	0.00255	0.00255	0.00255
sky130_fd_sc_hs__a32oi_2	(A1 * A2 * A3 * B2 * !Y)	-0.00336	-0.00340	-0.00371
	(A1 * A2 * A3 * B2 * !Y)	0.00226	0.00228	0.00201
	(A1 * A2 * A3 * !B2 * !Y)	-0.00349	-0.00364	-0.00362
	(A1 * A2 * A3 * !B2 * !Y)	0.00193	0.00194	0.00193
	(A1 * A2 * !A3 * !B2 * Y)	-0.00105	-0.00106	-0.00106
	(A1 * A2 * !A3 * !B2 * Y)	0.00493	0.00497	0.00496
	(A1 * !A2 * !B2 * Y)	-0.00105	-0.00106	-0.00106
	(A1 * !A2 * !B2 * Y)	0.00493	0.00497	0.00496
	(!A1 * !B2 * Y)	-0.00106	-0.00107	-0.00106
	(!A1 * !B2 * Y)	0.00493	0.00497	0.00496

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	-0.00686	-0.00690	-0.00751
	(A1 * A2 * A3 * B2 * !Y)	0.00452	0.00452	0.00406
	(A1 * A2 * A3 * !B2 * !Y)	-0.00705	-0.00735	-0.00731
	(A1 * A2 * A3 * !B2 * !Y)	0.00392	0.00397	0.00392
	(A1 * A2 * !A3 * !B2 * Y)	-0.00202	-0.00204	-0.00202
	(A1 * A2 * !A3 * !B2 * Y)	0.01004	0.01010	0.01008
	(A1 * !A2 * !B2 * Y)	-0.00202	-0.00204	-0.00202
	(A1 * !A2 * !B2 * Y)	0.01004	0.01010	0.01008
	(!A1 * !B2 * Y)	-0.00203	-0.00204	-0.00203
	(!A1 * !B2 * Y)	0.01004	0.01010	0.01008

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)**	0.00191	0.00192	0.00190
	(A1 * A2 * A3 * B1 * !Y)	-0.00103	-0.00103	-0.00102
	(A1 * A2 * A3 * !B1 * !Y)	0.00183	0.00187	0.00183
	(A1 * A2 * A3 * !B1 * !Y)	-0.00101	-0.00102	-0.00102
	(A1 * A2 * !A3 * !B1 * Y)	0.00163	0.00164	0.00163
	(A1 * A2 * !A3 * !B1 * Y)	-0.00215	-0.00215	-0.00215
	(A1 * !A2 * !B1 * Y)	0.00163	0.00165	0.00164
	(A1 * !A2 * !B1 * Y)	-0.00215	-0.00216	-0.00215
	(!A1 * !B1 * Y)	0.00163	0.00165	0.00163
	(!A1 * !B1 * Y)	-0.00215	-0.00216	-0.00215

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00374	0.00382	0.00375
	(A1 * A2 * A3 * B1 * !Y)	-0.00199	-0.00202	-0.00199
	(A1 * A2 * A3 * !B1 * !Y)	0.00362	0.00367	0.00363
	(A1 * A2 * A3 * !B1 * !Y)	-0.00197	-0.00198	-0.00198
	(A1 * A2 * !A3 * !B1 * Y)	0.00324	0.00325	0.00325
	(A1 * A2 * !A3 * !B1 * Y)	-0.00421	-0.00422	-0.00422
	(A1 * !A2 * !B1 * Y)	0.00324	0.00329	0.00325
	(A1 * !A2 * !B1 * Y)	-0.00421	-0.00425	-0.00422
	(!A1 * !B1 * Y)	0.00324	0.00329	0.00326
	(!A1 * !B1 * Y)	-0.00421	-0.00425	-0.00422
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00741	0.00757	0.00744
	(A1 * A2 * A3 * B1 * !Y)	-0.00395	-0.00403	-0.00395
	(A1 * A2 * A3 * !B1 * !Y)	0.00714	0.00729	0.00717
	(A1 * A2 * A3 * !B1 * !Y)	-0.00393	-0.00396	-0.00394
	(A1 * A2 * !A3 * !B1 * Y)	0.00632	0.00638	0.00635
	(A1 * A2 * !A3 * !B1 * Y)	-0.00843	-0.00847	-0.00844
	(A1 * !A2 * !B1 * Y)	0.00635	0.00638	0.00635
	(A1 * !A2 * !B1 * Y)	-0.00845	-0.00846	-0.00844
	(!A1 * !B1 * Y)	0.00637	0.00637	0.00637
	(!A1 * !B1 * Y)	-0.00845	-0.00844	-0.00844

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)**	-0.00170	-0.00172	-0.00188
	(A1 * A2 * A3 * B1 * !Y)	0.00119	0.00119	0.00106
	(A1 * A2 * A3 * !B1 * !Y)	-0.00180	-0.00184	-0.00183
	(A1 * A2 * A3 * !B1 * !Y)	0.00102	0.00102	0.00102
	(A1 * A2 * !A3 * !B1 * Y)	-0.00154	-0.00164	-0.00163
	(A1 * A2 * !A3 * !B1 * Y)	0.00223	0.00217	0.00216
	(A1 * !A2 * !B1 * Y)	-0.00154	-0.00164	-0.00164
	(A1 * !A2 * !B1 * Y)	0.00223	0.00217	0.00216
	(!A1 * !B1 * Y)	-0.00154	-0.00164	-0.00163
	(!A1 * !B1 * Y)	0.00223	0.00217	0.00216
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00335	-0.00339	-0.00370
	(A1 * A2 * A3 * B1 * !Y)	0.00232	0.00232	0.00206
	(A1 * A2 * A3 * !B1 * !Y)	-0.00350	-0.00361	-0.00363
	(A1 * A2 * A3 * !B1 * !Y)	0.00198	0.00198	0.00198
	(A1 * A2 * !A3 * !B1 * Y)	-0.00300	-0.00325	-0.00325
	(A1 * A2 * !A3 * !B1 * Y)	0.00436	0.00426	0.00423
	(A1 * !A2 * !B1 * Y)	-0.00300	-0.00327	-0.00325
	(A1 * !A2 * !B1 * Y)	0.00436	0.00426	0.00423
	(!A1 * !B1 * Y)	-0.00300	-0.00327	-0.00326
	(!A1 * !B1 * Y)	0.00436	0.00426	0.00423
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	-0.00671	-0.00677	-0.00735
	(A1 * A2 * A3 * B1 * !Y)	0.00457	0.00456	0.00409
	(A1 * A2 * A3 * !B1 * !Y)	-0.00692	-0.00716	-0.00717
	(A1 * A2 * A3 * !B1 * !Y)	0.00394	0.00396	0.00394
	(A1 * A2 * !A3 * !B1 * Y)	-0.00587	-0.00637	-0.00635
	(A1 * A2 * !A3 * !B1 * Y)	0.00876	0.00848	0.00846
	(A1 * !A2 * !B1 * Y)	-0.00587	-0.00637	-0.00635
	(A1 * !A2 * !B1 * Y)	0.00876	0.00847	0.00846
	(!A1 * !B1 * Y)	-0.00588	-0.00636	-0.00637
	(!A1 * !B1 * Y)	0.00876	0.00847	0.00846

SKY130_FD_SC_HS__A32Ox

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00259	0.00256	0.00265	0.00258	0.00240	1.18628
sky130_fd_sc_hs__a32o_2	0.00277	0.00273	0.00281	0.00272	0.00258	2.03958
sky130_fd_sc_hs__a32o_4	0.00475	0.00533	0.00479	0.00494	0.00563	4.37546

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a32o_1	0.00000	0.16571	0.40066
sky130_fd_sc_hs__a32o_2	0.00000	0.21701	0.40809
sky130_fd_sc_hs__a32o_4	0.00000	0.43743	0.81617

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)	0.09907	0.62540	6.38116
	A2->X (RR)	0.10720	0.62545	6.36133
	A3->X (RR)	0.10925	0.60739	6.21859
	B1->X (RR)	0.07265	0.56995	6.16619
	B2->X (RR)	0.07560	0.56380	6.11530
sky130_fd_sc_hs__a32o_2	A1->X (RR)	0.10087	0.55231	6.18261
	A2->X (RR)	0.10730	0.54862	6.14527
	A3->X (RR)	0.11148	0.53014	5.98157
	B1->X (RR)	0.07399	0.49712	5.92097
	B2->X (RR)	0.07766	0.48819	5.86671
sky130_fd_sc_hs__a32o_4	A1->X (RR)	0.10976	0.49017	6.37282
	A2->X (RR)	0.11837	0.49252	6.35719
	A3->X (RR)	0.12301	0.47186	6.22973
	B1->X (RR)	0.07303	0.42007	6.12864
	B2->X (RR)	0.07707	0.41370	6.08996

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32o_1	A1->X (FF)	0.15836	0.59415	4.80015
	A2->X (FF)	0.17571	0.62226	4.89662
	A3->X (FF)	0.18360	0.63329	4.95558
	B1->X (FF)	0.13699	0.59803	5.00752
	B2->X (FF)	0.14957	0.62510	5.07162
sky130_fd_sc_hs__a32o_2	A1->X (FF)	0.19101	0.60315	4.59193
	A2->X (FF)	0.21061	0.63372	4.69210
	A3->X (FF)	0.22551	0.65571	4.77516
	B1->X (FF)	0.17203	0.61922	4.79241
	B2->X (FF)	0.19026	0.65279	4.88090
sky130_fd_sc_hs__a32o_4	A1->X (FF)	0.17941	0.56013	4.87578
	A2->X (FF)	0.18986	0.58212	4.92746
	A3->X (FF)	0.21354	0.61579	5.03983
	B1->X (FF)	0.16901	0.59037	5.04093
	B2->X (FF)	0.17953	0.60876	5.08615

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32o_1	A1	0.01354	0.01383	0.04039
	A1	0.00665	0.00705	0.03374
	A2	0.01446	0.01441	0.03772
	A2	0.00663	0.00669	0.03015
	A3	0.01553	0.01527	0.03377
	A3	0.00661	0.00635	0.02522
	B1	0.00849	0.01011	0.04899
	B1	0.00374	0.00536	0.04463
	B2	0.00946	0.01061	0.04596
	B2	0.00373	0.00488	0.04065
sky130_fd_sc_hs__a32o_2	A1	0.01681	0.01724	0.04361
	A1	0.00969	0.01014	0.03732
	A2	0.01787	0.01801	0.04140
	A2	0.00966	0.00981	0.03404
	A3	0.01914	0.01911	0.03483
	A3	0.00967	0.00964	0.02627
	B1	0.01169	0.01351	0.04969
	B1	0.00671	0.00855	0.04473
	B2	0.01287	0.01419	0.04690
	B2	0.00669	0.00807	0.04092

sky130_fd_sc_hs__a32o_4	**A1**	0.03234	0.03401	0.08867
	A1	0.01915	0.02085	0.07655
	A2	0.03483	0.03565	0.08372
	A2	0.01918	0.02002	0.06914
	A3	0.03678	0.03762	0.08632
	A3	0.01918	0.02010	0.07034
	B1	0.02163	0.02481	0.10356
	B1	0.01263	0.01585	0.09632
	B2	0.02456	0.02697	0.10233
	B2	0.01253	0.01493	0.09204

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32o_1	**A1**	0.00407	0.00429	0.02706
	A1	0.01104	0.01124	0.03300
	A2	0.00465	0.00487	0.02734
	A2	0.01249	0.01270	0.03433
	A3	0.00489	0.00486	0.02681
	A3	0.01375	0.01371	0.03507
	B1	0.00394	0.00605	0.04803
	B1	0.00870	0.01080	0.05175
	B2	0.00425	0.00648	0.04627
	B2	0.00992	0.01207	0.05097

sky130_fd_sc_hs__a32o_2	**A1**	0.00667	0.00698	0.02949
	A1	0.01385	0.01416	0.03634
	A2	0.00747	0.00770	0.03023
	A2	0.01720	0.01688	0.03840
	A3	0.00772	0.00739	0.02852
	A3	0.01866	0.01772	0.03785
	B1	0.00633	0.00864	0.04928
	B1	0.01131	0.01353	0.05366
	B2	0.00698	0.00915	0.04795
	B2	0.01309	0.01521	0.05365
sky130_fd_sc_hs__a32o_4	**A1**	0.01321	0.01398	0.06654
	A1	0.02654	0.02705	0.07808
	A2	0.01437	0.01497	0.06375
	A2	0.03009	0.03032	0.07882
	A3	0.01611	0.01632	0.06586
	A3	0.03357	0.03375	0.08270
	B1	0.01254	0.01734	0.09049
	B1	0.02150	0.02612	0.09937
	B2	0.01259	0.01733	0.09371
	B2	0.02796	0.03184	0.10390

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)**	0.00173	0.00155	0.00152
	(A2 * A3 * B1 * B2 * X)	-0.00155	-0.00182	-0.00183
	(A2 * !A3 * B1 * B2 * X)	0.00143	0.00143	0.00143
	(A2 * !A3 * B1 * B2 * X)	-0.00187	-0.00187	-0.00186
	(A2 * !A3 * B1 * !B2 * !X)	0.00049	0.00049	0.00046
	(A2 * !A3 * B1 * !B2 * !X)	-0.00218	-0.00218	-0.00225
	(A2 * !A3 * !B1 * !X)	0.00048	0.00049	0.00046
	(A2 * !A3 * !B1 * !X)	-0.00217	-0.00218	-0.00225
	(!A2 * B1 * B2 * X)	0.00147	0.00148	0.00147
	(!A2 * B1 * B2 * X)	-0.00187	-0.00186	-0.00186
	(!A2 * B1 * !B2 * !X)	0.00050	0.00050	0.00048
	(!A2 * B1 * !B2 * !X)	-0.00222	-0.00222	-0.00225
	(!A2 * !B1 * !X)	0.00050	0.00050	0.00048
	(!A2 * !B1 * !X)	-0.00222	-0.00222	-0.00225
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	0.00195	0.00176	0.00173
	(A2 * A3 * B1 * B2 * X)	-0.00156	-0.00182	-0.00183
	(A2 * !A3 * B1 * B2 * X)	0.00162	0.00163	0.00163
	(A2 * !A3 * B1 * B2 * X)	-0.00186	-0.00186	-0.00186
	(A2 * !A3 * B1 * !B2 * !X)	0.00054	0.00054	0.00050
	(A2 * !A3 * B1 * !B2 * !X)	-0.00221	-0.00222	-0.00229
	(A2 * !A3 * !B1 * !X)	0.00054	0.00054	0.00050
	(A2 * !A3 * !B1 * !X)	-0.00221	-0.00222	-0.00229
	(!A2 * B1 * B2 * X)	0.00167	0.00169	0.00167
	(!A2 * B1 * B2 * X)	-0.00186	-0.00187	-0.00186
	(!A2 * B1 * !B2 * !X)	0.00055	0.00055	0.00053
	(!A2 * B1 * !B2 * !X)	-0.00226	-0.00227	-0.00230
	(!A2 * !B1 * !X)	0.00055	0.00055	0.00053
	(!A2 * !B1 * !X)	-0.00226	-0.00227	-0.00230

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	0.00310	0.00281	0.00277
	(A2 * A3 * B1 * B2 * X)	-0.00316	-0.00364	-0.00366
	(A2 * !A3 * B1 * B2 * X)	0.00261	0.00261	0.00261
	(A2 * !A3 * B1 * B2 * X)	-0.00373	-0.00372	-0.00372
	(A2 * !A3 * B1 * !B2 * !X)	0.00092	0.00092	0.00083
	(A2 * !A3 * B1 * !B2 * !X)	-0.00413	-0.00414	-0.00430
	(A2 * !A3 * !B1 * !X)	0.00092	0.00092	0.00083
	(A2 * !A3 * !B1 * !X)	-0.00413	-0.00414	-0.00430
	(!A2 * B1 * B2 * X)	0.00265	0.00267	0.00266
	(!A2 * B1 * B2 * X)	-0.00371	-0.00373	-0.00372
	(!A2 * B1 * !B2 * !X)	0.00089	0.00088	0.00085
	(!A2 * B1 * !B2 * !X)	-0.00426	-0.00427	-0.00432
	(!A2 * !B1 * !X)	0.00089	0.00088	0.00085
	(!A2 * !B1 * !X)	-0.00426	-0.00426	-0.00432

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)**	-0.00152	-0.00152	-0.00151
	(A2 * A3 * B1 * B2 * X)	0.00183	0.00184	0.00183
	(A2 * !A3 * B1 * B2 * X)	-0.00131	-0.00143	-0.00143
	(A2 * !A3 * B1 * B2 * X)	0.00188	0.00190	0.00187
	(A2 * !A3 * B1 * !B2 * !X)	-0.00046	-0.00046	-0.00046
	(A2 * !A3 * B1 * !B2 * !X)	0.00225	0.00228	0.00226
	(A2 * !A3 * !B1 * !X)	-0.00046	-0.00046	-0.00046
	(A2 * !A3 * !B1 * !X)	0.00225	0.00228	0.00226
	(!A2 * B1 * B2 * X)	-0.00142	-0.00146	-0.00147
	(!A2 * B1 * B2 * X)	0.00187	0.00186	0.00187
	(!A2 * B1 * !B2 * !X)	-0.00047	-0.00048	-0.00047
	(!A2 * B1 * !B2 * !X)	0.00225	0.00229	0.00226
	(!A2 * !B1 * !X)	-0.00047	-0.00048	-0.00047
	(!A2 * !B1 * !X)	0.00225	0.00229	0.00226
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	-0.00172	-0.00173	-0.00172
	(A2 * A3 * B1 * B2 * X)	0.00181	0.00184	0.00183
	(A2 * !A3 * B1 * B2 * X)	-0.00148	-0.00163	-0.00163
	(A2 * !A3 * B1 * B2 * X)	0.00187	0.00189	0.00187
	(A2 * !A3 * B1 * !B2 * !X)	-0.00050	-0.00051	-0.00050
	(A2 * !A3 * B1 * !B2 * !X)	0.00230	0.00234	0.00230
	(A2 * !A3 * !B1 * !X)	-0.00050	-0.00052	-0.00050
	(A2 * !A3 * !B1 * !X)	0.00229	0.00234	0.00230
	(!A2 * B1 * B2 * X)	-0.00162	-0.00168	-0.00167
	(!A2 * B1 * B2 * X)	0.00187	0.00189	0.00187
	(!A2 * B1 * !B2 * !X)	-0.00052	-0.00053	-0.00052
	(!A2 * B1 * !B2 * !X)	0.00230	0.00234	0.00230
	(!A2 * !B1 * !X)	-0.00051	-0.00053	-0.00052
	(!A2 * !B1 * !X)	0.00230	0.00234	0.00230

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	-0.00274	-0.00275	-0.00273
	(A2 * A3 * B1 * B2 * X)	0.00363	0.00368	0.00366
	(A2 * !A3 * B1 * B2 * X)	-0.00230	-0.00261	-0.00261
	(A2 * !A3 * B1 * B2 * X)	0.00373	0.00376	0.00374
	(A2 * !A3 * B1 * !B2 * !X)	-0.00078	-0.00080	-0.00078
	(A2 * !A3 * B1 * !B2 * !X)	0.00431	0.00437	0.00433
	(A2 * !A3 * !B1 * !X)	-0.00079	-0.00080	-0.00078
	(A2 * !A3 * !B1 * !X)	0.00431	0.00437	0.00433
	(!A2 * B1 * B2 * X)	-0.00254	-0.00267	-0.00266
	(!A2 * B1 * B2 * X)	0.00372	0.00377	0.00374
	(!A2 * B1 * !B2 * !X)	-0.00082	-0.00084	-0.00082
	(!A2 * B1 * !B2 * !X)	0.00432	0.00440	0.00434
	(!A2 * !B1 * !X)	-0.00082	-0.00084	-0.00082
	(!A2 * !B1 * !X)	0.00432	0.00440	0.00434

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)**	0.00170	0.00152	0.00149
	(A1 * A3 * B1 * B2 * X)	-0.00156	-0.00182	-0.00183
	(A1 * !A3 * B1 * B2 * X)	0.00143	0.00144	0.00143
	(A1 * !A3 * B1 * B2 * X)	-0.00186	-0.00187	-0.00186
	(A1 * !A3 * B1 * !B2 * !X)	0.00057	0.00056	0.00057
	(A1 * !A3 * B1 * !B2 * !X)	-0.00199	-0.00198	-0.00198
	(A1 * !A3 * !B1 * !X)	0.00057	0.00056	0.00057
	(A1 * !A3 * !B1 * !X)	-0.00199	-0.00198	-0.00198
	(!A1 * A3 * B1 * B2 * X)	0.00144	0.00145	0.00144
	(!A1 * A3 * B1 * B2 * X)	-0.00186	-0.00188	-0.00186
	(!A1 * A3 * B1 * !B2 * !X)	0.00132	0.00132	0.00131
	(!A1 * A3 * B1 * !B2 * !X)	-0.00199	-0.00199	-0.00198
	(!A1 * A3 * !B1 * !X)	0.00132	0.00132	0.00131
	(!A1 * A3 * !B1 * !X)	-0.00199	-0.00199	-0.00198
	(!A1 * !A3 * B1 * B2 * X)	0.00086	0.00087	0.00086
	(!A1 * !A3 * B1 * B2 * X)	-0.00186	-0.00187	-0.00186
	(!A1 * !A3 * B1 * !B2 * !X)	0.00067	0.00067	0.00067
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00199	-0.00200	-0.00200
	(!A1 * !A3 * !B1 * !X)	0.00067	0.00067	0.00067
	(!A1 * !A3 * !B1 * !X)	-0.00199	-0.00200	-0.00200

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	0.00191	0.00173	0.00170
	(A1 * A3 * B1 * B2 * X)	-0.00157	-0.00182	-0.00183
	(A1 * !A3 * B1 * B2 * X)	0.00162	0.00162	0.00163
	(A1 * !A3 * B1 * B2 * X)	-0.00185	-0.00186	-0.00186
	(A1 * !A3 * B1 * !B2 * !X)	0.00064	0.00065	0.00064
	(A1 * !A3 * B1 * !B2 * !X)	-0.00198	-0.00199	-0.00198
	(A1 * !A3 * !B1 * !X)	0.00064	0.00065	0.00064
	(A1 * !A3 * !B1 * !X)	-0.00198	-0.00199	-0.00198
	(!A1 * A3 * B1 * B2 * X)	0.00164	0.00166	0.00165
	(!A1 * A3 * B1 * B2 * X)	-0.00185	-0.00186	-0.00186
	(!A1 * A3 * B1 * !B2 * !X)	0.00152	0.00153	0.00152
	(!A1 * A3 * B1 * !B2 * !X)	-0.00198	-0.00199	-0.00198
	(!A1 * A3 * !B1 * !X)	0.00152	0.00153	0.00152
	(!A1 * A3 * !B1 * !X)	-0.00198	-0.00199	-0.00198
	(!A1 * !A3 * B1 * B2 * X)	0.00096	0.00097	0.00096
	(!A1 * !A3 * B1 * B2 * X)	-0.00186	-0.00187	-0.00186
	(!A1 * !A3 * B1 * !B2 * !X)	0.00076	0.00077	0.00076
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00199	-0.00200	-0.00199
	(!A1 * !A3 * !B1 * !X)	0.00076	0.00077	0.00076
	(!A1 * !A3 * !B1 * !X)	-0.00199	-0.00200	-0.00199

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	0.00346	0.00300	0.00293
	(A1 * A3 * B1 * B2 * X)	-0.00330	-0.00394	-0.00397
	(A1 * !A3 * B1 * B2 * X)	0.00282	0.00282	0.00283
	(A1 * !A3 * B1 * B2 * X)	-0.00405	-0.00404	-0.00405
	(A1 * !A3 * B1 * !B2 * !X)	0.00120	0.00118	0.00118
	(A1 * !A3 * B1 * !B2 * !X)	-0.00425	-0.00423	-0.00424
	(A1 * !A3 * !B1 * !X)	0.00120	0.00118	0.00118
	(A1 * !A3 * !B1 * !X)	-0.00425	-0.00423	-0.00424
	(!A1 * A3 * B1 * B2 * X)	0.00282	0.00285	0.00283
	(!A1 * A3 * B1 * B2 * X)	-0.00405	-0.00407	-0.00405
	(!A1 * A3 * B1 * !B2 * !X)	0.00264	0.00268	0.00265
	(!A1 * A3 * B1 * !B2 * !X)	-0.00423	-0.00426	-0.00423
	(!A1 * A3 * !B1 * !X)	0.00264	0.00268	0.00265
	(!A1 * A3 * !B1 * !X)	-0.00423	-0.00426	-0.00423
	(!A1 * !A3 * B1 * B2 * X)	0.00177	0.00176	0.00176
	(!A1 * !A3 * B1 * B2 * X)	-0.00406	-0.00405	-0.00406
	(!A1 * !A3 * B1 * !B2 * !X)	0.00145	0.00146	0.00145
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00426	-0.00429	-0.00427
	(!A1 * !A3 * !B1 * !X)	0.00146	0.00146	0.00145
	(!A1 * !A3 * !B1 * !X)	-0.00428	-0.00429	-0.00427

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)**	-0.00148	-0.00149	-0.00148
	(A1 * A3 * B1 * B2 * X)	0.00182	0.00184	0.00183
	(A1 * !A3 * B1 * B2 * X)	-0.00139	-0.00144	-0.00143
	(A1 * !A3 * B1 * B2 * X)	0.00188	0.00189	0.00187
	(A1 * !A3 * B1 * !B2 * !X)	-0.00054	-0.00054	-0.00055
	(A1 * !A3 * B1 * !B2 * !X)	0.00202	0.00205	0.00200
	(A1 * !A3 * !B1 * !X)	-0.00054	-0.00054	-0.00055
	(A1 * !A3 * !B1 * !X)	0.00202	0.00205	0.00200
	(!A1 * A3 * B1 * B2 * X)	-0.00138	-0.00144	-0.00144
	(!A1 * A3 * B1 * B2 * X)	0.00186	0.00189	0.00187
	(!A1 * A3 * B1 * !B2 * !X)	-0.00119	-0.00131	-0.00131
	(!A1 * A3 * B1 * !B2 * !X)	0.00207	0.00199	0.00199
	(!A1 * A3 * !B1 * !X)	-0.00119	-0.00131	-0.00131
	(!A1 * A3 * !B1 * !X)	0.00207	0.00199	0.00199
	(!A1 * !A3 * B1 * B2 * X)	-0.00086	-0.00087	-0.00086
	(!A1 * !A3 * B1 * B2 * X)	0.00187	0.00189	0.00187
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00067	-0.00067	-0.00067
	(!A1 * !A3 * B1 * !B2 * !X)	0.00207	0.00210	0.00202
	(!A1 * !A3 * !B1 * !X)	-0.00067	-0.00067	-0.00067
	(!A1 * !A3 * !B1 * !X)	0.00207	0.00210	0.00202

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	-0.00169	-0.00170	-0.00169
	(A1 * A3 * B1 * B2 * X)	0.00181	0.00183	0.00183
	(A1 * !A3 * B1 * B2 * X)	-0.00158	-0.00162	-0.00163
	(A1 * !A3 * B1 * B2 * X)	0.00186	0.00189	0.00187
	(A1 * !A3 * B1 * !B2 * !X)	-0.00060	-0.00061	-0.00062
	(A1 * !A3 * B1 * !B2 * !X)	0.00203	0.00205	0.00200
	(A1 * !A3 * !B1 * !X)	-0.00060	-0.00061	-0.00062
	(A1 * !A3 * !B1 * !X)	0.00203	0.00205	0.00200
	(!A1 * A3 * B1 * B2 * X)	-0.00158	-0.00164	-0.00165
	(!A1 * A3 * B1 * B2 * X)	0.00187	0.00187	0.00187
	(!A1 * A3 * B1 * !B2 * !X)	-0.00138	-0.00151	-0.00152
	(!A1 * A3 * B1 * !B2 * !X)	0.00208	0.00199	0.00199
	(!A1 * A3 * !B1 * !X)	-0.00138	-0.00151	-0.00152
	(!A1 * A3 * !B1 * !X)	0.00208	0.00199	0.00199
	(!A1 * !A3 * B1 * B2 * X)	-0.00096	-0.00097	-0.00096
	(!A1 * !A3 * B1 * B2 * X)	0.00188	0.00189	0.00187
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00076	-0.00077	-0.00076
	(!A1 * !A3 * B1 * !B2 * !X)	0.00208	0.00211	0.00202
	(!A1 * !A3 * !B1 * !X)	-0.00076	-0.00077	-0.00076
	(!A1 * !A3 * !B1 * !X)	0.00208	0.00211	0.00202

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	-0.00290	-0.00291	-0.00289
	(A1 * A3 * B1 * B2 * X)	0.00394	0.00398	0.00397
	(A1 * !A3 * B1 * B2 * X)	-0.00268	-0.00282	-0.00283
	(A1 * !A3 * B1 * B2 * X)	0.00407	0.00411	0.00408
	(A1 * !A3 * B1 * !B2 * !X)	-0.00111	-0.00112	-0.00113
	(A1 * !A3 * B1 * !B2 * !X)	0.00436	0.00438	0.00428
	(A1 * !A3 * !B1 * !X)	-0.00111	-0.00112	-0.00113
	(A1 * !A3 * !B1 * !X)	0.00436	0.00438	0.00428
	(!A1 * A3 * B1 * B2 * X)	-0.00271	-0.00281	-0.00283
	(!A1 * A3 * B1 * B2 * X)	0.00406	0.00408	0.00408
	(!A1 * A3 * B1 * !B2 * !X)	-0.00236	-0.00263	-0.00265
	(!A1 * A3 * B1 * !B2 * !X)	0.00446	0.00426	0.00425
	(!A1 * A3 * !B1 * !X)	-0.00236	-0.00263	-0.00265
	(!A1 * A3 * !B1 * !X)	0.00446	0.00426	0.00425
	(!A1 * !A3 * B1 * B2 * X)	-0.00177	-0.00176	-0.00176
	(!A1 * !A3 * B1 * B2 * X)	0.00406	0.00412	0.00408
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00145	-0.00146	-0.00145
	(!A1 * !A3 * B1 * !B2 * !X)	0.00447	0.00451	0.00433
	(!A1 * !A3 * !B1 * !X)	-0.00146	-0.00146	-0.00145
	(!A1 * !A3 * !B1 * !X)	0.00448	0.00451	0.00433

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)**	0.00185	0.00170	0.00167
	(A1 * A2 * B1 * B2 * X)	-0.00156	-0.00179	-0.00181
	(A1 * !A2 * B1 * !B2 * !X)	0.00132	0.00133	0.00133
	(A1 * !A2 * B1 * !B2 * !X)	-0.00212	-0.00213	-0.00212
	(A1 * !A2 * !B1 * !X)	0.00132	0.00133	0.00133
	(A1 * !A2 * !B1 * !X)	-0.00212	-0.00213	-0.00212
	(!A2 * B1 * B2 * X)	0.00160	0.00162	0.00161
	(!A2 * B1 * B2 * X)	-0.00183	-0.00184	-0.00183
	(!A1 * A2 * B1 * B2 * X)	0.00159	0.00160	0.00159
	(!A1 * A2 * B1 * B2 * X)	-0.00183	-0.00184	-0.00183
	(!A1 * A2 * B1 * !B2 * !X)	0.00131	0.00131	0.00130
	(!A1 * A2 * B1 * !B2 * !X)	-0.00212	-0.00213	-0.00212
	(!A1 * A2 * !B1 * !X)	0.00131	0.00131	0.00130
	(!A1 * A2 * !B1 * !X)	-0.00212	-0.00213	-0.00212
	(!A1 * !A2 * B1 * !B2 * !X)	0.00132	0.00133	0.00133
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00212	-0.00212	-0.00212
	(!A1 * !A2 * !B1 * !X)	0.00132	0.00133	0.00133
	(!A1 * !A2 * !B1 * !X)	-0.00212	-0.00212	-0.00212

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	0.00208	0.00192	0.00189
	(A1 * A2 * B1 * B2 * X)	-0.00156	-0.00180	-0.00181
	(A1 * !A2 * B1 * !B2 * !X)	0.00154	0.00157	0.00155
	(A1 * !A2 * B1 * !B2 * !X)	-0.00212	-0.00213	-0.00212
	(A1 * !A2 * !B1 * !X)	0.00154	0.00157	0.00155
	(A1 * !A2 * !B1 * !X)	-0.00212	-0.00213	-0.00212
	(!A2 * B1 * B2 * X)	0.00181	0.00183	0.00182
	(!A2 * B1 * B2 * X)	-0.00184	-0.00185	-0.00184
	(!A1 * A2 * B1 * B2 * X)	0.00178	0.00179	0.00178
	(!A1 * A2 * B1 * B2 * X)	-0.00184	-0.00185	-0.00184
	(!A1 * A2 * B1 * !B2 * !X)	0.00154	0.00154	0.00154
	(!A1 * A2 * B1 * !B2 * !X)	-0.00212	-0.00212	-0.00212
	(!A1 * A2 * !B1 * !X)	0.00154	0.00153	0.00154
	(!A1 * A2 * !B1 * !X)	-0.00212	-0.00211	-0.00212
	(!A1 * !A2 * B1 * !B2 * !X)	0.00154	0.00156	0.00154
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00212	-0.00213	-0.00212
	(!A1 * !A2 * !B1 * !X)	0.00154	0.00155	0.00154
	(!A1 * !A2 * !B1 * !X)	-0.00212	-0.00212	-0.00212

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	0.00337	0.00297	0.00291
	(A1 * A2 * B1 * B2 * X)	-0.00323	-0.00381	-0.00384
	(A1 * !A2 * B1 * !B2 * !X)	0.00278	0.00279	0.00278
	(A1 * !A2 * B1 * !B2 * !X)	-0.00393	-0.00393	-0.00392
	(A1 * !A2 * !B1 * !X)	0.00278	0.00279	0.00278
	(A1 * !A2 * !B1 * !X)	-0.00393	-0.00393	-0.00392
	(!A2 * B1 * B2 * X)	0.00279	0.00280	0.00279
	(!A2 * B1 * B2 * X)	-0.00392	-0.00393	-0.00391
	(!A1 * A2 * B1 * B2 * X)	0.00272	0.00272	0.00271
	(!A1 * A2 * B1 * B2 * X)	-0.00392	-0.00392	-0.00391
	(!A1 * A2 * B1 * !B2 * !X)	0.00271	0.00272	0.00270
	(!A1 * A2 * B1 * !B2 * !X)	-0.00393	-0.00393	-0.00392
	(!A1 * A2 * !B1 * !X)	0.00271	0.00272	0.00270
	(!A1 * A2 * !B1 * !X)	-0.00393	-0.00393	-0.00392
	(!A1 * !A2 * B1 * !B2 * !X)	0.00278	0.00279	0.00278
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00393	-0.00393	-0.00392
	(!A1 * !A2 * !B1 * !X)	0.00278	0.00276	0.00278
	(!A1 * !A2 * !B1 * !X)	-0.00393	-0.00391	-0.00392

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)**	-0.00166	-0.00167	-0.00166
	(A1 * A2 * B1 * B2 * X)	0.00180	0.00181	0.00181
	(A1 * !A2 * B1 * !B2 * !X)	-0.00128	-0.00133	-0.00133
	(A1 * !A2 * B1 * !B2 * !X)	0.00213	0.00214	0.00213
	(A1 * !A2 * !B1 * !X)	-0.00128	-0.00133	-0.00133
	(A1 * !A2 * !B1 * !X)	0.00213	0.00214	0.00213
	(!A2 * B1 * B2 * X)	-0.00157	-0.00161	-0.00161
	(!A2 * B1 * B2 * X)	0.00183	0.00186	0.00185
	(!A1 * A2 * B1 * B2 * X)	-0.00149	-0.00160	-0.00159
	(!A1 * A2 * B1 * B2 * X)	0.00184	0.00187	0.00185
	(!A1 * A2 * B1 * !B2 * !X)	-0.00121	-0.00131	-0.00130
	(!A1 * A2 * B1 * !B2 * !X)	0.00213	0.00215	0.00213
	(!A1 * A2 * !B1 * !X)	-0.00121	-0.00131	-0.00130
	(!A1 * A2 * !B1 * !X)	0.00213	0.00215	0.00213
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00129	-0.00133	-0.00133
	(!A1 * !A2 * B1 * !B2 * !X)	0.00213	0.00216	0.00213
	(!A1 * !A2 * !B1 * !X)	-0.00129	-0.00133	-0.00133
	(!A1 * !A2 * !B1 * !X)	0.00213	0.00216	0.00213

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	-0.00188	-0.00189	-0.00187
	(A1 * A2 * B1 * B2 * X)	0.00180	0.00182	0.00181
	(A1 * !A2 * B1 * !B2 * !X)	-0.00147	-0.00155	-0.00155
	(A1 * !A2 * B1 * !B2 * !X)	0.00212	0.00214	0.00213
	(A1 * !A2 * !B1 * !X)	-0.00147	-0.00155	-0.00155
	(A1 * !A2 * !B1 * !X)	0.00212	0.00214	0.00213
	(!A2 * B1 * B2 * X)	-0.00177	-0.00181	-0.00182
	(!A2 * B1 * B2 * X)	0.00185	0.00186	0.00185
	(!A1 * A2 * B1 * B2 * X)	-0.00168	-0.00179	-0.00178
	(!A1 * A2 * B1 * B2 * X)	0.00185	0.00187	0.00185
	(!A1 * A2 * B1 * !B2 * !X)	-0.00141	-0.00153	-0.00154
	(!A1 * A2 * B1 * !B2 * !X)	0.00213	0.00215	0.00213
	(!A1 * A2 * !B1 * !X)	-0.00141	-0.00153	-0.00154
	(!A1 * A2 * !B1 * !X)	0.00213	0.00215	0.00213
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00148	-0.00155	-0.00154
	(!A1 * !A2 * B1 * !B2 * !X)	0.00212	0.00214	0.00213
	(!A1 * !A2 * !B1 * !X)	-0.00148	-0.00155	-0.00154
	(!A1 * !A2 * !B1 * !X)	0.00212	0.00214	0.00213

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	-0.00288	-0.00289	-0.00287
	(A1 * A2 * B1 * B2 * X)	0.00381	0.00384	0.00384
	(A1 * !A2 * B1 * !B2 * !X)	-0.00262	-0.00278	-0.00278
	(A1 * !A2 * B1 * !B2 * !X)	0.00393	0.00396	0.00394
	(A1 * !A2 * !B1 * !X)	-0.00262	-0.00278	-0.00278
	(A1 * !A2 * !B1 * !X)	0.00393	0.00396	0.00394
	(!A2 * B1 * B2 * X)	-0.00267	-0.00280	-0.00279
	(!A2 * B1 * B2 * X)	0.00393	0.00400	0.00394
	(!A1 * A2 * B1 * B2 * X)	-0.00250	-0.00272	-0.00271
	(!A1 * A2 * B1 * B2 * X)	0.00393	0.00397	0.00394
	(!A1 * A2 * B1 * !B2 * !X)	-0.00249	-0.00272	-0.00270
	(!A1 * A2 * B1 * !B2 * !X)	0.00395	0.00398	0.00394
	(!A1 * A2 * !B1 * !X)	-0.00249	-0.00272	-0.00270
	(!A1 * A2 * !B1 * !X)	0.00395	0.00398	0.00394
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00265	-0.00278	-0.00278
	(!A1 * !A2 * B1 * !B2 * !X)	0.00393	0.00396	0.00394
	(!A1 * !A2 * !B1 * !X)	-0.00265	-0.00276	-0.00278
	(!A1 * !A2 * !B1 * !X)	0.00393	0.00396	0.00394

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)**	0.00164	0.00166	0.00165
	(A1 * A2 * A3 * B2 * X)	-0.00089	-0.00090	-0.00089
	(A1 * A2 * A3 * !B2 * X)	0.00159	0.00160	0.00159
	(A1 * A2 * A3 * !B2 * X)	-0.00088	-0.00089	-0.00089
	(A1 * A2 * !A3 * !B2 * !X)	0.00047	0.00047	0.00046
	(A1 * A2 * !A3 * !B2 * !X)	-0.00219	-0.00221	-0.00222
	(A1 * !A2 * !B2 * !X)	0.00047	0.00047	0.00046
	(A1 * !A2 * !B2 * !X)	-0.00219	-0.00221	-0.00222
	(!A1 * !B2 * !X)	0.00047	0.00047	0.00046
	(!A1 * !B2 * !X)	-0.00219	-0.00221	-0.00222
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B2 * X)**	0.00183	0.00184	0.00183
	(A1 * A2 * A3 * B2 * X)	-0.00091	-0.00091	-0.00090
	(A1 * A2 * A3 * !B2 * X)	0.00178	0.00178	0.00177
	(A1 * A2 * A3 * !B2 * X)	-0.00091	-0.00090	-0.00090
	(A1 * A2 * !A3 * !B2 * !X)	0.00058	0.00059	0.00056
	(A1 * A2 * !A3 * !B2 * !X)	-0.00219	-0.00220	-0.00222
	(A1 * !A2 * !B2 * !X)	0.00058	0.00059	0.00056
	(A1 * !A2 * !B2 * !X)	-0.00219	-0.00220	-0.00222
	(!A1 * !B2 * !X)	0.00058	0.00059	0.00056
	(!A1 * !B2 * !X)	-0.00219	-0.00220	-0.00222
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	0.00328	0.00334	0.00329
	(A1 * A2 * A3 * B2 * X)	-0.00181	-0.00183	-0.00180
	(A1 * A2 * A3 * !B2 * X)	0.00314	0.00317	0.00315
	(A1 * A2 * A3 * !B2 * X)	-0.00179	-0.00181	-0.00180
	(A1 * A2 * !A3 * !B2 * !X)	0.00087	0.00087	0.00084
	(A1 * A2 * !A3 * !B2 * !X)	-0.00444	-0.00445	-0.00449
	(A1 * !A2 * !B2 * !X)	0.00087	0.00087	0.00084
	(A1 * !A2 * !B2 * !X)	-0.00444	-0.00445	-0.00449
	(!A1 * !B2 * !X)	0.00087	0.00087	0.00084
	(!A1 * !B2 * !X)	-0.00444	-0.00445	-0.00449

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)	-0.00147	-0.00149	-0.00162
	(A1 * A2 * A3 * B2 * X)	0.00104	0.00104	0.00092
	(A1 * A2 * A3 * !B2 * X)	-0.00155	-0.00160	-0.00159
	(A1 * A2 * A3 * !B2 * X)	0.00089	0.00090	0.00089
	(A1 * A2 * !A3 * !B2 * !X)	-0.00045	-0.00046	-0.00045
	(A1 * A2 * !A3 * !B2 * !X)	0.00222	0.00226	0.00223
	(A1 * !A2 * !B2 * !X)	-0.00045	-0.00046	-0.00045
	(A1 * !A2 * !B2 * !X)	0.00222	0.00225	0.00223
	(!A1 * !B2 * !X)	-0.00045	-0.00046	-0.00045
	(!A1 * !B2 * !X)	0.00222	0.00226	0.00223
sky130_fd_sc_hs__a32o_2	(A1 * A2 * A3 * B2 * X)	-0.00166	-0.00168	-0.00181
	(A1 * A2 * A3 * B2 * X)	0.00105	0.00105	0.00093
	(A1 * A2 * A3 * !B2 * X)	-0.00172	-0.00177	-0.00177
	(A1 * A2 * A3 * !B2 * X)	0.00091	0.00090	0.00090
	(A1 * A2 * !A3 * !B2 * !X)	-0.00055	-0.00056	-0.00055
	(A1 * A2 * !A3 * !B2 * !X)	0.00223	0.00226	0.00223
	(A1 * !A2 * !B2 * !X)	-0.00055	-0.00056	-0.00055
	(A1 * !A2 * !B2 * !X)	0.00223	0.00226	0.00223
	(!A1 * !B2 * !X)	-0.00055	-0.00056	-0.00055
	(!A1 * !B2 * !X)	0.00223	0.00226	0.00223

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	-0.00291	-0.00295	-0.00324
	(A1 * A2 * A3 * B2 * X)	0.00209	0.00210	0.00186
	(A1 * A2 * A3 * !B2 * X)	-0.00305	-0.00317	-0.00315
	(A1 * A2 * A3 * !B2 * X)	0.00179	0.00181	0.00180
	(A1 * A2 * !A3 * !B2 * !X)	-0.00081	-0.00084	-0.00081
	(A1 * A2 * !A3 * !B2 * !X)	0.00448	0.00456	0.00450
	(A1 * !A2 * !B2 * !X)	-0.00081	-0.00084	-0.00081
	(A1 * !A2 * !B2 * !X)	0.00448	0.00456	0.00450
	(!A1 * !B2 * !X)	-0.00081	-0.00084	-0.00081
	(!A1 * !B2 * !X)	0.00448	0.00456	0.00450

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)**	0.00162	0.00162	0.00161
	(A1 * A2 * A3 * B1 * X)	-0.00094	-0.00095	-0.00094
	(A1 * A2 * A3 * !B1 * X)	0.00155	0.00158	0.00155
	(A1 * A2 * A3 * !B1 * X)	-0.00093	-0.00094	-0.00093
	(A1 * A2 * !A3 * !B1 * !X)	0.00142	0.00144	0.00142
	(A1 * A2 * !A3 * !B1 * !X)	-0.00188	-0.00190	-0.00189
	(A1 * !A2 * !B1 * !X)	0.00142	0.00144	0.00142
	(A1 * !A2 * !B1 * !X)	-0.00188	-0.00189	-0.00189
	(!A1 * !B1 * !X)	0.00142	0.00144	0.00142
	(!A1 * !B1 * !X)	-0.00188	-0.00189	-0.00189

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	0.00186	0.00186	0.00185
	(A1 * A2 * A3 * B1 * X)	-0.00096	-0.00096	-0.00095
	(A1 * A2 * A3 * !B1 * X)	0.00180	0.00182	0.00180
	(A1 * A2 * A3 * !B1 * X)	-0.00094	-0.00095	-0.00095
	(A1 * A2 * !A3 * !B1 * !X)	0.00166	0.00169	0.00167
	(A1 * A2 * !A3 * !B1 * !X)	-0.00189	-0.00191	-0.00190
	(A1 * !A2 * !B1 * !X)	0.00166	0.00169	0.00167
	(A1 * !A2 * !B1 * !X)	-0.00189	-0.00191	-0.00190
	(!A1 * !B1 * !X)	0.00166	0.00169	0.00167
	(!A1 * !B1 * !X)	-0.00189	-0.00191	-0.00190
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	0.00415	0.00417	0.00416
	(A1 * A2 * A3 * B1 * X)	-0.00187	-0.00189	-0.00188
	(A1 * A2 * A3 * !B1 * X)	0.00402	0.00406	0.00403
	(A1 * A2 * A3 * !B1 * X)	-0.00187	-0.00188	-0.00187
	(A1 * A2 * !A3 * !B1 * !X)	0.00353	0.00356	0.00354
	(A1 * A2 * !A3 * !B1 * !X)	-0.00400	-0.00402	-0.00400
	(A1 * !A2 * !B1 * !X)	0.00353	0.00357	0.00354
	(A1 * !A2 * !B1 * !X)	-0.00400	-0.00402	-0.00400
	(!A1 * !B1 * !X)	0.00353	0.00357	0.00354
	(!A1 * !B1 * !X)	-0.00400	-0.00402	-0.00400

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)**	-0.00143	-0.00145	-0.00159
	(A1 * A2 * A3 * B1 * X)	0.00108	0.00108	0.00097
	(A1 * A2 * A3 * !B1 * X)	-0.00152	-0.00155	-0.00155
	(A1 * A2 * A3 * !B1 * X)	0.00094	0.00094	0.00093
	(A1 * A2 * !A3 * !B1 * !X)	-0.00134	-0.00143	-0.00142
	(A1 * A2 * !A3 * !B1 * !X)	0.00197	0.00191	0.00189
	(A1 * !A2 * !B1 * !X)	-0.00134	-0.00143	-0.00142
	(A1 * !A2 * !B1 * !X)	0.00197	0.00191	0.00189
	(!A1 * !B1 * !X)	-0.00134	-0.00143	-0.00142
	(!A1 * !B1 * !X)	0.00197	0.00191	0.00189
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00168	-0.00169	-0.00183
	(A1 * A2 * A3 * B1 * X)	0.00110	0.00110	0.00098
	(A1 * A2 * A3 * !B1 * X)	-0.00175	-0.00179	-0.00180
	(A1 * A2 * A3 * !B1 * X)	0.00096	0.00096	0.00095
	(A1 * A2 * !A3 * !B1 * !X)	-0.00158	-0.00167	-0.00167
	(A1 * A2 * !A3 * !B1 * !X)	0.00196	0.00192	0.00191
	(A1 * !A2 * !B1 * !X)	-0.00158	-0.00167	-0.00167
	(A1 * !A2 * !B1 * !X)	0.00196	0.00192	0.00191
	(!A1 * !B1 * !X)	-0.00158	-0.00167	-0.00167
	(!A1 * !B1 * !X)	0.00196	0.00192	0.00191
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	-0.00377	-0.00381	-0.00411
	(A1 * A2 * A3 * B1 * X)	0.00216	0.00217	0.00194
	(A1 * A2 * A3 * !B1 * X)	-0.00395	-0.00404	-0.00403
	(A1 * A2 * A3 * !B1 * X)	0.00188	0.00190	0.00188
	(A1 * A2 * !A3 * !B1 * !X)	-0.00332	-0.00356	-0.00354
	(A1 * A2 * !A3 * !B1 * !X)	0.00420	0.00405	0.00402
	(A1 * !A2 * !B1 * !X)	-0.00333	-0.00356	-0.00354
	(A1 * !A2 * !B1 * !X)	0.00420	0.00405	0.00402
	(!A1 * !B1 * !X)	-0.00333	-0.00357	-0.00354
	(!A1 * !B1 * !X)	0.00420	0.00404	0.00402

SKY130_FD_SC_HS__A41OIx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00286	0.00290	0.00285	0.00288	0.00291	0.52681
sky130_fd_sc_hs__a41oi_2	0.00553	0.00540	0.00530	0.00529	0.00426	1.01224
sky130_fd_sc_hs__a41oi_4	0.01081	0.01047	0.01058	0.01048	0.00842	1.75298

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a41oi_1	0.00000	0.04427	0.11363
sky130_fd_sc_hs__a41oi_2	0.00000	0.08506	0.22726
sky130_fd_sc_hs__a41oi_4	0.00000	0.17011	0.45453

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)	0.09500	0.92929	10.11580
	A2->Y (FR)	0.11750	0.96686	10.29600
	A3->Y (FR)	0.12930	0.95934	10.06970
	A4->Y (FR)	0.13228	0.92613	9.66712
	B1->Y (FR)	0.08129	0.95708	10.72560
sky130_fd_sc_hs__a41oi_2	A1->Y (FR)	0.07903	0.79807	10.27540
	A2->Y (FR)	0.09807	0.79438	9.98200
	A3->Y (FR)	0.11459	0.81742	10.05690
	A4->Y (FR)	0.13160	0.84067	10.11350
	B1->Y (FR)	0.09247	0.82583	10.47450
sky130_fd_sc_hs__a41oi_4	A1->Y (FR)	0.07323	0.66624	9.62988
	A2->Y (FR)	0.09650	0.67360	9.41936
	A3->Y (FR)	0.11757	0.70548	9.61556
	A4->Y (FR)	0.13811	0.74199	9.83781
	B1->Y (FR)	0.10022	0.74612	10.46000

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41oi_1	A1->Y (RF)	0.04595	0.51727	5.60568
	A2->Y (RF)	0.05505	0.49949	5.27826
	A3->Y (RF)	0.06068	0.46386	4.72990
	A4->Y (RF)	0.06446	0.43102	4.20355
	B1->Y (RF)	0.01807	0.29207	3.21197
sky130_fd_sc_hs__a41oi_2	A1->Y (RF)	0.04317	0.50095	6.42016
	A2->Y (RF)	0.05581	0.48601	6.05936
	A3->Y (RF)	0.06237	0.43081	5.18823
	A4->Y (RF)	0.06740	0.40360	4.67028
	B1->Y (RF)	0.02065	0.38813	5.18570
sky130_fd_sc_hs__a41oi_4	A1->Y (RF)	0.04183	0.43516	6.29642
	A2->Y (RF)	0.05672	0.41894	5.85958
	A3->Y (RF)	0.06432	0.36986	5.02618
	A4->Y (RF)	0.06818	0.33063	4.34696
	B1->Y (RF)	0.01955	0.31661	4.80705

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41oi_1	A1	0.00035	0.00021	0.00559
	A1	0.00723	0.00711	0.01246
	A2	0.00119	0.00098	0.00634
	A2	0.00907	0.00888	0.01426
	A3	0.00187	0.00167	0.00718
	A3	0.01073	0.01055	0.01613
	A4	0.00226	0.00211	0.00773
	A4	0.01223	0.01209	0.01767
	B1	-0.00005	0.00083	0.01540
	B1	0.00716	0.00791	0.02194
sky130_fd_sc_hs__a41oi_2	A1	-0.00084	-0.00087	0.00853
	A1	0.01174	0.01173	0.02116
	A2	0.00126	0.00085	0.01076
	A2	0.01609	0.01570	0.02558
	A3	0.00245	0.00210	0.01202
	A3	0.01931	0.01897	0.02887
	A4	0.00400	0.00367	0.01375
	A4	0.02312	0.02280	0.03304
	B1	-0.00021	0.00162	0.01840
	B1	0.01171	0.01279	0.02933

sky130_fd_sc_hs__a41oi_4	**A1**	-0.00237	-0.00235	0.01881
	A1	0.02265	0.02274	0.04384
	A2	0.00237	0.00153	0.02360
	A2	0.03181	0.03104	0.05318
	A3	0.00476	0.00395	0.02604
	A3	0.03872	0.03784	0.06006
	A4	0.00717	0.00663	0.02907
	A4	0.04543	0.04489	0.06720
	B1	-0.00085	0.00241	0.04044
	B1	0.02319	0.02574	0.05935

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41oi_1	**A1**	0.00916	0.00917	0.01395
	A1	0.00239	0.00239	0.00719
	A2	0.01021	0.01009	0.01451
	A2	0.00239	0.00227	0.00629
	A3	0.01124	0.01113	0.01570
	A3	0.00235	0.00221	0.00649
	A4	0.01246	0.01229	0.01701
	A4	0.00238	0.00221	0.00696
	B1	0.00495	0.00532	0.01266
	B1	-0.00036	0.00001	0.00731

sky130_fd_sc_hs__a41oi_2	**A1**	0.01672	0.01677	0.02504
	A1	0.00438	0.00429	0.01273
	A2	0.01906	0.01872	0.02691
	A2	0.00430	0.00395	0.01113
	A3	0.02120	0.02090	0.02885
	A3	0.00429	0.00390	0.01192
	A4	0.02365	0.02336	0.03253
	A4	0.00423	0.00381	0.01246
	B1	0.00602	0.00667	0.01576
	B1	-0.00169	-0.00110	0.00788
sky130_fd_sc_hs__a41oi_4	**A1**	0.03241	0.03248	0.05120
	A1	0.00784	0.00785	0.02599
	A2	0.03700	0.03632	0.05348
	A2	0.00768	0.00704	0.02278
	A3	0.04177	0.04109	0.05890
	A3	0.00757	0.00678	0.02423
	A4	0.04634	0.04572	0.06569
	A4	0.00753	0.00672	0.02645
	B1	0.01182	0.01326	0.03548
	B1	-0.00341	-0.00203	0.01967

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)**	0.00187	0.00176	0.00174
	(A2 * A3 * A4 * B1 * !Y)	-0.00187	-0.00208	-0.00208
	(A2 * A3 * !A4 * B1 * !Y)	0.00163	0.00163	0.00163
	(A2 * A3 * !A4 * B1 * !Y)	-0.00213	-0.00214	-0.00214
	(A2 * A3 * !A4 * !B1 * Y)	0.00063	0.00063	0.00057
	(A2 * A3 * !A4 * !B1 * Y)	-0.00238	-0.00239	-0.00251
	(A2 * !A3 * B1 * !Y)	0.00165	0.00166	0.00165
	(A2 * !A3 * B1 * !Y)	-0.00213	-0.00214	-0.00214
	(A2 * !A3 * !B1 * Y)	0.00062	0.00062	0.00058
	(A2 * !A3 * !B1 * Y)	-0.00243	-0.00244	-0.00252
	(!A2 * B1 * !Y)	0.00168	0.00170	0.00169
	(!A2 * B1 * !Y)	-0.00213	-0.00214	-0.00214
	(!A2 * !B1 * Y)	0.00062	0.00062	0.00060
	(!A2 * !B1 * Y)	-0.00249	-0.00249	-0.00252
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	0.00371	0.00351	0.00347
	(A2 * A3 * A4 * B1 * !Y)	-0.00366	-0.00408	-0.00407
	(A2 * A3 * !A4 * B1 * !Y)	0.00324	0.00327	0.00324
	(A2 * A3 * !A4 * B1 * !Y)	-0.00417	-0.00420	-0.00417
	(A2 * A3 * !A4 * !B1 * Y)	0.00115	0.00116	0.00102
	(A2 * A3 * !A4 * !B1 * Y)	-0.00468	-0.00475	-0.00501
	(A2 * !A3 * B1 * !Y)	0.00327	0.00330	0.00327
	(A2 * !A3 * B1 * !Y)	-0.00417	-0.00420	-0.00417
	(A2 * !A3 * !B1 * Y)	0.00110	0.00111	0.00102
	(A2 * !A3 * !B1 * Y)	-0.00482	-0.00488	-0.00504
	(!A2 * B1 * !Y)	0.00332	0.00334	0.00333
	(!A2 * B1 * !Y)	-0.00416	-0.00418	-0.00417
	(!A2 * !B1 * Y)	0.00112	0.00112	0.00106
	(!A2 * !B1 * Y)	-0.00497	-0.00501	-0.00507

sky130_fd_sc_hs__a41oi_4	(A2 * A3 * A4 * B1 * !Y)	0.00746	0.00703	0.00695
	(A2 * A3 * A4 * B1 * !Y)	-0.00723	-0.00809	-0.00806
	(A2 * A3 * !A4 * B1 * !Y)	0.00642	0.00646	0.00645
	(A2 * A3 * !A4 * B1 * !Y)	-0.00823	-0.00827	-0.00826
	(A2 * A3 * !A4 * !B1 * Y)	0.00234	0.00235	0.00207
	(A2 * A3 * !A4 * !B1 * Y)	-0.00924	-0.00932	-0.00985
	(A2 * !A3 * B1 * !Y)	0.00655	0.00660	0.00655
	(A2 * !A3 * B1 * !Y)	-0.00826	-0.00829	-0.00826
	(A2 * !A3 * !B1 * Y)	0.00224	0.00226	0.00207
	(A2 * !A3 * !B1 * Y)	-0.00948	-0.00957	-0.00990
	(!A2 * B1 * !Y)	0.00664	0.00671	0.00666
	(!A2 * B1 * !Y)	-0.00824	-0.00829	-0.00826
	(!A2 * !B1 * Y)	0.00235	0.00236	0.00223
	(!A2 * !B1 * Y)	-0.00973	-0.00980	-0.00994

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)**	-0.00173	-0.00174	-0.00174
	(A2 * A3 * A4 * B1 * !Y)	0.00207	0.00208	0.00208
	(A2 * A3 * !A4 * B1 * !Y)	-0.00144	-0.00163	-0.00163
	(A2 * A3 * !A4 * B1 * !Y)	0.00213	0.00215	0.00214
	(A2 * A3 * !A4 * !B1 * Y)	-0.00057	-0.00058	-0.00057
	(A2 * A3 * !A4 * !B1 * Y)	0.00252	0.00257	0.00253
	(A2 * !A3 * B1 * !Y)	-0.00150	-0.00166	-0.00165
	(A2 * !A3 * B1 * !Y)	0.00213	0.00216	0.00214
	(A2 * !A3 * !B1 * Y)	-0.00057	-0.00058	-0.00057
	(A2 * !A3 * !B1 * Y)	0.00252	0.00257	0.00253
	(!A2 * B1 * !Y)	-0.00163	-0.00168	-0.00169
	(!A2 * B1 * !Y)	0.00215	0.00214	0.00214
	(!A2 * !B1 * Y)	-0.00058	-0.00059	-0.00058
	(!A2 * !B1 * Y)	0.00252	0.00257	0.00253
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	-0.00345	-0.00347	-0.00346
	(A2 * A3 * A4 * B1 * !Y)	0.00405	0.00408	0.00407
	(A2 * A3 * !A4 * B1 * !Y)	-0.00277	-0.00327	-0.00324
	(A2 * A3 * !A4 * B1 * !Y)	0.00417	0.00422	0.00418
	(A2 * A3 * !A4 * !B1 * Y)	-0.00100	-0.00100	-0.00100
	(A2 * A3 * !A4 * !B1 * Y)	0.00505	0.00506	0.00507
	(A2 * !A3 * B1 * !Y)	-0.00287	-0.00330	-0.00327
	(A2 * !A3 * B1 * !Y)	0.00417	0.00422	0.00418
	(A2 * !A3 * !B1 * Y)	-0.00100	-0.00101	-0.00101
	(A2 * !A3 * !B1 * Y)	0.00505	0.00506	0.00507
	(!A2 * B1 * !Y)	-0.00320	-0.00334	-0.00333
	(!A2 * B1 * !Y)	0.00417	0.00422	0.00418
	(!A2 * !B1 * Y)	-0.00103	-0.00103	-0.00103
	(!A2 * !B1 * Y)	0.00505	0.00507	0.00508

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	-0.00692	-0.00695	-0.00693
	(A2 * A3 * A4 * B1 * !Y)	0.00802	0.00809	0.00806
	(A2 * A3 * !A4 * B1 * !Y)	-0.00544	-0.00646	-0.00645
	(A2 * A3 * !A4 * B1 * !Y)	0.00826	0.00835	0.00828
	(A2 * A3 * !A4 * !B1 * Y)	-0.00207	-0.00208	-0.00207
	(A2 * A3 * !A4 * !B1 * Y)	0.00990	0.00993	0.00995
	(A2 * !A3 * B1 * !Y)	-0.00564	-0.00660	-0.00655
	(A2 * !A3 * B1 * !Y)	0.00826	0.00835	0.00828
	(A2 * !A3 * !B1 * Y)	-0.00208	-0.00209	-0.00207
	(A2 * !A3 * !B1 * Y)	0.00990	0.00993	0.00995
	(!A2 * B1 * !Y)	-0.00641	-0.00671	-0.00666
	(!A2 * B1 * !Y)	0.00826	0.00836	0.00828
	(!A2 * !B1 * Y)	-0.00216	-0.00217	-0.00217
	(!A2 * !B1 * Y)	0.00991	0.00994	0.00996

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)**	0.00180	0.00170	0.00168
	(A1 * A3 * A4 * B1 * !Y)	-0.00186	-0.00208	-0.00208
	(A1 * A3 * !A4 * B1 * !Y)	0.00158	0.00158	0.00158
	(A1 * A3 * !A4 * B1 * !Y)	-0.00213	-0.00214	-0.00213
	(A1 * A3 * !A4 * !B1 * Y)	0.00063	0.00063	0.00064
	(A1 * A3 * !A4 * !B1 * Y)	-0.00223	-0.00223	-0.00222
	(A1 * !A3 * B1 * !Y)	0.00161	0.00163	0.00162
	(A1 * !A3 * B1 * !Y)	-0.00212	-0.00214	-0.00213
	(A1 * !A3 * !B1 * Y)	0.00068	0.00067	0.00068
	(A1 * !A3 * !B1 * Y)	-0.00223	-0.00223	-0.00223
	(!A1 * A3 * A4 * B1 * !Y)	0.00161	0.00163	0.00162
	(!A1 * A3 * A4 * B1 * !Y)	-0.00212	-0.00214	-0.00213
	(!A1 * A3 * A4 * !B1 * Y)	0.00153	0.00154	0.00153
	(!A1 * A3 * A4 * !B1 * Y)	-0.00223	-0.00223	-0.00223
	(!A1 * A3 * !A4 * B1 * !Y)	0.00095	0.00096	0.00095
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00213	-0.00214	-0.00213
	(!A1 * A3 * !A4 * !B1 * Y)	0.00081	0.00081	0.00081
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00224	-0.00224	-0.00224
	(!A1 * !A3 * B1 * !Y)	0.00100	0.00100	0.00099
	(!A1 * !A3 * B1 * !Y)	-0.00214	-0.00215	-0.00213
	(!A1 * !A3 * !B1 * Y)	0.00081	0.00082	0.00081
	(!A1 * !A3 * !B1 * Y)	-0.00223	-0.00225	-0.00224

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00364	0.00343	0.00338
	(A1 * A3 * A4 * B1 * !Y)	-0.00371	-0.00413	-0.00414
	(A1 * A3 * !A4 * B1 * !Y)	0.00319	0.00319	0.00319
	(A1 * A3 * !A4 * B1 * !Y)	-0.00424	-0.00425	-0.00425
	(A1 * A3 * !A4 * !B1 * Y)	0.00139	0.00140	0.00141
	(A1 * A3 * !A4 * !B1 * Y)	-0.00429	-0.00431	-0.00429
	(A1 * !A3 * B1 * !Y)	0.00322	0.00326	0.00325
	(A1 * !A3 * B1 * !Y)	-0.00423	-0.00427	-0.00425
	(A1 * !A3 * !B1 * Y)	0.00146	0.00147	0.00148
	(A1 * !A3 * !B1 * Y)	-0.00429	-0.00431	-0.00429
	(!A1 * A3 * A4 * B1 * !Y)	0.00327	0.00330	0.00327
	(!A1 * A3 * A4 * B1 * !Y)	-0.00425	-0.00427	-0.00425
	(!A1 * A3 * A4 * !B1 * Y)	0.00320	0.00321	0.00320
	(!A1 * A3 * A4 * !B1 * Y)	-0.00430	-0.00430	-0.00429
	(!A1 * A3 * !A4 * B1 * !Y)	0.00193	0.00192	0.00192
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00425	-0.00424	-0.00425
	(!A1 * A3 * !A4 * !B1 * Y)	0.00176	0.00178	0.00176
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00432	-0.00435	-0.00432
	(!A1 * !A3 * B1 * !Y)	0.00198	0.00198	0.00197
	(!A1 * !A3 * B1 * !Y)	-0.00426	-0.00426	-0.00425
	(!A1 * !A3 * !B1 * Y)	0.00176	0.00176	0.00175
	(!A1 * !A3 * !B1 * Y)	-0.00434	-0.00435	-0.00433

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00722	0.00677	0.00669
	(A1 * A3 * A4 * B1 * !Y)	-0.00734	-0.00825	-0.00822
	(A1 * A3 * !A4 * B1 * !Y)	0.00621	0.00625	0.00621
	(A1 * A3 * !A4 * B1 * !Y)	-0.00843	-0.00848	-0.00844
	(A1 * A3 * !A4 * !B1 * Y)	0.00263	0.00266	0.00273
	(A1 * A3 * !A4 * !B1 * Y)	-0.00845	-0.00850	-0.00845
	(A1 * !A3 * B1 * !Y)	0.00629	0.00637	0.00633
	(A1 * !A3 * B1 * !Y)	-0.00840	-0.00848	-0.00844
	(A1 * !A3 * !B1 * Y)	0.00275	0.00277	0.00279
	(A1 * !A3 * !B1 * Y)	-0.00846	-0.00850	-0.00845
	(!A1 * A3 * A4 * B1 * !Y)	0.00641	0.00646	0.00643
	(!A1 * A3 * A4 * B1 * !Y)	-0.00843	-0.00847	-0.00844
	(!A1 * A3 * A4 * !B1 * Y)	0.00636	0.00642	0.00638
	(!A1 * A3 * A4 * !B1 * Y)	-0.00847	-0.00851	-0.00848
	(!A1 * A3 * !A4 * B1 * !Y)	0.00367	0.00368	0.00365
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00844	-0.00849	-0.00844
	(!A1 * A3 * !A4 * !B1 * Y)	0.00338	0.00343	0.00340
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00848	-0.00857	-0.00851
	(!A1 * !A3 * B1 * !Y)	0.00371	0.00374	0.00370
	(!A1 * !A3 * B1 * !Y)	-0.00841	-0.00850	-0.00844
	(!A1 * !A3 * !B1 * Y)	0.00333	0.00334	0.00333
	(!A1 * !A3 * !B1 * Y)	-0.00854	-0.00855	-0.00852

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)**	-0.00167	-0.00167	-0.00167
	(A1 * A3 * A4 * B1 * !Y)	0.00207	0.00208	0.00208
	(A1 * A3 * !A4 * B1 * !Y)	-0.00140	-0.00158	-0.00158
	(A1 * A3 * !A4 * B1 * !Y)	0.00213	0.00215	0.00214
	(A1 * A3 * !A4 * !B1 * Y)	-0.00063	-0.00063	-0.00064
	(A1 * A3 * !A4 * !B1 * Y)	0.00229	0.00230	0.00225
	(A1 * !A3 * B1 * !Y)	-0.00156	-0.00163	-0.00162
	(A1 * !A3 * B1 * !Y)	0.00214	0.00216	0.00214
	(A1 * !A3 * !B1 * Y)	-0.00064	-0.00064	-0.00065
	(A1 * !A3 * !B1 * Y)	0.00228	0.00230	0.00225
	(!A1 * A3 * A4 * B1 * !Y)	-0.00157	-0.00162	-0.00162
	(!A1 * A3 * A4 * B1 * !Y)	0.00214	0.00214	0.00214
	(!A1 * A3 * A4 * !B1 * Y)	-0.00137	-0.00152	-0.00153
	(!A1 * A3 * A4 * !B1 * Y)	0.00236	0.00223	0.00223
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00095	-0.00096	-0.00095
	(!A1 * A3 * !A4 * B1 * !Y)	0.00213	0.00216	0.00214
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00081	-0.00081	-0.00081
	(!A1 * A3 * !A4 * !B1 * Y)	0.00232	0.00231	0.00224
	(!A1 * !A3 * B1 * !Y)	-0.00100	-0.00100	-0.00099
	(!A1 * !A3 * B1 * !Y)	0.00215	0.00216	0.00214
	(!A1 * !A3 * !B1 * Y)	-0.00081	-0.00082	-0.00081
	(!A1 * !A3 * !B1 * Y)	0.00235	0.00236	0.00227

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00337	-0.00337	-0.00337
	(A1 * A3 * A4 * B1 * !Y)	0.00413	0.00413	0.00414
	(A1 * A3 * !A4 * B1 * !Y)	-0.00279	-0.00319	-0.00319
	(A1 * A3 * !A4 * B1 * !Y)	0.00424	0.00430	0.00426
	(A1 * A3 * !A4 * !B1 * Y)	-0.00134	-0.00136	-0.00138
	(A1 * A3 * !A4 * !B1 * Y)	0.00442	0.00447	0.00434
	(A1 * !A3 * B1 * !Y)	-0.00314	-0.00326	-0.00325
	(A1 * !A3 * B1 * !Y)	0.00425	0.00430	0.00426
	(A1 * !A3 * !B1 * Y)	-0.00139	-0.00140	-0.00143
	(A1 * !A3 * !B1 * Y)	0.00442	0.00446	0.00434
	(!A1 * A3 * A4 * B1 * !Y)	-0.00312	-0.00330	-0.00327
	(!A1 * A3 * A4 * B1 * !Y)	0.00425	0.00430	0.00426
	(!A1 * A3 * A4 * !B1 * Y)	-0.00278	-0.00321	-0.00320
	(!A1 * A3 * A4 * !B1 * Y)	0.00463	0.00434	0.00431
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00193	-0.00192	-0.00192
	(!A1 * A3 * !A4 * B1 * !Y)	0.00425	0.00431	0.00426
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00176	-0.00178	-0.00176
	(!A1 * A3 * !A4 * !B1 * Y)	0.00448	0.00443	0.00433
	(!A1 * !A3 * B1 * !Y)	-0.00198	-0.00198	-0.00197
	(!A1 * !A3 * B1 * !Y)	0.00428	0.00431	0.00427
	(!A1 * !A3 * !B1 * Y)	-0.00176	-0.00176	-0.00175
	(!A1 * !A3 * !B1 * Y)	0.00454	0.00459	0.00439

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00666	-0.00669	-0.00667
	(A1 * A3 * A4 * B1 * !Y)	0.00818	0.00825	0.00822
	(A1 * A3 * !A4 * B1 * !Y)	-0.00538	-0.00625	-0.00621
	(A1 * A3 * !A4 * B1 * !Y)	0.00843	0.00855	0.00847
	(A1 * A3 * !A4 * !B1 * Y)	-0.00254	-0.00258	-0.00263
	(A1 * A3 * !A4 * !B1 * Y)	0.00867	0.00880	0.00856
	(A1 * !A3 * B1 * !Y)	-0.00613	-0.00637	-0.00633
	(A1 * !A3 * B1 * !Y)	0.00843	0.00851	0.00847
	(A1 * !A3 * !B1 * Y)	-0.00263	-0.00264	-0.00269
	(A1 * !A3 * !B1 * Y)	0.00875	0.00880	0.00856
	(!A1 * A3 * A4 * B1 * !Y)	-0.00615	-0.00645	-0.00643
	(!A1 * A3 * A4 * B1 * !Y)	0.00843	0.00849	0.00847
	(!A1 * A3 * A4 * !B1 * Y)	-0.00551	-0.00642	-0.00638
	(!A1 * A3 * A4 * !B1 * Y)	0.00916	0.00859	0.00851
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00367	-0.00368	-0.00365
	(!A1 * A3 * !A4 * B1 * !Y)	0.00844	0.00856	0.00847
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00338	-0.00343	-0.00340
	(!A1 * A3 * !A4 * !B1 * Y)	0.00883	0.00874	0.00852
	(!A1 * !A3 * B1 * !Y)	-0.00371	-0.00374	-0.00370
	(!A1 * !A3 * B1 * !Y)	0.00841	0.00856	0.00847
	(!A1 * !A3 * !B1 * Y)	-0.00333	-0.00334	-0.00333
	(!A1 * !A3 * !B1 * Y)	0.00894	0.00903	0.00863

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)**	0.00176	0.00167	0.00165
	(A1 * A2 * A4 * B1 * !Y)	-0.00188	-0.00209	-0.00208
	(A1 * A2 * !A4 * B1 * !Y)	0.00159	0.00159	0.00159
	(A1 * A2 * !A4 * B1 * !Y)	-0.00213	-0.00214	-0.00213
	(A1 * A2 * !A4 * !B1 * Y)	0.00066	0.00066	0.00066
	(A1 * A2 * !A4 * !B1 * Y)	-0.00218	-0.00219	-0.00218
	(A1 * !A2 * A4 * !B1 * Y)	0.00152	0.00154	0.00152
	(A1 * !A2 * A4 * !B1 * Y)	-0.00220	-0.00220	-0.00220
	(A1 * !A2 * !A4 * !B1 * Y)	0.00078	0.00078	0.00078
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00220	-0.00221	-0.00221
	(!A2 * A4 * B1 * !Y)	0.00159	0.00160	0.00159
	(!A2 * A4 * B1 * !Y)	-0.00213	-0.00213	-0.00213
	(!A2 * !A4 * B1 * !Y)	0.00091	0.00092	0.00091
	(!A2 * !A4 * B1 * !Y)	-0.00213	-0.00214	-0.00213
	(!A1 * A2 * A4 * B1 * !Y)	0.00156	0.00157	0.00156
	(!A1 * A2 * A4 * B1 * !Y)	-0.00213	-0.00214	-0.00213
	(!A1 * A2 * A4 * !B1 * Y)	0.00150	0.00150	0.00150
	(!A1 * A2 * A4 * !B1 * Y)	-0.00220	-0.00220	-0.00220
	(!A1 * A2 * !A4 * B1 * !Y)	0.00092	0.00092	0.00091
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00213	-0.00214	-0.00213
	(!A1 * A2 * !A4 * !B1 * Y)	0.00078	0.00079	0.00078
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00220	-0.00222	-0.00221
	(!A1 * !A2 * A4 * !B1 * Y)	0.00152	0.00154	0.00152
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00219	-0.00220	-0.00220
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00081	0.00082	0.00082
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00220	-0.00221	-0.00221

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	0.00357	0.00337	0.00332
	(A1 * A2 * A4 * B1 * !Y)	-0.00372	-0.00416	-0.00412
	(A1 * A2 * !A4 * B1 * !Y)	0.00314	0.00317	0.00315
	(A1 * A2 * !A4 * B1 * !Y)	-0.00422	-0.00424	-0.00423
	(A1 * A2 * !A4 * !B1 * Y)	0.00146	0.00146	0.00147
	(A1 * A2 * !A4 * !B1 * Y)	-0.00416	-0.00416	-0.00413
	(A1 * !A2 * A4 * !B1 * Y)	0.00316	0.00320	0.00317
	(A1 * !A2 * A4 * !B1 * Y)	-0.00422	-0.00425	-0.00423
	(A1 * !A2 * !A4 * !B1 * Y)	0.00172	0.00173	0.00172
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00424	-0.00425	-0.00423
	(!A2 * A4 * B1 * !Y)	0.00317	0.00321	0.00318
	(!A2 * A4 * B1 * !Y)	-0.00422	-0.00425	-0.00423
	(!A2 * !A4 * B1 * !Y)	0.00184	0.00185	0.00184
	(!A2 * !A4 * B1 * !Y)	-0.00422	-0.00425	-0.00423
	(!A1 * A2 * A4 * B1 * !Y)	0.00316	0.00318	0.00316
	(!A1 * A2 * A4 * B1 * !Y)	-0.00423	-0.00425	-0.00423
	(!A1 * A2 * A4 * !B1 * Y)	0.00316	0.00318	0.00315
	(!A1 * A2 * A4 * !B1 * Y)	-0.00424	-0.00425	-0.00423
	(!A1 * A2 * !A4 * B1 * !Y)	0.00184	0.00185	0.00184
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00421	-0.00423	-0.00423
	(!A1 * A2 * !A4 * !B1 * Y)	0.00172	0.00171	0.00171
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00426	-0.00426	-0.00425
	(!A1 * !A2 * A4 * !B1 * Y)	0.00316	0.00320	0.00317
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00421	-0.00425	-0.00423
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00179	0.00180	0.00179
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00422	-0.00424	-0.00423

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	0.00716	0.00670	0.00662
	(A1 * A2 * A4 * B1 * !Y)	-0.00744	-0.00831	-0.00831
	(A1 * A2 * !A4 * B1 * !Y)	0.00627	0.00632	0.00629
	(A1 * A2 * !A4 * B1 * !Y)	-0.00851	-0.00857	-0.00853
	(A1 * A2 * !A4 * !B1 * Y)	0.00274	0.00278	0.00275
	(A1 * A2 * !A4 * !B1 * Y)	-0.00838	-0.00845	-0.00834
	(A1 * !A2 * A4 * !B1 * Y)	0.00624	0.00632	0.00627
	(A1 * !A2 * A4 * !B1 * Y)	-0.00851	-0.00857	-0.00853
	(A1 * !A2 * !A4 * !B1 * Y)	0.00320	0.00321	0.00320
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00854	-0.00856	-0.00853
	(!A2 * A4 * B1 * !Y)	0.00631	0.00637	0.00634
	(!A2 * A4 * B1 * !Y)	-0.00851	-0.00856	-0.00853
	(!A2 * !A4 * B1 * !Y)	0.00345	0.00346	0.00344
	(!A2 * !A4 * B1 * !Y)	-0.00853	-0.00856	-0.00853
	(!A1 * A2 * A4 * B1 * !Y)	0.00624	0.00626	0.00623
	(!A1 * A2 * A4 * B1 * !Y)	-0.00855	-0.00855	-0.00853
	(!A1 * A2 * A4 * !B1 * Y)	0.00625	0.00630	0.00624
	(!A1 * A2 * A4 * !B1 * Y)	-0.00855	-0.00858	-0.00853
	(!A1 * A2 * !A4 * B1 * !Y)	0.00353	0.00357	0.00355
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00849	-0.00855	-0.00853
	(!A1 * A2 * !A4 * !B1 * Y)	0.00329	0.00332	0.00330
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00854	-0.00861	-0.00856
	(!A1 * !A2 * A4 * !B1 * Y)	0.00624	0.00632	0.00627
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00851	-0.00857	-0.00853
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00335	0.00336	0.00335
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00852	-0.00855	-0.00853

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)**	-0.00164	-0.00165	-0.00164
	(A1 * A2 * A4 * B1 * !Y)	0.00207	0.00209	0.00208
	(A1 * A2 * !A4 * B1 * !Y)	-0.00154	-0.00159	-0.00159
	(A1 * A2 * !A4 * B1 * !Y)	0.00214	0.00215	0.00214
	(A1 * A2 * !A4 * !B1 * Y)	-0.00063	-0.00063	-0.00063
	(A1 * A2 * !A4 * !B1 * Y)	0.00224	0.00225	0.00222
	(A1 * !A2 * A4 * !B1 * Y)	-0.00144	-0.00152	-0.00152
	(A1 * !A2 * A4 * !B1 * Y)	0.00220	0.00220	0.00220
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00078	-0.00078	-0.00078
	(A1 * !A2 * !A4 * !B1 * Y)	0.00229	0.00231	0.00224
	(!A2 * A4 * B1 * !Y)	-0.00153	-0.00159	-0.00159
	(!A2 * A4 * B1 * !Y)	0.00213	0.00213	0.00214
	(!A2 * !A4 * B1 * !Y)	-0.00091	-0.00092	-0.00091
	(!A2 * !A4 * B1 * !Y)	0.00215	0.00216	0.00214
	(!A1 * A2 * A4 * B1 * !Y)	-0.00142	-0.00157	-0.00156
	(!A1 * A2 * A4 * B1 * !Y)	0.00213	0.00216	0.00214
	(!A1 * A2 * A4 * !B1 * Y)	-0.00134	-0.00149	-0.00150
	(!A1 * A2 * A4 * !B1 * Y)	0.00221	0.00221	0.00220
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00092	-0.00092	-0.00091
	(!A1 * A2 * !A4 * B1 * !Y)	0.00213	0.00216	0.00214
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00078	-0.00079	-0.00078
	(!A1 * A2 * !A4 * !B1 * Y)	0.00221	0.00225	0.00221
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00145	-0.00152	-0.00152
	(!A1 * !A2 * A4 * !B1 * Y)	0.00220	0.00220	0.00220
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00081	-0.00082	-0.00082
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00222	0.00224	0.00221

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	-0.00332	-0.00334	-0.00331
	(A1 * A2 * A4 * B1 * !Y)	0.00412	0.00419	0.00412
	(A1 * A2 * !A4 * B1 * !Y)	-0.00303	-0.00317	-0.00315
	(A1 * A2 * !A4 * B1 * !Y)	0.00423	0.00430	0.00424
	(A1 * A2 * !A4 * !B1 * Y)	-0.00137	-0.00140	-0.00138
	(A1 * A2 * !A4 * !B1 * Y)	0.00425	0.00434	0.00426
	(A1 * !A2 * A4 * !B1 * Y)	-0.00300	-0.00320	-0.00317
	(A1 * !A2 * A4 * !B1 * Y)	0.00422	0.00427	0.00424
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00172	-0.00173	-0.00172
	(A1 * !A2 * !A4 * !B1 * Y)	0.00436	0.00442	0.00428
	(!A2 * A4 * B1 * !Y)	-0.00307	-0.00320	-0.00318
	(!A2 * A4 * B1 * !Y)	0.00422	0.00427	0.00424
	(!A2 * !A4 * B1 * !Y)	-0.00184	-0.00185	-0.00184
	(!A2 * !A4 * B1 * !Y)	0.00422	0.00429	0.00424
	(!A1 * A2 * A4 * B1 * !Y)	-0.00284	-0.00316	-0.00316
	(!A1 * A2 * A4 * B1 * !Y)	0.00424	0.00426	0.00424
	(!A1 * A2 * A4 * !B1 * Y)	-0.00282	-0.00316	-0.00315
	(!A1 * A2 * A4 * !B1 * Y)	0.00427	0.00426	0.00424
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00184	-0.00185	-0.00184
	(!A1 * A2 * !A4 * B1 * !Y)	0.00423	0.00429	0.00424
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00172	-0.00171	-0.00171
	(!A1 * A2 * !A4 * !B1 * Y)	0.00427	0.00432	0.00426
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00304	-0.00320	-0.00317
	(!A1 * !A2 * A4 * !B1 * Y)	0.00422	0.00427	0.00424
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00179	-0.00180	-0.00179
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00422	0.00429	0.00424

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	-0.00659	-0.00660	-0.00659
	(A1 * A2 * A4 * B1 * !Y)	0.00828	0.00831	0.00831
	(A1 * A2 * !A4 * B1 * !Y)	-0.00607	-0.00632	-0.00629
	(A1 * A2 * !A4 * B1 * !Y)	0.00854	0.00868	0.00856
	(A1 * A2 * !A4 * !B1 * Y)	-0.00254	-0.00258	-0.00257
	(A1 * A2 * !A4 * !B1 * Y)	0.00864	0.00878	0.00862
	(A1 * !A2 * A4 * !B1 * Y)	-0.00587	-0.00632	-0.00627
	(A1 * !A2 * A4 * !B1 * Y)	0.00852	0.00861	0.00856
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00320	-0.00321	-0.00320
	(A1 * !A2 * !A4 * !B1 * Y)	0.00889	0.00898	0.00867
	(!A2 * A4 * B1 * !Y)	-0.00605	-0.00637	-0.00634
	(!A2 * A4 * B1 * !Y)	0.00851	0.00862	0.00856
	(!A2 * !A4 * B1 * !Y)	-0.00345	-0.00346	-0.00344
	(!A2 * !A4 * B1 * !Y)	0.00853	0.00865	0.00856
	(!A1 * A2 * A4 * B1 * !Y)	-0.00551	-0.00626	-0.00623
	(!A1 * A2 * A4 * B1 * !Y)	0.00857	0.00860	0.00856
	(!A1 * A2 * A4 * !B1 * Y)	-0.00545	-0.00627	-0.00624
	(!A1 * A2 * A4 * !B1 * Y)	0.00865	0.00860	0.00856
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00353	-0.00357	-0.00355
	(!A1 * A2 * !A4 * B1 * !Y)	0.00854	0.00865	0.00856
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00329	-0.00332	-0.00330
	(!A1 * A2 * !A4 * !B1 * Y)	0.00860	0.00871	0.00857
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00595	-0.00632	-0.00627
	(!A1 * !A2 * A4 * !B1 * Y)	0.00851	0.00862	0.00855
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00335	-0.00336	-0.00335
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00852	0.00865	0.00856

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)**	0.00187	0.00178	0.00176
	(A1 * A2 * A3 * B1 * !Y)	-0.00187	-0.00208	-0.00207
	(A1 * A2 * !A3 * !B1 * Y)	0.00153	0.00155	0.00154
	(A1 * A2 * !A3 * !B1 * Y)	-0.00226	-0.00228	-0.00227
	(A1 * !A2 * A3 * !B1 * Y)	0.00153	0.00154	0.00153
	(A1 * !A2 * A3 * !B1 * Y)	-0.00227	-0.00227	-0.00227
	(A1 * !A2 * !A3 * !B1 * Y)	0.00154	0.00155	0.00155
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00226	-0.00227	-0.00227
	(!A3 * B1 * !Y)	0.00168	0.00168	0.00168
	(!A3 * B1 * !Y)	-0.00212	-0.00212	-0.00212
	(!A2 * A3 * B1 * !Y)	0.00165	0.00166	0.00165
	(!A2 * A3 * B1 * !Y)	-0.00212	-0.00213	-0.00212
	(!A1 * A2 * A3 * B1 * !Y)	0.00164	0.00166	0.00165
	(!A1 * A2 * A3 * B1 * !Y)	-0.00212	-0.00213	-0.00212
	(!A1 * A2 * A3 * !B1 * Y)	0.00149	0.00149	0.00150
	(!A1 * A2 * A3 * !B1 * Y)	-0.00226	-0.00226	-0.00227
	(!A1 * !A3 * !B1 * Y)	0.00154	0.00155	0.00155
	(!A1 * !A3 * !B1 * Y)	-0.00226	-0.00227	-0.00227
	(!A1 * !A2 * A3 * !B1 * Y)	0.00154	0.00154	0.00153
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00227	-0.00227	-0.00227

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00359	0.00339	0.00335
	(A1 * A2 * A3 * B1 * !Y)	-0.00375	-0.00416	-0.00414
	(A1 * A2 * !A3 * !B1 * Y)	0.00317	0.00320	0.00319
	(A1 * A2 * !A3 * !B1 * Y)	-0.00423	-0.00424	-0.00424
	(A1 * !A2 * A3 * !B1 * Y)	0.00317	0.00320	0.00317
	(A1 * !A2 * A3 * !B1 * Y)	-0.00424	-0.00426	-0.00424
	(A1 * !A2 * !A3 * !B1 * Y)	0.00317	0.00322	0.00319
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00423	-0.00426	-0.00424
	(!A3 * B1 * !Y)	0.00317	0.00320	0.00318
	(!A3 * B1 * !Y)	-0.00423	-0.00423	-0.00424
	(!A2 * A3 * B1 * !Y)	0.00317	0.00320	0.00317
	(!A2 * A3 * B1 * !Y)	-0.00424	-0.00426	-0.00424
	(!A1 * A2 * A3 * B1 * !Y)	0.00315	0.00318	0.00315
	(!A1 * A2 * A3 * B1 * !Y)	-0.00424	-0.00426	-0.00424
	(!A1 * A2 * A3 * !B1 * Y)	0.00314	0.00318	0.00314
	(!A1 * A2 * A3 * !B1 * Y)	-0.00424	-0.00427	-0.00424
	(!A1 * !A3 * !B1 * Y)	0.00317	0.00322	0.00319
	(!A1 * !A3 * !B1 * Y)	-0.00423	-0.00426	-0.00424
	(!A1 * !A2 * A3 * !B1 * Y)	0.00317	0.00318	0.00317
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00424	-0.00425	-0.00424

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00715	0.00673	0.00663
	(A1 * A2 * A3 * B1 * !Y)	-0.00745	-0.00831	-0.00826
	(A1 * A2 * !A3 * !B1 * Y)	0.00631	0.00637	0.00635
	(A1 * A2 * !A3 * !B1 * Y)	-0.00844	-0.00849	-0.00848
	(A1 * !A2 * A3 * !B1 * Y)	0.00622	0.00631	0.00625
	(A1 * !A2 * A3 * !B1 * Y)	-0.00845	-0.00852	-0.00848
	(A1 * !A2 * !A3 * !B1 * Y)	0.00631	0.00637	0.00635
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00844	-0.00849	-0.00848
	(!A3 * B1 * !Y)	0.00634	0.00640	0.00638
	(!A3 * B1 * !Y)	-0.00844	-0.00849	-0.00847
	(!A2 * A3 * B1 * !Y)	0.00621	0.00631	0.00625
	(!A2 * A3 * B1 * !Y)	-0.00844	-0.00851	-0.00847
	(!A1 * A2 * A3 * B1 * !Y)	0.00612	0.00616	0.00610
	(!A1 * A2 * A3 * B1 * !Y)	-0.00850	-0.00852	-0.00847
	(!A1 * A2 * A3 * !B1 * Y)	0.00611	0.00610	0.00610
	(!A1 * A2 * A3 * !B1 * Y)	-0.00850	-0.00848	-0.00848
	(!A1 * !A3 * !B1 * Y)	0.00632	0.00638	0.00635
	(!A1 * !A3 * !B1 * Y)	-0.00844	-0.00849	-0.00848
	(!A1 * !A2 * A3 * !B1 * Y)	0.00621	0.00629	0.00623
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00846	-0.00852	-0.00848

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)**	-0.00175	-0.00176	-0.00175
	(A1 * A2 * A3 * B1 * !Y)	0.00206	0.00209	0.00207
	(A1 * A2 * !A3 * !B1 * Y)	-0.00147	-0.00155	-0.00154
	(A1 * A2 * !A3 * !B1 * Y)	0.00226	0.00229	0.00227
	(A1 * !A2 * A3 * !B1 * Y)	-0.00142	-0.00153	-0.00153
	(A1 * !A2 * A3 * !B1 * Y)	0.00227	0.00231	0.00227
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00148	-0.00155	-0.00155
	(A1 * !A2 * !A3 * !B1 * Y)	0.00226	0.00230	0.00227
	(!A3 * B1 * !Y)	-0.00164	-0.00168	-0.00168
	(!A3 * B1 * !Y)	0.00212	0.00214	0.00213
	(!A2 * A3 * B1 * !Y)	-0.00156	-0.00166	-0.00165
	(!A2 * A3 * B1 * !Y)	0.00212	0.00215	0.00213
	(!A1 * A2 * A3 * B1 * !Y)	-0.00153	-0.00166	-0.00165
	(!A1 * A2 * A3 * B1 * !Y)	0.00212	0.00215	0.00213
	(!A1 * A2 * A3 * !B1 * Y)	-0.00139	-0.00149	-0.00150
	(!A1 * A2 * A3 * !B1 * Y)	0.00227	0.00231	0.00227
	(!A1 * !A3 * !B1 * Y)	-0.00148	-0.00155	-0.00155
	(!A1 * !A3 * !B1 * Y)	0.00226	0.00230	0.00227
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00142	-0.00154	-0.00153
	(!A1 * !A2 * A3 * !B1 * Y)	0.00227	0.00229	0.00227

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00333	-0.00337	-0.00333
	(A1 * A2 * A3 * B1 * !Y)	0.00412	0.00421	0.00414
	(A1 * A2 * !A3 * !B1 * Y)	-0.00303	-0.00320	-0.00319
	(A1 * A2 * !A3 * !B1 * Y)	0.00423	0.00428	0.00425
	(A1 * !A2 * A3 * !B1 * Y)	-0.00289	-0.00315	-0.00317
	(A1 * !A2 * A3 * !B1 * Y)	0.00425	0.00430	0.00425
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00305	-0.00322	-0.00319
	(A1 * !A2 * !A3 * !B1 * Y)	0.00423	0.00428	0.00425
	(!A3 * B1 * !Y)	-0.00307	-0.00318	-0.00318
	(!A3 * B1 * !Y)	0.00423	0.00423	0.00425
	(!A2 * A3 * B1 * !Y)	-0.00289	-0.00315	-0.00317
	(!A2 * A3 * B1 * !Y)	0.00426	0.00429	0.00425
	(!A1 * A2 * A3 * B1 * !Y)	-0.00284	-0.00313	-0.00315
	(!A1 * A2 * A3 * B1 * !Y)	0.00426	0.00430	0.00425
	(!A1 * A2 * A3 * !B1 * Y)	-0.00283	-0.00312	-0.00314
	(!A1 * A2 * A3 * !B1 * Y)	0.00426	0.00430	0.00425
	(!A1 * !A3 * !B1 * Y)	-0.00305	-0.00322	-0.00319
	(!A1 * !A3 * !B1 * Y)	0.00423	0.00428	0.00425
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00289	-0.00315	-0.00317
	(!A1 * !A2 * A3 * !B1 * Y)	0.00425	0.00430	0.00425

sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * B1 * !Y)	-0.00661	-0.00665	-0.00661
	(A1 * A2 * A3 * B1 * !Y)	0.00824	0.00833	0.00826
	(A1 * A2 * !A3 * !B1 * Y)	-0.00599	-0.00637	-0.00635
	(A1 * A2 * !A3 * !B1 * Y)	0.00847	0.00857	0.00850
	(A1 * !A2 * A3 * !B1 * Y)	-0.00571	-0.00624	-0.00625
	(A1 * !A2 * A3 * !B1 * Y)	0.00851	0.00859	0.00850
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00606	-0.00637	-0.00635
	(A1 * !A2 * !A3 * !B1 * Y)	0.00847	0.00857	0.00850
	(!A3 * B1 * !Y)	-0.00611	-0.00633	-0.00638
	(!A3 * B1 * !Y)	0.00847	0.00851	0.00850
	(!A2 * A3 * B1 * !Y)	-0.00571	-0.00622	-0.00625
	(!A2 * A3 * B1 * !Y)	0.00852	0.00857	0.00850
	(!A1 * A2 * A3 * B1 * !Y)	-0.00564	-0.00616	-0.00610
	(!A1 * A2 * A3 * B1 * !Y)	0.00852	0.00860	0.00850
	(!A1 * A2 * A3 * !B1 * Y)	-0.00564	-0.00610	-0.00610
	(!A1 * A2 * A3 * !B1 * Y)	0.00852	0.00859	0.00850
	(!A1 * !A3 * !B1 * Y)	-0.00605	-0.00638	-0.00635
	(!A1 * !A3 * !B1 * Y)	0.00847	0.00857	0.00850
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00571	-0.00624	-0.00623
	(!A1 * !A2 * A3 * !B1 * Y)	0.00851	0.00859	0.00850

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)	0.00206	0.00208	0.00205
	(A1 * A2 * A3 * A4 * !Y)	-0.00099	-0.00100	-0.00098
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	0.00220	0.00221	0.00219
	(A1 * A2 * A3 * A4 * !Y)	-0.00203	-0.00203	-0.00201
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	0.00430	0.00439	0.00432
	(A1 * A2 * A3 * A4 * !Y)	-0.00395	-0.00403	-0.00396

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)	-0.00185	-0.00188	-0.00203
	(A1 * A2 * A3 * A4 * !Y)	0.00113	0.00114	0.00102
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	-0.00179	-0.00182	-0.00214
	(A1 * A2 * A3 * A4 * !Y)	0.00232	0.00233	0.00208
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	-0.00357	-0.00363	-0.00423
	(A1 * A2 * A3 * A4 * !Y)	0.00454	0.00456	0.00409

SKY130_FD_SC_HS__A41Ox

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00268	0.00265	0.00268	0.00262	0.00276	1.20780
sky130_fd_sc_hs__a41o_2	0.00264	0.00271	0.00278	0.00261	0.00278	2.32538
sky130_fd_sc_hs__a41o_4	0.00521	0.00505	0.00521	0.00502	0.00515	3.79087

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a41o_1	0.00000	0.14499	0.26621
sky130_fd_sc_hs__a41o_2	0.00000	0.18498	0.27363
sky130_fd_sc_hs__a41o_4	0.00000	0.36995	0.54726

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)	0.09907	0.60300	6.26287
	A2->X (RR)	0.10734	0.61160	6.26099
	A3->X (RR)	0.11366	0.60557	6.19568
	A4->X (RR)	0.11709	0.59259	6.10192
	B1->X (RR)	0.05824	0.52912	5.95606
sky130_fd_sc_hs__a41o_2	A1->X (RR)	0.10364	0.54281	6.36050
	A2->X (RR)	0.11303	0.54819	6.34462
	A3->X (RR)	0.11915	0.53754	6.26938
	A4->X (RR)	0.12215	0.52045	6.16358
	B1->X (RR)	0.05416	0.45140	6.00269
sky130_fd_sc_hs__a41o_4	A1->X (RR)	0.11842	0.51219	6.29010
	A2->X (RR)	0.13084	0.52252	6.33197
	A3->X (RR)	0.13686	0.49060	6.14006
	A4->X (RR)	0.14102	0.47626	6.03159
	B1->X (RR)	0.05113	0.38462	5.80104

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41o_1	A1->X (FF)	0.12813	0.53653	4.70239
	A2->X (FF)	0.15154	0.57313	4.78980
	A3->X (FF)	0.16797	0.60000	4.87970
	A4->X (FF)	0.18407	0.62686	4.97096
	B1->X (FF)	0.15436	0.62039	5.00018
sky130_fd_sc_hs__a41o_2	A1->X (FF)	0.15053	0.55044	4.74324
	A2->X (FF)	0.17553	0.58720	4.83025
	A3->X (FF)	0.19027	0.61081	4.91782
	A4->X (FF)	0.20445	0.63400	5.00269
	B1->X (FF)	0.17605	0.63235	5.04026
sky130_fd_sc_hs__a41o_4	A1->X (FF)	0.15687	0.51617	4.43056
	A2->X (FF)	0.17996	0.55063	4.51480
	A3->X (FF)	0.19782	0.57987	4.64575
	A4->X (FF)	0.21619	0.60772	4.73981
	B1->X (FF)	0.18405	0.61334	4.86343

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41o_1	A1	0.01307	0.01403	0.04093
	A1	0.00711	0.00807	0.03533
	A2	0.01422	0.01470	0.03899
	A2	0.00712	0.00760	0.03226
	A3	0.01534	0.01571	0.04037
	A3	0.00711	0.00748	0.03254
	A4	0.01650	0.01685	0.04179
	A4	0.00709	0.00744	0.03282
	B1	0.00911	0.01100	0.05680
	B1	0.00447	0.00638	0.05262
sky130_fd_sc_hs__a41o_2	A1	0.01517	0.01608	0.04284
	A1	0.00919	0.01012	0.03743
	A2	0.01636	0.01695	0.04078
	A2	0.00920	0.00980	0.03419
	A3	0.01751	0.01801	0.04221
	A3	0.00920	0.00970	0.03463
	A4	0.01861	0.01910	0.04366
	A4	0.00918	0.00970	0.03510
	B1	0.01103	0.01302	0.05789
	B1	0.00636	0.00842	0.05417

sky130_fd_sc_hs__a41o_4	**A1**	0.02938	0.03080	0.07500
	A1	0.01746	0.01892	0.06441
	A2	0.03162	0.03237	0.07746
	A2	0.01746	0.01821	0.06431
	A3	0.03415	0.03479	0.08208
	A3	0.01744	0.01808	0.06697
	A4	0.03637	0.03699	0.08495
	A4	0.01740	0.01806	0.06769
	B1	0.02023	0.02400	0.10613
	B1	0.01123	0.01507	0.09794

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41o_1	**A1**	0.00380	0.00402	0.03002
	A1	0.00984	0.01006	0.03603
	A2	0.00442	0.00460	0.02970
	A2	0.01154	0.01171	0.03614
	A3	0.00511	0.00534	0.03083
	A3	0.01325	0.01348	0.03819
	A4	0.00564	0.00590	0.03207
	A4	0.01487	0.01512	0.04023
	B1	0.00348	0.00628	0.04758
	B1	0.00810	0.01075	0.05185

sky130_fd_sc_hs__a41o_2	**A1**	0.00679	0.00702	0.03351
	A1	0.01283	0.01304	0.03824
	A2	0.00775	0.00773	0.03161
	A2	0.01491	0.01488	0.03875
	A3	0.00849	0.00846	0.03440
	A3	0.01672	0.01668	0.04089
	A4	0.00899	0.00891	0.03473
	A4	0.01824	0.01818	0.04276
	B1	0.00617	0.00896	0.05118
	B1	0.01084	0.01355	0.05423
sky130_fd_sc_hs__a41o_4	**A1**	0.01336	0.01343	0.06045
	A1	0.02545	0.02520	0.07096
	A2	0.01575	0.01595	0.06423
	A2	0.02993	0.02950	0.07498
	A3	0.01704	0.01670	0.06584
	A3	0.03358	0.03297	0.08032
	A4	0.01901	0.01816	0.06908
	A4	0.03753	0.03663	0.08481
	B1	0.01218	0.01729	0.09865
	B1	0.02550	0.03009	0.10768

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)**	0.00176	0.00164	0.00162
	(A2 * A3 * A4 * B1 * X)	-0.00168	-0.00189	-0.00189
	(A2 * A3 * !A4 * B1 * X)	0.00152	0.00154	0.00153
	(A2 * A3 * !A4 * B1 * X)	-0.00193	-0.00195	-0.00194
	(A2 * A3 * !A4 * !B1 * !X)	0.00056	0.00056	0.00050
	(A2 * A3 * !A4 * !B1 * !X)	-0.00212	-0.00213	-0.00225
	(A2 * !A3 * B1 * X)	0.00152	0.00153	0.00153
	(A2 * !A3 * B1 * X)	-0.00193	-0.00194	-0.00194
	(A2 * !A3 * !B1 * !X)	0.00054	0.00054	0.00050
	(A2 * !A3 * !B1 * !X)	-0.00218	-0.00218	-0.00226
	(!A2 * B1 * X)	0.00155	0.00157	0.00156
	(!A2 * B1 * X)	-0.00193	-0.00195	-0.00194
	(!A2 * !B1 * !X)	0.00053	0.00053	0.00051
	(!A2 * !B1 * !X)	-0.00223	-0.00224	-0.00227
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	0.00175	0.00162	0.00161
	(A2 * A3 * A4 * B1 * X)	-0.00169	-0.00190	-0.00190
	(A2 * A3 * !A4 * B1 * X)	0.00149	0.00150	0.00150
	(A2 * A3 * !A4 * B1 * X)	-0.00194	-0.00196	-0.00194
	(A2 * A3 * !A4 * !B1 * !X)	0.00057	0.00057	0.00051
	(A2 * A3 * !A4 * !B1 * !X)	-0.00211	-0.00211	-0.00224
	(A2 * !A3 * B1 * X)	0.00153	0.00155	0.00153
	(A2 * !A3 * B1 * X)	-0.00194	-0.00196	-0.00194
	(A2 * !A3 * !B1 * !X)	0.00056	0.00056	0.00052
	(A2 * !A3 * !B1 * !X)	-0.00216	-0.00216	-0.00225
	(!A2 * B1 * X)	0.00154	0.00156	0.00154
	(!A2 * B1 * X)	-0.00195	-0.00194	-0.00194
	(!A2 * !B1 * !X)	0.00056	0.00056	0.00054
	(!A2 * !B1 * !X)	-0.00221	-0.00221	-0.00225

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	0.00365	0.00344	0.00339
	(A2 * A3 * A4 * B1 * X)	-0.00344	-0.00386	-0.00385
	(A2 * A3 * !A4 * B1 * X)	0.00315	0.00319	0.00317
	(A2 * A3 * !A4 * B1 * X)	-0.00395	-0.00398	-0.00395
	(A2 * A3 * !A4 * !B1 * !X)	0.00125	0.00124	0.00110
	(A2 * A3 * !A4 * !B1 * !X)	-0.00428	-0.00430	-0.00458
	(A2 * !A3 * B1 * X)	0.00318	0.00319	0.00318
	(A2 * !A3 * B1 * X)	-0.00396	-0.00396	-0.00395
	(A2 * !A3 * !B1 * !X)	0.00119	0.00118	0.00109
	(A2 * !A3 * !B1 * !X)	-0.00442	-0.00444	-0.00461
	(!A2 * B1 * X)	0.00324	0.00326	0.00324
	(!A2 * B1 * X)	-0.00395	-0.00397	-0.00395
	(!A2 * !B1 * !X)	0.00123	0.00122	0.00117
	(!A2 * !B1 * !X)	-0.00454	-0.00454	-0.00463

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)**	-0.00161	-0.00162	-0.00161
	(A2 * A3 * A4 * B1 * X)	0.00188	0.00190	0.00189
	(A2 * A3 * !A4 * B1 * X)	-0.00135	-0.00152	-0.00153
	(A2 * A3 * !A4 * B1 * X)	0.00194	0.00198	0.00195
	(A2 * A3 * !A4 * !B1 * !X)	-0.00049	-0.00050	-0.00049
	(A2 * A3 * !A4 * !B1 * !X)	0.00226	0.00229	0.00227
	(A2 * !A3 * B1 * X)	-0.00139	-0.00153	-0.00153
	(A2 * !A3 * B1 * X)	0.00194	0.00197	0.00195
	(A2 * !A3 * !B1 * !X)	-0.00049	-0.00050	-0.00049
	(A2 * !A3 * !B1 * !X)	0.00226	0.00229	0.00227
	(!A2 * B1 * X)	-0.00150	-0.00155	-0.00156
	(!A2 * B1 * X)	0.00193	0.00195	0.00195
	(!A2 * !B1 * !X)	-0.00050	-0.00051	-0.00050
	(!A2 * !B1 * !X)	0.00226	0.00231	0.00227
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	-0.00159	-0.00160	-0.00159
	(A2 * A3 * A4 * B1 * X)	0.00189	0.00191	0.00190
	(A2 * A3 * !A4 * B1 * X)	-0.00134	-0.00150	-0.00150
	(A2 * A3 * !A4 * B1 * X)	0.00195	0.00198	0.00195
	(A2 * A3 * !A4 * !B1 * !X)	-0.00051	-0.00052	-0.00051
	(A2 * A3 * !A4 * !B1 * !X)	0.00225	0.00229	0.00226
	(A2 * !A3 * B1 * X)	-0.00138	-0.00152	-0.00153
	(A2 * !A3 * B1 * X)	0.00195	0.00197	0.00195
	(A2 * !A3 * !B1 * !X)	-0.00051	-0.00052	-0.00051
	(A2 * !A3 * !B1 * !X)	0.00225	0.00229	0.00226
	(!A2 * B1 * X)	-0.00149	-0.00153	-0.00154
	(!A2 * B1 * X)	0.00196	0.00194	0.00195
	(!A2 * !B1 * !X)	-0.00052	-0.00053	-0.00052
	(!A2 * !B1 * !X)	0.00225	0.00229	0.00226

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	-0.00337	-0.00340	-0.00337
	(A2 * A3 * A4 * B1 * X)	0.00384	0.00389	0.00385
	(A2 * A3 * !A4 * B1 * X)	-0.00274	-0.00319	-0.00317
	(A2 * A3 * !A4 * B1 * X)	0.00398	0.00399	0.00397
	(A2 * A3 * !A4 * !B1 * !X)	-0.00109	-0.00111	-0.00109
	(A2 * A3 * !A4 * !B1 * !X)	0.00461	0.00471	0.00464
	(A2 * !A3 * B1 * X)	-0.00280	-0.00319	-0.00318
	(A2 * !A3 * B1 * X)	0.00396	0.00399	0.00397
	(A2 * !A3 * !B1 * !X)	-0.00109	-0.00112	-0.00109
	(A2 * !A3 * !B1 * !X)	0.00461	0.00471	0.00464
	(!A2 * B1 * X)	-0.00311	-0.00326	-0.00324
	(!A2 * B1 * X)	0.00395	0.00400	0.00397
	(!A2 * !B1 * !X)	-0.00113	-0.00116	-0.00114
	(!A2 * !B1 * !X)	0.00462	0.00471	0.00464

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)**	0.00179	0.00167	0.00165
	(A1 * A3 * A4 * B1 * X)	-0.00167	-0.00188	-0.00188
	(A1 * A3 * !A4 * B1 * X)	0.00154	0.00154	0.00154
	(A1 * A3 * !A4 * B1 * X)	-0.00192	-0.00193	-0.00192
	(A1 * A3 * !A4 * !B1 * !X)	0.00069	0.00069	0.00069
	(A1 * A3 * !A4 * !B1 * !X)	-0.00194	-0.00194	-0.00193
	(A1 * !A3 * B1 * X)	0.00158	0.00159	0.00159
	(A1 * !A3 * B1 * X)	-0.00192	-0.00193	-0.00192
	(A1 * !A3 * !B1 * !X)	0.00071	0.00072	0.00071
	(A1 * !A3 * !B1 * !X)	-0.00193	-0.00194	-0.00193
	(!A1 * A3 * A4 * B1 * X)	0.00157	0.00158	0.00157
	(!A1 * A3 * A4 * B1 * X)	-0.00192	-0.00193	-0.00192
	(!A1 * A3 * A4 * !B1 * !X)	0.00157	0.00157	0.00158
	(!A1 * A3 * A4 * !B1 * !X)	-0.00193	-0.00193	-0.00194
	(!A1 * A3 * !A4 * B1 * X)	0.00092	0.00092	0.00091
	(!A1 * A3 * !A4 * B1 * X)	-0.00192	-0.00193	-0.00192
	(!A1 * A3 * !A4 * !B1 * !X)	0.00086	0.00087	0.00086
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00193	-0.00194	-0.00194
	(!A1 * !A3 * B1 * X)	0.00091	0.00092	0.00091
	(!A1 * !A3 * B1 * X)	-0.00192	-0.00194	-0.00192
	(!A1 * !A3 * !B1 * !X)	0.00084	0.00084	0.00084
	(!A1 * !A3 * !B1 * !X)	-0.00193	-0.00194	-0.00194

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	0.00182	0.00169	0.00166
	(A1 * A3 * A4 * B1 * X)	-0.00167	-0.00189	-0.00189
	(A1 * A3 * !A4 * B1 * X)	0.00156	0.00157	0.00156
	(A1 * A3 * !A4 * B1 * X)	-0.00193	-0.00194	-0.00193
	(A1 * A3 * !A4 * !B1 * !X)	0.00070	0.00070	0.00071
	(A1 * A3 * !A4 * !B1 * !X)	-0.00194	-0.00195	-0.00193
	(A1 * !A3 * B1 * X)	0.00160	0.00160	0.00160
	(A1 * !A3 * B1 * X)	-0.00193	-0.00193	-0.00193
	(A1 * !A3 * !B1 * !X)	0.00074	0.00075	0.00074
	(A1 * !A3 * !B1 * !X)	-0.00194	-0.00195	-0.00193
	(!A1 * A3 * A4 * B1 * X)	0.00159	0.00162	0.00160
	(!A1 * A3 * A4 * B1 * X)	-0.00192	-0.00194	-0.00193
	(!A1 * A3 * A4 * !B1 * !X)	0.00160	0.00160	0.00160
	(!A1 * A3 * A4 * !B1 * !X)	-0.00195	-0.00195	-0.00194
	(!A1 * A3 * !A4 * B1 * X)	0.00094	0.00093	0.00093
	(!A1 * A3 * !A4 * B1 * X)	-0.00193	-0.00194	-0.00193
	(!A1 * A3 * !A4 * !B1 * !X)	0.00088	0.00088	0.00088
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00195	-0.00195	-0.00194
	(!A1 * !A3 * B1 * X)	0.00096	0.00098	0.00097
	(!A1 * !A3 * B1 * X)	-0.00192	-0.00195	-0.00193
	(!A1 * !A3 * !B1 * !X)	0.00088	0.00090	0.00089
	(!A1 * !A3 * !B1 * !X)	-0.00194	-0.00196	-0.00194

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	0.00356	0.00335	0.00331
	(A1 * A3 * A4 * B1 * X)	-0.00339	-0.00380	-0.00379
	(A1 * A3 * !A4 * B1 * X)	0.00309	0.00310	0.00309
	(A1 * A3 * !A4 * B1 * X)	-0.00390	-0.00390	-0.00389
	(A1 * A3 * !A4 * !B1 * !X)	0.00131	0.00132	0.00134
	(A1 * A3 * !A4 * !B1 * !X)	-0.00388	-0.00388	-0.00388
	(A1 * !A3 * B1 * X)	0.00311	0.00314	0.00313
	(A1 * !A3 * B1 * X)	-0.00388	-0.00390	-0.00389
	(A1 * !A3 * !B1 * !X)	0.00135	0.00136	0.00136
	(A1 * !A3 * !B1 * !X)	-0.00390	-0.00391	-0.00388
	(!A1 * A3 * A4 * B1 * X)	0.00315	0.00317	0.00316
	(!A1 * A3 * A4 * B1 * X)	-0.00388	-0.00390	-0.00389
	(!A1 * A3 * A4 * !B1 * !X)	0.00314	0.00318	0.00316
	(!A1 * A3 * A4 * !B1 * !X)	-0.00388	-0.00390	-0.00389
	(!A1 * A3 * !A4 * B1 * X)	0.00178	0.00181	0.00179
	(!A1 * A3 * !A4 * B1 * X)	-0.00388	-0.00392	-0.00389
	(!A1 * A3 * !A4 * !B1 * !X)	0.00169	0.00171	0.00169
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00390	-0.00394	-0.00391
	(!A1 * !A3 * B1 * X)	0.00178	0.00180	0.00178
	(!A1 * !A3 * B1 * X)	-0.00389	-0.00392	-0.00389
	(!A1 * !A3 * !B1 * !X)	0.00162	0.00162	0.00162
	(!A1 * !A3 * !B1 * !X)	-0.00392	-0.00393	-0.00392

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)**	-0.00164	-0.00164	-0.00164
	(A1 * A3 * A4 * B1 * X)	0.00187	0.00189	0.00188
	(A1 * A3 * !A4 * B1 * X)	-0.00138	-0.00154	-0.00154
	(A1 * A3 * !A4 * B1 * X)	0.00192	0.00194	0.00193
	(A1 * A3 * !A4 * !B1 * !X)	-0.00066	-0.00067	-0.00067
	(A1 * A3 * !A4 * !B1 * !X)	0.00198	0.00200	0.00195
	(A1 * !A3 * B1 * X)	-0.00153	-0.00158	-0.00159
	(A1 * !A3 * B1 * X)	0.00194	0.00193	0.00193
	(A1 * !A3 * !B1 * !X)	-0.00067	-0.00068	-0.00069
	(A1 * !A3 * !B1 * !X)	0.00198	0.00200	0.00195
	(!A1 * A3 * A4 * B1 * X)	-0.00153	-0.00158	-0.00157
	(!A1 * A3 * A4 * B1 * X)	0.00194	0.00195	0.00193
	(!A1 * A3 * A4 * !B1 * !X)	-0.00142	-0.00157	-0.00158
	(!A1 * A3 * A4 * !B1 * !X)	0.00207	0.00196	0.00194
	(!A1 * A3 * !A4 * B1 * X)	-0.00092	-0.00092	-0.00091
	(!A1 * A3 * !A4 * B1 * X)	0.00192	0.00195	0.00193
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00086	-0.00087	-0.00086
	(!A1 * A3 * !A4 * !B1 * !X)	0.00203	0.00201	0.00194
	(!A1 * !A3 * B1 * X)	-0.00091	-0.00092	-0.00091
	(!A1 * !A3 * B1 * X)	0.00194	0.00195	0.00193
	(!A1 * !A3 * !B1 * !X)	-0.00084	-0.00084	-0.00084
	(!A1 * !A3 * !B1 * !X)	0.00204	0.00206	0.00197

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	-0.00165	-0.00166	-0.00165
	(A1 * A3 * A4 * B1 * X)	0.00188	0.00189	0.00189
	(A1 * A3 * !A4 * B1 * X)	-0.00139	-0.00157	-0.00156
	(A1 * A3 * !A4 * B1 * X)	0.00193	0.00195	0.00194
	(A1 * A3 * !A4 * !B1 * !X)	-0.00069	-0.00069	-0.00070
	(A1 * A3 * !A4 * !B1 * !X)	0.00199	0.00201	0.00196
	(A1 * !A3 * B1 * X)	-0.00155	-0.00160	-0.00160
	(A1 * !A3 * B1 * X)	0.00195	0.00193	0.00194
	(A1 * !A3 * !B1 * !X)	-0.00070	-0.00071	-0.00072
	(A1 * !A3 * !B1 * !X)	0.00199	0.00201	0.00196
	(!A1 * A3 * A4 * B1 * X)	-0.00155	-0.00160	-0.00160
	(!A1 * A3 * A4 * B1 * X)	0.00194	0.00194	0.00194
	(!A1 * A3 * A4 * !B1 * !X)	-0.00144	-0.00160	-0.00160
	(!A1 * A3 * A4 * !B1 * !X)	0.00207	0.00197	0.00195
	(!A1 * A3 * !A4 * B1 * X)	-0.00094	-0.00093	-0.00093
	(!A1 * A3 * !A4 * B1 * X)	0.00193	0.00196	0.00194
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00088	-0.00088	-0.00088
	(!A1 * A3 * !A4 * !B1 * !X)	0.00203	0.00201	0.00195
	(!A1 * !A3 * B1 * X)	-0.00096	-0.00098	-0.00097
	(!A1 * !A3 * B1 * X)	0.00195	0.00196	0.00194
	(!A1 * !A3 * !B1 * !X)	-0.00088	-0.00090	-0.00089
	(!A1 * !A3 * !B1 * !X)	0.00205	0.00207	0.00197

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	-0.00329	-0.00331	-0.00329
	(A1 * A3 * A4 * B1 * X)	0.00377	0.00383	0.00379
	(A1 * A3 * !A4 * B1 * X)	-0.00271	-0.00310	-0.00309
	(A1 * A3 * !A4 * B1 * X)	0.00391	0.00394	0.00390
	(A1 * A3 * !A4 * !B1 * !X)	-0.00124	-0.00126	-0.00127
	(A1 * A3 * !A4 * !B1 * !X)	0.00400	0.00405	0.00394
	(A1 * !A3 * B1 * X)	-0.00303	-0.00314	-0.00313
	(A1 * !A3 * B1 * X)	0.00391	0.00394	0.00390
	(A1 * !A3 * !B1 * !X)	-0.00126	-0.00129	-0.00131
	(A1 * !A3 * !B1 * !X)	0.00400	0.00405	0.00394
	(!A1 * A3 * A4 * B1 * X)	-0.00303	-0.00317	-0.00316
	(!A1 * A3 * A4 * B1 * X)	0.00390	0.00392	0.00390
	(!A1 * A3 * A4 * !B1 * !X)	-0.00274	-0.00318	-0.00316
	(!A1 * A3 * A4 * !B1 * !X)	0.00423	0.00394	0.00390
	(!A1 * A3 * !A4 * B1 * X)	-0.00178	-0.00181	-0.00179
	(!A1 * A3 * !A4 * B1 * X)	0.00390	0.00396	0.00391
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00169	-0.00171	-0.00169
	(!A1 * A3 * !A4 * !B1 * !X)	0.00409	0.00405	0.00392
	(!A1 * !A3 * B1 * X)	-0.00178	-0.00180	-0.00178
	(!A1 * !A3 * B1 * X)	0.00389	0.00395	0.00391
	(!A1 * !A3 * !B1 * !X)	-0.00162	-0.00162	-0.00162
	(!A1 * !A3 * !B1 * !X)	0.00410	0.00417	0.00398

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)**	0.00177	0.00164	0.00162
	(A1 * A2 * A4 * B1 * X)	-0.00168	-0.00191	-0.00191
	(A1 * A2 * !A4 * B1 * X)	0.00155	0.00156	0.00156
	(A1 * A2 * !A4 * B1 * X)	-0.00196	-0.00196	-0.00196
	(A1 * A2 * !A4 * !B1 * !X)	0.00072	0.00073	0.00073
	(A1 * A2 * !A4 * !B1 * !X)	-0.00192	-0.00194	-0.00192
	(A1 * !A2 * A4 * !B1 * !X)	0.00155	0.00155	0.00155
	(A1 * !A2 * A4 * !B1 * !X)	-0.00196	-0.00196	-0.00196
	(A1 * !A2 * !A4 * !B1 * !X)	0.00086	0.00087	0.00086
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00196	-0.00198	-0.00196
	(!A2 * A4 * B1 * X)	0.00155	0.00157	0.00156
	(!A2 * A4 * B1 * X)	-0.00196	-0.00196	-0.00196
	(!A2 * !A4 * B1 * X)	0.00091	0.00093	0.00092
	(!A2 * !A4 * B1 * X)	-0.00195	-0.00198	-0.00196
	(!A1 * A2 * A4 * B1 * X)	0.00152	0.00152	0.00152
	(!A1 * A2 * A4 * B1 * X)	-0.00196	-0.00197	-0.00196
	(!A1 * A2 * A4 * !B1 * !X)	0.00153	0.00153	0.00152
	(!A1 * A2 * A4 * !B1 * !X)	-0.00197	-0.00197	-0.00196
	(!A1 * A2 * !A4 * B1 * X)	0.00090	0.00090	0.00090
	(!A1 * A2 * !A4 * B1 * X)	-0.00196	-0.00197	-0.00196
	(!A1 * A2 * !A4 * !B1 * !X)	0.00083	0.00085	0.00084
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00196	-0.00197	-0.00196
	(!A1 * !A2 * A4 * !B1 * !X)	0.00155	0.00157	0.00156
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00196	-0.00196	-0.00196
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00091	0.00091	0.00090
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00197	-0.00198	-0.00196

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	0.00184	0.00171	0.00169
	(A1 * A2 * A4 * B1 * X)	-0.00167	-0.00190	-0.00190
	(A1 * A2 * !A4 * B1 * X)	0.00162	0.00163	0.00162
	(A1 * A2 * !A4 * B1 * X)	-0.00194	-0.00196	-0.00195
	(A1 * A2 * !A4 * !B1 * !X)	0.00075	0.00076	0.00076
	(A1 * A2 * !A4 * !B1 * !X)	-0.00192	-0.00194	-0.00192
	(A1 * !A2 * A4 * !B1 * !X)	0.00162	0.00164	0.00163
	(A1 * !A2 * A4 * !B1 * !X)	-0.00194	-0.00195	-0.00195
	(A1 * !A2 * !A4 * !B1 * !X)	0.00087	0.00088	0.00087
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00194	-0.00196	-0.00195
	(!A2 * A4 * B1 * X)	0.00162	0.00164	0.00163
	(!A2 * A4 * B1 * X)	-0.00194	-0.00195	-0.00195
	(!A2 * !A4 * B1 * X)	0.00093	0.00094	0.00093
	(!A2 * !A4 * B1 * X)	-0.00194	-0.00196	-0.00195
	(!A1 * A2 * A4 * B1 * X)	0.00162	0.00163	0.00162
	(!A1 * A2 * A4 * B1 * X)	-0.00195	-0.00196	-0.00195
	(!A1 * A2 * A4 * !B1 * !X)	0.00160	0.00159	0.00159
	(!A1 * A2 * A4 * !B1 * !X)	-0.00195	-0.00194	-0.00195
	(!A1 * A2 * !A4 * B1 * X)	0.00095	0.00095	0.00094
	(!A1 * A2 * !A4 * B1 * X)	-0.00195	-0.00196	-0.00195
	(!A1 * A2 * !A4 * !B1 * !X)	0.00088	0.00089	0.00088
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00194	-0.00195	-0.00195
	(!A1 * !A2 * A4 * !B1 * !X)	0.00162	0.00165	0.00163
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00194	-0.00195	-0.00195
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00091	0.00092	0.00091
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00194	-0.00195	-0.00195

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	0.00364	0.00341	0.00337
	(A1 * A2 * A4 * B1 * X)	-0.00341	-0.00384	-0.00384
	(A1 * A2 * !A4 * B1 * X)	0.00319	0.00321	0.00321
	(A1 * A2 * !A4 * B1 * X)	-0.00393	-0.00395	-0.00394
	(A1 * A2 * !A4 * !B1 * !X)	0.00144	0.00146	0.00144
	(A1 * A2 * !A4 * !B1 * !X)	-0.00386	-0.00390	-0.00385
	(A1 * !A2 * A4 * !B1 * !X)	0.00318	0.00323	0.00319
	(A1 * !A2 * A4 * !B1 * !X)	-0.00393	-0.00397	-0.00394
	(A1 * !A2 * !A4 * !B1 * !X)	0.00167	0.00169	0.00168
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00392	-0.00395	-0.00395
	(!A2 * A4 * B1 * X)	0.00321	0.00324	0.00322
	(!A2 * A4 * B1 * X)	-0.00393	-0.00396	-0.00394
	(!A2 * !A4 * B1 * X)	0.00181	0.00183	0.00181
	(!A2 * !A4 * B1 * X)	-0.00394	-0.00398	-0.00395
	(!A1 * A2 * A4 * B1 * X)	0.00317	0.00316	0.00317
	(!A1 * A2 * A4 * B1 * X)	-0.00394	-0.00393	-0.00394
	(!A1 * A2 * A4 * !B1 * !X)	0.00317	0.00321	0.00317
	(!A1 * A2 * A4 * !B1 * !X)	-0.00395	-0.00397	-0.00394
	(!A1 * A2 * !A4 * B1 * X)	0.00182	0.00184	0.00182
	(!A1 * A2 * !A4 * B1 * X)	-0.00395	-0.00397	-0.00395
	(!A1 * A2 * !A4 * !B1 * !X)	0.00170	0.00170	0.00169
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00397	-0.00397	-0.00396
	(!A1 * !A2 * A4 * !B1 * !X)	0.00317	0.00322	0.00318
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00394	-0.00397	-0.00394
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00175	0.00176	0.00176
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00394	-0.00395	-0.00395

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)**	-0.00160	-0.00161	-0.00161
	(A1 * A2 * A4 * B1 * X)	0.00190	0.00192	0.00191
	(A1 * A2 * !A4 * B1 * X)	-0.00150	-0.00156	-0.00156
	(A1 * A2 * !A4 * B1 * X)	0.00198	0.00198	0.00197
	(A1 * A2 * !A4 * !B1 * !X)	-0.00069	-0.00069	-0.00069
	(A1 * A2 * !A4 * !B1 * !X)	0.00199	0.00201	0.00198
	(A1 * !A2 * A4 * !B1 * !X)	-0.00147	-0.00155	-0.00155
	(A1 * !A2 * A4 * !B1 * !X)	0.00196	0.00196	0.00197
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00086	-0.00087	-0.00086
	(A1 * !A2 * !A4 * !B1 * !X)	0.00205	0.00206	0.00199
	(!A2 * A4 * B1 * X)	-0.00149	-0.00155	-0.00156
	(!A2 * A4 * B1 * X)	0.00196	0.00196	0.00197
	(!A2 * !A4 * B1 * X)	-0.00091	-0.00093	-0.00092
	(!A2 * !A4 * B1 * X)	0.00198	0.00199	0.00197
	(!A1 * A2 * A4 * B1 * X)	-0.00137	-0.00152	-0.00152
	(!A1 * A2 * A4 * B1 * X)	0.00196	0.00198	0.00197
	(!A1 * A2 * A4 * !B1 * !X)	-0.00137	-0.00152	-0.00152
	(!A1 * A2 * A4 * !B1 * !X)	0.00197	0.00198	0.00197
	(!A1 * A2 * !A4 * B1 * X)	-0.00090	-0.00090	-0.00090
	(!A1 * A2 * !A4 * B1 * X)	0.00196	0.00199	0.00197
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00083	-0.00085	-0.00084
	(!A1 * A2 * !A4 * !B1 * !X)	0.00197	0.00200	0.00197
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00148	-0.00155	-0.00156
	(!A1 * !A2 * A4 * !B1 * !X)	0.00196	0.00196	0.00197
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00091	-0.00091	-0.00090
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00197	0.00199	0.00197

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	-0.00168	-0.00168	-0.00168
	(A1 * A2 * A4 * B1 * X)	0.00189	0.00190	0.00190
	(A1 * A2 * !A4 * B1 * X)	-0.00158	-0.00163	-0.00162
	(A1 * A2 * !A4 * B1 * X)	0.00196	0.00197	0.00196
	(A1 * A2 * !A4 * !B1 * !X)	-0.00072	-0.00073	-0.00072
	(A1 * A2 * !A4 * !B1 * !X)	0.00198	0.00200	0.00197
	(A1 * !A2 * A4 * !B1 * !X)	-0.00154	-0.00162	-0.00163
	(A1 * !A2 * A4 * !B1 * !X)	0.00194	0.00195	0.00196
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00087	-0.00088	-0.00087
	(A1 * !A2 * !A4 * !B1 * !X)	0.00202	0.00205	0.00198
	(!A2 * A4 * B1 * X)	-0.00156	-0.00162	-0.00163
	(!A2 * A4 * B1 * X)	0.00195	0.00195	0.00196
	(!A2 * !A4 * B1 * X)	-0.00093	-0.00094	-0.00093
	(!A2 * !A4 * B1 * X)	0.00196	0.00198	0.00196
	(!A1 * A2 * A4 * B1 * X)	-0.00145	-0.00160	-0.00162
	(!A1 * A2 * A4 * B1 * X)	0.00195	0.00197	0.00196
	(!A1 * A2 * A4 * !B1 * !X)	-0.00144	-0.00159	-0.00159
	(!A1 * A2 * A4 * !B1 * !X)	0.00196	0.00196	0.00195
	(!A1 * A2 * !A4 * B1 * X)	-0.00095	-0.00095	-0.00094
	(!A1 * A2 * !A4 * B1 * X)	0.00195	0.00198	0.00196
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00088	-0.00089	-0.00088
	(!A1 * A2 * !A4 * !B1 * !X)	0.00195	0.00198	0.00195
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00155	-0.00162	-0.00163
	(!A1 * !A2 * A4 * !B1 * !X)	0.00195	0.00195	0.00196
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00091	-0.00092	-0.00091
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00195	0.00197	0.00196

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	-0.00335	-0.00337	-0.00335
	(A1 * A2 * A4 * B1 * X)	0.00382	0.00386	0.00384
	(A1 * A2 * !A4 * B1 * X)	-0.00308	-0.00321	-0.00321
	(A1 * A2 * !A4 * B1 * X)	0.00395	0.00398	0.00396
	(A1 * A2 * !A4 * !B1 * !X)	-0.00133	-0.00134	-0.00134
	(A1 * A2 * !A4 * !B1 * !X)	0.00404	0.00407	0.00399
	(A1 * !A2 * A4 * !B1 * !X)	-0.00301	-0.00320	-0.00319
	(A1 * !A2 * A4 * !B1 * !X)	0.00394	0.00398	0.00396
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00167	-0.00169	-0.00168
	(A1 * !A2 * !A4 * !B1 * !X)	0.00414	0.00417	0.00401
	(!A2 * A4 * B1 * X)	-0.00308	-0.00320	-0.00322
	(!A2 * A4 * B1 * X)	0.00394	0.00398	0.00396
	(!A2 * !A4 * B1 * X)	-0.00181	-0.00183	-0.00181
	(!A2 * !A4 * B1 * X)	0.00395	0.00401	0.00396
	(!A1 * A2 * A4 * B1 * X)	-0.00285	-0.00316	-0.00317
	(!A1 * A2 * A4 * B1 * X)	0.00397	0.00399	0.00396
	(!A1 * A2 * A4 * !B1 * !X)	-0.00283	-0.00315	-0.00317
	(!A1 * A2 * A4 * !B1 * !X)	0.00400	0.00398	0.00396
	(!A1 * A2 * !A4 * B1 * X)	-0.00182	-0.00184	-0.00182
	(!A1 * A2 * !A4 * B1 * X)	0.00395	0.00401	0.00396
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00170	-0.00170	-0.00169
	(!A1 * A2 * !A4 * !B1 * !X)	0.00397	0.00403	0.00397
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00304	-0.00320	-0.00318
	(!A1 * !A2 * A4 * !B1 * !X)	0.00394	0.00398	0.00396
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00175	-0.00176	-0.00176
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00395	0.00401	0.00396

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)**	0.00187	0.00175	0.00172
	(A1 * A2 * A3 * B1 * X)	-0.00169	-0.00191	-0.00191
	(A1 * A2 * !A3 * !B1 * !X)	0.00165	0.00166	0.00166
	(A1 * A2 * !A3 * !B1 * !X)	-0.00195	-0.00196	-0.00196
	(A1 * !A2 * A3 * !B1 * !X)	0.00163	0.00163	0.00162
	(A1 * !A2 * A3 * !B1 * !X)	-0.00195	-0.00196	-0.00196
	(A1 * !A2 * !A3 * !B1 * !X)	0.00165	0.00166	0.00166
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00195	-0.00196	-0.00196
	(!A3 * B1 * X)	0.00165	0.00168	0.00166
	(!A3 * B1 * X)	-0.00195	-0.00197	-0.00196
	(!A2 * A3 * B1 * X)	0.00163	0.00163	0.00162
	(!A2 * A3 * B1 * X)	-0.00196	-0.00196	-0.00196
	(!A1 * A2 * A3 * B1 * X)	0.00161	0.00162	0.00160
	(!A1 * A2 * A3 * B1 * X)	-0.00196	-0.00197	-0.00196
	(!A1 * A2 * A3 * !B1 * !X)	0.00161	0.00162	0.00160
	(!A1 * A2 * A3 * !B1 * !X)	-0.00195	-0.00197	-0.00195
	(!A1 * !A3 * !B1 * !X)	0.00165	0.00168	0.00166
	(!A1 * !A3 * !B1 * !X)	-0.00195	-0.00197	-0.00196
	(!A1 * !A2 * A3 * !B1 * !X)	0.00162	0.00163	0.00162
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00195	-0.00196	-0.00196

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	0.00186	0.00173	0.00171
	(A1 * A2 * A3 * B1 * X)	-0.00169	-0.00191	-0.00191
	(A1 * A2 * !A3 * !B1 * !X)	0.00164	0.00166	0.00164
	(A1 * A2 * !A3 * !B1 * !X)	-0.00195	-0.00197	-0.00196
	(A1 * !A2 * A3 * !B1 * !X)	0.00161	0.00162	0.00160
	(A1 * !A2 * A3 * !B1 * !X)	-0.00196	-0.00197	-0.00196
	(A1 * !A2 * !A3 * !B1 * !X)	0.00164	0.00166	0.00164
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00195	-0.00197	-0.00196
	(!A3 * B1 * X)	0.00162	0.00165	0.00163
	(!A3 * B1 * X)	-0.00195	-0.00197	-0.00196
	(!A2 * A3 * B1 * X)	0.00160	0.00161	0.00160
	(!A2 * A3 * B1 * X)	-0.00195	-0.00196	-0.00196
	(!A1 * A2 * A3 * B1 * X)	0.00160	0.00161	0.00159
	(!A1 * A2 * A3 * B1 * X)	-0.00196	-0.00197	-0.00196
	(!A1 * A2 * A3 * !B1 * !X)	0.00160	0.00161	0.00159
	(!A1 * A2 * A3 * !B1 * !X)	-0.00195	-0.00197	-0.00196
	(!A1 * !A3 * !B1 * !X)	0.00162	0.00164	0.00164
	(!A1 * !A3 * !B1 * !X)	-0.00195	-0.00196	-0.00196
	(!A1 * !A2 * A3 * !B1 * !X)	0.00161	0.00162	0.00160
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00196	-0.00197	-0.00196

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A3 * B1 * X)**	0.00355	0.00338	0.00333
	(A1 * A2 * A3 * B1 * X)	-0.00340	-0.00376	-0.00376
	(A1 * A2 * !A3 * !B1 * !X)	0.00316	0.00321	0.00318
	(A1 * A2 * !A3 * !B1 * !X)	-0.00383	-0.00387	-0.00385
	(A1 * !A2 * A3 * !B1 * !X)	0.00315	0.00318	0.00314
	(A1 * !A2 * A3 * !B1 * !X)	-0.00385	-0.00386	-0.00385
	(A1 * !A2 * !A3 * !B1 * !X)	0.00316	0.00321	0.00318
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00383	-0.00387	-0.00385
	(!A3 * B1 * X)	0.00316	0.00320	0.00318
	(!A3 * B1 * X)	-0.00383	-0.00386	-0.00385
	(!A2 * A3 * B1 * X)	0.00315	0.00316	0.00315
	(!A2 * A3 * B1 * X)	-0.00385	-0.00385	-0.00385
	(!A1 * A2 * A3 * B1 * X)	0.00311	0.00310	0.00312
	(!A1 * A2 * A3 * B1 * X)	-0.00384	-0.00383	-0.00385
	(!A1 * A2 * A3 * !B1 * !X)	0.00312	0.00314	0.00312
	(!A1 * A2 * A3 * !B1 * !X)	-0.00385	-0.00387	-0.00385
	(!A1 * !A3 * !B1 * !X)	0.00315	0.00321	0.00317
	(!A1 * !A3 * !B1 * !X)	-0.00383	-0.00387	-0.00385
	(!A1 * !A2 * A3 * !B1 * !X)	0.00315	0.00318	0.00314
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00385	-0.00386	-0.00385

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)**	-0.00171	-0.00172	-0.00171
	(A1 * A2 * A3 * B1 * X)	0.00190	0.00191	0.00191
	(A1 * A2 * !A3 * !B1 * !X)	-0.00161	-0.00166	-0.00166
	(A1 * A2 * !A3 * !B1 * !X)	0.00197	0.00198	0.00196
	(A1 * !A2 * A3 * !B1 * !X)	-0.00153	-0.00163	-0.00162
	(A1 * !A2 * A3 * !B1 * !X)	0.00195	0.00198	0.00196
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00161	-0.00166	-0.00166
	(A1 * !A2 * !A3 * !B1 * !X)	0.00197	0.00198	0.00196
	(!A3 * B1 * X)	-0.00160	-0.00166	-0.00166
	(!A3 * B1 * X)	0.00195	0.00197	0.00196
	(!A2 * A3 * B1 * X)	-0.00153	-0.00163	-0.00162
	(!A2 * A3 * B1 * X)	0.00196	0.00197	0.00196
	(!A1 * A2 * A3 * B1 * X)	-0.00150	-0.00162	-0.00160
	(!A1 * A2 * A3 * B1 * X)	0.00196	0.00198	0.00196
	(!A1 * A2 * A3 * !B1 * !X)	-0.00150	-0.00162	-0.00160
	(!A1 * A2 * A3 * !B1 * !X)	0.00195	0.00198	0.00196
	(!A1 * !A3 * !B1 * !X)	-0.00161	-0.00166	-0.00166
	(!A1 * !A3 * !B1 * !X)	0.00197	0.00198	0.00196
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00153	-0.00163	-0.00162
	(!A1 * !A2 * A3 * !B1 * !X)	0.00195	0.00198	0.00196

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00170	-0.00171	-0.00170
	(A1 * A2 * A3 * B1 * X)	0.00190	0.00191	0.00191
	(A1 * A2 * !A3 * !B1 * !X)	-0.00158	-0.00165	-0.00164
	(A1 * A2 * !A3 * !B1 * !X)	0.00197	0.00198	0.00196
	(A1 * !A2 * A3 * !B1 * !X)	-0.00151	-0.00162	-0.00160
	(A1 * !A2 * A3 * !B1 * !X)	0.00196	0.00198	0.00196
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00159	-0.00165	-0.00164
	(A1 * !A2 * !A3 * !B1 * !X)	0.00197	0.00198	0.00196
	(!A3 * B1 * X)	-0.00159	-0.00164	-0.00163
	(!A3 * B1 * X)	0.00195	0.00198	0.00196
	(!A2 * A3 * B1 * X)	-0.00151	-0.00161	-0.00160
	(!A2 * A3 * B1 * X)	0.00196	0.00198	0.00197
	(!A1 * A2 * A3 * B1 * X)	-0.00148	-0.00161	-0.00159
	(!A1 * A2 * A3 * B1 * X)	0.00196	0.00199	0.00197
	(!A1 * A2 * A3 * !B1 * !X)	-0.00148	-0.00161	-0.00159
	(!A1 * A2 * A3 * !B1 * !X)	0.00195	0.00198	0.00196
	(!A1 * !A3 * !B1 * !X)	-0.00159	-0.00164	-0.00164
	(!A1 * !A3 * !B1 * !X)	0.00197	0.00198	0.00196
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00151	-0.00162	-0.00160
	(!A1 * !A2 * A3 * !B1 * !X)	0.00196	0.00198	0.00196

sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * B1 * X)	-0.00332	-0.00334	-0.00332
	(A1 * A2 * A3 * B1 * X)	0.00374	0.00379	0.00376
	(A1 * A2 * !A3 * !B1 * !X)	-0.00302	-0.00321	-0.00318
	(A1 * A2 * !A3 * !B1 * !X)	0.00385	0.00389	0.00386
	(A1 * !A2 * A3 * !B1 * !X)	-0.00288	-0.00310	-0.00314
	(A1 * !A2 * A3 * !B1 * !X)	0.00387	0.00386	0.00386
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00304	-0.00321	-0.00318
	(A1 * !A2 * !A3 * !B1 * !X)	0.00385	0.00389	0.00386
	(!A3 * B1 * X)	-0.00306	-0.00318	-0.00318
	(!A3 * B1 * X)	0.00385	0.00386	0.00386
	(!A2 * A3 * B1 * X)	-0.00289	-0.00313	-0.00315
	(!A2 * A3 * B1 * X)	0.00387	0.00390	0.00386
	(!A1 * A2 * A3 * B1 * X)	-0.00284	-0.00310	-0.00312
	(!A1 * A2 * A3 * B1 * X)	0.00387	0.00391	0.00386
	(!A1 * A2 * A3 * !B1 * !X)	-0.00284	-0.00311	-0.00312
	(!A1 * A2 * A3 * !B1 * !X)	0.00387	0.00391	0.00386
	(!A1 * !A3 * !B1 * !X)	-0.00304	-0.00321	-0.00317
	(!A1 * !A3 * !B1 * !X)	0.00385	0.00389	0.00386
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00288	-0.00310	-0.00314
	(!A1 * !A2 * A3 * !B1 * !X)	0.00387	0.00386	0.00386

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)	0.00193	0.00197	0.00194
	(A1 * A2 * A3 * A4 * X)	-0.00093	-0.00094	-0.00093
sky130_fd_sc_hs__a41o_2	(A1 * A2 * A3 * A4 * X)	0.00195	0.00199	0.00196
	(A1 * A2 * A3 * A4 * X)	-0.00095	-0.00096	-0.00094
sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * A4 * X)	0.00366	0.00374	0.00368
	(A1 * A2 * A3 * A4 * X)	-0.00193	-0.00197	-0.00193

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)	-0.00174	-0.00177	-0.00191
	(A1 * A2 * A3 * A4 * X)	0.00107	0.00108	0.00096
sky130_fd_sc_hs__a41o_2	(A1 * A2 * A3 * A4 * X)	-0.00177	-0.00179	-0.00193
	(A1 * A2 * A3 * A4 * X)	0.00109	0.00109	0.00097
sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * A4 * X)	-0.00328	-0.00333	-0.00363
	(A1 * A2 * A3 * A4 * X)	0.00224	0.00226	0.00200

SKY130_FD_SC_HS__AND2Bx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00257	0.00244	1.21265
sky130_fd_sc_hs__and2b_2	0.00232	0.00282	2.04661
sky130_fd_sc_hs__and2b_4	0.00259	0.00510	4.37649

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2b_1	0.00000	0.51010	0.89894
sky130_fd_sc_hs__and2b_2	0.00000	0.44489	0.60483
sky130_fd_sc_hs__and2b_4	0.00000	0.79478	1.81448

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)	0.10996	0.71431	8.14118
	B->X (RR)	0.06375	0.51627	6.12276
sky130_fd_sc_hs__and2b_2	A_N->X (FR)	0.12017	0.65187	8.06648
	B->X (RR)	0.06741	0.44923	5.87708
sky130_fd_sc_hs__and2b_4	A_N->X (FR)	0.12051	0.58217	8.18029
	B->X (RR)	0.06859	0.37238	6.09148

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)	0.09209	0.31773	2.26421
	B->X (FF)	0.07228	0.47630	4.57414
sky130_fd_sc_hs__and2b_2	A_N->X (RF)	0.10414	0.28660	1.88446
	B->X (FF)	0.08334	0.46924	4.31447
sky130_fd_sc_hs__and2b_4	A_N->X (RF)	0.10250	0.26421	2.10956
	B->X (FF)	0.08460	0.44698	4.64096

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	0.00670	0.00935	0.05703
	A_N	0.01060	0.01327	0.06106
	B	0.00848	0.00954	0.04619
	B	0.00454	0.00561	0.04267
sky130_fd_sc_hs__and2b_2	A_N	0.01036	0.01316	0.05890
	A_N	0.01389	0.01670	0.06277
	B	0.01186	0.01282	0.03910
	B	0.00724	0.00821	0.03452
sky130_fd_sc_hs__and2b_4	A_N	0.01940	0.02306	0.07561
	A_N	0.02316	0.02681	0.07975
	B	0.02251	0.02528	0.10367
	B	0.01440	0.01718	0.09734

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	A_N	0.01169	0.01336	0.06055
	A_N	0.00778	0.00941	0.05631
	B	0.00380	0.00646	0.04640
	B	0.00771	0.01031	0.04948
sky130_fd_sc_hs__and2b_2	A_N	0.01436	0.01624	0.05834
	A_N	0.01083	0.01267	0.05469
	B	0.00627	0.00859	0.04737
	B	0.01088	0.01317	0.05096
sky130_fd_sc_hs__and2b_4	A_N	0.02246	0.02546	0.07812
	A_N	0.01871	0.02169	0.07430
	B	0.01255	0.01811	0.10443
	B	0.02062	0.02604	0.11063

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	0.00664	0.00832	0.05301
	(!B * !X)	0.00228	0.00394	0.04864
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00640	0.00816	0.05210
	(!B * !X)	0.00234	0.00407	0.04803
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.00802	0.01004	0.05792
	(!B * !X)	0.00338	0.00537	0.05329

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	-0.00003	0.00253	0.04732
	(!B * !X)	0.00434	0.00690	0.05169
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00025	0.00275	0.04680
	(!B * !X)	0.00432	0.00683	0.05087
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.00055	0.00293	0.05070
	(!B * !X)	0.00520	0.00759	0.05536

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	0.00149	0.00150	0.00149
	(A_N * !X)	-0.00184	-0.00185	-0.00184
sky130_fd_sc_hs__and2b_2	(A_N * !X)	0.00181	0.00183	0.00182
	(A_N * !X)	-0.00208	-0.00209	-0.00208
sky130_fd_sc_hs__and2b_4	(A_N * !X)	0.00318	0.00323	0.00319
	(A_N * !X)	-0.00371	-0.00374	-0.00372

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	-0.00139	-0.00149	-0.00148
	(A_N * !X)	0.00191	0.00189	0.00186
sky130_fd_sc_hs__and2b_2	(A_N * !X)	-0.00173	-0.00182	-0.00181
	(A_N * !X)	0.00217	0.00213	0.00210
sky130_fd_sc_hs__and2b_4	(A_N * !X)	-0.00303	-0.00319	-0.00318
	(A_N * !X)	0.00383	0.00377	0.00374

SKY130_FD_SC_HS__AND2x

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00249	0.00244	1.18044
sky130_fd_sc_hs__and2_2	0.00271	0.00298	2.23810
sky130_fd_sc_hs__and2_4	0.00442	0.00490	4.42967

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2_1	0.00000	0.28617	0.89470
sky130_fd_sc_hs__and2_2	0.00000	0.22096	0.40809
sky130_fd_sc_hs__and2_4	0.00000	0.69137	1.80427

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)	0.05905	0.52259	6.26680
	B->X (RR)	0.06369	0.52292	6.10890
sky130_fd_sc_hs__and2_2	A->X (RR)	0.06128	0.44485	6.08808
	B->X (RR)	0.06615	0.44113	5.94665
sky130_fd_sc_hs__and2_4	A->X (RR)	0.06059	0.37217	6.21875
	B->X (RR)	0.06752	0.37480	6.14255

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and2_1	A->X (FF)	0.06506	0.45282	4.43719
	B->X (FF)	0.07444	0.47864	4.52116
sky130_fd_sc_hs__and2_2	A->X (FF)	0.07096	0.44826	4.43725
	B->X (FF)	0.08126	0.47231	4.55062
sky130_fd_sc_hs__and2_4	A->X (FF)	0.07717	0.42597	4.57455
	B->X (FF)	0.08578	0.44532	4.61451

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.00784	0.00970	0.05607
	A	0.00357	0.00590	0.05214
	B	0.00862	0.00952	0.04298
	B	0.00359	0.00496	0.03836
sky130_fd_sc_hs__and2_2	A	0.01079	0.01255	0.05697
	A	0.00612	0.00790	0.05323
	B	0.01218	0.01308	0.04467
	B	0.00623	0.00714	0.03967
sky130_fd_sc_hs__and2_4	A	0.01997	0.02448	0.11698
	A	0.01260	0.01722	0.11121
	B	0.02259	0.02551	0.10501
	B	0.01253	0.01549	0.09662

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.00296	0.00583	0.04568
	A	0.00724	0.01008	0.04941
	B	0.00375	0.00623	0.04424
	B	0.00872	0.01117	0.04882
sky130_fd_sc_hs__and2_2	A	0.00603	0.00902	0.04848
	A	0.01068	0.01367	0.05244
	B	0.00640	0.00886	0.04668
	B	0.01228	0.01474	0.05236
sky130_fd_sc_hs__and2_4	A	0.01164	0.01785	0.10687
	A	0.01900	0.02512	0.11230
	B	0.01226	0.01776	0.10454
	B	0.02222	0.02768	0.11410

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	0.00082	0.00082	0.00080
	(!B * !X)	-0.00193	-0.00194	-0.00197
sky130_fd_sc_hs__and2_2	(!B * !X)	0.00059	0.00058	0.00057
	(!B * !X)	-0.00228	-0.00227	-0.00231
sky130_fd_sc_hs__and2_4	(!B * !X)	0.00088	0.00088	0.00084
	(!B * !X)	-0.00376	-0.00377	-0.00384

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	-0.00079	-0.00080	-0.00079
	(!B * !X)	0.00196	0.00201	0.00198
sky130_fd_sc_hs__and2_2	(!B * !X)	-0.00056	-0.00057	-0.00056
	(!B * !X)	0.00231	0.00235	0.00231
sky130_fd_sc_hs__and2_4	(!B * !X)	-0.00083	-0.00083	-0.00081
	(!B * !X)	0.00386	0.00391	0.00385

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	0.00131	0.00132	0.00132
	(!A * !X)	-0.00185	-0.00186	-0.00186
sky130_fd_sc_hs__and2_2	(!A * !X)	0.00153	0.00154	0.00153
	(!A * !X)	-0.00224	-0.00225	-0.00224
sky130_fd_sc_hs__and2_4	(!A * !X)	0.00308	0.00311	0.00309
	(!A * !X)	-0.00345	-0.00347	-0.00345

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	-0.00124	-0.00132	-0.00132
	(!A * !X)	0.00193	0.00188	0.00186
sky130_fd_sc_hs__and2_2	(!A * !X)	-0.00142	-0.00153	-0.00153
	(!A * !X)	0.00231	0.00228	0.00225
sky130_fd_sc_hs__and2_4	(!A * !X)	-0.00291	-0.00311	-0.00309
	(!A * !X)	0.00360	0.00350	0.00347

SKY130_FD_SC_HS__AND3Bx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00227	0.00239	0.00238	1.17178
sky130_fd_sc_hs__and3b_2	0.00234	0.00286	0.00274	2.01229
sky130_fd_sc_hs__and3b_4	0.00262	0.00490	0.00503	4.38726

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__and3b_1	0.00000	0.46221	1.34257
sky130_fd_sc_hs__and3b_2	0.00000	0.43692	0.60894
sky130_fd_sc_hs__and3b_4	0.00000	0.53110	1.21963

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)	0.12220	0.73259	8.15582
	B->X (RR)	0.08196	0.56407	6.34705
	C->X (RR)	0.08616	0.55371	6.17639
sky130_fd_sc_hs__and3b_2	A_N->X (FR)	0.13509	0.66495	7.95626
	B->X (RR)	0.08786	0.49516	6.09964
	C->X (RR)	0.09232	0.48081	5.86140
sky130_fd_sc_hs__and3b_4	A_N->X (FR)	0.14966	0.62793	8.29359
	B->X (RR)	0.10235	0.44864	6.50057
	C->X (RR)	0.10622	0.41895	6.28238

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)	0.09729	0.31146	2.09280
	B->X (FF)	0.08215	0.48970	4.44269
	C->X (FF)	0.08690	0.50399	4.51327
sky130_fd_sc_hs__and3b_2	A_N->X (RF)	0.10348	0.27985	1.75374
	B->X (FF)	0.08569	0.47056	4.15672
	C->X (FF)	0.09661	0.49691	4.27817
sky130_fd_sc_hs__and3b_4	A_N->X (RF)	0.10069	0.26241	2.08042
	B->X (FF)	0.08157	0.43978	4.46152
	C->X (FF)	0.08687	0.45666	4.59657

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	0.00821	0.01091	0.05857
	A_N	0.01145	0.01414	0.06191
	B	0.00950	0.01060	0.05189
	B	0.00550	0.00659	0.04812
	C	0.01051	0.01118	0.04390
	C	0.00562	0.00630	0.03940
sky130_fd_sc_hs__and3b_2	A_N	0.01175	0.01452	0.06083
	A_N	0.01514	0.01793	0.06467
	B	0.01338	0.01425	0.05382
	B	0.00867	0.00959	0.05000
	C	0.01452	0.01505	0.03987
	C	0.00887	0.00942	0.03448
sky130_fd_sc_hs__and3b_4	A_N	0.02152	0.02473	0.07648
	A_N	0.02485	0.02806	0.07990
	B	0.02471	0.02630	0.10084
	B	0.01639	0.01804	0.09320
	C	0.02692	0.02842	0.10151
	C	0.01644	0.01803	0.09243

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	A_N	0.01094	0.01296	0.06041
	A_N	0.00770	0.00969	0.05698
	B	0.00396	0.00642	0.04634
	B	0.00795	0.01040	0.05024
	C	0.00431	0.00661	0.04643
	C	0.00910	0.01130	0.05089
sky130_fd_sc_hs__and3b_2	A_N	0.01408	0.01619	0.06228
	A_N	0.01067	0.01274	0.05883
	B	0.00643	0.00938	0.04826
	B	0.01109	0.01382	0.05240
	C	0.00690	0.00907	0.04594
	C	0.01244	0.01434	0.05100
sky130_fd_sc_hs__and3b_4	A_N	0.02356	0.02645	0.07985
	A_N	0.02022	0.02303	0.07459
	B	0.01370	0.01850	0.09447
	B	0.02201	0.02660	0.10141
	C	0.01437	0.01914	0.10006
	C	0.02466	0.02919	0.10887

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)	0.00570	0.00769	0.05268
	(B * !C * !X)	0.00180	0.00378	0.04877
	(!B * !X)	0.00569	0.00768	0.05267
	(!B * !X)	0.00180	0.00378	0.04877
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00620	0.00799	0.05212
	(B * !C * !X)	0.00215	0.00392	0.04806
	(!B * !X)	0.00619	0.00798	0.05210
	(!B * !X)	0.00215	0.00393	0.04805
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.00856	0.01053	0.05832
	(B * !C * !X)	0.00407	0.00600	0.05381
	(!B * !X)	0.00852	0.01048	0.05827
	(!B * !X)	0.00406	0.00600	0.05381

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)	0.00001	0.00268	0.04773
	(B * !C * !X)	0.00399	0.00667	0.05169
	(!B * !X)	0.00000	0.00267	0.04774
	(!B * !X)	0.00390	0.00659	0.05164
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00015	0.00267	0.04684
	(B * !C * !X)	0.00429	0.00683	0.05097
	(!B * !X)	0.00014	0.00266	0.04685
	(!B * !X)	0.00419	0.00673	0.05091
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.00041	0.00276	0.05033
	(B * !C * !X)	0.00508	0.00744	0.05497
	(!B * !X)	0.00044	0.00279	0.05039
	(!B * !X)	0.00492	0.00728	0.05487

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)	0.00150	0.00151	0.00150
	(A_N * C * !X)	-0.00171	-0.00171	-0.00170
	(A_N * !C * !X)	0.00092	0.00092	0.00092
	(A_N * !C * !X)	-0.00172	-0.00172	-0.00171
	(!A_N * !C * !X)	0.00056	0.00057	0.00056
	(!A_N * !C * !X)	-0.00194	-0.00196	-0.00195
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	0.00183	0.00186	0.00185
	(A_N * C * !X)	-0.00201	-0.00203	-0.00202
	(A_N * !C * !X)	0.00116	0.00116	0.00116
	(A_N * !C * !X)	-0.00202	-0.00203	-0.00203
	(!A_N * !C * !X)	0.00075	0.00076	0.00075
	(!A_N * !C * !X)	-0.00229	-0.00231	-0.00230
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	0.00292	0.00293	0.00292
	(A_N * C * !X)	-0.00388	-0.00388	-0.00387
	(A_N * !C * !X)	0.00173	0.00174	0.00174
	(A_N * !C * !X)	-0.00391	-0.00392	-0.00391
	(!A_N * !C * !X)	0.00122	0.00121	0.00123
	(!A_N * !C * !X)	-0.00414	-0.00414	-0.00415

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)	-0.00137	-0.00148	-0.00149
	(A_N * C * !X)	0.00181	0.00172	0.00172
	(A_N * !C * !X)	-0.00092	-0.00092	-0.00092
	(A_N * !C * !X)	0.00181	0.00183	0.00175
	(!A_N * !C * !X)	-0.00053	-0.00054	-0.00054
	(!A_N * !C * !X)	0.00198	0.00200	0.00197
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	-0.00171	-0.00183	-0.00184
	(A_N * C * !X)	0.00213	0.00205	0.00204
	(A_N * !C * !X)	-0.00116	-0.00116	-0.00116
	(A_N * !C * !X)	0.00214	0.00216	0.00206
	(!A_N * !C * !X)	-0.00071	-0.00072	-0.00072
	(!A_N * !C * !X)	0.00233	0.00236	0.00232
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	-0.00263	-0.00292	-0.00292
	(A_N * C * !X)	0.00411	0.00392	0.00389
	(A_N * !C * !X)	-0.00173	-0.00174	-0.00174
	(A_N * !C * !X)	0.00409	0.00415	0.00398
	(!A_N * !C * !X)	-0.00113	-0.00115	-0.00118
	(!A_N * !C * !X)	0.00422	0.00428	0.00419

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)	0.00130	0.00132	0.00131
	(A_N * B * !X)	-0.00177	-0.00178	-0.00178
	(A_N * !B * !X)	0.00132	0.00135	0.00133
	(A_N * !B * !X)	-0.00177	-0.00179	-0.00178
	(!A_N * !B * !X)	0.00132	0.00133	0.00133
	(!A_N * !B * !X)	-0.00178	-0.00178	-0.00178
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	0.00164	0.00165	0.00164
	(A_N * B * !X)	-0.00202	-0.00203	-0.00202
	(A_N * !B * !X)	0.00165	0.00167	0.00166
	(A_N * !B * !X)	-0.00201	-0.00203	-0.00202
	(!A_N * !B * !X)	0.00165	0.00167	0.00166
	(!A_N * !B * !X)	-0.00202	-0.00203	-0.00202
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	0.00280	0.00281	0.00279
	(A_N * B * !X)	-0.00401	-0.00402	-0.00401
	(A_N * !B * !X)	0.00276	0.00280	0.00277
	(A_N * !B * !X)	-0.00400	-0.00403	-0.00401
	(!A_N * !B * !X)	0.00276	0.00279	0.00277
	(!A_N * !B * !X)	-0.00400	-0.00403	-0.00401

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)	-0.00123	-0.00132	-0.00131
	(A_N * B * !X)	0.00179	0.00181	0.00179
	(A_N * !B * !X)	-0.00129	-0.00133	-0.00133
	(A_N * !B * !X)	0.00180	0.00180	0.00179
	(!A_N * !B * !X)	-0.00128	-0.00133	-0.00133
	(!A_N * !B * !X)	0.00181	0.00180	0.00179
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	-0.00154	-0.00165	-0.00164
	(A_N * B * !X)	0.00203	0.00206	0.00204
	(A_N * !B * !X)	-0.00160	-0.00165	-0.00166
	(A_N * !B * !X)	0.00204	0.00205	0.00204
	(!A_N * !B * !X)	-0.00159	-0.00166	-0.00166
	(!A_N * !B * !X)	0.00205	0.00205	0.00203
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	-0.00262	-0.00278	-0.00279
	(A_N * B * !X)	0.00404	0.00407	0.00403
	(A_N * !B * !X)	-0.00268	-0.00280	-0.00277
	(A_N * !B * !X)	0.00401	0.00406	0.00403
	(!A_N * !B * !X)	-0.00265	-0.00279	-0.00277
	(!A_N * !B * !X)	0.00405	0.00406	0.00402

SKY130_FD_SC_HS__AND3x

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00257	0.00237	0.00233	1.21314
sky130_fd_sc_hs__and3_2	0.00254	0.00233	0.00236	2.31936
sky130_fd_sc_hs__and3_4	0.00463	0.00450	0.00465	4.37405

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and3_1	0.00000	0.23828	1.33833
sky130_fd_sc_hs__and3_2	0.00000	0.30648	1.34576
sky130_fd_sc_hs__and3_4	0.00000	0.61295	2.69152

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)	0.07204	0.54569	6.31650
	B->X (RR)	0.07819	0.55040	6.27169
	C->X (RR)	0.08176	0.54108	6.15619
sky130_fd_sc_hs__and3_2	A->X (RR)	0.08136	0.49204	6.38812
	B->X (RR)	0.08743	0.49321	6.34479
	C->X (RR)	0.09097	0.47794	6.16338
sky130_fd_sc_hs__and3_4	A->X (RR)	0.08861	0.44144	6.52041
	B->X (RR)	0.09781	0.44766	6.48494
	C->X (RR)	0.10194	0.41757	6.25506

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and3_1	A->X (FF)	0.07154	0.46531	4.44741
	B->X (FF)	0.08131	0.49091	4.52503
	C->X (FF)	0.08336	0.50137	4.58261
sky130_fd_sc_hs__and3_2	A->X (FF)	0.08632	0.47275	4.46327
	B->X (FF)	0.09542	0.49514	4.54177
	C->X (FF)	0.09964	0.50723	4.60494
sky130_fd_sc_hs__and3_4	A->X (FF)	0.08012	0.42825	4.39859
	B->X (FF)	0.08985	0.45241	4.47151
	C->X (FF)	0.09658	0.47177	4.61810

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.00878	0.01032	0.05418
	A	0.00429	0.00584	0.04997
	B	0.00933	0.01037	0.05164
	B	0.00432	0.00537	0.04700
	C	0.01031	0.01108	0.04897
	C	0.00427	0.00503	0.04336
sky130_fd_sc_hs__and3_2	A	0.01171	0.01327	0.05632
	A	0.00724	0.00882	0.05237
	B	0.01222	0.01324	0.05360
	B	0.00725	0.00830	0.04918
	C	0.01329	0.01407	0.04631
	C	0.00726	0.00817	0.04115
sky130_fd_sc_hs__and3_4	A	0.02208	0.02529	0.10885
	A	0.01383	0.01707	0.10125
	B	0.02411	0.02598	0.10487
	B	0.01392	0.01587	0.09542
	C	0.02637	0.02816	0.10357
	C	0.01390	0.01590	0.09260

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.00282	0.00543	0.04524
	A	0.00732	0.00984	0.04942
	B	0.00388	0.00630	0.04607
	B	0.00884	0.01125	0.05053
	C	0.00425	0.00661	0.04795
	C	0.01017	0.01252	0.05315
sky130_fd_sc_hs__and3_2	A	0.00561	0.00830	0.04801
	A	0.01010	0.01270	0.05248
	B	0.00673	0.00935	0.05038
	B	0.01164	0.01410	0.05380
	C	0.00700	0.00944	0.04926
	C	0.01290	0.01508	0.05442
sky130_fd_sc_hs__and3_4	A	0.01201	0.01720	0.10037
	A	0.02028	0.02533	0.10589
	B	0.01387	0.01873	0.09975
	B	0.02398	0.02879	0.10845
	C	0.01465	0.01918	0.10416
	C	0.02683	0.03132	0.11479

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	0.00088	0.00088	0.00085
	(B * !C * !X)	-0.00188	-0.00190	-0.00196
	(!B * !X)	0.00088	0.00089	0.00087
	(!B * !X)	-0.00192	-0.00194	-0.00196
sky130_fd_sc_hs__and3_2	(B * !C * !X)	0.00089	0.00090	0.00086
	(B * !C * !X)	-0.00186	-0.00187	-0.00193
	(!B * !X)	0.00090	0.00091	0.00089
	(!B * !X)	-0.00189	-0.00191	-0.00193
sky130_fd_sc_hs__and3_4	(B * !C * !X)	0.00101	0.00102	0.00093
	(B * !C * !X)	-0.00381	-0.00385	-0.00401
	(!B * !X)	0.00104	0.00105	0.00099
	(!B * !X)	-0.00392	-0.00394	-0.00403

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	-0.00085	-0.00086	-0.00084
	(B * !C * !X)	0.00196	0.00200	0.00197
	(!B * !X)	-0.00086	-0.00087	-0.00086
	(!B * !X)	0.00196	0.00200	0.00197
sky130_fd_sc_hs__and3_2	(B * !C * !X)	-0.00086	-0.00088	-0.00086
	(B * !C * !X)	0.00193	0.00196	0.00194
	(!B * !X)	-0.00087	-0.00089	-0.00087
	(!B * !X)	0.00193	0.00197	0.00194
sky130_fd_sc_hs__and3_4	(B * !C * !X)	-0.00092	-0.00095	-0.00093
	(B * !C * !X)	0.00401	0.00411	0.00404
	(!B * !X)	-0.00098	-0.00098	-0.00096
	(!B * !X)	0.00406	0.00411	0.00404

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	0.00054	0.00055	0.00055
	(A * !C * !X)	-0.00170	-0.00171	-0.00170
	(!A * C * !X)	0.00128	0.00129	0.00128
	(!A * C * !X)	-0.00170	-0.00171	-0.00170
	(!A * !C * !X)	0.00066	0.00067	0.00066
	(!A * !C * !X)	-0.00171	-0.00172	-0.00171
sky130_fd_sc_hs__and3_2	(A * !C * !X)	0.00053	0.00053	0.00053
	(A * !C * !X)	-0.00167	-0.00168	-0.00166
	(!A * C * !X)	0.00128	0.00128	0.00128
	(!A * C * !X)	-0.00167	-0.00167	-0.00167
	(!A * !C * !X)	0.00064	0.00063	0.00063
	(!A * !C * !X)	-0.00168	-0.00168	-0.00168
sky130_fd_sc_hs__and3_4	(A * !C * !X)	0.00126	0.00128	0.00128
	(A * !C * !X)	-0.00330	-0.00334	-0.00331
	(!A * C * !X)	0.00279	0.00284	0.00281
	(!A * C * !X)	-0.00330	-0.00334	-0.00332
	(!A * !C * !X)	0.00152	0.00152	0.00152
	(!A * !C * !X)	-0.00334	-0.00334	-0.00334

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	-0.00051	-0.00052	-0.00053
	(A * !C * !X)	0.00174	0.00176	0.00171
	(!A * C * !X)	-0.00117	-0.00128	-0.00128
	(!A * C * !X)	0.00181	0.00173	0.00171
	(!A * !C * !X)	-0.00066	-0.00067	-0.00066
	(!A * !C * !X)	0.00179	0.00181	0.00173
sky130_fd_sc_hs__and3_2	(A * !C * !X)	-0.00051	-0.00050	-0.00051
	(A * !C * !X)	0.00173	0.00173	0.00168
	(!A * C * !X)	-0.00115	-0.00128	-0.00128
	(!A * C * !X)	0.00176	0.00170	0.00168
	(!A * !C * !X)	-0.00064	-0.00063	-0.00063
	(!A * !C * !X)	0.00177	0.00178	0.00170
sky130_fd_sc_hs__and3_4	(A * !C * !X)	-0.00119	-0.00121	-0.00123
	(A * !C * !X)	0.00343	0.00346	0.00336
	(!A * C * !X)	-0.00250	-0.00281	-0.00281
	(!A * C * !X)	0.00356	0.00336	0.00333
	(!A * !C * !X)	-0.00152	-0.00152	-0.00152
	(!A * !C * !X)	0.00352	0.00357	0.00340

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	0.00132	0.00132	0.00132
	(A * !B * !X)	-0.00175	-0.00175	-0.00175
	(!A * B * !X)	0.00129	0.00130	0.00129
	(!A * B * !X)	-0.00175	-0.00176	-0.00175
	(!A * !B * !X)	0.00132	0.00133	0.00132
	(!A * !B * !X)	-0.00175	-0.00176	-0.00175
sky130_fd_sc_hs__and3_2	(A * !B * !X)	0.00130	0.00131	0.00130
	(A * !B * !X)	-0.00176	-0.00177	-0.00176
	(!A * B * !X)	0.00130	0.00131	0.00130
	(!A * B * !X)	-0.00177	-0.00177	-0.00176
	(!A * !B * !X)	0.00130	0.00130	0.00130
	(!A * !B * !X)	-0.00176	-0.00177	-0.00176
sky130_fd_sc_hs__and3_4	(A * !B * !X)	0.00276	0.00278	0.00277
	(A * !B * !X)	-0.00348	-0.00350	-0.00349
	(!A * B * !X)	0.00275	0.00274	0.00274
	(!A * B * !X)	-0.00350	-0.00349	-0.00349
	(!A * !B * !X)	0.00276	0.00280	0.00277
	(!A * !B * !X)	-0.00348	-0.00351	-0.00349

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	-0.00127	-0.00132	-0.00132
	(A * !B * !X)	0.00176	0.00177	0.00176
	(!A * B * !X)	-0.00121	-0.00130	-0.00129
	(!A * B * !X)	0.00175	0.00178	0.00176
	(!A * !B * !X)	-0.00128	-0.00132	-0.00132
	(!A * !B * !X)	0.00176	0.00177	0.00176
sky130_fd_sc_hs__and3_2	(A * !B * !X)	-0.00125	-0.00131	-0.00130
	(A * !B * !X)	0.00177	0.00178	0.00177
	(!A * B * !X)	-0.00119	-0.00130	-0.00130
	(!A * B * !X)	0.00177	0.00179	0.00177
	(!A * !B * !X)	-0.00126	-0.00130	-0.00130
	(!A * !B * !X)	0.00177	0.00178	0.00177
sky130_fd_sc_hs__and3_4	(A * !B * !X)	-0.00264	-0.00277	-0.00277
	(A * !B * !X)	0.00350	0.00353	0.00351
	(!A * B * !X)	-0.00254	-0.00274	-0.00274
	(!A * B * !X)	0.00351	0.00355	0.00351
	(!A * !B * !X)	-0.00265	-0.00277	-0.00277
	(!A * !B * !X)	0.00349	0.00353	0.00351

SKY130_FD_SC_HS__AND4BBx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00232	0.00234	0.00247	0.00241	1.06178
sky130_fd_sc_hs__and4bb_2	0.00235	0.00223	0.00271	0.00276	2.22359
sky130_fd_sc_hs__and4bb_4	0.00253	0.00269	0.00502	0.00487	4.27235

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4bb_1	0.00000	0.63398	1.79043
sky130_fd_sc_hs__and4bb_2	0.00000	0.64421	1.04196
sky130_fd_sc_hs__and4bb_4	0.00000	0.60062	1.62308

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)	0.14651	0.77912	8.15802
	B_N->X (FR)	0.15212	0.78153	8.09617
	C->X (RR)	0.11052	0.61220	6.38404
	D->X (RR)	0.11390	0.60181	6.28720
sky130_fd_sc_hs__and4bb_2	A_N->X (FR)	0.14291	0.66781	8.04472
	B_N->X (FR)	0.15750	0.68606	8.06860
	C->X (RR)	0.11277	0.51872	6.29175
	D->X (RR)	0.11753	0.50471	6.09932
sky130_fd_sc_hs__and4bb_4	A_N->X (FR)	0.17861	0.67291	8.27762
	B_N->X (FR)	0.19830	0.69717	8.31281
	C->X (RR)	0.14055	0.48445	6.51146
	D->X (RR)	0.14473	0.46276	6.30469

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)	0.10344	0.31807	1.99339
	B_N->X (RF)	0.10802	0.32517	1.97428
	C->X (FF)	0.09185	0.50773	4.36063
	D->X (FF)	0.09896	0.52595	4.45373
sky130_fd_sc_hs__and4bb_2	A_N->X (RF)	0.10511	0.29625	2.17855
	B_N->X (RF)	0.11628	0.31749	2.25668
	C->X (FF)	0.09602	0.51092	4.59467
	D->X (FF)	0.10292	0.52738	4.69966
sky130_fd_sc_hs__and4bb_4	A_N->X (RF)	0.11376	0.28059	2.06320
	B_N->X (RF)	0.11693	0.28969	2.08723
	C->X (FF)	0.08827	0.45784	4.44185
	D->X (FF)	0.09395	0.47568	4.57304

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	0.00882	0.01147	0.05662
	A_N	0.01213	0.01482	0.06003
	B_N	0.00959	0.01243	0.05859
	B_N	0.01334	0.01620	0.06247
	C	0.01087	0.01180	0.05272
	C	0.00690	0.00782	0.04899
	D	0.01178	0.01267	0.05480
	D	0.00703	0.00792	0.05038
sky130_fd_sc_hs__and4bb_2	A_N	0.01198	0.01466	0.06128
	A_N	0.01514	0.01783	0.06482
	B_N	0.01370	0.01599	0.05941
	B_N	0.01699	0.01929	0.06304
	C	0.01484	0.01515	0.05255
	C	0.01023	0.01056	0.04867
	D	0.01607	0.01615	0.04512
	D	0.01040	0.01051	0.04036
sky130_fd_sc_hs__and4bb_4	A_N	0.02462	0.02730	0.07755
	A_N	0.02746	0.03017	0.08059
	B_N	0.02700	0.02954	0.07889
	B_N	0.03037	0.03289	0.08228
	C	0.02938	0.03009	0.10226
	C	0.02080	0.02152	0.09438
	D	0.03130	0.03182	0.09986
	D	0.02088	0.02141	0.09080

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4bb_1	A_N	0.01177	0.01330	0.05611
	A_N	0.00844	0.00996	0.05270
	B_N	0.01208	0.01411	0.06116
	B_N	0.00834	0.01033	0.05723
	C	0.00508	0.00742	0.05035
	C	0.00904	0.01135	0.05384
	D	0.00553	0.00796	0.05199
	D	0.01019	0.01252	0.05639
sky130_fd_sc_hs__and4bb_2	A_N	0.01399	0.01593	0.06250
	A_N	0.01082	0.01277	0.05913
	B_N	0.01475	0.01665	0.05906
	B_N	0.01146	0.01335	0.05555
	C	0.00741	0.00961	0.04768
	C	0.01197	0.01418	0.05125
	D	0.00780	0.00976	0.04709
	D	0.01336	0.01522	0.05192
sky130_fd_sc_hs__and4bb_4	A_N	0.02367	0.02638	0.07831
	A_N	0.02084	0.02348	0.07473
	B_N	0.02554	0.02837	0.08070
	B_N	0.02216	0.02493	0.07666
	C	0.01419	0.01872	0.09428
	C	0.02276	0.02702	0.10094
	D	0.01548	0.01936	0.09664
	D	0.02570	0.02950	0.10634

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)	0.00572	0.00754	0.05167
	(B_N * !X)	0.00197	0.00379	0.04792
	(!B_N * C * !D * !X)	0.00597	0.00779	0.05193
	(!B_N * C * !D * !X)	0.00221	0.00403	0.04816
	(!B_N * !C * !X)	0.00597	0.00779	0.05192
	(!B_N * !C * !X)	0.00221	0.00404	0.04817
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00582	0.00767	0.05257
	(B_N * !X)	0.00204	0.00386	0.04877
	(!B_N * C * !D * !X)	0.00605	0.00791	0.05280
	(!B_N * C * !D * !X)	0.00225	0.00408	0.04900
	(!B_N * !C * !X)	0.00605	0.00790	0.05280
	(!B_N * !C * !X)	0.00226	0.00408	0.04900
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.00812	0.00982	0.05708
	(B_N * !X)	0.00419	0.00589	0.05315
	(!B_N * C * !D * !X)	0.00861	0.01029	0.05754
	(!B_N * C * !D * !X)	0.00463	0.00633	0.05359
	(!B_N * !C * !X)	0.00860	0.01028	0.05754
	(!B_N * !C * !X)	0.00464	0.00634	0.05360

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)	0.00042	0.00297	0.04717
	(B_N * !X)	0.00416	0.00675	0.05092
	(!B_N * C * !D * !X)	0.00019	0.00275	0.04692
	(!B_N * C * !D * !X)	0.00403	0.00662	0.05075
	(!B_N * !C * !X)	0.00018	0.00273	0.04691
	(!B_N * !C * !X)	0.00395	0.00653	0.05068
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00029	0.00291	0.04788
	(B_N * !X)	0.00408	0.00671	0.05168
	(!B_N * C * !D * !X)	0.00009	0.00270	0.04764
	(!B_N * C * !D * !X)	0.00399	0.00662	0.05154
	(!B_N * !C * !X)	0.00007	0.00268	0.04763
	(!B_N * !C * !X)	0.00389	0.00652	0.05146
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.00133	0.00354	0.05040
	(B_N * !X)	0.00525	0.00749	0.05434
	(!B_N * C * !D * !X)	0.00090	0.00311	0.04994
	(!B_N * C * !D * !X)	0.00504	0.00728	0.05406
	(!B_N * !C * !X)	0.00086	0.00307	0.04992
	(!B_N * !C * !X)	0.00484	0.00708	0.05391

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)	0.00577	0.00747	0.05194
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00159	0.00331	0.04776
	(!C * !X)	0.00585	0.00767	0.05228
	(!C * !X)	0.00158	0.00338	0.04800
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00584	0.00752	0.05173
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00192	0.00359	0.04782
	(!C * !X)	0.00593	0.00773	0.05215
	(!C * !X)	0.00190	0.00369	0.04811
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00814	0.00944	0.05651
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00369	0.00496	0.05206
	(!C * !X)	0.00830	0.00989	0.05728
	(!C * !X)	0.00365	0.00523	0.05262

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)	0.00113	0.00370	0.04842
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00529	0.00788	0.05260
	(!C * !X)	0.00056	0.00315	0.04798
	(!C * !X)	0.00480	0.00740	0.05223
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00163	0.00412	0.04876
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00553	0.00803	0.05267
	(!C * !X)	0.00095	0.00348	0.04820
	(!C * !X)	0.00494	0.00750	0.05221
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00335	0.00558	0.05256
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00780	0.01004	0.05702
	(!C * !X)	0.00212	0.00434	0.05157
	(!C * !X)	0.00673	0.00898	0.05618

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)**	0.00167	0.00169	0.00168
	(A_N * B_N * D * !X)	-0.00165	-0.00166	-0.00166
	(A_N * B_N * !D * !X)	0.00117	0.00118	0.00117
	(A_N * B_N * !D * !X)	-0.00166	-0.00167	-0.00166
	(A_N * !B_N * D * !X)	0.00130	0.00131	0.00130
	(A_N * !B_N * D * !X)	-0.00204	-0.00205	-0.00204
	(A_N * !B_N * !D * !X)	0.00073	0.00074	0.00074
	(A_N * !B_N * !D * !X)	-0.00220	-0.00222	-0.00221
	(!A_N * B_N * D * !X)	0.00167	0.00170	0.00168
	(!A_N * B_N * D * !X)	-0.00166	-0.00167	-0.00166
	(!A_N * B_N * !D * !X)	0.00113	0.00114	0.00113
	(!A_N * B_N * !D * !X)	-0.00166	-0.00167	-0.00166
	(!A_N * !B_N * !D * !X)	0.00060	0.00061	0.00061
	(!A_N * !B_N * !D * !X)	-0.00205	-0.00206	-0.00205
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	0.00178	0.00180	0.00179
	(A_N * B_N * D * !X)	-0.00195	-0.00196	-0.00195
	(A_N * B_N * !D * !X)	0.00119	0.00120	0.00118
	(A_N * B_N * !D * !X)	-0.00195	-0.00196	-0.00195
	(A_N * !B_N * D * !X)	0.00149	0.00150	0.00150
	(A_N * !B_N * D * !X)	-0.00225	-0.00225	-0.00225
	(A_N * !B_N * !D * !X)	0.00082	0.00083	0.00082
	(A_N * !B_N * !D * !X)	-0.00245	-0.00246	-0.00245
	(!A_N * B_N * D * !X)	0.00178	0.00180	0.00178
	(!A_N * B_N * D * !X)	-0.00195	-0.00196	-0.00195
	(!A_N * B_N * !D * !X)	0.00114	0.00115	0.00113
	(!A_N * B_N * !D * !X)	-0.00196	-0.00197	-0.00195
	(!A_N * !B_N * !D * !X)	0.00066	0.00067	0.00067
	(!A_N * !B_N * !D * !X)	-0.00227	-0.00228	-0.00227

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * D * !X)**	0.00299	0.00303	0.00300
	(A_N * B_N * D * !X)	-0.00403	-0.00406	-0.00404
	(A_N * B_N * !D * !X)	0.00188	0.00191	0.00189
	(A_N * B_N * !D * !X)	-0.00405	-0.00409	-0.00406
	(A_N * !B_N * D * !X)	0.00287	0.00286	0.00286
	(A_N * !B_N * D * !X)	-0.00422	-0.00421	-0.00421
	(A_N * !B_N * !D * !X)	0.00163	0.00164	0.00163
	(A_N * !B_N * !D * !X)	-0.00461	-0.00463	-0.00460
	(!A_N * B_N * D * !X)	0.00299	0.00301	0.00300
	(!A_N * B_N * D * !X)	-0.00404	-0.00405	-0.00404
	(!A_N * B_N * !D * !X)	0.00180	0.00183	0.00181
	(!A_N * B_N * !D * !X)	-0.00406	-0.00410	-0.00407
	(!A_N * !B_N * !D * !X)	0.00134	0.00134	0.00135
	(!A_N * !B_N * !D * !X)	-0.00423	-0.00423	-0.00426

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)**	-0.00164	-0.00167	-0.00166
	(A_N * B_N * D * !X)	0.00168	0.00169	0.00168
	(A_N * B_N * !D * !X)	-0.00117	-0.00118	-0.00117
	(A_N * B_N * !D * !X)	0.00167	0.00169	0.00168
	(A_N * !B_N * D * !X)	-0.00120	-0.00130	-0.00130
	(A_N * !B_N * D * !X)	0.00212	0.00206	0.00204
	(A_N * !B_N * !D * !X)	-0.00073	-0.00074	-0.00074
	(A_N * !B_N * !D * !X)	0.00226	0.00230	0.00226
	(!A_N * B_N * D * !X)	-0.00163	-0.00167	-0.00167
	(!A_N * B_N * D * !X)	0.00171	0.00169	0.00167
	(!A_N * B_N * !D * !X)	-0.00113	-0.00114	-0.00113
	(!A_N * B_N * !D * !X)	0.00174	0.00176	0.00169
	(!A_N * !B_N * !D * !X)	-0.00057	-0.00058	-0.00058
	(!A_N * !B_N * !D * !X)	0.00207	0.00212	0.00207
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	-0.00173	-0.00177	-0.00177
	(A_N * B_N * D * !X)	0.00196	0.00197	0.00197
	(A_N * B_N * !D * !X)	-0.00119	-0.00120	-0.00118
	(A_N * B_N * !D * !X)	0.00197	0.00199	0.00197
	(A_N * !B_N * D * !X)	-0.00137	-0.00148	-0.00150
	(A_N * !B_N * D * !X)	0.00236	0.00228	0.00225
	(A_N * !B_N * !D * !X)	-0.00082	-0.00083	-0.00082
	(A_N * !B_N * !D * !X)	0.00250	0.00257	0.00252
	(!A_N * B_N * D * !X)	-0.00172	-0.00177	-0.00177
	(!A_N * B_N * D * !X)	0.00199	0.00197	0.00197
	(!A_N * B_N * !D * !X)	-0.00114	-0.00115	-0.00113
	(!A_N * B_N * !D * !X)	0.00205	0.00207	0.00199
	(!A_N * !B_N * !D * !X)	-0.00062	-0.00064	-0.00063
	(!A_N * !B_N * !D * !X)	0.00231	0.00235	0.00230

sky130_fd_sc_hs__and4bb_4	(A_N * B_N * D * !X)	-0.00293	-0.00300	-0.00299
	(A_N * B_N * D * !X)	0.00405	0.00409	0.00406
	(A_N * B_N * !D * !X)	-0.00188	-0.00191	-0.00189
	(A_N * B_N * !D * !X)	0.00406	0.00413	0.00408
	(A_N * !B_N * D * !X)	-0.00261	-0.00285	-0.00286
	(A_N * !B_N * D * !X)	0.00444	0.00426	0.00421
	(A_N * !B_N * !D * !X)	-0.00163	-0.00164	-0.00163
	(A_N * !B_N * !D * !X)	0.00465	0.00478	0.00472
	(!A_N * B_N * D * !X)	-0.00288	-0.00300	-0.00299
	(!A_N * B_N * D * !X)	0.00411	0.00409	0.00406
	(!A_N * B_N * !D * !X)	-0.00180	-0.00183	-0.00181
	(!A_N * B_N * !D * !X)	0.00424	0.00429	0.00414
	(!A_N * !B_N * !D * !X)	-0.00125	-0.00128	-0.00127
	(!A_N * !B_N * !D * !X)	0.00432	0.00438	0.00432

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)	0.00153	0.00154	0.00153
	(A_N * B_N * C * !X)	-0.00162	-0.00162	-0.00162
	(A_N * !C * !X)	0.00152	0.00154	0.00153
	(A_N * !C * !X)	-0.00161	-0.00163	-0.00162
	(A_N * !B_N * C * !X)	0.00132	0.00133	0.00133
	(A_N * !B_N * C * !X)	-0.00183	-0.00184	-0.00183
	(!A_N * B_N * C * !X)	0.00152	0.00154	0.00152
	(!A_N * B_N * C * !X)	-0.00162	-0.00163	-0.00162
	(!A_N * B_N * !C * !X)	0.00152	0.00154	0.00152
	(!A_N * B_N * !C * !X)	-0.00162	-0.00163	-0.00162
	(!A_N * !B_N * !C * !X)	0.00133	0.00134	0.00134
	(!A_N * !B_N * !C * !X)	-0.00180	-0.00181	-0.00181

sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	0.00158	0.00160	0.00159
	(A_N * B_N * C * !X)	-0.00206	-0.00208	-0.00206
	(A_N * !C * !X)	0.00160	0.00162	0.00161
	(A_N * !C * !X)	-0.00206	-0.00208	-0.00207
	(A_N * !B_N * C * !X)	0.00150	0.00152	0.00150
	(A_N * !B_N * C * !X)	-0.00218	-0.00219	-0.00218
	(!A_N * B_N * C * !X)	0.00161	0.00161	0.00161
	(!A_N * B_N * C * !X)	-0.00207	-0.00207	-0.00207
	(!A_N * B_N * !C * !X)	0.00160	0.00162	0.00161
	(!A_N * B_N * !C * !X)	-0.00206	-0.00208	-0.00207
	(!A_N * !B_N * !C * !X)	0.00154	0.00156	0.00154
	(!A_N * !B_N * !C * !X)	-0.00214	-0.00215	-0.00214
sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	0.00272	0.00274	0.00271
	(A_N * B_N * C * !X)	-0.00401	-0.00403	-0.00400
	(A_N * !C * !X)	0.00273	0.00275	0.00273
	(A_N * !C * !X)	-0.00401	-0.00402	-0.00400
	(A_N * !B_N * C * !X)	0.00268	0.00271	0.00268
	(A_N * !B_N * C * !X)	-0.00408	-0.00410	-0.00407
	(!A_N * B_N * C * !X)	0.00272	0.00271	0.00271
	(!A_N * B_N * C * !X)	-0.00401	-0.00401	-0.00401
	(!A_N * B_N * !C * !X)	0.00273	0.00275	0.00273
	(!A_N * B_N * !C * !X)	-0.00401	-0.00402	-0.00401
	(!A_N * !B_N * !C * !X)	0.00273	0.00274	0.00272
	(!A_N * !B_N * !C * !X)	-0.00401	-0.00403	-0.00401

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)**	-0.00143	-0.00152	-0.00152
	(A_N * B_N * C * !X)	0.00163	0.00166	0.00164
	(A_N * !C * !X)	-0.00148	-0.00152	-0.00152
	(A_N * !C * !X)	0.00164	0.00165	0.00164
	(A_N * !B_N * C * !X)	-0.00121	-0.00133	-0.00133
	(A_N * !B_N * C * !X)	0.00188	0.00186	0.00184
	(!A_N * B_N * C * !X)	-0.00143	-0.00152	-0.00152
	(!A_N * B_N * C * !X)	0.00163	0.00165	0.00163
	(!A_N * B_N * !C * !X)	-0.00148	-0.00152	-0.00152
	(!A_N * B_N * !C * !X)	0.00164	0.00165	0.00163
	(!A_N * !B_N * !C * !X)	-0.00129	-0.00134	-0.00134
	(!A_N * !B_N * !C * !X)	0.00184	0.00183	0.00181
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	-0.00149	-0.00160	-0.00159
	(A_N * B_N * C * !X)	0.00208	0.00211	0.00209
	(A_N * !C * !X)	-0.00154	-0.00160	-0.00161
	(A_N * !C * !X)	0.00208	0.00210	0.00209
	(A_N * !B_N * C * !X)	-0.00138	-0.00152	-0.00150
	(A_N * !B_N * C * !X)	0.00223	0.00220	0.00218
	(!A_N * B_N * C * !X)	-0.00150	-0.00160	-0.00160
	(!A_N * B_N * C * !X)	0.00208	0.00211	0.00208
	(!A_N * B_N * !C * !X)	-0.00155	-0.00161	-0.00161
	(!A_N * B_N * !C * !X)	0.00207	0.00210	0.00208
	(!A_N * !B_N * !C * !X)	-0.00147	-0.00155	-0.00154
	(!A_N * !B_N * !C * !X)	0.00216	0.00217	0.00215

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	-0.00253	-0.00270	-0.00271
	(A_N * B_N * C * !X)	0.00402	0.00407	0.00403
	(A_N * !C * !X)	-0.00260	-0.00272	-0.00273
	(A_N * !C * !X)	0.00401	0.00406	0.00403
	(A_N * !B_N * C * !X)	-0.00246	-0.00268	-0.00268
	(A_N * !B_N * C * !X)	0.00418	0.00414	0.00408
	(!A_N * B_N * C * !X)	-0.00253	-0.00270	-0.00271
	(!A_N * B_N * C * !X)	0.00402	0.00407	0.00403
	(!A_N * B_N * !C * !X)	-0.00260	-0.00272	-0.00273
	(!A_N * B_N * !C * !X)	0.00401	0.00405	0.00403
	(!A_N * !B_N * !C * !X)	-0.00257	-0.00271	-0.00272
	(!A_N * !B_N * !C * !X)	0.00404	0.00406	0.00403

SKY130_FD_SC_HS__AND4Bx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00245	0.00258	0.00248	0.00241	1.16476
sky130_fd_sc_hs__and4b_2	0.00228	0.00276	0.00275	0.00283	2.01643
sky130_fd_sc_hs__and4b_4	0.00249	0.00510	0.00548	0.00508	3.78844

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__and4b_1	0.00000	0.41004	1.78620
sky130_fd_sc_hs__and4b_2	0.00000	0.42027	0.80555
sky130_fd_sc_hs__and4b_4	0.00000	0.49720	1.61286

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)	0.13493	0.75100	8.19615
	B->X (RR)	0.09985	0.60354	6.56490
	C->X (RR)	0.10512	0.59779	6.49735
	D->X (RR)	0.11002	0.58603	6.29283
sky130_fd_sc_hs__and4b_2	A_N->X (FR)	0.15140	0.69113	8.02260
	B->X (RR)	0.10372	0.52872	6.24171
	C->X (RR)	0.11009	0.52047	6.16432
	D->X (RR)	0.11424	0.50591	5.93037
sky130_fd_sc_hs__and4b_4	A_N->X (FR)	0.18515	0.69311	8.28884
	B->X (RR)	0.12062	0.49243	6.45878
	C->X (RR)	0.13404	0.48583	6.29270
	D->X (RR)	0.13467	0.46978	6.23744

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)	0.09689	0.31832	2.18020
	B->X (FF)	0.08325	0.49547	4.40265
	C->X (FF)	0.09087	0.51471	4.50607
	D->X (FF)	0.09808	0.53470	4.60562
sky130_fd_sc_hs__and4b_2	A_N->X (RF)	0.11184	0.29800	1.86435
	B->X (FF)	0.09259	0.48545	4.19372
	C->X (FF)	0.10153	0.50556	4.29077
	D->X (FF)	0.10691	0.51957	4.37186
sky130_fd_sc_hs__and4b_4	A_N->X (RF)	0.12478	0.29466	1.77799
	B->X (FF)	0.09066	0.44652	4.10159
	C->X (FF)	0.09958	0.46759	4.20801
	D->X (FF)	0.11473	0.50042	4.35523

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	0.00838	0.01095	0.05800
	A_N	0.01154	0.01414	0.06122
	B	0.01007	0.01067	0.04938
	B	0.00543	0.00603	0.04484
	C	0.01110	0.01158	0.05125
	C	0.00564	0.00612	0.04594
	D	0.01191	0.01200	0.04303
	D	0.00563	0.00572	0.03701
sky130_fd_sc_hs__and4b_2	A_N	0.01200	0.01457	0.05874
	A_N	0.01498	0.01757	0.06213
	B	0.01333	0.01400	0.05066
	B	0.00840	0.00907	0.04652
	C	0.01443	0.01496	0.05255
	C	0.00861	0.00916	0.04755
	D	0.01567	0.01596	0.04021
	D	0.00859	0.00889	0.03313
sky130_fd_sc_hs__and4b_4	A_N	0.02446	0.02739	0.07696
	A_N	0.02783	0.03077	0.08045
	B	0.02672	0.02821	0.09847
	B	0.01765	0.01915	0.09023
	C	0.02959	0.03056	0.09130
	C	0.01818	0.01916	0.08123
	D	0.03103	0.03190	0.10414
	D	0.01826	0.01918	0.09287

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4b_1	A_N	0.01089	0.01262	0.05971
	A_N	0.00773	0.00943	0.05630
	B	0.00399	0.00623	0.04328
	B	0.00863	0.01084	0.04694
	C	0.00424	0.00662	0.04458
	C	0.00962	0.01190	0.04943
	D	0.00497	0.00683	0.04439
	D	0.01107	0.01293	0.04995
sky130_fd_sc_hs__and4b_2	A_N	0.01464	0.01648	0.05788
	A_N	0.01165	0.01346	0.05462
	B	0.00690	0.00933	0.04706
	B	0.01181	0.01410	0.05073
	C	0.00758	0.00986	0.04827
	C	0.01328	0.01541	0.05333
	D	0.00776	0.00950	0.04593
	D	0.01463	0.01626	0.05257
sky130_fd_sc_hs__and4b_4	A_N	0.02543	0.02785	0.07491
	A_N	0.02206	0.02448	0.07137
	B	0.01304	0.01733	0.09295
	B	0.02205	0.02627	0.10057
	C	0.01413	0.01773	0.09258
	C	0.02531	0.02887	0.10323
	D	0.01618	0.01964	0.09727
	D	0.02855	0.03196	0.10829

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)	0.00585	0.00770	0.05271
	(B * C * !D * !X)	0.00163	0.00346	0.04848
	(B * !C * !X)	0.00585	0.00770	0.05271
	(B * !C * !X)	0.00163	0.00346	0.04848
	(!B * !X)	0.00583	0.00768	0.05270
	(!B * !X)	0.00164	0.00346	0.04848
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00650	0.00827	0.05220
	(B * C * !D * !X)	0.00247	0.00422	0.04817
	(B * !C * !X)	0.00649	0.00826	0.05219
	(B * !C * !X)	0.00247	0.00422	0.04817
	(!B * !X)	0.00648	0.00825	0.05218
	(!B * !X)	0.00247	0.00422	0.04817
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.01007	0.01169	0.05820
	(B * C * !D * !X)	0.00521	0.00681	0.05334
	(B * !C * !X)	0.01006	0.01168	0.05819
	(B * !C * !X)	0.00521	0.00681	0.05334
	(!B * !X)	0.00999	0.01161	0.05811
	(!B * !X)	0.00521	0.00681	0.05333

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)	0.00011	0.00275	0.04777
	(B * C * !D * !X)	0.00444	0.00711	0.05207
	(B * !C * !X)	0.00008	0.00272	0.04776
	(B * !C * !X)	0.00438	0.00705	0.05204
	(!B * !X)	0.00009	0.00273	0.04779
	(!B * !X)	0.00430	0.00697	0.05199
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00022	0.00269	0.04674
	(B * C * !D * !X)	0.00437	0.00686	0.05087
	(B * !C * !X)	0.00021	0.00268	0.04674
	(B * !C * !X)	0.00431	0.00680	0.05083
	(!B * !X)	0.00021	0.00270	0.04676
	(!B * !X)	0.00422	0.00673	0.05077
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.00060	0.00284	0.04881
	(B * C * !D * !X)	0.00570	0.00794	0.05386
	(B * !C * !X)	0.00059	0.00283	0.04882
	(B * !C * !X)	0.00558	0.00782	0.05379
	(!B * !X)	0.00059	0.00283	0.04888
	(!B * !X)	0.00538	0.00764	0.05367

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)**	0.00155	0.00155	0.00155
	(A_N * C * D * !X)	-0.00188	-0.00188	-0.00187
	(A_N * C * !D * !X)	0.00099	0.00099	0.00099
	(A_N * C * !D * !X)	-0.00189	-0.00189	-0.00188
	(A_N * !C * !X)	0.00096	0.00096	0.00095
	(A_N * !C * !X)	-0.00189	-0.00190	-0.00188
	(!A_N * C * !D * !X)	0.00059	0.00060	0.00059
	(!A_N * C * !D * !X)	-0.00210	-0.00211	-0.00212
	(!A_N * !C * !X)	0.00059	0.00060	0.00060
	(!A_N * !C * !X)	-0.00212	-0.00214	-0.00213
sky130_fd_sc_hs__and4b_2	**(A_N * C * D * !X)**	0.00177	0.00177	0.00177
	(A_N * C * D * !X)	-0.00197	-0.00196	-0.00196
	(A_N * C * !D * !X)	0.00109	0.00110	0.00109
	(A_N * C * !D * !X)	-0.00198	-0.00198	-0.00197
	(A_N * !C * !X)	0.00110	0.00112	0.00111
	(A_N * !C * !X)	-0.00197	-0.00199	-0.00198
	(!A_N * C * !D * !X)	0.00063	0.00063	0.00064
	(!A_N * C * !D * !X)	-0.00223	-0.00225	-0.00226
	(!A_N * !C * !X)	0.00067	0.00066	0.00067
	(!A_N * !C * !X)	-0.00226	-0.00226	-0.00227
sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	0.00360	0.00364	0.00361
	(A_N * C * D * !X)	-0.00374	-0.00376	-0.00374
	(A_N * C * !D * !X)	0.00245	0.00247	0.00245
	(A_N * C * !D * !X)	-0.00376	-0.00378	-0.00375
	(A_N * !C * !X)	0.00251	0.00254	0.00252
	(A_N * !C * !X)	-0.00375	-0.00379	-0.00376
	(!A_N * C * !D * !X)	0.00144	0.00147	0.00145
	(!A_N * C * !D * !X)	-0.00436	-0.00441	-0.00443
	(!A_N * !C * !X)	0.00152	0.00154	0.00152
	(!A_N * !C * !X)	-0.00441	-0.00445	-0.00445

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)	-0.00142	-0.00155	-0.00154
	(A_N * C * D * !X)	0.00201	0.00191	0.00189
	(A_N * C * !D * !X)	-0.00099	-0.00099	-0.00099
	(A_N * C * !D * !X)	0.00198	0.00196	0.00190
	(A_N * !C * !X)	-0.00096	-0.00096	-0.00095
	(A_N * !C * !X)	0.00197	0.00199	0.00191
	(!A_N * C * !D * !X)	-0.00056	-0.00057	-0.00057
	(!A_N * C * !D * !X)	0.00216	0.00218	0.00214
	(!A_N * !C * !X)	-0.00057	-0.00057	-0.00058
	(!A_N * !C * !X)	0.00216	0.00218	0.00214
sky130_fd_sc_hs__and4b_2	(A_N * C * D * !X)	-0.00163	-0.00176	-0.00176
	(A_N * C * D * !X)	0.00210	0.00198	0.00198
	(A_N * C * !D * !X)	-0.00109	-0.00110	-0.00109
	(A_N * C * !D * !X)	0.00207	0.00205	0.00199
	(A_N * !C * !X)	-0.00110	-0.00112	-0.00111
	(A_N * !C * !X)	0.00210	0.00210	0.00201
	(!A_N * C * !D * !X)	-0.00062	-0.00062	-0.00063
	(!A_N * C * !D * !X)	0.00231	0.00233	0.00229
	(!A_N * !C * !X)	-0.00063	-0.00064	-0.00064
	(!A_N * !C * !X)	0.00230	0.00234	0.00229

sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	-0.00337	-0.00362	-0.00361
	(A_N * C * D * !X)	0.00396	0.00380	0.00376
	(A_N * C * !D * !X)	-0.00245	-0.00247	-0.00245
	(A_N * C * !D * !X)	0.00392	0.00387	0.00377
	(A_N * !C * !X)	-0.00251	-0.00254	-0.00252
	(A_N * !C * !X)	0.00397	0.00399	0.00383
	(!A_N * C * !D * !X)	-0.00141	-0.00143	-0.00144
	(!A_N * C * !D * !X)	0.00453	0.00456	0.00449
	(!A_N * !C * !X)	-0.00144	-0.00146	-0.00147
	(!A_N * !C * !X)	0.00453	0.00457	0.00449

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)**	0.00156	0.00158	0.00157
	(A_N * B * D * !X)	-0.00169	-0.00170	-0.00169
	(A_N * B * !D * !X)	0.00102	0.00103	0.00102
	(A_N * B * !D * !X)	-0.00170	-0.00171	-0.00170
	(A_N * !B * D * !X)	0.00156	0.00159	0.00157
	(A_N * !B * D * !X)	-0.00169	-0.00170	-0.00169
	(A_N * !B * !D * !X)	0.00101	0.00102	0.00101
	(A_N * !B * !D * !X)	-0.00170	-0.00171	-0.00170
	(!A_N * B * !D * !X)	0.00087	0.00087	0.00086
	(!A_N * B * !D * !X)	-0.00171	-0.00171	-0.00170
	(!A_N * !B * D * !X)	0.00155	0.00157	0.00156
	(!A_N * !B * D * !X)	-0.00170	-0.00172	-0.00171
	(!A_N * !B * !D * !X)	0.00098	0.00098	0.00097
	(!A_N * !B * !D * !X)	-0.00172	-0.00173	-0.00172

sky130_fd_sc_hs__and4b_2	**(A_N * B * D * !X)**	0.00153	0.00153	0.00153
	(A_N * B * D * !X)	-0.00195	-0.00194	-0.00194
	(A_N * B * !D * !X)	0.00085	0.00085	0.00084
	(A_N * B * !D * !X)	-0.00196	-0.00196	-0.00195
	(A_N * !B * D * !X)	0.00154	0.00156	0.00155
	(A_N * !B * D * !X)	-0.00194	-0.00196	-0.00194
	(A_N * !B * !D * !X)	0.00083	0.00084	0.00083
	(A_N * !B * !D * !X)	-0.00195	-0.00196	-0.00195
	(!A_N * B * !D * !X)	0.00065	0.00066	0.00066
	(!A_N * B * !D * !X)	-0.00196	-0.00198	-0.00196
	(!A_N * !B * D * !X)	0.00152	0.00153	0.00152
	(!A_N * !B * D * !X)	-0.00197	-0.00197	-0.00197
	(!A_N * !B * !D * !X)	0.00077	0.00077	0.00077
	(!A_N * !B * !D * !X)	-0.00197	-0.00198	-0.00198
sky130_fd_sc_hs__and4b_4	**(A_N * B * D * !X)**	0.00339	0.00344	0.00341
	(A_N * B * D * !X)	-0.00396	-0.00399	-0.00397
	(A_N * B * !D * !X)	0.00223	0.00224	0.00224
	(A_N * B * !D * !X)	-0.00398	-0.00399	-0.00398
	(A_N * !B * D * !X)	0.00338	0.00341	0.00339
	(A_N * !B * D * !X)	-0.00397	-0.00398	-0.00397
	(A_N * !B * !D * !X)	0.00227	0.00229	0.00228
	(A_N * !B * !D * !X)	-0.00397	-0.00400	-0.00398
	(!A_N * B * !D * !X)	0.00187	0.00189	0.00189
	(!A_N * B * !D * !X)	-0.00401	-0.00403	-0.00400
	(!A_N * !B * D * !X)	0.00334	0.00335	0.00334
	(!A_N * !B * D * !X)	-0.00402	-0.00403	-0.00402
	(!A_N * !B * !D * !X)	0.00212	0.00213	0.00212
	(!A_N * !B * !D * !X)	-0.00405	-0.00406	-0.00405

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)	-0.00143	-0.00157	-0.00157
	(A_N * B * D * !X)	0.00171	0.00171	0.00171
	(A_N * B * !D * !X)	-0.00102	-0.00103	-0.00102
	(A_N * B * !D * !X)	0.00172	0.00175	0.00171
	(A_N * !B * D * !X)	-0.00153	-0.00158	-0.00157
	(A_N * !B * D * !X)	0.00170	0.00171	0.00171
	(A_N * !B * !D * !X)	-0.00101	-0.00102	-0.00101
	(A_N * !B * !D * !X)	0.00171	0.00173	0.00172
	(!A_N * B * !D * !X)	-0.00081	-0.00083	-0.00082
	(!A_N * B * !D * !X)	0.00175	0.00177	0.00173
	(!A_N * !B * D * !X)	-0.00149	-0.00157	-0.00156
	(!A_N * !B * D * !X)	0.00174	0.00172	0.00172
	(!A_N * !B * !D * !X)	-0.00098	-0.00098	-0.00097
	(!A_N * !B * !D * !X)	0.00181	0.00182	0.00175
sky130_fd_sc_hs__and4b_2	(A_N * B * D * !X)	-0.00139	-0.00152	-0.00153
	(A_N * B * D * !X)	0.00196	0.00196	0.00196
	(A_N * B * !D * !X)	-0.00085	-0.00085	-0.00084
	(A_N * B * !D * !X)	0.00197	0.00200	0.00197
	(A_N * !B * D * !X)	-0.00147	-0.00153	-0.00154
	(A_N * !B * D * !X)	0.00195	0.00196	0.00196
	(A_N * !B * !D * !X)	-0.00083	-0.00084	-0.00083
	(A_N * !B * !D * !X)	0.00196	0.00199	0.00197
	(!A_N * B * !D * !X)	-0.00062	-0.00063	-0.00062
	(!A_N * B * !D * !X)	0.00200	0.00203	0.00199
	(!A_N * !B * D * !X)	-0.00143	-0.00152	-0.00152
	(!A_N * !B * D * !X)	0.00199	0.00197	0.00198
	(!A_N * !B * !D * !X)	-0.00077	-0.00077	-0.00077
	(!A_N * !B * !D * !X)	0.00205	0.00208	0.00201

sky130_fd_sc_hs__and4b_4	(A_N * B * D * !X)	-0.00315	-0.00341	-0.00341
	(A_N * B * D * !X)	0.00401	0.00403	0.00399
	(A_N * B * !D * !X)	-0.00223	-0.00224	-0.00224
	(A_N * B * !D * !X)	0.00400	0.00405	0.00400
	(A_N * !B * D * !X)	-0.00327	-0.00341	-0.00339
	(A_N * !B * D * !X)	0.00399	0.00403	0.00399
	(A_N * !B * !D * !X)	-0.00227	-0.00229	-0.00228
	(A_N * !B * !D * !X)	0.00400	0.00403	0.00400
	(!A_N * B * !D * !X)	-0.00182	-0.00184	-0.00183
	(!A_N * B * !D * !X)	0.00410	0.00413	0.00407
	(!A_N * !B * D * !X)	-0.00318	-0.00335	-0.00334
	(!A_N * !B * D * !X)	0.00408	0.00408	0.00404
	(!A_N * !B * !D * !X)	-0.00212	-0.00213	-0.00212
	(!A_N * !B * !D * !X)	0.00421	0.00425	0.00411

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)	0.00128	0.00130	0.00129
	(A_N * B * C * !X)	-0.00183	-0.00185	-0.00184
	(A_N * !C * !X)	0.00133	0.00135	0.00133
	(A_N * !C * !X)	-0.00183	-0.00185	-0.00184
	(A_N * !B * C * !X)	0.00128	0.00130	0.00129
	(A_N * !B * C * !X)	-0.00183	-0.00184	-0.00184
	(!A_N * B * !C * !X)	0.00132	0.00134	0.00133
	(!A_N * B * !C * !X)	-0.00184	-0.00185	-0.00184
	(!A_N * !B * C * !X)	0.00128	0.00129	0.00129
	(!A_N * !B * C * !X)	-0.00184	-0.00184	-0.00184
	(!A_N * !B * !C * !X)	0.00132	0.00134	0.00133
	(!A_N * !B * !C * !X)	-0.00184	-0.00185	-0.00184

sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	0.00155	0.00156	0.00155
	(A_N * B * C * !X)	-0.00210	-0.00211	-0.00210
	(A_N * !C * !X)	0.00154	0.00155	0.00155
	(A_N * !C * !X)	-0.00209	-0.00210	-0.00210
	(A_N * !B * C * !X)	0.00156	0.00156	0.00155
	(A_N * !B * C * !X)	-0.00210	-0.00210	-0.00210
	(!A_N * B * !C * !X)	0.00152	0.00154	0.00153
	(!A_N * B * !C * !X)	-0.00212	-0.00213	-0.00212
	(!A_N * !B * C * !X)	0.00153	0.00152	0.00152
	(!A_N * !B * C * !X)	-0.00213	-0.00212	-0.00212
	(!A_N * !B * !C * !X)	0.00152	0.00154	0.00153
	(!A_N * !B * !C * !X)	-0.00212	-0.00213	-0.00212
sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	0.00278	0.00277	0.00277
	(A_N * B * C * !X)	-0.00396	-0.00395	-0.00395
	(A_N * !C * !X)	0.00278	0.00279	0.00279
	(A_N * !C * !X)	-0.00394	-0.00395	-0.00395
	(A_N * !B * C * !X)	0.00278	0.00280	0.00279
	(A_N * !B * C * !X)	-0.00394	-0.00396	-0.00395
	(!A_N * B * !C * !X)	0.00273	0.00275	0.00274
	(!A_N * B * !C * !X)	-0.00399	-0.00401	-0.00400
	(!A_N * !B * C * !X)	0.00273	0.00276	0.00274
	(!A_N * !B * C * !X)	-0.00399	-0.00401	-0.00400
	(!A_N * !B * !C * !X)	0.00274	0.00276	0.00275
	(!A_N * !B * !C * !X)	-0.00399	-0.00401	-0.00400

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)**	-0.00119	-0.00130	-0.00129
	(A_N * B * C * !X)	0.00184	0.00187	0.00185
	(A_N * !C * !X)	-0.00128	-0.00133	-0.00133
	(A_N * !C * !X)	0.00186	0.00187	0.00185
	(A_N * !B * C * !X)	-0.00120	-0.00130	-0.00129
	(A_N * !B * C * !X)	0.00185	0.00187	0.00185
	(!A_N * B * !C * !X)	-0.00128	-0.00133	-0.00133
	(!A_N * B * !C * !X)	0.00185	0.00186	0.00185
	(!A_N * !B * C * !X)	-0.00121	-0.00129	-0.00129
	(!A_N * !B * C * !X)	0.00184	0.00187	0.00185
	(!A_N * !B * !C * !X)	-0.00129	-0.00133	-0.00133
	(!A_N * !B * !C * !X)	0.00185	0.00187	0.00185
sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	-0.00141	-0.00155	-0.00154
	(A_N * B * C * !X)	0.00211	0.00215	0.00211
	(A_N * !C * !X)	-0.00150	-0.00155	-0.00155
	(A_N * !C * !X)	0.00212	0.00214	0.00211
	(A_N * !B * C * !X)	-0.00142	-0.00154	-0.00154
	(A_N * !B * C * !X)	0.00211	0.00213	0.00211
	(!A_N * B * !C * !X)	-0.00147	-0.00154	-0.00153
	(!A_N * B * !C * !X)	0.00214	0.00216	0.00213
	(!A_N * !B * C * !X)	-0.00140	-0.00152	-0.00152
	(!A_N * !B * C * !X)	0.00213	0.00217	0.00213
	(!A_N * !B * !C * !X)	-0.00148	-0.00153	-0.00153
	(!A_N * !B * !C * !X)	0.00214	0.00215	0.00213

sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	-0.00254	-0.00277	-0.00277
	(A_N * B * C * !X)	0.00397	0.00401	0.00397
	(A_N * !C * !X)	-0.00267	-0.00279	-0.00279
	(A_N * !C * !X)	0.00396	0.00400	0.00397
	(A_N * !B * C * !X)	-0.00257	-0.00280	-0.00279
	(A_N * !B * C * !X)	0.00397	0.00401	0.00397
	(!A_N * B * !C * !X)	-0.00260	-0.00274	-0.00274
	(!A_N * B * !C * !X)	0.00401	0.00405	0.00402
	(!A_N * !B * C * !X)	-0.00251	-0.00276	-0.00274
	(!A_N * !B * C * !X)	0.00402	0.00406	0.00402
	(!A_N * !B * !C * !X)	-0.00263	-0.00276	-0.00275
	(!A_N * !B * !C * !X)	0.00400	0.00405	0.00402

SKY130_FD_SC_HS__AND4x

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00260	0.00257	0.00247	0.00250	1.17179
sky130_fd_sc_hs__and4_2	0.00280	0.00288	0.00273	0.00269	2.01334
sky130_fd_sc_hs__and4_4	0.00485	0.00501	0.00549	0.00490	4.35708

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4_1	0.00000	0.18611	1.78196
sky130_fd_sc_hs__and4_2	0.00000	0.19634	0.80132
sky130_fd_sc_hs__and4_4	0.00000	0.39378	1.60264

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)	0.08991	0.59173	6.54756
	B->X (RR)	0.09749	0.59939	6.51558
	C->X (RR)	0.10189	0.59253	6.44346
	D->X (RR)	0.10738	0.58116	6.25025
sky130_fd_sc_hs__and4_2	A->X (RR)	0.09601	0.53249	6.32795
	B->X (RR)	0.10435	0.53640	6.29246
	C->X (RR)	0.10984	0.52734	6.21174
	D->X (RR)	0.11407	0.51247	5.96106
sky130_fd_sc_hs__and4_4	A->X (RR)	0.10227	0.46775	6.57247
	B->X (RR)	0.11363	0.47795	6.58445
	C->X (RR)	0.12503	0.47118	6.44579
	D->X (RR)	0.12529	0.45493	6.39402

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and4_1	A->X (FF)	0.07425	0.46694	4.29023
	B->X (FF)	0.08304	0.48985	4.35446
	C->X (FF)	0.09020	0.50898	4.45138
	D->X (FF)	0.09754	0.52762	4.54137
sky130_fd_sc_hs__and4_2	A->X (FF)	0.07930	0.45444	4.04337
	B->X (FF)	0.08990	0.47837	4.13736
	C->X (FF)	0.09732	0.49729	4.22415
	D->X (FF)	0.10807	0.52169	4.34334
sky130_fd_sc_hs__and4_4	A->X (FF)	0.07958	0.43239	4.45253
	B->X (FF)	0.08436	0.44242	4.45541
	C->X (FF)	0.09253	0.46293	4.56182
	D->X (FF)	0.09535	0.47605	4.64849

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.00939	0.01077	0.05271
	A	0.00471	0.00610	0.04816
	B	0.01023	0.01103	0.05046
	B	0.00475	0.00555	0.04513
	C	0.01115	0.01184	0.05218
	C	0.00474	0.00543	0.04597
	D	0.01225	0.01259	0.04477
	D	0.00476	0.00510	0.03764
sky130_fd_sc_hs__and4_2	A	0.01282	0.01401	0.05373
	A	0.00764	0.00885	0.04910
	B	0.01397	0.01459	0.05163
	B	0.00778	0.00843	0.04614
	C	0.01497	0.01547	0.05348
	C	0.00780	0.00831	0.04713
	D	0.01620	0.01644	0.04043
	D	0.00783	0.00808	0.03297
sky130_fd_sc_hs__and4_4	A	0.02401	0.02643	0.10290
	A	0.01510	0.01762	0.09451
	B	0.02627	0.02789	0.10001
	B	0.01507	0.01674	0.08926
	C	0.02900	0.03015	0.09632
	C	0.01512	0.01634	0.08334
	D	0.03020	0.03128	0.10781
	D	0.01516	0.01626	0.09380

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.00349	0.00596	0.04449
	A	0.00816	0.01047	0.04910
	B	0.00402	0.00633	0.04494
	B	0.00943	0.01173	0.04981
	C	0.00440	0.00670	0.04637
	C	0.01068	0.01295	0.05233
	D	0.00483	0.00680	0.04565
	D	0.01210	0.01402	0.05284
sky130_fd_sc_hs__and4_2	A	0.00601	0.00849	0.04623
	A	0.01117	0.01355	0.05079
	B	0.00663	0.00899	0.04696
	B	0.01274	0.01504	0.05195
	C	0.00734	0.00971	0.04798
	C	0.01437	0.01654	0.05481
	D	0.00775	0.00938	0.04635
	D	0.01586	0.01742	0.05351
sky130_fd_sc_hs__and4_4	A	0.01202	0.01643	0.09706
	A	0.02091	0.02530	0.10273
	B	0.01273	0.01715	0.09558
	B	0.02385	0.02819	0.10470
	C	0.01370	0.01784	0.09830
	C	0.02729	0.03122	0.10836
	D	0.01551	0.01971	0.10173
	D	0.03010	0.03420	0.11515

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)	0.00053	0.00053	0.00048
	(B * C * !D * !X)	-0.00202	-0.00203	-0.00212
	(B * !C * !X)	0.00050	0.00050	0.00047
	(B * !C * !X)	-0.00207	-0.00207	-0.00213
	(!B * !X)	0.00050	0.00050	0.00049
	(!B * !X)	-0.00211	-0.00211	-0.00213
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	0.00063	0.00064	0.00058
	(B * C * !D * !X)	-0.00226	-0.00229	-0.00241
	(B * !C * !X)	0.00062	0.00062	0.00058
	(B * !C * !X)	-0.00234	-0.00234	-0.00241
	(!B * !X)	0.00060	0.00060	0.00059
	(!B * !X)	-0.00239	-0.00239	-0.00242
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	0.00090	0.00091	0.00080
	(B * C * !D * !X)	-0.00418	-0.00422	-0.00444
	(B * !C * !X)	0.00088	0.00088	0.00080
	(B * !C * !X)	-0.00428	-0.00431	-0.00446
	(!B * !X)	0.00085	0.00085	0.00082
	(!B * !X)	-0.00442	-0.00442	-0.00447

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)	-0.00047	-0.00048	-0.00047
	(B * C * !D * !X)	0.00213	0.00216	0.00214
	(B * !C * !X)	-0.00047	-0.00048	-0.00047
	(B * !C * !X)	0.00213	0.00216	0.00214
	(!B * !X)	-0.00048	-0.00049	-0.00048
	(!B * !X)	0.00213	0.00217	0.00214
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	-0.00057	-0.00057	-0.00056
	(B * C * !D * !X)	0.00242	0.00245	0.00243
	(B * !C * !X)	-0.00057	-0.00057	-0.00056
	(B * !C * !X)	0.00242	0.00245	0.00243
	(!B * !X)	-0.00057	-0.00058	-0.00057
	(!B * !X)	0.00242	0.00246	0.00243
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	-0.00076	-0.00077	-0.00075
	(B * C * !D * !X)	0.00446	0.00455	0.00449
	(B * !C * !X)	-0.00076	-0.00078	-0.00076
	(B * !C * !X)	0.00446	0.00455	0.00449
	(!B * !X)	-0.00079	-0.00081	-0.00079
	(!B * !X)	0.00446	0.00456	0.00449

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)**	0.00057	0.00058	0.00057
	(A * C * !D * !X)	-0.00173	-0.00174	-0.00173
	(A * !C * !X)	0.00058	0.00058	0.00058
	(A * !C * !X)	-0.00173	-0.00174	-0.00173
	(!A * C * D * !X)	0.00134	0.00135	0.00134
	(!A * C * D * !X)	-0.00174	-0.00174	-0.00173
	(!A * C * !D * !X)	0.00071	0.00071	0.00071
	(!A * C * !D * !X)	-0.00174	-0.00173	-0.00173
	(!A * !C * !X)	0.00067	0.00067	0.00067
	(!A * !C * !X)	-0.00174	-0.00175	-0.00174
sky130_fd_sc_hs__and4_2	**(A * C * !D * !X)**	0.00067	0.00067	0.00067
	(A * C * !D * !X)	-0.00206	-0.00205	-0.00205
	(A * !C * !X)	0.00070	0.00069	0.00069
	(A * !C * !X)	-0.00206	-0.00206	-0.00205
	(!A * C * D * !X)	0.00156	0.00157	0.00156
	(!A * C * D * !X)	-0.00206	-0.00207	-0.00206
	(!A * C * !D * !X)	0.00084	0.00085	0.00084
	(!A * C * !D * !X)	-0.00206	-0.00207	-0.00206
	(!A * !C * !X)	0.00081	0.00082	0.00082
	(!A * !C * !X)	-0.00206	-0.00207	-0.00207
sky130_fd_sc_hs__and4_4	**(A * C * !D * !X)**	0.00142	0.00144	0.00142
	(A * C * !D * !X)	-0.00388	-0.00391	-0.00388
	(A * !C * !X)	0.00149	0.00151	0.00149
	(A * !C * !X)	-0.00389	-0.00392	-0.00389
	(!A * C * D * !X)	0.00301	0.00303	0.00302
	(!A * C * D * !X)	-0.00387	-0.00388	-0.00387
	(!A * C * !D * !X)	0.00171	0.00173	0.00172
	(!A * C * !D * !X)	-0.00390	-0.00393	-0.00391
	(!A * !C * !X)	0.00173	0.00176	0.00174
	(!A * !C * !X)	-0.00392	-0.00395	-0.00392

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)	-0.00054	-0.00055	-0.00055
	(A * C * !D * !X)	0.00176	0.00178	0.00174
	(A * !C * !X)	-0.00055	-0.00056	-0.00056
	(A * !C * !X)	0.00176	0.00178	0.00174
	(!A * C * D * !X)	-0.00119	-0.00134	-0.00134
	(!A * C * D * !X)	0.00186	0.00175	0.00174
	(!A * C * !D * !X)	-0.00071	-0.00071	-0.00071
	(!A * C * !D * !X)	0.00184	0.00182	0.00175
	(!A * !C * !X)	-0.00067	-0.00067	-0.00067
	(!A * !C * !X)	0.00182	0.00183	0.00176
sky130_fd_sc_hs__and4_2	(A * C * !D * !X)	-0.00065	-0.00065	-0.00065
	(A * C * !D * !X)	0.00210	0.00212	0.00207
	(A * !C * !X)	-0.00066	-0.00067	-0.00067
	(A * !C * !X)	0.00210	0.00212	0.00207
	(!A * C * D * !X)	-0.00141	-0.00156	-0.00156
	(!A * C * D * !X)	0.00220	0.00210	0.00207
	(!A * C * !D * !X)	-0.00084	-0.00085	-0.00084
	(!A * C * !D * !X)	0.00217	0.00214	0.00207
	(!A * !C * !X)	-0.00081	-0.00082	-0.00082
	(!A * !C * !X)	0.00217	0.00219	0.00209

sky130_fd_sc_hs__and4_4	**(A * C * !D * !X)**	-0.00139	-0.00140	-0.00141
	(A * C * !D * !X)	0.00398	0.00400	0.00393
	(A * !C * !X)	-0.00142	-0.00143	-0.00144
	(A * !C * !X)	0.00399	0.00401	0.00393
	(!A * C * D * !X)	-0.00273	-0.00303	-0.00302
	(!A * C * D * !X)	0.00412	0.00393	0.00389
	(!A * C * !D * !X)	-0.00171	-0.00173	-0.00172
	(!A * C * !D * !X)	0.00411	0.00404	0.00393
	(!A * !C * !X)	-0.00173	-0.00176	-0.00174
	(!A * !C * !X)	0.00415	0.00416	0.00399

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)**	0.00067	0.00068	0.00067
	(A * B * !D * !X)	-0.00165	-0.00166	-0.00164
	(A * !B * D * !X)	0.00139	0.00140	0.00139
	(A * !B * D * !X)	-0.00167	-0.00168	-0.00167
	(A * !B * !D * !X)	0.00078	0.00078	0.00077
	(A * !B * !D * !X)	-0.00168	-0.00169	-0.00167
	(!A * B * D * !X)	0.00136	0.00138	0.00136
	(!A * B * D * !X)	-0.00167	-0.00168	-0.00167
	(!A * B * !D * !X)	0.00076	0.00076	0.00076
	(!A * B * !D * !X)	-0.00167	-0.00168	-0.00167
	(!A * !B * D * !X)	0.00138	0.00140	0.00139
	(!A * !B * D * !X)	-0.00167	-0.00168	-0.00167
	(!A * !B * !D * !X)	0.00080	0.00080	0.00080
	(!A * !B * !D * !X)	-0.00167	-0.00168	-0.00167

sky130_fd_sc_hs__and4_2	**(A * B * !D * !X)**	0.00072	0.00073	0.00073
	(A * B * !D * !X)	-0.00190	-0.00192	-0.00190
	(A * !B * D * !X)	0.00155	0.00158	0.00156
	(A * !B * D * !X)	-0.00193	-0.00194	-0.00194
	(A * !B * !D * !X)	0.00086	0.00087	0.00086
	(A * !B * !D * !X)	-0.00194	-0.00195	-0.00194
	(!A * B * D * !X)	0.00152	0.00154	0.00153
	(!A * B * D * !X)	-0.00193	-0.00194	-0.00194
	(!A * B * !D * !X)	0.00082	0.00084	0.00083
	(!A * B * !D * !X)	-0.00193	-0.00195	-0.00194
	(!A * !B * D * !X)	0.00156	0.00159	0.00157
	(!A * !B * D * !X)	-0.00193	-0.00194	-0.00194
	(!A * !B * !D * !X)	0.00091	0.00091	0.00090
	(!A * !B * !D * !X)	-0.00194	-0.00195	-0.00194
sky130_fd_sc_hs__and4_4	**(A * B * !D * !X)**	0.00187	0.00188	0.00188
	(A * B * !D * !X)	-0.00397	-0.00400	-0.00397
	(A * !B * D * !X)	0.00334	0.00337	0.00335
	(A * !B * D * !X)	-0.00402	-0.00403	-0.00402
	(A * !B * !D * !X)	0.00210	0.00211	0.00210
	(A * !B * !D * !X)	-0.00404	-0.00404	-0.00404
	(!A * B * D * !X)	0.00329	0.00334	0.00331
	(!A * B * D * !X)	-0.00401	-0.00404	-0.00402
	(!A * B * !D * !X)	0.00206	0.00207	0.00206
	(!A * B * !D * !X)	-0.00404	-0.00404	-0.00404
	(!A * !B * D * !X)	0.00334	0.00337	0.00335
	(!A * !B * D * !X)	-0.00402	-0.00404	-0.00402
	(!A * !B * !D * !X)	0.00218	0.00219	0.00218
	(!A * !B * !D * !X)	-0.00404	-0.00405	-0.00404

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)	-0.00063	-0.00064	-0.00064
	(A * B * !D * !X)	0.00170	0.00172	0.00169
	(A * !B * D * !X)	-0.00132	-0.00140	-0.00139
	(A * !B * D * !X)	0.00168	0.00170	0.00168
	(A * !B * !D * !X)	-0.00078	-0.00078	-0.00077
	(A * !B * !D * !X)	0.00174	0.00176	0.00170
	(!A * B * D * !X)	-0.00123	-0.00136	-0.00136
	(!A * B * D * !X)	0.00169	0.00168	0.00168
	(!A * B * !D * !X)	-0.00076	-0.00076	-0.00076
	(!A * B * !D * !X)	0.00170	0.00172	0.00168
	(!A * !B * D * !X)	-0.00134	-0.00140	-0.00139
	(!A * !B * D * !X)	0.00167	0.00170	0.00168
	(!A * !B * !D * !X)	-0.00080	-0.00080	-0.00080
	(!A * !B * !D * !X)	0.00167	0.00170	0.00168
sky130_fd_sc_hs__and4_2	(A * B * !D * !X)	-0.00068	-0.00069	-0.00069
	(A * B * !D * !X)	0.00197	0.00199	0.00196
	(A * !B * D * !X)	-0.00148	-0.00156	-0.00156
	(A * !B * D * !X)	0.00194	0.00194	0.00195
	(A * !B * !D * !X)	-0.00086	-0.00087	-0.00086
	(A * !B * !D * !X)	0.00202	0.00204	0.00197
	(!A * B * D * !X)	-0.00137	-0.00153	-0.00153
	(!A * B * D * !X)	0.00195	0.00195	0.00195
	(!A * B * !D * !X)	-0.00082	-0.00084	-0.00083
	(!A * B * !D * !X)	0.00195	0.00198	0.00195
	(!A * !B * D * !X)	-0.00149	-0.00156	-0.00157
	(!A * !B * D * !X)	0.00194	0.00194	0.00195
	(!A * !B * !D * !X)	-0.00091	-0.00091	-0.00090
	(!A * !B * !D * !X)	0.00194	0.00197	0.00195

sky130_fd_sc_hs__and4_4	(A * B * !D * !X)	-0.00179	-0.00182	-0.00182
	(A * B * !D * !X)	0.00407	0.00412	0.00406
	(A * !B * D * !X)	-0.00319	-0.00337	-0.00335
	(A * !B * D * !X)	0.00404	0.00407	0.00403
	(A * !B * !D * !X)	-0.00210	-0.00211	-0.00210
	(A * !B * !D * !X)	0.00420	0.00425	0.00411
	(!A * B * D * !X)	-0.00304	-0.00334	-0.00331
	(!A * B * D * !X)	0.00406	0.00406	0.00403
	(!A * B * !D * !X)	-0.00206	-0.00207	-0.00206
	(!A * B * !D * !X)	0.00407	0.00412	0.00406
	(!A * !B * D * !X)	-0.00322	-0.00337	-0.00335
	(!A * !B * D * !X)	0.00404	0.00407	0.00403
	(!A * !B * !D * !X)	-0.00218	-0.00219	-0.00218
	(!A * !B * !D * !X)	0.00406	0.00409	0.00406

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)	0.00136	0.00137	0.00136
	(A * B * !C * !X)	-0.00184	-0.00185	-0.00185
	(A * !B * C * !X)	0.00132	0.00134	0.00133
	(A * !B * C * !X)	-0.00185	-0.00186	-0.00185
	(A * !B * !C * !X)	0.00135	0.00138	0.00136
	(A * !B * !C * !X)	-0.00184	-0.00186	-0.00185
	(!A * B * C * !X)	0.00131	0.00132	0.00131
	(!A * B * C * !X)	-0.00184	-0.00186	-0.00185
	(!A * !C * !X)	0.00135	0.00138	0.00136
	(!A * !C * !X)	-0.00184	-0.00186	-0.00185
	(!A * !B * C * !X)	0.00134	0.00136	0.00134
	(!A * !B * C * !X)	-0.00185	-0.00186	-0.00185

sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	0.00159	0.00160	0.00160
	(A * B * !C * !X)	-0.00199	-0.00201	-0.00200
	(A * !B * C * !X)	0.00156	0.00156	0.00156
	(A * !B * C * !X)	-0.00200	-0.00201	-0.00200
	(A * !B * !C * !X)	0.00159	0.00159	0.00160
	(A * !B * !C * !X)	-0.00200	-0.00200	-0.00200
	(!A * B * C * !X)	0.00155	0.00156	0.00154
	(!A * B * C * !X)	-0.00200	-0.00201	-0.00200
	(!A * !C * !X)	0.00159	0.00161	0.00160
	(!A * !C * !X)	-0.00199	-0.00202	-0.00200
	(!A * !B * C * !X)	0.00156	0.00156	0.00155
	(!A * !B * C * !X)	-0.00200	-0.00201	-0.00200
sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	0.00264	0.00267	0.00264
	(A * B * !C * !X)	-0.00393	-0.00395	-0.00393
	(A * !B * C * !X)	0.00264	0.00268	0.00266
	(A * !B * C * !X)	-0.00391	-0.00394	-0.00393
	(A * !B * !C * !X)	0.00263	0.00267	0.00264
	(A * !B * !C * !X)	-0.00391	-0.00395	-0.00393
	(!A * B * C * !X)	0.00264	0.00266	0.00263
	(!A * B * C * !X)	-0.00393	-0.00395	-0.00393
	(!A * !C * !X)	0.00261	0.00266	0.00263
	(!A * !C * !X)	-0.00391	-0.00395	-0.00392
	(!A * !B * C * !X)	0.00264	0.00265	0.00266
	(!A * !B * C * !X)	-0.00392	-0.00392	-0.00393

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)**	-0.00131	-0.00137	-0.00136
	(A * B * !C * !X)	0.00186	0.00187	0.00185
	(A * !B * C * !X)	-0.00125	-0.00134	-0.00133
	(A * !B * C * !X)	0.00185	0.00187	0.00186
	(A * !B * !C * !X)	-0.00132	-0.00137	-0.00136
	(A * !B * !C * !X)	0.00186	0.00187	0.00185
	(!A * B * C * !X)	-0.00121	-0.00132	-0.00131
	(!A * B * C * !X)	0.00185	0.00187	0.00185
	(!A * !C * !X)	-0.00132	-0.00137	-0.00136
	(!A * !C * !X)	0.00186	0.00187	0.00185
	(!A * !B * C * !X)	-0.00125	-0.00135	-0.00134
	(!A * !B * C * !X)	0.00185	0.00187	0.00186
sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	-0.00154	-0.00160	-0.00160
	(A * B * !C * !X)	0.00201	0.00202	0.00201
	(A * !B * C * !X)	-0.00147	-0.00156	-0.00156
	(A * !B * C * !X)	0.00200	0.00203	0.00201
	(A * !B * !C * !X)	-0.00155	-0.00159	-0.00160
	(A * !B * !C * !X)	0.00201	0.00202	0.00201
	(!A * B * C * !X)	-0.00143	-0.00156	-0.00154
	(!A * B * C * !X)	0.00200	0.00203	0.00201
	(!A * !C * !X)	-0.00155	-0.00160	-0.00160
	(!A * !C * !X)	0.00201	0.00203	0.00201
	(!A * !B * C * !X)	-0.00147	-0.00156	-0.00155
	(!A * !B * C * !X)	0.00200	0.00203	0.00201

sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	-0.00252	-0.00267	-0.00264
	(A * B * !C * !X)	0.00394	0.00397	0.00394
	(A * !B * C * !X)	-0.00243	-0.00264	-0.00266
	(A * !B * C * !X)	0.00395	0.00399	0.00394
	(A * !B * !C * !X)	-0.00255	-0.00267	-0.00264
	(A * !B * !C * !X)	0.00394	0.00397	0.00394
	(!A * B * C * !X)	-0.00235	-0.00264	-0.00263
	(!A * B * C * !X)	0.00394	0.00398	0.00394
	(!A * !C * !X)	-0.00254	-0.00266	-0.00263
	(!A * !C * !X)	0.00394	0.00397	0.00394
	(!A * !B * C * !X)	-0.00243	-0.00264	-0.00266
	(!A * !B * C * !X)	0.00395	0.00399	0.00394

SKY130_FD_SC_HS__BUFx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00250	1.16398
sky130_fd_sc_hs__buf_16	0.01626	17.88087
sky130_fd_sc_hs__buf_2	0.00268	2.15413
sky130_fd_sc_hs__buf_4	0.00368	4.42974
sky130_fd_sc_hs__buf_8	0.00832	8.35994
sky130_fd_sc_hs__bufbuf_16	0.00298	17.69915
sky130_fd_sc_hs__bufbuf_8	0.00234	8.58329

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__buf_1	0.00000	0.26609	0.45107
sky130_fd_sc_hs__buf_16	0.00000	0.92743	1.27469
sky130_fd_sc_hs__buf_2	0.00000	0.18773	0.21148
sky130_fd_sc_hs__buf_4	0.00000	0.61598	0.91700
sky130_fd_sc_hs__buf_8	0.00000	0.46372	0.63735
sky130_fd_sc_hs__bufbuf_16	0.00000	1.09606	1.51277
sky130_fd_sc_hs__bufbuf_8	0.00000	0.72981	0.74116

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)	0.05121	0.51096	6.09400
sky130_fd_sc_hs__buf_16	A->X (RR)	0.05282	0.25382	6.10098
sky130_fd_sc_hs__buf_2	A->X (RR)	0.05329	0.42785	5.82278
sky130_fd_sc_hs__buf_4	A->X (RR)	0.06407	0.40283	6.44056
sky130_fd_sc_hs__buf_8	A->X (RR)	0.05269	0.30052	5.93000
sky130_fd_sc_hs__bufbuf_16	A->X (RR)	0.15705	0.36768	6.06304
sky130_fd_sc_hs__bufbuf_8	A->X (RR)	0.16703	0.39626	6.02814

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__buf_1	A->X (FF)	0.06201	0.43711	4.27776
sky130_fd_sc_hs__buf_16	A->X (FF)	0.07481	0.38934	4.66326
sky130_fd_sc_hs__buf_2	A->X (FF)	0.07374	0.44875	4.30836
sky130_fd_sc_hs__buf_4	A->X (FF)	0.07228	0.40897	4.28364
sky130_fd_sc_hs__buf_8	A->X (FF)	0.07598	0.41628	4.70399
sky130_fd_sc_hs__bufbuf_16	A->X (FF)	0.18883	0.50517	4.57882
sky130_fd_sc_hs__bufbuf_8	A->X (FF)	0.16700	0.45677	4.37646

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	A	0.00727	0.00873	0.04359
	A	0.00324	0.00471	0.03999
sky130_fd_sc_hs__buf_16	A	0.07285	0.08568	0.33889
	A	0.04663	0.05947	0.31954
sky130_fd_sc_hs__buf_2	A	0.01067	0.01222	0.04174
	A	0.00634	0.00793	0.03769
sky130_fd_sc_hs__buf_4	A	0.01734	0.02019	0.08943
	A	0.01140	0.01426	0.08440
sky130_fd_sc_hs__buf_8	A	0.03710	0.04301	0.16443
	A	0.02369	0.02964	0.15102
sky130_fd_sc_hs__bufbuf_16	A	0.08745	0.09487	0.14884
	A	0.08264	0.09039	0.15107
sky130_fd_sc_hs__bufbuf_8	A	0.04391	0.04779	0.09473
	A	0.04013	0.04412	0.09467

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	A	0.00331	0.00596	0.04523
	A	0.00734	0.00988	0.04879
sky130_fd_sc_hs__buf_16	A	0.04866	0.06449	0.32682
	A	0.07489	0.09076	0.34378
sky130_fd_sc_hs__buf_2	A	0.00592	0.00833	0.04525
	A	0.01024	0.01259	0.04857
sky130_fd_sc_hs__buf_4	A	0.01239	0.01721	0.08614
	A	0.01833	0.02305	0.08971
sky130_fd_sc_hs__buf_8	A	0.02400	0.03208	0.15848
	A	0.03744	0.04534	0.16829
sky130_fd_sc_hs__bufbuf_16	A	0.08452	0.09293	0.14585
	A	0.08934	0.09678	0.15015
sky130_fd_sc_hs__bufbuf_8	A	0.03959	0.04461	0.09392
	A	0.04336	0.04837	0.09413

SKY130_FD_SC_HS__CLKBUFx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00265	1.17985
sky130_fd_sc_hs__clkbuf_16	0.00896	18.18800
sky130_fd_sc_hs__clkbuf_2	0.00266	2.00499
sky130_fd_sc_hs__clkbuf_4	0.00245	4.39878
sky130_fd_sc_hs__clkbuf_8	0.00459	8.50128

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__clkbuf_1	0.00000	0.07887	0.07887
sky130_fd_sc_hs__clkbuf_16	0.00000	0.78864	1.23804
sky130_fd_sc_hs__clkbuf_2	0.00000	0.11830	0.15575
sky130_fd_sc_hs__clkbuf_4	0.00000	0.19716	0.30951
sky130_fd_sc_hs__clkbuf_8	0.00000	0.39432	0.61902

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)	0.05453	0.52924	6.29826
sky130_fd_sc_hs__clkbuf_16	A->X (RR)	0.07307	0.34191	6.62854
sky130_fd_sc_hs__clkbuf_2	A->X (RR)	0.06047	0.46943	6.05376
sky130_fd_sc_hs__clkbuf_4	A->X (RR)	0.07730	0.45098	6.46613
sky130_fd_sc_hs__clkbuf_8	A->X (RR)	0.07287	0.38270	6.38122

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkbuf_1	A->X (FF)	0.05871	0.55198	6.27783
sky130_fd_sc_hs__clkbuf_16	A->X (FF)	0.08845	0.46330	6.77809
sky130_fd_sc_hs__clkbuf_2	A->X (FF)	0.06876	0.50880	5.74381
sky130_fd_sc_hs__clkbuf_4	A->X (FF)	0.08854	0.53653	6.47199
sky130_fd_sc_hs__clkbuf_8	A->X (FF)	0.08529	0.48635	6.44306

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00705	0.00807	0.03543
	A	0.00278	0.00380	0.03147
sky130_fd_sc_hs__clkbuf_16	A	0.05658	0.06222	0.18924
	A	0.04209	0.04796	0.17580
sky130_fd_sc_hs__clkbuf_2	A	0.00956	0.01042	0.03245
	A	0.00539	0.00628	0.02919
sky130_fd_sc_hs__clkbuf_4	A	0.01496	0.01622	0.04392
	A	0.01100	0.01245	0.04082
sky130_fd_sc_hs__clkbuf_8	A	0.02868	0.03152	0.09237
	A	0.02125	0.02436	0.08716

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00268	0.00452	0.03756
	A	0.00696	0.00879	0.04175
sky130_fd_sc_hs__clkbuf_16	A	0.03718	0.04657	0.18595
	A	0.05162	0.06058	0.19417
sky130_fd_sc_hs__clkbuf_2	A	0.00435	0.00614	0.03663
	A	0.00852	0.01027	0.03942
sky130_fd_sc_hs__clkbuf_4	A	0.00943	0.01276	0.04258
	A	0.01337	0.01568	0.04652
sky130_fd_sc_hs__clkbuf_8	A	0.01842	0.02332	0.08903
	A	0.02584	0.03038	0.09643

SKY130_FD_SC_HS__CLKDLYINVx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00252	1.19598
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00255	1.19500
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00257	1.19677
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00250	1.20847
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00254	1.19081
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00257	1.19344

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__clkdlyinv3sd1_1	0.00000	0.17817	0.20058
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00000	0.07942	0.15477
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00000	0.07990	0.15477
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00000	0.37677	0.39918
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00000	0.08052	0.15587
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00000	0.08196	0.15683

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)**	0.08962	0.67726	7.84356
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A->Y (FR)**	0.09954	0.69664	7.86240
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A->Y (FR)**	0.11425	0.72894	7.93865
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A->Y (FR)**	0.16191	0.75191	7.99277
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A->Y (FR)**	0.22119	0.81857	7.98520
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A->Y (FR)**	0.36012	0.97704	8.20902

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A->Y (RF)**	0.08752	0.45498	4.56472
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A->Y (RF)**	0.11917	0.50545	4.73160
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A->Y (RF)**	0.18704	0.60753	4.95797
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A->Y (RF)**	0.16002	0.52938	4.67240
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A->Y (RF)**	0.24505	0.63209	4.83609
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A->Y (RF)**	0.44450	0.86710	5.22018

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	A	0.00567	0.00768	0.04636
	A	0.00973	0.01175	0.05076
sky130_fd_sc_hs__clkdlyinv3sd2_1	A	0.00606	0.00779	0.04477
	A	0.01017	0.01193	0.04920
sky130_fd_sc_hs__clkdlyinv3sd3_1	A	0.00678	0.00821	0.04403
	A	0.01094	0.01236	0.04845
sky130_fd_sc_hs__clkdlyinv5sd1_1	A	0.01255	0.01430	0.05308
	A	0.01660	0.01836	0.05733
sky130_fd_sc_hs__clkdlyinv5sd2_1	A	0.01384	0.01527	0.05198
	A	0.01793	0.01936	0.05632
sky130_fd_sc_hs__clkdlyinv5sd3_1	A	0.01656	0.01773	0.05318
	A	0.02072	0.02188	0.05742

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A**	0.00958	0.01096	0.04970
	A	0.00552	0.00686	0.04519
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A**	0.01024	0.01146	0.04782
	A	0.00612	0.00732	0.04369
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A**	0.01203	0.01318	0.04874
	A	0.00787	0.00901	0.04459
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A**	0.01625	0.01740	0.05584
	A	0.01221	0.01334	0.05169
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A**	0.01781	0.01885	0.05495
	A	0.01371	0.01474	0.05086
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A**	0.02191	0.02284	0.05855
	A	0.01775	0.01869	0.05382

SKY130_FD_SC_HS__CLKINVx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00322	1.62578
sky130_fd_sc_hs__clkinv_16	0.04776	24.40760
sky130_fd_sc_hs__clkinv_2	0.00614	3.13841
sky130_fd_sc_hs__clkinv_4	0.01218	6.14784
sky130_fd_sc_hs__clkinv_8	0.02438	11.54467

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__clkinv_1	0.00000	0.44463	0.88727
sky130_fd_sc_hs__clkinv_16	0.00000	0.93844	1.84516
sky130_fd_sc_hs__clkinv_2	0.00000	0.11731	0.23065
sky130_fd_sc_hs__clkinv_4	0.00000	0.23461	0.46129
sky130_fd_sc_hs__clkinv_8	0.00000	0.46922	0.92258

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)	0.02113	0.66440	10.20850
sky130_fd_sc_hs__clkinv_16	A->Y (FR)	0.01543	0.40107	10.25820
sky130_fd_sc_hs__clkinv_2	A->Y (FR)	0.01975	0.60743	10.61490
sky130_fd_sc_hs__clkinv_4	A->Y (FR)	0.01746	0.53013	10.53670
sky130_fd_sc_hs__clkinv_8	A->Y (FR)	0.01782	0.46486	10.36100

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkinv_1	A->Y (RF)	0.02361	0.65746	10.24560
sky130_fd_sc_hs__clkinv_16	A->Y (RF)	0.01694	0.33657	10.16700
sky130_fd_sc_hs__clkinv_2	A->Y (RF)	0.02092	0.55186	10.00190
sky130_fd_sc_hs__clkinv_4	A->Y (RF)	0.01853	0.47149	10.03240
sky130_fd_sc_hs__clkinv_8	A->Y (RF)	0.01893	0.39484	9.81538

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	-0.00036	0.00092	0.01117
	A	0.00483	0.00617	0.01662
sky130_fd_sc_hs__clkinv_16	A	-0.01369	0.00825	0.09925
	A	0.06325	0.08520	0.18147
sky130_fd_sc_hs__clkinv_2	A	-0.00112	0.00109	0.01252
	A	0.00877	0.01105	0.02304
sky130_fd_sc_hs__clkinv_4	A	-0.00258	0.00272	0.02714
	A	0.01704	0.02255	0.04802
sky130_fd_sc_hs__clkinv_8	A	-0.00501	0.00620	0.06640
	A	0.03421	0.04568	0.10832

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	0.00382	0.00423	0.00782
	A	-0.00137	-0.00100	0.00251
sky130_fd_sc_hs__clkinv_16	A	0.05275	0.06699	0.11562
	A	-0.02419	-0.01025	0.03739
sky130_fd_sc_hs__clkinv_2	A	0.00757	0.00813	0.01488
	A	-0.00232	-0.00159	0.00489
sky130_fd_sc_hs__clkinv_4	A	0.01372	0.01573	0.02996
	A	-0.00588	-0.00415	0.01014
sky130_fd_sc_hs__clkinv_8	A	0.02702	0.03433	0.06676
	A	-0.01221	-0.00569	0.02721

SKY130_FD_SC_HS__CONB

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00160	1.18468
sky130_fd_sc_hs__dlymetal6s4s_1	0.00160	1.18572
sky130_fd_sc_hs__dlymetal6s6s_1	0.00160	1.19466

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlymetal6s2s_1	0.00000	0.14424	0.23660
sky130_fd_sc_hs__dlymetal6s4s_1	0.00000	0.14424	0.23660
sky130_fd_sc_hs__dlymetal6s6s_1	0.00000	0.14424	0.23660

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)**	0.06214	0.52151	5.82477
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (RR)**	0.12361	0.58256	5.81563
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (RR)**	0.17763	0.63663	5.91825

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlymetal6s2s_1	**A->X (FF)**	0.09194	0.54143	4.87089
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (FF)**	0.18263	0.61762	4.88344
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (FF)**	0.26728	0.70509	4.99168

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.01851	0.01933	0.04726
	A	0.01592	0.01676	0.04473
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.01852	0.01959	0.05435
	A	0.01594	0.01702	0.05188
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.01856	0.01916	0.03719
	A	0.01597	0.01659	0.03514

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.01568	0.01652	0.03501
	A	0.01825	0.01910	0.03718
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.01570	0.01687	0.04074
	A	0.01828	0.01944	0.04325
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.01573	0.01678	0.03467
	A	0.01831	0.01935	0.03659

SKY130_FD_SC_HS__DFBBNx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00174	0.00172	0.00544	0.00298	1.19242	1.09595
sky130_fd_sc_hs__dfbbn_2	0.00175	0.00174	0.00539	0.00298	2.26028	2.23427

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfbbn_1	0.00000	1.10603	2.27812
sky130_fd_sc_hs__dfbbn_2	0.00000	1.04542	2.11541

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)	0.35772	1.00347	8.58320
	SET_B->Q (FR)	0.17883	0.85765	8.57410
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FR)	0.40174	0.94178	8.49067
	SET_B->Q (FR)	0.20536	0.79441	8.50478

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)	0.35799	0.76937	4.81367
	RESET_B->Q (FF)	0.22308	0.66246	4.75508
	SET_B->Q (RF)	0.13122	0.38968	2.32302
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FF)	0.39217	0.75841	4.68051
	RESET_B->Q (FF)	0.25576	0.65291	4.64764
	SET_B->Q (RF)	0.16260	0.39322	2.29931

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)	0.32688	0.99734	8.58781
	RESET_B->Q_N (FR)	0.19348	0.89595	8.54064
	SET_B->Q_N (RR)	0.10123	0.62603	6.34816
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FR)	0.33232	0.90346	8.57541
	RESET_B->Q_N (FR)	0.19783	0.80036	8.55325
	SET_B->Q_N (RR)	0.10496	0.54333	6.40533

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)	0.29100	0.75538	4.64635
	SET_B->Q_N (FF)	0.11876	0.61268	4.83268
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FF)	0.31751	0.76035	4.64998
	SET_B->Q_N (FF)	0.13086	0.60740	4.88257

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)	0.00776	0.07812	2.34059
	setup	CLK_N (F)	0.09347	0.00253	-2.33204
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	0.00906	0.07900	2.34680
	setup	CLK_N (F)	0.08574	-0.00375	-2.33911

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)	-0.12807	-0.18383	-0.73887
	setup	CLK_N (F)	0.14662	0.20477	0.75263
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.12737	-0.18698	-0.73942
	setup	CLK_N (F)	0.14766	0.20252	0.75076

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)	0.00776	0.07812	2.34059
	setup	CLK_N (F)	0.09347	0.00253	-2.33204
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	0.00906	0.07900	2.34680
	setup	CLK_N (F)	0.08574	-0.00375	-2.33911

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)	-0.12807	-0.18383	-0.73887
	setup	CLK_N (F)	0.14662	0.20477	0.75263
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.12737	-0.18698	-0.73942
	setup	CLK_N (F)	0.14766	0.20252	0.75076

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)	0.08956	-0.00039	-2.21091
	removal	CLK_N (F)	0.02008	0.09357	2.24857
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.08287	-0.00617	-2.21911
	removal	CLK_N (F)	0.02217	0.09390	2.25161

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)	0.08956	-0.00039	-2.21091
	removal	CLK_N (F)	0.02008	0.09357	2.24857
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.08287	-0.00617	-2.21911
	removal	CLK_N (F)	0.02217	0.09390	2.25161

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 ()	0.19003	0.64453	16.50020
	min_pulse_width	RESET_B ()	0.16827	0.64453	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	RESET_B ()	0.19970	0.64453	16.50020
	min_pulse_width	RESET_B ()	0.17311	0.64453	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)	-0.02473	-0.12632	-2.01556
	removal	CLK_N (F)	0.03686	0.13687	2.32634
	hold	RESET_B (R)	-0.04738	-0.08269	-0.37556
	setup	RESET_B (R)	0.10035	0.12688	0.60594
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.02416	-0.12632	-1.74697
	removal	CLK_N (F)	0.03686	0.13687	2.32928
	hold	RESET_B (R)	-0.06789	-0.10576	-0.50389
	setup	RESET_B (R)	0.10855	0.15003	0.78653

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)	-0.02473	-0.12632	-2.01556
	removal	CLK_N (F)	0.03686	0.13687	2.32634
	hold	RESET_B (R)	-0.04738	-0.08269	-0.37556
	hold	RESET_B (R)	-0.04786	-0.08440	-0.38162
	setup	RESET_B (R)	0.10035	0.12688	0.59839
	setup	RESET_B (R)	0.07766	0.11051	0.60594
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.02416	-0.12632	-1.74697
	removal	CLK_N (F)	0.03686	0.13687	2.32928
	hold	RESET_B (R)	-0.06971	-0.11804	-0.50828
	hold	RESET_B (R)	-0.06789	-0.10576	-0.50389
	setup	RESET_B (R)	0.10855	0.15003	0.78653
	setup	RESET_B (R)	0.08276	0.13890	0.78318

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 ()	0.13442	0.64453	16.50020
	min_pulse_width	SET_B ()	0.11992	0.64453	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	SET_B ()	0.15860	0.64453	16.50020
	min_pulse_width	SET_B ()	0.13684	0.64453	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 ()	0.15618	0.64453	16.50020
	min_pulse_width	CLK_N ()	0.13926	0.64453	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.15135	0.64453	16.50020
	min_pulse_width	CLK_N ()	0.13926	0.64453	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 ()	0.15377	0.64453	16.50020
	min_pulse_width	CLK_N ()	0.18761	0.64453	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.17794	0.64453	16.50020
	min_pulse_width	CLK_N ()	0.19728	0.64453	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	0.01441	0.01560	0.03946
	CLK_N	0.01678	0.01798	0.04183
	SET_B	0.01502	0.01697	0.06026
	SET_B	0.01943	0.02139	0.06465
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01807	0.01911	0.04303
	CLK_N	0.02047	0.02147	0.04542
	SET_B	0.01836	0.02056	0.06372
	SET_B	0.02277	0.02498	0.06811

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.01577	0.01712	0.04057
	CLK_N	0.01794	0.01931	0.04233
	RESET_B	0.01883	0.01965	0.03445
	RESET_B	0.02010	0.02091	0.03521
	SET_B	0.01976	0.02022	0.06012
	SET_B	0.01533	0.01574	0.05560
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01894	0.02051	0.04427
	CLK_N	0.02109	0.02270	0.04586
	RESET_B	0.02204	0.02312	0.03886
	RESET_B	0.02331	0.02438	0.03928
	SET_B	0.02294	0.02361	0.06279
	SET_B	0.01851	0.01915	0.05836

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.01579	0.01715	0.04049
	CLK_N	0.01796	0.01932	0.04267
	RESET_B	0.01885	0.01967	0.03426
	RESET_B	0.02012	0.02093	0.03552
	SET_B	0.01977	0.02019	0.06028
	SET_B	0.01534	0.01576	0.05584
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01896	0.02051	0.04403
	CLK_N	0.02111	0.02274	0.04617
	RESET_B	0.02206	0.02314	0.03812
	RESET_B	0.02332	0.02440	0.03939
	SET_B	0.02295	0.02359	0.06337
	SET_B	0.01852	0.01916	0.05889

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.01438	0.01558	0.03972
	CLK_N	0.01676	0.01795	0.04162
	SET_B	0.01498	0.01691	0.06006
	SET_B	0.01938	0.02132	0.06416
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01804	0.01908	0.04306
	CLK_N	0.02044	0.02148	0.04509
	SET_B	0.01832	0.02052	0.06383
	SET_B	0.02273	0.02492	0.06758

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)	0.01124	0.01151	0.02760
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00896	0.00922	0.02532
	(CLK_N * !SET_B * Q * !Q_N)	0.00731	0.00769	0.02225
	(CLK_N * !SET_B * Q * !Q_N)	0.00445	0.00483	0.01940
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00618	0.00656	0.02105
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00336	0.00374	0.01823
	!CLK_N	0.00387	0.00443	0.01980
	!CLK_N	0.00105	0.00160	0.01698
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01128	0.01155	0.02766
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00899	0.00925	0.02537
	(CLK_N * !SET_B * Q * !Q_N)	0.00733	0.00772	0.02231
	(CLK_N * !SET_B * Q * !Q_N)	0.00447	0.00485	0.01945
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00615	0.00653	0.02106
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00332	0.00370	0.01823
	!CLK_N	0.00386	0.00441	0.01982
	!CLK_N	0.00104	0.00159	0.01700

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)	0.01082	0.01126	0.02682
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01310	0.01353	0.02910
	(CLK_N * !SET_B * Q * !Q_N)	0.00293	0.00336	0.01730
	(CLK_N * !SET_B * Q * !Q_N)	0.00578	0.00623	0.02017
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00387	0.00432	0.01841
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00668	0.00713	0.02123
	!CLK_N	0.00150	0.00209	0.01712
	!CLK_N	0.00433	0.00492	0.01993
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01079	0.01123	0.02680
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01309	0.01352	0.02909
	(CLK_N * !SET_B * Q * !Q_N)	0.00285	0.00329	0.01726
	(CLK_N * !SET_B * Q * !Q_N)	0.00571	0.00616	0.02012
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00384	0.00430	0.01841
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00666	0.00712	0.02124
	!CLK_N	0.00147	0.00207	0.01712
	!CLK_N	0.00430	0.00490	0.01993

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)	0.01255	0.01306	0.04186
	(CLK_N * D * SET_B * !Q * Q_N)	0.00980	0.01032	0.03912
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00746	0.00819	0.03617
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00417	0.00490	0.03288
	(!SET_B * Q * !Q_N)	0.00746	0.00822	0.03664
	(!SET_B * Q * !Q_N)	0.00412	0.00486	0.03328
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.01260	0.01311	0.04206
	(CLK_N * D * SET_B * !Q * Q_N)	0.00980	0.01032	0.03927
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00745	0.00818	0.03631
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00412	0.00485	0.03299
	(!SET_B * Q * !Q_N)	0.00747	0.00823	0.03671
	(!SET_B * Q * !Q_N)	0.00409	0.00483	0.03332

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)	0.01099	0.01235	0.04152
	(CLK_N * D * SET_B * !Q * Q_N)	0.01374	0.01510	0.04427
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00367	0.00486	0.03300
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00695	0.00815	0.03629
	(!SET_B * Q * !Q_N)	0.00239	0.00366	0.03204
	(!SET_B * Q * !Q_N)	0.00576	0.00702	0.03540
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.01103	0.01240	0.04169
	(CLK_N * D * SET_B * !Q * Q_N)	0.01383	0.01519	0.04448
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00370	0.00489	0.03317
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00702	0.00822	0.03649
	(!SET_B * Q * !Q_N)	0.00240	0.00367	0.03212
	(!SET_B * Q * !Q_N)	0.00580	0.00707	0.03552

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)	0.00360	0.00363	0.00359
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00410	-0.00411	-0.00409
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.01158	0.01214	0.05082
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00321	0.00372	0.04242
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00357	0.00359	0.00356
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00408	-0.00409	-0.00406
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.01157	0.01213	0.05079
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00328	0.00380	0.04247

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)	-0.00349	-0.00358	-0.00357
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00412	0.00413	0.00411
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00129	0.00305	0.04343
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00962	0.01144	0.05183
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00345	-0.00354	-0.00354
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00411	0.00411	0.00409
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00124	0.00300	0.04336
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00951	0.01135	0.05169

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)**	0.02112	0.02250	0.06949
	(D * RESET_B * SET_B * !Q * Q_N)	0.01710	0.01847	0.06547
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01342	0.01471	0.06068
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00886	0.01017	0.05612
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01599	0.01736	0.06422
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01143	0.01279	0.05966
	(!D * SET_B * !Q * Q_N)	0.01269	0.01395	0.06027
	(!D * SET_B * !Q * Q_N)	0.00814	0.00938	0.05571
	(!D * RESET_B * SET_B * Q * !Q_N)	0.02221	0.02338	0.07017
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01711	0.01827	0.06506
	(!D * !SET_B * Q * !Q_N)	0.01413	0.01534	0.06196
	(!D * !SET_B * Q * !Q_N)	0.00961	0.01080	0.05743

sky130_fd_sc_hs__dfbbn_2	**(D * RESET_B * SET_B * !Q * Q_N)**	0.02119	0.02256	0.06955
	(D * RESET_B * SET_B * !Q * Q_N)	0.01716	0.01852	0.06551
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01341	0.01470	0.06066
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00885	0.01015	0.05610
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01600	0.01737	0.06431
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01144	0.01280	0.05975
	(!D * SET_B * !Q * Q_N)	0.01271	0.01397	0.06028
	(!D * SET_B * !Q * Q_N)	0.00815	0.00940	0.05572
	(!D * RESET_B * SET_B * Q * !Q_N)	0.02222	0.02338	0.07017
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01713	0.01829	0.06508
	(!D * !SET_B * Q * !Q_N)	0.01408	0.01529	0.06192
	(!D * !SET_B * Q * !Q_N)	0.00955	0.01074	0.05739

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)	0.01005	0.01213	0.05851
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01461	0.01671	0.06307
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01423	0.01623	0.06208
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01880	0.02080	0.06663
	(!D * SET_B * !Q * Q_N)	0.01094	0.01302	0.05930
	(!D * SET_B * !Q * Q_N)	0.01551	0.01759	0.06386
	(!D * !SET_B * Q * !Q_N)	0.01396	0.01600	0.06324
	(!D * !SET_B * Q * !Q_N)	0.01850	0.02054	0.06777
sky130_fd_sc_hs__dfbbn_2	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01005	0.01214	0.05851
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01462	0.01672	0.06308
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01419	0.01619	0.06203
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01876	0.02076	0.06659
	(!D * SET_B * !Q * Q_N)	0.01092	0.01300	0.05928
	(!D * SET_B * !Q * Q_N)	0.01549	0.01757	0.06384
	(!D * !SET_B * Q * !Q_N)	0.01400	0.01605	0.06329
	(!D * !SET_B * Q * !Q_N)	0.01855	0.02059	0.06783

SKY130_FD_SC_HS__DFBBP

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00153	0.00188	0.00627	0.00295	1.19723	1.08535

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfbbp_1	0.00000	1.10603	2.27812

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)	0.34495	0.81886	6.20459
	SET_B->Q (FR)	0.16317	0.83773	8.54251

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbp_1	CLK->Q (RF)	0.26714	0.50761	2.41510
	RESET_B->Q (FF)	0.21658	0.65309	4.77129
	SET_B->Q (RF)	0.13372	0.38300	2.33709

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)	0.23771	0.73335	6.14445
	RESET_B->Q_N (FR)	0.18785	0.88631	8.51302
	SET_B->Q_N (RR)	0.10555	0.61917	6.31351

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)	0.28019	0.56470	2.18977
	SET_B->Q_N (FF)	0.10699	0.58169	4.71999

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)	-0.03239	-0.06908	-0.26549
	setup	CLK (R)	0.06790	0.08834	0.29280

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)	-0.08254	-0.20959	-2.99015
	setup	CLK (R)	0.13091	0.25303	3.07342

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)	-0.03239	-0.06908	-0.26549
	setup	CLK (R)	0.06790	0.08834	0.29280

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)	-0.08254	-0.20959	-2.99015
	setup	CLK (R)	0.13091	0.25303	3.07342

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)	0.07740	0.08578	0.27227
	removal	CLK (R)	-0.03624	-0.05201	-0.14755

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)	0.07740	0.08578	0.27227
	removal	CLK (R)	-0.03624	-0.05201	-0.14755

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 ()	0.16827	0.64453	16.50020
	min_pulse_width	RESET_B ()	0.17311	0.64453	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)	0.01053	0.00365	1.65317
	removal	CLK (R)	0.05558	0.07699	0.03832
	hold	RESET_B (R)	-0.05091	-0.08936	-0.40432
	setup	RESET_B (R)	0.09120	0.12500	0.61887

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)	0.01053	0.00365	1.65317
	removal	CLK (R)	0.05558	0.07699	0.03832
	hold	RESET_B (R)	-0.05251	-0.08936	-0.41005
	hold	RESET_B (R)	-0.05091	-0.09000	-0.40432
	setup	RESET_B (R)	0.09017	0.12299	0.61887
	setup	RESET_B (R)	0.09120	0.12500	0.61862

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 ()	0.10783	0.64453	16.50020
	min_pulse_width	SET_B ()	0.11750	0.64453	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 ()	0.09091	0.64453	16.50020
	min_pulse_width	CLK ()	0.11750	0.64453	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 ()	0.14410	0.64453	16.50020
	min_pulse_width	CLK ()	0.19970	0.64453	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	0.01698	0.01790	0.04218
	CLK	0.01468	0.01561	0.03978
	SET_B	0.01487	0.01695	0.06109
	SET_B	0.01968	0.02176	0.06589

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01700	0.01801	0.04244
	CLK	0.01447	0.01546	0.03987
	RESET_B	0.01734	0.01813	0.03285
	RESET_B	0.01864	0.01943	0.03374
	SET_B	0.01883	0.01918	0.05958
	SET_B	0.01400	0.01431	0.05466

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01702	0.01803	0.04303
	CLK	0.01449	0.01548	0.04056
	RESET_B	0.01735	0.01815	0.03277
	RESET_B	0.01866	0.01945	0.03407
	SET_B	0.01885	0.01916	0.05978
	SET_B	0.01402	0.01433	0.05497

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01695	0.01789	0.04154
	CLK	0.01466	0.01558	0.03930
	SET_B	0.01482	0.01690	0.06080
	SET_B	0.01962	0.02169	0.06537

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.00258	0.00342	0.01966
	CLK	0.00011	0.00094	0.01719
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.01061	0.01102	0.02762
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00841	0.00881	0.02542
	(!CLK * !SET_B * Q * !Q_N)	0.00621	0.00676	0.02185
	(!CLK * !SET_B * Q * !Q_N)	0.00346	0.00400	0.01910
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00495	0.00550	0.02052
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00221	0.00274	0.01778

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	-0.00018	0.00068	0.01679
	CLK	0.00229	0.00316	0.01926
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00820	0.00866	0.02495
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.01042	0.01087	0.02717
	(!CLK * !SET_B * Q * !Q_N)	0.00194	0.00244	0.01705
	(!CLK * !SET_B * Q * !Q_N)	0.00471	0.00521	0.01981
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00296	0.00351	0.01827
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00570	0.00626	0.02100

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)	0.00681	0.00751	0.03583
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00372	0.00440	0.03273
	(!SET_B * Q * !Q_N)	0.00732	0.00828	0.03680
	(!SET_B * Q * !Q_N)	0.00417	0.00509	0.03363
	(!CLK * D * SET_B * !Q * Q_N)	0.01262	0.01305	0.04216
	(!CLK * D * SET_B * !Q * Q_N)	0.01007	0.01048	0.03959

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)	0.00355	0.00472	0.03309
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00665	0.00782	0.03619
	(!SET_B * Q * !Q_N)	0.00175	0.00303	0.03162
	(!SET_B * Q * !Q_N)	0.00493	0.00620	0.03480
	(!CLK * D * SET_B * !Q * Q_N)	0.00936	0.01049	0.03998
	(!CLK * D * SET_B * !Q * Q_N)	0.01193	0.01306	0.04254

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)	0.00362	0.00365	0.00362
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	-0.00515	-0.00516	-0.00513
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00968	0.01026	0.04909
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00026	0.00079	0.03965

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)	-0.00352	-0.00362	-0.00360
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	0.00518	0.00519	0.00516
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00228	0.00411	0.04435
	(!CLK * !D * RESET_B * Q * !Q_N)	0.01168	0.01358	0.05379

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)	0.01541	0.01679	0.06338
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01059	0.01196	0.05857
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01860	0.01986	0.06727
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01405	0.01530	0.06272
	(!D * SET_B * !Q * Q_N)	0.01566	0.01701	0.06401
	(!D * SET_B * !Q * Q_N)	0.01085	0.01219	0.05920
	(!D * !SET_B * Q * !Q_N)	0.01950	0.02094	0.06782
	(!D * !SET_B * Q * !Q_N)	0.01441	0.01586	0.06274

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)	0.01620	0.01817	0.06636
	(D * RESET_B * SET_B * !Q * Q_N)	0.02126	0.02325	0.07145
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00808	0.01019	0.05754
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01289	0.01501	0.06236
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01022	0.01227	0.06045
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01475	0.01681	0.06498
	(!D * SET_B * !Q * Q_N)	0.00800	0.01006	0.05728
	(!D * SET_B * !Q * Q_N)	0.01280	0.01488	0.06209
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01724	0.01954	0.06778
	(!D * RESET_B * SET_B * Q * !Q_N)	0.02180	0.02410	0.07235
	(!D * !SET_B * Q * !Q_N)	0.01092	0.01323	0.06139
	(!D * !SET_B * Q * !Q_N)	0.01601	0.01833	0.06648

SKY130_FD_SC_HS__DFRBPx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00181	0.00551	0.00301	1.21936	1.19054
sky130_fd_sc_hs__dfrbp_2	0.00166	0.00531	0.00301	2.36336	2.35780

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrbp_1	0.00000	0.51549	1.03950
sky130_fd_sc_hs__dfrbp_2	0.00000	0.52006	0.87400

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)	0.21443	0.68776	6.14068
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RR)	0.25315	0.64306	6.58504

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrbp_1	CLK->Q (RF)	0.19933	0.43614	2.22341
	RESET_B->Q (FF)	0.27887	0.74957	5.12894
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RF)	0.22748	0.43069	2.29121
	RESET_B->Q (FF)	0.32909	0.77483	5.27765

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)	0.16939	0.66094	6.09357
	RESET_B->Q_N (FR)	0.24841	0.96919	8.98478
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RR)	0.16515	0.56343	6.03386
	RESET_B->Q_N (FR)	0.26690	0.90535	9.01463

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)	0.16222	0.45325	2.23534
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RF)	0.16491	0.44892	2.33451

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)	-0.05408	-0.12176	-0.58515
	setup	CLK (R)	0.09856	0.15398	0.60952
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.05183	-0.12632	-0.61491
	setup	CLK (R)	0.11721	0.16709	0.64261

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)	-0.06879	-0.20123	-3.08967
	setup	CLK (R)	0.14200	0.27925	3.15755
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.08338	-0.22640	-3.14776
	setup	CLK (R)	0.15850	0.29641	3.21693

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)	-0.05408	-0.12176	-0.58515
	setup	CLK (R)	0.09856	0.15398	0.60952
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.05183	-0.12632	-0.61491
	setup	CLK (R)	0.11721	0.16709	0.64261

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)	-0.06879	-0.20123	-3.08967
	setup	CLK (R)	0.14200	0.27925	3.15755
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.08338	-0.22640	-3.14776
	setup	CLK (R)	0.15850	0.29641	3.21693

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)	0.10931	0.15013	0.85799
	removal	CLK (R)	-0.08537	-0.13473	-0.85151
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.12524	0.16039	0.87554
	removal	CLK (R)	-0.09309	-0.14329	-0.86538

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)	0.10931	0.15013	0.85799
	removal	CLK (R)	-0.08537	-0.13473	-0.85151
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.12524	0.16039	0.87554
	removal	CLK (R)	-0.09309	-0.14329	-0.86538

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 ()	0.14168	0.64453	16.50020
	min_pulse_width	RESET_B ()	0.11750	0.64453	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	RESET_B ()	0.15377	0.64453	16.50020
	min_pulse_width	RESET_B ()	0.12959	0.64453	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 ()	0.11750	0.64453	16.50020
	min_pulse_width	CLK ()	0.07640	0.64453	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.15377	0.64453	16.50020
	min_pulse_width	CLK ()	0.09091	0.64453	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 ()	0.15135	0.64453	16.50020
	min_pulse_width	CLK ()	0.18519	0.64453	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.16827	0.64453	16.50020
	min_pulse_width	CLK ()	0.19003	0.64453	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	0.01582	0.01669	0.04051
	CLK	0.01340	0.01415	0.03807
sky130_fd_sc_hs__dfrbp_2	CLK	0.01805	0.01889	0.04284
	CLK	0.01566	0.01644	0.04042

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.01600	0.01700	0.04019
	CLK	0.01353	0.01448	0.03770
	RESET_B	0.01231	0.01314	0.03337
	RESET_B	0.01709	0.01792	0.03774
sky130_fd_sc_hs__dfrbp_2	CLK	0.01806	0.01947	0.04285
	CLK	0.01567	0.01703	0.04042
	RESET_B	0.01573	0.01693	0.03679
	RESET_B	0.02019	0.02143	0.04117

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.01601	0.01701	0.04100
	CLK	0.01354	0.01449	0.03857
	RESET_B	0.01232	0.01315	0.03409
	RESET_B	0.01710	0.01794	0.03810
sky130_fd_sc_hs__dfrbp_2	CLK	0.01808	0.01949	0.04377
	CLK	0.01569	0.01705	0.04133
	RESET_B	0.01575	0.01695	0.03895
	RESET_B	0.02021	0.02145	0.04175

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.01580	0.01655	0.03998
	CLK	0.01339	0.01413	0.03756
sky130_fd_sc_hs__dfrbp_2	CLK	0.01804	0.01880	0.04202
	CLK	0.01565	0.01643	0.03960

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00410	0.00459	0.01946
	(CLK * RESET_B)	0.00089	0.00136	0.01625
	(CLK * !RESET_B)	0.00045	0.00044	0.00043
	(CLK * !RESET_B)	-0.00139	-0.00139	-0.00141
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01171	0.01221	0.02875
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00835	0.00885	0.02539
	(!CLK * !RESET_B)	0.00044	0.00045	0.00043
	(!CLK * !RESET_B)	-0.00139	-0.00140	-0.00141
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00471	0.00521	0.01981
	(CLK * RESET_B)	0.00191	0.00239	0.01700
	(CLK * !RESET_B)	0.00050	0.00050	0.00050
	(CLK * !RESET_B)	-0.00119	-0.00119	-0.00121
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01432	0.01480	0.03115
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01168	0.01215	0.02851
	(!CLK * !RESET_B)	0.00050	0.00051	0.00050
	(!CLK * !RESET_B)	-0.00119	-0.00120	-0.00121

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00056	0.00110	0.01578
	(CLK * RESET_B)	0.00376	0.00432	0.01899
	(CLK * !RESET_B)	-0.00043	-0.00042	-0.00042
	(CLK * !RESET_B)	0.00143	0.00142	0.00142
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00744	0.00807	0.02553
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01081	0.01144	0.02889
	(!CLK * !RESET_B)	-0.00043	-0.00043	-0.00042
	(!CLK * !RESET_B)	0.00143	0.00144	0.00142
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00094	0.00143	0.01583
	(CLK * RESET_B)	0.00374	0.00425	0.01865
	(CLK * !RESET_B)	-0.00049	-0.00049	-0.00048
	(CLK * !RESET_B)	0.00123	0.00124	0.00122
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00891	0.00946	0.02621
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01157	0.01211	0.02886
	(!CLK * !RESET_B)	-0.00049	-0.00049	-0.00048
	(!CLK * !RESET_B)	0.00123	0.00124	0.00122

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)	0.00773	0.00800	0.02191
	(CLK * D * !Q * Q_N)	-0.00164	-0.00144	0.01257
	(CLK * !D * !Q * Q_N)	0.00369	0.00374	0.00370
	(CLK * !D * !Q * Q_N)	-0.00414	-0.00417	-0.00414
	(!CLK * D * !Q * Q_N)	0.01571	0.01577	0.03829
	(!CLK * D * !Q * Q_N)	0.00621	0.00623	0.02877
	(!CLK * !D * !Q * Q_N)	0.00360	0.00362	0.00361
	(!CLK * !D * !Q * Q_N)	-0.00422	-0.00424	-0.00423
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	0.00859	0.00888	0.02269
	(CLK * D * !Q * Q_N)	-0.00031	-0.00010	0.01373
	(CLK * !D * !Q * Q_N)	0.00402	0.00407	0.00403
	(CLK * !D * !Q * Q_N)	-0.00365	-0.00368	-0.00365
	(!CLK * D * !Q * Q_N)	0.01855	0.01860	0.04091
	(!CLK * D * !Q * Q_N)	0.00983	0.00978	0.03214
	(!CLK * !D * !Q * Q_N)	0.00396	0.00401	0.00397
	(!CLK * !D * !Q * Q_N)	-0.00370	-0.00373	-0.00371

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)	-0.00209	-0.00166	0.01239
	(CLK * D * !Q * Q_N)	0.00726	0.00776	0.02177
	(CLK * !D * !Q * Q_N)	-0.00357	-0.00372	-0.00370
	(CLK * !D * !Q * Q_N)	0.00422	0.00419	0.00416
	(!CLK * D * !Q * Q_N)	0.00557	0.00576	0.02996
	(!CLK * D * !Q * Q_N)	0.01512	0.01525	0.03949
	(!CLK * !D * !Q * Q_N)	-0.00349	-0.00362	-0.00361
	(!CLK * !D * !Q * Q_N)	0.00429	0.00428	0.00425
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	-0.00210	-0.00168	0.01234
	(CLK * D * !Q * Q_N)	0.00682	0.00729	0.02131
	(CLK * !D * !Q * Q_N)	-0.00389	-0.00405	-0.00403
	(CLK * !D * !Q * Q_N)	0.00372	0.00369	0.00367
	(!CLK * D * !Q * Q_N)	0.00688	0.00716	0.03086
	(!CLK * D * !Q * Q_N)	0.01569	0.01596	0.03967
	(!CLK * !D * !Q * Q_N)	-0.00384	-0.00400	-0.00397
	(!CLK * !D * !Q * Q_N)	0.00377	0.00375	0.00372

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)	0.01487	0.01603	0.06093
	(D * RESET_B * Q * !Q_N)	0.00997	0.01111	0.05603
	(D * !RESET_B * !Q * Q_N)	0.01525	0.01638	0.06110
	(D * !RESET_B * !Q * Q_N)	0.01035	0.01148	0.05620
	(!D * !Q * Q_N)	0.01525	0.01638	0.06110
	(!D * !Q * Q_N)	0.01035	0.01147	0.05620
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.01353	0.01473	0.05961
	(D * RESET_B * Q * !Q_N)	0.00875	0.00992	0.05483
	(D * !RESET_B * !Q * Q_N)	0.01353	0.01472	0.05963
	(D * !RESET_B * !Q * Q_N)	0.00875	0.00993	0.05485
	(!D * !Q * Q_N)	0.01353	0.01471	0.05964
	(!D * !Q * Q_N)	0.00875	0.00993	0.05486

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)	0.00815	0.01021	0.05548
	(D * RESET_B * Q * !Q_N)	0.01306	0.01511	0.06038
	(D * RESET_B * !Q * Q_N)	0.01499	0.01703	0.06356
	(D * RESET_B * !Q * Q_N)	0.01975	0.02180	0.06831
	(D * !RESET_B * !Q * Q_N)	0.00760	0.00966	0.05499
	(D * !RESET_B * !Q * Q_N)	0.01250	0.01458	0.05989
	(!D * RESET_B * Q * !Q_N)	0.01604	0.01829	0.06418
	(!D * RESET_B * Q * !Q_N)	0.02110	0.02335	0.06923
	(!D * !Q * Q_N)	0.00759	0.00966	0.05501
	(!D * !Q * Q_N)	0.01250	0.01457	0.05991
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.00825	0.01022	0.05550
	(D * RESET_B * Q * !Q_N)	0.01302	0.01502	0.06027
	(D * RESET_B * !Q * Q_N)	0.01827	0.02020	0.06649
	(D * RESET_B * !Q * Q_N)	0.02320	0.02512	0.07140
	(D * !RESET_B * !Q * Q_N)	0.00815	0.01019	0.05550
	(D * !RESET_B * !Q * Q_N)	0.01294	0.01498	0.06028
	(!D * RESET_B * Q * !Q_N)	0.01745	0.01963	0.06555
	(!D * RESET_B * Q * !Q_N)	0.02205	0.02425	0.07015
	(!D * !Q * Q_N)	0.00815	0.01019	0.05552
	(!D * !Q * Q_N)	0.01294	0.01498	0.06029

SKY130_FD_SC_HS__DFRTN

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00178	0.00532	0.00288	1.15956

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrtn_1	0.00000	0.48352	0.95983

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)	0.22941	0.89181	8.51824

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)	0.18599	0.59808	4.53647
	RESET_B->Q (FF)	0.25608	0.71989	4.95896

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)	0.01762	0.07959	2.14107
	setup	CLK_N (F)	0.05781	-0.00826	-2.08830

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)	-0.05398	-0.10613	-0.56092
	setup	CLK_N (F)	0.17263	0.20617	0.59848

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)	0.01762	0.07959	2.14107
	setup	CLK_N (F)	0.05781	-0.00826	-2.08830

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)	-0.05398	-0.10613	-0.56092
	setup	CLK_N (F)	0.17263	0.20617	0.59848

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)	0.06532	-0.01845	-1.91464
	removal	CLK_N (F)	-0.03178	0.04063	1.91660

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)	0.06532	-0.01845	-1.91464
	removal	CLK_N (F)	-0.03178	0.04063	1.91660

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 ()	0.11025	0.64453	16.50020
	min_pulse_width	RESET_B ()	0.13926	0.64453	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 ()	0.11750	0.64453	16.50020
	min_pulse_width	CLK_N ()	0.17552	0.64453	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 ()	0.13201	0.64453	16.50020
	min_pulse_width	CLK_N ()	0.11750	0.64453	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	0.02456	0.02710	0.07497
	CLK_N	0.02914	0.03169	0.07955

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtn_1	CLK_N	0.02262	0.02476	0.07220
	CLK_N	0.02709	0.02920	0.07665
	RESET_B	0.02196	0.02320	0.06396
	RESET_B	0.03087	0.03209	0.07166

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)	0.01160	0.01212	0.02861
	(CLK_N * RESET_B)	0.00864	0.00916	0.02565
	(CLK_N * !RESET_B)	0.00045	0.00045	0.00044
	(CLK_N * !RESET_B)	-0.00138	-0.00139	-0.00139
	(!CLK_N * RESET_B)	0.00399	0.00448	0.01936
	(!CLK_N * RESET_B)	0.00095	0.00142	0.01631
	(!CLK_N * !RESET_B)	0.00045	0.00045	0.00044
	(!CLK_N * !RESET_B)	-0.00138	-0.00138	-0.00139

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)	0.00848	0.00909	0.02639
	(CLK_N * RESET_B)	0.01144	0.01204	0.02934
	(CLK_N * !RESET_B)	-0.00043	-0.00043	-0.00042
	(CLK_N * !RESET_B)	0.00140	0.00142	0.00140
	(!CLK_N * RESET_B)	0.00065	0.00120	0.01588
	(!CLK_N * RESET_B)	0.00370	0.00425	0.01892
	(!CLK_N * !RESET_B)	-0.00043	-0.00043	-0.00042
	(!CLK_N * !RESET_B)	0.00141	0.00141	0.00140

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)	0.01556	0.01568	0.03818
	(CLK_N * D * !Q)	0.00672	0.00681	0.02932
	(CLK_N * !D * !Q)	0.00387	0.00392	0.00388
	(CLK_N * !D * !Q)	-0.00368	-0.00371	-0.00368
	(!CLK_N * D * !Q)	0.00740	0.00770	0.02163
	(!CLK_N * D * !Q)	-0.00156	-0.00130	0.01267
	(!CLK_N * !D * !Q)	0.00378	0.00383	0.00379
	(!CLK_N * !D * !Q)	-0.00377	-0.00380	-0.00377

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)	0.00650	0.00699	0.03137
	(CLK_N * D * !Q)	0.01538	0.01585	0.04025
	(CLK_N * !D * !Q)	-0.00376	-0.00391	-0.00388
	(CLK_N * !D * !Q)	0.00374	0.00373	0.00370
	(!CLK_N * D * !Q)	-0.00187	-0.00141	0.01266
	(!CLK_N * D * !Q)	0.00704	0.00758	0.02162
	(!CLK_N * !D * !Q)	-0.00367	-0.00380	-0.00379
	(!CLK_N * !D * !Q)	0.00383	0.00380	0.00379

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)	0.01421	0.01550	0.06106
	(D * RESET_B * Q)	0.00968	0.01096	0.05653
	(D * RESET_B * !Q)	0.02207	0.02347	0.06949
	(D * RESET_B * !Q)	0.01763	0.01901	0.06505
	(D * !RESET_B * !Q)	0.01398	0.01530	0.06068
	(D * !RESET_B * !Q)	0.00944	0.01075	0.05615
	(!D * RESET_B * Q)	0.02163	0.02276	0.06912
	(!D * RESET_B * Q)	0.01700	0.01812	0.06449
	(!D * !Q)	0.01397	0.01530	0.06063
	(!D * !Q)	0.00944	0.01075	0.05611

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)	0.01014	0.01207	0.05810
	(D * RESET_B * Q)	0.01466	0.01661	0.06263
	(D * !RESET_B * !Q)	0.01025	0.01215	0.05822
	(D * !RESET_B * !Q)	0.01477	0.01670	0.06276
	(!D * !Q)	0.01023	0.01214	0.05815
	(!D * !Q)	0.01475	0.01668	0.06268

SKY130_FD_SC_HS__DFRTPx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00179	0.00549	0.00303	1.22780
sky130_fd_sc_hs__dfrtp_2	0.00178	0.00540	0.00302	2.30978
sky130_fd_sc_hs__dfrtp_4	0.00179	0.00557	0.00301	4.59926

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dfrtp_1	0.00000	0.48352	0.95983
sky130_fd_sc_hs__dfrtp_2	0.00000	0.53938	0.96725
sky130_fd_sc_hs__dfrtp_4	0.00000	0.79473	1.42577

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)	0.18409	0.65963	6.11391
sky130_fd_sc_hs__dfrtp_2	CLK->Q (RR)	0.18240	0.55501	5.90550
sky130_fd_sc_hs__dfrtp_4	CLK->Q (RR)	0.23799	0.54512	6.06997

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrtp_1	CLK->Q (RF)	0.19048	0.42817	2.23881
	RESET_B->Q (FF)	0.26275	0.73422	5.13394
sky130_fd_sc_hs__dfrtp_2	CLK->Q (RF)	0.21082	0.41602	2.11035
	RESET_B->Q (FF)	0.28169	0.71985	5.00530
sky130_fd_sc_hs__dfrtp_4	CLK->Q (RF)	0.21241	0.39466	2.30648
	RESET_B->Q (FF)	0.29072	0.70475	5.20629

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)	-0.05897	-0.12632	-0.60296
	setup	CLK (R)	0.11900	0.16709	0.66634
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.05568	-0.12632	-0.59768
	setup	CLK (R)	0.11589	0.16646	0.64662
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.05933	-0.12432	-0.58940
	setup	CLK (R)	0.11712	0.16577	0.62126

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)	-0.06029	-0.19408	-2.98185
	setup	CLK (R)	0.13975	0.27493	3.15614
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.05597	-0.19016	-2.97691
	setup	CLK (R)	0.13738	0.27591	3.15609
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.07192	-0.20475	-3.01208
	setup	CLK (R)	0.15103	0.28400	3.17716

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)	-0.05897	-0.12632	-0.60296
	setup	CLK (R)	0.11900	0.16709	0.66634
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.05568	-0.12632	-0.59768
	setup	CLK (R)	0.11589	0.16646	0.64662
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.05933	-0.12432	-0.58940
	setup	CLK (R)	0.11712	0.16577	0.62126

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)	-0.06029	-0.19408	-2.98185
	setup	CLK (R)	0.13975	0.27493	3.15614
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.05597	-0.19016	-2.97691
	setup	CLK (R)	0.13738	0.27591	3.15609
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.07192	-0.20475	-3.01208
	setup	CLK (R)	0.15103	0.28400	3.17716

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)	0.12874	0.16310	0.90121
	removal	CLK (R)	-0.08570	-0.13687	-0.85818
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.12860	0.16028	0.89700
	removal	CLK (R)	-0.08217	-0.13473	-0.85338
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.12509	0.16122	0.89277
	removal	CLK (R)	-0.09003	-0.13901	-0.84911

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)	0.12874	0.16310	0.90121
	removal	CLK (R)	-0.08570	-0.13687	-0.85818
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.12860	0.16028	0.89700
	removal	CLK (R)	-0.08217	-0.13473	-0.85338
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.12509	0.16122	0.89277
	removal	CLK (R)	-0.09003	-0.13901	-0.84911

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 ()	0.13926	0.64453	16.50020
	min_pulse_width	RESET_B ()	0.11025	0.64453	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	RESET_B ()	0.14168	0.64453	16.50020
	min_pulse_width	RESET_B ()	0.11509	0.64453	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	RESET_B ()	0.14651	0.64453	16.50020
	min_pulse_width	RESET_B ()	0.11509	0.64453	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 ()	0.08849	0.64453	16.50020
	min_pulse_width	CLK ()	0.07157	0.64453	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.09091	0.64453	16.50020
	min_pulse_width	CLK ()	0.07399	0.64453	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.12717	0.64453	16.50020
	min_pulse_width	CLK ()	0.07882	0.64453	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 ()	0.17069	0.64453	16.50020
	min_pulse_width	CLK ()	0.18278	0.64453	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.16827	0.64453	16.50020
	min_pulse_width	CLK ()	0.18278	0.64453	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.17311	0.64453	16.50020
	min_pulse_width	CLK ()	0.19728	0.64453	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	0.02809	0.02971	0.07731
	CLK	0.02328	0.02489	0.07292
sky130_fd_sc_hs__dfrtp_2	CLK	0.03103	0.03293	0.08035
	CLK	0.02623	0.02815	0.07555
sky130_fd_sc_hs__dfrtp_4	CLK	0.03936	0.04166	0.08929
	CLK	0.03438	0.03674	0.08621

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	CLK	0.03001	0.03178	0.07831
	CLK	0.02493	0.02662	0.07287
	RESET_B	0.02218	0.02370	0.06344
	RESET_B	0.03171	0.03320	0.07281
sky130_fd_sc_hs__dfrtp_2	CLK	0.03236	0.03435	0.08109
	CLK	0.02732	0.02925	0.07558
	RESET_B	0.02471	0.02640	0.06840
	RESET_B	0.03408	0.03572	0.07546
sky130_fd_sc_hs__dfrtp_4	CLK	0.04189	0.04455	0.09084
	CLK	0.03666	0.03923	0.08539
	RESET_B	0.03362	0.03596	0.08060
	RESET_B	0.04324	0.04557	0.08533

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00406	0.00455	0.01944
	(CLK * RESET_B)	0.00087	0.00135	0.01624
	(CLK * !RESET_B)	0.00043	0.00043	0.00043
	(CLK * !RESET_B)	-0.00136	-0.00137	-0.00138
	(!CLK * RESET_B)	0.01200	0.01252	0.02913
	(!CLK * RESET_B)	0.00862	0.00913	0.02574
	(!CLK * !RESET_B)	0.00043	0.00044	0.00043
	(!CLK * !RESET_B)	-0.00136	-0.00137	-0.00138
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00395	0.00446	0.01937
	(CLK * RESET_B)	0.00080	0.00130	0.01621
	(CLK * !RESET_B)	0.00043	0.00043	0.00043
	(CLK * !RESET_B)	-0.00136	-0.00137	-0.00138
	(!CLK * RESET_B)	0.01154	0.01209	0.02876
	(!CLK * RESET_B)	0.00824	0.00878	0.02546
	(!CLK * !RESET_B)	0.00043	0.00044	0.00043
	(!CLK * !RESET_B)	-0.00136	-0.00138	-0.00138
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00409	0.00458	0.01945
	(CLK * RESET_B)	0.00091	0.00138	0.01626
	(CLK * !RESET_B)	0.00045	0.00044	0.00044
	(CLK * !RESET_B)	-0.00138	-0.00137	-0.00139
	(!CLK * RESET_B)	0.01307	0.01357	0.02999
	(!CLK * RESET_B)	0.00970	0.01018	0.02662
	(!CLK * !RESET_B)	0.00044	0.00045	0.00044
	(!CLK * !RESET_B)	-0.00137	-0.00138	-0.00139

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00054	0.00108	0.01578
	(CLK * RESET_B)	0.00373	0.00429	0.01897
	(CLK * !RESET_B)	-0.00042	-0.00041	-0.00041
	(CLK * !RESET_B)	0.00140	0.00140	0.00139
	(!CLK * RESET_B)	0.00780	0.00843	0.02597
	(!CLK * RESET_B)	0.01118	0.01182	0.02935
	(!CLK * !RESET_B)	-0.00042	-0.00042	-0.00041
	(!CLK * !RESET_B)	0.00140	0.00141	0.00139
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00054	0.00110	0.01582
	(CLK * RESET_B)	0.00368	0.00425	0.01897
	(CLK * !RESET_B)	-0.00042	-0.00041	-0.00041
	(CLK * !RESET_B)	0.00140	0.00140	0.00139
	(!CLK * RESET_B)	0.00782	0.00848	0.02610
	(!CLK * RESET_B)	0.01113	0.01179	0.02940
	(!CLK * !RESET_B)	-0.00042	-0.00042	-0.00041
	(!CLK * !RESET_B)	0.00141	0.00142	0.00139
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00056	0.00110	0.01578
	(CLK * RESET_B)	0.00373	0.00429	0.01896
	(CLK * !RESET_B)	-0.00043	-0.00042	-0.00042
	(CLK * !RESET_B)	0.00141	0.00141	0.00140
	(!CLK * RESET_B)	0.00797	0.00855	0.02594
	(!CLK * RESET_B)	0.01134	0.01193	0.02931
	(!CLK * !RESET_B)	-0.00043	-0.00043	-0.00042
	(!CLK * !RESET_B)	0.00141	0.00142	0.00140

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)	0.00771	0.00796	0.02192
	(CLK * D * !Q)	-0.00165	-0.00144	0.01256
	(CLK * !D * !Q)	0.00368	0.00374	0.00369
	(CLK * !D * !Q)	-0.00412	-0.00415	-0.00412
	(!CLK * D * !Q)	0.01606	0.01612	0.03872
	(!CLK * D * !Q)	0.00653	0.00661	0.02922
	(!CLK * !D * !Q)	0.00356	0.00358	0.00356
	(!CLK * !D * !Q)	-0.00424	-0.00425	-0.00424
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	0.00755	0.00780	0.02180
	(CLK * D * !Q)	-0.00167	-0.00144	0.01257
	(CLK * !D * !Q)	0.00365	0.00368	0.00366
	(CLK * !D * !Q)	-0.00406	-0.00407	-0.00406
	(!CLK * D * !Q)	0.01552	0.01565	0.03830
	(!CLK * D * !Q)	0.00616	0.00626	0.02896
	(!CLK * !D * !Q)	0.00354	0.00355	0.00355
	(!CLK * !D * !Q)	-0.00417	-0.00417	-0.00417
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	0.00791	0.00818	0.02209
	(CLK * D * !Q)	-0.00156	-0.00135	0.01264
	(CLK * !D * !Q)	0.00389	0.00395	0.00390
	(CLK * !D * !Q)	-0.00405	-0.00409	-0.00406
	(!CLK * D * !Q)	0.01703	0.01706	0.03944
	(!CLK * D * !Q)	0.00739	0.00739	0.02979
	(!CLK * !D * !Q)	0.00358	0.00361	0.00359
	(!CLK * !D * !Q)	-0.00436	-0.00438	-0.00437

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)	-0.00211	-0.00170	0.01238
	(CLK * D * !Q)	0.00723	0.00767	0.02174
	(CLK * !D * !Q)	-0.00357	-0.00371	-0.00369
	(CLK * !D * !Q)	0.00419	0.00416	0.00413
	(!CLK * D * !Q)	0.00581	0.00599	0.03029
	(!CLK * D * !Q)	0.01538	0.01552	0.03984
	(!CLK * !D * !Q)	-0.00345	-0.00358	-0.00356
	(!CLK * !D * !Q)	0.00431	0.00429	0.00426
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	-0.00207	-0.00164	0.01246
	(CLK * D * !Q)	0.00713	0.00759	0.02168
	(CLK * !D * !Q)	-0.00354	-0.00368	-0.00366
	(CLK * !D * !Q)	0.00414	0.00410	0.00408
	(!CLK * D * !Q)	0.00582	0.00622	0.03045
	(!CLK * D * !Q)	0.01523	0.01561	0.03985
	(!CLK * !D * !Q)	-0.00343	-0.00355	-0.00354
	(!CLK * !D * !Q)	0.00424	0.00422	0.00419
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	-0.00229	-0.00188	0.01219
	(CLK * D * !Q)	0.00716	0.00761	0.02168
	(CLK * !D * !Q)	-0.00377	-0.00391	-0.00389
	(CLK * !D * !Q)	0.00414	0.00410	0.00408
	(!CLK * D * !Q)	0.00614	0.00624	0.03091
	(!CLK * D * !Q)	0.01583	0.01592	0.04054
	(!CLK * !D * !Q)	-0.00347	-0.00361	-0.00358
	(!CLK * !D * !Q)	0.00444	0.00442	0.00439

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)	0.01537	0.01647	0.06133
	(D * RESET_B * Q)	0.01040	0.01150	0.05637
	(D * !RESET_B * !Q)	0.01593	0.01702	0.06169
	(D * !RESET_B * !Q)	0.01097	0.01205	0.05673
	(!D * !Q)	0.01593	0.01701	0.06169
	(!D * !Q)	0.01097	0.01204	0.05673
sky130_fd_sc_hs__dfrtp_2	(D * RESET_B * Q)	0.01528	0.01640	0.06116
	(D * RESET_B * Q)	0.01034	0.01144	0.05622
	(D * !RESET_B * !Q)	0.01584	0.01694	0.06160
	(D * !RESET_B * !Q)	0.01091	0.01200	0.05666
	(!D * !Q)	0.01584	0.01693	0.06160
	(!D * !Q)	0.01090	0.01199	0.05666
sky130_fd_sc_hs__dfrtp_4	(D * RESET_B * Q)	0.01612	0.01723	0.06182
	(D * RESET_B * Q)	0.01100	0.01210	0.05670
	(D * !RESET_B * !Q)	0.01656	0.01767	0.06201
	(D * !RESET_B * !Q)	0.01145	0.01253	0.05689
	(!D * !Q)	0.01656	0.01766	0.06202
	(!D * !Q)	0.01144	0.01252	0.05689

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)**	0.00821	0.01024	0.05546
	(D * RESET_B * Q)	0.01318	0.01521	0.06042
	(D * RESET_B * !Q)	0.01540	0.01744	0.06386
	(D * RESET_B * !Q)	0.02019	0.02222	0.06865
	(D * !RESET_B * !Q)	0.00756	0.00961	0.05485
	(D * !RESET_B * !Q)	0.01253	0.01459	0.05981
	(!D * RESET_B * Q)	0.01649	0.01872	0.06455
	(!D * RESET_B * Q)	0.02165	0.02388	0.06970
	(!D * !Q)	0.00756	0.00961	0.05486
	(!D * !Q)	0.01253	0.01459	0.05982
sky130_fd_sc_hs__dfrtp_2	**(D * RESET_B * Q)**	0.00823	0.01027	0.05549
	(D * RESET_B * Q)	0.01318	0.01521	0.06042
	(D * RESET_B * !Q)	0.01507	0.01711	0.06356
	(D * RESET_B * !Q)	0.01986	0.02189	0.06835
	(D * !RESET_B * !Q)	0.00759	0.00965	0.05487
	(D * !RESET_B * !Q)	0.01253	0.01459	0.05981
	(!D * RESET_B * Q)	0.01652	0.01875	0.06457
	(!D * RESET_B * Q)	0.02162	0.02386	0.06968
	(!D * !Q)	0.00759	0.00964	0.05489
	(!D * !Q)	0.01253	0.01459	0.05982
sky130_fd_sc_hs__dfrtp_4	**(D * RESET_B * Q)**	0.00854	0.01056	0.05557
	(D * RESET_B * Q)	0.01367	0.01566	0.06070
	(D * RESET_B * !Q)	0.01692	0.01886	0.06504
	(D * RESET_B * !Q)	0.02186	0.02379	0.06998
	(D * !RESET_B * !Q)	0.00801	0.01006	0.05509
	(D * !RESET_B * !Q)	0.01314	0.01518	0.06020
	(!D * RESET_B * Q)	0.01688	0.01909	0.06474
	(!D * RESET_B * Q)	0.02219	0.02439	0.07004
	(!D * !Q)	0.00801	0.01003	0.05510
	(!D * !Q)	0.01314	0.01515	0.06021

SKY130_FD_SC_HS__DFSBPx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00176	0.00328	0.00298	1.16186	1.09753
sky130_fd_sc_hs__dfsbp_2	0.00177	0.00325	0.00299	2.38064	2.28311

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfsbp_1	0.00000	0.53240	0.65612
sky130_fd_sc_hs__dfsbp_2	0.00000	0.45403	0.49340

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)	0.24668	0.71740	6.08982
	SET_B->Q (FR)	0.24770	0.98530	9.08625
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RR)	0.29368	0.65414	6.14029
	SET_B->Q (FR)	0.30198	0.93787	9.22462

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfsbp_1	CLK->Q (RF)	0.22651	0.45600	2.12246
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RF)	0.25537	0.45020	2.22709

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)	0.19627	0.69850	6.08086
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RR)	0.19663	0.59296	6.06310

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)	0.18805	0.48018	2.14139
	SET_B->Q_N (FF)	0.18412	0.74817	5.16282
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RF)	0.20560	0.47764	2.25390
	SET_B->Q_N (FF)	0.20679	0.75819	5.37067

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)	-0.04934	-0.11577	-0.52363
	setup	CLK (R)	0.08190	0.13887	0.53303
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.04734	-0.11205	-0.51811
	setup	CLK (R)	0.07606	0.13487	0.52165

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)	-0.05113	-0.18499	-3.02391
	setup	CLK (R)	0.15523	0.29600	3.25729
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.05750	-0.19401	-3.01783
	setup	CLK (R)	0.15294	0.29431	3.25530

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)	-0.04934	-0.11577	-0.52363
	setup	CLK (R)	0.08190	0.13887	0.53303
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.04734	-0.11205	-0.51811
	setup	CLK (R)	0.07606	0.13487	0.52165

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)	-0.05113	-0.18499	-3.02391
	setup	CLK (R)	0.15523	0.29600	3.25729
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.05750	-0.19401	-3.01783
	setup	CLK (R)	0.15294	0.29431	3.25530

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)	-0.08927	-0.12988	-0.39018
	removal	CLK (R)	0.11210	0.14971	0.44810
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.09178	-0.12812	-0.40391
	removal	CLK (R)	0.11015	0.14971	0.42755

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)	-0.08927	-0.12988	-0.39018
	removal	CLK (R)	0.11210	0.14971	0.44810
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.09178	-0.12812	-0.40391
	removal	CLK (R)	0.11015	0.14971	0.42755

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 ()	0.19245	0.64453	16.50020
	min_pulse_width	SET_B ()	0.19245	0.64453	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	SET_B ()	0.20695	0.64453	16.50020
	min_pulse_width	SET_B ()	0.23838	0.64453	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 ()	0.14651	0.64453	16.50020
	min_pulse_width	CLK ()	0.09574	0.64453	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.18761	0.64453	16.50020
	min_pulse_width	CLK ()	0.11025	0.64453	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 ()	0.14651	0.64453	16.50020
	min_pulse_width	CLK ()	0.21179	0.64453	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.14168	0.64453	16.50020
	min_pulse_width	CLK ()	0.20695	0.64453	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	0.01644	0.01709	0.04092
	CLK	0.01405	0.01468	0.03851
	SET_B	0.01560	0.01591	0.02845
	SET_B	0.01798	0.01828	0.03025
sky130_fd_sc_hs__dfsbp_2	CLK	0.01981	0.02035	0.04437
	CLK	0.01739	0.01780	0.04189
	SET_B	0.01301	0.01314	0.03146
	SET_B	0.01562	0.01574	0.03103

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01692	0.01786	0.04050
	CLK	0.01465	0.01548	0.03820
sky130_fd_sc_hs__dfsbp_2	CLK	0.01985	0.02101	0.04403
	CLK	0.01753	0.01866	0.04165

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01694	0.01787	0.04100
	CLK	0.01467	0.01550	0.03880
sky130_fd_sc_hs__dfsbp_2	CLK	0.01988	0.02112	0.04465
	CLK	0.01756	0.01869	0.04242

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01642	0.01710	0.04032
	CLK	0.01402	0.01466	0.03794
	SET_B	0.01558	0.01588	0.02769
	SET_B	0.01795	0.01826	0.02992
sky130_fd_sc_hs__dfsbp_2	CLK	0.01979	0.02032	0.04372
	CLK	0.01737	0.01778	0.04131
	SET_B	0.01301	0.01312	0.02789
	SET_B	0.01561	0.01573	0.03046

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00366	0.00426	0.02006
	CLK	0.00079	0.00139	0.01721
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01088	0.01127	0.02605
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00775	0.00812	0.02290
	(!CLK * !SET_B * Q * !Q_N)	0.00857	0.00899	0.02313
	(!CLK * !SET_B * Q * !Q_N)	0.00531	0.00571	0.01986
sky130_fd_sc_hs__dfsbp_2	CLK	0.00365	0.00424	0.02006
	CLK	0.00078	0.00138	0.01719
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01078	0.01117	0.02598
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00753	0.00791	0.02273
	(!CLK * !SET_B * Q * !Q_N)	0.00856	0.00898	0.02314
	(!CLK * !SET_B * Q * !Q_N)	0.00521	0.00561	0.01979

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00028	0.00097	0.01645
	CLK	0.00313	0.00383	0.01931
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00790	0.00830	0.02302
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01103	0.01144	0.02616
	(!CLK * !SET_B * Q * !Q_N)	0.00447	0.00481	0.01847
	(!CLK * !SET_B * Q * !Q_N)	0.00774	0.00809	0.02174
sky130_fd_sc_hs__dfsbp_2	CLK	0.00027	0.00096	0.01645
	CLK	0.00314	0.00384	0.01932
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00758	0.00798	0.02273
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01082	0.01123	0.02597
	(!CLK * !SET_B * Q * !Q_N)	0.00431	0.00465	0.01834
	(!CLK * !SET_B * Q * !Q_N)	0.00766	0.00801	0.02170

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)	0.00276	0.00278	0.00277
	(CLK * Q * !Q_N)	-0.00235	-0.00236	-0.00235
	(!CLK * D * Q * !Q_N)	0.00302	0.00304	0.00303
	(!CLK * D * Q * !Q_N)	-0.00209	-0.00209	-0.00209
	(!CLK * !D * Q * !Q_N)	0.00577	0.00610	0.02002
	(!CLK * !D * Q * !Q_N)	0.00045	0.00077	0.01469
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	0.00280	0.00284	0.00281
	(CLK * Q * !Q_N)	-0.00229	-0.00230	-0.00229
	(!CLK * D * Q * !Q_N)	0.00299	0.00301	0.00300
	(!CLK * D * Q * !Q_N)	-0.00209	-0.00209	-0.00209
	(!CLK * !D * Q * !Q_N)	0.00555	0.00591	0.01986
	(!CLK * !D * Q * !Q_N)	0.00028	0.00060	0.01458

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)	-0.00269	-0.00277	-0.00276
	(CLK * Q * !Q_N)	0.00238	0.00239	0.00237
	(!CLK * D * Q * !Q_N)	-0.00295	-0.00303	-0.00302
	(!CLK * D * Q * !Q_N)	0.00213	0.00212	0.00211
	(!CLK * !D * Q * !Q_N)	-0.00029	0.00052	0.01436
	(!CLK * !D * Q * !Q_N)	0.00501	0.00587	0.01970
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	-0.00276	-0.00281	-0.00280
	(CLK * Q * !Q_N)	0.00234	0.00232	0.00230
	(!CLK * D * Q * !Q_N)	-0.00295	-0.00301	-0.00299
	(!CLK * D * Q * !Q_N)	0.00215	0.00212	0.00210
	(!CLK * !D * Q * !Q_N)	-0.00025	0.00047	0.01445
	(!CLK * !D * Q * !Q_N)	0.00501	0.00575	0.01973

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)	0.01589	0.01697	0.06189
	(D * Q * !Q_N)	0.01120	0.01226	0.05720
	(!D * SET_B * !Q * Q_N)	0.01558	0.01662	0.06142
	(!D * SET_B * !Q * Q_N)	0.01089	0.01191	0.05675
	(!D * !SET_B * Q * !Q_N)	0.02890	0.03031	0.07587
	(!D * !SET_B * Q * !Q_N)	0.02381	0.02520	0.07077
sky130_fd_sc_hs__dfsbp_2	(D * Q * !Q_N)	0.01571	0.01679	0.06163
	(D * Q * !Q_N)	0.01094	0.01201	0.05686
	(!D * SET_B * !Q * Q_N)	0.01550	0.01654	0.06140
	(!D * SET_B * !Q * Q_N)	0.01073	0.01176	0.05665
	(!D * !SET_B * Q * !Q_N)	0.02853	0.02995	0.07558
	(!D * !SET_B * Q * !Q_N)	0.02327	0.02467	0.07032

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)	0.01578	0.01778	0.06433
	(D * SET_B * !Q * Q_N)	0.02019	0.02220	0.06874
	(D * Q * !Q_N)	0.00902	0.01109	0.05652
	(D * Q * !Q_N)	0.01372	0.01578	0.06121
	(!D * SET_B * Q * !Q_N)	0.01832	0.02056	0.06679
	(!D * SET_B * Q * !Q_N)	0.02330	0.02553	0.07177
	(!D * SET_B * !Q * Q_N)	0.00921	0.01128	0.05682
	(!D * SET_B * !Q * Q_N)	0.01390	0.01599	0.06151
	(!D * !SET_B * Q * !Q_N)	0.01488	0.01711	0.06331
	(!D * !SET_B * Q * !Q_N)	0.01999	0.02223	0.06842
sky130_fd_sc_hs__dfsbp_2	(D * SET_B * !Q * Q_N)	0.01552	0.01753	0.06414
	(D * SET_B * !Q * Q_N)	0.01992	0.02193	0.06853
	(D * Q * !Q_N)	0.00889	0.01095	0.05646
	(D * Q * !Q_N)	0.01366	0.01573	0.06122
	(!D * SET_B * Q * !Q_N)	0.01782	0.02006	0.06636
	(!D * SET_B * Q * !Q_N)	0.02298	0.02521	0.07152
	(!D * SET_B * !Q * Q_N)	0.00898	0.01106	0.05666
	(!D * SET_B * !Q * Q_N)	0.01375	0.01584	0.06142
	(!D * !SET_B * Q * !Q_N)	0.01453	0.01676	0.06303
	(!D * !SET_B * Q * !Q_N)	0.01980	0.02204	0.06829

SKY130_FD_SC_HS__DFSTPx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00176	0.00342	0.00297	1.19290
sky130_fd_sc_hs__dfstp_2	0.00176	0.00320	0.00299	2.37565
sky130_fd_sc_hs__dfstp_4	0.00175	0.00324	0.00300	4.43297

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dfstp_1	0.00000	0.47867	0.57923
sky130_fd_sc_hs__dfstp_2	0.00000	0.34656	0.47791
sky130_fd_sc_hs__dfstp_4	0.00000	0.86724	1.04516

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)	0.20304	0.66848	5.97043
	SET_B->Q (FR)	0.20336	0.91935	8.86188
sky130_fd_sc_hs__dfstp_2	CLK->Q (RR)	0.21171	0.58317	6.06545
	SET_B->Q (FR)	0.21374	0.84072	8.97777
sky130_fd_sc_hs__dfstp_4	CLK->Q (RR)	0.25089	0.55243	6.04428
	SET_B->Q (FR)	0.25292	0.81715	9.00070

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfstp_1	CLK->Q (RF)	0.20993	0.44050	2.18091
sky130_fd_sc_hs__dfstp_2	CLK->Q (RF)	0.22274	0.42106	2.21250
sky130_fd_sc_hs__dfstp_4	CLK->Q (RF)	0.22940	0.39832	2.13343

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)	-0.05089	-0.11204	-0.51308
	setup	CLK (R)	0.07988	0.13687	0.52293
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.04951	-0.11571	-0.52431
	setup	CLK (R)	0.08193	0.13939	0.53255
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.05037	-0.11282	-0.51234
	setup	CLK (R)	0.07884	0.13265	0.51659

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)	-0.04746	-0.18250	-3.02185
	setup	CLK (R)	0.15062	0.29167	3.24385
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.05021	-0.18388	-3.02860
	setup	CLK (R)	0.15216	0.29272	3.25178
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.05409	-0.19096	-3.02205
	setup	CLK (R)	0.15056	0.29081	3.24170

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)	-0.05089	-0.11204	-0.51308
	setup	CLK (R)	0.07988	0.13687	0.52293
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.04951	-0.11571	-0.52431
	setup	CLK (R)	0.08193	0.13939	0.53255
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.05037	-0.11282	-0.51234
	setup	CLK (R)	0.07884	0.13265	0.51659

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)	-0.04746	-0.18250	-3.02185
	setup	CLK (R)	0.15062	0.29167	3.24385
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.05021	-0.18388	-3.02860
	setup	CLK (R)	0.15216	0.29272	3.25178
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.05409	-0.19096	-3.02205
	setup	CLK (R)	0.15056	0.29081	3.24170

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)	-0.08914	-0.13400	-0.38872
	removal	CLK (R)	0.10818	0.14757	0.50520
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.09121	-0.13487	-0.39122
	removal	CLK (R)	0.10975	0.14757	0.47372
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.08753	-0.12661	-0.38116
	removal	CLK (R)	0.10632	0.14543	0.44170

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)	-0.08914	-0.13400	-0.38872
	removal	CLK (R)	0.10818	0.14757	0.50520
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.09121	-0.13487	-0.39122
	removal	CLK (R)	0.10975	0.14757	0.47372
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.08753	-0.12661	-0.38116
	removal	CLK (R)	0.10632	0.14543	0.44170

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 ()	0.17311	0.64453	16.50020
	min_pulse_width	SET_B ()	0.14893	0.64453	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	SET_B ()	0.18036	0.64453	16.50020
	min_pulse_width	SET_B ()	0.15618	0.64453	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	SET_B ()	0.18519	0.64453	16.50020
	min_pulse_width	SET_B ()	0.17794	0.64453	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 ()	0.10541	0.64453	16.50020
	min_pulse_width	CLK ()	0.08366	0.64453	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.11267	0.64453	16.50020
	min_pulse_width	CLK ()	0.08849	0.64453	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.13926	0.64453	16.50020
	min_pulse_width	CLK ()	0.09091	0.64453	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 ()	0.14410	0.64453	16.50020
	min_pulse_width	CLK ()	0.20695	0.64453	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.14410	0.64453	16.50020
	min_pulse_width	CLK ()	0.20695	0.64453	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.14168	0.64453	16.50020
	min_pulse_width	CLK ()	0.20212	0.64453	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	0.02792	0.02915	0.07640
	CLK	0.02332	0.02454	0.07227
	SET_B	0.02648	0.02674	0.05031
	SET_B	0.03156	0.03181	0.05565
sky130_fd_sc_hs__dfstp_2	CLK	0.03156	0.03303	0.08043
	CLK	0.02676	0.02824	0.07654
	SET_B	0.03021	0.03083	0.05437
	SET_B	0.03487	0.03549	0.05939
sky130_fd_sc_hs__dfstp_4	CLK	0.03925	0.04105	0.08874
	CLK	0.03437	0.03625	0.08574
	SET_B	0.03734	0.03857	0.06252
	SET_B	0.04203	0.04327	0.06788

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.03034	0.03176	0.07752
	CLK	0.02553	0.02681	0.07244
sky130_fd_sc_hs__dfstp_2	CLK	0.03346	0.03525	0.08107
	CLK	0.02879	0.03040	0.07583
sky130_fd_sc_hs__dfstp_4	CLK	0.04155	0.04411	0.09016
	CLK	0.03687	0.03932	0.08529

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00367	0.00427	0.02004
	CLK	0.00081	0.00141	0.01720
	(!CLK * SET_B)	0.01076	0.01115	0.02597
	(!CLK * SET_B)	0.00764	0.00801	0.02284
	(!CLK * !SET_B * Q)	0.00852	0.00893	0.02311
	(!CLK * !SET_B * Q)	0.00524	0.00564	0.01983
sky130_fd_sc_hs__dfstp_2	CLK	0.00369	0.00430	0.02006
	CLK	0.00082	0.00142	0.01721
	(!CLK * SET_B)	0.01076	0.01114	0.02593
	(!CLK * SET_B)	0.00762	0.00799	0.02278
	(!CLK * !SET_B * Q)	0.00851	0.00892	0.02306
	(!CLK * !SET_B * Q)	0.00522	0.00562	0.01977
sky130_fd_sc_hs__dfstp_4	CLK	0.00369	0.00429	0.02006
	CLK	0.00083	0.00143	0.01721
	(!CLK * SET_B)	0.01072	0.01110	0.02593
	(!CLK * SET_B)	0.00756	0.00793	0.02277
	(!CLK * !SET_B * Q)	0.00842	0.00884	0.02303
	(!CLK * !SET_B * Q)	0.00514	0.00554	0.01974

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00037	0.00105	0.01650
	CLK	0.00321	0.00391	0.01935
	(!CLK * SET_B)	0.00758	0.00799	0.02273
	(!CLK * SET_B)	0.01071	0.01111	0.02585
	(!CLK * !SET_B * Q)	0.00431	0.00466	0.01835
	(!CLK * !SET_B * Q)	0.00759	0.00795	0.02163
sky130_fd_sc_hs__dfstp_2	CLK	0.00035	0.00103	0.01648
	CLK	0.00321	0.00390	0.01934
	(!CLK * SET_B)	0.00781	0.00830	0.02291
	(!CLK * SET_B)	0.01094	0.01144	0.02604
	(!CLK * !SET_B * Q)	0.00454	0.00488	0.01854
	(!CLK * !SET_B * Q)	0.00784	0.00819	0.02184
sky130_fd_sc_hs__dfstp_4	CLK	0.00038	0.00106	0.01650
	CLK	0.00322	0.00392	0.01935
	(!CLK * SET_B)	0.00750	0.00789	0.02263
	(!CLK * SET_B)	0.01066	0.01105	0.02578
	(!CLK * !SET_B * Q)	0.00430	0.00465	0.01835
	(!CLK * !SET_B * Q)	0.00759	0.00795	0.02164

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	0.00264	0.00267	0.00265
	(CLK * Q)	-0.00256	-0.00257	-0.00256
	(!CLK * D * Q)	0.00286	0.00288	0.00286
	(!CLK * D * Q)	-0.00234	-0.00235	-0.00234
	(!CLK * !D * Q)	0.00551	0.00585	0.01978
	(!CLK * !D * Q)	0.00007	0.00038	0.01434
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	0.00259	0.00261	0.00260
	(CLK * Q)	-0.00236	-0.00237	-0.00236
	(!CLK * D * Q)	0.00280	0.00282	0.00281
	(!CLK * D * Q)	-0.00215	-0.00215	-0.00215
	(!CLK * !D * Q)	0.00546	0.00578	0.01973
	(!CLK * !D * Q)	0.00027	0.00058	0.01452
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	0.00274	0.00276	0.00274
	(CLK * Q)	-0.00229	-0.00230	-0.00229
	(!CLK * D * Q)	0.00293	0.00295	0.00294
	(!CLK * D * Q)	-0.00210	-0.00211	-0.00210
	(!CLK * !D * Q)	0.00549	0.00584	0.01979
	(!CLK * !D * Q)	0.00025	0.00057	0.01453

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	-0.00258	-0.00266	-0.00264
	(CLK * Q)	0.00260	0.00261	0.00257
	(!CLK * D * Q)	-0.00279	-0.00288	-0.00286
	(!CLK * D * Q)	0.00239	0.00239	0.00236
	(!CLK * !D * Q)	-0.00017	0.00056	0.01452
	(!CLK * !D * Q)	0.00529	0.00602	0.01996
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	-0.00253	-0.00261	-0.00259
	(CLK * Q)	0.00238	0.00239	0.00237
	(!CLK * D * Q)	-0.00274	-0.00282	-0.00281
	(!CLK * D * Q)	0.00218	0.00218	0.00216
	(!CLK * !D * Q)	-0.00007	0.00071	0.01459
	(!CLK * !D * Q)	0.00510	0.00592	0.01979
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	-0.00266	-0.00274	-0.00273
	(CLK * Q)	0.00233	0.00234	0.00232
	(!CLK * D * Q)	-0.00285	-0.00293	-0.00292
	(!CLK * D * Q)	0.00215	0.00215	0.00213
	(!CLK * !D * Q)	-0.00014	0.00069	0.01455
	(!CLK * !D * Q)	0.00513	0.00596	0.01980

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(D * Q)	0.01572	0.01679	0.06155
	(D * Q)	0.01100	0.01206	0.05683
	(!D * SET_B * !Q)	0.01555	0.01659	0.06138
	(!D * SET_B * !Q)	0.01083	0.01186	0.05666
	(!D * !SET_B * Q)	0.02821	0.02963	0.07521
	(!D * !SET_B * Q)	0.02307	0.02447	0.07006
sky130_fd_sc_hs__dfstp_2	(D * Q)	0.01594	0.01700	0.06181
	(D * Q)	0.01118	0.01223	0.05705
	(!D * SET_B * !Q)	0.01562	0.01665	0.06147
	(!D * SET_B * !Q)	0.01086	0.01188	0.05673
	(!D * !SET_B * Q)	0.02856	0.02995	0.07554
	(!D * !SET_B * Q)	0.02337	0.02475	0.07035
sky130_fd_sc_hs__dfstp_4	(D * Q)	0.01576	0.01683	0.06164
	(D * Q)	0.01096	0.01202	0.05685
	(!D * SET_B * !Q)	0.01562	0.01666	0.06149
	(!D * SET_B * !Q)	0.01083	0.01185	0.05671
	(!D * !SET_B * Q)	0.02807	0.02948	0.07503
	(!D * !SET_B * Q)	0.02284	0.02424	0.06980

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)**	0.01571	0.01770	0.06426
	(D * SET_B * !Q)	0.02017	0.02217	0.06871
	(D * Q)	0.00907	0.01112	0.05654
	(D * Q)	0.01379	0.01584	0.06126
	(!D * SET_B * Q)	0.01785	0.02006	0.06639
	(!D * SET_B * Q)	0.02285	0.02505	0.07138
	(!D * SET_B * !Q)	0.00910	0.01117	0.05670
	(!D * SET_B * !Q)	0.01383	0.01590	0.06142
	(!D * !SET_B * Q)	0.01457	0.01677	0.06307
	(!D * !SET_B * Q)	0.01972	0.02192	0.06823
sky130_fd_sc_hs__dfstp_2	**(D * SET_B * !Q)**	0.01561	0.01761	0.06420
	(D * SET_B * !Q)	0.02011	0.02209	0.06869
	(D * Q)	0.00891	0.01096	0.05646
	(D * Q)	0.01367	0.01573	0.06121
	(!D * SET_B * Q)	0.01797	0.02021	0.06656
	(!D * SET_B * Q)	0.02301	0.02524	0.07160
	(!D * SET_B * !Q)	0.00910	0.01118	0.05676
	(!D * SET_B * !Q)	0.01386	0.01594	0.06150
	(!D * !SET_B * Q)	0.01470	0.01692	0.06325
	(!D * !SET_B * Q)	0.01990	0.02213	0.06845
sky130_fd_sc_hs__dfstp_4	**(D * SET_B * !Q)**	0.01555	0.01754	0.06417
	(D * SET_B * !Q)	0.02004	0.02202	0.06865
	(D * Q)	0.00897	0.01103	0.05653
	(D * Q)	0.01377	0.01582	0.06132
	(!D * SET_B * Q)	0.01760	0.01985	0.06615
	(!D * SET_B * Q)	0.02271	0.02493	0.07124
	(!D * SET_B * !Q)	0.00898	0.01105	0.05664
	(!D * SET_B * !Q)	0.01377	0.01585	0.06142
	(!D * !SET_B * Q)	0.01442	0.01665	0.06292
	(!D * !SET_B * Q)	0.01966	0.02190	0.06814

SKY130_FD_SC_HS__DFXBPx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00179	0.00298	1.17507	1.16352
sky130_fd_sc_hs__dfxbp_2	0.00174	0.00299	2.02516	2.32128

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxbp_1	0.00000	0.85012	1.27099
sky130_fd_sc_hs__dfxbp_2	0.00000	1.15486	2.04601

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)	0.18885	0.66887	6.12220
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RR)	0.22131	0.61396	5.92317

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxbp_1	CLK->Q (RF)	0.20646	0.46121	2.29115
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RF)	0.20121	0.40198	1.83270

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)	0.24510	0.72610	6.12854
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RR)	0.25738	0.63279	6.04180

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)	0.22081	0.45244	2.16713
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RF)	0.27337	0.47198	2.26240

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)	-0.02009	-0.05533	-0.26094
	setup	CLK (R)	0.07390	0.09810	0.33395
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.01935	-0.04897	-0.23443
	setup	CLK (R)	0.05164	0.08291	0.30440

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)	-0.04042	-0.16307	-2.87029
	setup	CLK (R)	0.11091	0.23844	3.04279
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.04321	-0.15950	-2.85817
	setup	CLK (R)	0.10580	0.22981	3.02642

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 ()	0.08849	0.64453	16.50020
	min_pulse_width	CLK ()	0.07399	0.64453	16.50020
sky130_fd_sc_hs__dfxbp_2	min_pulse_width	CLK ()	0.11750	0.64453	16.50020
	min_pulse_width	CLK ()	0.07399	0.64453	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 ()	0.14168	0.64453	16.50020
	min_pulse_width	CLK ()	0.17311	0.64453	16.50020
sky130_fd_sc_hs__dfxbp_2	min_pulse_width	CLK ()	0.12717	0.64453	16.50020
	min_pulse_width	CLK ()	0.17311	0.64453	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	0.01554	0.01613	0.04050
	CLK	0.01330	0.01388	0.03828
sky130_fd_sc_hs__dfxbp_2	CLK	0.01916	0.02017	0.04430
	CLK	0.01689	0.01786	0.04204

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01606	0.01698	0.04085
	CLK	0.01382	0.01475	0.03858
sky130_fd_sc_hs__dfxbp_2	CLK	0.01996	0.02126	0.04491
	CLK	0.01769	0.01896	0.04266

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01608	0.01700	0.04138
	CLK	0.01384	0.01476	0.03914
sky130_fd_sc_hs__dfxbp_2	CLK	0.01998	0.02123	0.04602
	CLK	0.01771	0.01897	0.04379

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01553	0.01614	0.04000
	CLK	0.01329	0.01387	0.03777
sky130_fd_sc_hs__dfxbp_2	CLK	0.01915	0.02016	0.04401
	CLK	0.01688	0.01784	0.04171

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00267	0.00340	0.01932
	CLK	-0.00024	0.00047	0.01642
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00967	0.01025	0.02748
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00675	0.00734	0.02457
sky130_fd_sc_hs__dfxbp_2	CLK	0.00252	0.00325	0.01919
	CLK	-0.00031	0.00043	0.01637
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00950	0.01010	0.02734
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00666	0.00726	0.02451

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	-0.00019	0.00061	0.01637
	CLK	0.00272	0.00352	0.01928
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00572	0.00640	0.02361
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00863	0.00931	0.02652
sky130_fd_sc_hs__dfxbp_2	CLK	-0.00019	0.00063	0.01639
	CLK	0.00263	0.00346	0.01922
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00533	0.00603	0.02326
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00816	0.00886	0.02607

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)	0.01411	0.01540	0.06141
	(D * Q * !Q_N)	0.00964	0.01091	0.05694
	(!D * !Q * Q_N)	0.01434	0.01561	0.06167
	(!D * !Q * Q_N)	0.00987	0.01113	0.05721
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.01419	0.01550	0.06146
	(D * Q * !Q_N)	0.00967	0.01096	0.05693
	(!D * !Q * Q_N)	0.01427	0.01556	0.06158
	(!D * !Q * Q_N)	0.00974	0.01102	0.05705

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)	0.01054	0.01249	0.05871
	(D * Q * !Q_N)	0.01500	0.01698	0.06318
	(D * !Q * Q_N)	0.01690	0.01876	0.06646
	(D * !Q * Q_N)	0.02136	0.02323	0.07094
	(!D * Q * !Q_N)	0.01796	0.02005	0.06724
	(!D * Q * !Q_N)	0.02241	0.02453	0.07170
	(!D * !Q * Q_N)	0.01014	0.01210	0.05840
	(!D * !Q * Q_N)	0.01459	0.01658	0.06287
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.01052	0.01246	0.05867
	(D * Q * !Q_N)	0.01504	0.01701	0.06321
	(D * !Q * Q_N)	0.01704	0.01887	0.06655
	(D * !Q * Q_N)	0.02155	0.02341	0.07109
	(!D * Q * !Q_N)	0.01744	0.01952	0.06669
	(!D * Q * !Q_N)	0.02196	0.02404	0.07123
	(!D * !Q * Q_N)	0.01028	0.01222	0.05850
	(!D * !Q * Q_N)	0.01480	0.01676	0.06303

SKY130_FD_SC_HS__DFXTPx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00175	0.00298	1.16800
sky130_fd_sc_hs__dfxtp_2	0.00180	0.00298	2.35892
sky130_fd_sc_hs__dfxtp_4	0.00179	0.00299	4.37936

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxtp_1	0.00000	0.70454	1.43093
sky130_fd_sc_hs__dfxtp_2	0.00000	0.62319	1.19132
sky130_fd_sc_hs__dfxtp_4	0.00000	1.05144	1.89689

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)**	0.17117	0.65075	6.04444
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RR)**	0.18226	0.56143	6.05890
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RR)**	0.21821	0.52957	6.06782

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxtp_1	**CLK->Q (RF)**	0.19609	0.44515	2.25109
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RF)**	0.20239	0.41736	2.28235
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RF)**	0.20884	0.39433	2.24902

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)	-0.01972	-0.05347	-0.24703
	setup	CLK (R)	0.07612	0.09878	0.32131
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.02144	-0.05133	-0.24591
	setup	CLK (R)	0.07285	0.09459	0.31910
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.01979	-0.04733	-0.23926
	setup	CLK (R)	0.06177	0.08997	0.31616

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)	-0.04271	-0.16800	-2.88335
	setup	CLK (R)	0.11488	0.23975	3.05693
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.03810	-0.15871	-2.85633
	setup	CLK (R)	0.10918	0.23112	3.03043
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.04070	-0.15622	-2.84236
	setup	CLK (R)	0.10904	0.23112	3.02384

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 ()	0.07882	0.64453	16.50020
	min_pulse_width	CLK ()	0.07157	0.64453	16.50020
sky130_fd_sc_hs__dfxtp_2	min_pulse_width	CLK ()	0.08849	0.64453	16.50020
	min_pulse_width	CLK ()	0.07399	0.64453	16.50020
sky130_fd_sc_hs__dfxtp_4	min_pulse_width	CLK ()	0.11509	0.64453	16.50020
	min_pulse_width	CLK ()	0.07640	0.64453	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 ()	0.14651	0.64453	16.50020
	min_pulse_width	CLK ()	0.17794	0.64453	16.50020
sky130_fd_sc_hs__dfxtp_2	min_pulse_width	CLK ()	0.14168	0.64453	16.50020
	min_pulse_width	CLK ()	0.17311	0.64453	16.50020
sky130_fd_sc_hs__dfxtp_4	min_pulse_width	CLK ()	0.13442	0.64453	16.50020
	min_pulse_width	CLK ()	0.17552	0.64453	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	0.02407	0.02518	0.07373
	CLK	0.01956	0.02067	0.06966
sky130_fd_sc_hs__dfxtp_2	CLK	0.02726	0.02861	0.07699
	CLK	0.02272	0.02409	0.07338
sky130_fd_sc_hs__dfxtp_4	CLK	0.03444	0.03615	0.08463
	CLK	0.02996	0.03172	0.08196

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.02525	0.02693	0.07494
	CLK	0.02075	0.02238	0.07031
sky130_fd_sc_hs__dfxtp_2	CLK	0.02823	0.03021	0.07799
	CLK	0.02370	0.02565	0.07334
sky130_fd_sc_hs__dfxtp_4	CLK	0.03629	0.03910	0.08739
	CLK	0.03181	0.03455	0.08228

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00248	0.00318	0.01909
	CLK	-0.00036	0.00034	0.01626
	!CLK	0.00953	0.01010	0.02733
	!CLK	0.00667	0.00725	0.02449
sky130_fd_sc_hs__dfxtp_2	CLK	0.00263	0.00337	0.01932
	CLK	-0.00028	0.00044	0.01641
	!CLK	0.00943	0.01000	0.02727
	!CLK	0.00651	0.00709	0.02435
sky130_fd_sc_hs__dfxtp_4	CLK	0.00250	0.00325	0.01920
	CLK	-0.00040	0.00033	0.01631
	!CLK	0.00944	0.01002	0.02727
	!CLK	0.00654	0.00712	0.02439

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00019	0.00098	0.01665
	CLK	0.00303	0.00383	0.01949
	!CLK	0.00610	0.00678	0.02394
	!CLK	0.00894	0.00962	0.02678
sky130_fd_sc_hs__dfxtp_2	CLK	-0.00025	0.00059	0.01635
	CLK	0.00266	0.00350	0.01927
	!CLK	0.00580	0.00648	0.02372
	!CLK	0.00871	0.00940	0.02662
sky130_fd_sc_hs__dfxtp_4	CLK	-0.00018	0.00067	0.01644
	CLK	0.00271	0.00357	0.01934
	!CLK	0.00572	0.00640	0.02362
	!CLK	0.00862	0.00931	0.02651

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.01416	0.01546	0.06135
	(D * Q)	0.00965	0.01092	0.05683
	(!D * !Q)	0.01460	0.01589	0.06185
	(!D * !Q)	0.01009	0.01136	0.05733
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.01421	0.01550	0.06144
	(D * Q)	0.00967	0.01093	0.05689
	(!D * !Q)	0.01453	0.01582	0.06180
	(!D * !Q)	0.01000	0.01126	0.05726
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.01412	0.01540	0.06127
	(D * Q)	0.00963	0.01089	0.05677
	(!D * !Q)	0.01445	0.01573	0.06165
	(!D * !Q)	0.00996	0.01121	0.05715

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.01098	0.01292	0.05907
	(D * Q)	0.01549	0.01746	0.06358
	(D * !Q)	0.01727	0.01908	0.06674
	(D * !Q)	0.02177	0.02360	0.07125
	(!D * Q)	0.01832	0.02042	0.06757
	(!D * Q)	0.02283	0.02495	0.07210
	(!D * !Q)	0.01037	0.01230	0.05854
	(!D * !Q)	0.01488	0.01684	0.06304
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.01075	0.01276	0.05888
	(D * Q)	0.01529	0.01732	0.06342
	(D * !Q)	0.01688	0.01872	0.06636
	(D * !Q)	0.02141	0.02327	0.07092
	(!D * Q)	0.01820	0.02030	0.06743
	(!D * Q)	0.02273	0.02486	0.07198
	(!D * !Q)	0.01027	0.01220	0.05846
	(!D * !Q)	0.01480	0.01677	0.06302
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.01118	0.01317	0.05914
	(D * Q)	0.01566	0.01768	0.06365
	(D * !Q)	0.01734	0.01917	0.06666
	(D * !Q)	0.02182	0.02367	0.07116
	(!D * Q)	0.01862	0.02072	0.06777
	(!D * Q)	0.02311	0.02522	0.07227
	(!D * !Q)	0.01067	0.01259	0.05870
	(!D * !Q)	0.01515	0.01710	0.06321

SKY130_FD_SC_HS__DIODE_2

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00262	0.00448	1.20847
sky130_fd_sc_hs__dlclkp_2	0.00261	0.00482	2.32704
sky130_fd_sc_hs__dlclkp_4	0.00259	0.00505	4.62048

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlclkp_1	0.00000	0.89989	1.55598
sky130_fd_sc_hs__dlclkp_2	0.00000	0.78767	1.06937
sky130_fd_sc_hs__dlclkp_4	0.00000	0.81531	0.85484

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)**	0.06440	0.51863	6.15999
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (RR)**	0.06638	0.43340	5.95956
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (RR)**	0.09179	0.43296	6.30103

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlclkp_1	**CLK->GCLK (FF)**	0.07438	0.47572	4.61543
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (FF)**	0.08159	0.47558	4.68096
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (FF)**	0.10740	0.51741	4.89497

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)	-0.02917	-0.06630	-0.48170
	setup	CLK (R)	0.12053	0.17296	0.59447
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.02822	-0.06630	-0.47876
	setup	CLK (R)	0.12720	0.16935	0.62144
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.02939	-0.06202	-0.45849
	setup	CLK (R)	0.12237	0.14770	0.66405

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)	-0.04846	-0.13542	-2.49365
	setup	CLK (R)	0.10006	0.20219	2.61096
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.04693	-0.13000	-2.47421
	setup	CLK (R)	0.09176	0.18687	2.56288
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.04491	-0.13000	-2.46454
	setup	CLK (R)	0.07320	0.15085	2.54570

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 ()	0.04498	0.64453	16.50020
sky130_fd_sc_hs__dlclkp_2	min_pulse_width	CLK ()	0.04981	0.64453	16.50020
sky130_fd_sc_hs__dlclkp_4	min_pulse_width	CLK ()	0.07640	0.64453	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 ()	0.17069	0.64453	16.50020
	min_pulse_width	CLK ()	0.14893	0.64453	16.50020
sky130_fd_sc_hs__dlclkp_2	min_pulse_width	CLK ()	0.18036	0.64453	16.50020
	min_pulse_width	CLK ()	0.15135	0.64453	16.50020
sky130_fd_sc_hs__dlclkp_4	min_pulse_width	CLK ()	0.17552	0.64453	16.50020
	min_pulse_width	CLK ()	0.15135	0.64453	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	0.01779	0.02126	0.11804
	CLK	0.01054	0.01401	0.11117
sky130_fd_sc_hs__dlclkp_2	CLK	0.02134	0.02467	0.11894
	CLK	0.01354	0.01689	0.11214
sky130_fd_sc_hs__dlclkp_4	CLK	0.02803	0.03106	0.11925
	CLK	0.02004	0.02314	0.11258

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.01971	0.02513	0.11693
	CLK	0.02710	0.03241	0.12382
sky130_fd_sc_hs__dlclkp_2	CLK	0.02322	0.02865	0.11907
	CLK	0.03112	0.03638	0.12617
sky130_fd_sc_hs__dlclkp_4	CLK	0.02086	0.02616	0.11940
	CLK	0.02879	0.03370	0.12447

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.00203	0.00177	0.00173
	CLK	-0.00168	-0.00196	-0.00199
	(!CLK * !GCLK)	0.01279	0.01328	0.04093
	(!CLK * !GCLK)	0.00879	0.00927	0.03694
sky130_fd_sc_hs__dlclkp_2	CLK	0.00152	0.00153	0.00152
	CLK	-0.00219	-0.00221	-0.00221
	(!CLK * !GCLK)	0.01292	0.01344	0.04100
	(!CLK * !GCLK)	0.00895	0.00945	0.03704
sky130_fd_sc_hs__dlclkp_4	CLK	0.00147	0.00149	0.00148
	CLK	-0.00218	-0.00220	-0.00220
	(!CLK * !GCLK)	0.01263	0.01313	0.04065
	(!CLK * !GCLK)	0.00887	0.00933	0.03689

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	-0.00168	-0.00171	-0.00170
	CLK	0.00202	0.00204	0.00203
	(!CLK * !GCLK)	0.00862	0.00921	0.03658
	(!CLK * !GCLK)	0.01262	0.01322	0.04059
sky130_fd_sc_hs__dlclkp_2	CLK	-0.00142	-0.00150	-0.00151
	CLK	0.00229	0.00224	0.00222
	(!CLK * !GCLK)	0.00897	0.00955	0.03693
	(!CLK * !GCLK)	0.01296	0.01354	0.04091
sky130_fd_sc_hs__dlclkp_4	CLK	-0.00138	-0.00146	-0.00147
	CLK	0.00229	0.00224	0.00222
	(!CLK * !GCLK)	0.00963	0.01021	0.03751
	(!CLK * !GCLK)	0.01342	0.01401	0.04129

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(!GATE * !GCLK)	0.01109	0.01318	0.06652
	(!GATE * !GCLK)	0.00416	0.00619	0.05956
sky130_fd_sc_hs__dlclkp_2	(!GATE * !GCLK)	0.01168	0.01358	0.06695
	(!GATE * !GCLK)	0.00424	0.00610	0.05949
sky130_fd_sc_hs__dlclkp_4	(!GATE * !GCLK)	0.01162	0.01360	0.06592
	(!GATE * !GCLK)	0.00393	0.00586	0.05821

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(GATE * !GCLK)	0.01502	0.01791	0.07858
	(GATE * !GCLK)	0.02198	0.02484	0.08553
	(!GATE * !GCLK)	0.00512	0.00790	0.06160
	(!GATE * !GCLK)	0.01206	0.01487	0.06857
sky130_fd_sc_hs__dlclkp_2	(GATE * !GCLK)	0.01545	0.01833	0.07894
	(GATE * !GCLK)	0.02297	0.02585	0.08644
	(!GATE * !GCLK)	0.00539	0.00812	0.06183
	(!GATE * !GCLK)	0.01281	0.01558	0.06929
sky130_fd_sc_hs__dlclkp_4	(GATE * !GCLK)	0.01501	0.01770	0.07709
	(GATE * !GCLK)	0.02286	0.02560	0.08499
	(!GATE * !GCLK)	0.00508	0.00767	0.06060
	(!GATE * !GCLK)	0.01277	0.01538	0.06832

SKY130_FD_SC_HS__DLRBNx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00234	0.00258	0.00285	1.17547	1.19276
sky130_fd_sc_hs__dlrbn_2	0.00235	0.00258	0.00296	1.99095	2.30780

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrbn_1	0.00000	1.18179	1.63286
sky130_fd_sc_hs__dlrbn_2	0.00000	1.09498	1.47015

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)	0.23665	0.69728	6.15763
	GATE_N->Q (-R)	0.27904	0.91673	8.53886
	RESET_B->Q (RR)	0.08173	0.56450	6.14910
sky130_fd_sc_hs__dlrbn_2	D->Q (RR)	0.24327	0.61920	5.85863
	GATE_N->Q (-R)	0.28872	0.84449	8.27781
	RESET_B->Q (RR)	0.08858	0.50265	5.88586

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbn_1	D->Q (FF)	0.18394	0.56284	4.31180
	GATE_N->Q (-F)	0.19944	0.61434	4.60645
	RESET_B->Q (FF)	0.08627	0.52880	4.62319
sky130_fd_sc_hs__dlrbn_2	D->Q (FF)	0.20184	0.54573	3.97696
	GATE_N->Q (-F)	0.21780	0.59759	4.26967
	RESET_B->Q (FF)	0.10016	0.52542	4.37549

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)	0.22627	0.83279	8.20175
	GATE_N->Q_N (-R)	0.24190	0.88425	8.49553
	RESET_B->Q_N (FR)	0.13042	0.78301	8.35132
sky130_fd_sc_hs__dlrbn_2	D->Q_N (FR)	0.26431	0.78233	8.44581
	GATE_N->Q_N (-R)	0.28047	0.83422	8.73827
	RESET_B->Q_N (FR)	0.16496	0.75042	8.67056

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)	0.26817	0.48214	2.29806
	GATE_N->Q_N (-F)	0.31060	0.70166	4.67966
	RESET_B->Q_N (RF)	0.11337	0.34498	2.12501
sky130_fd_sc_hs__dlrbn_2	D->Q_N (RF)	0.30529	0.50010	2.55033
	GATE_N->Q_N (-F)	0.35083	0.72539	4.97007
	RESET_B->Q_N (RF)	0.15005	0.38168	2.47559

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 ()**	0.10541	0.64453	16.50020
sky130_fd_sc_hs__dlrbn_2	**min_pulse_width**	**RESET_B ()**	0.13201	0.64453	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	0.01318	0.01421	0.03731
	D	0.01122	0.01216	0.03539
	GATE_N	0.01349	0.01490	0.04123
	GATE_N	0.01536	0.01677	0.04310
	RESET_B	0.00869	0.00921	0.02482
	RESET_B	0.00638	0.00687	0.02252
sky130_fd_sc_hs__dlrbn_2	D	0.01601	0.01726	0.03999
	D	0.01407	0.01532	0.03808
	GATE_N	0.01630	0.01806	0.04421
	GATE_N	0.01817	0.01993	0.04591
	RESET_B	0.01175	0.01246	0.02549
	RESET_B	0.00939	0.01009	0.02322

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.01031	0.01178	0.03485
	D	0.01227	0.01373	0.03665
	GATE_N	0.01247	0.01413	0.04158
	GATE_N	0.01457	0.01623	0.04357
	RESET_B	0.00905	0.00993	0.02738
	RESET_B	0.00784	0.00892	0.02804
sky130_fd_sc_hs__dlrbn_2	D	0.01344	0.01527	0.03823
	D	0.01537	0.01720	0.03989
	GATE_N	0.01558	0.01760	0.04487
	GATE_N	0.01766	0.01967	0.04658
	RESET_B	0.01204	0.01308	0.03052
	RESET_B	0.01424	0.01526	0.03241

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.01033	0.01180	0.03526
	D	0.01229	0.01375	0.03698
	GATE_N	0.01249	0.01416	0.04166
	GATE_N	0.01460	0.01626	0.04376
	RESET_B	0.00907	0.00997	0.02809
	RESET_B	0.00786	0.00893	0.02836
sky130_fd_sc_hs__dlrbn_2	D	0.01346	0.01529	0.03839
	D	0.01539	0.01722	0.04010
	GATE_N	0.01561	0.01763	0.04560
	GATE_N	0.01768	0.01970	0.04688
	RESET_B	0.01206	0.01325	0.03109
	RESET_B	0.01426	0.01529	0.03268

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.01316	0.01414	0.03678
	D	0.01120	0.01214	0.03480
	GATE_N	0.01347	0.01488	0.04124
	GATE_N	0.01534	0.01675	0.04285
	RESET_B	0.00868	0.00916	0.02468
	RESET_B	0.00637	0.00685	0.02238
sky130_fd_sc_hs__dlrbn_2	D	0.01600	0.01729	0.03969
	D	0.01406	0.01531	0.03764
	GATE_N	0.01629	0.01805	0.04400
	GATE_N	0.01816	0.01992	0.04553
	RESET_B	0.01173	0.01244	0.02511
	RESET_B	0.00937	0.01008	0.02265

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)	0.00582	0.00740	0.05215
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00212	0.00370	0.04846
	(!GATE_N * !RESET_B * !Q * Q_N)	0.01072	0.01236	0.05775
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00725	0.00889	0.05428
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)	0.00579	0.00735	0.05136
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00212	0.00368	0.04769
	(!GATE_N * !RESET_B * !Q * Q_N)	0.01015	0.01171	0.05643
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00671	0.00826	0.05300

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)	0.00161	0.00413	0.04908
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00530	0.00783	0.05277
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00792	0.01029	0.05623
	(!GATE_N * !RESET_B * !Q * Q_N)	0.01139	0.01377	0.05970
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)	0.00152	0.00400	0.04818
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00518	0.00767	0.05184
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00812	0.01046	0.05564
	(!GATE_N * !RESET_B * !Q * Q_N)	0.01156	0.01393	0.05909

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)	0.01014	0.01195	0.06478
	(D * RESET_B * Q * !Q_N)	0.00618	0.00795	0.06081
	(D * !RESET_B * !Q * Q_N)	0.01584	0.01758	0.07042
	(D * !RESET_B * !Q * Q_N)	0.01166	0.01337	0.06622
	(!D * !Q * Q_N)	0.01073	0.01252	0.06543
	(!D * !Q * Q_N)	0.00674	0.00852	0.06145
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.01018	0.01192	0.06396
	(D * RESET_B * Q * !Q_N)	0.00622	0.00797	0.06001
	(D * !RESET_B * !Q * Q_N)	0.01605	0.01774	0.06968
	(D * !RESET_B * !Q * Q_N)	0.01188	0.01358	0.06551
	(!D * !Q * Q_N)	0.01062	0.01237	0.06424
	(!D * !Q * Q_N)	0.00667	0.00840	0.06029

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)	0.00786	0.01094	0.06372
	(D * RESET_B * Q * !Q_N)	0.01184	0.01492	0.06771
	(D * !RESET_B * !Q * Q_N)	0.01125	0.01418	0.06607
	(D * !RESET_B * !Q * Q_N)	0.01546	0.01839	0.07028
	(!D * !Q * Q_N)	0.00712	0.01019	0.06313
	(!D * !Q * Q_N)	0.01110	0.01418	0.06712
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.00774	0.01080	0.06264
	(D * RESET_B * Q * !Q_N)	0.01169	0.01475	0.06659
	(D * !RESET_B * !Q * Q_N)	0.01072	0.01360	0.06457
	(D * !RESET_B * !Q * Q_N)	0.01489	0.01778	0.06876
	(!D * !Q * Q_N)	0.00712	0.01021	0.06216
	(!D * !Q * Q_N)	0.01107	0.01417	0.06611

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)	0.00172	0.00174	0.00173
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00224	-0.00225	-0.00224
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00183	0.00185	0.00184
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00227	-0.00228	-0.00227

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)	-0.00162	-0.00170	-0.00170
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00236	0.00230	0.00228
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00173	-0.00181	-0.00181
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00238	0.00233	0.00231

SKY130_FD_SC_HS__DLRBPx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00217	0.00248	0.00294	1.17615	1.18376
sky130_fd_sc_hs__dlrbp_2	0.00218	0.00247	0.00295	2.34066	2.37727

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrbp_1	0.00000	1.18179	1.63286
sky130_fd_sc_hs__dlrbp_2	0.00000	1.09498	1.47015

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)	0.22986	0.68850	6.16465
	GATE->Q (-R)	0.20409	0.66490	6.01582
	RESET_B->Q (RR)	0.08311	0.57006	6.20208
sky130_fd_sc_hs__dlrbp_2	D->Q (RR)	0.23689	0.59820	6.10876
	GATE->Q (-R)	0.20933	0.57125	5.95349
	RESET_B->Q (RR)	0.08724	0.49226	6.23452

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbp_1	D->Q (FF)	0.18263	0.56066	4.33051
	GATE->Q (-F)	0.19704	0.42026	2.03368
	RESET_B->Q (FF)	0.08767	0.53307	4.64207
sky130_fd_sc_hs__dlrbp_2	D->Q (FF)	0.20014	0.55690	4.43680
	GATE->Q (-F)	0.21401	0.41436	2.13358
	RESET_B->Q (FF)	0.09561	0.53076	4.80709

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)	0.22705	0.84056	8.33353
	GATE->Q_N (-R)	0.24155	0.70029	6.03765
	RESET_B->Q_N (FR)	0.13398	0.79724	8.47985
sky130_fd_sc_hs__dlrbp_2	D->Q_N (FR)	0.26104	0.76257	8.23503
	GATE->Q_N (-R)	0.27505	0.61994	5.93232
	RESET_B->Q_N (FR)	0.15645	0.72555	8.42665

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)	0.26273	0.47077	2.23081
	GATE->Q_N (-F)	0.23702	0.44716	2.08174
	RESET_B->Q_N (RF)	0.11607	0.34757	2.10462
sky130_fd_sc_hs__dlrbp_2	D->Q_N (RF)	0.29199	0.46669	2.32536
	GATE->Q_N (-F)	0.26452	0.43972	2.16936
	RESET_B->Q_N (RF)	0.14191	0.35797	2.30076

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 ()**	0.10541	0.64453	16.50020
sky130_fd_sc_hs__dlrbp_2	**min_pulse_width**	**RESET_B ()**	0.12234	0.64453	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	0.01250	0.01355	0.03627
	D	0.01067	0.01158	0.03445
	GATE	0.01420	0.01517	0.04280
	GATE	0.01213	0.01307	0.04079
	RESET_B	0.00875	0.00921	0.02479
	RESET_B	0.00638	0.00679	0.02243
sky130_fd_sc_hs__dlrbp_2	D	0.01570	0.01714	0.04014
	D	0.01387	0.01514	0.03828
	GATE	0.01738	0.01871	0.04666
	GATE	0.01532	0.01658	0.04459
	RESET_B	0.01184	0.01260	0.02955
	RESET_B	0.00946	0.01021	0.02704

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.01070	0.01218	0.03466
	D	0.01254	0.01401	0.03650
	GATE	0.01462	0.01585	0.04204
	GATE	0.01283	0.01407	0.04026
	RESET_B	0.00917	0.01005	0.02777
	RESET_B	0.00810	0.00916	0.02826
sky130_fd_sc_hs__dlrbp_2	D	0.01382	0.01563	0.03882
	D	0.01565	0.01742	0.04005
	GATE	0.01772	0.01927	0.04546
	GATE	0.01591	0.01746	0.04366
	RESET_B	0.01223	0.01337	0.03246
	RESET_B	0.01444	0.01554	0.03379

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.01072	0.01221	0.03499
	D	0.01256	0.01403	0.03683
	GATE	0.01464	0.01595	0.04275
	GATE	0.01285	0.01409	0.04098
	RESET_B	0.00919	0.01011	0.02798
	RESET_B	0.00812	0.00917	0.02861
sky130_fd_sc_hs__dlrbp_2	D	0.01384	0.01560	0.03848
	D	0.01567	0.01743	0.04026
	GATE	0.01774	0.01928	0.04656
	GATE	0.01593	0.01747	0.04473
	RESET_B	0.01225	0.01353	0.03189
	RESET_B	0.01446	0.01557	0.03403

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.01248	0.01344	0.03579
	D	0.01065	0.01156	0.03395
	GATE	0.01419	0.01514	0.04227
	GATE	0.01212	0.01305	0.04021
	RESET_B	0.00874	0.00915	0.02459
	RESET_B	0.00636	0.00678	0.02223
sky130_fd_sc_hs__dlrbp_2	D	0.01568	0.01696	0.03925
	D	0.01384	0.01510	0.03740
	GATE	0.01736	0.01866	0.04547
	GATE	0.01530	0.01656	0.04341
	RESET_B	0.01183	0.01259	0.02890
	RESET_B	0.00945	0.01019	0.02650

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)	0.00927	0.01093	0.05566
	(GATE * !RESET_B * !Q * Q_N)	0.00610	0.00775	0.05249
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00563	0.00725	0.05132
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00222	0.00384	0.04793
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.00935	0.01099	0.05571
	(GATE * !RESET_B * !Q * Q_N)	0.00617	0.00780	0.05253
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00564	0.00724	0.05130
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00220	0.00380	0.04786

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)	0.00827	0.01088	0.05587
	(GATE * !RESET_B * !Q * Q_N)	0.01145	0.01408	0.05905
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00124	0.00376	0.04799
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00464	0.00718	0.05140
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.00837	0.01097	0.05593
	(GATE * !RESET_B * !Q * Q_N)	0.01155	0.01417	0.05912
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00134	0.00386	0.04807
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00477	0.00731	0.05151

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)	0.01054	0.01234	0.06450
	(D * RESET_B * Q * !Q_N)	0.00668	0.00848	0.06064
	(D * !RESET_B * !Q * Q_N)	0.01230	0.01398	0.06778
	(D * !RESET_B * !Q * Q_N)	0.00867	0.01034	0.06415
	(!D * !Q * Q_N)	0.01049	0.01230	0.06434
	(!D * !Q * Q_N)	0.00663	0.00843	0.06048
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.01056	0.01238	0.06456
	(D * RESET_B * Q * !Q_N)	0.00667	0.00848	0.06068
	(D * !RESET_B * !Q * Q_N)	0.01230	0.01397	0.06777
	(D * !RESET_B * !Q * Q_N)	0.00867	0.01033	0.06414
	(!D * !Q * Q_N)	0.01046	0.01229	0.06435
	(!D * !Q * Q_N)	0.00658	0.00840	0.06047

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)	0.00650	0.00952	0.06141
	(D * RESET_B * Q * !Q_N)	0.01035	0.01336	0.06527
	(D * !RESET_B * !Q * Q_N)	0.01111	0.01410	0.06803
	(D * !RESET_B * !Q * Q_N)	0.01474	0.01774	0.07167
	(!D * !Q * Q_N)	0.00641	0.00920	0.06152
	(!D * !Q * Q_N)	0.01026	0.01307	0.06539
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.00645	0.00955	0.06138
	(D * RESET_B * Q * !Q_N)	0.01032	0.01344	0.06526
	(D * !RESET_B * !Q * Q_N)	0.01102	0.01402	0.06794
	(D * !RESET_B * !Q * Q_N)	0.01464	0.01766	0.07157
	(!D * !Q * Q_N)	0.00640	0.00952	0.06154
	(!D * !Q * Q_N)	0.01028	0.01342	0.06543

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)	0.00175	0.00177	0.00176
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00230	-0.00231	-0.00230
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00177	0.00179	0.00178
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00229	-0.00230	-0.00229

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)	-0.00165	-0.00173	-0.00173
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00241	0.00236	0.00234
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00167	-0.00175	-0.00175
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00240	0.00235	0.00233

SKY130_FD_SC_HS__DLRTNx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00216	0.00250	0.00280	1.18948
sky130_fd_sc_hs__dlrtn_2	0.00218	0.00248	0.00290	2.32456
sky130_fd_sc_hs__dlrtn_4	0.00217	0.00249	0.00472	4.36083

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dlrtn_1	0.00000	0.91355	1.30381
sky130_fd_sc_hs__dlrtn_2	0.00000	0.89775	1.25867
sky130_fd_sc_hs__dlrtn_4	0.00000	1.50129	2.70741

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)	0.21873	0.67091	6.06578
	GATE_N->Q (-R)	0.25234	0.87526	8.40702
	RESET_B->Q (RR)	0.07153	0.53224	6.03220
sky130_fd_sc_hs__dlrtn_2	D->Q (RR)	0.22768	0.58893	6.09980
	GATE_N->Q (-R)	0.26146	0.79319	8.42347
	RESET_B->Q (RR)	0.07617	0.46079	6.08176
sky130_fd_sc_hs__dlrtn_4	D->Q (RR)	0.25155	0.54524	6.11956
	GATE_N->Q (-R)	0.28551	0.75108	8.43906
	RESET_B->Q (RR)	0.08206	0.40074	6.22128

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtn_1	D->Q (FF)	0.17153	0.54454	4.32056
	GATE_N->Q (-F)	0.18132	0.58582	4.58199
	RESET_B->Q (FF)	0.07863	0.49991	4.57394
sky130_fd_sc_hs__dlrtn_2	D->Q (FF)	0.17848	0.51572	4.25347
	GATE_N->Q (-F)	0.18797	0.55696	4.51631
	RESET_B->Q (FF)	0.08434	0.49064	4.61609
sky130_fd_sc_hs__dlrtn_4	D->Q (FF)	0.19026	0.50436	4.32109
	GATE_N->Q (-F)	0.20316	0.55247	4.60092
	RESET_B->Q (FF)	0.09073	0.46341	4.65748

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 ()**	0.09333	0.64453	16.50020
sky130_fd_sc_hs__dlrtn_2	**min_pulse_width**	**RESET_B ()**	0.11025	0.64453	16.50020
sky130_fd_sc_hs__dlrtn_4	**min_pulse_width**	**RESET_B ()**	0.12717	0.64453	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	0.01846	0.02017	0.06576
	D	0.01482	0.01654	0.06260
	GATE_N	0.01889	0.02157	0.07438
	GATE_N	0.02252	0.02522	0.08014
	RESET_B	0.01102	0.01179	0.04680
	RESET_B	0.00651	0.00727	0.04273
sky130_fd_sc_hs__dlrtn_2	D	0.02130	0.02341	0.06910
	D	0.01769	0.01984	0.06641
	GATE_N	0.02177	0.02489	0.07787
	GATE_N	0.02541	0.02856	0.08156
	RESET_B	0.01373	0.01467	0.04434
	RESET_B	0.00906	0.01000	0.04056
sky130_fd_sc_hs__dlrtn_4	D	0.03061	0.03357	0.07978
	D	0.02677	0.02980	0.07773
	GATE_N	0.03109	0.03511	0.08855
	GATE_N	0.03450	0.03852	0.09214
	RESET_B	0.02416	0.02670	0.10359
	RESET_B	0.01654	0.01910	0.09753

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	D	0.01501	0.01769	0.06343
	D	0.01864	0.02131	0.06703
	GATE_N	0.01794	0.02106	0.07622
	GATE_N	0.02209	0.02521	0.07994
	RESET_B	0.01184	0.01383	0.05057
	RESET_B	0.00915	0.01148	0.05135
sky130_fd_sc_hs__dlrtn_2	D	0.01818	0.02145	0.06704
	D	0.02178	0.02488	0.07053
	GATE_N	0.02123	0.02476	0.08030
	GATE_N	0.02528	0.02880	0.08346
	RESET_B	0.01491	0.01726	0.05092
	RESET_B	0.01927	0.02103	0.05454
sky130_fd_sc_hs__dlrtn_4	D	0.02613	0.03028	0.07736
	D	0.02996	0.03376	0.07959
	GATE_N	0.02929	0.03400	0.09068
	GATE_N	0.03360	0.03775	0.09295
	RESET_B	0.01429	0.01929	0.10833
	RESET_B	0.02183	0.02672	0.11383

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)	0.00544	0.00706	0.05150
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00207	0.00367	0.04812
	(!GATE_N * !RESET_B * !Q)	0.00910	0.01063	0.05589
	(!GATE_N * !RESET_B * !Q)	0.00595	0.00747	0.05275
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00549	0.00708	0.05154
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00208	0.00367	0.04813
	(!GATE_N * !RESET_B * !Q)	0.00914	0.01064	0.05593
	(!GATE_N * !RESET_B * !Q)	0.00596	0.00749	0.05275
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00548	0.00709	0.05158
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00208	0.00369	0.04819
	(!GATE_N * !RESET_B * !Q)	0.00961	0.01114	0.05636
	(!GATE_N * !RESET_B * !Q)	0.00647	0.00800	0.05322

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)	0.00169	0.00422	0.04888
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00505	0.00760	0.05225
	(!GATE_N * !RESET_B * !Q)	0.00874	0.01114	0.05683
	(!GATE_N * !RESET_B * !Q)	0.01189	0.01429	0.05998
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00167	0.00419	0.04886
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00506	0.00761	0.05225
	(!GATE_N * !RESET_B * !Q)	0.00883	0.01122	0.05691
	(!GATE_N * !RESET_B * !Q)	0.01200	0.01439	0.06009
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00163	0.00416	0.04886
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00501	0.00757	0.05224
	(!GATE_N * !RESET_B * !Q)	0.01015	0.01254	0.05816
	(!GATE_N * !RESET_B * !Q)	0.01329	0.01571	0.06132

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)	0.00997	0.01183	0.06497
	(D * RESET_B * Q)	0.00610	0.00792	0.06106
	(D * !RESET_B * !Q)	0.01567	0.01748	0.07047
	(D * !RESET_B * !Q)	0.01155	0.01335	0.06636
	(!D * !Q)	0.00990	0.01177	0.06478
	(!D * !Q)	0.00600	0.00785	0.06087
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.00994	0.01180	0.06495
	(D * RESET_B * Q)	0.00610	0.00793	0.06109
	(D * !RESET_B * !Q)	0.01573	0.01756	0.07060
	(D * !RESET_B * !Q)	0.01167	0.01346	0.06651
	(!D * !Q)	0.00984	0.01172	0.06473
	(!D * !Q)	0.00598	0.00784	0.06087
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.01004	0.01187	0.06500
	(D * RESET_B * Q)	0.00617	0.00799	0.06113
	(D * !RESET_B * !Q)	0.01711	0.01893	0.07198
	(D * !RESET_B * !Q)	0.01300	0.01481	0.06787
	(!D * !Q)	0.00987	0.01172	0.06473
	(!D * !Q)	0.00599	0.00783	0.06086

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)	0.00664	0.00946	0.06263
	(D * RESET_B * Q)	0.01053	0.01337	0.06653
	(D * !RESET_B * !Q)	0.00948	0.01252	0.06439
	(D * !RESET_B * !Q)	0.01360	0.01664	0.06852
	(!D * !Q)	0.00654	0.00940	0.06268
	(!D * !Q)	0.01043	0.01331	0.06657
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.00673	0.00982	0.06274
	(D * RESET_B * Q)	0.01058	0.01369	0.06660
	(D * !RESET_B * !Q)	0.00957	0.01258	0.06452
	(D * !RESET_B * !Q)	0.01366	0.01669	0.06861
	(!D * !Q)	0.00666	0.00951	0.06281
	(!D * !Q)	0.01051	0.01337	0.06666
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.00678	0.00957	0.06276
	(D * RESET_B * Q)	0.01064	0.01345	0.06663
	(D * !RESET_B * !Q)	0.01008	0.01314	0.06506
	(D * !RESET_B * !Q)	0.01420	0.01728	0.06918
	(!D * !Q)	0.00674	0.00959	0.06286
	(!D * !Q)	0.01060	0.01346	0.06673

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)	0.00174	0.00176	0.00175
	(D * GATE_N * !Q) + (!D * !Q)	-0.00211	-0.00212	-0.00211
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	0.00178	0.00180	0.00179
	(D * GATE_N * !Q) + (!D * !Q)	-0.00226	-0.00228	-0.00227
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	0.00300	0.00303	0.00301
	(D * GATE_N * !Q) + (!D * !Q)	-0.00348	-0.00350	-0.00348

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)	-0.00165	-0.00173	-0.00173
	(D * GATE_N * !Q) + (!D * !Q)	0.00221	0.00216	0.00214
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	-0.00169	-0.00177	-0.00177
	(D * GATE_N * !Q) + (!D * !Q)	0.00237	0.00232	0.00230
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	-0.00280	-0.00299	-0.00298
	(D * GATE_N * !Q) + (!D * !Q)	0.00364	0.00355	0.00352

SKY130_FD_SC_HS__DLRTPx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00232	0.00252	0.00286	1.19821
sky130_fd_sc_hs__dlrtp_2	0.00229	0.00247	0.00296	2.31800
sky130_fd_sc_hs__dlrtp_4	0.00228	0.00246	0.00451	4.40782

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrtp_1	0.00000	0.91355	1.30381
sky130_fd_sc_hs__dlrtp_2	0.00000	0.89775	1.25867
sky130_fd_sc_hs__dlrtp_4	0.00000	1.50129	2.70741

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)	0.21701	0.66689	6.07121
	GATE->Q (-R)	0.19081	0.64224	5.91701
	RESET_B->Q (RR)	0.07205	0.53316	6.07345
sky130_fd_sc_hs__dlrtp_2	D->Q (RR)	0.22700	0.58352	6.02270
	GATE->Q (-R)	0.20018	0.55665	5.86973
	RESET_B->Q (RR)	0.07594	0.45930	6.07081
sky130_fd_sc_hs__dlrtp_4	D->Q (RR)	0.25054	0.54324	6.13324
	GATE->Q (-R)	0.22628	0.52073	5.99692
	RESET_B->Q (RR)	0.08183	0.40084	6.26894

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtp_1	D->Q (FF)	0.17865	0.56237	4.49479
	GATE->Q (-F)	0.19275	0.42307	2.20813
	RESET_B->Q (FF)	0.07918	0.50669	4.66839
sky130_fd_sc_hs__dlrtp_2	D->Q (FF)	0.18715	0.53238	4.37392
	GATE->Q (-F)	0.19923	0.38799	2.06891
	RESET_B->Q (FF)	0.08196	0.48787	4.64528
sky130_fd_sc_hs__dlrtp_4	D->Q (FF)	0.19682	0.51467	4.38233
	GATE->Q (-F)	0.20856	0.37275	2.09633
	RESET_B->Q (FF)	0.08987	0.46318	4.68397

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 ()**	0.09333	0.64453	16.50020
sky130_fd_sc_hs__dlrtp_2	**min_pulse_width**	**RESET_B ()**	0.10541	0.64453	16.50020
sky130_fd_sc_hs__dlrtp_4	**min_pulse_width**	**RESET_B ()**	0.12717	0.64453	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	0.01857	0.02002	0.06518
	D	0.01456	0.01601	0.06161
	GATE	0.02217	0.02367	0.07828
	GATE	0.01795	0.01944	0.07453
	RESET_B	0.01062	0.01123	0.04533
	RESET_B	0.00601	0.00663	0.04116
sky130_fd_sc_hs__dlrtp_2	D	0.02191	0.02381	0.06909
	D	0.01789	0.01983	0.06607
	GATE	0.02517	0.02720	0.08211
	GATE	0.02098	0.02302	0.07805
	RESET_B	0.01378	0.01464	0.04680
	RESET_B	0.00900	0.00987	0.04296
sky130_fd_sc_hs__dlrtp_4	D	0.03092	0.03381	0.07933
	D	0.02683	0.02980	0.07699
	GATE	0.03422	0.03714	0.09215
	GATE	0.02995	0.03298	0.08976
	RESET_B	0.02390	0.02652	0.10611
	RESET_B	0.01663	0.01926	0.10022

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtp_1	D	0.01459	0.01728	0.06268
	D	0.01861	0.02126	0.06645
	GATE	0.02283	0.02509	0.07770
	GATE	0.01912	0.02134	0.07382
	RESET_B	0.00495	0.00731	0.04619
	RESET_B	0.00952	0.01186	0.04985
sky130_fd_sc_hs__dlrtp_2	D	0.01751	0.02081	0.06646
	D	0.02153	0.02457	0.06973
	GATE	0.02539	0.02816	0.08094
	GATE	0.02178	0.02443	0.07690
	RESET_B	0.01460	0.01679	0.05140
	RESET_B	0.01906	0.02090	0.05497
sky130_fd_sc_hs__dlrtp_4	D	0.02585	0.02990	0.07680
	D	0.02994	0.03365	0.07882
	GATE	0.03351	0.03690	0.08993
	GATE	0.02998	0.03329	0.08568
	RESET_B	0.01466	0.01979	0.11141
	RESET_B	0.02187	0.02686	0.11486

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)	0.00965	0.01121	0.05593
	(GATE * !RESET_B * !Q)	0.00616	0.00770	0.05243
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00591	0.00748	0.05149
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00216	0.00372	0.04774
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.00978	0.01131	0.05598
	(GATE * !RESET_B * !Q)	0.00629	0.00781	0.05250
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00595	0.00751	0.05148
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00222	0.00376	0.04775
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.01009	0.01161	0.05596
	(GATE * !RESET_B * !Q)	0.00661	0.00812	0.05248
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00594	0.00748	0.05121
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00221	0.00374	0.04748

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)	0.00813	0.01049	0.05565
	(GATE * !RESET_B * !Q)	0.01163	0.01399	0.05916
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00122	0.00372	0.04788
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00496	0.00749	0.05164
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.00835	0.01070	0.05582
	(GATE * !RESET_B * !Q)	0.01185	0.01421	0.05932
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00128	0.00376	0.04792
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00501	0.00750	0.05165
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.00961	0.01197	0.05679
	(GATE * !RESET_B * !Q)	0.01310	0.01548	0.06030
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00124	0.00373	0.04764
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00496	0.00746	0.05136

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)	0.01101	0.01280	0.06492
	(D * RESET_B * Q)	0.00703	0.00880	0.06095
	(D * !RESET_B * !Q)	0.01283	0.01448	0.06832
	(D * !RESET_B * !Q)	0.00912	0.01076	0.06460
	(!D * !Q)	0.01082	0.01261	0.06464
	(!D * !Q)	0.00684	0.00861	0.06067
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.01077	0.01257	0.06469
	(D * RESET_B * Q)	0.00685	0.00863	0.06078
	(D * !RESET_B * !Q)	0.01269	0.01431	0.06810
	(D * !RESET_B * !Q)	0.00901	0.01063	0.06442
	(!D * !Q)	0.01054	0.01235	0.06434
	(!D * !Q)	0.00663	0.00842	0.06043
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.01061	0.01238	0.06441
	(D * RESET_B * Q)	0.00670	0.00847	0.06051
	(D * !RESET_B * !Q)	0.01297	0.01455	0.06795
	(D * !RESET_B * !Q)	0.00930	0.01088	0.06427
	(!D * !Q)	0.01045	0.01223	0.06415
	(!D * !Q)	0.00654	0.00831	0.06024

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)	0.00646	0.00948	0.06140
	(D * RESET_B * Q)	0.01043	0.01346	0.06538
	(D * !RESET_B * !Q)	0.01107	0.01412	0.06811
	(D * !RESET_B * !Q)	0.01479	0.01785	0.07184
	(!D * !Q)	0.00652	0.00961	0.06166
	(!D * !Q)	0.01049	0.01360	0.06564
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.00650	0.00955	0.06137
	(D * RESET_B * Q)	0.01041	0.01348	0.06528
	(D * !RESET_B * !Q)	0.01131	0.01440	0.06823
	(D * !RESET_B * !Q)	0.01499	0.01810	0.07192
	(!D * !Q)	0.00660	0.00964	0.06166
	(!D * !Q)	0.01050	0.01356	0.06558
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.00646	0.00945	0.06110
	(D * RESET_B * Q)	0.01036	0.01337	0.06502
	(D * !RESET_B * !Q)	0.01261	0.01554	0.06910
	(D * !RESET_B * !Q)	0.01629	0.01924	0.07279
	(!D * !Q)	0.00645	0.00953	0.06131
	(!D * !Q)	0.01035	0.01345	0.06523

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)	0.00174	0.00176	0.00175
	(D * !GATE * !Q) + (!D * !Q)	-0.00217	-0.00218	-0.00217
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	0.00176	0.00177	0.00176
	(D * !GATE * !Q) + (!D * !Q)	-0.00231	-0.00232	-0.00231
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	0.00291	0.00295	0.00292
	(D * !GATE * !Q) + (!D * !Q)	-0.00332	-0.00335	-0.00333

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)	-0.00163	-0.00173	-0.00173
	(D * !GATE * !Q) + (!D * !Q)	0.00226	0.00222	0.00220
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	-0.00166	-0.00174	-0.00174
	(D * !GATE * !Q) + (!D * !Q)	0.00242	0.00237	0.00235
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	-0.00273	-0.00291	-0.00290
	(D * !GATE * !Q) + (!D * !Q)	0.00348	0.00340	0.00336

SKY130_FD_SC_HS__DLXBNx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00231	0.00252	1.16475	1.19720
sky130_fd_sc_hs__dlxbn_2	0.00219	0.00250	2.00283	2.32633

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbn_1	0.00000	1.07766	1.63286
sky130_fd_sc_hs__dlxbn_2	0.00000	1.04145	1.47015

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)	0.22001	0.68408	6.12788
	GATE_N->Q (-R)	0.25490	0.89060	8.45644
sky130_fd_sc_hs__dlxbn_2	D->Q (RR)	0.22683	0.60093	5.88468
	GATE_N->Q (-R)	0.26123	0.80678	8.20759

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbn_1	D->Q (FF)	0.18170	0.56483	4.39953
	GATE_N->Q (-F)	0.19222	0.60794	4.66737
sky130_fd_sc_hs__dlxbn_2	D->Q (FF)	0.18908	0.52641	3.97126
	GATE_N->Q (-F)	0.20006	0.56988	4.23857

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)	0.22604	0.87144	8.83268
	GATE_N->Q_N (-R)	0.23666	0.91418	9.09863
sky130_fd_sc_hs__dlxbn_2	D->Q_N (FR)	0.24933	0.76705	8.48275
	GATE_N->Q_N (-R)	0.26046	0.81030	8.75006

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)	0.25274	0.47602	2.45414
	GATE_N->Q_N (-F)	0.28762	0.68258	4.78360
sky130_fd_sc_hs__dlxbn_2	D->Q_N (RF)	0.28468	0.48065	2.56122
	GATE_N->Q_N (-F)	0.31917	0.68637	4.88446

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.01250	0.01393	0.03696
	D	0.01070	0.01200	0.03515
	GATE_N	0.01267	0.01444	0.04114
	GATE_N	0.01463	0.01641	0.04291
sky130_fd_sc_hs__dlxbn_2	D	0.01552	0.01722	0.04022
	D	0.01380	0.01544	0.03849
	GATE_N	0.01569	0.01783	0.04480
	GATE_N	0.01765	0.01980	0.04644

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.01084	0.01249	0.03549
	D	0.01263	0.01427	0.03709
	GATE_N	0.01252	0.01435	0.04174
	GATE_N	0.01449	0.01632	0.04359
sky130_fd_sc_hs__dlxbn_2	D	0.01383	0.01579	0.03888
	D	0.01555	0.01750	0.04042
	GATE_N	0.01546	0.01761	0.04532
	GATE_N	0.01742	0.01956	0.04706

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.01086	0.01254	0.03625
	D	0.01266	0.01430	0.03748
	GATE_N	0.01254	0.01438	0.04210
	GATE_N	0.01451	0.01634	0.04396
sky130_fd_sc_hs__dlxbn_2	D	0.01386	0.01584	0.03946
	D	0.01557	0.01754	0.04078
	GATE_N	0.01549	0.01775	0.04624
	GATE_N	0.01744	0.01962	0.04737

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.01249	0.01382	0.03644
	D	0.01069	0.01198	0.03463
	GATE_N	0.01265	0.01443	0.04107
	GATE_N	0.01462	0.01639	0.04258
sky130_fd_sc_hs__dlxbn_2	D	0.01551	0.01725	0.03987
	D	0.01379	0.01544	0.03807
	GATE_N	0.01568	0.01783	0.04445
	GATE_N	0.01764	0.01980	0.04595

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)	0.00575	0.00733	0.05184
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00214	0.00372	0.04823
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00563	0.00724	0.05175
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00218	0.00378	0.04830

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)	0.00144	0.00395	0.04867
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00504	0.00757	0.05227
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00151	0.00403	0.04876
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00494	0.00749	0.05221

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)	0.01034	0.01214	0.06523
	(D * Q * !Q_N)	0.00639	0.00819	0.06129
	(!D * !Q * Q_N)	0.01016	0.01199	0.06495
	(!D * !Q * Q_N)	0.00621	0.00803	0.06100
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.01030	0.01211	0.06521
	(D * Q * !Q_N)	0.00637	0.00818	0.06129
	(!D * !Q * Q_N)	0.01013	0.01197	0.06493
	(!D * !Q * Q_N)	0.00620	0.00802	0.06100

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)	0.00676	0.00959	0.06272
	(D * Q * !Q_N)	0.01070	0.01355	0.06666
	(!D * !Q * Q_N)	0.00676	0.00960	0.06285
	(!D * !Q * Q_N)	0.01070	0.01355	0.06680
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.00673	0.00953	0.06266
	(D * Q * !Q_N)	0.01064	0.01344	0.06659
	(!D * !Q * Q_N)	0.00672	0.00955	0.06279
	(!D * !Q * Q_N)	0.01064	0.01349	0.06672

SKY130_FD_SC_HS__DLXBP

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00229	0.00253	1.16626	1.20105

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbp_1	0.00000	1.07766	1.63286

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)	0.21563	0.67756	6.09559
	GATE->Q (-R)	0.18949	0.65157	5.93880

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbp_1	D->Q (FF)	0.18820	0.57597	4.44065
	GATE->Q (-F)	0.19769	0.42856	2.13019

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)	0.23317	0.88142	8.89133
	GATE->Q_N (-R)	0.24274	0.73393	6.58119

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)	0.24854	0.46986	2.42595
	GATE->Q_N (-F)	0.22240	0.44380	2.26842

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.01252	0.01382	0.03674
	D	0.01073	0.01200	0.03495
	GATE	0.01410	0.01556	0.04297
	GATE	0.01212	0.01352	0.04101

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.01065	0.01227	0.03515
	D	0.01243	0.01405	0.03664
	GATE	0.01449	0.01603	0.04211
	GATE	0.01252	0.01400	0.04014

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.01067	0.01233	0.03567
	D	0.01246	0.01408	0.03696
	GATE	0.01452	0.01603	0.04251
	GATE	0.01254	0.01403	0.04052

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.01251	0.01384	0.03626
	D	0.01072	0.01199	0.03445
	GATE	0.01408	0.01548	0.04242
	GATE	0.01211	0.01350	0.04043

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)	0.00589	0.00745	0.05146
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00231	0.00387	0.04788

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)	0.00128	0.00377	0.04795
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00485	0.00735	0.05153

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)	0.01045	0.01246	0.06442
	(D * Q * !Q_N)	0.00649	0.00851	0.06047
	(!D * !Q * Q_N)	0.01045	0.01253	0.06431
	(!D * !Q * Q_N)	0.00650	0.00856	0.06036

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)	0.00634	0.00935	0.06122
	(D * Q * !Q_N)	0.01028	0.01329	0.06517
	(!D * !Q * Q_N)	0.00621	0.00899	0.06128
	(!D * !Q * Q_N)	0.01014	0.01295	0.06524

SKY130_FD_SC_HS__DLXTNx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00229	0.00255	1.19222
sky130_fd_sc_hs__dlxtn_2	0.00234	0.00255	2.19282
sky130_fd_sc_hs__dlxtn_4	0.00233	0.00254	4.40069

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtn_1	0.00000	0.87283	1.18458
sky130_fd_sc_hs__dlxtn_2	0.00000	0.85372	1.25867
sky130_fd_sc_hs__dlxtn_4	0.00000	1.34974	1.82015

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)	0.20519	0.66132	6.08489
	GATE_N->Q (-R)	0.24038	0.86834	8.43009
sky130_fd_sc_hs__dlxtn_2	D->Q (RR)	0.20841	0.56113	5.79723
	GATE_N->Q (-R)	0.24187	0.76545	8.11981
sky130_fd_sc_hs__dlxtn_4	D->Q (RR)	0.23226	0.52115	6.11500
	GATE_N->Q (-R)	0.26468	0.72437	8.42728

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtn_1	D->Q (FF)	0.16833	0.54067	4.30545
	GATE_N->Q (-F)	0.18054	0.58605	4.57518
sky130_fd_sc_hs__dlxtn_2	D->Q (FF)	0.17502	0.50855	4.12510
	GATE_N->Q (-F)	0.18598	0.55207	4.39314
sky130_fd_sc_hs__dlxtn_4	D->Q (FF)	0.18907	0.50603	4.40287
	GATE_N->Q (-F)	0.20311	0.55539	4.68713

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.01774	0.01974	0.06546
	D	0.01403	0.01602	0.06219
	GATE_N	0.01798	0.02093	0.07374
	GATE_N	0.02201	0.02500	0.07977
sky130_fd_sc_hs__dlxtn_2	D	0.02079	0.02307	0.06882
	D	0.01699	0.01930	0.06530
	GATE_N	0.02092	0.02427	0.07720
	GATE_N	0.02492	0.02838	0.08152
sky130_fd_sc_hs__dlxtn_4	D	0.02972	0.03232	0.07831
	D	0.02593	0.02864	0.07629
	GATE_N	0.02973	0.03350	0.08653
	GATE_N	0.03373	0.03755	0.09066

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.01481	0.01745	0.06320
	D	0.01852	0.02116	0.06691
	GATE_N	0.01806	0.02115	0.07628
	GATE_N	0.02209	0.02518	0.07996
sky130_fd_sc_hs__dlxtn_2	D	0.01759	0.02087	0.06739
	D	0.02137	0.02434	0.07005
	GATE_N	0.02079	0.02422	0.07902
	GATE_N	0.02479	0.02820	0.08282
sky130_fd_sc_hs__dlxtn_4	D	0.02586	0.02973	0.07721
	D	0.02964	0.03326	0.07915
	GATE_N	0.02914	0.03419	0.09049
	GATE_N	0.03315	0.03719	0.09241

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00576	0.00730	0.05165
	GATE_N	0.00205	0.00356	0.04792
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00578	0.00731	0.05168
	GATE_N	0.00200	0.00351	0.04788
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.00580	0.00733	0.05168
	GATE_N	0.00202	0.00353	0.04789

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00178	0.00424	0.04883
	GATE_N	0.00549	0.00798	0.05256
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00175	0.00425	0.04883
	GATE_N	0.00554	0.00805	0.05262
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.00179	0.00428	0.04886
	GATE_N	0.00557	0.00808	0.05264

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.01076	0.01251	0.06547
	(D * Q)	0.00672	0.00848	0.06143
	(!D * !Q)	0.01056	0.01233	0.06516
	(!D * !Q)	0.00651	0.00828	0.06112
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.01051	0.01231	0.06532
	(D * Q)	0.00650	0.00829	0.06131
	(!D * !Q)	0.01027	0.01208	0.06496
	(!D * !Q)	0.00627	0.00805	0.06095
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.01061	0.01237	0.06537
	(D * Q)	0.00659	0.00836	0.06135
	(!D * !Q)	0.01037	0.01214	0.06501
	(!D * !Q)	0.00635	0.00812	0.06099

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.00680	0.00956	0.06263
	(D * Q)	0.01082	0.01361	0.06667
	(!D * !Q)	0.00682	0.00990	0.06277
	(!D * !Q)	0.01084	0.01396	0.06681
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.00672	0.00950	0.06259
	(D * Q)	0.01073	0.01352	0.06661
	(!D * !Q)	0.00678	0.00990	0.06278
	(!D * !Q)	0.01078	0.01393	0.06680
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.00678	0.00989	0.06263
	(D * Q)	0.01078	0.01392	0.06665
	(!D * !Q)	0.00684	0.00992	0.06280
	(!D * !Q)	0.01084	0.01395	0.06683

SKY130_FD_SC_HS__DLXTP

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00225	0.00260	1.15696

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtp_1	0.00000	0.81076	1.18180

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)	0.24441	0.70050	6.12113
	GATE->Q (-R)	0.19583	0.65386	5.96711

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtp_1	D->Q (FF)	0.18199	0.56013	4.39619
	GATE->Q (-F)	0.19410	0.42328	2.15554

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.01932	0.02133	0.06692
	D	0.01549	0.01750	0.06350
	GATE	0.02289	0.02445	0.06716
	GATE	0.01869	0.02026	0.06342

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.01676	0.01951	0.06599
	D	0.02059	0.02332	0.06906
	GATE	0.02445	0.02668	0.07563
	GATE	0.02062	0.02280	0.07159

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00542	0.00713	0.05189
	!GATE	0.00177	0.00347	0.04824

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00150	0.00391	0.04872
	!GATE	0.00514	0.00758	0.05236

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.01132	0.01318	0.06627
	(D * Q)	0.00730	0.00916	0.06226
	(!D * !Q)	0.01091	0.01275	0.06572
	(!D * !Q)	0.00689	0.00874	0.06170

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.00558	0.00867	0.06155
	(D * Q)	0.00958	0.01270	0.06556
	(!D * !Q)	0.00600	0.00911	0.06209
	(!D * !Q)	0.01000	0.01314	0.06611

SKY130_FD_SC_HS__DLYGATE4SDx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00181	1.19537
sky130_fd_sc_hs__dlygate4sd2_1	0.00182	1.19437
sky130_fd_sc_hs__dlygate4sd3_1	0.00184	1.19206

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlygate4sd1_1	0.00000	0.05186	0.08264
sky130_fd_sc_hs__dlygate4sd2_1	0.00000	0.04918	0.07997
sky130_fd_sc_hs__dlygate4sd3_1	0.00000	0.05014	0.08093

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)**	0.14404	0.60239	5.89658
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (RR)**	0.18138	0.64708	5.99708
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (RR)**	0.30811	0.79361	6.25305

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlygate4sd1_1	**A->X (FF)**	0.17967	0.61787	4.92629
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (FF)**	0.21833	0.67164	5.00638
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (FF)**	0.32411	0.81858	5.23019

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.01347	0.01367	0.02998
	A	0.01055	0.01076	0.02757
sky130_fd_sc_hs__dlygate4sd2_1	A	0.01409	0.01427	0.02987
	A	0.01116	0.01133	0.02746
sky130_fd_sc_hs__dlygate4sd3_1	A	0.01615	0.01633	0.03136
	A	0.01318	0.01336	0.02872

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.01011	0.01088	0.02646
	A	0.01302	0.01379	0.02912
sky130_fd_sc_hs__dlygate4sd2_1	A	0.01079	0.01138	0.02660
	A	0.01373	0.01431	0.02899
sky130_fd_sc_hs__dlygate4sd3_1	A	0.01330	0.01349	0.02765
	A	0.01626	0.01651	0.03012

SKY130_FD_SC_HS__EBUFNx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00234	0.00436	0.61747
sky130_fd_sc_hs__ebufn_2	0.00255	0.00572	1.01018
sky130_fd_sc_hs__ebufn_4	0.00280	0.00878	2.00461
sky130_fd_sc_hs__ebufn_8	0.00540	0.01461	3.44726

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__ebufn_1	0.00000	0.53586	0.88816
sky130_fd_sc_hs__ebufn_2	0.00000	0.26741	0.39502
sky130_fd_sc_hs__ebufn_4	0.00000	0.15491	0.32239
sky130_fd_sc_hs__ebufn_8	0.00000	0.25609	0.63734

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)	0.07147	0.67285	6.38430
	TE_B->Z (RR)	0.02581	0.38111	5.09367
	TE_B->Z (FR)	0.05657	0.88285	10.40440
sky130_fd_sc_hs__ebufn_2	A->Z (RR)	0.06650	0.57443	6.22244
	TE_B->Z (RR)	0.02795	0.38190	5.09446
	TE_B->Z (FR)	0.05666	0.77259	10.22810
sky130_fd_sc_hs__ebufn_4	A->Z (RR)	0.07387	0.50237	6.29741
	TE_B->Z (RR)	0.03590	0.38392	5.09640
	TE_B->Z (FR)	0.05350	0.65227	10.14440
sky130_fd_sc_hs__ebufn_8	A->Z (RR)	0.07926	0.43328	6.21807
	TE_B->Z (RR)	0.05949	0.38834	5.10067
	TE_B->Z (FR)	0.06053	0.56827	9.84102

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ebufn_1	A->Z (FF)	0.07209	0.45170	3.85999
	TE_B->Z (RF)	0.02568	0.38109	5.09368
	TE_B->Z (FF)	0.05802	0.41160	3.74635
sky130_fd_sc_hs__ebufn_2	A->Z (FF)	0.08177	0.45649	3.87149
	TE_B->Z (RF)	0.02784	0.38187	5.09447
	TE_B->Z (FF)	0.06235	0.39535	3.71522
sky130_fd_sc_hs__ebufn_4	A->Z (FF)	0.10761	0.50846	4.22079
	TE_B->Z (RF)	0.03582	0.38385	5.09645
	TE_B->Z (FF)	0.07368	0.41598	3.98095
sky130_fd_sc_hs__ebufn_8	A->Z (FF)	0.10523	0.48113	4.30887
	TE_B->Z (RF)	0.05871	0.38820	5.10075
	TE_B->Z (FF)	0.10300	0.46477	4.24562

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.00759	0.00964	0.05398
	A	0.00371	0.00576	0.05024
	TE_B	0.00342	0.00606	0.05085
	TE_B	0.01036	0.01300	0.05784
sky130_fd_sc_hs__ebufn_2	A	0.01086	0.01329	0.06064
	A	0.00671	0.00914	0.05686
	TE_B	0.00668	0.00928	0.05670
	TE_B	0.01578	0.01841	0.06587
sky130_fd_sc_hs__ebufn_4	A	0.01740	0.02009	0.06413
	A	0.01282	0.01556	0.06021
	TE_B	0.01353	0.01570	0.06037
	TE_B	0.02756	0.02980	0.07440
sky130_fd_sc_hs__ebufn_8	A	0.03372	0.03944	0.12904
	A	0.02482	0.03065	0.12151
	TE_B	0.02776	0.02953	0.07254
	TE_B	0.05123	0.05303	0.09606

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.00365	0.00637	0.05048
	A	0.00751	0.01023	0.05427
	TE_B	0.00386	0.00691	0.05125
	TE_B	0.01068	0.01370	0.05804
sky130_fd_sc_hs__ebufn_2	A	0.00665	0.00967	0.05624
	A	0.01079	0.01373	0.06003
	TE_B	0.00762	0.01031	0.05805
	TE_B	0.01634	0.01901	0.06628
sky130_fd_sc_hs__ebufn_4	A	0.01294	0.01663	0.05935
	A	0.01751	0.02109	0.06384
	TE_B	0.01513	0.01747	0.06256
	TE_B	0.02864	0.03092	0.07537
sky130_fd_sc_hs__ebufn_8	A	0.02547	0.03205	0.11982
	A	0.03435	0.04082	0.12867
	TE_B	0.03085	0.03306	0.07772
	TE_B	0.05325	0.05545	0.09817

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00502	0.00696	0.05100
	(TE_B * Z)	0.00110	0.00304	0.04709
	(TE_B * !Z)	0.00489	0.00679	0.05079
	(TE_B * !Z)	0.00098	0.00288	0.04690
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00696	0.00872	0.05576
	(TE_B * Z)	0.00268	0.00439	0.05146
	(TE_B * !Z)	0.00652	0.00823	0.05512
	(TE_B * !Z)	0.00225	0.00395	0.05086
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.01025	0.01147	0.05532
	(TE_B * Z)	0.00549	0.00668	0.05056
	(TE_B * !Z)	0.00950	0.01068	0.05424
	(TE_B * !Z)	0.00479	0.00596	0.04953
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.01899	0.02230	0.11067
	(TE_B * Z)	0.00973	0.01299	0.10141
	(TE_B * !Z)	0.01750	0.02045	0.10849
	(TE_B * !Z)	0.00833	0.01126	0.09934

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00062	0.00325	0.04739
	(TE_B * Z)	0.00457	0.00721	0.05135
	(TE_B * !Z)	0.00071	0.00333	0.04763
	(TE_B * !Z)	0.00461	0.00722	0.05153
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00135	0.00372	0.05033
	(TE_B * Z)	0.00570	0.00810	0.05469
	(TE_B * !Z)	0.00170	0.00414	0.05104
	(TE_B * !Z)	0.00594	0.00840	0.05529
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.00261	0.00456	0.04810
	(TE_B * Z)	0.00750	0.00946	0.05304
	(TE_B * !Z)	0.00324	0.00529	0.04925
	(TE_B * !Z)	0.00793	0.00999	0.05394
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.00438	0.00855	0.09696
	(TE_B * Z)	0.01386	0.01810	0.10655
	(TE_B * !Z)	0.00567	0.01005	0.09926
	(TE_B * !Z)	0.01476	0.01920	0.10836

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00426	0.00591	0.05029
	(A * Z)	-0.00257	-0.00096	0.04346
	(!A * !Z)	0.00432	0.00594	0.05032
	(!A * !Z)	-0.00251	-0.00090	0.04348
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00478	0.00613	0.05338
	(A * Z)	-0.00397	-0.00269	0.04458
	(!A * !Z)	0.00497	0.00626	0.05346
	(!A * !Z)	-0.00378	-0.00256	0.04470
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00602	0.00640	0.05046
	(A * Z)	-0.00744	-0.00717	0.03692
	(!A * !Z)	0.00617	0.00652	0.05053
	(!A * !Z)	-0.00727	-0.00704	0.03700
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.00826	0.00759	0.04903
	(A * Z)	-0.01410	-0.01492	0.02653
	(!A * !Z)	0.00825	0.00765	0.04915
	(!A * !Z)	-0.01410	-0.01486	0.02669

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00096	0.00371	0.04828
	(A * Z)	0.00778	0.01057	0.05513
	(!A * !Z)	0.00094	0.00378	0.04826
	(!A * !Z)	0.00778	0.01064	0.05507
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00239	0.00517	0.05235
	(A * Z)	0.01116	0.01398	0.06115
	(!A * !Z)	0.00231	0.00506	0.05221
	(!A * !Z)	0.01106	0.01387	0.06096
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00513	0.00738	0.05198
	(A * Z)	0.01860	0.02094	0.06552
	(!A * !Z)	0.00510	0.00760	0.05191
	(!A * !Z)	0.01858	0.02114	0.06542
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.01066	0.01292	0.05555
	(A * Z)	0.03305	0.03545	0.07804
	(!A * !Z)	0.01097	0.01296	0.05596
	(!A * !Z)	0.03335	0.03545	0.07839

SKY130_FD_SC_HS__EDFXBP

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00184	0.00364	0.00294	1.20155	1.20990

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxbp_1	0.00000	0.70628	1.15647

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)	0.17820	0.65731	6.03133

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxbp_1	CLK->Q (RF)	0.16579	0.45206	2.34850

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)	0.24463	0.70929	6.11815

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)	0.23878	0.48581	2.26913

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)	-0.08437	-0.16748	-0.65873
	setup	CLK (R)	0.11095	0.18332	0.65807

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)	-0.27133	-0.41758	-3.70918
	setup	CLK (R)	0.35185	0.47672	3.79336

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)	-0.08437	-0.16748	-0.65873
	setup	CLK (R)	0.11095	0.18332	0.65807

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)	-0.27133	-0.41758	-3.70918
	setup	CLK (R)	0.35185	0.47672	3.79336

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)	-0.00186	0.00642	0.25581
	setup	CLK (R)	0.38193	0.40030	0.61739

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)	-0.14456	-0.26609	-2.73538
	setup	CLK (R)	0.31218	0.43122	3.56832

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)	-0.00186	0.00642	0.25581
	hold	CLK (R)	-0.15249	-0.18042	-0.37550
	setup	CLK (R)	0.10757	0.16476	0.61739
	setup	CLK (R)	0.38193	0.40030	0.60497

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)	-0.29486	-0.41838	-3.56552
	hold	CLK (R)	-0.14456	-0.26609	-2.73538
	setup	CLK (R)	0.31218	0.43122	3.56832
	setup	CLK (R)	0.15973	0.27510	2.73696

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 ()	0.08124	0.64453	16.50020
	min_pulse_width	CLK ()	0.12959	0.64453	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 ()	0.14168	0.64453	16.50020
	min_pulse_width	CLK ()	0.23355	0.64453	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	0.01710	0.01809	0.04169
	CLK	0.01485	0.01573	0.03947

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01681	0.01746	0.04119
	CLK	0.01440	0.01500	0.03874

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01683	0.01748	0.04184
	CLK	0.01442	0.01503	0.03935

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01708	0.01800	0.04105
	CLK	0.01483	0.01570	0.03879

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.00647	0.00674	0.01848
	(CLK * DE)	0.00334	0.00359	0.01534
	(CLK * !DE)	0.00128	0.00129	0.00128
	(CLK * !DE)	-0.00071	-0.00072	-0.00071
	(!CLK * DE * Q * !Q_N)	0.01464	0.01498	0.02883
	(!CLK * DE * Q * !Q_N)	0.01151	0.01183	0.02569
	(!CLK * DE * !Q * Q_N)	0.01392	0.01424	0.02793
	(!CLK * DE * !Q * Q_N)	0.01076	0.01106	0.02476
	(!CLK * !DE)	0.00128	0.00129	0.00129
	(!CLK * !DE)	-0.00071	-0.00072	-0.00071

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.00234	0.00259	0.01385
	(CLK * DE)	0.00552	0.00576	0.01702
	(CLK * !DE)	-0.00040	-0.00040	-0.00039
	(CLK * !DE)	0.00160	0.00160	0.00159
	(!CLK * DE * Q * !Q_N)	0.01126	0.01157	0.02621
	(!CLK * DE * Q * !Q_N)	0.01441	0.01471	0.02935
	(!CLK * DE * !Q * Q_N)	0.01190	0.01228	0.02724
	(!CLK * DE * !Q * Q_N)	0.01507	0.01544	0.03042
	(!CLK * !DE)	-0.00040	-0.00040	-0.00039
	(!CLK * !DE)	0.00160	0.00160	0.00159

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01029	0.01144	0.05131
	CLK	0.00315	0.00427	0.04416
	(!CLK * D * Q * !Q_N)	0.00574	0.00667	0.03627
	(!CLK * D * Q * !Q_N)	-0.00008	0.00081	0.03044
	(!CLK * D * !Q * Q_N)	0.01835	0.01958	0.06095
	(!CLK * D * !Q * Q_N)	0.01122	0.01241	0.05380
	(!CLK * !D * Q * !Q_N)	0.01824	0.01916	0.04903
	(!CLK * !D * Q * !Q_N)	0.01358	0.01449	0.04436
	(!CLK * !D * !Q * Q_N)	0.00572	0.00672	0.03631
	(!CLK * !D * !Q * Q_N)	-0.00006	0.00091	0.03052

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00326	0.00478	0.04450
	CLK	0.01040	0.01195	0.05164
	(!CLK * D * Q * !Q_N)	-0.00014	0.00139	0.03094
	(!CLK * D * Q * !Q_N)	0.00567	0.00723	0.03677
	(!CLK * D * !Q * Q_N)	0.01274	0.01434	0.05640
	(!CLK * D * !Q * Q_N)	0.01988	0.02148	0.06353
	(!CLK * !D * Q * !Q_N)	0.01424	0.01572	0.04515
	(!CLK * !D * Q * !Q_N)	0.01886	0.02038	0.04983
	(!CLK * !D * !Q * Q_N)	-0.00018	0.00128	0.03090
	(!CLK * !D * !Q * Q_N)	0.00558	0.00708	0.03670

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)	0.01616	0.01750	0.06320
	(D * Q * !Q_N)	0.01147	0.01280	0.05852
	(D * !DE * !Q * Q_N)	0.01577	0.01702	0.06293
	(D * !DE * !Q * Q_N)	0.01108	0.01233	0.05824
	(!D * !Q * Q_N)	0.01578	0.01702	0.06291
	(!D * !Q * Q_N)	0.01109	0.01234	0.05823
	(!D * !DE * Q * !Q_N)	0.01616	0.01749	0.06319
	(!D * !DE * Q * !Q_N)	0.01147	0.01280	0.05851

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)	0.00826	0.01019	0.05635
	(D * Q * !Q_N)	0.01294	0.01488	0.06103
	(D * DE * !Q * Q_N)	0.01657	0.01840	0.06550
	(D * DE * !Q * Q_N)	0.02125	0.02309	0.07018
	(D * !DE * !Q * Q_N)	0.00869	0.01072	0.05664
	(D * !DE * !Q * Q_N)	0.01337	0.01540	0.06133
	(!D * DE * Q * !Q_N)	0.01887	0.02091	0.06753
	(!D * DE * Q * !Q_N)	0.02354	0.02559	0.07222
	(!D * !Q * Q_N)	0.00869	0.01060	0.05664
	(!D * !Q * Q_N)	0.01337	0.01529	0.06133
	(!D * !DE * Q * !Q_N)	0.00826	0.01019	0.05635
	(!D * !DE * Q * !Q_N)	0.01293	0.01487	0.06103

SKY130_FD_SC_HS__EDFXTP

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00188	0.00350	0.00288	1.18898

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxtp_1	0.00000	0.71750	1.26403

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)	0.16902	0.64231	5.94609

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxtp_1	CLK->Q (RF)	0.15365	0.42348	2.20000

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)	-0.08557	-0.16445	-0.66009
	setup	CLK (R)	0.10574	0.18117	0.66267

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)	-0.26922	-0.41374	-3.69391
	setup	CLK (R)	0.35104	0.47681	3.79490

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)	-0.00320	0.00428	0.25208
	setup	CLK (R)	0.37792	0.39568	0.61814

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)	-0.14495	-0.26791	-2.74465
	setup	CLK (R)	0.31044	0.43122	3.56351

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)	-0.00320	0.00428	0.25208
	hold	CLK (R)	-0.15031	-0.17204	-0.36728
	setup	CLK (R)	0.10762	0.16454	0.61814
	setup	CLK (R)	0.37792	0.39568	0.61416

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)	-0.28872	-0.41438	-3.55819
	hold	CLK (R)	-0.14495	-0.26791	-2.74465
	setup	CLK (R)	0.31044	0.43122	3.56351
	setup	CLK (R)	0.15577	0.27482	2.74995

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 ()	0.07640	0.64453	16.50020
	min_pulse_width	CLK ()	0.11992	0.64453	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 ()	0.13926	0.64453	16.50020
	min_pulse_width	CLK ()	0.23596	0.64453	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	0.02877	0.03044	0.07778
	CLK	0.02433	0.02601	0.07386

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.02790	0.02927	0.07720
	CLK	0.02316	0.02453	0.07226

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.00627	0.00652	0.01832
	(CLK * DE)	0.00311	0.00335	0.01516
	(CLK * !DE)	0.00130	0.00131	0.00130
	(CLK * !DE)	-0.00073	-0.00074	-0.00073
	(!CLK * DE * Q)	0.01441	0.01474	0.02867
	(!CLK * DE * Q)	0.01125	0.01158	0.02550
	(!CLK * DE * !Q)	0.01367	0.01398	0.02775
	(!CLK * DE * !Q)	0.01049	0.01078	0.02455
	(!CLK * !DE)	0.00129	0.00130	0.00130
	(!CLK * !DE)	-0.00073	-0.00074	-0.00073

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.00225	0.00250	0.01381
	(CLK * DE)	0.00546	0.00569	0.01701
	(CLK * !DE)	-0.00038	-0.00038	-0.00037
	(CLK * !DE)	0.00164	0.00164	0.00163
	(!CLK * DE * Q)	0.01085	0.01106	0.02575
	(!CLK * DE * Q)	0.01402	0.01423	0.02892
	(!CLK * DE * !Q)	0.01144	0.01180	0.02682
	(!CLK * DE * !Q)	0.01465	0.01500	0.03003
	(!CLK * !DE)	-0.00038	-0.00038	-0.00038
	(!CLK * !DE)	0.00164	0.00164	0.00163

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.00997	0.01118	0.05110
	CLK	0.00304	0.00422	0.04417
	(!CLK * D * Q)	0.00558	0.00653	0.03619
	(!CLK * D * Q)	-0.00004	0.00089	0.03058
	(!CLK * D * !Q)	0.01795	0.01923	0.06066
	(!CLK * D * !Q)	0.01102	0.01229	0.05373
	(!CLK * !D * Q)	0.01756	0.01853	0.04843
	(!CLK * !D * Q)	0.01314	0.01408	0.04398
	(!CLK * !D * !Q)	0.00557	0.00661	0.03624
	(!CLK * !D * !Q)	0.00001	0.00102	0.03068

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.00320	0.00473	0.04447
	CLK	0.01013	0.01165	0.05138
	(!CLK * D * Q)	-0.00009	0.00143	0.03100
	(!CLK * D * Q)	0.00551	0.00706	0.03661
	(!CLK * D * !Q)	0.01231	0.01391	0.05597
	(!CLK * D * !Q)	0.01924	0.02084	0.06289
	(!CLK * !D * Q)	0.01403	0.01552	0.04495
	(!CLK * !D * Q)	0.01843	0.01994	0.04941
	(!CLK * !D * !Q)	-0.00015	0.00129	0.03095
	(!CLK * !D * !Q)	0.00539	0.00689	0.03653

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.01550	0.01678	0.06273
	(D * Q)	0.01091	0.01217	0.05814
	(D * !DE * !Q)	0.01560	0.01681	0.06294
	(D * !DE * !Q)	0.01101	0.01221	0.05835
	(!D * !Q)	0.01561	0.01681	0.06294
	(!D * !Q)	0.01101	0.01222	0.05835
	(!D * !DE * Q)	0.01550	0.01677	0.06273
	(!D * !DE * Q)	0.01090	0.01217	0.05814

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.00826	0.01024	0.05648
	(D * Q)	0.01286	0.01484	0.06108
	(D * DE * !Q)	0.01604	0.01791	0.06515
	(D * DE * !Q)	0.02064	0.02251	0.06975
	(D * !DE * !Q)	0.00820	0.01014	0.05627
	(D * !DE * !Q)	0.01279	0.01473	0.06085
	(!D * DE * Q)	0.01838	0.02042	0.06753
	(!D * DE * Q)	0.02297	0.02501	0.07213
	(!D * !Q)	0.00820	0.01014	0.05627
	(!D * !Q)	0.01280	0.01473	0.06085
	(!D * !DE * Q)	0.00826	0.01023	0.05648
	(!D * !DE * Q)	0.01286	0.01484	0.06107

SKY130_FD_SC_HS__EINVNx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00285	0.00321	0.61973
sky130_fd_sc_hs__einvn_2	0.00536	0.00485	1.10198
sky130_fd_sc_hs__einvn_4	0.01069	0.00873	2.11497
sky130_fd_sc_hs__einvn_8	0.02138	0.01455	3.69780

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__einvn_1	0.00000	0.22316	0.31283
sky130_fd_sc_hs__einvn_2	0.00000	0.23791	0.31405
sky130_fd_sc_hs__einvn_4	0.00000	0.11275	0.31496
sky130_fd_sc_hs__einvn_8	0.00000	0.17177	0.62248

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)	0.04715	0.89381	10.77680
	TE_B->Z (RR)	0.02700	0.38077	5.09333
	TE_B->Z (FR)	0.05555	0.88494	10.43710
sky130_fd_sc_hs__einvn_2	A->Z (FR)	0.03226	0.75753	10.59210
	TE_B->Z (RR)	0.03527	0.38249	5.09505
	TE_B->Z (FR)	0.05013	0.75127	10.22520
sky130_fd_sc_hs__einvn_4	A->Z (FR)	0.03016	0.65960	10.62540
	TE_B->Z (RR)	0.03674	0.38395	5.09647
	TE_B->Z (FR)	0.04795	0.63776	10.08480
sky130_fd_sc_hs__einvn_8	A->Z (FR)	0.03178	0.58579	10.46110
	TE_B->Z (RR)	0.05851	0.39041	5.10270
	TE_B->Z (FR)	0.05661	0.55276	9.72481

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvn_1	A->Z (RF)	0.01989	0.38476	4.57278
	TE_B->Z (RF)	0.02653	0.38075	5.09334
	TE_B->Z (FF)	0.05696	0.41655	3.66685
sky130_fd_sc_hs__einvn_2	A->Z (RF)	0.01664	0.33156	4.62123
	TE_B->Z (RF)	0.03482	0.38247	5.09507
	TE_B->Z (FF)	0.06552	0.41739	3.84443
sky130_fd_sc_hs__einvn_4	A->Z (RF)	0.01609	0.28077	4.68394
	TE_B->Z (RF)	0.03615	0.38393	5.09651
	TE_B->Z (FF)	0.06703	0.39715	3.96617
sky130_fd_sc_hs__einvn_8	A->Z (RF)	0.01804	0.25307	4.90328
	TE_B->Z (RF)	0.05760	0.39031	5.10284
	TE_B->Z (FF)	0.09293	0.44228	4.26014

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	-0.00056	0.00031	0.01044
	A	0.00390	0.00477	0.01498
	TE_B	0.00227	0.00396	0.03447
	TE_B	0.00897	0.01067	0.04124
sky130_fd_sc_hs__einvn_2	A	-0.00224	-0.00012	0.01936
	A	0.00638	0.00853	0.02814
	TE_B	0.00350	0.00516	0.03533
	TE_B	0.01443	0.01613	0.04634
sky130_fd_sc_hs__einvn_4	A	-0.00438	-0.00056	0.03760
	A	0.01281	0.01672	0.05511
	TE_B	0.00723	0.00960	0.05570
	TE_B	0.02753	0.02999	0.07601
sky130_fd_sc_hs__einvn_8	A	-0.00834	0.00054	0.07257
	A	0.02619	0.03514	0.10762
	TE_B	0.01513	0.01713	0.06181
	TE_B	0.05119	0.05318	0.09789

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	0.00411	0.00450	0.01012
	A	-0.00034	-0.00001	0.00529
	TE_B	0.00435	0.00612	0.03424
	TE_B	0.00787	0.00962	0.03770
sky130_fd_sc_hs__einvn_2	A	0.00678	0.00773	0.01910
	A	-0.00183	-0.00092	0.00941
	TE_B	0.00741	0.00920	0.03948
	TE_B	0.01215	0.01392	0.04387
sky130_fd_sc_hs__einvn_4	A	0.01371	0.01570	0.03593
	A	-0.00347	-0.00159	0.01872
	TE_B	0.01529	0.01764	0.06397
	TE_B	0.02301	0.02535	0.07131
sky130_fd_sc_hs__einvn_8	A	0.02733	0.03168	0.07370
	A	-0.00711	-0.00288	0.03659
	TE_B	0.03095	0.03335	0.07855
	TE_B	0.04154	0.04381	0.08798

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	0.00090	0.00090	0.00090
	(TE_B * Z)	-0.00148	-0.00149	-0.00147
	(TE_B * !Z)	0.00099	0.00101	0.00099
	(TE_B * !Z)	-0.00132	-0.00134	-0.00132
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	0.00168	0.00170	0.00164
	(TE_B * Z)	-0.00288	-0.00287	-0.00287
	(TE_B * !Z)	0.00201	0.00202	0.00201
	(TE_B * !Z)	-0.00235	-0.00237	-0.00236
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	0.00308	0.00311	0.00300
	(TE_B * Z)	-0.00565	-0.00571	-0.00569
	(TE_B * !Z)	0.00366	0.00371	0.00367
	(TE_B * !Z)	-0.00481	-0.00490	-0.00481
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	0.00588	0.00597	0.00575
	(TE_B * Z)	-0.01126	-0.01127	-0.01122
	(TE_B * !Z)	0.00713	0.00720	0.00716
	(TE_B * !Z)	-0.00954	-0.00966	-0.00952

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	-0.00088	-0.00089	-0.00087
	(TE_B * Z)	0.00148	0.00149	0.00147
	(TE_B * !Z)	-0.00099	-0.00101	-0.00099
	(TE_B * !Z)	0.00134	0.00135	0.00133
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	-0.00162	-0.00161	-0.00161
	(TE_B * Z)	0.00288	0.00287	0.00287
	(TE_B * !Z)	-0.00201	-0.00202	-0.00201
	(TE_B * !Z)	0.00245	0.00246	0.00236
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	-0.00293	-0.00297	-0.00295
	(TE_B * Z)	0.00565	0.00571	0.00569
	(TE_B * !Z)	-0.00366	-0.00371	-0.00367
	(TE_B * !Z)	0.00494	0.00499	0.00481
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	-0.00574	-0.00574	-0.00571
	(TE_B * Z)	0.01126	0.01127	0.01122
	(TE_B * !Z)	-0.00713	-0.00720	-0.00716
	(TE_B * !Z)	0.00977	0.00987	0.00952

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00306	0.00413	0.03463
	(A * !Z)	-0.00191	-0.00097	0.02956
	(!A * Z)	0.00291	0.00407	0.03460
	(!A * Z)	-0.00192	-0.00095	0.02958
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00373	0.00436	0.03410
	(A * !Z)	-0.00394	-0.00345	0.02635
	(!A * Z)	0.00335	0.00417	0.03399
	(!A * Z)	-0.00394	-0.00341	0.02640
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00622	0.00689	0.05216
	(A * !Z)	-0.00736	-0.00703	0.03840
	(!A * Z)	0.00543	0.00648	0.05198
	(!A * Z)	-0.00742	-0.00695	0.03849
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.00763	0.00729	0.05022
	(A * !Z)	-0.01455	-0.01565	0.02755
	(!A * Z)	0.00617	0.00664	0.04988
	(!A * Z)	-0.01466	-0.01542	0.02769

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00145	0.00330	0.03383
	(A * !Z)	0.00650	0.00840	0.03892
	(!A * Z)	0.00149	0.00327	0.03390
	(!A * Z)	0.00644	0.00824	0.03885
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00250	0.00417	0.03418
	(A * !Z)	0.01028	0.01199	0.04200
	(!A * Z)	0.00263	0.00431	0.03436
	(!A * Z)	0.01015	0.01187	0.04191
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00502	0.00770	0.05331
	(A * !Z)	0.01889	0.02165	0.06722
	(!A * Z)	0.00531	0.00767	0.05367
	(!A * Z)	0.01863	0.02107	0.06701
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.01073	0.01285	0.05725
	(A * !Z)	0.03358	0.03578	0.08021
	(!A * Z)	0.01115	0.01338	0.05779
	(!A * Z)	0.03292	0.03525	0.07958

SKY130_FD_SC_HS__EINVPx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00286	0.00283	0.54681
sky130_fd_sc_hs__einvp_2	0.00528	0.00439	1.12283
sky130_fd_sc_hs__einvp_4	0.01068	0.00792	2.09711
sky130_fd_sc_hs__einvp_8	0.02140	0.01247	3.66301

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__einvp_1	0.00000	0.03940	0.20647
sky130_fd_sc_hs__einvp_2	0.00000	0.13470	0.46537
sky130_fd_sc_hs__einvp_4	0.00000	0.08960	0.38441
sky130_fd_sc_hs__einvp_8	0.00000	0.14863	0.69193

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)	0.05113	0.90448	10.52960
	TE->Z (FR)	0.08609	0.38076	5.09327
	TE->Z (RR)	0.07736	0.67619	5.83369
sky130_fd_sc_hs__einvp_2	A->Z (FR)	0.03188	0.75074	10.55380
	TE->Z (FR)	0.08074	0.38185	5.09432
	TE->Z (RR)	0.07616	0.55815	6.16198
sky130_fd_sc_hs__einvp_4	A->Z (FR)	0.03010	0.65609	10.53980
	TE->Z (FR)	0.09374	0.38397	5.09609
	TE->Z (RR)	0.07482	0.45599	6.03740
sky130_fd_sc_hs__einvp_8	A->Z (FR)	0.03196	0.58792	10.49070
	TE->Z (FR)	0.15702	0.44086	5.10168
	TE->Z (RR)	0.09456	0.44155	6.14358

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvp_1	A->Z (RF)	0.02019	0.36618	4.17890
	TE->Z (FF)	0.08659	0.38071	5.09324
	TE->Z (RF)	0.02072	0.33116	3.71856
sky130_fd_sc_hs__einvp_2	A->Z (RF)	0.01615	0.32089	4.49845
	TE->Z (FF)	0.08156	0.38174	5.09423
	TE->Z (RF)	0.01934	0.28496	3.92188
sky130_fd_sc_hs__einvp_4	A->Z (RF)	0.01636	0.28254	4.70184
	TE->Z (FF)	0.09436	0.38377	5.09591
	TE->Z (RF)	0.02063	0.23248	3.80204
sky130_fd_sc_hs__einvp_8	A->Z (RF)	0.01819	0.26070	5.03399
	TE->Z (FF)	0.15921	0.44124	5.10109
	TE->Z (RF)	0.02569	0.18984	3.60205

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	-0.00078	0.00025	0.01246
	A	0.00377	0.00480	0.01707
	TE	0.00742	0.00794	0.02265
	TE	0.00477	0.00527	0.02004
sky130_fd_sc_hs__einvp_2	A	-0.00218	0.00025	0.01977
	A	0.00632	0.00877	0.02844
	TE	0.01170	0.01277	0.04283
	TE	0.00823	0.00929	0.03976
sky130_fd_sc_hs__einvp_4	A	-0.00426	0.00031	0.03827
	A	0.01298	0.01756	0.05579
	TE	0.02224	0.02358	0.06932
	TE	0.01683	0.01818	0.06470
sky130_fd_sc_hs__einvp_8	A	-0.00823	0.00011	0.06863
	A	0.02630	0.03476	0.10328
	TE	0.03907	0.03996	0.08348
	TE	0.03367	0.03459	0.07955

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	0.00425	0.00460	0.01016
	A	-0.00030	0.00003	0.00549
	TE	0.00947	0.00998	0.02585
	TE	0.00339	0.00389	0.01967
sky130_fd_sc_hs__einvp_2	A	0.00682	0.00778	0.01877
	A	-0.00166	-0.00075	0.00982
	TE	0.01520	0.01634	0.04660
	TE	0.00533	0.00640	0.03627
sky130_fd_sc_hs__einvp_4	A	0.01349	0.01574	0.03729
	A	-0.00368	-0.00152	0.01881
	TE	0.02921	0.03062	0.07604
	TE	0.01066	0.01203	0.05738
sky130_fd_sc_hs__einvp_8	A	0.02721	0.03163	0.06937
	A	-0.00720	-0.00300	0.03490
	TE	0.05295	0.05398	0.09859
	TE	0.02109	0.02204	0.06533

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	0.00076	0.00077	0.00076
	(!TE * Z)	-0.00150	-0.00151	-0.00149
	(!TE * !Z)	0.00087	0.00087	0.00086
	(!TE * !Z)	-0.00136	-0.00136	-0.00134
sky130_fd_sc_hs__einvp_2	(!TE * Z)	0.00139	0.00141	0.00136
	(!TE * Z)	-0.00303	-0.00305	-0.00304
	(!TE * !Z)	0.00167	0.00169	0.00167
	(!TE * !Z)	-0.00250	-0.00252	-0.00250
sky130_fd_sc_hs__einvp_4	(!TE * Z)	0.00266	0.00268	0.00259
	(!TE * Z)	-0.00599	-0.00604	-0.00600
	(!TE * !Z)	0.00324	0.00326	0.00325
	(!TE * !Z)	-0.00498	-0.00501	-0.00499
sky130_fd_sc_hs__einvp_8	(!TE * Z)	0.00523	0.00521	0.00509
	(!TE * Z)	-0.01164	-0.01166	-0.01158
	(!TE * !Z)	0.00633	0.00637	0.00635
	(!TE * !Z)	-0.00961	-0.00968	-0.00962

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	-0.00076	-0.00077	-0.00076
	(!TE * Z)	0.00150	0.00151	0.00149
	(!TE * !Z)	-0.00087	-0.00087	-0.00086
	(!TE * !Z)	0.00136	0.00137	0.00135
sky130_fd_sc_hs__einvp_2	(!TE * Z)	-0.00135	-0.00137	-0.00136
	(!TE * Z)	0.00303	0.00305	0.00304
	(!TE * !Z)	-0.00167	-0.00169	-0.00167
	(!TE * !Z)	0.00262	0.00263	0.00251
sky130_fd_sc_hs__einvp_4	(!TE * Z)	-0.00260	-0.00262	-0.00259
	(!TE * Z)	0.00599	0.00604	0.00600
	(!TE * !Z)	-0.00324	-0.00326	-0.00325
	(!TE * !Z)	0.00518	0.00521	0.00499
sky130_fd_sc_hs__einvp_8	(!TE * Z)	-0.00516	-0.00515	-0.00509
	(!TE * Z)	0.01164	0.01166	0.01158
	(!TE * !Z)	-0.00633	-0.00637	-0.00635
	(!TE * !Z)	0.00994	0.01002	0.00962

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	0.00664	0.00719	0.02307
	(A * !Z)	0.00242	0.00295	0.01885
	(!A * Z)	0.00657	0.00713	0.02299
	(!A * Z)	0.00229	0.00280	0.01868
sky130_fd_sc_hs__einvp_2	(A * !Z)	0.01031	0.01140	0.04128
	(A * !Z)	0.00384	0.00492	0.03480
	(!A * Z)	0.01029	0.01139	0.04120
	(!A * Z)	0.00356	0.00460	0.03443
sky130_fd_sc_hs__einvp_4	(A * !Z)	0.01951	0.02098	0.06628
	(A * !Z)	0.00798	0.00934	0.05475
	(!A * Z)	0.01950	0.02090	0.06616
	(!A * Z)	0.00741	0.00874	0.05403
sky130_fd_sc_hs__einvp_8	(A * !Z)	0.03374	0.03468	0.07817
	(A * !Z)	0.01603	0.01698	0.06040
	(!A * Z)	0.03374	0.03479	0.07795
	(!A * Z)	0.01504	0.01596	0.05917

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	-0.00136	-0.00093	0.01436
	(A * !Z)	0.00280	0.00329	0.01857
	(!A * Z)	-0.00142	-0.00095	0.01436
	(!A * Z)	0.00286	0.00336	0.01863
sky130_fd_sc_hs__einvp_2	(A * !Z)	-0.00323	-0.00212	0.02745
	(A * !Z)	0.00315	0.00436	0.03386
	(!A * Z)	-0.00351	-0.00222	0.02736
	(!A * Z)	0.00322	0.00449	0.03397
sky130_fd_sc_hs__einvp_4	(A * !Z)	-0.00594	-0.00450	0.04016
	(A * !Z)	0.00540	0.00709	0.05162
	(!A * Z)	-0.00640	-0.00469	0.04004
	(!A * Z)	0.00563	0.00737	0.05187
sky130_fd_sc_hs__einvp_8	(A * !Z)	-0.01114	-0.01060	0.03192
	(A * !Z)	0.00612	0.00712	0.04958
	(!A * Z)	-0.01186	-0.01098	0.03168
	(!A * Z)	0.00664	0.00760	0.04997

SKY130_FD_SC_HS__FAHCIN

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00292	0.00709	0.00513	0.57870	1.19146

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcin_1	0.00000	2.17128	2.44545

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)	0.15904	0.67680	4.22961
	B->COUT (RR)	0.14359	0.59900	4.13330
	CIN->COUT (FR)	0.06861	0.75150	8.56110

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fahcin_1	A->COUT (FF)	0.18013	0.69071	4.31089
	B->COUT (FF)	0.17003	0.63681	4.23812
	CIN->COUT (RF)	0.03822	0.39140	4.23506

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)	-	0.23142	0.92639	8.78472
	B->SUM (-R)	-	0.22711	0.90576	8.75933
	CIN->SUM (RR)	(A * !B) + (!A * B)	0.08835	0.60274	6.32648
	CIN->SUM (FR)	(A * B) + (!A * !B)	0.13709	0.76543	8.30652

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)	-	0.27166	0.75682	4.98371
	B->SUM (-F)	-	0.21923	0.67278	4.81746
	CIN->SUM (FF)	(A * !B) + (!A * B)	0.11794	0.62931	5.11876
	CIN->SUM (RF)	(A * B) + (!A * !B)	0.12338	0.37305	2.21345

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.01697	0.01771	0.04085
	A	0.01475	0.01545	0.03872
	B	0.01808	0.01980	0.06504
	B	0.01236	0.01406	0.05937
	CIN	0.00714	0.00887	0.04058
	CIN	0.01127	0.01301	0.04481

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.01488	0.01585	0.03963
	A	0.01709	0.01806	0.04186
	B	0.01296	0.01558	0.06475
	B	0.01840	0.02105	0.07022
	CIN	0.01175	0.01308	0.04406
	CIN	0.00759	0.00891	0.03985

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.03329	0.03490	0.08178
	A	-	0.02886	0.03048	0.07771
	B	-	0.03387	0.03778	0.14616
	B	-	0.02244	0.02633	0.13510
	CIN	(A * B) + (!A * !B)	0.01050	0.01536	0.10931
	CIN	(A * B) + (!A * !B)	0.01880	0.02369	0.11761
	CIN	(A * !B) + (!A * B)	0.01176	0.01311	0.04390
	CIN	(A * !B) + (!A * B)	0.00761	0.00894	0.03964

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.02998	0.03237	0.08025
	A	-	0.03440	0.03678	0.08395
	B	-	0.02340	0.03114	0.13677
	B	-	0.03484	0.04255	0.14587
	CIN	(A * B) + (!A * !B)	0.02061	0.02445	0.11848
	CIN	(A * B) + (!A * !B)	0.01234	0.01609	0.10987
	CIN	(A * !B) + (!A * B)	0.00713	0.00881	0.03760
	CIN	(A * !B) + (!A * B)	0.01127	0.01296	0.04165

SKY130_FD_SC_HS__FAHCON

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00290	0.00901	0.00516	0.59143	1.15243

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcon_1	0.00000	2.17128	2.51489

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)	0.21105	0.83686	6.37253
	B->COUT_N (FR)	0.15116	0.79964	8.76699
	CI->COUT_N (FR)	0.06253	0.73720	8.52603

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)	0.16083	0.45337	1.80278
	B->COUT_N (RF)	0.10551	0.44425	4.51381
	CI->COUT_N (RF)	0.03731	0.38986	4.30342

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)	-	0.20859	0.89327	8.52089
	B->SUM (-R)	-	0.18402	0.84612	8.42792
	CI->SUM (RR)	(A * B) + (!A * !B)	0.08497	0.59154	6.18107
	CI->SUM (FR)	(A * !B) + (!A * B)	0.13534	0.77077	8.32713

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)	-	0.25119	0.72559	4.86194
	B->SUM (-F)	-	0.18968	0.61786	4.60897
	CI->SUM (FF)	(A * B) + (!A * !B)	0.11561	0.60245	4.94156
	CI->SUM (RF)	(A * !B) + (!A * B)	0.13228	0.37633	2.18583

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	0.01444	0.01506	0.03901
	A	0.01671	0.01733	0.04159
	B	0.00999	0.01337	0.07854
	B	0.01715	0.02054	0.08608
	CI	0.00695	0.00856	0.04118
	CI	0.01112	0.01272	0.04543

Internal switching power(pJ) to COUT_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcon_1	A	0.01581	0.01615	0.03917
	A	0.01347	0.01371	0.03686
	B	0.01691	0.01982	0.08611
	B	0.00975	0.01262	0.07891
	CI	0.01189	0.01301	0.04515
	CI	0.00772	0.00884	0.04099

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.02922	0.03063	0.07783
	A	-	0.02469	0.02610	0.07368
	B	-	0.03395	0.04662	0.20254
	B	-	0.01961	0.03231	0.18836
	CI	(A * B) + (!A * !B)	0.02020	0.02408	0.11961
	CI	(A * B) + (!A * !B)	0.01188	0.01573	0.11165
	CI	(A * !B) + (!A * B)	0.00695	0.00846	0.03928
	CI	(A * !B) + (!A * B)	0.01111	0.01265	0.04344

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.02806	0.03086	0.07872
	A	-	0.03258	0.03540	0.08271
	B	-	0.02121	0.03389	0.18701
	B	-	0.03555	0.04824	0.20130
	CI	(A * B) + (!A * !B)	0.01220	0.01729	0.11189
	CI	(A * B) + (!A * !B)	0.02054	0.02563	0.12020
	CI	(A * !B) + (!A * B)	0.01189	0.01302	0.04452
	CI	(A * !B) + (!A * B)	0.00772	0.00882	0.04014

SKY130_FD_SC_HS__FAHx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00487	0.00712	0.00257	1.02864	1.15326
sky130_fd_sc_hs__fah_2	0.00491	0.00808	0.00271	2.01735	2.24672
sky130_fd_sc_hs__fah_4	0.00483	0.00733	0.00259	3.72653	4.45055

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fah_1	0.00000	2.17128	2.58432
sky130_fd_sc_hs__fah_2	0.00000	2.25559	2.66862
sky130_fd_sc_hs__fah_4	0.00000	2.42422	2.83726

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)	0.23702	0.74868	6.37528
	B->COUT (RR)	0.19213	0.75764	6.45199
	CI->COUT (RR)	0.12027	0.70632	6.82615
sky130_fd_sc_hs__fah_2	A->COUT (RR)	0.24150	0.62673	5.90803
	B->COUT (RR)	0.17808	0.62025	6.34549
	CI->COUT (RR)	0.10872	0.55981	6.17404
sky130_fd_sc_hs__fah_4	A->COUT (RR)	0.24846	0.58307	6.28966
	B->COUT (RR)	0.20323	0.58827	6.40012
	CI->COUT (RR)	0.13706	0.55556	6.80963

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fah_1	A->COUT (FF)	0.23633	0.64599	4.39985
	B->COUT (FF)	0.22302	0.69012	4.88023
	CI->COUT (FF)	0.14961	0.66780	4.95559
sky130_fd_sc_hs__fah_2	A->COUT (FF)	0.25166	0.64794	4.24293
	B->COUT (FF)	0.23993	0.68512	4.91041
	CI->COUT (FF)	0.14879	0.63996	4.69830
sky130_fd_sc_hs__fah_4	A->COUT (FF)	0.27916	0.69133	4.40675
	B->COUT (FF)	0.25302	0.70824	5.10915
	CI->COUT (FF)	0.17725	0.67151	5.01298

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)	-	0.23819	0.95470	9.07371
	B->SUM (-R)	-	0.22055	0.91570	8.99508
	CI->SUM (RR)	(A * B) + (!A * !B)	0.11749	0.65026	6.31761
	CI->SUM (FR)	(A * !B) + (!A * B)	0.22620	0.95768	9.12199
sky130_fd_sc_hs__fah_2	A->SUM (-R)	-	0.24184	0.83080	8.52741
	B->SUM (-R)	-	0.22937	0.80890	8.57132
	CI->SUM (RR)	(A * B) + (!A * !B)	0.10966	0.55506	6.31194
	CI->SUM (FR)	(A * !B) + (!A * B)	0.22178	0.82280	8.57953
sky130_fd_sc_hs__fah_4	A->SUM (-R)	-	0.25760	0.78778	9.07987
	B->SUM (-R)	-	0.23920	0.76177	9.08786
	CI->SUM (RR)	(A * B) + (!A * !B)	0.14328	0.54821	6.55286
	CI->SUM (FR)	(A * !B) + (!A * B)	0.28218	0.85834	9.30839

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)	-	0.23581	0.66066	4.59597
	B->SUM (-F)	-	0.23330	0.71018	6.80419
	CI->SUM (FF)	(A * B) + (!A * !B)	0.14729	0.66794	4.94767
	CI->SUM (RF)	(A * !B) + (!A * B)	0.20374	0.55273	2.79606
sky130_fd_sc_hs__fah_2	A->SUM (-F)	-	0.26177	0.66377	4.50347
	B->SUM (-F)	-	0.24677	0.69188	4.76032
	CI->SUM (FF)	(A * B) + (!A * !B)	0.15561	0.64620	4.96119
	CI->SUM (RF)	(A * !B) + (!A * B)	0.18144	0.48268	2.43388
sky130_fd_sc_hs__fah_4	A->SUM (-F)	-	0.27723	0.70573	4.73230
	B->SUM (-F)	-	0.26358	0.73537	6.87545
	CI->SUM (FF)	(A * B) + (!A * !B)	0.18701	0.68333	5.20999
	CI->SUM (RF)	(A * !B) + (!A * B)	0.26972	0.61782	3.13782

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.02174	0.02351	0.07251
	A	0.01791	0.01960	0.06869
	B	0.01865	0.02094	0.07414
	B	0.01316	0.01543	0.06868
	CI	0.01358	0.01431	0.03623
	CI	0.01174	0.01244	0.03440
sky130_fd_sc_hs__fah_2	A	0.02480	0.02646	0.07432
	A	0.02077	0.02233	0.07035
	B	0.02280	0.02452	0.07387
	B	0.01653	0.01826	0.06774
	CI	0.01460	0.01521	0.03750
	CI	0.01242	0.01295	0.03553
sky130_fd_sc_hs__fah_4	A	0.03093	0.03136	0.08089
	A	0.02713	0.02757	0.07715
	B	0.02889	0.02941	0.08283
	B	0.02317	0.02360	0.07722
	CI	0.02388	0.02349	0.05329
	CI	0.02197	0.02159	0.04813

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.01803	0.02040	0.06897
	A	0.02169	0.02406	0.07246
	B	0.01498	0.01785	0.06951
	B	0.02047	0.02334	0.07496
	CI	0.01140	0.01262	0.03530
	CI	0.01324	0.01445	0.03672
sky130_fd_sc_hs__fah_2	A	0.02080	0.02328	0.07130
	A	0.02482	0.02732	0.07496
	B	0.01570	0.01865	0.06847
	B	0.02199	0.02491	0.07448
	CI	0.01276	0.01363	0.03553
	CI	0.01494	0.01582	0.03766
sky130_fd_sc_hs__fah_4	A	0.02648	0.02791	0.07606
	A	0.03021	0.03162	0.07971
	B	0.02346	0.02523	0.07715
	B	0.02910	0.03103	0.08219
	CI	0.02154	0.02155	0.04422
	CI	0.02345	0.02347	0.04529

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.03821	0.04084	0.13691
	A	-	0.03042	0.03303	0.12956
	B	-	0.03442	0.04082	0.16359
	B	-	0.02331	0.02971	0.15267
	CI	(A * B) + (!A * !B)	0.01844	0.01910	0.05531
	CI	(A * B) + (!A * !B)	0.01428	0.01496	0.05143
	CI	(A * !B) + (!A * B)	0.01142	0.01263	0.03660
	CI	(A * !B) + (!A * B)	0.01325	0.01448	0.03713
sky130_fd_sc_hs__fah_2	A	-	0.04091	0.04336	0.13817
	A	-	0.03282	0.03529	0.13099
	B	-	0.03739	0.04423	0.15580
	B	-	0.02483	0.03170	0.14399
	CI	(A * B) + (!A * !B)	0.01909	0.02087	0.06742
	CI	(A * B) + (!A * !B)	0.01470	0.01652	0.06286
	CI	(A * !B) + (!A * B)	0.01278	0.01364	0.03585
	CI	(A * !B) + (!A * B)	0.01495	0.01585	0.03802
sky130_fd_sc_hs__fah_4	A	-	0.04402	0.04710	0.14421
	A	-	0.03620	0.03931	0.13819
	B	-	0.04177	0.05015	0.17697
	B	-	0.03010	0.03854	0.16598
	CI	(A * B) + (!A * !B)	0.02778	0.02887	0.06793
	CI	(A * B) + (!A * !B)	0.02358	0.02474	0.06425
	CI	(A * !B) + (!A * B)	0.02157	0.02154	0.04821
	CI	(A * !B) + (!A * B)	0.02347	0.02350	0.04567

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.02856	0.03283	0.12776
	A	-	0.03667	0.04095	0.13529
	B	-	0.02517	0.03449	0.37739
	B	-	0.03663	0.04592	0.38697
	CI	(A * B) + (!A * !B)	0.01363	0.01533	0.05712
	CI	(A * B) + (!A * !B)	0.01778	0.01947	0.06081
	CI	(A * !B) + (!A * B)	0.01356	0.01426	0.03565
	CI	(A * !B) + (!A * B)	0.01172	0.01243	0.03377
sky130_fd_sc_hs__fah_2	A	-	0.03259	0.03649	0.12946
	A	-	0.04067	0.04456	0.13757
	B	-	0.02544	0.03406	0.13880
	B	-	0.03798	0.04659	0.15002
	CI	(A * B) + (!A * !B)	0.01635	0.01793	0.06559
	CI	(A * B) + (!A * !B)	0.02072	0.02234	0.06872
	CI	(A * !B) + (!A * B)	0.01458	0.01518	0.03703
	CI	(A * !B) + (!A * B)	0.01239	0.01294	0.03479
sky130_fd_sc_hs__fah_4	A	-	0.03822	0.04050	0.13700
	A	-	0.04617	0.04843	0.14298
	B	-	0.03732	0.04898	0.37946
	B	-	0.04911	0.06074	0.38688
	CI	(A * B) + (!A * !B)	0.02573	0.02465	0.07363
	CI	(A * B) + (!A * !B)	0.02990	0.02897	0.07176
	CI	(A * !B) + (!A * B)	0.02387	0.02351	0.04540
	CI	(A * !B) + (!A * B)	0.02196	0.02162	0.04301

SKY130_FD_SC_HS__FAx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.01025	0.00999	0.00728	1.20911	1.20605
sky130_fd_sc_hs__fa_2	0.01085	0.01040	0.00774	2.02212	2.19173
sky130_fd_sc_hs__fa_4	0.01081	0.01069	0.00760	4.40418	4.37673

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fa_1	0.00000	0.34510	0.49569
sky130_fd_sc_hs__fa_2	0.00000	0.42498	0.57527
sky130_fd_sc_hs__fa_4	0.00000	0.59360	0.74390

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)	0.09840	0.60706	6.22830
	B->COUT (RR)	0.11152	0.62942	6.28602
	CIN->COUT (RR)	0.09114	0.61200	6.36725
sky130_fd_sc_hs__fa_2	A->COUT (RR)	0.10258	0.52922	5.99407
	B->COUT (RR)	0.10888	0.55193	6.05330
	CIN->COUT (RR)	0.09541	0.54505	6.10718
sky130_fd_sc_hs__fa_4	A->COUT (RR)	0.13871	0.51801	6.29718
	B->COUT (RR)	0.11965	0.52347	6.36187
	CIN->COUT (RR)	0.11931	0.52870	6.41944

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->COUT (FF)	0.19010	0.66404	5.16254
	B->COUT (FF)	0.20368	0.68637	5.20492
	CIN->COUT (FF)	0.14629	0.65220	5.18938
sky130_fd_sc_hs__fa_2	A->COUT (FF)	0.22219	0.67567	4.96111
	B->COUT (FF)	0.23099	0.69780	5.01695
	CIN->COUT (FF)	0.19999	0.67791	4.99301
sky130_fd_sc_hs__fa_4	A->COUT (FF)	0.30369	0.76541	5.49027
	B->COUT (FF)	0.27448	0.75162	5.50763
	CIN->COUT (FF)	0.27269	0.76102	5.54308

Delay(ns) to SUM rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-R)	0.27396	0.91881	8.72092
	B->SUM (-R)	0.28540	0.93777	8.73289
	CIN->SUM (-R)	0.24582	0.89806	8.60527
sky130_fd_sc_hs__fa_2	A->SUM (-R)	0.34489	0.90622	8.81528
	B->SUM (-R)	0.35124	0.92513	8.84342
	CIN->SUM (-R)	0.32626	0.90261	8.77817
sky130_fd_sc_hs__fa_4	A->SUM (-R)	0.49845	0.98367	9.11970
	B->SUM (-R)	0.45472	0.96664	9.10866
	CIN->SUM (-R)	0.46605	0.97423	9.10850

Delay(ns) to SUM falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-F)	0.21628	0.64617	5.09593
	B->SUM (-F)	0.21910	0.68279	5.27176
	CIN->SUM (-F)	0.17641	0.64985	5.22372
sky130_fd_sc_hs__fa_2	A->SUM (-F)	0.27000	0.69181	5.04041
	B->SUM (-F)	0.28053	0.73462	5.23400
	CIN->SUM (-F)	0.23960	0.70490	5.19661
sky130_fd_sc_hs__fa_4	A->SUM (-F)	0.37569	0.79895	5.46576
	B->SUM (-F)	0.33694	0.80003	5.64734
	CIN->SUM (-F)	0.31902	0.78727	5.63797

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.01290	0.01323	0.02702
	A	0.00472	0.00493	0.01870
	B	0.01140	0.01185	0.02921
	B	0.00366	0.00399	0.02136
	CIN	0.01082	0.01122	0.03026
	CIN	0.00589	0.00628	0.02534
sky130_fd_sc_hs__fa_2	A	0.01670	0.01630	0.02960
	A	0.00775	0.00728	0.02067
	B	0.01540	0.01512	0.03224
	B	0.00723	0.00690	0.02409
	CIN	0.01479	0.01449	0.03282
	CIN	0.00927	0.00892	0.02754
sky130_fd_sc_hs__fa_4	A	0.02449	0.02340	0.03768
	A	0.01517	0.01404	0.02773
	B	0.02393	0.02242	0.03985
	B	0.01615	0.01466	0.03172
	CIN	0.02283	0.02159	0.04003
	CIN	0.01764	0.01643	0.03454

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00495	0.00520	0.01887
	A	0.01312	0.01340	0.02677
	B	0.00597	0.00640	0.02447
	B	0.01370	0.01416	0.03205
	CIN	0.00678	0.00758	0.02593
	CIN	0.01172	0.01254	0.03071
sky130_fd_sc_hs__fa_2	A	0.00841	0.00799	0.02135
	A	0.01724	0.01688	0.02974
	B	0.00939	0.00919	0.02759
	B	0.01754	0.01736	0.03522
	CIN	0.01014	0.01034	0.02914
	CIN	0.01574	0.01592	0.03402
sky130_fd_sc_hs__fa_4	A	0.01756	0.01532	0.02975
	A	0.02678	0.02456	0.03723
	B	0.01836	0.01645	0.03620
	B	0.02610	0.02423	0.04196
	CIN	0.01950	0.01789	0.03712
	CIN	0.02477	0.02311	0.04021

Internal switching power(pJ) to SUM rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.01867	0.01910	0.03874
	A	0.01319	0.01344	0.02673
	B	0.01646	0.01647	0.04011
	B	0.01373	0.01420	0.03237
	CIN	0.01302	0.01369	0.03843
	CIN	0.00203	0.00269	0.02741
sky130_fd_sc_hs__fa_2	A	0.02191	0.02195	0.04671
	A	0.01728	0.01688	0.02969
	B	0.02046	0.02104	0.04555
	B	0.01758	0.01738	0.03567
	CIN	0.01650	0.01744	0.04610
	CIN	0.00521	0.00615	0.03491
sky130_fd_sc_hs__fa_4	A	0.02788	0.02754	0.05048
	A	0.02682	0.02457	0.03732
	B	0.02769	0.02780	0.05055
	B	0.02613	0.02423	0.04242
	CIN	0.02490	0.02507	0.05027
	CIN	0.01350	0.01374	0.03963

Internal switching power(pJ) to SUM falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00089	0.00118	0.02339
	A	0.01820	0.01848	0.04010
	B	0.01140	0.01175	0.02896
	B	0.01701	0.01747	0.03861
	CIN	0.00378	0.00450	0.03344
	CIN	0.01499	0.01580	0.04473
sky130_fd_sc_hs__fa_2	A	0.00422	0.00431	0.03109
	A	0.02236	0.02241	0.04725
	B	0.01539	0.01518	0.03196
	B	0.02075	0.02078	0.04523
	CIN	0.00839	0.00812	0.03875
	CIN	0.01995	0.01974	0.04920
sky130_fd_sc_hs__fa_4	A	0.01392	0.01163	0.03786
	A	0.03355	0.03150	0.05394
	B	0.01746	0.01232	0.03643
	B	0.03379	0.02865	0.04820
	CIN	0.01904	0.01408	0.04554
	CIN	0.03067	0.02591	0.05384

SKY130_FD_SC_HS__HAx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00489	0.00451	1.15315	1.07833
sky130_fd_sc_hs__ha_2	0.00494	0.00515	1.99392	2.10047
sky130_fd_sc_hs__ha_4	0.00941	0.00848	3.77764	4.35890

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__ha_1	0.00000	0.62448	0.98181
sky130_fd_sc_hs__ha_2	0.00000	0.47623	0.56929
sky130_fd_sc_hs__ha_4	0.00000	1.45230	2.13222

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)	0.07685	0.56048	6.12650
	B->COUT (RR)	0.07245	0.56496	6.28330
sky130_fd_sc_hs__ha_2	A->COUT (RR)	0.08247	0.49627	5.99177
	B->COUT (RR)	0.07927	0.50435	6.06378
sky130_fd_sc_hs__ha_4	A->COUT (RR)	0.10004	0.44160	6.07728
	B->COUT (RR)	0.08684	0.44172	6.19427

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ha_1	A->COUT (FF)	0.09337	0.52837	4.56477
	B->COUT (FF)	0.08236	0.50266	4.47860
sky130_fd_sc_hs__ha_2	A->COUT (FF)	0.10802	0.53266	4.45386
	B->COUT (FF)	0.09979	0.51272	4.37498
sky130_fd_sc_hs__ha_4	A->COUT (FF)	0.12587	0.51101	4.44389
	B->COUT (FF)	0.10696	0.47983	4.36892

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	0.07915	0.57033	6.06611
	A->SUM (FR)	B	0.15082	0.81215	8.36294
	B->SUM (RR)	!A	0.06795	0.54634	6.03727
	B->SUM (FR)	A	0.15000	0.79830	8.23561
sky130_fd_sc_hs__ha_2	A->SUM (RR)	!B	0.08453	0.47905	5.82636
	A->SUM (FR)	B	0.19592	0.77119	8.30702
	B->SUM (RR)	!A	0.07590	0.46147	5.80533
	B->SUM (FR)	A	0.19387	0.75722	8.19629
sky130_fd_sc_hs__ha_4	A->SUM (RR)	!B	0.09425	0.43151	6.19647
	A->SUM (FR)	B	0.21945	0.71279	8.53868
	B->SUM (RR)	!A	0.08165	0.40607	6.15514
	B->SUM (FR)	A	0.20777	0.69275	8.41493

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	0.12743	0.53736	4.58344
	A->SUM (RF)	B	0.11653	0.34462	1.94287
	B->SUM (FF)	!A	0.11238	0.53572	4.61348
	B->SUM (RF)	A	0.11231	0.34764	2.03791
sky130_fd_sc_hs__ha_2	A->SUM (FF)	!B	0.16825	0.58576	4.80482
	A->SUM (RF)	B	0.14240	0.35875	2.07720
	B->SUM (FF)	!A	0.15318	0.59034	4.83212
	B->SUM (RF)	A	0.13956	0.36639	2.15241
sky130_fd_sc_hs__ha_4	A->SUM (FF)	!B	0.17143	0.55737	4.99592
	A->SUM (RF)	B	0.17331	0.37102	2.35675
	B->SUM (FF)	!A	0.15208	0.55904	5.03366
	B->SUM (RF)	A	0.16024	0.37060	2.45205

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.00878	0.00936	0.02718
	A	0.00426	0.00478	0.02269
	B	0.00826	0.00915	0.03404
	B	0.00469	0.00555	0.03053
sky130_fd_sc_hs__ha_2	A	0.01210	0.01281	0.03440
	A	0.00754	0.00820	0.02998
	B	0.01177	0.01266	0.03565
	B	0.00782	0.00867	0.03190
sky130_fd_sc_hs__ha_4	A	0.02281	0.02459	0.06307
	A	0.01448	0.01622	0.05485
	B	0.02144	0.02356	0.07160
	B	0.01509	0.01719	0.06559

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.00449	0.00589	0.02706
	A	0.00900	0.01038	0.03139
	B	0.00544	0.00680	0.02885
	B	0.00895	0.01030	0.03232
sky130_fd_sc_hs__ha_2	A	0.00848	0.00971	0.03238
	A	0.01302	0.01425	0.03644
	B	0.00899	0.00991	0.03167
	B	0.01289	0.01374	0.03554
sky130_fd_sc_hs__ha_4	A	0.01549	0.01812	0.06322
	A	0.02381	0.02632	0.07113
	B	0.01720	0.01990	0.06677
	B	0.02335	0.02599	0.07256

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	0.00450	0.00589	0.03070
	A	B	0.00901	0.01038	0.03211
	A	!B	0.01298	0.01380	0.04039
	A	!B	0.00428	0.00508	0.03207
	B	A	0.00546	0.00690	0.02921
	B	A	0.00896	0.01033	0.03265
	B	!A	0.00970	0.01081	0.04618
	B	!A	0.00300	0.00411	0.03987
sky130_fd_sc_hs__ha_2	A	B	0.00849	0.00975	0.03204
	A	B	0.01303	0.01429	0.03654
	A	!B	0.01659	0.01747	0.04310
	A	!B	0.00794	0.00884	0.03463
	B	A	0.00900	0.01001	0.03242
	B	A	0.01289	0.01377	0.03592
	B	!A	0.01384	0.01494	0.04883
	B	!A	0.00652	0.00768	0.04173
sky130_fd_sc_hs__ha_4	A	B	0.01551	0.01820	0.06315
	A	B	0.02385	0.02638	0.07147
	A	!B	0.03349	0.03506	0.08496
	A	!B	0.01560	0.01719	0.06859
	B	A	0.01723	0.01991	0.06731
	B	A	0.02336	0.02604	0.07317
	B	!A	0.02641	0.02856	0.09404
	B	!A	0.01293	0.01511	0.08208

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	0.00877	0.00930	0.02702
	A	B	0.00426	0.00477	0.02253
	A	!B	0.00262	0.00333	0.02990
	A	!B	0.01113	0.01185	0.03824
	B	A	0.00825	0.00912	0.03364
	B	A	0.00469	0.00554	0.03019
	B	!A	0.00380	0.00602	0.04167
	B	!A	0.01062	0.01279	0.04841
sky130_fd_sc_hs__ha_2	A	B	0.01210	0.01274	0.03391
	A	B	0.00754	0.00818	0.02933
	A	!B	0.00628	0.00665	0.03244
	A	!B	0.01473	0.01510	0.04052
	B	A	0.01177	0.01263	0.03495
	B	A	0.00782	0.00866	0.03109
	B	!A	0.00697	0.00885	0.04348
	B	!A	0.01441	0.01609	0.05090
sky130_fd_sc_hs__ha_4	A	B	0.02280	0.02470	0.06268
	A	B	0.01448	0.01629	0.05394
	A	!B	0.01250	0.01319	0.06387
	A	!B	0.03002	0.03050	0.07990
	B	A	0.02143	0.02356	0.07058
	B	A	0.01508	0.01721	0.06408
	B	!A	0.01513	0.01809	0.08708
	B	!A	0.02904	0.03191	0.09917

SKY130_FD_SC_HS__INVx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00832	17.95503
sky130_fd_sc_hs__bufinv_8	0.00285	7.16018
sky130_fd_sc_hs__inv_1	0.00289	1.17058
sky130_fd_sc_hs__inv_16	0.04385	17.69071
sky130_fd_sc_hs__inv_2	0.00532	2.25665
sky130_fd_sc_hs__inv_4	0.01073	4.26980
sky130_fd_sc_hs__inv_8	0.02125	8.36542

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__bufinv_16	0.00000	1.05390	1.50534
sky130_fd_sc_hs__bufinv_8	0.00000	0.50587	0.71423
sky130_fd_sc_hs__inv_1	0.00000	0.04216	0.07688
sky130_fd_sc_hs__inv_16	0.00000	0.67450	1.23011
sky130_fd_sc_hs__inv_2	0.00000	0.08431	0.15376
sky130_fd_sc_hs__inv_4	0.00000	0.16862	0.30753
sky130_fd_sc_hs__inv_8	0.00000	0.33725	0.61505

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)	0.11877	0.48293	8.33389
sky130_fd_sc_hs__bufinv_8	A->Y (FR)	0.15268	0.60416	8.25977
sky130_fd_sc_hs__inv_1	A->Y (FR)	0.02688	0.75818	10.78520
sky130_fd_sc_hs__inv_16	A->Y (FR)	0.01839	0.45335	10.77460
sky130_fd_sc_hs__inv_2	A->Y (FR)	0.02101	0.65307	10.64690
sky130_fd_sc_hs__inv_4	A->Y (FR)	0.01955	0.57996	10.67700
sky130_fd_sc_hs__inv_8	A->Y (FR)	0.01919	0.51151	10.62470

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__bufinv_16	A->Y (RF)	0.10474	0.22311	2.08646
sky130_fd_sc_hs__bufinv_8	A->Y (RF)	0.12549	0.28916	1.81670
sky130_fd_sc_hs__inv_1	A->Y (RF)	0.01512	0.39434	5.64851
sky130_fd_sc_hs__inv_16	A->Y (RF)	0.01164	0.18041	5.63078
sky130_fd_sc_hs__inv_2	A->Y (RF)	0.01267	0.32300	5.51785
sky130_fd_sc_hs__inv_4	A->Y (RF)	0.01199	0.27377	5.58624
sky130_fd_sc_hs__inv_8	A->Y (RF)	0.01205	0.22394	5.55355

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	A	0.07020	0.08155	0.22897
	A	0.08361	0.09547	0.24238
sky130_fd_sc_hs__bufinv_8	A	0.03698	0.04110	0.09329
	A	0.04156	0.04588	0.09844
sky130_fd_sc_hs__inv_1	A	-0.00093	0.00022	0.00946
	A	0.00372	0.00491	0.01430
sky130_fd_sc_hs__inv_16	A	-0.01903	0.00928	0.14954
	A	0.05164	0.08065	0.22304
sky130_fd_sc_hs__inv_2	A	-0.00226	0.00034	0.01890
	A	0.00630	0.00896	0.02796
sky130_fd_sc_hs__inv_4	A	-0.00448	0.00221	0.03676
	A	0.01281	0.01959	0.05490
sky130_fd_sc_hs__inv_8	A	-0.00888	0.00370	0.08271
	A	0.02533	0.03796	0.11869

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	**A**	0.08623	0.09502	0.24280
	A	0.07279	0.08154	0.22890
sky130_fd_sc_hs__bufinv_8	**A**	0.04167	0.04437	0.09079
	A	0.03707	0.03975	0.08592
sky130_fd_sc_hs__inv_1	**A**	0.00411	0.00449	0.01092
	A	-0.00055	-0.00018	0.00433
sky130_fd_sc_hs__inv_16	**A**	0.05391	0.06577	0.17024
	A	-0.01676	-0.00537	0.06635
sky130_fd_sc_hs__inv_2	**A**	0.00663	0.00773	0.01971
	A	-0.00195	-0.00093	0.00810
sky130_fd_sc_hs__inv_4	**A**	0.01345	0.01580	0.04126
	A	-0.00384	-0.00165	0.01629
sky130_fd_sc_hs__inv_8	**A**	0.02623	0.03229	0.08120
	A	-0.00801	-0.00220	0.03849

SKY130_FD_SC_HS__MAJ3x

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00535	0.00502	0.00523	1.19392
sky130_fd_sc_hs__maj3_2	0.00568	0.00541	0.00555	2.32299
sky130_fd_sc_hs__maj3_4	0.01042	0.00985	0.01026	4.39130

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__maj3_1	0.00000	0.15432	0.40443
sky130_fd_sc_hs__maj3_2	0.00000	0.19465	0.41186
sky130_fd_sc_hs__maj3_4	0.00000	0.39296	0.82372

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)	0.09109	0.58881	6.08834
	B->X (RR)	0.08405	0.58043	6.11699
	C->X (RR)	0.09217	0.60110	6.16206
sky130_fd_sc_hs__maj3_2	A->X (RR)	0.09767	0.50612	6.00625
	B->X (RR)	0.08397	0.49972	6.03802
	C->X (RR)	0.09054	0.51481	6.07200
sky130_fd_sc_hs__maj3_4	A->X (RR)	0.09242	0.43456	6.10351
	B->X (RR)	0.08707	0.43644	6.15010
	C->X (RR)	0.08855	0.44250	6.13165

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__maj3_1	A->X (FF)	0.14706	0.60699	5.02571
	B->X (FF)	0.13749	0.60193	5.00599
	C->X (FF)	0.15881	0.62304	5.05880
sky130_fd_sc_hs__maj3_2	A->X (FF)	0.19978	0.63326	5.00296
	B->X (FF)	0.15486	0.61487	4.98925
	C->X (FF)	0.19293	0.64502	5.05550
sky130_fd_sc_hs__maj3_4	A->X (FF)	0.18246	0.58104	5.02071
	B->X (FF)	0.13824	0.55792	5.03915
	C->X (FF)	0.17520	0.59187	5.06573

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.01726	0.01758	0.03896
	A	0.00482	0.00514	0.02696
	B	0.01440	0.01435	0.04914
	B	0.00472	0.00466	0.03983
	C	0.01369	0.01413	0.04847
	C	0.00280	0.00325	0.03801
sky130_fd_sc_hs__maj3_2	A	0.01957	0.02008	0.04579
	A	0.00610	0.00663	0.03330
	B	0.01739	0.01787	0.04996
	B	0.00677	0.00726	0.04026
	C	0.01780	0.01831	0.05230
	C	0.00585	0.00639	0.04135
sky130_fd_sc_hs__maj3_4	A	0.03846	0.03923	0.08845
	A	0.01482	0.01558	0.06660
	B	0.03095	0.03232	0.10424
	B	0.01228	0.01366	0.08709
	C	0.03168	0.03276	0.09372
	C	0.01047	0.01158	0.07430

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.00244	0.00277	0.02825
	A	0.01477	0.01512	0.04014
	B	0.00410	0.00496	0.03999
	B	0.01366	0.01455	0.04953
	C	0.00456	0.00554	0.04069
	C	0.01524	0.01625	0.05106
sky130_fd_sc_hs__maj3_2	A	0.00645	0.00653	0.03271
	A	0.01958	0.01971	0.04508
	B	0.00763	0.00802	0.04381
	B	0.01808	0.01849	0.05339
	C	0.00825	0.00869	0.04531
	C	0.01996	0.02046	0.05537
sky130_fd_sc_hs__maj3_4	A	0.01375	0.01399	0.06266
	A	0.03713	0.03725	0.08604
	B	0.01294	0.01451	0.08458
	B	0.03143	0.03308	0.10325
	C	0.01571	0.01682	0.08587
	C	0.03651	0.03770	0.10476

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	0.00438	0.00387	0.00379
	(B * C * X)	-0.00303	-0.00363	-0.00364
	(!B * !C * !X)	0.00340	0.00345	0.00342
	(!B * !C * !X)	-0.00392	-0.00395	-0.00393
sky130_fd_sc_hs__maj3_2	(B * C * X)	0.00421	0.00373	0.00366
	(B * C * X)	-0.00358	-0.00417	-0.00418
	(!B * !C * !X)	0.00314	0.00317	0.00314
	(!B * !C * !X)	-0.00458	-0.00461	-0.00459
sky130_fd_sc_hs__maj3_4	(B * C * X)	0.00787	0.00689	0.00675
	(B * C * X)	-0.00619	-0.00738	-0.00740
	(!B * !C * !X)	0.00596	0.00601	0.00599
	(!B * !C * !X)	-0.00798	-0.00801	-0.00799

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	-0.00376	-0.00378	-0.00376
	(B * C * X)	0.00362	0.00367	0.00365
	(!B * !C * !X)	-0.00322	-0.00340	-0.00342
	(!B * !C * !X)	0.00408	0.00398	0.00395
sky130_fd_sc_hs__maj3_2	(B * C * X)	-0.00363	-0.00363	-0.00363
	(B * C * X)	0.00417	0.00418	0.00419
	(!B * !C * !X)	-0.00295	-0.00315	-0.00314
	(!B * !C * !X)	0.00474	0.00467	0.00461
sky130_fd_sc_hs__maj3_4	(B * C * X)	-0.00671	-0.00673	-0.00669
	(B * C * X)	0.00738	0.00744	0.00742
	(!B * !C * !X)	-0.00566	-0.00601	-0.00599
	(!B * !C * !X)	0.00819	0.00809	0.00802

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	0.00314	0.00321	0.00315
	(A * C * X)	-0.00181	-0.00185	-0.00182
	(!A * !C * !X)	0.00080	0.00081	0.00078
	(!A * !C * !X)	-0.00439	-0.00444	-0.00447
sky130_fd_sc_hs__maj3_2	(A * C * X)	0.00372	0.00377	0.00371
	(A * C * X)	-0.00177	-0.00178	-0.00174
	(!A * !C * !X)	0.00099	0.00100	0.00095
	(!A * !C * !X)	-0.00450	-0.00452	-0.00456
sky130_fd_sc_hs__maj3_4	(A * C * X)	0.00620	0.00632	0.00622
	(A * C * X)	-0.00364	-0.00371	-0.00364
	(!A * !C * !X)	0.00187	0.00189	0.00179
	(!A * !C * !X)	-0.00856	-0.00863	-0.00874

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	-0.00304	-0.00307	-0.00314
	(A * C * X)	0.00190	0.00192	0.00184
	(!A * !C * !X)	-0.00076	-0.00077	-0.00076
	(!A * !C * !X)	0.00446	0.00448	0.00448
sky130_fd_sc_hs__maj3_2	(A * C * X)	-0.00359	-0.00362	-0.00370
	(A * C * X)	0.00184	0.00186	0.00177
	(!A * !C * !X)	-0.00094	-0.00094	-0.00093
	(!A * !C * !X)	0.00457	0.00458	0.00457
sky130_fd_sc_hs__maj3_4	(A * C * X)	-0.00596	-0.00601	-0.00619
	(A * C * X)	0.00388	0.00390	0.00370
	(!A * !C * !X)	-0.00173	-0.00175	-0.00173
	(!A * !C * !X)	0.00873	0.00878	0.00876

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	0.00357	0.00332	0.00326
	(A * B * X)	-0.00247	-0.00276	-0.00276
	(!A * !B * !X)	0.00173	0.00175	0.00171
	(!A * !B * !X)	-0.00438	-0.00440	-0.00440
sky130_fd_sc_hs__maj3_2	(A * B * X)	0.00406	0.00381	0.00375
	(A * B * X)	-0.00242	-0.00272	-0.00271
	(!A * !B * !X)	0.00209	0.00210	0.00209
	(!A * !B * !X)	-0.00430	-0.00432	-0.00435
sky130_fd_sc_hs__maj3_4	(A * B * X)	0.00705	0.00658	0.00648
	(A * B * X)	-0.00485	-0.00550	-0.00548
	(!A * !B * !X)	0.00384	0.00390	0.00382
	(!A * !B * !X)	-0.00828	-0.00834	-0.00838

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	-0.00320	-0.00321	-0.00324
	(A * B * X)	0.00281	0.00282	0.00278
	(!A * !B * !X)	-0.00160	-0.00172	-0.00171
	(!A * !B * !X)	0.00447	0.00445	0.00442
sky130_fd_sc_hs__maj3_2	(A * B * X)	-0.00368	-0.00370	-0.00373
	(A * B * X)	0.00275	0.00278	0.00273
	(!A * !B * !X)	-0.00197	-0.00207	-0.00208
	(!A * !B * !X)	0.00441	0.00437	0.00437
sky130_fd_sc_hs__maj3_4	(A * B * X)	-0.00632	-0.00636	-0.00643
	(A * B * X)	0.00555	0.00561	0.00551
	(!A * !B * !X)	-0.00363	-0.00383	-0.00382
	(!A * !B * !X)	0.00847	0.00846	0.00840

SKY130_FD_SC_HS__MUX2Ix

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00288	0.00273	0.00506	0.55383
sky130_fd_sc_hs__mux2i_2	0.00541	0.00571	0.00821	0.92970
sky130_fd_sc_hs__mux2i_4	0.01071	0.01068	0.01431	1.62215

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux2i_1	0.00000	0.27654	0.55256
sky130_fd_sc_hs__mux2i_2	0.00000	0.20863	0.41446
sky130_fd_sc_hs__mux2i_4	0.00000	0.65777	1.32295

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)	-	0.08464	0.93448	10.57060
	A1->Y (FR)	-	0.07581	0.92630	10.57260
	S->Y (RR)	(A0 * !A1)	0.11940	0.72626	6.16633
	S->Y (FR)	(!A0 * A1)	0.09758	0.92439	10.19440
sky130_fd_sc_hs__mux2i_2	A0->Y (FR)	-	0.09545	0.83881	10.61100
	A1->Y (FR)	-	0.08697	0.80435	10.18050
	S->Y (RR)	(A0 * !A1)	0.12882	0.60928	5.67904
	S->Y (FR)	(!A0 * A1)	0.10532	0.81200	9.99682
sky130_fd_sc_hs__mux2i_4	A0->Y (FR)	-	0.08833	0.72218	10.23460
	A1->Y (FR)	-	0.08817	0.73702	10.50980
	S->Y (RR)	(A0 * !A1)	0.14797	0.60330	6.47455
	S->Y (FR)	(!A0 * A1)	0.10005	0.68589	9.51077

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)	-	0.02847	0.39320	4.32864
	A1->Y (RF)	-	0.03016	0.41765	4.62485
	S->Y (FF)	(A0 * !A1)	0.08287	0.44546	3.58196
	S->Y (RF)	(!A0 * A1)	0.03514	0.36629	3.94781
sky130_fd_sc_hs__mux2i_2	A0->Y (RF)	-	0.03619	0.38499	4.73051
	A1->Y (RF)	-	0.03456	0.37113	4.58222
	S->Y (FF)	(A0 * !A1)	0.10110	0.46900	3.86297
	S->Y (RF)	(!A0 * A1)	0.03734	0.29750	3.57041
sky130_fd_sc_hs__mux2i_4	A0->Y (RF)	-	0.03334	0.32008	4.48239
	A1->Y (RF)	-	0.03833	0.35421	4.95543
	S->Y (FF)	(A0 * !A1)	0.10261	0.42374	3.51064
	S->Y (RF)	(!A0 * A1)	0.04053	0.24841	3.40288

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	-	0.00133	0.00172	0.01248
	A0	-	0.00752	0.00792	0.01874
	A1	-	0.00094	0.00131	0.01168
	A1	-	0.00664	0.00703	0.01747
	S	(A0 * !A1)	0.01036	0.01197	0.05713
	S	(A0 * !A1)	0.00540	0.00697	0.05225
	S	(!A0 * A1)	0.00208	0.00450	0.05589
	S	(!A0 * A1)	0.01340	0.01583	0.06730
sky130_fd_sc_hs__mux2i_2	A0	-	0.00287	0.00347	0.02239
	A0	-	0.01495	0.01521	0.03454
	A1	-	0.00263	0.00333	0.02305
	A1	-	0.01463	0.01533	0.03510
	S	(A0 * !A1)	0.01748	0.01866	0.06053
	S	(A0 * !A1)	0.01129	0.01244	0.05445
	S	(!A0 * A1)	0.00503	0.00714	0.06683
	S	(!A0 * A1)	0.02440	0.02648	0.08620
sky130_fd_sc_hs__mux2i_4	A0	-	0.00336	0.00569	0.04274
	A0	-	0.02732	0.02958	0.06679
	A1	-	0.00352	0.00486	0.03874
	A1	-	0.02627	0.02758	0.06170
	S	(A0 * !A1)	0.03007	0.03195	0.10837
	S	(A0 * !A1)	0.02054	0.02240	0.09909
	S	(!A0 * A1)	0.00818	0.01195	0.11397
	S	(!A0 * A1)	0.04331	0.04713	0.14916

Internal switching power(pJ) to Y falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2i_1	A0	-	0.00788	0.00818	0.01378
	A0	-	0.00180	0.00203	0.00745
	A1	-	0.00764	0.00792	0.01335
	A1	-	0.00166	0.00190	0.00707
	S	(A0 * !A1)	0.00645	0.00912	0.05374
	S	(A0 * !A1)	0.01142	0.01407	0.05861
	S	(!A0 * A1)	0.01452	0.01616	0.06572
	S	(!A0 * A1)	0.00318	0.00481	0.05439
sky130_fd_sc_hs__mux2i_2	A0	-	0.01610	0.01651	0.02630
	A0	-	0.00442	0.00477	0.01454
	A1	-	0.01558	0.01596	0.02691
	A1	-	0.00322	0.00361	0.01382
	S	(A0 * !A1)	0.01380	0.01573	0.05686
	S	(A0 * !A1)	0.01980	0.02179	0.06280
	S	(!A0 * A1)	0.02589	0.02729	0.08473
	S	(!A0 * A1)	0.00643	0.00782	0.06521
sky130_fd_sc_hs__mux2i_4	A0	-	0.02986	0.03093	0.05076
	A0	-	0.00657	0.00760	0.02734
	A1	-	0.02977	0.03074	0.04985
	A1	-	0.00610	0.00699	0.02517
	S	(A0 * !A1)	0.02630	0.02986	0.10831
	S	(A0 * !A1)	0.03551	0.03906	0.11725
	S	(!A0 * A1)	0.04798	0.04994	0.14705
	S	(!A0 * A1)	0.01269	0.01450	0.11134

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	0.00203	0.00205	0.00204
	(A1 * S * !Y)	-0.00105	-0.00106	-0.00105
	(!A1 * S * Y)	0.00087	0.00085	0.00082
	(!A1 * S * Y)	-0.00238	-0.00246	-0.00247
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	0.00370	0.00370	0.00371
	(A1 * S * !Y)	-0.00193	-0.00193	-0.00193
	(!A1 * S * Y)	0.00128	0.00128	0.00121
	(!A1 * S * Y)	-0.00471	-0.00481	-0.00486
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	0.00717	0.00724	0.00720
	(A1 * S * !Y)	-0.00396	-0.00401	-0.00397
	(!A1 * S * Y)	0.00244	0.00245	0.00232
	(!A1 * S * Y)	-0.00947	-0.00970	-0.00976

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	-0.00190	-0.00194	-0.00202
	(A1 * S * !Y)	0.00115	0.00115	0.00108
	(!A1 * S * Y)	-0.00080	-0.00081	-0.00081
	(!A1 * S * Y)	0.00246	0.00248	0.00247
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	-0.00346	-0.00359	-0.00370
	(A1 * S * !Y)	0.00205	0.00207	0.00197
	(!A1 * S * Y)	-0.00118	-0.00118	-0.00117
	(!A1 * S * Y)	0.00486	0.00487	0.00486
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	-0.00677	-0.00696	-0.00720
	(A1 * S * !Y)	0.00425	0.00429	0.00406
	(!A1 * S * Y)	-0.00223	-0.00227	-0.00224
	(!A1 * S * Y)	0.00971	0.00980	0.00976

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	0.00185	0.00188	0.00186
	(A0 * !S * !Y)	-0.00105	-0.00107	-0.00106
	(!A0 * !S * Y)	0.00069	0.00068	0.00064
	(!A0 * !S * Y)	-0.00239	-0.00242	-0.00247
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	0.00380	0.00387	0.00382
	(A0 * !S * !Y)	-0.00215	-0.00219	-0.00215
	(!A0 * !S * Y)	0.00137	0.00138	0.00131
	(!A0 * !S * Y)	-0.00485	-0.00492	-0.00499
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	0.00705	0.00712	0.00708
	(A0 * !S * !Y)	-0.00399	-0.00404	-0.00400
	(!A0 * !S * Y)	0.00218	0.00220	0.00207
	(!A0 * !S * Y)	-0.00955	-0.00970	-0.00983

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	-0.00162	-0.00175	-0.00185
	(A0 * !S * !Y)	0.00119	0.00118	0.00108
	(!A0 * !S * Y)	-0.00063	-0.00063	-0.00063
	(!A0 * !S * Y)	0.00246	0.00248	0.00247
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	-0.00351	-0.00371	-0.00382
	(A0 * !S * !Y)	0.00233	0.00234	0.00220
	(!A0 * !S * Y)	-0.00129	-0.00129	-0.00128
	(!A0 * !S * Y)	0.00499	0.00500	0.00499
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	-0.00648	-0.00683	-0.00708
	(A0 * !S * !Y)	0.00431	0.00433	0.00409
	(!A0 * !S * Y)	-0.00202	-0.00203	-0.00201
	(!A0 * !S * Y)	0.00983	0.00986	0.00983

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	0.00781	0.00936	0.05389
	(A0 * A1 * !Y)	-0.00011	0.00136	0.04593
	(!A0 * !A1 * Y)	0.00786	0.00940	0.05393
	(!A0 * !A1 * Y)	-0.00013	0.00144	0.04594
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	0.01245	0.01330	0.06023
	(A0 * A1 * !Y)	0.00006	0.00080	0.04778
	(!A0 * !A1 * Y)	0.01188	0.01324	0.06011
	(!A0 * !A1 * Y)	-0.00054	0.00084	0.04776
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	0.02198	0.02273	0.09970
	(A0 * A1 * !Y)	0.00045	0.00107	0.07804
	(!A0 * !A1 * Y)	0.02095	0.02276	0.09962
	(!A0 * !A1 * Y)	-0.00048	0.00122	0.07813

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	-0.00043	0.00216	0.04668
	(A0 * A1 * !Y)	0.00753	0.01014	0.05464
	(!A0 * !A1 * Y)	-0.00058	0.00207	0.04669
	(!A0 * !A1 * Y)	0.00739	0.01004	0.05463
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	-0.00052	0.00166	0.04818
	(A0 * A1 * !Y)	0.01182	0.01401	0.06056
	(!A0 * !A1 * Y)	-0.00058	0.00139	0.04813
	(!A0 * !A1 * Y)	0.01169	0.01381	0.06056
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	-0.00014	0.00357	0.08127
	(A0 * A1 * !Y)	0.02137	0.02504	0.10282
	(!A0 * !A1 * Y)	-0.00047	0.00292	0.08120
	(!A0 * !A1 * Y)	0.02085	0.02450	0.10279

SKY130_FD_SC_HS__MUX2x

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00278	0.00325	0.00466	1.20812
sky130_fd_sc_hs__mux2_2	0.00257	0.00290	0.00548	2.01747
sky130_fd_sc_hs__mux2_4	0.00494	0.00496	0.00830	3.79363

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__mux2_1	0.00000	0.38949	0.72237
sky130_fd_sc_hs__mux2_2	0.00000	0.43164	0.72981
sky130_fd_sc_hs__mux2_4	0.00000	0.52265	0.76895

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)	-	0.06981	0.54828	6.05509
	A1->X (RR)	-	0.06962	0.54875	6.00898
	S->X (RR)	(!A0 * A1)	0.07234	0.54430	5.96555
	S->X (FR)	(A0 * !A1)	0.13454	0.74738	8.20045
sky130_fd_sc_hs__mux2_2	A0->X (RR)	-	0.08408	0.51167	5.97141
	A1->X (RR)	-	0.08046	0.49950	5.89925
	S->X (RR)	(!A0 * A1)	0.08242	0.48953	5.85774
	S->X (FR)	(A0 * !A1)	0.14475	0.67569	7.98117
sky130_fd_sc_hs__mux2_4	A0->X (RR)	-	0.11462	0.49160	6.09029
	A1->X (RR)	-	0.11591	0.49655	6.17420
	S->X (RR)	(!A0 * A1)	0.11870	0.46069	5.97632
	S->X (FR)	(A0 * !A1)	0.18963	0.69146	8.24461

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)	-	0.11391	0.58569	4.99522
	A1->X (FF)	-	0.11135	0.58220	5.10162
	S->X (FF)	(!A0 * A1)	0.15114	0.59597	5.10840
	S->X (RF)	(A0 * !A1)	0.17287	0.42276	2.43155
sky130_fd_sc_hs__mux2_2	A0->X (FF)	-	0.14401	0.59494	4.72954
	A1->X (FF)	-	0.14736	0.60465	4.78196
	S->X (FF)	(!A0 * A1)	0.18104	0.58907	4.66173
	S->X (RF)	(A0 * !A1)	0.21407	0.42906	1.98136
sky130_fd_sc_hs__mux2_4	A0->X (FF)	-	0.17158	0.59569	4.66425
	A1->X (FF)	-	0.17284	0.59937	4.64273
	S->X (FF)	(!A0 * A1)	0.20497	0.57795	4.52810
	S->X (RF)	(A0 * !A1)	0.23428	0.43281	1.83389

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	-	0.00995	0.01097	0.04627
	A0	-	0.00511	0.00601	0.04126
	A1	-	0.01152	0.01260	0.04353
	A1	-	0.00511	0.00620	0.03757
	S	(A0 * !A1)	0.01018	0.01217	0.05734
	S	(A0 * !A1)	0.01412	0.01608	0.06138
	S	(!A0 * A1)	0.01806	0.02029	0.08835
	S	(!A0 * A1)	0.00730	0.00955	0.07805
sky130_fd_sc_hs__mux2_2	A0	-	0.01439	0.01568	0.04911
	A0	-	0.00854	0.00989	0.04418
	A1	-	0.01499	0.01626	0.05012
	A1	-	0.00889	0.01020	0.04412
	S	(A0 * !A1)	0.01309	0.01625	0.05876
	S	(A0 * !A1)	0.01792	0.02110	0.06404
	S	(!A0 * A1)	0.02173	0.02357	0.07690
	S	(!A0 * A1)	0.01009	0.01195	0.06548
sky130_fd_sc_hs__mux2_4	A0	-	0.02519	0.02722	0.08012
	A0	-	0.01418	0.01622	0.07077
	A1	-	0.02425	0.02610	0.08828
	A1	-	0.01385	0.01573	0.07945
	S	(A0 * !A1)	0.02485	0.02815	0.07463
	S	(A0 * !A1)	0.03169	0.03501	0.08205
	S	(!A0 * A1)	0.03853	0.04044	0.11285
	S	(!A0 * A1)	0.01993	0.02187	0.09592

Internal switching power(pJ) to X falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2_1	A0	-	0.00404	0.00608	0.03788
	A0	-	0.00996	0.01200	0.04355
	A1	-	0.00540	0.00709	0.04226
	A1	-	0.01047	0.01239	0.04792
	S	(A0 * !A1)	0.01527	0.01657	0.06118
	S	(A0 * !A1)	0.01130	0.01251	0.05698
	S	(!A0 * A1)	0.00571	0.00866	0.07677
	S	(!A0 * A1)	0.01640	0.01934	0.08729
sky130_fd_sc_hs__mux2_2	A0	-	0.00716	0.00869	0.04325
	A0	-	0.01299	0.01453	0.04777
	A1	-	0.00889	0.01003	0.04382
	A1	-	0.01332	0.01485	0.04843
	S	(A0 * !A1)	0.01835	0.01952	0.05966
	S	(A0 * !A1)	0.01349	0.01459	0.05438
	S	(!A0 * A1)	0.00854	0.01050	0.07452
	S	(!A0 * A1)	0.02012	0.02207	0.08548
sky130_fd_sc_hs__mux2_4	A0	-	0.01712	0.01847	0.07733
	A0	-	0.02782	0.02914	0.08800
	A1	-	0.01782	0.01922	0.07962
	A1	-	0.02868	0.03008	0.08878
	S	(A0 * !A1)	0.03412	0.03469	0.07924
	S	(A0 * !A1)	0.02711	0.02755	0.07179
	S	(!A0 * A1)	0.02025	0.02074	0.10767
	S	(!A0 * A1)	0.03873	0.03921	0.12429

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	0.00190	0.00194	0.00191
	(A1 * S * X)	-0.00087	-0.00089	-0.00087
	(!A1 * S * !X)	0.00072	0.00072	0.00067
	(!A1 * S * !X)	-0.00216	-0.00220	-0.00225
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	0.00181	0.00183	0.00181
	(A1 * S * X)	-0.00094	-0.00095	-0.00094
	(!A1 * S * !X)	0.00080	0.00081	0.00075
	(!A1 * S * !X)	-0.00203	-0.00209	-0.00214
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	0.00326	0.00327	0.00326
	(A1 * S * X)	-0.00187	-0.00188	-0.00186
	(!A1 * S * !X)	0.00122	0.00121	0.00114
	(!A1 * S * !X)	-0.00428	-0.00437	-0.00441

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	-0.00178	-0.00184	-0.00190
	(A1 * S * X)	0.00096	0.00096	0.00091
	(!A1 * S * !X)	-0.00065	-0.00065	-0.00065
	(!A1 * S * !X)	0.00225	0.00225	0.00225
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	-0.00165	-0.00171	-0.00180
	(A1 * S * X)	0.00105	0.00106	0.00098
	(!A1 * S * !X)	-0.00072	-0.00073	-0.00072
	(!A1 * S * !X)	0.00215	0.00215	0.00214
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	-0.00306	-0.00312	-0.00325
	(A1 * S * X)	0.00201	0.00201	0.00191
	(!A1 * S * !X)	-0.00112	-0.00113	-0.00112
	(!A1 * S * !X)	0.00441	0.00441	0.00441

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	0.00211	0.00212	0.00211
	(A0 * !S * X)	-0.00106	-0.00106	-0.00106
	(!A0 * !S * !X)	0.00064	0.00063	0.00061
	(!A0 * !S * !X)	-0.00258	-0.00259	-0.00261
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	0.00195	0.00197	0.00196
	(A0 * !S * X)	-0.00090	-0.00092	-0.00091
	(!A0 * !S * !X)	0.00057	0.00057	0.00055
	(!A0 * !S * !X)	-0.00233	-0.00236	-0.00238
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	0.00328	0.00327	0.00328
	(A0 * !S * X)	-0.00187	-0.00186	-0.00186
	(!A0 * !S * !X)	0.00098	0.00098	0.00093
	(!A0 * !S * !X)	-0.00447	-0.00451	-0.00457

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	-0.00200	-0.00206	-0.00211
	(A0 * !S * X)	0.00112	0.00113	0.00108
	(!A0 * !S * !X)	-0.00061	-0.00061	-0.00060
	(!A0 * !S * !X)	0.00262	0.00262	0.00261
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	-0.00182	-0.00189	-0.00196
	(A0 * !S * X)	0.00101	0.00101	0.00094
	(!A0 * !S * !X)	-0.00054	-0.00055	-0.00054
	(!A0 * !S * !X)	0.00237	0.00239	0.00238
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	-0.00300	-0.00318	-0.00328
	(A0 * !S * X)	0.00201	0.00201	0.00190
	(!A0 * !S * !X)	-0.00091	-0.00091	-0.00090
	(!A0 * !S * !X)	0.00458	0.00458	0.00457

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	0.00800	0.00930	0.05323
	(A0 * A1 * X)	0.00078	0.00204	0.04598
	(!A0 * !A1 * !X)	0.00799	0.00952	0.05341
	(!A0 * !A1 * !X)	0.00079	0.00235	0.04624
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	0.00808	0.00945	0.05335
	(A0 * A1 * X)	-0.00002	0.00128	0.04521
	(!A0 * !A1 * !X)	0.00761	0.00918	0.05296
	(!A0 * !A1 * !X)	-0.00050	0.00107	0.04489
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	0.01268	0.01359	0.05997
	(A0 * A1 * X)	0.00025	0.00112	0.04753
	(!A0 * !A1 * !X)	0.01251	0.01375	0.05988
	(!A0 * !A1 * !X)	0.00008	0.00124	0.04745

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	-0.00001	0.00250	0.04639
	(A0 * A1 * X)	0.00722	0.00976	0.05361
	(!A0 * !A1 * !X)	-0.00032	0.00198	0.04615
	(!A0 * !A1 * !X)	0.00684	0.00921	0.05334
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	-0.00070	0.00182	0.04569
	(A0 * A1 * X)	0.00743	0.00996	0.05380
	(!A0 * !A1 * !X)	-0.00050	0.00181	0.04584
	(!A0 * !A1 * !X)	0.00759	0.00993	0.05396
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	-0.00036	0.00167	0.04751
	(A0 * A1 * X)	0.01207	0.01414	0.05993
	(!A0 * !A1 * !X)	-0.00076	0.00131	0.04715
	(!A0 * !A1 * !X)	0.01162	0.01377	0.05958

SKY130_FD_SC_HS__MUX4x

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00242	0.00253	0.00252	0.00279	0.00849	0.00542	1.13980
sky130_fd_sc_hs__mux4_2	0.00274	0.00259	0.00270	0.00263	0.00960	0.00561	2.31545
sky130_fd_sc_hs__mux4_4	0.00482	0.00463	0.00481	0.00482	0.01344	0.00837	4.36316

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux4_1	0.00000	0.54233	0.96667
sky130_fd_sc_hs__mux4_2	0.00000	0.57965	1.03595
sky130_fd_sc_hs__mux4_4	0.00000	0.83961	1.45441

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)	0.12415	0.64142	6.17647
	A1->X (RR)	0.12564	0.64282	6.16694
	A2->X (RR)	0.12557	0.64805	6.18849
	A3->X (RR)	0.12310	0.64208	6.16462
	S0->X (-R)	0.19740	0.85429	8.32640
	S1->X (-R)	0.11405	0.73497	8.16199
sky130_fd_sc_hs__mux4_2	A0->X (RR)	0.13218	0.56051	6.20668
	A1->X (RR)	0.12668	0.55828	6.20534
	A2->X (RR)	0.12263	0.54920	6.17866
	A3->X (RR)	0.11663	0.54398	6.17433
	S0->X (-R)	0.18451	0.74718	8.38653
	S1->X (-R)	0.12190	0.65439	8.17896
sky130_fd_sc_hs__mux4_4	A0->X (RR)	0.15152	0.50891	6.30582
	A1->X (RR)	0.15516	0.51253	6.31609
	A2->X (RR)	0.15580	0.51551	6.30144
	A3->X (RR)	0.14823	0.51070	6.29635
	S0->X (-R)	0.25990	0.79143	8.61539
	S1->X (-R)	0.14237	0.64395	8.39338

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__mux4_1	A0->X (FF)	0.19903	0.68496	4.94953
	A1->X (FF)	0.20953	0.70249	4.99885
	A2->X (FF)	0.21582	0.71473	5.02473
	A3->X (FF)	0.21578	0.71336	5.02531
	S0->X (-F)	0.19809	0.71292	5.04130
	S1->X (-F)	0.09712	0.54931	4.80391
sky130_fd_sc_hs__mux4_2	A0->X (FF)	0.24775	0.74546	5.27008
	A1->X (FF)	0.24578	0.74061	5.25160
	A2->X (FF)	0.24481	0.73719	5.25042
	A3->X (FF)	0.23732	0.72629	5.22015
	S0->X (-F)	0.22606	0.74275	5.27372
	S1->X (-F)	0.11708	0.57395	5.05128
sky130_fd_sc_hs__mux4_4	A0->X (FF)	0.25004	0.69677	5.23713
	A1->X (FF)	0.24517	0.69088	5.21936
	A2->X (FF)	0.27253	0.72231	5.28139
	A3->X (FF)	0.26009	0.70830	5.25535
	S0->X (-F)	0.24597	0.73921	5.41349
	S1->X (-F)	0.12705	0.56635	5.12474

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux4_1	A0	0.01768	0.01834	0.04354
	A0	0.01070	0.01136	0.03698
	A1	0.01609	0.01669	0.04137
	A1	0.00916	0.00976	0.03486
	A2	0.01592	0.01661	0.04110
	A2	0.00913	0.00981	0.03474
	A3	0.01476	0.01539	0.04013
	A3	0.00767	0.00831	0.03348
	S0	0.02830	0.03232	0.15298
	S0	0.01145	0.01546	0.13648
	S1	0.01326	0.01622	0.08453
	S1	0.01336	0.01843	0.08980
sky130_fd_sc_hs__mux4_2	A0	0.02165	0.02244	0.04721
	A0	0.01389	0.01466	0.04032
	A1	0.02017	0.02098	0.04607
	A1	0.01244	0.01326	0.03921
	A2	0.01897	0.01979	0.04435
	A2	0.01161	0.01243	0.03788
	A3	0.01784	0.01873	0.04381
	A3	0.01058	0.01176	0.03742
	S0	0.03362	0.03764	0.15953
	S0	0.01614	0.02021	0.14283
	S1	0.01620	0.01930	0.08874
	S1	0.00715	0.01029	0.08065

sky130_fd_sc_hs__mux4_4	**A0**	0.04013	0.04146	0.08999
	A0	0.02645	0.02797	0.07765
	A1	0.03695	0.03821	0.08727
	A1	0.02354	0.02490	0.07492
	A2	0.03697	0.03825	0.08597
	A2	0.02356	0.02491	0.07389
	A3	0.03490	0.03619	0.08476
	A3	0.02138	0.02273	0.07258
	S0	0.05701	0.06225	0.23642
	S0	0.03026	0.03554	0.21037
	S1	0.02922	0.03227	0.12300
	S1	0.01568	0.01878	0.11052

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__mux4_1	**A0**	0.00602	0.00631	0.03210
	A0	0.01301	0.01331	0.03838
	A1	0.00780	0.00808	0.03328
	A1	0.01469	0.01499	0.03942
	A2	0.00891	0.00916	0.03393
	A2	0.01571	0.01596	0.04027
	A3	0.01009	0.01030	0.03528
	A3	0.01713	0.01733	0.04188
	S0	0.00964	0.01544	0.13531
	S0	0.02636	0.03222	0.15113
	S1	0.01368	0.01701	0.08707
	S1	0.01182	0.01626	0.08842

sky130_fd_sc_hs__mux4_2	**A0**	0.01242	0.01119	0.03627
	A0	0.02016	0.01926	0.04393
	A1	0.01388	0.01278	0.03808
	A1	0.02156	0.02053	0.04538
	A2	0.01353	0.01259	0.03734
	A2	0.02089	0.02001	0.04432
	A3	0.01450	0.01358	0.03962
	A3	0.02171	0.02081	0.04564
	S0	0.01434	0.01900	0.13858
	S0	0.03188	0.03652	0.15608
	S1	0.00791	0.01157	0.08429
	S1	0.01696	0.02060	0.09292
sky130_fd_sc_hs__mux4_4	**A0**	0.02323	0.02100	0.07452
	A0	0.03692	0.03468	0.08249
	A1	0.02672	0.02465	0.07776
	A1	0.04010	0.03803	0.08614
	A2	0.02729	0.02398	0.07508
	A2	0.04070	0.03766	0.08456
	A3	0.02951	0.02687	0.08100
	A3	0.04292	0.04031	0.08786
	S0	0.02741	0.03160	0.20805
	S0	0.05377	0.05814	0.23137
	S1	0.01677	0.01969	0.11245
	S1	0.03031	0.03319	0.12595

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)**	0.00936	0.00989	0.03624
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00381	0.00432	0.03070
	(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)	0.00182	0.00158	0.00156
	(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)	-0.00156	-0.00184	-0.00185
sky130_fd_sc_hs__mux4_2	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.01041	0.01087	0.03737
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00409	0.00453	0.03106
	(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)	0.00201	0.00175	0.00171
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00151	-0.00180	-0.00182
sky130_fd_sc_hs__mux4_4	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.01754	0.01860	0.07038
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00666	0.00767	0.05952
	(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)	0.00354	0.00300	0.00291
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00318	-0.00380	-0.00385

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)	0.00148	0.00201	0.02847
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00704	0.00757	0.03402
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00152	-0.00154	-0.00154
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00186	0.00188	0.00187
sky130_fd_sc_hs__mux4_2	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00235	0.00287	0.02933
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00865	0.00919	0.03564
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00166	-0.00168	-0.00169
	(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	0.00183	0.00184

sky130_fd_sc_hs__mux4_4	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.00334	0.00438	0.05620
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.01422	0.01528	0.06707
	(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)	-0.00283	-0.00288	-0.00289
	(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)	0.00385	0.00386	0.00387

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)**	0.00777	0.00825	0.03415
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00233	0.00278	0.02869
	(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)	0.00171	0.00144	0.00141
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00172	-0.00203	-0.00205

sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00892	0.00943	0.03601
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00269	0.00317	0.02976
	(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)	0.00177	0.00154	0.00152
	(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)	-0.00169	-0.00195	-0.00196
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.01435	0.01539	0.06768
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00383	0.00480	0.05715
	(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)	0.00341	0.00286	0.00278
	(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)	-0.00313	-0.00376	-0.00381

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)**	0.00320	0.00372	0.02949
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00867	0.00920	0.03492
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00135	-0.00141	-0.00140
	(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)	0.00206	0.00209	0.00207
sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00379	0.00426	0.03093
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.01004	0.01052	0.03715
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00147	-0.00151	-0.00152
	(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)	0.00197	0.00198	0.00198
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00685	0.00785	0.06013
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.01742	0.01843	0.07061
	(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)	-0.00269	-0.00278	-0.00278
	(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)	0.00379	0.00383	0.00382

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)	0.00194	0.00167	0.00164
	(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)	-0.00147	-0.00177	-0.00180
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00959	0.01007	0.03574
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00401	0.00447	0.03016
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)	0.00218	0.00191	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)	-0.00148	-0.00179	-0.00182
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00986	0.01030	0.03636
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00382	0.00423	0.03032

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)**	0.00366	0.00309	0.00303
	(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)	-0.00301	-0.00361	-0.00367
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01777	0.01877	0.06970
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00670	0.00765	0.05865

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)**	-0.00160	-0.00162	-0.00162
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00180	0.00182	0.00182
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00239	0.00289	0.02852
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00797	0.00849	0.03410

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)**	-0.00183	-0.00186	-0.00185
	(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)	0.00182	0.00184	0.00183
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00249	0.00299	0.02901
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00853	0.00905	0.03505
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)**	-0.00296	-0.00303	-0.00301
	(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)	0.00365	0.00372	0.00368
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00323	0.00426	0.05514
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01429	0.01533	0.06620

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)**	0.00844	0.00887	0.03479
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00260	0.00301	0.02895
	(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)	0.00213	0.00186	0.00182
	(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)	-0.00167	-0.00197	-0.00199
sky130_fd_sc_hs__mux4_2	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00875	0.00925	0.03572
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00284	0.00332	0.02982
	(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)	0.00190	0.00165	0.00162
	(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)	-0.00161	-0.00189	-0.00191
sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.01573	0.01666	0.06842
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00466	0.00556	0.05736
	(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)	0.00352	0.00299	0.00293
	(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)	-0.00305	-0.00364	-0.00369

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)	0.00354	0.00401	0.02984
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00939	0.00987	0.03567
	(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)	-0.00177	-0.00181	-0.00181
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00200	0.00202	0.00201
sky130_fd_sc_hs__mux4_2	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00348	0.00399	0.03055
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00940	0.00991	0.03644
	(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)	-0.00157	-0.00162	-0.00162
	(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)	0.00191	0.00193	0.00193

sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00592	0.00684	0.05852
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.01703	0.01795	0.06955
	(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)	-0.00283	-0.00293	-0.00293
	(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)	0.00369	0.00372	0.00371

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)**	0.01037	0.01203	0.05894
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00123	0.00036	0.04734
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01549	0.01661	0.06542
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00560	0.00668	0.05563
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01484	0.01764	0.10196
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00136	0.00410	0.08846
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01078	0.01240	0.05943
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00099	0.00059	0.04762
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01460	0.01600	0.06501
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00463	0.00597	0.05509
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01438	0.01584	0.06499
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00424	0.00563	0.05489
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01440	0.01726	0.10112
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00093	0.00375	0.08763
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01539	0.01828	0.10216
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00176	0.00461	0.08849
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01521	0.01632	0.06529
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00509	0.00615	0.05521
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01583	0.01860	0.10293
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00211	0.00484	0.08916

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.01151	0.01301	0.06050
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00007	0.00149	0.04906
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01657	0.01728	0.06656
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00716	0.00779	0.05718
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01602	0.01892	0.10379
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00250	0.00533	0.09025
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01141	0.01294	0.06057
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00007	0.00136	0.04903
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01714	0.01760	0.06643
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00809	0.00845	0.05743
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01661	0.01709	0.06611
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00751	0.00792	0.05704
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01609	0.01900	0.10412
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00226	0.00503	0.09021
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01641	0.01924	0.10454
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00252	0.00529	0.09059
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01573	0.01649	0.06590
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00627	0.00693	0.05647
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01713	0.01996	0.10497
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00358	0.00636	0.09142

sky130_fd_sc_hs__mux4_4	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.01621	0.01749	0.06173
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00028	0.00091	0.04525
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.02533	0.02505	0.07195
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01236	0.01198	0.05917
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.02423	0.02757	0.13718
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00409	0.00731	0.11702
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01634	0.01764	0.06206
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00033	0.00093	0.04534
	(A0 * !A1 * A2 * A3 * S1 * X)	0.02558	0.02602	0.07281
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01200	0.01236	0.05942
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.02475	0.02526	0.07236
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01097	0.01139	0.05879
	(!A0 * A1 * A2 * A3 * S1 * X)	0.02323	0.02704	0.13954
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00341	0.00717	0.11970
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.02426	0.02812	0.14073
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00428	0.00818	0.12069
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.02507	0.02485	0.07214
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01177	0.01146	0.05894
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.02600	0.02936	0.13910
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00550	0.00878	0.11853

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)**	0.00068	0.00289	0.04996
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.01224	0.01451	0.06161
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00739	0.00965	0.05867
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01727	0.01959	0.06837
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00270	0.00682	0.09086
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01616	0.02028	0.10438
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00040	0.00271	0.04951
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01216	0.01450	0.06133
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00706	0.00941	0.05817
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01703	0.01942	0.06791
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00739	0.00967	0.05827
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01757	0.01989	0.06821
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00181	0.00595	0.08952
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01525	0.01946	0.10298
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00092	0.00529	0.08849
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01455	0.01897	0.10217
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00783	0.01000	0.05888
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01798	0.02020	0.06883
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00182	0.00596	0.08991
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01555	0.01971	0.10367

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	-0.00115	0.00113	0.04873
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.01026	0.01261	0.06023
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00572	0.00798	0.05745
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01516	0.01748	0.06665
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00108	0.00525	0.09001
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01457	0.01878	0.10354
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00097	0.00127	0.04873
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01051	0.01281	0.06027
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00635	0.00867	0.05817
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01541	0.01777	0.06700
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00699	0.00919	0.05853
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01612	0.01838	0.06743
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00046	0.00459	0.08972
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01432	0.01851	0.10362
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00021	0.00427	0.08927
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01412	0.01827	0.10317
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00664	0.00881	0.05815
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01614	0.01838	0.06740
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00002	0.00414	0.08879
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01357	0.01777	0.10235

	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00162	0.00068	0.04554
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.01479	0.01711	0.06200
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01160	0.01350	0.06181
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.02451	0.02649	0.07418
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00129	0.00645	0.11613
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.02141	0.02657	0.13633
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00154	0.00069	0.04533
sky130_fd_sc_hs__mux4_4	**(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)**	0.01515	0.01741	0.06205
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01031	0.01273	0.06041
	(A0 * !A1 * A2 * A3 * S1 * X)	0.02381	0.02627	0.07348
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01145	0.01374	0.06106
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.02524	0.02756	0.07438
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00087	0.00674	0.12017
	(!A0 * A1 * A2 * A3 * S1 * X)	0.02065	0.02649	0.13994
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00000	0.00576	0.11901
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.02004	0.02585	0.13906
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01227	0.01403	0.06246
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.02562	0.02745	0.07521
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	-0.00021	0.00480	0.11433
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.02032	0.02544	0.13494

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)	0.00687	0.00897	0.05737
	(A1 * A3 * S0 * X)	-0.00046	0.00160	0.05002
	(A0 * A2 * !S0 * X)	0.00687	0.00895	0.05737
	(A0 * A2 * !S0 * X)	-0.00046	0.00158	0.05002
	(!A1 * !A3 * S0 * !X)	0.00716	0.00931	0.05769
	(!A1 * !A3 * S0 * !X)	-0.00040	0.00171	0.05011
	(!A0 * !A2 * !S0 * !X)	0.00716	0.00931	0.05769
	(!A0 * !A2 * !S0 * !X)	-0.00040	0.00171	0.05011
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	0.00721	0.00941	0.05744
	(A1 * A3 * S0 * X)	-0.00041	0.00173	0.04979
	(A0 * A2 * !S0 * X)	0.00721	0.00941	0.05744
	(A0 * A2 * !S0 * X)	-0.00041	0.00173	0.04978
	(!A1 * !A3 * S0 * !X)	0.00724	0.00942	0.05761
	(!A1 * !A3 * S0 * !X)	-0.00052	0.00160	0.04981
	(!A0 * !A2 * !S0 * !X)	0.00724	0.00941	0.05760
	(!A0 * !A2 * !S0 * !X)	-0.00052	0.00160	0.04981
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	0.01049	0.01204	0.05790
	(A1 * A3 * S0 * X)	-0.00033	0.00113	0.04706
	(A0 * A2 * !S0 * X)	0.01049	0.01203	0.05790
	(A0 * A2 * !S0 * X)	-0.00033	0.00113	0.04706
	(!A1 * !A3 * S0 * !X)	0.01057	0.01214	0.05813
	(!A1 * !A3 * S0 * !X)	-0.00072	0.00084	0.04682
	(!A0 * !A2 * !S0 * !X)	0.01057	0.01213	0.05813
	(!A0 * !A2 * !S0 * !X)	-0.00072	0.00084	0.04682

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)	-0.00099	0.00208	0.05016
	(A1 * A3 * S0 * X)	0.00635	0.00944	0.05751
	(A0 * A2 * !S0 * X)	-0.00099	0.00203	0.05016
	(A0 * A2 * !S0 * X)	0.00635	0.00939	0.05751
	(!A1 * !A3 * S0 * !X)	-0.00104	0.00164	0.04986
	(!A1 * !A3 * S0 * !X)	0.00652	0.00924	0.05742
	(!A0 * !A2 * !S0 * !X)	-0.00104	0.00163	0.04986
	(!A0 * !A2 * !S0 * !X)	0.00652	0.00922	0.05742
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	-0.00107	0.00193	0.04985
	(A1 * A3 * S0 * X)	0.00657	0.00959	0.05751
	(A0 * A2 * !S0 * X)	-0.00107	0.00192	0.04985
	(A0 * A2 * !S0 * X)	0.00657	0.00956	0.05751
	(!A1 * !A3 * S0 * !X)	-0.00099	0.00168	0.04975
	(!A1 * !A3 * S0 * !X)	0.00680	0.00949	0.05752
	(!A0 * !A2 * !S0 * !X)	-0.00099	0.00168	0.04975
	(!A0 * !A2 * !S0 * !X)	0.00680	0.00949	0.05751
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	-0.00150	0.00092	0.04697
	(A1 * A3 * S0 * X)	0.00928	0.01178	0.05782
	(A0 * A2 * !S0 * X)	-0.00150	0.00092	0.04697
	(A0 * A2 * !S0 * X)	0.00928	0.01177	0.05782
	(!A1 * !A3 * S0 * !X)	-0.00114	0.00133	0.04688
	(!A1 * !A3 * S0 * !X)	0.01018	0.01269	0.05820
	(!A0 * !A2 * !S0 * !X)	-0.00114	0.00134	0.04688
	(!A0 * !A2 * !S0 * !X)	0.01018	0.01267	0.05820

SKY130_FD_SC_HS__NAND2Bx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00235	0.00281	1.09346
sky130_fd_sc_hs__nand2b_2	0.00264	0.00535	1.96811
sky130_fd_sc_hs__nand2b_4	0.00390	0.00816	2.34778

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand2b_1	0.00000	0.26599	0.45107
sky130_fd_sc_hs__nand2b_2	0.00000	0.18753	0.31774
sky130_fd_sc_hs__nand2b_4	0.00000	0.53869	0.91700

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)	0.05714	0.53425	6.25550
	B->Y (FR)	0.03697	0.76084	10.52410
sky130_fd_sc_hs__nand2b_2	A_N->Y (RR)	0.05604	0.42100	5.48478
	B->Y (FR)	0.03510	0.67375	10.48480
sky130_fd_sc_hs__nand2b_4	A_N->Y (RR)	0.06788	0.44950	6.17028
	B->Y (FR)	0.04496	0.67814	10.74070

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)	0.07101	0.51610	5.34824
	B->Y (RF)	0.02513	0.44299	6.11916
sky130_fd_sc_hs__nand2b_2	A_N->Y (FF)	0.07753	0.50444	5.57751
	B->Y (RF)	0.02547	0.37123	5.97549
sky130_fd_sc_hs__nand2b_4	A_N->Y (FF)	0.06102	0.37406	3.92635
	B->Y (RF)	0.02208	0.24949	4.21449

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	0.00789	0.00991	0.05501
	A_N	0.00401	0.00604	0.05147
	B	0.00018	0.00125	0.00975
	B	0.00456	0.00566	0.01435
sky130_fd_sc_hs__nand2b_2	A_N	0.01048	0.01262	0.04997
	A_N	0.00648	0.00866	0.04636
	B	0.00004	0.00230	0.01852
	B	0.00862	0.01092	0.02751
sky130_fd_sc_hs__nand2b_4	A_N	0.01386	0.01753	0.09096
	A_N	0.00807	0.01177	0.08613
	B	-0.00040	0.00270	0.02807
	B	0.01266	0.01580	0.04150

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	A_N	0.00403	0.00681	0.04925
	A_N	0.00790	0.01064	0.05291
	B	0.00556	0.00576	0.00987
	B	0.00116	0.00130	0.00486
sky130_fd_sc_hs__nand2b_2	A_N	0.00700	0.00966	0.05646
	A_N	0.01102	0.01354	0.05897
	B	0.01074	0.01117	0.01846
	B	0.00210	0.00243	0.00953
sky130_fd_sc_hs__nand2b_4	A_N	0.01223	0.01689	0.09644
	A_N	0.01804	0.02265	0.10150
	B	0.01879	0.01934	0.03099
	B	0.00560	0.00614	0.01684

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	0.00643	0.00830	0.05334
	(!B * Y)	0.00233	0.00418	0.04923
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.00902	0.01086	0.05797
	(!B * Y)	0.00447	0.00629	0.05342
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.01107	0.01412	0.09343
	(!B * Y)	0.00439	0.00741	0.08674

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	0.00002	0.00258	0.04773
	(!B * Y)	0.00413	0.00669	0.05185
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.00076	0.00299	0.04995
	(!B * Y)	0.00533	0.00759	0.05452
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.00140	0.00569	0.08553
	(!B * Y)	0.00813	0.01245	0.09226

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	0.00194	0.00196	0.00195
	(A_N * Y)	-0.00204	-0.00205	-0.00204
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	0.00336	0.00341	0.00337
	(A_N * Y)	-0.00420	-0.00424	-0.00421
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	0.00673	0.00677	0.00675
	(A_N * Y)	-0.00442	-0.00443	-0.00442

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	-0.00185	-0.00194	-0.00194
	(A_N * Y)	0.00212	0.00208	0.00206
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	-0.00319	-0.00337	-0.00337
	(A_N * Y)	0.00432	0.00426	0.00422
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	-0.00631	-0.00675	-0.00675
	(A_N * Y)	0.00476	0.00451	0.00446

SKY130_FD_SC_HS__NAND2x

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00282	0.00274	1.16155
sky130_fd_sc_hs__nand2_2	0.00541	0.00536	2.25175
sky130_fd_sc_hs__nand2_4	0.00822	0.00798	2.27725
sky130_fd_sc_hs__nand2_8	0.01574	0.01577	4.10093

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand2_1	0.00000	0.04205	0.15376
sky130_fd_sc_hs__nand2_2	0.00000	0.08411	0.30753
sky130_fd_sc_hs__nand2_4	0.00000	0.09134	0.30753
sky130_fd_sc_hs__nand2_8	0.00000	0.18267	0.61506

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)	0.02869	0.75631	10.72190
	B->Y (FR)	0.03576	0.76358	10.72980
sky130_fd_sc_hs__nand2_2	A->Y (FR)	0.02494	0.65902	10.72210
	B->Y (FR)	0.03407	0.66544	10.67590
sky130_fd_sc_hs__nand2_4	A->Y (FR)	0.03486	0.67163	10.79040
	B->Y (FR)	0.05286	0.68493	10.75420
sky130_fd_sc_hs__nand2_8	A->Y (FR)	0.02817	0.58100	10.37250
	B->Y (FR)	0.04409	0.58230	9.96512

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand2_1	A->Y (RF)	0.01994	0.49113	6.97762
	B->Y (RF)	0.02324	0.45213	6.38846
sky130_fd_sc_hs__nand2_2	A->Y (RF)	0.01921	0.44637	7.51221
	B->Y (RF)	0.02479	0.40553	6.81271
sky130_fd_sc_hs__nand2_4	A->Y (RF)	0.01749	0.30253	5.12429
	B->Y (RF)	0.02228	0.25483	4.24590
sky130_fd_sc_hs__nand2_8	A->Y (RF)	0.01567	0.26283	5.30499
	B->Y (RF)	0.02042	0.19594	3.98412

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	-0.00063	0.00034	0.00852
	A	0.00399	0.00498	0.01334
	B	-0.00009	0.00082	0.00909
	B	0.00557	0.00652	0.01495
sky130_fd_sc_hs__nand2_2	A	-0.00177	0.00073	0.01525
	A	0.00717	0.00973	0.02459
	B	0.00020	0.00237	0.01715
	B	0.01144	0.01368	0.02882
sky130_fd_sc_hs__nand2_4	A	-0.00340	-0.00004	0.02463
	A	0.01016	0.01358	0.03847
	B	0.00016	0.00308	0.02829
	B	0.01821	0.02074	0.04666
sky130_fd_sc_hs__nand2_8	A	-0.00746	-0.00071	0.05777
	A	0.01887	0.02571	0.08510
	B	-0.00101	0.00444	0.05690
	B	0.03457	0.04016	0.09298

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	0.00429	0.00469	0.00926
	A	-0.00033	-0.00007	0.00391
	B	0.00544	0.00559	0.00942
	B	-0.00028	-0.00014	0.00329
sky130_fd_sc_hs__nand2_2	A	0.00840	0.00919	0.01657
	A	-0.00054	0.00015	0.00763
	B	0.01096	0.01138	0.01830
	B	-0.00044	-0.00013	0.00639
sky130_fd_sc_hs__nand2_4	A	0.01555	0.01646	0.03063
	A	0.00201	0.00284	0.01466
	B	0.02048	0.02102	0.03248
	B	0.00216	0.00259	0.01335
sky130_fd_sc_hs__nand2_8	A	0.02487	0.02722	0.05672
	A	-0.00142	0.00089	0.02767
	B	0.03522	0.03662	0.06063
	B	-0.00098	0.00041	0.02346

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	0.00059	0.00059	0.00057
	(!B * Y)	-0.00249	-0.00250	-0.00252
sky130_fd_sc_hs__nand2_2	(!B * Y)	0.00110	0.00110	0.00105
	(!B * Y)	-0.00483	-0.00485	-0.00494
sky130_fd_sc_hs__nand2_4	(!B * Y)	0.00216	0.00216	0.00206
	(!B * Y)	-0.00581	-0.00582	-0.00599
sky130_fd_sc_hs__nand2_8	(!B * Y)	0.00429	0.00426	0.00408
	(!B * Y)	-0.01122	-0.01123	-0.01154

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	-0.00057	-0.00057	-0.00056
	(!B * Y)	0.00253	0.00257	0.00252
sky130_fd_sc_hs__nand2_2	(!B * Y)	-0.00102	-0.00104	-0.00102
	(!B * Y)	0.00493	0.00503	0.00495
sky130_fd_sc_hs__nand2_4	(!B * Y)	-0.00202	-0.00201	-0.00200
	(!B * Y)	0.00601	0.00602	0.00599
sky130_fd_sc_hs__nand2_8	(!B * Y)	-0.00395	-0.00399	-0.00397
	(!B * Y)	0.01149	0.01159	0.01155

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!A * Y)	0.00164	0.00166	0.00164
	(!A * Y)	-0.00215	-0.00216	-0.00215
sky130_fd_sc_hs__nand2_2	(!A * Y)	0.00318	0.00320	0.00318
	(!A * Y)	-0.00421	-0.00422	-0.00421
sky130_fd_sc_hs__nand2_4	(!A * Y)	0.00630	0.00640	0.00633
	(!A * Y)	-0.00439	-0.00443	-0.00440
sky130_fd_sc_hs__nand2_8	(!A * Y)	0.01261	0.01273	0.01266
	(!A * Y)	-0.00879	-0.00883	-0.00880

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!A * Y)	-0.00154	-0.00165	-0.00164
	(!A * Y)	0.00222	0.00218	0.00216
sky130_fd_sc_hs__nand2_2	(!A * Y)	-0.00295	-0.00320	-0.00318
	(!A * Y)	0.00435	0.00426	0.00422
sky130_fd_sc_hs__nand2_4	(!A * Y)	-0.00584	-0.00636	-0.00633
	(!A * Y)	0.00471	0.00446	0.00442
sky130_fd_sc_hs__nand2_8	(!A * Y)	-0.01173	-0.01273	-0.01266
	(!A * Y)	0.00937	0.00891	0.00883

SKY130_FD_SC_HS__NAND3Bx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00221	0.00283	0.00275	1.17726
sky130_fd_sc_hs__nand3b_2	0.00262	0.00539	0.00536	2.22482
sky130_fd_sc_hs__nand3b_4	0.00370	0.00774	0.00782	2.02694

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand3b_1	0.00000	0.25562	0.45107
sky130_fd_sc_hs__nand3b_2	0.00000	0.16679	0.47151
sky130_fd_sc_hs__nand3b_4	0.00000	0.51643	0.91700

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)	0.05876	0.52119	6.23697
	B->Y (FR)	0.04225	0.78388	10.98870
	C->Y (FR)	0.04706	0.77845	10.81980
sky130_fd_sc_hs__nand3b_2	A_N->Y (RR)	0.05905	0.42596	5.88267
	B->Y (FR)	0.03664	0.66500	10.59710
	C->Y (FR)	0.04307	0.67826	10.70660
sky130_fd_sc_hs__nand3b_4	A_N->Y (RR)	0.07361	0.46231	5.92829
	B->Y (FR)	0.05068	0.66607	10.11130
	C->Y (FR)	0.06881	0.70157	10.44520

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)	0.07779	0.61618	7.00313
	B->Y (RF)	0.03603	0.56049	7.87331
	C->Y (RF)	0.03933	0.51410	7.18364
sky130_fd_sc_hs__nand3b_2	A_N->Y (FF)	0.08978	0.62562	7.94559
	B->Y (RF)	0.03730	0.51769	8.62304
	C->Y (RF)	0.04029	0.45009	7.62409
sky130_fd_sc_hs__nand3b_4	A_N->Y (FF)	0.07646	0.51085	6.18768
	B->Y (RF)	0.04147	0.45267	7.19183
	C->Y (RF)	0.04471	0.32022	5.18434

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	0.00767	0.00973	0.05510
	A_N	0.00426	0.00633	0.05207
	B	0.00053	0.00132	0.00866
	B	0.00503	0.00584	0.01326
	C	0.00102	0.00179	0.00929
	C	0.00633	0.00714	0.01474
sky130_fd_sc_hs__nand3b_2	A_N	0.01088	0.01319	0.06008
	A_N	0.00710	0.00945	0.05649
	B	0.00075	0.00260	0.01562
	B	0.00980	0.01168	0.02509
	C	0.00175	0.00335	0.01677
	C	0.01293	0.01460	0.02834
sky130_fd_sc_hs__nand3b_4	A_N	0.01456	0.01854	0.09597
	A_N	0.00883	0.01282	0.09053
	B	0.00106	0.00254	0.02289
	B	0.01381	0.01536	0.03599
	C	0.00254	0.00397	0.02529
	C	0.02014	0.02125	0.04328

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	A_N	0.00519	0.00793	0.05152
	A_N	0.00859	0.01133	0.05474
	B	0.00664	0.00671	0.00997
	B	0.00213	0.00220	0.00515
	C	0.00771	0.00781	0.01100
	C	0.00231	0.00234	0.00557
sky130_fd_sc_hs__nand3b_2	A_N	0.00940	0.01243	0.05599
	A_N	0.01317	0.01590	0.05925
	B	0.01258	0.01275	0.01838
	B	0.00351	0.00365	0.00920
	C	0.01495	0.01509	0.02164
	C	0.00352	0.00363	0.01005
sky130_fd_sc_hs__nand3b_4	A_N	0.01303	0.01761	0.09242
	A_N	0.01875	0.02330	0.09785
	B	0.01879	0.01906	0.02644
	B	0.00592	0.00609	0.01356
	C	0.02484	0.02507	0.03550
	C	0.00674	0.00696	0.01743

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)	0.00611	0.00808	0.05338
	(B * !C * Y)	0.00228	0.00422	0.04953
	(!B * Y)	0.00609	0.00808	0.05335
	(!B * Y)	0.00228	0.00424	0.04952
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.00939	0.01102	0.05838
	(B * !C * Y)	0.00453	0.00614	0.05352
	(!B * Y)	0.00924	0.01090	0.05826
	(!B * Y)	0.00454	0.00616	0.05354
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.01116	0.01404	0.09154
	(B * !C * Y)	0.00433	0.00719	0.08469
	(!B * Y)	0.01096	0.01387	0.09155
	(!B * Y)	0.00428	0.00716	0.08484

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	0.00280	0.04822
	(B * !C * Y)	0.00414	0.00675	0.05215
	(!B * Y)	0.00022	0.00282	0.04823
	(!B * Y)	0.00404	0.00667	0.05207
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.00067	0.00289	0.04986
	(B * !C * Y)	0.00568	0.00793	0.05485
	(!B * Y)	0.00083	0.00306	0.05001
	(!B * Y)	0.00556	0.00780	0.05474
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.00150	0.00567	0.08356
	(B * !C * Y)	0.00871	0.01291	0.09070
	(!B * Y)	0.00172	0.00592	0.08404
	(!B * Y)	0.00845	0.01268	0.09078

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)	0.00181	0.00181	0.00181
	(A_N * C * Y)	-0.00210	-0.00210	-0.00210
	(A_N * !C * Y)	0.00111	0.00112	0.00112
	(A_N * !C * Y)	-0.00210	-0.00211	-0.00210
	(!A_N * !C * Y)	0.00063	0.00064	0.00064
	(!A_N * !C * Y)	-0.00245	-0.00246	-0.00245
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	0.00336	0.00340	0.00337
	(A_N * C * Y)	-0.00432	-0.00435	-0.00433
	(A_N * !C * Y)	0.00203	0.00203	0.00202
	(A_N * !C * Y)	-0.00436	-0.00436	-0.00434
	(!A_N * !C * Y)	0.00137	0.00137	0.00140
	(!A_N * !C * Y)	-0.00461	-0.00462	-0.00464
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	0.00680	0.00686	0.00681
	(A_N * C * Y)	-0.00421	-0.00423	-0.00420
	(A_N * !C * Y)	0.00369	0.00368	0.00368
	(A_N * !C * Y)	-0.00469	-0.00467	-0.00467
	(!A_N * !C * Y)	0.00255	0.00256	0.00263
	(!A_N * !C * Y)	-0.00504	-0.00506	-0.00505

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)	-0.00169	-0.00180	-0.00180
	(A_N * C * Y)	0.00219	0.00212	0.00212
	(A_N * !C * Y)	-0.00111	-0.00112	-0.00112
	(A_N * !C * Y)	0.00221	0.00223	0.00214
	(!A_N * !C * Y)	-0.00061	-0.00061	-0.00062
	(!A_N * !C * Y)	0.00250	0.00253	0.00247
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	-0.00311	-0.00337	-0.00337
	(A_N * C * Y)	0.00455	0.00438	0.00435
	(A_N * !C * Y)	-0.00203	-0.00203	-0.00202
	(A_N * !C * Y)	0.00452	0.00460	0.00440
	(!A_N * !C * Y)	-0.00130	-0.00132	-0.00135
	(!A_N * !C * Y)	0.00473	0.00479	0.00468
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	-0.00579	-0.00682	-0.00681
	(A_N * C * Y)	0.00519	0.00429	0.00424
	(A_N * !C * Y)	-0.00369	-0.00368	-0.00368
	(A_N * !C * Y)	0.00512	0.00516	0.00481
	(!A_N * !C * Y)	-0.00248	-0.00250	-0.00255
	(!A_N * !C * Y)	0.00519	0.00525	0.00510

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)	0.00161	0.00163	0.00161
	(A_N * B * Y)	-0.00208	-0.00208	-0.00207
	(A_N * !B * Y)	0.00158	0.00160	0.00159
	(A_N * !B * Y)	-0.00207	-0.00208	-0.00207
	(!A_N * !B * Y)	0.00153	0.00154	0.00153
	(!A_N * !B * Y)	-0.00213	-0.00215	-0.00214
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	0.00340	0.00341	0.00339
	(A_N * B * Y)	-0.00418	-0.00418	-0.00417
	(A_N * !B * Y)	0.00342	0.00345	0.00342
	(A_N * !B * Y)	-0.00418	-0.00420	-0.00417
	(!A_N * !B * Y)	0.00306	0.00308	0.00305
	(!A_N * !B * Y)	-0.00455	-0.00457	-0.00454
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	0.00651	0.00657	0.00653
	(A_N * B * Y)	-0.00426	-0.00428	-0.00427
	(A_N * !B * Y)	0.00660	0.00664	0.00659
	(A_N * !B * Y)	-0.00432	-0.00433	-0.00431
	(!A_N * !B * Y)	0.00611	0.00617	0.00609
	(!A_N * !B * Y)	-0.00482	-0.00484	-0.00480

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	(A_N * B * Y)	-0.00149	-0.00160	-0.00160
	(A_N * B * Y)	0.00208	0.00210	0.00208
	(A_N * !B * Y)	-0.00155	-0.00160	-0.00159
	(A_N * !B * Y)	0.00209	0.00211	0.00209
	(!A_N * !B * Y)	-0.00146	-0.00154	-0.00153
	(!A_N * !B * Y)	0.00215	0.00217	0.00214
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	-0.00325	-0.00341	-0.00339
	(A_N * B * Y)	0.00418	0.00423	0.00419
	(A_N * !B * Y)	-0.00331	-0.00344	-0.00342
	(A_N * !B * Y)	0.00418	0.00422	0.00419
	(!A_N * !B * Y)	-0.00292	-0.00307	-0.00305
	(!A_N * !B * Y)	0.00456	0.00459	0.00455
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	-0.00620	-0.00657	-0.00653
	(A_N * B * Y)	0.00432	0.00433	0.00428
	(A_N * !B * Y)	-0.00621	-0.00662	-0.00659
	(A_N * !B * Y)	0.00440	0.00437	0.00432
	(!A_N * !B * Y)	-0.00570	-0.00614	-0.00609
	(!A_N * !B * Y)	0.00493	0.00485	0.00480

SKY130_FD_SC_HS__NAND3x

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00286	0.00291	0.00282	1.17061
sky130_fd_sc_hs__nand3_2	0.00537	0.00581	0.00533	1.84438
sky130_fd_sc_hs__nand3_4	0.00796	0.00786	0.00790	2.24779

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand3_1	0.00000	0.03168	0.23065
sky130_fd_sc_hs__nand3_2	0.00000	0.06337	0.46129
sky130_fd_sc_hs__nand3_4	0.00000	0.06908	0.46129

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)	0.03452	0.76262	10.76330
	B->Y (FR)	0.04245	0.76867	10.74570
	C->Y (FR)	0.04789	0.77729	10.77610
sky130_fd_sc_hs__nand3_2	A->Y (FR)	0.03222	0.68654	10.71460
	B->Y (FR)	0.03799	0.63850	9.65572
	C->Y (FR)	0.04504	0.64954	9.70516
sky130_fd_sc_hs__nand3_4	A->Y (FR)	0.03431	0.66801	10.70080
	B->Y (FR)	0.05286	0.67915	10.60430
	C->Y (FR)	0.06404	0.68621	10.46680

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand3_1	A->Y (RF)	0.02903	0.58816	8.31882
	B->Y (RF)	0.03531	0.55986	7.86134
	C->Y (RF)	0.03799	0.51466	7.17383
sky130_fd_sc_hs__nand3_2	A->Y (RF)	0.02446	0.48041	7.64346
	B->Y (RF)	0.03319	0.45889	7.20709
	C->Y (RF)	0.03769	0.41410	6.48441
sky130_fd_sc_hs__nand3_4	A->Y (RF)	0.01942	0.36603	6.16967
	B->Y (RF)	0.02796	0.33145	5.46954
	C->Y (RF)	0.03121	0.27510	4.53055

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	-0.00047	0.00037	0.00796
	A	0.00444	0.00528	0.01305
	B	0.00027	0.00104	0.00842
	B	0.00624	0.00702	0.01456
	C	0.00068	0.00137	0.00889
	C	0.00777	0.00850	0.01615
sky130_fd_sc_hs__nand3_2	A	-0.00162	0.00059	0.01484
	A	0.00768	0.00953	0.02443
	B	0.00042	0.00232	0.01787
	B	0.01231	0.01419	0.02985
	C	0.00194	0.00388	0.02057
	C	0.01578	0.01778	0.03440
sky130_fd_sc_hs__nand3_4	A	-0.00327	-0.00035	0.02227
	A	0.01040	0.01338	0.03634
	B	0.00048	0.00302	0.02573
	B	0.01862	0.02121	0.04432
	C	0.00255	0.00489	0.02868
	C	0.02544	0.02782	0.05202

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	0.00587	0.00611	0.00950
	A	0.00098	0.00117	0.00496
	B	0.00704	0.00712	0.01040
	B	0.00103	0.00109	0.00406
	C	0.00821	0.00826	0.01150
	C	0.00097	0.00102	0.00426
sky130_fd_sc_hs__nand3_2	A	0.01004	0.01056	0.01881
	A	0.00076	0.00127	0.00890
	B	0.01261	0.01283	0.01942
	B	0.00059	0.00073	0.00739
	C	0.01486	0.01502	0.02344
	C	0.00067	0.00078	0.00848
sky130_fd_sc_hs__nand3_4	A	0.01507	0.01593	0.02892
	A	0.00141	0.00218	0.01269
	B	0.01993	0.02030	0.02940
	B	0.00154	0.00184	0.01101
	C	0.02480	0.02513	0.03757
	C	0.00131	0.00154	0.01197

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	0.00056	0.00055	0.00052
	(B * !C * Y)	-0.00244	-0.00245	-0.00252
	(!B * Y)	0.00057	0.00057	0.00055
	(!B * Y)	-0.00249	-0.00249	-0.00252
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	0.00109	0.00109	0.00099
	(B * !C * Y)	-0.00455	-0.00458	-0.00475
	(!B * Y)	0.00114	0.00114	0.00109
	(!B * Y)	-0.00466	-0.00468	-0.00476
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	0.00201	0.00203	0.00186
	(B * !C * Y)	-0.00541	-0.00547	-0.00581
	(!B * Y)	0.00211	0.00210	0.00200
	(!B * Y)	-0.00568	-0.00569	-0.00585

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	-0.00053	-0.00053	-0.00052
	(B * !C * Y)	0.00253	0.00257	0.00253
	(!B * Y)	-0.00054	-0.00055	-0.00054
	(!B * Y)	0.00253	0.00257	0.00253
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	-0.00098	-0.00101	-0.00099
	(B * !C * Y)	0.00474	0.00485	0.00477
	(!B * Y)	-0.00105	-0.00108	-0.00106
	(!B * Y)	0.00474	0.00484	0.00477
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	-0.00189	-0.00188	-0.00186
	(B * !C * Y)	0.00586	0.00587	0.00585
	(!B * Y)	-0.00197	-0.00196	-0.00195
	(!B * Y)	0.00587	0.00588	0.00585

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	0.00072	0.00073	0.00072
	(A * !C * Y)	-0.00215	-0.00216	-0.00214
	(!A * C * Y)	0.00160	0.00161	0.00160
	(!A * C * Y)	-0.00214	-0.00216	-0.00215
	(!A * !C * Y)	0.00084	0.00085	0.00084
	(!A * !C * Y)	-0.00215	-0.00216	-0.00215
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	0.00144	0.00145	0.00146
	(A * !C * Y)	-0.00449	-0.00451	-0.00448
	(!A * C * Y)	0.00317	0.00322	0.00319
	(!A * C * Y)	-0.00446	-0.00450	-0.00448
	(!A * !C * Y)	0.00177	0.00177	0.00177
	(!A * !C * Y)	-0.00452	-0.00452	-0.00452
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	0.00261	0.00263	0.00263
	(A * !C * Y)	-0.00443	-0.00445	-0.00440
	(!A * C * Y)	0.00625	0.00633	0.00627
	(!A * C * Y)	-0.00442	-0.00445	-0.00442
	(!A * !C * Y)	0.00312	0.00314	0.00313
	(!A * !C * Y)	-0.00447	-0.00449	-0.00448

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	-0.00069	-0.00070	-0.00070
	(A * !C * Y)	0.00220	0.00221	0.00216
	(!A * C * Y)	-0.00147	-0.00160	-0.00160
	(!A * C * Y)	0.00224	0.00216	0.00216
	(!A * !C * Y)	-0.00084	-0.00085	-0.00084
	(!A * !C * Y)	0.00224	0.00227	0.00218
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	-0.00136	-0.00138	-0.00141
	(A * !C * Y)	0.00459	0.00465	0.00453
	(!A * C * Y)	-0.00289	-0.00318	-0.00319
	(!A * C * Y)	0.00465	0.00453	0.00449
	(!A * !C * Y)	-0.00177	-0.00177	-0.00177
	(!A * !C * Y)	0.00471	0.00477	0.00457
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	-0.00248	-0.00249	-0.00254
	(A * !C * Y)	0.00466	0.00468	0.00449
	(!A * C * Y)	-0.00564	-0.00633	-0.00627
	(!A * C * Y)	0.00495	0.00448	0.00444
	(!A * !C * Y)	-0.00312	-0.00314	-0.00313
	(!A * !C * Y)	0.00483	0.00492	0.00457

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	0.00169	0.00171	0.00170
	(A * !B * Y)	-0.00216	-0.00218	-0.00216
	(!A * B * Y)	0.00170	0.00171	0.00169
	(!A * B * Y)	-0.00217	-0.00217	-0.00216
	(!A * !B * Y)	0.00169	0.00170	0.00169
	(!A * !B * Y)	-0.00216	-0.00217	-0.00216
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	0.00315	0.00317	0.00315
	(A * !B * Y)	-0.00425	-0.00426	-0.00425
	(!A * B * Y)	0.00312	0.00313	0.00311
	(!A * B * Y)	-0.00425	-0.00426	-0.00425
	(!A * !B * Y)	0.00315	0.00319	0.00315
	(!A * !B * Y)	-0.00425	-0.00428	-0.00425
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	0.00630	0.00637	0.00635
	(A * !B * Y)	-0.00446	-0.00449	-0.00448
	(!A * B * Y)	0.00619	0.00622	0.00618
	(!A * B * Y)	-0.00448	-0.00449	-0.00448
	(!A * !B * Y)	0.00630	0.00633	0.00634
	(!A * !B * Y)	-0.00446	-0.00447	-0.00448

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	-0.00165	-0.00170	-0.00170
	(A * !B * Y)	0.00217	0.00218	0.00217
	(!A * B * Y)	-0.00157	-0.00170	-0.00169
	(!A * B * Y)	0.00217	0.00219	0.00217
	(!A * !B * Y)	-0.00166	-0.00170	-0.00169
	(!A * !B * Y)	0.00218	0.00219	0.00217
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	-0.00298	-0.00315	-0.00315
	(A * !B * Y)	0.00425	0.00430	0.00426
	(!A * B * Y)	-0.00285	-0.00311	-0.00311
	(!A * B * Y)	0.00426	0.00431	0.00426
	(!A * !B * Y)	-0.00299	-0.00315	-0.00315
	(!A * !B * Y)	0.00425	0.00430	0.00426
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	-0.00605	-0.00637	-0.00635
	(A * !B * Y)	0.00447	0.00453	0.00449
	(!A * B * Y)	-0.00578	-0.00622	-0.00618
	(!A * B * Y)	0.00451	0.00454	0.00449
	(!A * !B * Y)	-0.00609	-0.00633	-0.00634
	(!A * !B * Y)	0.00447	0.00453	0.00449

SKY130_FD_SC_HS__NAND4BBx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00223	0.00217	0.00289	0.00292	1.08020
sky130_fd_sc_hs__nand4bb_2	0.00255	0.00252	0.00545	0.00539	1.77238
sky130_fd_sc_hs__nand4bb_4	0.00358	0.00369	0.01062	0.01066	2.83920

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4bb_1	0.00000	0.46919	0.88819
sky130_fd_sc_hs__nand4bb_2	0.00000	0.24948	0.63549
sky130_fd_sc_hs__nand4bb_4	0.00000	0.97999	1.77821

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)	0.06834	0.54541	6.23894
	B_N->Y (RR)	0.07769	0.55214	6.20146
	C->Y (FR)	0.05518	0.77440	10.43910
	D->Y (FR)	0.06189	0.78393	10.46290
sky130_fd_sc_hs__nand4bb_2	A_N->Y (RR)	0.06349	0.39910	4.79122
	B_N->Y (RR)	0.07260	0.39177	4.45456
	C->Y (FR)	0.04486	0.63391	9.28461
	D->Y (FR)	0.05137	0.64409	9.35702
sky130_fd_sc_hs__nand4bb_4	A_N->Y (RR)	0.07736	0.36053	4.19095
	B_N->Y (RR)	0.09037	0.37948	4.30160
	C->Y (FR)	0.04367	0.55449	8.67499
	D->Y (FR)	0.04948	0.56847	8.74315

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)	0.09048	0.70816	8.12756
	B_N->Y (FF)	0.10051	0.72225	8.11656
	C->Y (RF)	0.05935	0.62571	8.39215
	D->Y (RF)	0.06426	0.59359	7.84789
sky130_fd_sc_hs__nand4bb_2	A_N->Y (FF)	0.10215	0.68785	8.48379
	B_N->Y (FF)	0.12243	0.71414	8.49801
	C->Y (RF)	0.06121	0.53161	8.18369
	D->Y (RF)	0.06578	0.50341	7.65641
sky130_fd_sc_hs__nand4bb_4	A_N->Y (FF)	0.10340	0.59159	7.72567
	B_N->Y (FF)	0.11864	0.60988	7.70763
	C->Y (RF)	0.06442	0.43948	7.61415
	D->Y (RF)	0.06835	0.40237	6.95632

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	0.00797	0.00988	0.05523
	A_N	0.00501	0.00692	0.05262
	B_N	0.00868	0.01059	0.05564
	B_N	0.00581	0.00773	0.05305
	C	0.00125	0.00187	0.00874
	C	0.00616	0.00679	0.01385
	D	0.00186	0.00244	0.00969
	D	0.00772	0.00832	0.01576
sky130_fd_sc_hs__nand4bb_2	A_N	0.01129	0.01360	0.06059
	A_N	0.00810	0.01046	0.05742
	B_N	0.01389	0.01584	0.06256
	B_N	0.01080	0.01280	0.06003
	C	0.00205	0.00298	0.01749
	C	0.01100	0.01192	0.02665
	D	0.00363	0.00507	0.01898
	D	0.01480	0.01627	0.03026
sky130_fd_sc_hs__nand4bb_4	A_N	0.01884	0.02215	0.09944
	A_N	0.01471	0.01810	0.09629
	B_N	0.02296	0.02572	0.10373
	B_N	0.01867	0.02158	0.10014
	C	0.00331	0.00676	0.04350
	C	0.02101	0.02454	0.06176
	D	0.00584	0.00815	0.04675
	D	0.02801	0.03036	0.06972

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4bb_1	A_N	0.00650	0.00919	0.05467
	A_N	0.00946	0.01214	0.05752
	B_N	0.00808	0.01084	0.05615
	B_N	0.01093	0.01360	0.05890
	C	0.00955	0.00953	0.01274
	C	0.00464	0.00461	0.00755
	D	0.01075	0.01073	0.01439
	D	0.00478	0.00474	0.00809
sky130_fd_sc_hs__nand4bb_2	A_N	0.01109	0.01368	0.06079
	A_N	0.01426	0.01685	0.06385
	B_N	0.01398	0.01658	0.06317
	B_N	0.01706	0.01966	0.06624
	C	0.01689	0.01683	0.02335
	C	0.00788	0.00782	0.01417
	D	0.01927	0.01925	0.02677
	D	0.00785	0.00773	0.01465
sky130_fd_sc_hs__nand4bb_4	A_N	0.02240	0.02709	0.10711
	A_N	0.02653	0.03116	0.11065
	B_N	0.02724	0.03171	0.11198
	B_N	0.03153	0.03596	0.11549
	C	0.03320	0.03319	0.05270
	C	0.01538	0.01531	0.03450
	D	0.03802	0.03792	0.05968
	D	0.01536	0.01522	0.03700

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)	0.00576	0.00765	0.05250
	(B_N * Y)	0.00207	0.00394	0.04881
	(!B_N * C * !D * Y)	0.00629	0.00817	0.05302
	(!B_N * C * !D * Y)	0.00259	0.00445	0.04932
	(!B_N * !C * Y)	0.00629	0.00817	0.05302
	(!B_N * !C * Y)	0.00260	0.00446	0.04932
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.00866	0.01033	0.05704
	(B_N * Y)	0.00462	0.00627	0.05300
	(!B_N * C * !D * Y)	0.00931	0.01096	0.05766
	(!B_N * C * !D * Y)	0.00523	0.00687	0.05359
	(!B_N * !C * Y)	0.00930	0.01095	0.05765
	(!B_N * !C * Y)	0.00524	0.00687	0.05359
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.01423	0.01668	0.09393
	(B_N * Y)	0.00841	0.01085	0.08811
	(!B_N * C * !D * Y)	0.01510	0.01754	0.09480
	(!B_N * C * !D * Y)	0.00920	0.01163	0.08892
	(!B_N * !C * Y)	0.01509	0.01752	0.09479
	(!B_N * !C * Y)	0.00923	0.01166	0.08894

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)	0.00045	0.00306	0.04790
	(B_N * Y)	0.00414	0.00676	0.05159
	(!B_N * C * !D * Y)	-0.00006	0.00257	0.04737
	(!B_N * C * !D * Y)	0.00375	0.00637	0.05117
	(!B_N * !C * Y)	-0.00008	0.00255	0.04736
	(!B_N * !C * Y)	0.00365	0.00626	0.05109
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.00130	0.00352	0.04973
	(B_N * Y)	0.00532	0.00758	0.05378
	(!B_N * C * !D * Y)	0.00070	0.00293	0.04910
	(!B_N * C * !D * Y)	0.00498	0.00722	0.05335
	(!B_N * !C * Y)	0.00066	0.00289	0.04909
	(!B_N * !C * Y)	0.00476	0.00700	0.05320
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.00268	0.00658	0.08451
	(B_N * Y)	0.00848	0.01241	0.09033
	(!B_N * C * !D * Y)	0.00192	0.00582	0.08369
	(!B_N * C * !D * Y)	0.00826	0.01219	0.08996
	(!B_N * !C * Y)	0.00186	0.00576	0.08367
	(!B_N * !C * Y)	0.00781	0.01174	0.08962

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)	0.00570	0.00732	0.05181
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00211	0.00371	0.04822
	(!C * Y)	0.00579	0.00776	0.05223
	(!C * Y)	0.00210	0.00405	0.04852
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00842	0.00969	0.05569
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00447	0.00573	0.05175
	(!C * Y)	0.00862	0.01036	0.05647
	(!C * Y)	0.00447	0.00619	0.05231
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.01407	0.01613	0.09175
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00810	0.01016	0.08578
	(!C * Y)	0.01467	0.01702	0.09339
	(!C * Y)	0.00826	0.01061	0.08697

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)	0.00137	0.00391	0.04865
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00495	0.00751	0.05224
	(!C * Y)	0.00070	0.00327	0.04810
	(!C * Y)	0.00437	0.00696	0.05178
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00320	0.00537	0.05116
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00713	0.00933	0.05511
	(!C * Y)	0.00191	0.00410	0.05013
	(!C * Y)	0.00602	0.00824	0.05424
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00594	0.00987	0.08726
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.01190	0.01584	0.09323
	(!C * Y)	0.00335	0.00734	0.08507
	(!C * Y)	0.00968	0.01369	0.09140

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)**	0.00173	0.00176	0.00174
	(A_N * B_N * D * Y)	-0.00219	-0.00221	-0.00220
	(A_N * B_N * !D * Y)	0.00115	0.00116	0.00114
	(A_N * B_N * !D * Y)	-0.00221	-0.00223	-0.00221
	(A_N * !B_N * D * Y)	0.00151	0.00151	0.00150
	(A_N * !B_N * D * Y)	-0.00246	-0.00246	-0.00244
	(A_N * !B_N * !D * Y)	0.00084	0.00085	0.00084
	(A_N * !B_N * !D * Y)	-0.00264	-0.00267	-0.00265
	(!A_N * B_N * D * Y)	0.00173	0.00175	0.00174
	(!A_N * B_N * D * Y)	-0.00219	-0.00221	-0.00220
	(!A_N * B_N * !D * Y)	0.00109	0.00111	0.00110
	(!A_N * B_N * !D * Y)	-0.00221	-0.00223	-0.00221
	(!A_N * !B_N * !D * Y)	0.00068	0.00068	0.00068
	(!A_N * !B_N * !D * Y)	-0.00246	-0.00246	-0.00247
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	0.00328	0.00334	0.00330
	(A_N * B_N * D * Y)	-0.00430	-0.00435	-0.00432
	(A_N * B_N * !D * Y)	0.00204	0.00205	0.00203
	(A_N * B_N * !D * Y)	-0.00433	-0.00436	-0.00432
	(A_N * !B_N * D * Y)	0.00322	0.00325	0.00322
	(A_N * !B_N * D * Y)	-0.00444	-0.00446	-0.00442
	(A_N * !B_N * !D * Y)	0.00184	0.00185	0.00184
	(A_N * !B_N * !D * Y)	-0.00484	-0.00486	-0.00484
	(!A_N * B_N * D * Y)	0.00328	0.00333	0.00330
	(!A_N * B_N * D * Y)	-0.00430	-0.00434	-0.00432
	(!A_N * B_N * !D * Y)	0.00193	0.00196	0.00193
	(!A_N * B_N * !D * Y)	-0.00433	-0.00436	-0.00433
	(!A_N * !B_N * !D * Y)	0.00148	0.00147	0.00149
	(!A_N * !B_N * !D * Y)	-0.00444	-0.00443	-0.00445

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * D * Y)**	0.00654	0.00663	0.00656
	(A_N * B_N * D * Y)	-0.00844	-0.00851	-0.00845
	(A_N * B_N * !D * Y)	0.00399	0.00405	0.00400
	(A_N * B_N * !D * Y)	-0.00844	-0.00852	-0.00846
	(A_N * !B_N * D * Y)	0.00637	0.00641	0.00636
	(A_N * !B_N * D * Y)	-0.00877	-0.00878	-0.00874
	(A_N * !B_N * !D * Y)	0.00351	0.00354	0.00350
	(A_N * !B_N * !D * Y)	-0.00958	-0.00963	-0.00957
	(!A_N * B_N * D * Y)	0.00654	0.00659	0.00656
	(!A_N * B_N * D * Y)	-0.00845	-0.00849	-0.00846
	(!A_N * B_N * !D * Y)	0.00381	0.00381	0.00380
	(!A_N * B_N * !D * Y)	-0.00850	-0.00850	-0.00849
	(!A_N * !B_N * !D * Y)	0.00280	0.00285	0.00285
	(!A_N * !B_N * !D * Y)	-0.00878	-0.00887	-0.00883

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)**	-0.00169	-0.00172	-0.00173
	(A_N * B_N * D * Y)	0.00221	0.00222	0.00222
	(A_N * B_N * !D * Y)	-0.00115	-0.00116	-0.00114
	(A_N * B_N * !D * Y)	0.00223	0.00225	0.00223
	(A_N * !B_N * D * Y)	-0.00138	-0.00150	-0.00150
	(A_N * !B_N * D * Y)	0.00255	0.00248	0.00244
	(A_N * !B_N * !D * Y)	-0.00084	-0.00085	-0.00084
	(A_N * !B_N * !D * Y)	0.00268	0.00275	0.00271
	(!A_N * B_N * D * Y)	-0.00168	-0.00173	-0.00174
	(!A_N * B_N * D * Y)	0.00223	0.00221	0.00221
	(!A_N * B_N * !D * Y)	-0.00109	-0.00111	-0.00110
	(!A_N * B_N * !D * Y)	0.00231	0.00233	0.00225
	(!A_N * !B_N * !D * Y)	-0.00064	-0.00065	-0.00065
	(!A_N * !B_N * !D * Y)	0.00250	0.00253	0.00249
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	-0.00321	-0.00330	-0.00329
	(A_N * B_N * D * Y)	0.00432	0.00437	0.00434
	(A_N * B_N * !D * Y)	-0.00204	-0.00205	-0.00203
	(A_N * B_N * !D * Y)	0.00433	0.00439	0.00434
	(A_N * !B_N * D * Y)	-0.00296	-0.00320	-0.00322
	(A_N * !B_N * D * Y)	0.00467	0.00448	0.00442
	(A_N * !B_N * !D * Y)	-0.00184	-0.00185	-0.00184
	(A_N * !B_N * !D * Y)	0.00488	0.00501	0.00495
	(!A_N * B_N * D * Y)	-0.00318	-0.00330	-0.00330
	(!A_N * B_N * D * Y)	0.00436	0.00437	0.00434
	(!A_N * B_N * !D * Y)	-0.00193	-0.00196	-0.00193
	(!A_N * B_N * !D * Y)	0.00446	0.00452	0.00438
	(!A_N * !B_N * !D * Y)	-0.00139	-0.00141	-0.00140
	(!A_N * !B_N * !D * Y)	0.00452	0.00458	0.00452

sky130_fd_sc_hs__nand4bb_4	(A_N * B_N * D * Y)	-0.00640	-0.00659	-0.00656
	(A_N * B_N * D * Y)	0.00847	0.00857	0.00851
	(A_N * B_N * !D * Y)	-0.00399	-0.00405	-0.00400
	(A_N * B_N * !D * Y)	0.00848	0.00862	0.00852
	(A_N * !B_N * D * Y)	-0.00576	-0.00636	-0.00636
	(A_N * !B_N * D * Y)	0.00927	0.00882	0.00874
	(A_N * !B_N * !D * Y)	-0.00351	-0.00354	-0.00350
	(A_N * !B_N * !D * Y)	0.00970	0.00991	0.00983
	(!A_N * B_N * D * Y)	-0.00629	-0.00659	-0.00656
	(!A_N * B_N * D * Y)	0.00860	0.00856	0.00850
	(!A_N * B_N * !D * Y)	-0.00381	-0.00381	-0.00380
	(!A_N * B_N * !D * Y)	0.00883	0.00897	0.00863
	(!A_N * !B_N * !D * Y)	-0.00267	-0.00271	-0.00270
	(!A_N * !B_N * !D * Y)	0.00896	0.00908	0.00895

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)	0.00152	0.00153	0.00152
	(A_N * B_N * C * Y)	-0.00231	-0.00232	-0.00231
	(A_N * !C * Y)	0.00156	0.00157	0.00155
	(A_N * !C * Y)	-0.00232	-0.00232	-0.00231
	(A_N * !B_N * C * Y)	0.00152	0.00154	0.00152
	(A_N * !B_N * C * Y)	-0.00235	-0.00236	-0.00235
	(!A_N * B_N * C * Y)	0.00152	0.00153	0.00152
	(!A_N * B_N * C * Y)	-0.00231	-0.00232	-0.00232
	(!A_N * B_N * !C * Y)	0.00154	0.00155	0.00155
	(!A_N * B_N * !C * Y)	-0.00231	-0.00232	-0.00232
	(!A_N * !B_N * !C * Y)	0.00153	0.00154	0.00154
	(!A_N * !B_N * !C * Y)	-0.00231	-0.00232	-0.00232

sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	0.00320	0.00324	0.00320
	(A_N * B_N * C * Y)	-0.00423	-0.00424	-0.00422
	(A_N * !C * Y)	0.00324	0.00325	0.00324
	(A_N * !C * Y)	-0.00422	-0.00422	-0.00422
	(A_N * !B_N * C * Y)	0.00316	0.00319	0.00316
	(A_N * !B_N * C * Y)	-0.00431	-0.00434	-0.00430
	(!A_N * B_N * C * Y)	0.00321	0.00324	0.00320
	(!A_N * B_N * C * Y)	-0.00423	-0.00425	-0.00422
	(!A_N * B_N * !C * Y)	0.00322	0.00327	0.00323
	(!A_N * B_N * !C * Y)	-0.00421	-0.00425	-0.00422
	(!A_N * !B_N * !C * Y)	0.00322	0.00326	0.00323
	(!A_N * !B_N * !C * Y)	-0.00421	-0.00424	-0.00422
sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	0.00639	0.00642	0.00643
	(A_N * B_N * C * Y)	-0.00836	-0.00839	-0.00840
	(A_N * !C * Y)	0.00639	0.00650	0.00644
	(A_N * !C * Y)	-0.00835	-0.00844	-0.00840
	(A_N * !B_N * C * Y)	0.00629	0.00635	0.00628
	(A_N * !B_N * C * Y)	-0.00862	-0.00866	-0.00858
	(!A_N * B_N * C * Y)	0.00638	0.00641	0.00637
	(!A_N * B_N * C * Y)	-0.00843	-0.00843	-0.00840
	(!A_N * B_N * !C * Y)	0.00643	0.00649	0.00643
	(!A_N * B_N * !C * Y)	-0.00842	-0.00845	-0.00840
	(!A_N * !B_N * !C * Y)	0.00641	0.00646	0.00645
	(!A_N * !B_N * !C * Y)	-0.00838	-0.00842	-0.00841

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)**	-0.00143	-0.00153	-0.00152
	(A_N * B_N * C * Y)	0.00233	0.00236	0.00233
	(A_N * !C * Y)	-0.00147	-0.00154	-0.00154
	(A_N * !C * Y)	0.00232	0.00235	0.00233
	(A_N * !B_N * C * Y)	-0.00138	-0.00152	-0.00152
	(A_N * !B_N * C * Y)	0.00241	0.00239	0.00236
	(!A_N * B_N * C * Y)	-0.00143	-0.00153	-0.00152
	(!A_N * B_N * C * Y)	0.00233	0.00236	0.00233
	(!A_N * B_N * !C * Y)	-0.00148	-0.00154	-0.00155
	(!A_N * B_N * !C * Y)	0.00232	0.00235	0.00233
	(!A_N * !B_N * !C * Y)	-0.00147	-0.00154	-0.00154
	(!A_N * !B_N * !C * Y)	0.00233	0.00234	0.00233
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	-0.00298	-0.00321	-0.00320
	(A_N * B_N * C * Y)	0.00423	0.00429	0.00424
	(A_N * !C * Y)	-0.00308	-0.00324	-0.00324
	(A_N * !C * Y)	0.00422	0.00427	0.00424
	(A_N * !B_N * C * Y)	-0.00292	-0.00319	-0.00316
	(A_N * !B_N * C * Y)	0.00445	0.00437	0.00430
	(!A_N * B_N * C * Y)	-0.00298	-0.00321	-0.00320
	(!A_N * B_N * C * Y)	0.00423	0.00428	0.00423
	(!A_N * B_N * !C * Y)	-0.00308	-0.00324	-0.00323
	(!A_N * B_N * !C * Y)	0.00422	0.00427	0.00423
	(!A_N * !B_N * !C * Y)	-0.00305	-0.00324	-0.00323
	(!A_N * !B_N * !C * Y)	0.00426	0.00427	0.00423

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	-0.00596	-0.00640	-0.00643
	(A_N * B_N * C * Y)	0.00847	0.00855	0.00845
	(A_N * !C * Y)	-0.00614	-0.00645	-0.00644
	(A_N * !C * Y)	0.00842	0.00852	0.00845
	(A_N * !B_N * C * Y)	-0.00582	-0.00635	-0.00628
	(A_N * !B_N * C * Y)	0.00885	0.00871	0.00858
	(!A_N * B_N * C * Y)	-0.00596	-0.00640	-0.00637
	(!A_N * B_N * C * Y)	0.00847	0.00854	0.00844
	(!A_N * B_N * !C * Y)	-0.00615	-0.00646	-0.00643
	(!A_N * B_N * !C * Y)	0.00842	0.00852	0.00844
	(!A_N * !B_N * !C * Y)	-0.00608	-0.00646	-0.00645
	(!A_N * !B_N * !C * Y)	0.00850	0.00851	0.00844

SKY130_FD_SC_HS__NAND4Bx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00220	0.00284	0.00284	0.00275	1.14577
sky130_fd_sc_hs__nand4b_2	0.00275	0.00561	0.00544	0.00545	1.77475
sky130_fd_sc_hs__nand4b_4	0.00384	0.00795	0.00811	0.00778	2.24152

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4b_1	0.00000	0.24526	0.45107
sky130_fd_sc_hs__nand4b_2	0.00000	0.14606	0.62527
sky130_fd_sc_hs__nand4b_4	0.00000	0.49419	0.91700

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)	0.06143	0.50818	5.88498
	B->Y (FR)	0.04435	0.77813	10.80510
	C->Y (FR)	0.05163	0.78575	10.80850
	D->Y (FR)	0.05457	0.77998	10.64330
sky130_fd_sc_hs__nand4b_2	A_N->Y (RR)	0.06212	0.37570	4.35710
	B->Y (FR)	0.03954	0.62223	9.26753
	C->Y (FR)	0.04687	0.64093	9.41130
	D->Y (FR)	0.05241	0.64450	9.36662
sky130_fd_sc_hs__nand4b_4	A_N->Y (RR)	0.07676	0.45329	5.98006
	B->Y (FR)	0.05388	0.67417	10.43590
	C->Y (FR)	0.06809	0.68733	10.45460
	D->Y (FR)	0.08174	0.71191	10.60160

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)	0.08672	0.71838	8.36291
	B->Y (RF)	0.04551	0.66323	9.25129
	C->Y (RF)	0.05206	0.62919	8.68571
	D->Y (RF)	0.05485	0.59569	8.15308
sky130_fd_sc_hs__nand4b_2	A_N->Y (FF)	0.09566	0.67106	8.38010
	B->Y (RF)	0.05082	0.58483	9.04546
	C->Y (RF)	0.05739	0.52541	8.12179
	D->Y (RF)	0.06245	0.49801	7.60987
sky130_fd_sc_hs__nand4b_4	A_N->Y (FF)	0.07504	0.49273	6.18051
	B->Y (RF)	0.04276	0.42868	6.99405
	C->Y (RF)	0.05021	0.37867	6.11766
	D->Y (RF)	0.05430	0.34280	5.45431

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	0.00773	0.00972	0.05428
	A_N	0.00460	0.00659	0.05127
	B	0.00058	0.00128	0.00795
	B	0.00533	0.00605	0.01282
	C	0.00125	0.00188	0.00856
	C	0.00685	0.00749	0.01428
	D	0.00171	0.00231	0.00920
	D	0.00827	0.00890	0.01596
sky130_fd_sc_hs__nand4b_2	A_N	0.01133	0.01345	0.05353
	A_N	0.00827	0.01040	0.05175
	B	0.00049	0.00207	0.01584
	B	0.01027	0.01133	0.02586
	C	0.00193	0.00291	0.01725
	C	0.01362	0.01457	0.02901
	D	0.00342	0.00490	0.01889
	D	0.01740	0.01890	0.03295
sky130_fd_sc_hs__nand4b_4	A_N	0.01449	0.01813	0.09130
	A_N	0.00998	0.01365	0.08700
	B	0.00056	0.00233	0.02221
	B	0.01435	0.01618	0.03647
	C	0.00295	0.00465	0.02459
	C	0.02124	0.02253	0.04328
	D	0.00556	0.00676	0.02777
	D	0.02791	0.02887	0.05055

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4b_1	A_N	0.00592	0.00858	0.05100
	A_N	0.00905	0.01171	0.05393
	B	0.00717	0.00721	0.00999
	B	0.00241	0.00243	0.00511
	C	0.00828	0.00829	0.01116
	C	0.00260	0.00260	0.00541
	D	0.00932	0.00934	0.01247
	D	0.00258	0.00256	0.00563
sky130_fd_sc_hs__nand4b_2	A_N	0.01077	0.01325	0.06258
	A_N	0.01383	0.01631	0.06303
	B	0.01442	0.01448	0.02014
	B	0.00459	0.00457	0.01026
	C	0.01666	0.01663	0.02320
	C	0.00476	0.00471	0.01106
	D	0.01912	0.01911	0.02604
	D	0.00470	0.00460	0.01156
sky130_fd_sc_hs__nand4b_4	A_N	0.01642	0.02079	0.10029
	A_N	0.02093	0.02527	0.10439
	B	0.02248	0.02271	0.03068
	B	0.00860	0.00872	0.01654
	C	0.02734	0.02740	0.03607
	C	0.00868	0.00869	0.01743
	D	0.03194	0.03212	0.04312
	D	0.00874	0.00873	0.01841

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)	0.00619	0.00810	0.05295
	(B * C * !D * Y)	0.00236	0.00423	0.04910
	(B * !C * Y)	0.00618	0.00811	0.05293
	(B * !C * Y)	0.00236	0.00425	0.04909
	(!B * Y)	0.00616	0.00808	0.05290
	(!B * Y)	0.00236	0.00425	0.04909
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.00933	0.01100	0.05874
	(B * C * !D * Y)	0.00455	0.00620	0.05397
	(B * !C * Y)	0.00932	0.01099	0.05873
	(B * !C * Y)	0.00455	0.00620	0.05397
	(!B * Y)	0.00928	0.01095	0.05869
	(!B * Y)	0.00456	0.00620	0.05397
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.01106	0.01405	0.09316
	(B * C * !D * Y)	0.00435	0.00735	0.08646
	(B * !C * Y)	0.01104	0.01402	0.09315
	(B * !C * Y)	0.00435	0.00736	0.08646
	(!B * Y)	0.01096	0.01397	0.09306
	(!B * Y)	0.00437	0.00735	0.08647

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)	0.00043	0.00297	0.04801
	(B * C * !D * Y)	0.00442	0.00698	0.05197
	(B * !C * Y)	0.00043	0.00297	0.04799
	(B * !C * Y)	0.00436	0.00692	0.05190
	(!B * Y)	0.00045	0.00299	0.04802
	(!B * Y)	0.00426	0.00682	0.05184
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.00054	0.00276	0.05009
	(B * C * !D * Y)	0.00559	0.00784	0.05508
	(B * !C * Y)	0.00051	0.00272	0.05008
	(B * !C * Y)	0.00543	0.00768	0.05498
	(!B * Y)	0.00049	0.00272	0.05012
	(!B * Y)	0.00522	0.00747	0.05485
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.00131	0.00561	0.08503
	(B * C * !D * Y)	0.00861	0.01292	0.09216
	(B * !C * Y)	0.00124	0.00554	0.08501
	(B * !C * Y)	0.00831	0.01262	0.09198
	(!B * Y)	0.00125	0.00556	0.08511
	(!B * Y)	0.00790	0.01221	0.09170

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)**	0.00179	0.00179	0.00179
	(A_N * C * D * Y)	-0.00212	-0.00211	-0.00211
	(A_N * C * !D * Y)	0.00112	0.00112	0.00111
	(A_N * C * !D * Y)	-0.00212	-0.00212	-0.00211
	(A_N * !C * Y)	0.00113	0.00115	0.00113
	(A_N * !C * Y)	-0.00211	-0.00213	-0.00212
	(!A_N * C * !D * Y)	0.00062	0.00063	0.00063
	(!A_N * C * !D * Y)	-0.00241	-0.00242	-0.00243
	(!A_N * !C * Y)	0.00066	0.00066	0.00066
	(!A_N * !C * Y)	-0.00244	-0.00243	-0.00244
sky130_fd_sc_hs__nand4b_2	**(A_N * C * D * Y)**	0.00328	0.00331	0.00329
	(A_N * C * D * Y)	-0.00446	-0.00449	-0.00447
	(A_N * C * !D * Y)	0.00199	0.00202	0.00200
	(A_N * C * !D * Y)	-0.00449	-0.00453	-0.00450
	(A_N * !C * Y)	0.00203	0.00204	0.00203
	(A_N * !C * Y)	-0.00452	-0.00453	-0.00451
	(!A_N * C * !D * Y)	0.00132	0.00133	0.00134
	(!A_N * C * !D * Y)	-0.00470	-0.00472	-0.00477
	(!A_N * !C * Y)	0.00140	0.00141	0.00141
	(!A_N * !C * Y)	-0.00476	-0.00478	-0.00479
sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	0.00629	0.00636	0.00631
	(A_N * C * D * Y)	-0.00463	-0.00466	-0.00463
	(A_N * C * !D * Y)	0.00359	0.00363	0.00360
	(A_N * C * !D * Y)	-0.00467	-0.00471	-0.00469
	(A_N * !C * Y)	0.00365	0.00365	0.00364
	(A_N * !C * Y)	-0.00472	-0.00471	-0.00471
	(!A_N * C * !D * Y)	0.00245	0.00248	0.00251
	(!A_N * C * !D * Y)	-0.00492	-0.00495	-0.00508
	(!A_N * !C * Y)	0.00260	0.00262	0.00263
	(!A_N * !C * Y)	-0.00506	-0.00508	-0.00512

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)	-0.00165	-0.00179	-0.00179
	(A_N * C * D * Y)	0.00225	0.00215	0.00213
	(A_N * C * !D * Y)	-0.00112	-0.00112	-0.00111
	(A_N * C * !D * Y)	0.00221	0.00220	0.00213
	(A_N * !C * Y)	-0.00113	-0.00115	-0.00113
	(A_N * !C * Y)	0.00223	0.00225	0.00215
	(!A_N * C * !D * Y)	-0.00062	-0.00062	-0.00063
	(!A_N * C * !D * Y)	0.00248	0.00250	0.00246
	(!A_N * !C * Y)	-0.00063	-0.00064	-0.00064
	(!A_N * !C * Y)	0.00248	0.00252	0.00246
sky130_fd_sc_hs__nand4b_2	(A_N * C * D * Y)	-0.00294	-0.00331	-0.00329
	(A_N * C * D * Y)	0.00480	0.00453	0.00448
	(A_N * C * !D * Y)	-0.00199	-0.00202	-0.00200
	(A_N * C * !D * Y)	0.00466	0.00463	0.00451
	(A_N * !C * Y)	-0.00203	-0.00204	-0.00203
	(A_N * !C * Y)	0.00470	0.00477	0.00457
	(!A_N * C * !D * Y)	-0.00128	-0.00131	-0.00132
	(!A_N * C * !D * Y)	0.00486	0.00496	0.00483
	(!A_N * !C * Y)	-0.00132	-0.00135	-0.00136
	(!A_N * !C * Y)	0.00486	0.00496	0.00484

sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	-0.00554	-0.00635	-0.00631
	(A_N * C * D * Y)	0.00534	0.00471	0.00466
	(A_N * C * !D * Y)	-0.00359	-0.00363	-0.00360
	(A_N * C * !D * Y)	0.00508	0.00490	0.00470
	(A_N * !C * Y)	-0.00365	-0.00365	-0.00364
	(A_N * !C * Y)	0.00508	0.00516	0.00482
	(!A_N * C * !D * Y)	-0.00240	-0.00244	-0.00247
	(!A_N * C * !D * Y)	0.00526	0.00532	0.00518
	(!A_N * !C * Y)	-0.00247	-0.00252	-0.00254
	(!A_N * !C * Y)	0.00526	0.00536	0.00518

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)**	0.00156	0.00157	0.00156
	(A_N * B * D * Y)	-0.00211	-0.00211	-0.00211
	(A_N * B * !D * Y)	0.00088	0.00089	0.00089
	(A_N * B * !D * Y)	-0.00210	-0.00211	-0.00211
	(A_N * !B * D * Y)	0.00157	0.00157	0.00158
	(A_N * !B * D * Y)	-0.00210	-0.00211	-0.00211
	(A_N * !B * !D * Y)	0.00087	0.00088	0.00087
	(A_N * !B * !D * Y)	-0.00210	-0.00211	-0.00211
	(!A_N * B * !D * Y)	0.00065	0.00065	0.00065
	(!A_N * B * !D * Y)	-0.00217	-0.00217	-0.00216
	(!A_N * !B * D * Y)	0.00151	0.00153	0.00152
	(!A_N * !B * D * Y)	-0.00216	-0.00218	-0.00217
	(!A_N * !B * !D * Y)	0.00076	0.00076	0.00076
	(!A_N * !B * !D * Y)	-0.00217	-0.00218	-0.00218

sky130_fd_sc_hs__nand4b_2	**(A_N * B * D * Y)**	0.00318	0.00321	0.00318
	(A_N * B * D * Y)	-0.00429	-0.00432	-0.00429
	(A_N * B * !D * Y)	0.00180	0.00181	0.00180
	(A_N * B * !D * Y)	-0.00432	-0.00434	-0.00432
	(A_N * !B * D * Y)	0.00320	0.00324	0.00322
	(A_N * !B * D * Y)	-0.00428	-0.00431	-0.00429
	(A_N * !B * !D * Y)	0.00183	0.00184	0.00182
	(A_N * !B * !D * Y)	-0.00430	-0.00433	-0.00430
	(!A_N * B * !D * Y)	0.00143	0.00146	0.00146
	(!A_N * B * !D * Y)	-0.00426	-0.00430	-0.00425
	(!A_N * !B * D * Y)	0.00320	0.00318	0.00320
	(!A_N * !B * D * Y)	-0.00430	-0.00428	-0.00429
	(!A_N * !B * !D * Y)	0.00172	0.00175	0.00173
	(!A_N * !B * !D * Y)	-0.00429	-0.00434	-0.00431
sky130_fd_sc_hs__nand4b_4	**(A_N * B * D * Y)**	0.00639	0.00643	0.00641
	(A_N * B * D * Y)	-0.00461	-0.00462	-0.00461
	(A_N * B * !D * Y)	0.00348	0.00351	0.00348
	(A_N * B * !D * Y)	-0.00464	-0.00467	-0.00465
	(A_N * !B * D * Y)	0.00646	0.00653	0.00648
	(A_N * !B * D * Y)	-0.00460	-0.00463	-0.00460
	(A_N * !B * !D * Y)	0.00348	0.00350	0.00346
	(A_N * !B * !D * Y)	-0.00462	-0.00464	-0.00461
	(!A_N * B * !D * Y)	0.00278	0.00281	0.00283
	(!A_N * B * !D * Y)	-0.00454	-0.00457	-0.00453
	(!A_N * !B * D * Y)	0.00645	0.00649	0.00647
	(!A_N * !B * D * Y)	-0.00460	-0.00462	-0.00461
	(!A_N * !B * !D * Y)	0.00331	0.00333	0.00329
	(!A_N * !B * !D * Y)	-0.00464	-0.00467	-0.00463

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)	-0.00143	-0.00156	-0.00156
	(A_N * B * D * Y)	0.00212	0.00213	0.00212
	(A_N * B * !D * Y)	-0.00088	-0.00089	-0.00089
	(A_N * B * !D * Y)	0.00212	0.00216	0.00212
	(A_N * !B * D * Y)	-0.00151	-0.00157	-0.00158
	(A_N * !B * D * Y)	0.00211	0.00212	0.00212
	(A_N * !B * !D * Y)	-0.00087	-0.00088	-0.00087
	(A_N * !B * !D * Y)	0.00212	0.00215	0.00212
	(!A_N * B * !D * Y)	-0.00062	-0.00063	-0.00062
	(!A_N * B * !D * Y)	0.00221	0.00223	0.00219
	(!A_N * !B * D * Y)	-0.00143	-0.00152	-0.00152
	(!A_N * !B * D * Y)	0.00219	0.00218	0.00218
	(!A_N * !B * !D * Y)	-0.00076	-0.00076	-0.00076
	(!A_N * !B * !D * Y)	0.00226	0.00228	0.00221
sky130_fd_sc_hs__nand4b_2	(A_N * B * D * Y)	-0.00290	-0.00316	-0.00318
	(A_N * B * D * Y)	0.00433	0.00433	0.00431
	(A_N * B * !D * Y)	-0.00180	-0.00181	-0.00180
	(A_N * B * !D * Y)	0.00432	0.00439	0.00433
	(A_N * !B * D * Y)	-0.00306	-0.00321	-0.00321
	(A_N * !B * D * Y)	0.00432	0.00434	0.00431
	(A_N * !B * !D * Y)	-0.00183	-0.00184	-0.00182
	(A_N * !B * !D * Y)	0.00430	0.00437	0.00432
	(!A_N * B * !D * Y)	-0.00136	-0.00139	-0.00138
	(!A_N * B * !D * Y)	0.00434	0.00441	0.00433
	(!A_N * !B * D * Y)	-0.00302	-0.00318	-0.00320
	(!A_N * !B * D * Y)	0.00437	0.00434	0.00431
	(!A_N * !B * !D * Y)	-0.00172	-0.00175	-0.00173
	(!A_N * !B * !D * Y)	0.00445	0.00451	0.00436

sky130_fd_sc_hs__nand4b_4	(A_N * B * D * Y)	-0.00576	-0.00643	-0.00641
	(A_N * B * D * Y)	0.00471	0.00466	0.00464
	(A_N * B * !D * Y)	-0.00348	-0.00351	-0.00348
	(A_N * B * !D * Y)	0.00469	0.00478	0.00467
	(A_N * !B * D * Y)	-0.00617	-0.00650	-0.00648
	(A_N * !B * D * Y)	0.00465	0.00466	0.00463
	(A_N * !B * !D * Y)	-0.00348	-0.00350	-0.00346
	(A_N * !B * !D * Y)	0.00464	0.00469	0.00464
	(!A_N * B * !D * Y)	-0.00266	-0.00268	-0.00268
	(!A_N * B * !D * Y)	0.00476	0.00480	0.00468
	(!A_N * !B * D * Y)	-0.00604	-0.00649	-0.00647
	(!A_N * !B * D * Y)	0.00479	0.00466	0.00462
	(!A_N * !B * !D * Y)	-0.00331	-0.00333	-0.00329
	(!A_N * !B * !D * Y)	0.00503	0.00505	0.00475

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)	0.00156	0.00157	0.00156
	(A_N * B * C * Y)	-0.00207	-0.00207	-0.00206
	(A_N * !C * Y)	0.00158	0.00160	0.00159
	(A_N * !C * Y)	-0.00206	-0.00207	-0.00206
	(A_N * !B * C * Y)	0.00155	0.00156	0.00155
	(A_N * !B * C * Y)	-0.00207	-0.00207	-0.00206
	(!A_N * B * !C * Y)	0.00152	0.00153	0.00152
	(!A_N * B * !C * Y)	-0.00212	-0.00214	-0.00213
	(!A_N * !B * C * Y)	0.00149	0.00149	0.00149
	(!A_N * !B * C * Y)	-0.00213	-0.00213	-0.00213
	(!A_N * !B * !C * Y)	0.00151	0.00153	0.00152
	(!A_N * !B * !C * Y)	-0.00212	-0.00214	-0.00213

sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	0.00319	0.00318	0.00319
	(A_N * B * C * Y)	-0.00427	-0.00426	-0.00426
	(A_N * !C * Y)	0.00319	0.00325	0.00321
	(A_N * !C * Y)	-0.00425	-0.00429	-0.00426
	(A_N * !B * C * Y)	0.00317	0.00323	0.00319
	(A_N * !B * C * Y)	-0.00424	-0.00429	-0.00426
	(!A_N * B * !C * Y)	0.00319	0.00324	0.00321
	(!A_N * B * !C * Y)	-0.00425	-0.00429	-0.00426
	(!A_N * !B * C * Y)	0.00320	0.00321	0.00319
	(!A_N * !B * C * Y)	-0.00427	-0.00425	-0.00426
	(!A_N * !B * !C * Y)	0.00319	0.00325	0.00320
	(!A_N * !B * !C * Y)	-0.00425	-0.00430	-0.00427
sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	0.00620	0.00626	0.00620
	(A_N * B * C * Y)	-0.00426	-0.00428	-0.00425
	(A_N * !C * Y)	0.00635	0.00639	0.00636
	(A_N * !C * Y)	-0.00425	-0.00426	-0.00425
	(A_N * !B * C * Y)	0.00617	0.00623	0.00619
	(A_N * !B * C * Y)	-0.00424	-0.00426	-0.00425
	(!A_N * B * !C * Y)	0.00635	0.00639	0.00635
	(!A_N * B * !C * Y)	-0.00426	-0.00427	-0.00426
	(!A_N * !B * C * Y)	0.00616	0.00621	0.00619
	(!A_N * !B * C * Y)	-0.00425	-0.00426	-0.00426
	(!A_N * !B * !C * Y)	0.00635	0.00638	0.00635
	(!A_N * !B * !C * Y)	-0.00426	-0.00427	-0.00426

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)**	-0.00144	-0.00157	-0.00156
	(A_N * B * C * Y)	0.00207	0.00210	0.00208
	(A_N * !C * Y)	-0.00152	-0.00159	-0.00159
	(A_N * !C * Y)	0.00206	0.00209	0.00208
	(A_N * !B * C * Y)	-0.00145	-0.00156	-0.00155
	(A_N * !B * C * Y)	0.00207	0.00210	0.00208
	(!A_N * B * !C * Y)	-0.00146	-0.00153	-0.00152
	(!A_N * B * !C * Y)	0.00212	0.00215	0.00213
	(!A_N * !B * C * Y)	-0.00139	-0.00149	-0.00149
	(!A_N * !B * C * Y)	0.00213	0.00216	0.00213
	(!A_N * !B * !C * Y)	-0.00147	-0.00153	-0.00152
	(!A_N * !B * !C * Y)	0.00212	0.00215	0.00213
sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	-0.00290	-0.00317	-0.00319
	(A_N * B * C * Y)	0.00429	0.00433	0.00428
	(A_N * !C * Y)	-0.00307	-0.00324	-0.00321
	(A_N * !C * Y)	0.00426	0.00431	0.00428
	(A_N * !B * C * Y)	-0.00292	-0.00317	-0.00319
	(A_N * !B * C * Y)	0.00428	0.00433	0.00428
	(!A_N * B * !C * Y)	-0.00305	-0.00324	-0.00321
	(!A_N * B * !C * Y)	0.00426	0.00431	0.00428
	(!A_N * !B * C * Y)	-0.00291	-0.00314	-0.00319
	(!A_N * !B * C * Y)	0.00429	0.00425	0.00428
	(!A_N * !B * !C * Y)	-0.00307	-0.00324	-0.00320
	(!A_N * !B * !C * Y)	0.00426	0.00431	0.00428

sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	-0.00572	-0.00623	-0.00620
	(A_N * B * C * Y)	0.00427	0.00430	0.00428
	(A_N * !C * Y)	-0.00609	-0.00637	-0.00636
	(A_N * !C * Y)	0.00428	0.00428	0.00428
	(A_N * !B * C * Y)	-0.00572	-0.00623	-0.00619
	(A_N * !B * C * Y)	0.00426	0.00430	0.00428
	(!A_N * B * !C * Y)	-0.00605	-0.00637	-0.00635
	(!A_N * B * !C * Y)	0.00427	0.00427	0.00427
	(!A_N * !B * C * Y)	-0.00572	-0.00621	-0.00619
	(!A_N * !B * C * Y)	0.00426	0.00429	0.00427
	(!A_N * !B * !C * Y)	-0.00610	-0.00637	-0.00635
	(!A_N * !B * !C * Y)	0.00427	0.00427	0.00427

SKY130_FD_SC_HS__NAND4x

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00278	0.00293	0.00288	0.00288	1.14118
sky130_fd_sc_hs__nand4_2	0.00542	0.00547	0.00552	0.00535	1.73625
sky130_fd_sc_hs__nand4_4	0.00809	0.00790	0.00791	0.00811	2.17123

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4_1	0.00000	0.02132	0.30753
sky130_fd_sc_hs__nand4_2	0.00000	0.04264	0.61505
sky130_fd_sc_hs__nand4_4	0.00000	0.04684	0.61506

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)	0.03658	0.75577	10.56660
	B->Y (FR)	0.04691	0.77932	10.78930
	C->Y (FR)	0.05367	0.78726	10.79820
	D->Y (FR)	0.05698	0.78118	10.61830
sky130_fd_sc_hs__nand4_2	A->Y (FR)	0.03089	0.61619	9.26232
	B->Y (FR)	0.04019	0.62160	9.18524
	C->Y (FR)	0.04664	0.63193	9.21500
	D->Y (FR)	0.05228	0.64359	9.28198
sky130_fd_sc_hs__nand4_4	A->Y (FR)	0.03878	0.65403	10.25550
	B->Y (FR)	0.05694	0.66731	10.21560
	C->Y (FR)	0.07369	0.69818	10.49950
	D->Y (FR)	0.08634	0.71401	10.51920

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand4_1	A->Y (RF)	0.03562	0.66978	9.43316
	B->Y (RF)	0.04560	0.65397	9.08847
	C->Y (RF)	0.05136	0.61833	8.50765
	D->Y (RF)	0.05471	0.58452	7.96503
sky130_fd_sc_hs__nand4_2	A->Y (RF)	0.03372	0.59467	9.29591
	B->Y (RF)	0.04774	0.58118	8.94784
	C->Y (RF)	0.05463	0.52208	8.03871
	D->Y (RF)	0.05911	0.49295	7.49920
sky130_fd_sc_hs__nand4_4	A->Y (RF)	0.02590	0.44383	7.33077
	B->Y (RF)	0.03934	0.42276	6.81915
	C->Y (RF)	0.04687	0.37155	5.93645
	D->Y (RF)	0.05107	0.33519	5.27144

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	-0.00023	0.00051	0.00720
	A	0.00505	0.00580	0.01271
	B	0.00060	0.00123	0.00786
	B	0.00694	0.00760	0.01436
	C	0.00129	0.00188	0.00871
	C	0.00861	0.00922	0.01617
	D	0.00172	0.00228	0.00931
	D	0.01014	0.01072	0.01793
sky130_fd_sc_hs__nand4_2	A	-0.00144	0.00067	0.01435
	A	0.00835	0.01031	0.02438
	B	0.00071	0.00176	0.01628
	B	0.01283	0.01366	0.02867
	C	0.00181	0.00272	0.01764
	C	0.01627	0.01715	0.03234
	D	0.00342	0.00433	0.01914
	D	0.01996	0.02090	0.03586
sky130_fd_sc_hs__nand4_4	A	-0.00287	-0.00017	0.02030
	A	0.01152	0.01423	0.03514
	B	0.00087	0.00283	0.02350
	B	0.01962	0.02164	0.04259
	C	0.00324	0.00503	0.02600
	C	0.02639	0.02816	0.04951
	D	0.00587	0.00762	0.02866
	D	0.03379	0.03525	0.05693

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	0.00640	0.00656	0.00998
	A	0.00113	0.00127	0.00464
	B	0.00760	0.00763	0.01043
	B	0.00121	0.00122	0.00391
	C	0.00867	0.00866	0.01165
	C	0.00122	0.00121	0.00412
	D	0.00982	0.00983	0.01321
	D	0.00118	0.00115	0.00434
sky130_fd_sc_hs__nand4_2	A	0.01167	0.01207	0.01927
	A	0.00189	0.00223	0.00926
	B	0.01418	0.01423	0.01993
	B	0.00197	0.00193	0.00761
	C	0.01670	0.01668	0.02338
	C	0.00195	0.00187	0.00827
	D	0.01898	0.01898	0.02634
	D	0.00190	0.00178	0.00874
sky130_fd_sc_hs__nand4_4	A	0.01814	0.01870	0.02840
	A	0.00382	0.00436	0.01394
	B	0.02293	0.02307	0.03112
	B	0.00393	0.00402	0.01204
	C	0.02770	0.02775	0.03698
	C	0.00400	0.00398	0.01273
	D	0.03264	0.03263	0.04267
	D	0.00374	0.00371	0.01341

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)	0.00063	0.00063	0.00057
	(B * C * !D * Y)	-0.00232	-0.00233	-0.00245
	(B * !C * Y)	0.00062	0.00062	0.00058
	(B * !C * Y)	-0.00237	-0.00238	-0.00245
	(!B * Y)	0.00062	0.00062	0.00060
	(!B * Y)	-0.00243	-0.00242	-0.00246
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	0.00113	0.00114	0.00099
	(B * C * !D * Y)	-0.00457	-0.00462	-0.00489
	(B * !C * Y)	0.00107	0.00108	0.00098
	(B * !C * Y)	-0.00471	-0.00475	-0.00492
	(!B * Y)	0.00112	0.00112	0.00106
	(!B * Y)	-0.00483	-0.00486	-0.00494
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	0.00221	0.00221	0.00195
	(B * C * !D * Y)	-0.00526	-0.00530	-0.00583
	(B * !C * Y)	0.00210	0.00209	0.00194
	(B * !C * Y)	-0.00553	-0.00555	-0.00589
	(!B * Y)	0.00217	0.00216	0.00207
	(!B * Y)	-0.00576	-0.00578	-0.00592

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)	-0.00058	-0.00058	-0.00057
	(B * C * !D * Y)	0.00247	0.00250	0.00246
	(B * !C * Y)	-0.00058	-0.00058	-0.00057
	(B * !C * Y)	0.00247	0.00250	0.00246
	(!B * Y)	-0.00058	-0.00059	-0.00058
	(!B * Y)	0.00246	0.00251	0.00246
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	-0.00098	-0.00100	-0.00099
	(B * C * !D * Y)	0.00493	0.00503	0.00495
	(B * !C * Y)	-0.00099	-0.00101	-0.00098
	(B * !C * Y)	0.00493	0.00503	0.00495
	(!B * Y)	-0.00103	-0.00105	-0.00103
	(!B * Y)	0.00493	0.00503	0.00495
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	-0.00192	-0.00195	-0.00195
	(B * C * !D * Y)	0.00588	0.00595	0.00592
	(B * !C * Y)	-0.00197	-0.00196	-0.00194
	(B * !C * Y)	0.00594	0.00594	0.00592
	(!B * Y)	-0.00204	-0.00202	-0.00201
	(!B * Y)	0.00595	0.00595	0.00593

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)**	0.00064	0.00064	0.00065
	(A * C * !D * Y)	-0.00223	-0.00223	-0.00222
	(A * !C * Y)	0.00068	0.00068	0.00068
	(A * !C * Y)	-0.00223	-0.00223	-0.00222
	(!A * C * D * Y)	0.00152	0.00154	0.00153
	(!A * C * D * Y)	-0.00221	-0.00223	-0.00222
	(!A * C * !D * Y)	0.00082	0.00082	0.00081
	(!A * C * !D * Y)	-0.00224	-0.00224	-0.00224
	(!A * !C * Y)	0.00082	0.00083	0.00082
	(!A * !C * Y)	-0.00223	-0.00226	-0.00224
sky130_fd_sc_hs__nand4_2	**(A * C * !D * Y)**	0.00135	0.00136	0.00138
	(A * C * !D * Y)	-0.00427	-0.00429	-0.00425
	(A * !C * Y)	0.00138	0.00137	0.00139
	(A * !C * Y)	-0.00427	-0.00426	-0.00425
	(!A * C * D * Y)	0.00322	0.00325	0.00323
	(!A * C * D * Y)	-0.00427	-0.00429	-0.00427
	(!A * C * !D * Y)	0.00174	0.00174	0.00173
	(!A * C * !D * Y)	-0.00430	-0.00429	-0.00429
	(!A * !C * Y)	0.00166	0.00166	0.00166
	(!A * !C * Y)	-0.00430	-0.00430	-0.00429
sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	0.00259	0.00261	0.00264
	(A * C * !D * Y)	-0.00446	-0.00448	-0.00444
	(A * !C * Y)	0.00266	0.00267	0.00269
	(A * !C * Y)	-0.00447	-0.00447	-0.00444
	(!A * C * D * Y)	0.00631	0.00636	0.00632
	(!A * C * D * Y)	-0.00447	-0.00448	-0.00446
	(!A * C * !D * Y)	0.00330	0.00332	0.00330
	(!A * C * !D * Y)	-0.00449	-0.00451	-0.00450
	(!A * !C * Y)	0.00318	0.00320	0.00317
	(!A * !C * Y)	-0.00452	-0.00455	-0.00451

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)	-0.00064	-0.00064	-0.00065
	(A * C * !D * Y)	0.00228	0.00230	0.00224
	(A * !C * Y)	-0.00065	-0.00065	-0.00066
	(A * !C * Y)	0.00228	0.00230	0.00224
	(!A * C * D * Y)	-0.00138	-0.00154	-0.00153
	(!A * C * D * Y)	0.00235	0.00225	0.00223
	(!A * C * !D * Y)	-0.00082	-0.00082	-0.00081
	(!A * C * !D * Y)	0.00232	0.00231	0.00224
	(!A * !C * Y)	-0.00082	-0.00083	-0.00082
	(!A * !C * Y)	0.00235	0.00236	0.00227
sky130_fd_sc_hs__nand4_2	(A * C * !D * Y)	-0.00127	-0.00129	-0.00130
	(A * C * !D * Y)	0.00437	0.00443	0.00431
	(A * !C * Y)	-0.00129	-0.00131	-0.00134
	(A * !C * Y)	0.00437	0.00443	0.00431
	(!A * C * D * Y)	-0.00278	-0.00325	-0.00323
	(!A * C * D * Y)	0.00460	0.00432	0.00428
	(!A * C * !D * Y)	-0.00174	-0.00174	-0.00173
	(!A * C * !D * Y)	0.00444	0.00439	0.00429
	(!A * !C * Y)	-0.00166	-0.00166	-0.00166
	(!A * !C * Y)	0.00447	0.00455	0.00435

sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	-0.00247	-0.00250	-0.00253
	(A * C * !D * Y)	0.00466	0.00471	0.00452
	(A * !C * Y)	-0.00252	-0.00255	-0.00260
	(A * !C * Y)	0.00466	0.00471	0.00452
	(!A * C * D * Y)	-0.00545	-0.00636	-0.00632
	(!A * C * D * Y)	0.00519	0.00453	0.00448
	(!A * C * !D * Y)	-0.00330	-0.00332	-0.00330
	(!A * C * !D * Y)	0.00489	0.00471	0.00450
	(!A * !C * Y)	-0.00318	-0.00320	-0.00317
	(!A * !C * Y)	0.00488	0.00495	0.00460

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)**	0.00066	0.00066	0.00066
	(A * B * !D * Y)	-0.00218	-0.00219	-0.00217
	(A * !B * D * Y)	0.00151	0.00154	0.00152
	(A * !B * D * Y)	-0.00218	-0.00220	-0.00219
	(A * !B * !D * Y)	0.00077	0.00078	0.00078
	(A * !B * !D * Y)	-0.00220	-0.00221	-0.00220
	(!A * B * D * Y)	0.00149	0.00149	0.00148
	(!A * B * D * Y)	-0.00219	-0.00219	-0.00219
	(!A * B * !D * Y)	0.00078	0.00078	0.00078
	(!A * B * !D * Y)	-0.00220	-0.00220	-0.00220
	(!A * !B * D * Y)	0.00151	0.00154	0.00152
	(!A * !B * D * Y)	-0.00218	-0.00220	-0.00219
	(!A * !B * !D * Y)	0.00081	0.00082	0.00082
	(!A * !B * !D * Y)	-0.00220	-0.00221	-0.00220

sky130_fd_sc_hs__nand4_2	**(A * B * !D * Y)**	0.00145	0.00148	0.00146
	(A * B * !D * Y)	-0.00417	-0.00422	-0.00417
	(A * !B * D * Y)	0.00318	0.00321	0.00320
	(A * !B * D * Y)	-0.00426	-0.00428	-0.00426
	(A * !B * !D * Y)	0.00170	0.00171	0.00170
	(A * !B * !D * Y)	-0.00426	-0.00428	-0.00427
	(!A * B * D * Y)	0.00316	0.00320	0.00317
	(!A * B * D * Y)	-0.00426	-0.00429	-0.00426
	(!A * B * !D * Y)	0.00174	0.00175	0.00174
	(!A * B * !D * Y)	-0.00428	-0.00430	-0.00428
	(!A * !B * D * Y)	0.00319	0.00324	0.00321
	(!A * !B * D * Y)	-0.00425	-0.00429	-0.00426
	(!A * !B * !D * Y)	0.00178	0.00178	0.00178
	(!A * !B * !D * Y)	-0.00426	-0.00428	-0.00427
sky130_fd_sc_hs__nand4_4	**(A * B * !D * Y)**	0.00269	0.00273	0.00270
	(A * B * !D * Y)	-0.00424	-0.00429	-0.00422
	(A * !B * D * Y)	0.00623	0.00627	0.00625
	(A * !B * D * Y)	-0.00440	-0.00441	-0.00441
	(A * !B * !D * Y)	0.00315	0.00318	0.00317
	(A * !B * !D * Y)	-0.00439	-0.00441	-0.00441
	(!A * B * D * Y)	0.00612	0.00613	0.00614
	(!A * B * D * Y)	-0.00440	-0.00440	-0.00440
	(!A * B * !D * Y)	0.00320	0.00321	0.00319
	(!A * B * !D * Y)	-0.00444	-0.00444	-0.00443
	(!A * !B * D * Y)	0.00623	0.00631	0.00625
	(!A * !B * D * Y)	-0.00440	-0.00443	-0.00441
	(!A * !B * !D * Y)	0.00330	0.00332	0.00331
	(!A * !B * !D * Y)	-0.00440	-0.00442	-0.00441

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	(A * B * !D * Y)	-0.00063	-0.00063	-0.00063
	(A * B * !D * Y)	0.00222	0.00224	0.00221
	(A * !B * D * Y)	-0.00144	-0.00153	-0.00152
	(A * !B * D * Y)	0.00219	0.00222	0.00220
	(A * !B * !D * Y)	-0.00077	-0.00078	-0.00078
	(A * !B * !D * Y)	0.00227	0.00230	0.00223
	(!A * B * D * Y)	-0.00134	-0.00149	-0.00148
	(!A * B * D * Y)	0.00220	0.00219	0.00220
	(!A * B * !D * Y)	-0.00078	-0.00078	-0.00078
	(!A * B * !D * Y)	0.00220	0.00224	0.00220
	(!A * !B * D * Y)	-0.00145	-0.00153	-0.00152
	(!A * !B * D * Y)	0.00219	0.00222	0.00220
	(!A * !B * !D * Y)	-0.00081	-0.00082	-0.00082
	(!A * !B * !D * Y)	0.00220	0.00223	0.00221
sky130_fd_sc_hs__nand4_2	(A * B * !D * Y)	-0.00135	-0.00135	-0.00135
	(A * B * !D * Y)	0.00438	0.00441	0.00431
	(A * !B * D * Y)	-0.00301	-0.00321	-0.00320
	(A * !B * D * Y)	0.00426	0.00433	0.00428
	(A * !B * !D * Y)	-0.00170	-0.00171	-0.00170
	(A * !B * !D * Y)	0.00445	0.00447	0.00432
	(!A * B * D * Y)	-0.00282	-0.00317	-0.00317
	(!A * B * D * Y)	0.00432	0.00430	0.00428
	(!A * B * !D * Y)	-0.00174	-0.00175	-0.00174
	(!A * B * !D * Y)	0.00428	0.00435	0.00428
	(!A * !B * D * Y)	-0.00304	-0.00322	-0.00321
	(!A * !B * D * Y)	0.00426	0.00433	0.00428
	(!A * !B * !D * Y)	-0.00178	-0.00178	-0.00178
	(!A * !B * !D * Y)	0.00426	0.00433	0.00428

sky130_fd_sc_hs__nand4_4	(A * B * !D * Y)	-0.00250	-0.00253	-0.00252
	(A * B * !D * Y)	0.00456	0.00461	0.00448
	(A * !B * D * Y)	-0.00581	-0.00627	-0.00625
	(A * !B * D * Y)	0.00444	0.00445	0.00442
	(A * !B * !D * Y)	-0.00315	-0.00318	-0.00317
	(A * !B * !D * Y)	0.00480	0.00481	0.00453
	(!A * B * D * Y)	-0.00537	-0.00613	-0.00614
	(!A * B * D * Y)	0.00451	0.00444	0.00442
	(!A * B * !D * Y)	-0.00320	-0.00321	-0.00319
	(!A * B * !D * Y)	0.00445	0.00453	0.00443
	(!A * !B * D * Y)	-0.00590	-0.00629	-0.00625
	(!A * !B * D * Y)	0.00443	0.00445	0.00442
	(!A * !B * !D * Y)	-0.00330	-0.00332	-0.00331
	(!A * !B * !D * Y)	0.00442	0.00447	0.00442

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)	0.00153	0.00154	0.00153
	(A * B * !C * Y)	-0.00227	-0.00229	-0.00228
	(A * !B * C * Y)	0.00150	0.00150	0.00150
	(A * !B * C * Y)	-0.00227	-0.00228	-0.00228
	(A * !B * !C * Y)	0.00152	0.00154	0.00153
	(A * !B * !C * Y)	-0.00227	-0.00228	-0.00228
	(!A * B * C * Y)	0.00149	0.00151	0.00150
	(!A * B * C * Y)	-0.00227	-0.00229	-0.00228
	(!A * !C * Y)	0.00152	0.00154	0.00153
	(!A * !C * Y)	-0.00227	-0.00228	-0.00228
	(!A * !B * C * Y)	0.00150	0.00151	0.00150
	(!A * !B * C * Y)	-0.00227	-0.00229	-0.00228

sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	0.00323	0.00327	0.00324
	(A * B * !C * Y)	-0.00420	-0.00424	-0.00421
	(A * !B * C * Y)	0.00316	0.00317	0.00316
	(A * !B * C * Y)	-0.00422	-0.00423	-0.00421
	(A * !B * !C * Y)	0.00323	0.00328	0.00325
	(A * !B * !C * Y)	-0.00420	-0.00424	-0.00421
	(!A * B * C * Y)	0.00318	0.00321	0.00319
	(!A * B * C * Y)	-0.00421	-0.00423	-0.00421
	(!A * !C * Y)	0.00325	0.00326	0.00326
	(!A * !C * Y)	-0.00421	-0.00422	-0.00421
	(!A * !B * C * Y)	0.00317	0.00320	0.00316
	(!A * !B * C * Y)	-0.00422	-0.00424	-0.00421
sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	0.00647	0.00651	0.00649
	(A * B * !C * Y)	-0.00448	-0.00450	-0.00449
	(A * !B * C * Y)	0.00630	0.00635	0.00630
	(A * !B * C * Y)	-0.00449	-0.00451	-0.00449
	(A * !B * !C * Y)	0.00647	0.00657	0.00649
	(A * !B * !C * Y)	-0.00448	-0.00452	-0.00449
	(!A * B * C * Y)	0.00621	0.00627	0.00622
	(!A * B * C * Y)	-0.00449	-0.00452	-0.00449
	(!A * !C * Y)	0.00647	0.00656	0.00649
	(!A * !C * Y)	-0.00448	-0.00452	-0.00449
	(!A * !B * C * Y)	0.00647	0.00649	0.00646
	(!A * !B * C * Y)	-0.00450	-0.00450	-0.00449

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)**	-0.00148	-0.00154	-0.00153
	(A * B * !C * Y)	0.00229	0.00231	0.00228
	(A * !B * C * Y)	-0.00140	-0.00150	-0.00150
	(A * !B * C * Y)	0.00227	0.00231	0.00228
	(A * !B * !C * Y)	-0.00149	-0.00154	-0.00153
	(A * !B * !C * Y)	0.00229	0.00231	0.00228
	(!A * B * C * Y)	-0.00137	-0.00151	-0.00150
	(!A * B * C * Y)	0.00227	0.00231	0.00228
	(!A * !C * Y)	-0.00148	-0.00154	-0.00153
	(!A * !C * Y)	0.00229	0.00231	0.00228
	(!A * !B * C * Y)	-0.00140	-0.00151	-0.00150
	(!A * !B * C * Y)	0.00227	0.00231	0.00228
sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	-0.00306	-0.00326	-0.00324
	(A * B * !C * Y)	0.00421	0.00426	0.00422
	(A * !B * C * Y)	-0.00289	-0.00317	-0.00316
	(A * !B * C * Y)	0.00422	0.00427	0.00423
	(A * !B * !C * Y)	-0.00309	-0.00326	-0.00325
	(A * !B * !C * Y)	0.00421	0.00426	0.00422
	(!A * B * C * Y)	-0.00285	-0.00318	-0.00319
	(!A * B * C * Y)	0.00422	0.00427	0.00422
	(!A * !C * Y)	-0.00309	-0.00326	-0.00326
	(!A * !C * Y)	0.00421	0.00426	0.00422
	(!A * !B * C * Y)	-0.00290	-0.00318	-0.00316
	(!A * !B * C * Y)	0.00422	0.00427	0.00423

sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	-0.00613	-0.00651	-0.00649
	(A * B * !C * Y)	0.00449	0.00454	0.00450
	(A * !B * C * Y)	-0.00582	-0.00635	-0.00630
	(A * !B * C * Y)	0.00450	0.00456	0.00450
	(A * !B * !C * Y)	-0.00620	-0.00656	-0.00649
	(A * !B * !C * Y)	0.00448	0.00454	0.00450
	(!A * B * C * Y)	-0.00573	-0.00627	-0.00622
	(!A * B * C * Y)	0.00451	0.00456	0.00450
	(!A * !C * Y)	-0.00620	-0.00656	-0.00649
	(!A * !C * Y)	0.00448	0.00454	0.00450
	(!A * !B * C * Y)	-0.00583	-0.00640	-0.00646
	(!A * !B * C * Y)	0.00450	0.00456	0.00450

SKY130_FD_SC_HS__NOR2Bx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00277	0.00224	0.61493
sky130_fd_sc_hs__nor2b_2	0.00546	0.00260	1.08691
sky130_fd_sc_hs__nor2b_4	0.00903	0.00374	2.14094

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor2b_1	0.00000	0.25556	0.47568
sky130_fd_sc_hs__nor2b_2	0.00000	0.16667	0.26069
sky130_fd_sc_hs__nor2b_4	0.00000	0.56643	1.01542

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)	0.06426	0.89190	10.47280
	B_N->Y (RR)	0.07451	0.67165	6.34745
sky130_fd_sc_hs__nor2b_2	A->Y (FR)	0.06256	0.76406	10.26280
	B_N->Y (RR)	0.06738	0.54779	6.11853
sky130_fd_sc_hs__nor2b_4	A->Y (FR)	0.04898	0.63609	10.08180
	B_N->Y (RR)	0.06706	0.47154	6.45506

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2b_1	A->Y (RF)	0.01860	0.31522	3.63298
	B_N->Y (FF)	0.06485	0.38840	3.16487
sky130_fd_sc_hs__nor2b_2	A->Y (RF)	0.01668	0.25674	3.41103
	B_N->Y (FF)	0.07128	0.39232	3.06299
sky130_fd_sc_hs__nor2b_4	A->Y (RF)	0.02442	0.35097	5.54082
	B_N->Y (FF)	0.07438	0.42015	4.18747

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.00096	0.00107	0.00791
	A	0.00537	0.00547	0.01239
	B_N	0.00766	0.00954	0.05147
	B_N	0.00409	0.00596	0.04805
sky130_fd_sc_hs__nor2b_2	A	0.00200	0.00223	0.01655
	A	0.01084	0.01110	0.02545
	B_N	0.01110	0.01317	0.06142
	B_N	0.00756	0.00963	0.05831
sky130_fd_sc_hs__nor2b_4	A	0.00361	0.00403	0.01917
	A	0.01812	0.01856	0.03376
	B_N	0.01680	0.01987	0.09563
	B_N	0.01156	0.01466	0.09091

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.00526	0.00554	0.01186
	A	0.00087	0.00111	0.00744
	B_N	0.00406	0.00676	0.05118
	B_N	0.00763	0.01032	0.05475
sky130_fd_sc_hs__nor2b_2	A	0.01028	0.01092	0.02391
	A	0.00152	0.00208	0.01509
	B_N	0.00720	0.01002	0.05310
	B_N	0.01072	0.01352	0.05658
sky130_fd_sc_hs__nor2b_4	A	0.01608	0.01674	0.03374
	A	0.00168	0.00221	0.01760
	B_N	0.01035	0.01531	0.09451
	B_N	0.01560	0.02047	0.09916

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	0.00195	0.00170	0.00166
	(!B_N * !Y)	-0.00206	-0.00236	-0.00235
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	0.00404	0.00346	0.00339
	(!B_N * !Y)	-0.00364	-0.00432	-0.00433
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	0.00536	0.00423	0.00412
	(!B_N * !Y)	-0.00742	-0.00864	-0.00865

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	-0.00165	-0.00166	-0.00165
	(!B_N * !Y)	0.00234	0.00237	0.00236
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	-0.00337	-0.00340	-0.00337
	(!B_N * !Y)	0.00431	0.00437	0.00433
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	-0.00410	-0.00412	-0.00409
	(!B_N * !Y)	0.00862	0.00871	0.00867

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00472	0.00665	0.05165
	(A * !Y)	0.00082	0.00274	0.04775
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00615	0.00775	0.05575
	(A * !Y)	0.00177	0.00337	0.05137
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.00947	0.01215	0.09077
	(A * !Y)	0.00293	0.00558	0.08422

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00151	0.00424	0.04959
	(A * !Y)	0.00539	0.00814	0.05348
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00324	0.00572	0.05379
	(A * !Y)	0.00759	0.01010	0.05816
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.00384	0.00842	0.08802
	(A * !Y)	0.01035	0.01495	0.09455

SKY130_FD_SC_HS__NOR2x

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00278	0.00286	0.60974
sky130_fd_sc_hs__nor2_2	0.00442	0.00421	1.09428
sky130_fd_sc_hs__nor2_4	0.00845	0.00841	2.07742
sky130_fd_sc_hs__nor2_8	0.01650	0.01659	3.75364

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor2_1	0.00000	0.03163	0.07688
sky130_fd_sc_hs__nor2_2	0.00000	0.05954	0.15376
sky130_fd_sc_hs__nor2_4	0.00000	0.11908	0.30753
sky130_fd_sc_hs__nor2_8	0.00000	0.23816	0.61505

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)	0.06243	0.88785	10.41600
	B->Y (FR)	0.04912	0.89256	10.68550
sky130_fd_sc_hs__nor2_2	A->Y (FR)	0.05106	0.75549	10.27930
	B->Y (FR)	0.03137	0.75409	10.54340
sky130_fd_sc_hs__nor2_4	A->Y (FR)	0.05063	0.64873	10.19770
	B->Y (FR)	0.03084	0.65783	10.57490
sky130_fd_sc_hs__nor2_8	A->Y (FR)	0.05053	0.55466	9.93683
	B->Y (FR)	0.03597	0.58810	10.52490

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2_1	A->Y (RF)	0.01886	0.31404	3.60699
	B->Y (RF)	0.01647	0.30655	3.59147
sky130_fd_sc_hs__nor2_2	A->Y (RF)	0.02488	0.40541	5.44357
	B->Y (RF)	0.01853	0.39102	5.43140
sky130_fd_sc_hs__nor2_4	A->Y (RF)	0.02430	0.34183	5.32644
	B->Y (RF)	0.01779	0.32219	5.25382
sky130_fd_sc_hs__nor2_8	A->Y (RF)	0.02294	0.28033	5.03290
	B->Y (RF)	0.02475	0.27004	5.02006

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	-0.00059	-0.00048	0.00643
	A	0.00532	0.00542	0.01241
	B	-0.00076	-0.00002	0.01161
	B	0.00408	0.00483	0.01653
sky130_fd_sc_hs__nor2_2	A	-0.00106	-0.00093	0.00700
	A	0.00878	0.00894	0.01690
	B	-0.00089	0.00026	0.01445
	B	0.00616	0.00732	0.02164
sky130_fd_sc_hs__nor2_4	A	-0.00011	0.00018	0.01638
	A	0.01902	0.01931	0.03578
	B	-0.00074	0.00187	0.03013
	B	0.01352	0.01615	0.04465
sky130_fd_sc_hs__nor2_8	A	-0.00108	-0.00010	0.03334
	A	0.03653	0.03798	0.07110
	B	-0.00258	0.00382	0.06152
	B	0.02559	0.03213	0.09021

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	0.00666	0.00691	0.01343
	A	0.00079	0.00100	0.00738
	B	0.00467	0.00503	0.01129
	B	-0.00017	0.00019	0.00630
sky130_fd_sc_hs__nor2_2	A	0.01131	0.01144	0.02002
	A	0.00156	0.00171	0.00960
	B	0.00544	0.00618	0.01455
	B	-0.00159	-0.00086	0.00683
sky130_fd_sc_hs__nor2_4	A	0.02151	0.02200	0.03882
	A	0.00259	0.00302	0.01893
	B	0.01084	0.01227	0.02802
	B	-0.00339	-0.00203	0.01379
sky130_fd_sc_hs__nor2_8	A	0.04095	0.04269	0.07524
	A	0.00373	0.00533	0.03813
	B	0.02145	0.02490	0.05986
	B	-0.00677	-0.00345	0.02911

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	0.00208	0.00182	0.00179
	(B * !Y)	-0.00177	-0.00207	-0.00208
sky130_fd_sc_hs__nor2_2	(B * !Y)	0.00290	0.00229	0.00223
	(B * !Y)	-0.00342	-0.00414	-0.00415
sky130_fd_sc_hs__nor2_4	(B * !Y)	0.00504	0.00374	0.00361
	(B * !Y)	-0.00684	-0.00833	-0.00837
sky130_fd_sc_hs__nor2_8	(B * !Y)	0.00963	0.00717	0.00697
	(B * !Y)	-0.01377	-0.01667	-0.01664

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	-0.00177	-0.00178	-0.00177
	(B * !Y)	0.00207	0.00207	0.00208
sky130_fd_sc_hs__nor2_2	(B * !Y)	-0.00223	-0.00223	-0.00221
	(B * !Y)	0.00415	0.00418	0.00415
sky130_fd_sc_hs__nor2_4	(B * !Y)	-0.00359	-0.00360	-0.00357
	(B * !Y)	0.00833	0.00839	0.00837
sky130_fd_sc_hs__nor2_8	(B * !Y)	-0.00694	-0.00695	-0.00689
	(B * !Y)	0.01659	0.01667	0.01664

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(A * !Y)	0.00202	0.00203	0.00201
	(A * !Y)	-0.00098	-0.00098	-0.00097
sky130_fd_sc_hs__nor2_2	(A * !Y)	0.00220	0.00223	0.00221
	(A * !Y)	-0.00197	-0.00199	-0.00197
sky130_fd_sc_hs__nor2_4	(A * !Y)	0.00444	0.00450	0.00446
	(A * !Y)	-0.00389	-0.00394	-0.00390
sky130_fd_sc_hs__nor2_8	(A * !Y)	0.00876	0.00891	0.00878
	(A * !Y)	-0.00772	-0.00785	-0.00773

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(A * !Y)	-0.00195	-0.00196	-0.00200
	(A * !Y)	0.00103	0.00103	0.00099
sky130_fd_sc_hs__nor2_2	(A * !Y)	-0.00202	-0.00205	-0.00219
	(A * !Y)	0.00213	0.00215	0.00202
sky130_fd_sc_hs__nor2_4	(A * !Y)	-0.00411	-0.00416	-0.00443
	(A * !Y)	0.00420	0.00422	0.00398
sky130_fd_sc_hs__nor2_8	(A * !Y)	-0.00814	-0.00825	-0.00873
	(A * !Y)	0.00823	0.00832	0.00787

SKY130_FD_SC_HS__NOR3Bx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00273	0.00285	0.00218	0.40053
sky130_fd_sc_hs__nor3b_2	0.00535	0.00534	0.00260	0.72961
sky130_fd_sc_hs__nor3b_4	0.01074	0.01068	0.00367	1.25474

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor3b_1	0.00000	0.24509	0.47568
sky130_fd_sc_hs__nor3b_2	0.00000	0.14572	0.26069
sky130_fd_sc_hs__nor3b_4	0.00000	0.53196	1.01542

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)	0.12050	1.00814	9.90648
	B->Y (FR)	0.10897	1.03125	10.48100
	C_N->Y (RR)	0.10010	0.79830	6.35257
sky130_fd_sc_hs__nor3b_2	A->Y (FR)	0.11525	0.86008	9.80020
	B->Y (FR)	0.10187	0.89064	10.54970
	C_N->Y (RR)	0.08400	0.65584	6.35475
sky130_fd_sc_hs__nor3b_4	A->Y (FR)	0.11891	0.73903	9.49215
	B->Y (FR)	0.10587	0.77213	10.29960
	C_N->Y (RR)	0.10382	0.60986	6.64279

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3b_1	A->Y (RF)	0.01975	0.27528	2.61185
	B->Y (RF)	0.02122	0.27703	2.69104
	C_N->Y (FF)	0.06706	0.36135	2.64615
sky130_fd_sc_hs__nor3b_2	A->Y (RF)	0.01636	0.22081	2.41014
	B->Y (RF)	0.01703	0.21139	2.37562
	C_N->Y (FF)	0.07272	0.37004	2.59792
sky130_fd_sc_hs__nor3b_4	A->Y (RF)	0.01610	0.18348	2.26679
	B->Y (RF)	0.01669	0.17420	2.23694
	C_N->Y (FF)	0.07991	0.35658	2.39598

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.00191	0.00181	0.00936
	A	0.00744	0.00737	0.01490
	B	0.00171	0.00170	0.00908
	B	0.00639	0.00639	0.01379
	C_N	0.00820	0.01001	0.05192
	C_N	0.00514	0.00696	0.04896
sky130_fd_sc_hs__nor3b_2	A	0.00294	0.00281	0.01794
	A	0.01458	0.01445	0.02951
	B	0.00292	0.00297	0.01760
	B	0.01215	0.01221	0.02692
	C_N	0.01193	0.01393	0.06243
	C_N	0.00905	0.01104	0.05970
sky130_fd_sc_hs__nor3b_4	A	0.00547	0.00524	0.03603
	A	0.02885	0.02862	0.05954
	B	0.00567	0.00573	0.03530
	B	0.02434	0.02447	0.05403
	C_N	0.02151	0.02438	0.10180
	C_N	0.01806	0.02094	0.09848

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.00747	0.00761	0.01512
	A	0.00200	0.00212	0.00966
	B	0.00570	0.00601	0.01299
	B	0.00104	0.00132	0.00832
	C_N	0.00440	0.00710	0.05129
	C_N	0.00745	0.01014	0.05436
sky130_fd_sc_hs__nor3b_2	A	0.01511	0.01544	0.03075
	A	0.00368	0.00395	0.01930
	B	0.01091	0.01152	0.02579
	B	0.00173	0.00227	0.01659
	C_N	0.00795	0.01075	0.05401
	C_N	0.01083	0.01365	0.05689
sky130_fd_sc_hs__nor3b_4	A	0.02979	0.03041	0.06099
	A	0.00677	0.00730	0.03801
	B	0.02152	0.02270	0.05102
	B	0.00296	0.00400	0.03236
	C_N	0.01727	0.02221	0.10085
	C_N	0.02072	0.02568	0.10429

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)	0.00177	0.00169	0.00167
	(B * C_N * !Y)	-0.00188	-0.00203	-0.00203
	(B * !C_N * !Y)	0.00160	0.00162	0.00160
	(B * !C_N * !Y)	-0.00205	-0.00210	-0.00209
	(!B * !C_N * !Y)	0.00165	0.00161	0.00160
	(!B * !C_N * !Y)	-0.00186	-0.00204	-0.00203
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	0.00352	0.00341	0.00337
	(B * C_N * !Y)	-0.00396	-0.00423	-0.00419
	(B * !C_N * !Y)	0.00339	0.00341	0.00336
	(B * !C_N * !Y)	-0.00410	-0.00420	-0.00419
	(!B * !C_N * !Y)	0.00346	0.00340	0.00337
	(!B * !C_N * !Y)	-0.00378	-0.00410	-0.00408
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	0.00752	0.00727	0.00717
	(B * C_N * !Y)	-0.00753	-0.00809	-0.00804
	(B * !C_N * !Y)	0.00671	0.00677	0.00669
	(B * !C_N * !Y)	-0.00832	-0.00855	-0.00852
	(!B * !C_N * !Y)	0.00681	0.00677	0.00668
	(!B * !C_N * !Y)	-0.00767	-0.00836	-0.00832

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)	-0.00165	-0.00167	-0.00166
	(B * C_N * !Y)	0.00202	0.00204	0.00203
	(B * !C_N * !Y)	-0.00159	-0.00160	-0.00160
	(B * !C_N * !Y)	0.00207	0.00210	0.00209
	(!B * !C_N * !Y)	-0.00159	-0.00160	-0.00159
	(!B * !C_N * !Y)	0.00202	0.00204	0.00203
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	-0.00335	-0.00337	-0.00335
	(B * C_N * !Y)	0.00418	0.00423	0.00419
	(B * !C_N * !Y)	-0.00334	-0.00336	-0.00336
	(B * !C_N * !Y)	0.00416	0.00420	0.00419
	(!B * !C_N * !Y)	-0.00337	-0.00337	-0.00336
	(!B * !C_N * !Y)	0.00410	0.00410	0.00408
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	-0.00712	-0.00720	-0.00716
	(B * C_N * !Y)	0.00798	0.00812	0.00804
	(B * !C_N * !Y)	-0.00669	-0.00669	-0.00668
	(B * !C_N * !Y)	0.00852	0.00855	0.00852
	(!B * !C_N * !Y)	-0.00663	-0.00669	-0.00666
	(!B * !C_N * !Y)	0.00826	0.00836	0.00832

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)	0.00195	0.00197	0.00195
	(A * C_N * !Y)	-0.00106	-0.00107	-0.00107
	(A * !C_N * !Y)	0.00180	0.00184	0.00173
	(A * !C_N * !Y)	-0.00158	-0.00158	-0.00157
	(!A * !C_N * !Y)	0.00204	0.00170	0.00167
	(!A * !C_N * !Y)	-0.00186	-0.00227	-0.00227
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	0.00349	0.00350	0.00346
	(A * C_N * !Y)	-0.00227	-0.00227	-0.00226
	(A * !C_N * !Y)	0.00359	0.00367	0.00348
	(A * !C_N * !Y)	-0.00285	-0.00285	-0.00284
	(!A * !C_N * !Y)	0.00420	0.00340	0.00334
	(!A * !C_N * !Y)	-0.00345	-0.00429	-0.00429
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	0.00705	0.00713	0.00702
	(A * C_N * !Y)	-0.00443	-0.00448	-0.00448
	(A * !C_N * !Y)	0.00728	0.00747	0.00700
	(A * !C_N * !Y)	-0.00569	-0.00570	-0.00568
	(!A * !C_N * !Y)	0.00847	0.00682	0.00671
	(!A * !C_N * !Y)	-0.00669	-0.00851	-0.00856

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)	-0.00191	-0.00193	-0.00192
	(A * C_N * !Y)	0.00109	0.00110	0.00111
	(A * !C_N * !Y)	-0.00167	-0.00167	-0.00166
	(A * !C_N * !Y)	0.00158	0.00158	0.00157
	(!A * !C_N * !Y)	-0.00165	-0.00166	-0.00165
	(!A * !C_N * !Y)	0.00226	0.00227	0.00228
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	-0.00339	-0.00342	-0.00340
	(A * C_N * !Y)	0.00229	0.00232	0.00234
	(A * !C_N * !Y)	-0.00336	-0.00337	-0.00336
	(A * !C_N * !Y)	0.00285	0.00285	0.00284
	(!A * !C_N * !Y)	-0.00332	-0.00334	-0.00332
	(!A * !C_N * !Y)	0.00427	0.00432	0.00429
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	-0.00693	-0.00698	-0.00691
	(A * C_N * !Y)	0.00455	0.00459	0.00463
	(A * !C_N * !Y)	-0.00674	-0.00675	-0.00673
	(A * !C_N * !Y)	0.00569	0.00570	0.00568
	(!A * !C_N * !Y)	-0.00668	-0.00671	-0.00665
	(!A * !C_N * !Y)	0.00857	0.00863	0.00859

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00464	0.00658	0.05140
	(B * !Y)	0.00090	0.00284	0.04766
	(A * !B * !Y)	0.00472	0.00667	0.05144
	(A * !B * !Y)	0.00092	0.00287	0.04765
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00610	0.00772	0.05576
	(B * !Y)	0.00179	0.00340	0.05144
	(A * !B * !Y)	0.00630	0.00792	0.05590
	(A * !B * !Y)	0.00186	0.00346	0.05147
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.00986	0.01194	0.08975
	(B * !Y)	0.00334	0.00542	0.08323
	(A * !B * !Y)	0.01021	0.01229	0.08999
	(A * !B * !Y)	0.00345	0.00551	0.08326

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00156	0.00426	0.04946
	(B * !Y)	0.00528	0.00799	0.05319
	(A * !B * !Y)	0.00156	0.00426	0.04945
	(A * !B * !Y)	0.00529	0.00800	0.05318
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00320	0.00569	0.05380
	(B * !Y)	0.00749	0.01001	0.05811
	(A * !B * !Y)	0.00320	0.00569	0.05379
	(A * !B * !Y)	0.00750	0.01002	0.05812
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.00763	0.01188	0.09123
	(B * !Y)	0.01413	0.01839	0.09772
	(A * !B * !Y)	0.00763	0.01189	0.09122
	(A * !B * !Y)	0.01417	0.01843	0.09774

SKY130_FD_SC_HS__NOR3x

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00283	0.00306	0.00290	0.40433
sky130_fd_sc_hs__nor3_2	0.00438	0.00459	0.00427	0.76498
sky130_fd_sc_hs__nor3_4	0.00958	0.00944	0.00910	1.22666

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor3_1	0.00000	0.02115	0.07688
sky130_fd_sc_hs__nor3_2	0.00000	0.03952	0.15376
sky130_fd_sc_hs__nor3_4	0.00000	0.07903	0.30752

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)	0.12219	1.00626	9.89681
	B->Y (FR)	0.11218	1.03001	10.47500
	C->Y (FR)	0.07993	1.00617	10.54680
sky130_fd_sc_hs__nor3_2	A->Y (FR)	0.09724	0.84047	9.82250
	B->Y (FR)	0.08297	0.85592	10.37210
	C->Y (FR)	0.04204	0.82244	10.44200
sky130_fd_sc_hs__nor3_4	A->Y (FR)	0.10848	0.72983	9.28174
	B->Y (FR)	0.08914	0.73998	9.88912
	C->Y (FR)	0.04879	0.71761	10.07310

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3_1	A->Y (RF)	0.02051	0.27663	2.62773
	B->Y (RF)	0.02232	0.27730	2.69135
	C->Y (RF)	0.01901	0.26960	2.68916
sky130_fd_sc_hs__nor3_2	A->Y (RF)	0.02895	0.37215	4.30238
	B->Y (RF)	0.02817	0.35839	4.25501
	C->Y (RF)	0.02038	0.34171	4.23933
sky130_fd_sc_hs__nor3_4	A->Y (RF)	0.02190	0.29957	3.73614
	B->Y (RF)	0.02493	0.29253	3.78570
	C->Y (RF)	0.02666	0.27938	3.76661

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.00004	-0.00007	0.00751
	A	0.00771	0.00762	0.01519
	B	0.00010	0.00006	0.00743
	B	0.00667	0.00664	0.01403
	C	-0.00001	0.00058	0.01289
	C	0.00544	0.00605	0.01839
sky130_fd_sc_hs__nor3_2	A	-0.00010	-0.00018	0.00826
	A	0.01231	0.01226	0.02040
	B	0.00020	0.00021	0.00883
	B	0.01039	0.01037	0.01908
	C	0.00009	0.00115	0.01693
	C	0.00753	0.00859	0.02444
sky130_fd_sc_hs__nor3_4	A	-0.00055	-0.00079	0.01810
	A	0.02598	0.02577	0.04489
	B	-0.00054	-0.00054	0.01952
	B	0.02060	0.02060	0.04073
	C	-0.00136	0.00117	0.03525
	C	0.01537	0.01778	0.05197

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.00959	0.00972	0.01721
	A	0.00202	0.00211	0.00965
	B	0.00765	0.00793	0.01490
	B	0.00112	0.00137	0.00837
	C	0.00532	0.00580	0.01253
	C	-0.00012	0.00031	0.00706
sky130_fd_sc_hs__nor3_2	A	0.01609	0.01612	0.02543
	A	0.00391	0.00395	0.01316
	B	0.01190	0.01213	0.02107
	B	0.00184	0.00202	0.01101
	C	0.00596	0.00677	0.01574
	C	-0.00146	-0.00071	0.00803
sky130_fd_sc_hs__nor3_4	A	0.03412	0.03385	0.05282
	A	0.00808	0.00774	0.02657
	B	0.02439	0.02465	0.04469
	B	0.00339	0.00366	0.02318
	C	0.01362	0.01518	0.03545
	C	-0.00313	-0.00159	0.01832

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	0.00183	0.00185	0.00183
	(B * C * !Y)	-0.00201	-0.00206	-0.00205
	(B * !C * !Y)	0.00191	0.00185	0.00183
	(B * !C * !Y)	-0.00192	-0.00206	-0.00205
	(!B * C * !Y)	0.00188	0.00184	0.00183
	(!B * C * !Y)	-0.00181	-0.00200	-0.00199
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	0.00214	0.00215	0.00213
	(B * C * !Y)	-0.00391	-0.00405	-0.00403
	(B * !C * !Y)	0.00224	0.00216	0.00213
	(B * !C * !Y)	-0.00377	-0.00406	-0.00403
	(!B * C * !Y)	0.00225	0.00216	0.00213
	(!B * C * !Y)	-0.00352	-0.00391	-0.00390
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	0.00409	0.00413	0.00408
	(B * C * !Y)	-0.00836	-0.00865	-0.00860
	(B * !C * !Y)	0.00468	0.00413	0.00408
	(B * !C * !Y)	-0.00774	-0.00864	-0.00861
	(!B * C * !Y)	0.00446	0.00414	0.00408
	(!B * C * !Y)	-0.00738	-0.00846	-0.00833

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	-0.00182	-0.00183	-0.00183
	(B * C * !Y)	0.00205	0.00206	0.00205
	(B * !C * !Y)	-0.00183	-0.00183	-0.00183
	(B * !C * !Y)	0.00206	0.00206	0.00205
	(!B * C * !Y)	-0.00182	-0.00183	-0.00182
	(!B * C * !Y)	0.00198	0.00200	0.00199
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	-0.00212	-0.00213	-0.00212
	(B * C * !Y)	0.00401	0.00405	0.00403
	(B * !C * !Y)	-0.00213	-0.00213	-0.00212
	(B * !C * !Y)	0.00402	0.00406	0.00403
	(!B * C * !Y)	-0.00212	-0.00213	-0.00212
	(!B * C * !Y)	0.00388	0.00391	0.00390
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	-0.00406	-0.00409	-0.00407
	(B * C * !Y)	0.00855	0.00865	0.00860
	(B * !C * !Y)	-0.00406	-0.00408	-0.00407
	(B * !C * !Y)	0.00857	0.00864	0.00861
	(!B * C * !Y)	-0.00405	-0.00410	-0.00405
	(!B * C * !Y)	0.00829	0.00846	0.00833

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	0.00203	0.00206	0.00195
	(A * C * !Y)	-0.00127	-0.00127	-0.00126
	(A * !C * !Y)	0.00190	0.00192	0.00189
	(A * !C * !Y)	-0.00104	-0.00105	-0.00105
	(!A * C * !Y)	0.00227	0.00192	0.00189
	(!A * C * !Y)	-0.00156	-0.00198	-0.00199
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	0.00220	0.00226	0.00202
	(A * C * !Y)	-0.00277	-0.00278	-0.00275
	(A * !C * !Y)	0.00196	0.00198	0.00190
	(A * !C * !Y)	-0.00230	-0.00232	-0.00234
	(!A * C * !Y)	0.00278	0.00191	0.00186
	(!A * C * !Y)	-0.00332	-0.00426	-0.00428
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	0.00493	0.00499	0.00459
	(A * C * !Y)	-0.00521	-0.00526	-0.00523
	(A * !C * !Y)	0.00442	0.00450	0.00439
	(A * !C * !Y)	-0.00423	-0.00432	-0.00428
	(!A * C * !Y)	0.00598	0.00448	0.00438
	(!A * C * !Y)	-0.00636	-0.00801	-0.00806

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	-0.00189	-0.00189	-0.00188
	(A * C * !Y)	0.00127	0.00127	0.00126
	(A * !C * !Y)	-0.00187	-0.00188	-0.00186
	(A * !C * !Y)	0.00106	0.00108	0.00108
	(!A * C * !Y)	-0.00187	-0.00188	-0.00187
	(!A * C * !Y)	0.00197	0.00198	0.00199
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	-0.00190	-0.00190	-0.00189
	(A * C * !Y)	0.00277	0.00278	0.00275
	(A * !C * !Y)	-0.00186	-0.00186	-0.00182
	(A * !C * !Y)	0.00240	0.00241	0.00241
	(!A * C * !Y)	-0.00185	-0.00186	-0.00184
	(!A * C * !Y)	0.00425	0.00430	0.00428
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	-0.00437	-0.00440	-0.00438
	(A * C * !Y)	0.00521	0.00526	0.00523
	(A * !C * !Y)	-0.00432	-0.00434	-0.00426
	(A * !C * !Y)	0.00437	0.00439	0.00441
	(!A * C * !Y)	-0.00436	-0.00436	-0.00433
	(!A * C * !Y)	0.00804	0.00806	0.00806

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	0.00197	0.00199	0.00197
	(B * !Y)	-0.00098	-0.00098	-0.00097
	(A * !B * !Y)	0.00197	0.00199	0.00198
	(A * !B * !Y)	-0.00097	-0.00098	-0.00097
sky130_fd_sc_hs__nor3_2	(B * !Y)	0.00219	0.00221	0.00219
	(B * !Y)	-0.00196	-0.00197	-0.00195
	(A * !B * !Y)	0.00219	0.00221	0.00219
	(A * !B * !Y)	-0.00195	-0.00197	-0.00195
sky130_fd_sc_hs__nor3_4	(B * !Y)	0.00493	0.00496	0.00493
	(B * !Y)	-0.00402	-0.00405	-0.00402
	(A * !B * !Y)	0.00491	0.00496	0.00493
	(A * !B * !Y)	-0.00399	-0.00403	-0.00401

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	-0.00192	-0.00193	-0.00197
	(B * !Y)	0.00103	0.00103	0.00099
	(A * !B * !Y)	-0.00183	-0.00185	-0.00196
	(A * !B * !Y)	0.00106	0.00107	0.00099
sky130_fd_sc_hs__nor3_2	(B * !Y)	-0.00200	-0.00202	-0.00217
	(B * !Y)	0.00212	0.00212	0.00199
	(A * !B * !Y)	-0.00183	-0.00186	-0.00214
	(A * !B * !Y)	0.00219	0.00220	0.00200
sky130_fd_sc_hs__nor3_4	(B * !Y)	-0.00460	-0.00465	-0.00490
	(B * !Y)	0.00431	0.00434	0.00410
	(A * !B * !Y)	-0.00422	-0.00426	-0.00482
	(A * !B * !Y)	0.00448	0.00450	0.00408

SKY130_FD_SC_HS__NOR4BBx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00286	0.00294	0.00232	0.00228	0.30391
sky130_fd_sc_hs__nor4bb_2	0.00535	0.00560	0.00268	0.00255	0.51462
sky130_fd_sc_hs__nor4bb_4	0.01056	0.01125	0.00372	0.00362	0.97451

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor4bb_1	0.00000	0.46144	0.91700
sky130_fd_sc_hs__nor4bb_2	0.00000	0.23397	0.45268
sky130_fd_sc_hs__nor4bb_4	0.00000	0.94896	1.89343

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)	0.19729	1.15336	9.72073
	B->Y (FR)	0.18640	1.16059	10.16480
	C_N->Y (RR)	0.18466	0.98413	6.57718
	D_N->Y (RR)	0.12063	0.90770	6.48295
sky130_fd_sc_hs__nor4bb_2	A->Y (FR)	0.20130	1.01109	9.48672
	B->Y (FR)	0.18546	1.00125	9.91400
	C_N->Y (RR)	0.18153	0.83973	6.46792
	D_N->Y (RR)	0.10662	0.75656	6.38250
sky130_fd_sc_hs__nor4bb_4	A->Y (FR)	0.20267	0.86983	9.43953
	B->Y (FR)	0.18706	0.86866	9.91076
	C_N->Y (RR)	0.18279	0.73856	6.77115
	D_N->Y (RR)	0.11484	0.66705	6.70537

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4bb_1	A->Y (RF)	0.02078	0.25727	2.08038
	B->Y (RF)	0.02135	0.24898	2.03851
	C_N->Y (FF)	0.08253	0.36818	2.41104
	D_N->Y (FF)	0.06932	0.34531	2.32121
sky130_fd_sc_hs__nor4bb_2	A->Y (RF)	0.01738	0.20073	1.77341
	B->Y (RF)	0.01822	0.19808	1.78217
	C_N->Y (FF)	0.08591	0.37390	2.46942
	D_N->Y (FF)	0.07380	0.35833	2.44449
sky130_fd_sc_hs__nor4bb_4	A->Y (RF)	0.01834	0.18589	1.92139
	B->Y (RF)	0.01877	0.17342	1.80766
	C_N->Y (FF)	0.08831	0.35227	2.14595
	D_N->Y (FF)	0.08146	0.34582	2.18660

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.00369	0.00351	0.01120
	A	0.00965	0.00941	0.01718
	B	0.00363	0.00347	0.01097
	B	0.00860	0.00843	0.01595
	C_N	0.01097	0.01258	0.05504
	C_N	0.00781	0.00949	0.05192
	D_N	0.00892	0.01075	0.05624
	D_N	0.00611	0.00791	0.05347
sky130_fd_sc_hs__nor4bb_2	A	0.00684	0.00655	0.02134
	A	0.01858	0.01835	0.03315
	B	0.00677	0.00648	0.02155
	B	0.01636	0.01609	0.03114
	C_N	0.01625	0.01804	0.06641
	C_N	0.01343	0.01522	0.06369
	D_N	0.01336	0.01531	0.06426
	D_N	0.01084	0.01279	0.06186
sky130_fd_sc_hs__nor4bb_4	A	0.01410	0.01345	0.04307
	A	0.03688	0.03618	0.06593
	B	0.01381	0.01322	0.04272
	B	0.03284	0.03224	0.06179
	C_N	0.02959	0.03185	0.10907
	C_N	0.02633	0.02861	0.10583
	D_N	0.02368	0.02660	0.10637
	D_N	0.02065	0.02356	0.10342

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.00896	0.00899	0.01722
	A	0.00307	0.00308	0.01135
	B	0.00714	0.00730	0.01519
	B	0.00219	0.00234	0.01025
	C_N	0.00658	0.00918	0.05295
	C_N	0.00972	0.01233	0.05609
	D_N	0.00472	0.00763	0.05044
	D_N	0.00753	0.01045	0.05325
sky130_fd_sc_hs__nor4bb_2	A	0.01808	0.01815	0.03469
	A	0.00659	0.00662	0.02323
	B	0.01331	0.01368	0.02957
	B	0.00379	0.00410	0.02005
	C_N	0.01222	0.01458	0.06226
	C_N	0.01505	0.01742	0.06508
	D_N	0.00837	0.01117	0.05909
	D_N	0.01088	0.01369	0.06159
sky130_fd_sc_hs__nor4bb_4	A	0.03466	0.03497	0.06842
	A	0.01236	0.01263	0.04617
	B	0.02688	0.02746	0.06023
	B	0.00800	0.00848	0.04132
	C_N	0.02246	0.02657	0.09941
	C_N	0.02572	0.02985	0.10265
	D_N	0.01746	0.02265	0.10180
	D_N	0.02051	0.02570	0.10482

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)**	0.00194	0.00192	0.00189
	(B * C_N * D_N * !Y)	-0.00194	-0.00203	-0.00203
	(B * !D_N * !Y)	0.00193	0.00191	0.00189
	(B * !D_N * !Y)	-0.00195	-0.00204	-0.00203
	(B * !C_N * D_N * !Y)	0.00175	0.00177	0.00175
	(B * !C_N * D_N * !Y)	-0.00212	-0.00218	-0.00217
	(!B * C_N * !D_N * !Y)	0.00201	0.00194	0.00191
	(!B * C_N * !D_N * !Y)	-0.00179	-0.00194	-0.00194
	(!B * !C_N * D_N * !Y)	0.00175	0.00176	0.00175
	(!B * !C_N * D_N * !Y)	-0.00198	-0.00212	-0.00211
	(!B * !C_N * !D_N * !Y)	0.00174	0.00176	0.00174
	(!B * !C_N * !D_N * !Y)	-0.00197	-0.00212	-0.00211
sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	0.00345	0.00338	0.00334
	(B * C_N * D_N * !Y)	-0.00395	-0.00420	-0.00418
	(B * !D_N * !Y)	0.00342	0.00338	0.00334
	(B * !D_N * !Y)	-0.00398	-0.00421	-0.00417
	(B * !C_N * D_N * !Y)	0.00334	0.00338	0.00334
	(B * !C_N * D_N * !Y)	-0.00405	-0.00421	-0.00418
	(!B * C_N * !D_N * !Y)	0.00363	0.00347	0.00339
	(!B * C_N * !D_N * !Y)	-0.00369	-0.00400	-0.00398
	(!B * !C_N * D_N * !Y)	0.00336	0.00337	0.00334
	(!B * !C_N * D_N * !Y)	-0.00377	-0.00408	-0.00405
	(!B * !C_N * !D_N * !Y)	0.00334	0.00337	0.00333
	(!B * !C_N * !D_N * !Y)	-0.00377	-0.00408	-0.00405

sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	0.00674	0.00660	0.00651
	(B * C_N * D_N * !Y)	-0.00765	-0.00812	-0.00809
	(B * !D_N * !Y)	0.00673	0.00661	0.00652
	(B * !D_N * !Y)	-0.00772	-0.00812	-0.00807
	(B * !C_N * D_N * !Y)	0.00652	0.00657	0.00649
	(B * !C_N * D_N * !Y)	-0.00789	-0.00814	-0.00810
	(!B * C_N * !D_N * !Y)	0.00705	0.00676	0.00660
	(!B * C_N * !D_N * !Y)	-0.00703	-0.00774	-0.00770
	(!B * !C_N * D_N * !Y)	0.00651	0.00657	0.00649
	(!B * !C_N * D_N * !Y)	-0.00726	-0.00791	-0.00784
	(!B * !C_N * !D_N * !Y)	0.00650	0.00656	0.00648
	(!B * !C_N * !D_N * !Y)	-0.00729	-0.00790	-0.00783

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)**	-0.00187	-0.00188	-0.00187
	(B * C_N * D_N * !Y)	0.00203	0.00205	0.00203
	(B * !D_N * !Y)	-0.00187	-0.00188	-0.00188
	(B * !D_N * !Y)	0.00202	0.00204	0.00203
	(B * !C_N * D_N * !Y)	-0.00173	-0.00174	-0.00174
	(B * !C_N * D_N * !Y)	0.00216	0.00218	0.00217
	(!B * C_N * !D_N * !Y)	-0.00193	-0.00193	-0.00191
	(!B * C_N * !D_N * !Y)	0.00194	0.00194	0.00194
	(!B * !C_N * D_N * !Y)	-0.00173	-0.00174	-0.00174
	(!B * !C_N * D_N * !Y)	0.00210	0.00212	0.00211
	(!B * !C_N * !D_N * !Y)	-0.00174	-0.00175	-0.00174
	(!B * !C_N * !D_N * !Y)	0.00210	0.00212	0.00211

sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	-0.00332	-0.00334	-0.00333
	(B * C_N * D_N * !Y)	0.00416	0.00420	0.00418
	(B * !D_N * !Y)	-0.00332	-0.00335	-0.00333
	(B * !D_N * !Y)	0.00416	0.00421	0.00417
	(B * !C_N * D_N * !Y)	-0.00332	-0.00334	-0.00333
	(B * !C_N * D_N * !Y)	0.00416	0.00421	0.00418
	(!B * C_N * !D_N * !Y)	-0.00345	-0.00347	-0.00339
	(!B * C_N * !D_N * !Y)	0.00397	0.00400	0.00398
	(!B * !C_N * D_N * !Y)	-0.00332	-0.00334	-0.00333
	(!B * !C_N * D_N * !Y)	0.00404	0.00408	0.00405
	(!B * !C_N * !D_N * !Y)	-0.00332	-0.00334	-0.00333
	(!B * !C_N * !D_N * !Y)	0.00404	0.00408	0.00405
sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	-0.00645	-0.00648	-0.00646
	(B * C_N * D_N * !Y)	0.00805	0.00812	0.00809
	(B * !D_N * !Y)	-0.00647	-0.00652	-0.00650
	(B * !D_N * !Y)	0.00802	0.00812	0.00807
	(B * !C_N * D_N * !Y)	-0.00644	-0.00648	-0.00646
	(B * !C_N * D_N * !Y)	0.00805	0.00814	0.00810
	(!B * C_N * !D_N * !Y)	-0.00673	-0.00674	-0.00660
	(!B * C_N * !D_N * !Y)	0.00771	0.00774	0.00770
	(!B * !C_N * D_N * !Y)	-0.00645	-0.00649	-0.00646
	(!B * !C_N * D_N * !Y)	0.00781	0.00791	0.00784
	(!B * !C_N * !D_N * !Y)	-0.00645	-0.00650	-0.00647
	(!B * !C_N * !D_N * !Y)	0.00780	0.00790	0.00783

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)**	0.00202	0.00204	0.00202
	(A * C_N * D_N * !Y)	-0.00106	-0.00107	-0.00106
	(A * C_N * !D_N * !Y)	0.00226	0.00233	0.00233
	(A * C_N * !D_N * !Y)	-0.00131	-0.00130	-0.00130
	(A * !C_N * D_N * !Y)	0.00191	0.00195	0.00186
	(A * !C_N * D_N * !Y)	-0.00153	-0.00153	-0.00152
	(A * !C_N * !D_N * !Y)	0.00183	0.00184	0.00182
	(A * !C_N * !D_N * !Y)	-0.00160	-0.00160	-0.00159
	(!A * C_N * !D_N * !Y)	0.00229	0.00208	0.00203
	(!A * C_N * !D_N * !Y)	-0.00172	-0.00194	-0.00193
	(!A * !C_N * D_N * !Y)	0.00199	0.00184	0.00182
	(!A * !C_N * D_N * !Y)	-0.00203	-0.00220	-0.00219
	(!A * !C_N * !D_N * !Y)	0.00183	0.00184	0.00181
	(!A * !C_N * !D_N * !Y)	-0.00218	-0.00219	-0.00219
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	0.00362	0.00364	0.00360
	(A * C_N * D_N * !Y)	-0.00237	-0.00238	-0.00235
	(A * C_N * !D_N * !Y)	0.00403	0.00419	0.00418
	(A * C_N * !D_N * !Y)	-0.00286	-0.00288	-0.00285
	(A * !C_N * D_N * !Y)	0.00362	0.00363	0.00352
	(A * !C_N * D_N * !Y)	-0.00303	-0.00303	-0.00301
	(A * !C_N * !D_N * !Y)	0.00350	0.00353	0.00348
	(A * !C_N * !D_N * !Y)	-0.00316	-0.00316	-0.00314
	(!A * C_N * !D_N * !Y)	0.00406	0.00368	0.00361
	(!A * C_N * !D_N * !Y)	-0.00379	-0.00416	-0.00413
	(!A * !C_N * D_N * !Y)	0.00377	0.00349	0.00348
	(!A * !C_N * D_N * !Y)	-0.00411	-0.00437	-0.00438
	(!A * !C_N * !D_N * !Y)	0.00352	0.00348	0.00347
	(!A * !C_N * !D_N * !Y)	-0.00435	-0.00438	-0.00437

sky130_fd_sc_hs__nor4bb_4	**(A * C_N * D_N * !Y)**	0.00697	0.00712	0.00697
	(A * C_N * D_N * !Y)	-0.00465	-0.00474	-0.00466
	(A * C_N * !D_N * !Y)	0.00797	0.00825	0.00821
	(A * C_N * !D_N * !Y)	-0.00555	-0.00558	-0.00555
	(A * !C_N * D_N * !Y)	0.00707	0.00709	0.00683
	(A * !C_N * D_N * !Y)	-0.00591	-0.00599	-0.00592
	(A * !C_N * !D_N * !Y)	0.00670	0.00666	0.00668
	(A * !C_N * !D_N * !Y)	-0.00624	-0.00633	-0.00627
	(!A * C_N * !D_N * !Y)	0.00810	0.00723	0.00700
	(!A * C_N * !D_N * !Y)	-0.00726	-0.00814	-0.00813
	(!A * !C_N * D_N * !Y)	0.00751	0.00678	0.00669
	(!A * !C_N * D_N * !Y)	-0.00782	-0.00870	-0.00867
	(!A * !C_N * !D_N * !Y)	0.00670	0.00676	0.00668
	(!A * !C_N * !D_N * !Y)	-0.00858	-0.00869	-0.00866

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)**	-0.00197	-0.00198	-0.00197
	(A * C_N * D_N * !Y)	0.00110	0.00112	0.00112
	(A * C_N * !D_N * !Y)	-0.00221	-0.00221	-0.00221
	(A * C_N * !D_N * !Y)	0.00131	0.00130	0.00130
	(A * !C_N * D_N * !Y)	-0.00182	-0.00182	-0.00181
	(A * !C_N * D_N * !Y)	0.00153	0.00153	0.00152
	(A * !C_N * !D_N * !Y)	-0.00182	-0.00183	-0.00182
	(A * !C_N * !D_N * !Y)	0.00160	0.00160	0.00159
	(!A * C_N * !D_N * !Y)	-0.00207	-0.00208	-0.00203
	(!A * C_N * !D_N * !Y)	0.00192	0.00194	0.00193
	(!A * !C_N * D_N * !Y)	-0.00180	-0.00181	-0.00181
	(!A * !C_N * D_N * !Y)	0.00218	0.00220	0.00219
	(!A * !C_N * !D_N * !Y)	-0.00181	-0.00182	-0.00181
	(!A * !C_N * !D_N * !Y)	0.00219	0.00219	0.00219
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	-0.00345	-0.00348	-0.00347
	(A * C_N * D_N * !Y)	0.00248	0.00250	0.00251
	(A * C_N * !D_N * !Y)	-0.00397	-0.00399	-0.00397
	(A * C_N * !D_N * !Y)	0.00286	0.00288	0.00285
	(A * !C_N * D_N * !Y)	-0.00348	-0.00348	-0.00347
	(A * !C_N * D_N * !Y)	0.00303	0.00303	0.00301
	(A * !C_N * !D_N * !Y)	-0.00348	-0.00348	-0.00347
	(A * !C_N * !D_N * !Y)	0.00316	0.00316	0.00314
	(!A * C_N * !D_N * !Y)	-0.00374	-0.00368	-0.00361
	(!A * C_N * !D_N * !Y)	0.00414	0.00416	0.00413
	(!A * !C_N * D_N * !Y)	-0.00346	-0.00347	-0.00346
	(!A * !C_N * D_N * !Y)	0.00436	0.00439	0.00438
	(!A * !C_N * !D_N * !Y)	-0.00346	-0.00348	-0.00347
	(!A * !C_N * !D_N * !Y)	0.00435	0.00439	0.00437

sky130_fd_sc_hs__nor4bb_4	(A * C_N * D_N * !Y)	-0.00681	-0.00682	-0.00679
	(A * C_N * D_N * !Y)	0.00483	0.00484	0.00487
	(A * C_N * !D_N * !Y)	-0.00775	-0.00778	-0.00776
	(A * C_N * !D_N * !Y)	0.00555	0.00558	0.00555
	(A * !C_N * D_N * !Y)	-0.00667	-0.00672	-0.00668
	(A * !C_N * D_N * !Y)	0.00591	0.00599	0.00592
	(A * !C_N * !D_N * !Y)	-0.00665	-0.00666	-0.00667
	(A * !C_N * !D_N * !Y)	0.00624	0.00633	0.00627
	(!A * C_N * !D_N * !Y)	-0.00723	-0.00723	-0.00700
	(!A * C_N * !D_N * !Y)	0.00806	0.00814	0.00813
	(!A * !C_N * D_N * !Y)	-0.00667	-0.00668	-0.00666
	(!A * !C_N * D_N * !Y)	0.00868	0.00870	0.00867
	(!A * !C_N * !D_N * !Y)	-0.00667	-0.00668	-0.00666
	(!A * !C_N * !D_N * !Y)	0.00866	0.00869	0.00866

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * !Y)	0.00532	0.00702	0.05136
	(B * !Y)	0.00129	0.00297	0.04731
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00540	0.00709	0.05138
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00128	0.00296	0.04727
sky130_fd_sc_hs__nor4bb_2	(B * !Y)	0.00610	0.00766	0.05564
	(B * !Y)	0.00174	0.00327	0.05127
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00629	0.00785	0.05574
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00177	0.00329	0.05124
sky130_fd_sc_hs__nor4bb_4	(B * !Y)	0.00975	0.01215	0.08939
	(B * !Y)	0.00354	0.00592	0.08319
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00999	0.01238	0.08954
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00349	0.00587	0.08309

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * !Y)	0.00206	0.00464	0.04936
	(B * !Y)	0.00609	0.00869	0.05339
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00207	0.00465	0.04934
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00611	0.00870	0.05338
sky130_fd_sc_hs__nor4bb_2	(B * !Y)	0.00382	0.00625	0.05433
	(B * !Y)	0.00817	0.01061	0.05869
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00383	0.00626	0.05433
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00819	0.01063	0.05870
sky130_fd_sc_hs__nor4bb_4	(B * !Y)	0.00697	0.01131	0.09003
	(B * !Y)	0.01311	0.01748	0.09618
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00701	0.01134	0.09005
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.01317	0.01754	0.09621

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)	0.00472	0.00657	0.05147
	(B * C_N * !Y)	0.00102	0.00286	0.04777
	(A * !B * C_N * !Y)	0.00483	0.00667	0.05155
	(A * !B * C_N * !Y)	0.00108	0.00291	0.04781
	(!C_N * !Y)	0.00504	0.00688	0.05181
	(!C_N * !Y)	0.00135	0.00318	0.04812
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00591	0.00753	0.05551
	(B * C_N * !Y)	0.00189	0.00349	0.05149
	(A * !B * C_N * !Y)	0.00621	0.00782	0.05573
	(A * !B * C_N * !Y)	0.00205	0.00365	0.05160
	(!C_N * !Y)	0.00627	0.00788	0.05589
	(!C_N * !Y)	0.00227	0.00387	0.05190
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.00909	0.01147	0.08884
	(B * C_N * !Y)	0.00318	0.00557	0.08294
	(A * !B * C_N * !Y)	0.00956	0.01194	0.08918
	(A * !B * C_N * !Y)	0.00345	0.00583	0.08312
	(!C_N * !Y)	0.00966	0.01204	0.08952
	(!C_N * !Y)	0.00383	0.00621	0.08371

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)	0.00184	0.00455	0.04981
	(B * C_N * !Y)	0.00552	0.00825	0.05350
	(A * !B * C_N * !Y)	0.00184	0.00455	0.04981
	(A * !B * C_N * !Y)	0.00552	0.00825	0.05349
	(!C_N * !Y)	0.00146	0.00417	0.04943
	(!C_N * !Y)	0.00514	0.00787	0.05312
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00347	0.00597	0.05417
	(B * C_N * !Y)	0.00747	0.00998	0.05816
	(A * !B * C_N * !Y)	0.00347	0.00597	0.05416
	(A * !B * C_N * !Y)	0.00747	0.00999	0.05816
	(!C_N * !Y)	0.00301	0.00551	0.05372
	(!C_N * !Y)	0.00700	0.00952	0.05771
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.00816	0.01256	0.09170
	(B * C_N * !Y)	0.01398	0.01842	0.09753
	(A * !B * C_N * !Y)	0.00816	0.01256	0.09170
	(A * !B * C_N * !Y)	0.01398	0.01843	0.09753
	(!C_N * !Y)	0.00729	0.01169	0.09086
	(!C_N * !Y)	0.01310	0.01752	0.09670

SKY130_FD_SC_HS__NOR4Bx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00277	0.00287	0.00286	0.00221	0.30196
sky130_fd_sc_hs__nor4b_2	0.00546	0.00552	0.00555	0.00259	0.50850
sky130_fd_sc_hs__nor4b_4	0.01070	0.01076	0.01092	0.00390	0.94556

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor4b_1	0.00000	0.23750	0.47568
sky130_fd_sc_hs__nor4b_2	0.00000	0.13055	0.26069
sky130_fd_sc_hs__nor4b_4	0.00000	0.50161	1.01542

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)	0.19004	1.14268	9.64814
	B->Y (FR)	0.17839	1.14688	10.09620
	C->Y (FR)	0.14825	1.14230	10.54250
	D_N->Y (RR)	0.12424	0.90934	6.45459
sky130_fd_sc_hs__nor4b_2	A->Y (FR)	0.20204	1.00623	9.40069
	B->Y (FR)	0.18623	0.99746	9.82026
	C->Y (FR)	0.15390	1.00332	10.47250
	D_N->Y (RR)	0.10758	0.75014	6.26044
sky130_fd_sc_hs__nor4b_4	A->Y (FR)	0.20093	0.86712	9.31378
	B->Y (FR)	0.18558	0.86151	9.79340
	C->Y (FR)	0.15036	0.86558	10.44460
	D_N->Y (RR)	0.11841	0.67039	6.69522

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4b_1	A->Y (RF)	0.02121	0.26251	2.13602
	B->Y (RF)	0.02231	0.25744	2.12219
	C->Y (RF)	0.02227	0.25032	2.10606
	D_N->Y (FF)	0.07001	0.34953	2.40025
sky130_fd_sc_hs__nor4b_2	A->Y (RF)	0.01727	0.19988	1.74618
	B->Y (RF)	0.01811	0.19670	1.75533
	C->Y (RF)	0.02021	0.19413	1.78679
	D_N->Y (FF)	0.07623	0.36013	2.36552
sky130_fd_sc_hs__nor4b_4	A->Y (RF)	0.01756	0.17323	1.76022
	B->Y (RF)	0.01773	0.16650	1.72346
	C->Y (RF)	0.01803	0.15035	1.61963
	D_N->Y (FF)	0.07965	0.34011	2.11905

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.00211	0.00194	0.00937
	A	0.00912	0.00893	0.01639
	B	0.00210	0.00194	0.00923
	B	0.00805	0.00784	0.01519
	C	0.00186	0.00180	0.00931
	C	0.00694	0.00682	0.01441
	D_N	0.00857	0.01033	0.05293
	D_N	0.00576	0.00752	0.05018
sky130_fd_sc_hs__nor4b_2	A	0.00384	0.00353	0.01878
	A	0.01890	0.01865	0.03393
	B	0.00388	0.00357	0.01883
	B	0.01655	0.01627	0.03135
	C	0.00375	0.00361	0.01845
	C	0.01419	0.01405	0.02894
	D_N	0.01290	0.01480	0.06340
	D_N	0.01100	0.01290	0.06168
sky130_fd_sc_hs__nor4b_4	A	0.00758	0.00697	0.03677
	A	0.03731	0.03659	0.06665
	B	0.00761	0.00700	0.03692
	B	0.03260	0.03178	0.06210
	C	0.00724	0.00708	0.03656
	C	0.02792	0.02774	0.05725
	D_N	0.02271	0.02537	0.10445
	D_N	0.02115	0.02381	0.10294

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.01012	0.01016	0.01821
	A	0.00324	0.00325	0.01135
	B	0.00822	0.00839	0.01605
	B	0.00234	0.00249	0.01017
	C	0.00623	0.00658	0.01396
	C	0.00117	0.00151	0.00890
	D_N	0.00500	0.00788	0.05188
	D_N	0.00779	0.01067	0.05467
sky130_fd_sc_hs__nor4b_2	A	0.02114	0.02109	0.03780
	A	0.00646	0.00636	0.02321
	B	0.01638	0.01670	0.03259
	B	0.00388	0.00415	0.02012
	C	0.01219	0.01282	0.02773
	C	0.00179	0.00236	0.01731
	D_N	0.00919	0.01197	0.05562
	D_N	0.01107	0.01387	0.05750
sky130_fd_sc_hs__nor4b_4	A	0.04108	0.04133	0.07355
	A	0.01214	0.01227	0.04470
	B	0.03204	0.03267	0.06372
	B	0.00739	0.00788	0.03908
	C	0.02345	0.02481	0.05452
	C	0.00288	0.00411	0.03385
	D_N	0.01867	0.02363	0.09701
	D_N	0.02023	0.02521	0.09855

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)**	0.00169	0.00171	0.00169
	(B * C * D_N * !Y)	-0.00197	-0.00203	-0.00202
	(B * !D_N * !Y)	0.00162	0.00164	0.00162
	(B * !D_N * !Y)	-0.00204	-0.00210	-0.00209
	(B * !C * D_N * !Y)	0.00170	0.00171	0.00169
	(B * !C * D_N * !Y)	-0.00193	-0.00203	-0.00203
	(!B * C * D_N * !Y)	0.00169	0.00170	0.00169
	(!B * C * D_N * !Y)	-0.00180	-0.00197	-0.00196
	(!B * C * !D_N * !Y)	0.00161	0.00163	0.00162
	(!B * C * !D_N * !Y)	-0.00187	-0.00203	-0.00202
	(!B * !C * !D_N * !Y)	0.00163	0.00163	0.00162
	(!B * !C * !D_N * !Y)	-0.00186	-0.00200	-0.00200
sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	0.00340	0.00344	0.00340
	(B * C * D_N * !Y)	-0.00407	-0.00423	-0.00422
	(B * !D_N * !Y)	0.00339	0.00343	0.00339
	(B * !D_N * !Y)	-0.00408	-0.00423	-0.00422
	(B * !C * D_N * !Y)	0.00343	0.00344	0.00340
	(B * !C * D_N * !Y)	-0.00399	-0.00424	-0.00422
	(!B * C * D_N * !Y)	0.00341	0.00343	0.00340
	(!B * C * D_N * !Y)	-0.00375	-0.00410	-0.00408
	(!B * C * !D_N * !Y)	0.00339	0.00343	0.00339
	(!B * C * !D_N * !Y)	-0.00375	-0.00410	-0.00407
	(!B * !C * !D_N * !Y)	0.00345	0.00343	0.00340
	(!B * !C * !D_N * !Y)	-0.00372	-0.00404	-0.00403

sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	0.00664	0.00672	0.00664
	(B * C * D_N * !Y)	-0.00804	-0.00837	-0.00831
	(B * !D_N * !Y)	0.00663	0.00671	0.00663
	(B * !D_N * !Y)	-0.00806	-0.00838	-0.00831
	(B * !C * D_N * !Y)	0.00670	0.00672	0.00664
	(B * !C * D_N * !Y)	-0.00789	-0.00836	-0.00832
	(!B * C * D_N * !Y)	0.00669	0.00672	0.00664
	(!B * C * D_N * !Y)	-0.00744	-0.00809	-0.00804
	(!B * C * !D_N * !Y)	0.00666	0.00670	0.00663
	(!B * C * !D_N * !Y)	-0.00745	-0.00809	-0.00804
	(!B * !C * !D_N * !Y)	0.00667	0.00670	0.00664
	(!B * !C * !D_N * !Y)	-0.00730	-0.00794	-0.00794

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)**	-0.00167	-0.00168	-0.00168
	(B * C * D_N * !Y)	0.00201	0.00204	0.00202
	(B * !D_N * !Y)	-0.00161	-0.00162	-0.00161
	(B * !D_N * !Y)	0.00207	0.00210	0.00209
	(B * !C * D_N * !Y)	-0.00167	-0.00168	-0.00168
	(B * !C * D_N * !Y)	0.00202	0.00204	0.00203
	(!B * C * D_N * !Y)	-0.00167	-0.00168	-0.00168
	(!B * C * D_N * !Y)	0.00195	0.00197	0.00196
	(!B * C * !D_N * !Y)	-0.00161	-0.00162	-0.00161
	(!B * C * !D_N * !Y)	0.00201	0.00203	0.00202
	(!B * !C * !D_N * !Y)	-0.00161	-0.00161	-0.00161
	(!B * !C * !D_N * !Y)	0.00199	0.00200	0.00200

sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	-0.00338	-0.00339	-0.00339
	(B * C * D_N * !Y)	0.00420	0.00423	0.00422
	(B * !D_N * !Y)	-0.00338	-0.00340	-0.00339
	(B * !D_N * !Y)	0.00420	0.00423	0.00422
	(B * !C * D_N * !Y)	-0.00339	-0.00340	-0.00339
	(B * !C * D_N * !Y)	0.00422	0.00426	0.00422
	(!B * C * D_N * !Y)	-0.00338	-0.00340	-0.00339
	(!B * C * D_N * !Y)	0.00406	0.00410	0.00408
	(!B * C * !D_N * !Y)	-0.00338	-0.00340	-0.00339
	(!B * C * !D_N * !Y)	0.00406	0.00410	0.00407
	(!B * !C * !D_N * !Y)	-0.00339	-0.00340	-0.00339
	(!B * !C * !D_N * !Y)	0.00402	0.00404	0.00403
sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	-0.00662	-0.00665	-0.00661
	(B * C * D_N * !Y)	0.00832	0.00840	0.00831
	(B * !D_N * !Y)	-0.00663	-0.00665	-0.00662
	(B * !D_N * !Y)	0.00831	0.00839	0.00831
	(B * !C * D_N * !Y)	-0.00662	-0.00664	-0.00661
	(B * !C * D_N * !Y)	0.00833	0.00839	0.00832
	(!B * C * D_N * !Y)	-0.00660	-0.00663	-0.00661
	(!B * C * D_N * !Y)	0.00803	0.00809	0.00804
	(!B * C * !D_N * !Y)	-0.00661	-0.00664	-0.00662
	(!B * C * !D_N * !Y)	0.00802	0.00809	0.00804
	(!B * !C * !D_N * !Y)	-0.00663	-0.00663	-0.00662
	(!B * !C * !D_N * !Y)	0.00796	0.00794	0.00794

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)**	0.00185	0.00188	0.00178
	(A * C * D_N * !Y)	-0.00131	-0.00131	-0.00130
	(A * C * !D_N * !Y)	0.00166	0.00168	0.00166
	(A * C * !D_N * !Y)	-0.00144	-0.00144	-0.00143
	(A * !C * D_N * !Y)	0.00173	0.00175	0.00173
	(A * !C * D_N * !Y)	-0.00107	-0.00108	-0.00107
	(A * !C * !D_N * !Y)	0.00166	0.00167	0.00166
	(A * !C * !D_N * !Y)	-0.00137	-0.00137	-0.00136
	(!A * C * D_N * !Y)	0.00192	0.00175	0.00173
	(!A * C * D_N * !Y)	-0.00179	-0.00201	-0.00200
	(!A * C * !D_N * !Y)	0.00165	0.00168	0.00166
	(!A * C * !D_N * !Y)	-0.00201	-0.00208	-0.00206
	(!A * !C * !D_N * !Y)	0.00174	0.00168	0.00166
	(!A * !C * !D_N * !Y)	-0.00177	-0.00201	-0.00199
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	0.00360	0.00364	0.00350
	(A * C * D_N * !Y)	-0.00285	-0.00284	-0.00283
	(A * C * !D_N * !Y)	0.00349	0.00352	0.00347
	(A * C * !D_N * !Y)	-0.00297	-0.00297	-0.00296
	(A * !C * D_N * !Y)	0.00348	0.00350	0.00346
	(A * !C * D_N * !Y)	-0.00234	-0.00234	-0.00232
	(A * !C * !D_N * !Y)	0.00348	0.00352	0.00350
	(A * !C * !D_N * !Y)	-0.00282	-0.00282	-0.00281
	(!A * C * D_N * !Y)	0.00370	0.00347	0.00346
	(!A * C * D_N * !Y)	-0.00386	-0.00423	-0.00422
	(!A * C * !D_N * !Y)	0.00350	0.00347	0.00345
	(!A * C * !D_N * !Y)	-0.00414	-0.00424	-0.00422
	(!A * !C * !D_N * !Y)	0.00360	0.00347	0.00346
	(!A * !C * !D_N * !Y)	-0.00374	-0.00410	-0.00408

sky130_fd_sc_hs__nor4b_4	**(A * C * D_N * !Y)**	0.00705	0.00720	0.00686
	(A * C * D_N * !Y)	-0.00556	-0.00555	-0.00554
	(A * C * !D_N * !Y)	0.00680	0.00686	0.00677
	(A * C * !D_N * !Y)	-0.00581	-0.00580	-0.00578
	(A * !C * D_N * !Y)	0.00680	0.00684	0.00676
	(A * !C * D_N * !Y)	-0.00459	-0.00459	-0.00455
	(A * !C * !D_N * !Y)	0.00678	0.00687	0.00682
	(A * !C * !D_N * !Y)	-0.00551	-0.00551	-0.00548
	(!A * C * D_N * !Y)	0.00740	0.00680	0.00676
	(!A * C * D_N * !Y)	-0.00751	-0.00838	-0.00837
	(!A * C * !D_N * !Y)	0.00677	0.00678	0.00675
	(!A * C * !D_N * !Y)	-0.00814	-0.00840	-0.00835
	(!A * !C * !D_N * !Y)	0.00707	0.00680	0.00675
	(!A * !C * !D_N * !Y)	-0.00733	-0.00812	-0.00806

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)**	-0.00173	-0.00173	-0.00173
	(A * C * D_N * !Y)	0.00131	0.00131	0.00130
	(A * C * !D_N * !Y)	-0.00166	-0.00166	-0.00166
	(A * C * !D_N * !Y)	0.00144	0.00144	0.00143
	(A * !C * D_N * !Y)	-0.00168	-0.00169	-0.00168
	(A * !C * D_N * !Y)	0.00111	0.00112	0.00113
	(A * !C * !D_N * !Y)	-0.00166	-0.00166	-0.00166
	(A * !C * !D_N * !Y)	0.00137	0.00137	0.00136
	(!A * C * D_N * !Y)	-0.00171	-0.00172	-0.00172
	(!A * C * D_N * !Y)	0.00198	0.00201	0.00200
	(!A * C * !D_N * !Y)	-0.00165	-0.00167	-0.00166
	(!A * C * !D_N * !Y)	0.00206	0.00208	0.00206
	(!A * !C * !D_N * !Y)	-0.00165	-0.00166	-0.00165
	(!A * !C * !D_N * !Y)	0.00198	0.00201	0.00199
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	-0.00346	-0.00346	-0.00346
	(A * C * D_N * !Y)	0.00285	0.00284	0.00283
	(A * C * !D_N * !Y)	-0.00346	-0.00346	-0.00345
	(A * C * !D_N * !Y)	0.00297	0.00297	0.00296
	(A * !C * D_N * !Y)	-0.00333	-0.00336	-0.00332
	(A * !C * D_N * !Y)	0.00244	0.00247	0.00247
	(A * !C * !D_N * !Y)	-0.00348	-0.00349	-0.00348
	(A * !C * !D_N * !Y)	0.00282	0.00282	0.00281
	(!A * C * D_N * !Y)	-0.00343	-0.00346	-0.00344
	(!A * C * D_N * !Y)	0.00419	0.00424	0.00422
	(!A * C * !D_N * !Y)	-0.00344	-0.00347	-0.00345
	(!A * C * !D_N * !Y)	0.00420	0.00425	0.00422
	(!A * !C * !D_N * !Y)	-0.00346	-0.00347	-0.00345
	(!A * !C * !D_N * !Y)	0.00408	0.00410	0.00408

sky130_fd_sc_hs__nor4b_4	(A * C * D_N * !Y)	-0.00675	-0.00675	-0.00674
	(A * C * D_N * !Y)	0.00556	0.00555	0.00554
	(A * C * !D_N * !Y)	-0.00675	-0.00676	-0.00674
	(A * C * !D_N * !Y)	0.00581	0.00580	0.00578
	(A * !C * D_N * !Y)	-0.00653	-0.00657	-0.00650
	(A * !C * D_N * !Y)	0.00476	0.00481	0.00483
	(A * !C * !D_N * !Y)	-0.00678	-0.00680	-0.00678
	(A * !C * !D_N * !Y)	0.00551	0.00551	0.00548
	(!A * C * D_N * !Y)	-0.00673	-0.00676	-0.00672
	(!A * C * D_N * !Y)	0.00837	0.00843	0.00837
	(!A * C * !D_N * !Y)	-0.00674	-0.00677	-0.00673
	(!A * C * !D_N * !Y)	0.00836	0.00843	0.00835
	(!A * !C * !D_N * !Y)	-0.00673	-0.00677	-0.00673
	(!A * !C * !D_N * !Y)	0.00803	0.00812	0.00806

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)	0.00196	0.00198	0.00196
	(B * D_N * !Y)	-0.00106	-0.00107	-0.00107
	(B * !D_N * !Y)	0.00177	0.00179	0.00170
	(B * !D_N * !Y)	-0.00159	-0.00159	-0.00159
	(A * !B * D_N * !Y)	0.00197	0.00199	0.00196
	(A * !B * D_N * !Y)	-0.00105	-0.00106	-0.00106
	(A * !B * !D_N * !Y)	0.00184	0.00170	0.00167
	(A * !B * !D_N * !Y)	-0.00162	-0.00163	-0.00162
	(!A * !B * !D_N * !Y)	0.00208	0.00170	0.00167
	(!A * !B * !D_N * !Y)	-0.00189	-0.00227	-0.00228

sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	0.00374	0.00376	0.00372
	(B * D_N * !Y)	-0.00220	-0.00220	-0.00219
	(B * !D_N * !Y)	0.00362	0.00373	0.00359
	(B * !D_N * !Y)	-0.00286	-0.00288	-0.00285
	(A * !B * D_N * !Y)	0.00375	0.00377	0.00372
	(A * !B * D_N * !Y)	-0.00218	-0.00219	-0.00218
	(A * !B * !D_N * !Y)	0.00383	0.00359	0.00354
	(A * !B * !D_N * !Y)	-0.00295	-0.00296	-0.00294
	(!A * !B * !D_N * !Y)	0.00438	0.00357	0.00350
	(!A * !B * !D_N * !Y)	-0.00333	-0.00424	-0.00426
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	0.00730	0.00745	0.00731
	(B * D_N * !Y)	-0.00432	-0.00441	-0.00435
	(B * !D_N * !Y)	0.00747	0.00761	0.00727
	(B * !D_N * !Y)	-0.00543	-0.00551	-0.00546
	(A * !B * D_N * !Y)	0.00736	0.00747	0.00732
	(A * !B * D_N * !Y)	-0.00431	-0.00437	-0.00432
	(A * !B * !D_N * !Y)	0.00788	0.00728	0.00715
	(A * !B * !D_N * !Y)	-0.00563	-0.00561	-0.00560
	(!A * !B * !D_N * !Y)	0.00894	0.00724	0.00709
	(!A * !B * !D_N * !Y)	-0.00644	-0.00825	-0.00828

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)**	-0.00194	-0.00194	-0.00193
	(B * D_N * !Y)	0.00110	0.00110	0.00110
	(B * !D_N * !Y)	-0.00167	-0.00166	-0.00166
	(B * !D_N * !Y)	0.00159	0.00159	0.00159
	(A * !B * D_N * !Y)	-0.00187	-0.00189	-0.00193
	(A * !B * D_N * !Y)	0.00109	0.00110	0.00108
	(A * !B * !D_N * !Y)	-0.00166	-0.00167	-0.00166
	(A * !B * !D_N * !Y)	0.00163	0.00163	0.00162
	(!A * !B * !D_N * !Y)	-0.00166	-0.00166	-0.00165
	(!A * !B * !D_N * !Y)	0.00229	0.00229	0.00229
sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	-0.00365	-0.00368	-0.00366
	(B * D_N * !Y)	0.00223	0.00226	0.00226
	(B * !D_N * !Y)	-0.00354	-0.00356	-0.00354
	(B * !D_N * !Y)	0.00286	0.00288	0.00285
	(A * !B * D_N * !Y)	-0.00350	-0.00354	-0.00364
	(A * !B * D_N * !Y)	0.00226	0.00228	0.00223
	(A * !B * !D_N * !Y)	-0.00354	-0.00355	-0.00353
	(A * !B * !D_N * !Y)	0.00295	0.00296	0.00294
	(!A * !B * !D_N * !Y)	-0.00349	-0.00351	-0.00348
	(!A * !B * !D_N * !Y)	0.00423	0.00426	0.00426
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	-0.00718	-0.00724	-0.00720
	(B * D_N * !Y)	0.00445	0.00450	0.00450
	(B * !D_N * !Y)	-0.00712	-0.00718	-0.00714
	(B * !D_N * !Y)	0.00543	0.00551	0.00546
	(A * !B * D_N * !Y)	-0.00691	-0.00696	-0.00717
	(A * !B * D_N * !Y)	0.00450	0.00452	0.00442
	(A * !B * !D_N * !Y)	-0.00715	-0.00714	-0.00713
	(A * !B * !D_N * !Y)	0.00563	0.00561	0.00560
	(!A * !B * !D_N * !Y)	-0.00708	-0.00710	-0.00704
	(!A * !B * !D_N * !Y)	0.00826	0.00829	0.00829

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00480	0.00670	0.05127
	(C * !Y)	0.00093	0.00282	0.04740
	(B * !C * !Y)	0.00489	0.00678	0.05133
	(B * !C * !Y)	0.00096	0.00285	0.04741
	(A * !B * !C * !Y)	0.00499	0.00689	0.05137
	(A * !B * !C * !Y)	0.00101	0.00290	0.04740
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00617	0.00776	0.05578
	(C * !Y)	0.00177	0.00337	0.05138
	(B * !C * !Y)	0.00637	0.00797	0.05593
	(B * !C * !Y)	0.00186	0.00345	0.05143
	(A * !B * !C * !Y)	0.00664	0.00825	0.05613
	(A * !B * !C * !Y)	0.00201	0.00359	0.05154
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.00945	0.01162	0.08972
	(C * !Y)	0.00294	0.00510	0.08324
	(B * !C * !Y)	0.00985	0.01201	0.09000
	(B * !C * !Y)	0.00313	0.00528	0.08333
	(A * !B * !C * !Y)	0.01038	0.01253	0.09038
	(A * !B * !C * !Y)	0.00342	0.00556	0.08353

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00155	0.00425	0.04922
	(C * !Y)	0.00540	0.00812	0.05308
	(B * !C * !Y)	0.00155	0.00425	0.04921
	(B * !C * !Y)	0.00541	0.00813	0.05308
	(A * !B * !C * !Y)	0.00155	0.00424	0.04916
	(A * !B * !C * !Y)	0.00541	0.00813	0.05303
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00320	0.00568	0.05376
	(C * !Y)	0.00758	0.01008	0.05816
	(B * !C * !Y)	0.00320	0.00568	0.05376
	(B * !C * !Y)	0.00759	0.01009	0.05817
	(A * !B * !C * !Y)	0.00320	0.00568	0.05375
	(A * !B * !C * !Y)	0.00759	0.01009	0.05817
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.00671	0.01101	0.09045
	(C * !Y)	0.01319	0.01752	0.09693
	(B * !C * !Y)	0.00671	0.01100	0.09044
	(B * !C * !Y)	0.01320	0.01753	0.09694
	(A * !B * !C * !Y)	0.00671	0.01100	0.09044
	(A * !B * !C * !Y)	0.01320	0.01753	0.09694

SKY130_FD_SC_HS__NOR4x

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00271	0.00287	0.00286	0.00290	0.30161
sky130_fd_sc_hs__nor4_2	0.00420	0.00481	0.00477	0.00446	0.54369
sky130_fd_sc_hs__nor4_4	0.00830	0.00867	0.00846	0.00860	0.97992

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor4_1	0.00000	0.01357	0.07688
sky130_fd_sc_hs__nor4_2	0.00000	0.02527	0.15376
sky130_fd_sc_hs__nor4_4	0.00000	0.05055	0.30752

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)	0.18501	1.13163	9.57830
	B->Y (FR)	0.17486	1.13729	10.02380
	C->Y (FR)	0.14492	1.13368	10.47740
	D->Y (FR)	0.09616	1.09176	10.43720
sky130_fd_sc_hs__nor4_2	A->Y (FR)	0.15941	0.95727	9.42206
	B->Y (FR)	0.14391	0.95334	9.83650
	C->Y (FR)	0.10509	0.93744	10.29010
	D->Y (FR)	0.05169	0.87944	10.19510
sky130_fd_sc_hs__nor4_4	A->Y (FR)	0.17522	0.84241	9.26305
	B->Y (FR)	0.16084	0.84076	9.75168
	C->Y (FR)	0.12556	0.83836	10.34760
	D->Y (FR)	0.06229	0.78585	10.35630

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4_1	A->Y (RF)	0.02023	0.25383	2.05010
	B->Y (RF)	0.02237	0.25726	2.12112
	C->Y (RF)	0.02261	0.25109	2.11524
	D->Y (RF)	0.01934	0.23911	2.07750
sky130_fd_sc_hs__nor4_2	A->Y (RF)	0.02741	0.34134	3.38981
	B->Y (RF)	0.03112	0.34446	3.48642
	C->Y (RF)	0.03034	0.33010	3.45889
	D->Y (RF)	0.02364	0.30403	3.31420
sky130_fd_sc_hs__nor4_4	A->Y (RF)	0.02808	0.28810	3.13894
	B->Y (RF)	0.02999	0.28181	3.15155
	C->Y (RF)	0.03084	0.27443	3.20330
	D->Y (RF)	0.02269	0.25299	3.16518

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.00031	0.00016	0.00776
	A	0.00907	0.00893	0.01655
	B	0.00045	0.00029	0.00761
	B	0.00808	0.00789	0.01525
	C	0.00044	0.00037	0.00794
	C	0.00693	0.00684	0.01445
	D	0.00030	0.00088	0.01324
	D	0.00582	0.00641	0.01878
sky130_fd_sc_hs__nor4_2	A	0.00038	0.00023	0.00861
	A	0.01526	0.01515	0.02353
	B	0.00002	-0.00013	0.00838
	B	0.01332	0.01322	0.02170
	C	0.00029	0.00021	0.00953
	C	0.01090	0.01084	0.02018
	D	-0.00007	0.00105	0.01740
	D	0.00822	0.00915	0.02571
sky130_fd_sc_hs__nor4_4	A	0.00370	0.00337	0.02099
	A	0.03406	0.03373	0.05150
	B	0.00381	0.00344	0.02112
	B	0.02967	0.02927	0.04695
	C	0.00394	0.00375	0.02209
	C	0.02489	0.02471	0.04311
	D	0.00352	0.00545	0.03725
	D	0.01985	0.02183	0.05368

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.01166	0.01175	0.02005
	A	0.00310	0.00315	0.01149
	B	0.00975	0.00992	0.01763
	B	0.00222	0.00237	0.01012
	C	0.00750	0.00785	0.01527
	C	0.00105	0.00139	0.00882
	D	0.00525	0.00575	0.01311
	D	-0.00025	0.00024	0.00759
sky130_fd_sc_hs__nor4_2	A	0.02066	0.02051	0.03069
	A	0.00620	0.00602	0.01619
	B	0.01705	0.01703	0.02680
	B	0.00399	0.00392	0.01370
	C	0.01176	0.01215	0.02165
	C	0.00121	0.00155	0.01107
	D	0.00676	0.00764	0.01725
	D	-0.00151	-0.00065	0.00892
sky130_fd_sc_hs__nor4_4	A	0.04154	0.04129	0.06227
	A	0.01208	0.01176	0.03273
	B	0.03264	0.03262	0.05286
	B	0.00724	0.00725	0.02744
	C	0.02365	0.02429	0.04349
	C	0.00290	0.00348	0.02263
	D	0.01338	0.01510	0.03366
	D	-0.00290	-0.00126	0.01726

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	0.00174	0.00176	0.00173
	(B * D * !Y)	-0.00203	-0.00208	-0.00207
	(B * C * !D * !Y)	0.00174	0.00176	0.00173
	(B * C * !D * !Y)	-0.00202	-0.00208	-0.00207
	(B * !C * !D * !Y)	0.00174	0.00176	0.00173
	(B * !C * !D * !Y)	-0.00199	-0.00208	-0.00207
	(!B * C * D * !Y)	0.00173	0.00175	0.00173
	(!B * C * D * !Y)	-0.00186	-0.00201	-0.00200
	(!B * C * !D * !Y)	0.00174	0.00175	0.00173
	(!B * C * !D * !Y)	-0.00186	-0.00201	-0.00200
	(!B * !C * D * !Y)	0.00174	0.00175	0.00173
	(!B * !C * D * !Y)	-0.00183	-0.00196	-0.00198
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00174	0.00175	0.00173
	(B * D * !Y)	-0.00391	-0.00403	-0.00403
	(B * C * !D * !Y)	0.00174	0.00175	0.00173
	(B * C * !D * !Y)	-0.00390	-0.00403	-0.00403
	(B * !C * !D * !Y)	0.00175	0.00175	0.00173
	(B * !C * !D * !Y)	-0.00381	-0.00402	-0.00403
	(!B * C * D * !Y)	0.00174	0.00175	0.00173
	(!B * C * D * !Y)	-0.00355	-0.00390	-0.00388
	(!B * C * !D * !Y)	0.00174	0.00175	0.00173
	(!B * C * !D * !Y)	-0.00355	-0.00390	-0.00388
	(!B * !C * D * !Y)	0.00177	0.00175	0.00173
	(!B * !C * D * !Y)	-0.00347	-0.00382	-0.00381

sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00362	0.00365	0.00360
	(B * D * !Y)	-0.00801	-0.00828	-0.00823
	(B * C * !D * !Y)	0.00362	0.00365	0.00360
	(B * C * !D * !Y)	-0.00800	-0.00826	-0.00824
	(B * !C * !D * !Y)	0.00364	0.00365	0.00360
	(B * !C * !D * !Y)	-0.00784	-0.00823	-0.00825
	(!B * C * D * !Y)	0.00362	0.00364	0.00360
	(!B * C * D * !Y)	-0.00737	-0.00802	-0.00797
	(!B * C * !D * !Y)	0.00363	0.00364	0.00360
	(!B * C * !D * !Y)	-0.00736	-0.00802	-0.00797
	(!B * !C * D * !Y)	0.00368	0.00365	0.00361
	(!B * !C * D * !Y)	-0.00723	-0.00788	-0.00785

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00173	-0.00174	-0.00173
	(B * D * !Y)	0.00207	0.00208	0.00207
	(B * C * !D * !Y)	-0.00173	-0.00173	-0.00173
	(B * C * !D * !Y)	0.00207	0.00208	0.00207
	(B * !C * !D * !Y)	-0.00172	-0.00173	-0.00173
	(B * !C * !D * !Y)	0.00205	0.00208	0.00207
	(!B * C * D * !Y)	-0.00173	-0.00173	-0.00173
	(!B * C * D * !Y)	0.00200	0.00201	0.00200
	(!B * C * !D * !Y)	-0.00173	-0.00173	-0.00173
	(!B * C * !D * !Y)	0.00200	0.00201	0.00200
	(!B * !C * D * !Y)	-0.00173	-0.00172	-0.00173
	(!B * !C * D * !Y)	0.00197	0.00196	0.00198

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00172	-0.00173	-0.00173
	(B * D * !Y)	0.00401	0.00403	0.00403
	(B * C * !D * !Y)	-0.00172	-0.00173	-0.00173
	(B * C * !D * !Y)	0.00401	0.00403	0.00403
	(B * !C * !D * !Y)	-0.00172	-0.00172	-0.00173
	(B * !C * !D * !Y)	0.00401	0.00402	0.00403
	(!B * C * D * !Y)	-0.00172	-0.00174	-0.00173
	(!B * C * D * !Y)	0.00386	0.00390	0.00388
	(!B * C * !D * !Y)	-0.00172	-0.00174	-0.00173
	(!B * C * !D * !Y)	0.00386	0.00390	0.00388
	(!B * !C * D * !Y)	-0.00172	-0.00173	-0.00172
	(!B * !C * D * !Y)	0.00379	0.00382	0.00381
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00360	-0.00361	-0.00360
	(B * D * !Y)	0.00823	0.00828	0.00823
	(B * C * !D * !Y)	-0.00360	-0.00360	-0.00359
	(B * C * !D * !Y)	0.00824	0.00826	0.00824
	(B * !C * !D * !Y)	-0.00360	-0.00359	-0.00359
	(B * !C * !D * !Y)	0.00824	0.00823	0.00825
	(!B * C * D * !Y)	-0.00359	-0.00361	-0.00359
	(!B * C * D * !Y)	0.00795	0.00802	0.00797
	(!B * C * !D * !Y)	-0.00359	-0.00361	-0.00359
	(!B * C * !D * !Y)	0.00795	0.00802	0.00797
	(!B * !C * D * !Y)	-0.00360	-0.00361	-0.00359
	(!B * !C * D * !Y)	0.00786	0.00788	0.00785

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)**	0.00167	0.00169	0.00167
	(A * C * D * !Y)	-0.00145	-0.00145	-0.00144
	(A * C * !D * !Y)	0.00177	0.00179	0.00170
	(A * C * !D * !Y)	-0.00138	-0.00138	-0.00137
	(A * !C * D * !Y)	0.00167	0.00168	0.00167
	(A * !C * D * !Y)	-0.00136	-0.00136	-0.00135
	(A * !C * !D * !Y)	0.00167	0.00168	0.00167
	(A * !C * !D * !Y)	-0.00115	-0.00116	-0.00114
	(!A * C * D * !Y)	0.00168	0.00169	0.00167
	(!A * C * D * !Y)	-0.00203	-0.00208	-0.00207
	(!A * C * !D * !Y)	0.00183	0.00169	0.00167
	(!A * C * !D * !Y)	-0.00187	-0.00207	-0.00207
	(!A * !C * D * !Y)	0.00175	0.00169	0.00167
	(!A * !C * D * !Y)	-0.00174	-0.00201	-0.00199
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	0.00220	0.00221	0.00219
	(A * C * D * !Y)	-0.00296	-0.00296	-0.00294
	(A * C * !D * !Y)	0.00235	0.00240	0.00223
	(A * C * !D * !Y)	-0.00277	-0.00280	-0.00279
	(A * !C * D * !Y)	0.00218	0.00220	0.00218
	(A * !C * D * !Y)	-0.00275	-0.00277	-0.00274
	(A * !C * !D * !Y)	0.00217	0.00219	0.00217
	(A * !C * !D * !Y)	-0.00234	-0.00235	-0.00233
	(!A * C * D * !Y)	0.00219	0.00217	0.00216
	(!A * C * D * !Y)	-0.00407	-0.00419	-0.00420
	(!A * C * !D * !Y)	0.00253	0.00217	0.00216
	(!A * C * !D * !Y)	-0.00373	-0.00424	-0.00421
	(!A * !C * D * !Y)	0.00237	0.00215	0.00216
	(!A * !C * D * !Y)	-0.00353	-0.00410	-0.00404

sky130_fd_sc_hs__nor4_4	**(A * C * D * !Y)**	0.00375	0.00378	0.00373
	(A * C * D * !Y)	-0.00583	-0.00584	-0.00583
	(A * C * !D * !Y)	0.00407	0.00408	0.00381
	(A * C * !D * !Y)	-0.00559	-0.00564	-0.00558
	(A * !C * D * !Y)	0.00377	0.00381	0.00377
	(A * !C * D * !Y)	-0.00548	-0.00548	-0.00546
	(A * !C * !D * !Y)	0.00372	0.00376	0.00372
	(A * !C * !D * !Y)	-0.00464	-0.00468	-0.00464
	(!A * C * D * !Y)	0.00378	0.00373	0.00372
	(!A * C * D * !Y)	-0.00823	-0.00844	-0.00846
	(!A * C * !D * !Y)	0.00427	0.00374	0.00372
	(!A * C * !D * !Y)	-0.00753	-0.00849	-0.00846
	(!A * !C * D * !Y)	0.00404	0.00375	0.00373
	(!A * !C * D * !Y)	-0.00719	-0.00817	-0.00812

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)**	-0.00167	-0.00167	-0.00166
	(A * C * D * !Y)	0.00145	0.00145	0.00144
	(A * C * !D * !Y)	-0.00167	-0.00167	-0.00166
	(A * C * !D * !Y)	0.00138	0.00138	0.00137
	(A * !C * D * !Y)	-0.00167	-0.00167	-0.00166
	(A * !C * D * !Y)	0.00136	0.00136	0.00135
	(A * !C * !D * !Y)	-0.00162	-0.00163	-0.00162
	(A * !C * !D * !Y)	0.00118	0.00119	0.00119
	(!A * C * D * !Y)	-0.00166	-0.00167	-0.00166
	(!A * C * D * !Y)	0.00207	0.00208	0.00207
	(!A * C * !D * !Y)	-0.00167	-0.00167	-0.00166
	(!A * C * !D * !Y)	0.00207	0.00207	0.00207
	(!A * !C * D * !Y)	-0.00166	-0.00167	-0.00166
	(!A * !C * D * !Y)	0.00198	0.00201	0.00199
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	-0.00219	-0.00219	-0.00218
	(A * C * D * !Y)	0.00296	0.00296	0.00294
	(A * C * !D * !Y)	-0.00217	-0.00219	-0.00218
	(A * C * !D * !Y)	0.00277	0.00280	0.00279
	(A * !C * D * !Y)	-0.00217	-0.00218	-0.00217
	(A * !C * D * !Y)	0.00275	0.00277	0.00274
	(A * !C * !D * !Y)	-0.00209	-0.00210	-0.00207
	(A * !C * !D * !Y)	0.00240	0.00243	0.00242
	(!A * C * D * !Y)	-0.00216	-0.00216	-0.00216
	(!A * C * D * !Y)	0.00419	0.00419	0.00420
	(!A * C * !D * !Y)	-0.00217	-0.00217	-0.00216
	(!A * C * !D * !Y)	0.00421	0.00424	0.00421
	(!A * !C * D * !Y)	-0.00215	-0.00215	-0.00215
	(!A * !C * D * !Y)	0.00403	0.00410	0.00404

sky130_fd_sc_hs__nor4_4	(A * C * D * !Y)	-0.00371	-0.00372	-0.00372
	(A * C * D * !Y)	0.00583	0.00584	0.00583
	(A * C * !D * !Y)	-0.00371	-0.00374	-0.00372
	(A * C * !D * !Y)	0.00559	0.00564	0.00558
	(A * !C * D * !Y)	-0.00375	-0.00375	-0.00374
	(A * !C * D * !Y)	0.00548	0.00548	0.00546
	(A * !C * !D * !Y)	-0.00349	-0.00352	-0.00345
	(A * !C * !D * !Y)	0.00481	0.00486	0.00488
	(!A * C * D * !Y)	-0.00370	-0.00371	-0.00371
	(!A * C * D * !Y)	0.00840	0.00844	0.00846
	(!A * C * !D * !Y)	-0.00370	-0.00373	-0.00371
	(!A * C * !D * !Y)	0.00841	0.00853	0.00846
	(!A * !C * D * !Y)	-0.00371	-0.00373	-0.00371
	(!A * !C * D * !Y)	0.00808	0.00817	0.00812

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(B * D * !Y)	0.00180	0.00181	0.00172
	(B * D * !Y)	-0.00130	-0.00130	-0.00130
	(B * !D * !Y)	0.00170	0.00172	0.00169
	(B * !D * !Y)	-0.00108	-0.00109	-0.00108
	(A * !B * D * !Y)	0.00188	0.00173	0.00170
	(A * !B * D * !Y)	-0.00131	-0.00135	-0.00133
	(A * !B * !D * !Y)	0.00171	0.00173	0.00170
	(A * !B * !D * !Y)	-0.00107	-0.00108	-0.00108
	(!A * !B * D * !Y)	0.00212	0.00172	0.00169
	(!A * !B * D * !Y)	-0.00160	-0.00199	-0.00202

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00236	0.00233	0.00221
	(B * D * !Y)	-0.00267	-0.00267	-0.00266
	(B * !D * !Y)	0.00216	0.00218	0.00215
	(B * !D * !Y)	-0.00219	-0.00220	-0.00220
	(A * !B * D * !Y)	0.00252	0.00223	0.00216
	(A * !B * D * !Y)	-0.00266	-0.00274	-0.00272
	(A * !B * !D * !Y)	0.00219	0.00219	0.00215
	(A * !B * !D * !Y)	-0.00219	-0.00219	-0.00218
	(!A * !B * D * !Y)	0.00296	0.00219	0.00213
	(!A * !B * D * !Y)	-0.00330	-0.00408	-0.00412
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00401	0.00404	0.00375
	(B * D * !Y)	-0.00530	-0.00535	-0.00530
	(B * !D * !Y)	0.00364	0.00367	0.00359
	(B * !D * !Y)	-0.00446	-0.00450	-0.00449
	(A * !B * D * !Y)	0.00443	0.00376	0.00361
	(A * !B * D * !Y)	-0.00536	-0.00551	-0.00547
	(A * !B * !D * !Y)	0.00368	0.00371	0.00361
	(A * !B * !D * !Y)	-0.00441	-0.00445	-0.00446
	(!A * !B * D * !Y)	0.00550	0.00370	0.00357
	(!A * !B * D * !Y)	-0.00637	-0.00825	-0.00830

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

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

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00169	-0.00169	-0.00169
	(B * D * !Y)	0.00130	0.00130	0.00130
	(B * !D * !Y)	-0.00168	-0.00169	-0.00167
	(B * !D * !Y)	0.00111	0.00111	0.00111
	(A * !B * D * !Y)	-0.00169	-0.00170	-0.00169
	(A * !B * D * !Y)	0.00134	0.00135	0.00133
	(A * !B * !D * !Y)	-0.00164	-0.00165	-0.00167
	(A * !B * !D * !Y)	0.00109	0.00111	0.00109
	(!A * !B * D * !Y)	-0.00169	-0.00169	-0.00168
	(!A * !B * D * !Y)	0.00201	0.00203	0.00202
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00216	-0.00216	-0.00215
	(B * D * !Y)	0.00267	0.00267	0.00266
	(B * !D * !Y)	-0.00211	-0.00213	-0.00210
	(B * !D * !Y)	0.00223	0.00225	0.00226
	(A * !B * D * !Y)	-0.00215	-0.00215	-0.00214
	(A * !B * D * !Y)	0.00273	0.00274	0.00272
	(A * !B * !D * !Y)	-0.00200	-0.00203	-0.00209
	(A * !B * !D * !Y)	0.00226	0.00228	0.00223
	(!A * !B * D * !Y)	-0.00211	-0.00211	-0.00210
	(!A * !B * D * !Y)	0.00410	0.00410	0.00412
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00360	-0.00363	-0.00361
	(B * D * !Y)	0.00530	0.00535	0.00530
	(B * !D * !Y)	-0.00354	-0.00354	-0.00348
	(B * !D * !Y)	0.00459	0.00461	0.00462
	(A * !B * D * !Y)	-0.00360	-0.00361	-0.00360
	(A * !B * D * !Y)	0.00549	0.00551	0.00547
	(A * !B * !D * !Y)	-0.00339	-0.00343	-0.00347
	(A * !B * !D * !Y)	0.00452	0.00457	0.00454
	(!A * !B * D * !Y)	-0.00353	-0.00355	-0.00351
	(!A * !B * D * !Y)	0.00823	0.00827	0.00830

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	0.00195	0.00197	0.00195
	(C * !Y)	-0.00099	-0.00100	-0.00099
	(B * !C * !Y)	0.00195	0.00197	0.00195
	(B * !C * !Y)	-0.00099	-0.00100	-0.00099
	(A * !B * !C * !Y)	0.00195	0.00197	0.00195
	(A * !B * !C * !Y)	-0.00099	-0.00100	-0.00099
sky130_fd_sc_hs__nor4_2	(C * !Y)	0.00236	0.00238	0.00237
	(C * !Y)	-0.00195	-0.00197	-0.00196
	(B * !C * !Y)	0.00236	0.00238	0.00237
	(B * !C * !Y)	-0.00194	-0.00196	-0.00195
	(A * !B * !C * !Y)	0.00237	0.00238	0.00237
	(A * !B * !C * !Y)	-0.00195	-0.00196	-0.00195
sky130_fd_sc_hs__nor4_4	(C * !Y)	0.00447	0.00450	0.00446
	(C * !Y)	-0.00392	-0.00394	-0.00391
	(B * !C * !Y)	0.00449	0.00450	0.00446
	(B * !C * !Y)	-0.00394	-0.00393	-0.00389
	(A * !B * !C * !Y)	0.00448	0.00454	0.00446
	(A * !B * !C * !Y)	-0.00393	-0.00396	-0.00389

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	-0.00189	-0.00190	-0.00194
	(C * !Y)	0.00105	0.00105	0.00101
	(B * !C * !Y)	-0.00180	-0.00182	-0.00193
	(B * !C * !Y)	0.00110	0.00110	0.00101
	(A * !B * !C * !Y)	-0.00169	-0.00171	-0.00190
	(A * !B * !C * !Y)	0.00115	0.00116	0.00102
sky130_fd_sc_hs__nor4_2	(C * !Y)	-0.00223	-0.00224	-0.00235
	(C * !Y)	0.00208	0.00208	0.00199
	(B * !C * !Y)	-0.00202	-0.00203	-0.00232
	(B * !C * !Y)	0.00219	0.00219	0.00199
	(A * !B * !C * !Y)	-0.00179	-0.00180	-0.00226
	(A * !B * !C * !Y)	0.00232	0.00232	0.00202
sky130_fd_sc_hs__nor4_4	(C * !Y)	-0.00414	-0.00419	-0.00444
	(C * !Y)	0.00417	0.00420	0.00398
	(B * !C * !Y)	-0.00378	-0.00384	-0.00436
	(B * !C * !Y)	0.00435	0.00438	0.00399
	(A * !B * !C * !Y)	-0.00327	-0.00333	-0.00423
	(A * !B * !C * !Y)	0.00465	0.00468	0.00406

SKY130_FD_SC_HS__O2111AIx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00274	0.00285	0.00277	0.00294	0.00287	0.60090
sky130_fd_sc_hs__o2111ai_2	0.00531	0.00535	0.00553	0.00540	0.00537	1.06860
sky130_fd_sc_hs__o2111ai_4	0.01058	0.01070	0.00806	0.00814	0.00805	1.81683

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2111ai_1	0.00000	0.02784	0.30753
sky130_fd_sc_hs__o2111ai_2	0.00000	0.05568	0.61505
sky130_fd_sc_hs__o2111ai_4	0.00000	0.06810	0.76882

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)	0.12906	0.95498	10.38020
	A2->Y (FR)	0.11705	0.95520	10.64030
	B1->Y (FR)	0.05112	0.64115	7.63721
	C1->Y (FR)	0.04494	0.63454	7.63883
	D1->Y (FR)	0.03725	0.62466	7.62215
sky130_fd_sc_hs__o2111ai_2	A1->Y (FR)	0.13259	0.83708	10.21950
	A2->Y (FR)	0.11403	0.83185	10.51030
	B1->Y (FR)	0.04781	0.56490	7.35054
	C1->Y (FR)	0.04096	0.55459	7.33052
	D1->Y (FR)	0.03098	0.54133	7.30038
sky130_fd_sc_hs__o2111ai_4	A1->Y (FR)	0.14052	0.74583	9.98107
	A2->Y (FR)	0.11840	0.74822	10.35510
	B1->Y (FR)	0.08741	0.70614	10.00990
	C1->Y (FR)	0.06566	0.65895	9.53366
	D1->Y (FR)	0.04845	0.66630	9.94638

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111ai_1	A1->Y (RF)	0.06970	0.47531	4.88875
	A2->Y (RF)	0.05789	0.45203	4.76964
	B1->Y (RF)	0.06433	0.51294	5.54538
	C1->Y (RF)	0.05801	0.54568	6.08465
	D1->Y (RF)	0.04890	0.56112	6.39777
sky130_fd_sc_hs__o2111ai_2	A1->Y (RF)	0.07831	0.42631	5.00902
	A2->Y (RF)	0.06183	0.40026	4.89196
	B1->Y (RF)	0.07201	0.45956	5.64503
	C1->Y (RF)	0.06411	0.51555	6.54028
	D1->Y (RF)	0.04898	0.52549	6.87179
sky130_fd_sc_hs__o2111ai_4	A1->Y (RF)	0.07381	0.33727	4.47886
	A2->Y (RF)	0.06247	0.32768	4.62666
	B1->Y (RF)	0.05288	0.36973	5.45262
	C1->Y (RF)	0.04487	0.41614	6.26842
	D1->Y (RF)	0.02931	0.43073	6.71525

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111ai_1	A1	0.00245	0.00237	0.00782
	A1	0.01211	0.01205	0.01751
	A2	0.00248	0.00296	0.01206
	A2	0.01100	0.01147	0.02061
	B1	0.00129	0.00211	0.01344
	B1	0.00838	0.00920	0.02067
	C1	0.00059	0.00146	0.01250
	C1	0.00677	0.00762	0.01883
	D1	0.00003	0.00094	0.01184
	D1	0.00512	0.00576	0.01706
sky130_fd_sc_hs__o2111ai_2	A1	0.00401	0.00377	0.01368
	A1	0.02343	0.02321	0.03312
	A2	0.00405	0.00466	0.02119
	A2	0.02101	0.02122	0.03820
	B1	0.00169	0.00290	0.02467
	B1	0.01614	0.01735	0.03934
	C1	0.00054	0.00181	0.02272
	C1	0.01267	0.01396	0.03539
	D1	-0.00169	0.00064	0.02063
	D1	0.00821	0.01063	0.03091

sky130_fd_sc_hs__o2111ai_4	**A1**	0.00703	0.00653	0.02712
	A1	0.04506	0.04452	0.06502
	A2	0.00681	0.00814	0.04016
	A2	0.04043	0.04173	0.07359
	B1	0.00290	0.00481	0.02880
	B1	0.03178	0.03358	0.05678
	C1	0.00070	0.00268	0.02670
	C1	0.02512	0.02712	0.05063
	D1	-0.00301	-0.00051	0.02281
	D1	0.01676	0.01928	0.04233

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111ai_1	**A1**	0.01217	0.01209	0.01637
	A1	0.00225	0.00216	0.00647
	A2	0.01008	0.01008	0.01475
	A2	0.00131	0.00128	0.00544
	B1	0.00840	0.00845	0.01371
	B1	0.00117	0.00116	0.00587
	C1	0.00740	0.00742	0.01228
	C1	0.00116	0.00119	0.00565
	D1	0.00619	0.00635	0.01171
	D1	0.00111	0.00126	0.00663

sky130_fd_sc_hs__o2111ai_2	**A1**	0.02511	0.02486	0.03317
	A1	0.00519	0.00484	0.01328
	A2	0.01981	0.01979	0.02818
	A2	0.00232	0.00224	0.01051
	B1	0.01680	0.01676	0.02699
	B1	0.00202	0.00196	0.01155
	C1	0.01437	0.01447	0.02320
	C1	0.00209	0.00208	0.01057
	D1	0.01183	0.01233	0.02302
	D1	0.00194	0.00240	0.01245
sky130_fd_sc_hs__o2111ai_4	**A1**	0.04822	0.04745	0.06631
	A1	0.00925	0.00839	0.02611
	A2	0.03768	0.03764	0.05539
	A2	0.00297	0.00281	0.01995
	B1	0.04093	0.04090	0.05068
	B1	0.00533	0.00532	0.01579
	C1	0.03634	0.03635	0.04731
	C1	0.00540	0.00547	0.01501
	D1	0.03128	0.03182	0.04238
	D1	0.00529	0.00575	0.01686

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)**	0.00204	0.00177	0.00174
	(A2 * B1 * C1 * D1 * !Y)	-0.00177	-0.00207	-0.00208
	(A2 * B1 * C1 * !D1 * Y)	0.00173	0.00174	0.00173
	(A2 * B1 * C1 * !D1 * Y)	-0.00205	-0.00206	-0.00208
	(A2 * B1 * !C1 * Y)	0.00173	0.00174	0.00173
	(A2 * B1 * !C1 * Y)	-0.00205	-0.00208	-0.00208
	(A2 * !B1 * Y)	0.00174	0.00174	0.00173
	(A2 * !B1 * Y)	-0.00205	-0.00208	-0.00208
	(!A2 * B1 * C1 * !D1 * Y)	0.00161	0.00162	0.00160
	(!A2 * B1 * C1 * !D1 * Y)	-0.00210	-0.00211	-0.00210
	(!A2 * B1 * !C1 * D1 * Y)	0.00161	0.00162	0.00162
	(!A2 * B1 * !C1 * D1 * Y)	-0.00209	-0.00210	-0.00210
	(!A2 * B1 * !C1 * !D1 * Y)	0.00165	0.00166	0.00164
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00210	-0.00211	-0.00210
	(!A2 * !B1 * C1 * D1 * Y)	0.00165	0.00167	0.00165
	(!A2 * !B1 * C1 * D1 * Y)	-0.00209	-0.00211	-0.00210
	(!A2 * !B1 * !D1 * Y)	0.00164	0.00167	0.00165
	(!A2 * !B1 * !D1 * Y)	-0.00209	-0.00211	-0.00210
	(!A2 * !B1 * !C1 * D1 * Y)	0.00164	0.00167	0.00165
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00209	-0.00211	-0.00210

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	0.00403	0.00344	0.00337
	(A2 * B1 * C1 * D1 * !Y)	-0.00346	-0.00418	-0.00419
	(A2 * B1 * C1 * !D1 * Y)	0.00335	0.00339	0.00335
	(A2 * B1 * C1 * !D1 * Y)	-0.00409	-0.00418	-0.00418
	(A2 * B1 * !C1 * Y)	0.00335	0.00339	0.00335
	(A2 * B1 * !C1 * Y)	-0.00409	-0.00418	-0.00418
	(A2 * !B1 * Y)	0.00335	0.00340	0.00335
	(A2 * !B1 * Y)	-0.00409	-0.00418	-0.00418
	(!A2 * B1 * C1 * !D1 * Y)	0.00315	0.00315	0.00315
	(!A2 * B1 * C1 * !D1 * Y)	-0.00425	-0.00424	-0.00424
	(!A2 * B1 * !C1 * D1 * Y)	0.00317	0.00319	0.00317
	(!A2 * B1 * !C1 * D1 * Y)	-0.00425	-0.00426	-0.00424
	(!A2 * B1 * !C1 * !D1 * Y)	0.00317	0.00317	0.00317
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00425	-0.00425	-0.00424
	(!A2 * !B1 * C1 * D1 * Y)	0.00320	0.00324	0.00321
	(!A2 * !B1 * C1 * D1 * Y)	-0.00423	-0.00426	-0.00424
	(!A2 * !B1 * !D1 * Y)	0.00316	0.00321	0.00317
	(!A2 * !B1 * !D1 * Y)	-0.00423	-0.00426	-0.00424
	(!A2 * !B1 * !C1 * D1 * Y)	0.00316	0.00321	0.00317
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00423	-0.00426	-0.00424

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	0.00812	0.00695	0.00684
	(A2 * B1 * C1 * D1 * !Y)	-0.00674	-0.00814	-0.00811
	(A2 * B1 * C1 * !D1 * Y)	0.00657	0.00665	0.00657
	(A2 * B1 * C1 * !D1 * Y)	-0.00820	-0.00841	-0.00837
	(A2 * B1 * !C1 * Y)	0.00658	0.00665	0.00657
	(A2 * B1 * !C1 * Y)	-0.00820	-0.00841	-0.00838
	(A2 * !B1 * Y)	0.00658	0.00665	0.00657
	(A2 * !B1 * Y)	-0.00820	-0.00841	-0.00838
	(!A2 * B1 * C1 * !D1 * Y)	0.00605	0.00610	0.00604
	(!A2 * B1 * C1 * !D1 * Y)	-0.00847	-0.00850	-0.00846
	(!A2 * B1 * !C1 * D1 * Y)	0.00616	0.00621	0.00615
	(!A2 * B1 * !C1 * D1 * Y)	-0.00847	-0.00846	-0.00845
	(!A2 * B1 * !C1 * !D1 * Y)	0.00613	0.00617	0.00612
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00846	-0.00849	-0.00846
	(!A2 * !B1 * C1 * D1 * Y)	0.00622	0.00626	0.00624
	(!A2 * !B1 * C1 * D1 * Y)	-0.00844	-0.00847	-0.00845
	(!A2 * !B1 * !D1 * Y)	0.00621	0.00628	0.00624
	(!A2 * !B1 * !D1 * Y)	-0.00844	-0.00849	-0.00846
	(!A2 * !B1 * !C1 * D1 * Y)	0.00622	0.00628	0.00625
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00844	-0.00848	-0.00846

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)**	-0.00173	-0.00174	-0.00172
	(A2 * B1 * C1 * D1 * !Y)	0.00208	0.00210	0.00208
	(A2 * B1 * C1 * !D1 * Y)	-0.00173	-0.00172	-0.00173
	(A2 * B1 * C1 * !D1 * Y)	0.00207	0.00206	0.00208
	(A2 * B1 * !C1 * Y)	-0.00172	-0.00174	-0.00173
	(A2 * B1 * !C1 * Y)	0.00206	0.00210	0.00208
	(A2 * !B1 * Y)	-0.00172	-0.00174	-0.00173
	(A2 * !B1 * Y)	0.00206	0.00209	0.00208
	(!A2 * B1 * C1 * !D1 * Y)	-0.00147	-0.00162	-0.00160
	(!A2 * B1 * C1 * !D1 * Y)	0.00210	0.00213	0.00210
	(!A2 * B1 * !C1 * D1 * Y)	-0.00150	-0.00162	-0.00162
	(!A2 * B1 * !C1 * D1 * Y)	0.00210	0.00213	0.00210
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00150	-0.00165	-0.00164
	(!A2 * B1 * !C1 * !D1 * Y)	0.00210	0.00213	0.00210
	(!A2 * !B1 * C1 * D1 * Y)	-0.00156	-0.00166	-0.00165
	(!A2 * !B1 * C1 * D1 * Y)	0.00209	0.00212	0.00210
	(!A2 * !B1 * !D1 * Y)	-0.00157	-0.00166	-0.00165
	(!A2 * !B1 * !D1 * Y)	0.00209	0.00212	0.00210
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00157	-0.00166	-0.00165
	(!A2 * !B1 * !C1 * D1 * Y)	0.00209	0.00212	0.00210

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	-0.00334	-0.00335	-0.00334
	(A2 * B1 * C1 * D1 * !Y)	0.00416	0.00418	0.00419
	(A2 * B1 * C1 * !D1 * Y)	-0.00334	-0.00335	-0.00335
	(A2 * B1 * C1 * !D1 * Y)	0.00416	0.00418	0.00418
	(A2 * B1 * !C1 * Y)	-0.00334	-0.00335	-0.00335
	(A2 * B1 * !C1 * Y)	0.00416	0.00418	0.00418
	(A2 * !B1 * Y)	-0.00334	-0.00334	-0.00335
	(A2 * !B1 * Y)	0.00416	0.00418	0.00418
	(!A2 * B1 * C1 * !D1 * Y)	-0.00284	-0.00313	-0.00315
	(!A2 * B1 * C1 * !D1 * Y)	0.00426	0.00430	0.00425
	(!A2 * B1 * !C1 * D1 * Y)	-0.00289	-0.00314	-0.00317
	(!A2 * B1 * !C1 * D1 * Y)	0.00426	0.00427	0.00425
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00289	-0.00314	-0.00317
	(!A2 * B1 * !C1 * !D1 * Y)	0.00426	0.00426	0.00425
	(!A2 * !B1 * C1 * D1 * Y)	-0.00300	-0.00321	-0.00321
	(!A2 * !B1 * C1 * D1 * Y)	0.00424	0.00429	0.00425
	(!A2 * !B1 * !D1 * Y)	-0.00300	-0.00321	-0.00317
	(!A2 * !B1 * !D1 * Y)	0.00424	0.00429	0.00425
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00300	-0.00321	-0.00317
	(!A2 * !B1 * !C1 * D1 * Y)	0.00424	0.00429	0.00425

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	-0.00681	-0.00684	-0.00681
	(A2 * B1 * C1 * D1 * !Y)	0.00807	0.00815	0.00811
	(A2 * B1 * C1 * !D1 * Y)	-0.00654	-0.00657	-0.00655
	(A2 * B1 * C1 * !D1 * Y)	0.00834	0.00841	0.00837
	(A2 * B1 * !C1 * Y)	-0.00654	-0.00657	-0.00656
	(A2 * B1 * !C1 * Y)	0.00834	0.00841	0.00838
	(A2 * !B1 * Y)	-0.00654	-0.00657	-0.00655
	(A2 * !B1 * Y)	0.00833	0.00841	0.00838
	(!A2 * B1 * C1 * !D1 * Y)	-0.00552	-0.00610	-0.00604
	(!A2 * B1 * C1 * !D1 * Y)	0.00850	0.00857	0.00848
	(!A2 * B1 * !C1 * D1 * Y)	-0.00561	-0.00612	-0.00615
	(!A2 * B1 * !C1 * D1 * Y)	0.00847	0.00846	0.00848
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00561	-0.00617	-0.00612
	(!A2 * B1 * !C1 * !D1 * Y)	0.00846	0.00857	0.00848
	(!A2 * !B1 * C1 * D1 * Y)	-0.00585	-0.00626	-0.00624
	(!A2 * !B1 * C1 * D1 * Y)	0.00845	0.00855	0.00848
	(!A2 * !B1 * !D1 * Y)	-0.00587	-0.00627	-0.00624
	(!A2 * !B1 * !D1 * Y)	0.00845	0.00855	0.00848
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00587	-0.00627	-0.00625
	(!A2 * !B1 * !C1 * D1 * Y)	0.00845	0.00855	0.00848

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)**	0.00187	0.00190	0.00188
	(A1 * B1 * C1 * D1 * !Y)	-0.00096	-0.00098	-0.00097
	(A1 * B1 * C1 * !D1 * Y)	0.00169	0.00171	0.00169
	(A1 * B1 * C1 * !D1 * Y)	-0.00201	-0.00206	-0.00205
	(A1 * B1 * !C1 * D1 * Y)	0.00169	0.00171	0.00169
	(A1 * B1 * !C1 * D1 * Y)	-0.00201	-0.00206	-0.00205
	(A1 * B1 * !C1 * !D1 * Y)	0.00169	0.00171	0.00169
	(A1 * B1 * !C1 * !D1 * Y)	-0.00202	-0.00206	-0.00205
	(A1 * !B1 * C1 * D1 * Y)	0.00169	0.00171	0.00169
	(A1 * !B1 * C1 * D1 * Y)	-0.00202	-0.00206	-0.00205
	(A1 * !B1 * !D1 * Y)	0.00169	0.00171	0.00169
	(A1 * !B1 * !D1 * Y)	-0.00202	-0.00204	-0.00205
	(A1 * !B1 * !C1 * D1 * Y)	0.00169	0.00171	0.00169
	(A1 * !B1 * !C1 * D1 * Y)	-0.00202	-0.00205	-0.00205
	(!A1 * B1 * C1 * !D1 * Y)	0.00156	0.00157	0.00156
	(!A1 * B1 * C1 * !D1 * Y)	-0.00207	-0.00208	-0.00207
	(!A1 * B1 * !C1 * D1 * Y)	0.00158	0.00157	0.00157
	(!A1 * B1 * !C1 * D1 * Y)	-0.00207	-0.00207	-0.00207
	(!A1 * B1 * !C1 * !D1 * Y)	0.00158	0.00159	0.00157
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00207	-0.00208	-0.00207
	(!A1 * !B1 * C1 * D1 * Y)	0.00162	0.00163	0.00161
	(!A1 * !B1 * C1 * D1 * Y)	-0.00207	-0.00209	-0.00207
	(!A1 * !B1 * !D1 * Y)	0.00160	0.00163	0.00161
	(!A1 * !B1 * !D1 * Y)	-0.00207	-0.00209	-0.00207
	(!A1 * !B1 * !C1 * D1 * Y)	0.00160	0.00163	0.00161
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00206	-0.00208	-0.00207

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	0.00366	0.00369	0.00366
	(A1 * B1 * C1 * D1 * !Y)	-0.00198	-0.00199	-0.00197
	(A1 * B1 * C1 * !D1 * Y)	0.00330	0.00330	0.00328
	(A1 * B1 * C1 * !D1 * Y)	-0.00406	-0.00414	-0.00412
	(A1 * B1 * !C1 * D1 * Y)	0.00326	0.00330	0.00328
	(A1 * B1 * !C1 * D1 * Y)	-0.00402	-0.00414	-0.00412
	(A1 * B1 * !C1 * !D1 * Y)	0.00327	0.00333	0.00328
	(A1 * B1 * !C1 * !D1 * Y)	-0.00402	-0.00414	-0.00413
	(A1 * !B1 * C1 * D1 * Y)	0.00326	0.00330	0.00328
	(A1 * !B1 * C1 * D1 * Y)	-0.00402	-0.00414	-0.00412
	(A1 * !B1 * !D1 * Y)	0.00327	0.00333	0.00328
	(A1 * !B1 * !D1 * Y)	-0.00403	-0.00413	-0.00412
	(A1 * !B1 * !C1 * D1 * Y)	0.00327	0.00333	0.00328
	(A1 * !B1 * !C1 * D1 * Y)	-0.00403	-0.00414	-0.00413
	(!A1 * B1 * C1 * !D1 * Y)	0.00308	0.00309	0.00309
	(!A1 * B1 * C1 * !D1 * Y)	-0.00418	-0.00419	-0.00419
	(!A1 * B1 * !C1 * D1 * Y)	0.00310	0.00311	0.00311
	(!A1 * B1 * !C1 * D1 * Y)	-0.00418	-0.00418	-0.00419
	(!A1 * B1 * !C1 * !D1 * Y)	0.00311	0.00312	0.00311
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00419	-0.00418	-0.00419
	(!A1 * !B1 * C1 * D1 * Y)	0.00316	0.00316	0.00315
	(!A1 * !B1 * C1 * D1 * Y)	-0.00417	-0.00419	-0.00419
	(!A1 * !B1 * !D1 * Y)	0.00316	0.00317	0.00315
	(!A1 * !B1 * !D1 * Y)	-0.00417	-0.00420	-0.00419
	(!A1 * !B1 * !C1 * D1 * Y)	0.00316	0.00317	0.00315
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00417	-0.00420	-0.00419

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	0.00757	0.00766	0.00754
	(A1 * B1 * C1 * D1 * !Y)	-0.00398	-0.00401	-0.00394
	(A1 * B1 * C1 * !D1 * Y)	0.00666	0.00673	0.00668
	(A1 * B1 * C1 * !D1 * Y)	-0.00817	-0.00836	-0.00833
	(A1 * B1 * !C1 * D1 * Y)	0.00666	0.00673	0.00668
	(A1 * B1 * !C1 * D1 * Y)	-0.00816	-0.00836	-0.00833
	(A1 * B1 * !C1 * !D1 * Y)	0.00666	0.00669	0.00668
	(A1 * B1 * !C1 * !D1 * Y)	-0.00816	-0.00838	-0.00834
	(A1 * !B1 * C1 * D1 * Y)	0.00666	0.00673	0.00668
	(A1 * !B1 * C1 * D1 * Y)	-0.00816	-0.00834	-0.00833
	(A1 * !B1 * !D1 * Y)	0.00665	0.00669	0.00668
	(A1 * !B1 * !D1 * Y)	-0.00816	-0.00838	-0.00834
	(A1 * !B1 * !C1 * D1 * Y)	0.00665	0.00668	0.00668
	(A1 * !B1 * !C1 * D1 * Y)	-0.00816	-0.00837	-0.00834
	(!A1 * B1 * C1 * !D1 * Y)	0.00613	0.00616	0.00612
	(!A1 * B1 * C1 * !D1 * Y)	-0.00846	-0.00849	-0.00845
	(!A1 * B1 * !C1 * D1 * Y)	0.00620	0.00617	0.00618
	(!A1 * B1 * !C1 * D1 * Y)	-0.00846	-0.00845	-0.00845
	(!A1 * B1 * !C1 * !D1 * Y)	0.00618	0.00618	0.00616
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00846	-0.00847	-0.00845
	(!A1 * !B1 * C1 * D1 * Y)	0.00630	0.00640	0.00632
	(!A1 * !B1 * C1 * D1 * Y)	-0.00842	-0.00851	-0.00845
	(!A1 * !B1 * !D1 * Y)	0.00628	0.00631	0.00631
	(!A1 * !B1 * !D1 * Y)	-0.00842	-0.00846	-0.00845
	(!A1 * !B1 * !C1 * D1 * Y)	0.00628	0.00632	0.00631
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00842	-0.00846	-0.00845

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)**	-0.00182	-0.00183	-0.00187
	(A1 * B1 * C1 * D1 * !Y)	0.00103	0.00103	0.00099
	(A1 * B1 * C1 * !D1 * Y)	-0.00169	-0.00170	-0.00169
	(A1 * B1 * C1 * !D1 * Y)	0.00204	0.00206	0.00205
	(A1 * B1 * !C1 * D1 * Y)	-0.00169	-0.00170	-0.00169
	(A1 * B1 * !C1 * D1 * Y)	0.00204	0.00206	0.00205
	(A1 * B1 * !C1 * !D1 * Y)	-0.00168	-0.00170	-0.00169
	(A1 * B1 * !C1 * !D1 * Y)	0.00204	0.00206	0.00205
	(A1 * !B1 * C1 * D1 * Y)	-0.00168	-0.00170	-0.00169
	(A1 * !B1 * C1 * D1 * Y)	0.00204	0.00206	0.00205
	(A1 * !B1 * !D1 * Y)	-0.00169	-0.00169	-0.00169
	(A1 * !B1 * !D1 * Y)	0.00205	0.00204	0.00205
	(A1 * !B1 * !C1 * D1 * Y)	-0.00169	-0.00169	-0.00169
	(A1 * !B1 * !C1 * D1 * Y)	0.00205	0.00205	0.00205
	(!A1 * B1 * C1 * !D1 * Y)	-0.00142	-0.00157	-0.00156
	(!A1 * B1 * C1 * !D1 * Y)	0.00207	0.00210	0.00208
	(!A1 * B1 * !C1 * D1 * Y)	-0.00146	-0.00157	-0.00157
	(!A1 * B1 * !C1 * D1 * Y)	0.00207	0.00210	0.00208
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00146	-0.00159	-0.00157
	(!A1 * B1 * !C1 * !D1 * Y)	0.00207	0.00210	0.00208
	(!A1 * !B1 * C1 * D1 * Y)	-0.00153	-0.00162	-0.00161
	(!A1 * !B1 * C1 * D1 * Y)	0.00207	0.00209	0.00208
	(!A1 * !B1 * !D1 * Y)	-0.00153	-0.00162	-0.00161
	(!A1 * !B1 * !D1 * Y)	0.00207	0.00209	0.00208
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00153	-0.00162	-0.00161
	(!A1 * !B1 * !C1 * D1 * Y)	0.00207	0.00209	0.00208

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	-0.00346	-0.00349	-0.00363
	(A1 * B1 * C1 * D1 * !Y)	0.00213	0.00216	0.00202
	(A1 * B1 * C1 * !D1 * Y)	-0.00327	-0.00329	-0.00328
	(A1 * B1 * C1 * !D1 * Y)	0.00410	0.00414	0.00412
	(A1 * B1 * !C1 * D1 * Y)	-0.00326	-0.00329	-0.00328
	(A1 * B1 * !C1 * D1 * Y)	0.00411	0.00415	0.00412
	(A1 * B1 * !C1 * !D1 * Y)	-0.00327	-0.00329	-0.00328
	(A1 * B1 * !C1 * !D1 * Y)	0.00412	0.00414	0.00413
	(A1 * !B1 * C1 * D1 * Y)	-0.00326	-0.00329	-0.00328
	(A1 * !B1 * C1 * D1 * Y)	0.00411	0.00415	0.00412
	(A1 * !B1 * !D1 * Y)	-0.00327	-0.00328	-0.00328
	(A1 * !B1 * !D1 * Y)	0.00411	0.00413	0.00412
	(A1 * !B1 * !C1 * D1 * Y)	-0.00326	-0.00328	-0.00328
	(A1 * !B1 * !C1 * D1 * Y)	0.00410	0.00414	0.00413
	(!A1 * B1 * C1 * !D1 * Y)	-0.00276	-0.00307	-0.00309
	(!A1 * B1 * C1 * !D1 * Y)	0.00419	0.00424	0.00420
	(!A1 * B1 * !C1 * D1 * Y)	-0.00281	-0.00306	-0.00311
	(!A1 * B1 * !C1 * D1 * Y)	0.00419	0.00418	0.00420
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00281	-0.00306	-0.00311
	(!A1 * B1 * !C1 * !D1 * Y)	0.00419	0.00418	0.00420
	(!A1 * !B1 * C1 * D1 * Y)	-0.00292	-0.00314	-0.00315
	(!A1 * !B1 * C1 * D1 * Y)	0.00417	0.00423	0.00420
	(!A1 * !B1 * !D1 * Y)	-0.00293	-0.00314	-0.00315
	(!A1 * !B1 * !D1 * Y)	0.00417	0.00423	0.00420
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00293	-0.00314	-0.00315
	(!A1 * !B1 * !C1 * D1 * Y)	0.00417	0.00423	0.00420

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	-0.00715	-0.00720	-0.00749
	(A1 * B1 * C1 * D1 * !Y)	0.00432	0.00433	0.00404
	(A1 * B1 * C1 * !D1 * Y)	-0.00666	-0.00668	-0.00666
	(A1 * B1 * C1 * !D1 * Y)	0.00835	0.00836	0.00833
	(A1 * B1 * !C1 * D1 * Y)	-0.00666	-0.00668	-0.00666
	(A1 * B1 * !C1 * D1 * Y)	0.00835	0.00836	0.00833
	(A1 * B1 * !C1 * !D1 * Y)	-0.00666	-0.00669	-0.00666
	(A1 * B1 * !C1 * !D1 * Y)	0.00836	0.00840	0.00834
	(A1 * !B1 * C1 * D1 * Y)	-0.00665	-0.00667	-0.00666
	(A1 * !B1 * C1 * D1 * Y)	0.00831	0.00834	0.00833
	(A1 * !B1 * !D1 * Y)	-0.00664	-0.00669	-0.00666
	(A1 * !B1 * !D1 * Y)	0.00830	0.00841	0.00834
	(A1 * !B1 * !C1 * D1 * Y)	-0.00664	-0.00668	-0.00666
	(A1 * !B1 * !C1 * D1 * Y)	0.00830	0.00841	0.00834
	(!A1 * B1 * C1 * !D1 * Y)	-0.00564	-0.00616	-0.00612
	(!A1 * B1 * C1 * !D1 * Y)	0.00846	0.00856	0.00848
	(!A1 * B1 * !C1 * D1 * Y)	-0.00572	-0.00617	-0.00618
	(!A1 * B1 * !C1 * D1 * Y)	0.00846	0.00856	0.00848
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00573	-0.00618	-0.00616
	(!A1 * B1 * !C1 * !D1 * Y)	0.00846	0.00856	0.00848
	(!A1 * !B1 * C1 * D1 * Y)	-0.00593	-0.00637	-0.00632
	(!A1 * !B1 * C1 * D1 * Y)	0.00842	0.00854	0.00848
	(!A1 * !B1 * !D1 * Y)	-0.00595	-0.00631	-0.00631
	(!A1 * !B1 * !D1 * Y)	0.00842	0.00854	0.00848
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00595	-0.00632	-0.00631
	(!A1 * !B1 * !C1 * D1 * Y)	0.00842	0.00854	0.00848

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)**	0.00152	0.00152	0.00152
	(A2 * C1 * !D1 * Y)	-0.00210	-0.00210	-0.00209
	(A2 * !C1 * D1 * Y)	0.00156	0.00157	0.00157
	(A2 * !C1 * D1 * Y)	-0.00208	-0.00210	-0.00210
	(A2 * !C1 * !D1 * Y)	0.00156	0.00158	0.00156
	(A2 * !C1 * !D1 * Y)	-0.00209	-0.00211	-0.00210
	(A1 * !A2 * C1 * !D1 * Y)	0.00153	0.00153	0.00153
	(A1 * !A2 * C1 * !D1 * Y)	-0.00210	-0.00210	-0.00209
	(A1 * !A2 * !C1 * D1 * Y)	0.00156	0.00158	0.00156
	(A1 * !A2 * !C1 * D1 * Y)	-0.00209	-0.00210	-0.00210
	(A1 * !A2 * !C1 * !D1 * Y)	0.00156	0.00157	0.00156
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00209	-0.00210	-0.00210
	(!A1 * !A2 * C1 * D1 * Y)	0.00072	0.00072	0.00072
	(!A1 * !A2 * C1 * D1 * Y)	-0.00206	-0.00206	-0.00205
	(!A1 * !A2 * C1 * !D1 * Y)	0.00085	0.00086	0.00085
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00209	-0.00211	-0.00209
	(!A1 * !A2 * !C1 * D1 * Y)	0.00091	0.00091	0.00090
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00210	-0.00211	-0.00210
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00093	0.00094	0.00093
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00210	-0.00210	-0.00210

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	0.00327	0.00330	0.00328
	(A2 * C1 * !D1 * Y)	-0.00433	-0.00435	-0.00434
	(A2 * !C1 * D1 * Y)	0.00330	0.00334	0.00331
	(A2 * !C1 * D1 * Y)	-0.00433	-0.00434	-0.00434
	(A2 * !C1 * !D1 * Y)	0.00330	0.00334	0.00331
	(A2 * !C1 * !D1 * Y)	-0.00433	-0.00434	-0.00434
	(A1 * !A2 * C1 * !D1 * Y)	0.00326	0.00331	0.00328
	(A1 * !A2 * C1 * !D1 * Y)	-0.00432	-0.00436	-0.00434
	(A1 * !A2 * !C1 * D1 * Y)	0.00329	0.00332	0.00329
	(A1 * !A2 * !C1 * D1 * Y)	-0.00432	-0.00436	-0.00434
	(A1 * !A2 * !C1 * !D1 * Y)	0.00329	0.00331	0.00329
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00432	-0.00435	-0.00434
	(!A1 * !A2 * C1 * D1 * Y)	0.00152	0.00154	0.00155
	(!A1 * !A2 * C1 * D1 * Y)	-0.00425	-0.00428	-0.00423
	(!A1 * !A2 * C1 * !D1 * Y)	0.00184	0.00184	0.00183
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00435	-0.00437	-0.00434
	(!A1 * !A2 * !C1 * D1 * Y)	0.00188	0.00188	0.00187
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00435	-0.00436	-0.00434
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00194	0.00195	0.00193
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00433	-0.00436	-0.00434

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	0.00627	0.00634	0.00628
	(A2 * C1 * !D1 * Y)	-0.00453	-0.00455	-0.00452
	(A2 * !C1 * D1 * Y)	0.00633	0.00642	0.00636
	(A2 * !C1 * D1 * Y)	-0.00451	-0.00455	-0.00452
	(A2 * !C1 * !D1 * Y)	0.00633	0.00642	0.00636
	(A2 * !C1 * !D1 * Y)	-0.00451	-0.00455	-0.00452
	(A1 * !A2 * C1 * !D1 * Y)	0.00625	0.00626	0.00626
	(A1 * !A2 * C1 * !D1 * Y)	-0.00452	-0.00452	-0.00452
	(A1 * !A2 * !C1 * D1 * Y)	0.00634	0.00640	0.00636
	(A1 * !A2 * !C1 * D1 * Y)	-0.00451	-0.00454	-0.00452
	(A1 * !A2 * !C1 * !D1 * Y)	0.00633	0.00640	0.00636
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00451	-0.00454	-0.00452
	(!A1 * !A2 * C1 * D1 * Y)	0.00282	0.00281	0.00284
	(!A1 * !A2 * C1 * D1 * Y)	-0.00437	-0.00437	-0.00433
	(!A1 * !A2 * C1 * !D1 * Y)	0.00334	0.00338	0.00335
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00454	-0.00458	-0.00455
	(!A1 * !A2 * !C1 * D1 * Y)	0.00345	0.00348	0.00345
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00452	-0.00455	-0.00453
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00356	0.00360	0.00356
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00452	-0.00456	-0.00453

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)**	-0.00139	-0.00152	-0.00152
	(A2 * C1 * !D1 * Y)	0.00210	0.00212	0.00210
	(A2 * !C1 * D1 * Y)	-0.00148	-0.00157	-0.00157
	(A2 * !C1 * D1 * Y)	0.00208	0.00212	0.00210
	(A2 * !C1 * !D1 * Y)	-0.00151	-0.00158	-0.00156
	(A2 * !C1 * !D1 * Y)	0.00210	0.00212	0.00210
	(A1 * !A2 * C1 * !D1 * Y)	-0.00136	-0.00153	-0.00153
	(A1 * !A2 * C1 * !D1 * Y)	0.00211	0.00211	0.00210
	(A1 * !A2 * !C1 * D1 * Y)	-0.00148	-0.00157	-0.00156
	(A1 * !A2 * !C1 * D1 * Y)	0.00210	0.00210	0.00210
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00150	-0.00157	-0.00156
	(A1 * !A2 * !C1 * !D1 * Y)	0.00210	0.00210	0.00210
	(!A1 * !A2 * C1 * D1 * Y)	-0.00067	-0.00068	-0.00068
	(!A1 * !A2 * C1 * D1 * Y)	0.00213	0.00215	0.00211
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00085	-0.00086	-0.00085
	(!A1 * !A2 * C1 * !D1 * Y)	0.00212	0.00214	0.00210
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00091	-0.00091	-0.00090
	(!A1 * !A2 * !C1 * D1 * Y)	0.00219	0.00219	0.00211
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00093	-0.00094	-0.00093
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00210	0.00212	0.00210

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	-0.00300	-0.00325	-0.00328
	(A2 * C1 * !D1 * Y)	0.00436	0.00438	0.00435
	(A2 * !C1 * D1 * Y)	-0.00315	-0.00331	-0.00331
	(A2 * !C1 * D1 * Y)	0.00433	0.00434	0.00435
	(A2 * !C1 * !D1 * Y)	-0.00317	-0.00331	-0.00331
	(A2 * !C1 * !D1 * Y)	0.00433	0.00434	0.00435
	(A1 * !A2 * C1 * !D1 * Y)	-0.00293	-0.00328	-0.00328
	(A1 * !A2 * C1 * !D1 * Y)	0.00437	0.00437	0.00435
	(A1 * !A2 * !C1 * D1 * Y)	-0.00311	-0.00332	-0.00329
	(A1 * !A2 * !C1 * D1 * Y)	0.00432	0.00438	0.00435
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00314	-0.00331	-0.00329
	(A1 * !A2 * !C1 * !D1 * Y)	0.00432	0.00438	0.00435
	(!A1 * !A2 * C1 * D1 * Y)	-0.00144	-0.00147	-0.00146
	(!A1 * !A2 * C1 * D1 * Y)	0.00437	0.00446	0.00437
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00184	-0.00184	-0.00183
	(!A1 * !A2 * C1 * !D1 * Y)	0.00435	0.00446	0.00435
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00188	-0.00188	-0.00187
	(!A1 * !A2 * !C1 * D1 * Y)	0.00447	0.00450	0.00437
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00194	-0.00195	-0.00193
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00433	0.00440	0.00435

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	-0.00564	-0.00630	-0.00628
	(A2 * C1 * !D1 * Y)	0.00459	0.00456	0.00454
	(A2 * !C1 * D1 * Y)	-0.00602	-0.00642	-0.00636
	(A2 * !C1 * D1 * Y)	0.00453	0.00457	0.00454
	(A2 * !C1 * !D1 * Y)	-0.00609	-0.00642	-0.00636
	(A2 * !C1 * !D1 * Y)	0.00453	0.00457	0.00453
	(A1 * !A2 * C1 * !D1 * Y)	-0.00556	-0.00626	-0.00626
	(A1 * !A2 * C1 * !D1 * Y)	0.00461	0.00456	0.00454
	(A1 * !A2 * !C1 * D1 * Y)	-0.00597	-0.00640	-0.00636
	(A1 * !A2 * !C1 * D1 * Y)	0.00453	0.00456	0.00453
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00606	-0.00640	-0.00636
	(A1 * !A2 * !C1 * !D1 * Y)	0.00453	0.00456	0.00453
	(!A1 * !A2 * C1 * D1 * Y)	-0.00266	-0.00268	-0.00266
	(!A1 * !A2 * C1 * D1 * Y)	0.00466	0.00472	0.00459
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00334	-0.00338	-0.00335
	(!A1 * !A2 * C1 * !D1 * Y)	0.00459	0.00474	0.00457
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00345	-0.00348	-0.00345
	(!A1 * !A2 * !C1 * D1 * Y)	0.00489	0.00486	0.00461
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00356	-0.00360	-0.00356
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00452	0.00459	0.00454

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)**	0.00161	0.00162	0.00161
	(A2 * B1 * !D1 * Y)	-0.00216	-0.00217	-0.00216
	(A2 * !B1 * D1 * Y)	0.00073	0.00072	0.00072
	(A2 * !B1 * D1 * Y)	-0.00216	-0.00216	-0.00216
	(A2 * !B1 * !D1 * Y)	0.00084	0.00084	0.00084
	(A2 * !B1 * !D1 * Y)	-0.00216	-0.00217	-0.00217
	(A1 * !A2 * B1 * !D1 * Y)	0.00160	0.00162	0.00161
	(A1 * !A2 * B1 * !D1 * Y)	-0.00216	-0.00217	-0.00216
	(!A2 * !B1 * D1 * Y)	0.00073	0.00073	0.00072
	(!A2 * !B1 * D1 * Y)	-0.00216	-0.00216	-0.00216
	(!A2 * !B1 * !D1 * Y)	0.00084	0.00085	0.00084
	(!A2 * !B1 * !D1 * Y)	-0.00216	-0.00217	-0.00217
	(!A1 * !A2 * B1 * D1 * Y)	0.00070	0.00070	0.00069
	(!A1 * !A2 * B1 * D1 * Y)	-0.00217	-0.00216	-0.00216
	(!A1 * !A2 * B1 * !D1 * Y)	0.00090	0.00090	0.00090
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00217	-0.00217	-0.00217

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	0.00318	0.00321	0.00318
	(A2 * B1 * !D1 * Y)	-0.00424	-0.00425	-0.00423
	(A2 * !B1 * D1 * Y)	0.00146	0.00145	0.00146
	(A2 * !B1 * D1 * Y)	-0.00423	-0.00422	-0.00421
	(A2 * !B1 * !D1 * Y)	0.00175	0.00175	0.00175
	(A2 * !B1 * !D1 * Y)	-0.00424	-0.00424	-0.00425
	(A1 * !A2 * B1 * !D1 * Y)	0.00317	0.00320	0.00318
	(A1 * !A2 * B1 * !D1 * Y)	-0.00424	-0.00425	-0.00423
	(!A2 * !B1 * D1 * Y)	0.00146	0.00146	0.00146
	(!A2 * !B1 * D1 * Y)	-0.00423	-0.00423	-0.00421
	(!A2 * !B1 * !D1 * Y)	0.00175	0.00176	0.00175
	(!A2 * !B1 * !D1 * Y)	-0.00424	-0.00425	-0.00425
	(!A1 * !A2 * B1 * D1 * Y)	0.00137	0.00137	0.00139
	(!A1 * !A2 * B1 * D1 * Y)	-0.00423	-0.00423	-0.00421
	(!A1 * !A2 * B1 * !D1 * Y)	0.00179	0.00180	0.00179
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00425	-0.00426	-0.00424

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * !D1 * Y)**	0.00623	0.00629	0.00626
	(A2 * B1 * !D1 * Y)	-0.00445	-0.00447	-0.00445
	(A2 * !B1 * D1 * Y)	0.00273	0.00271	0.00272
	(A2 * !B1 * D1 * Y)	-0.00447	-0.00445	-0.00445
	(A2 * !B1 * !D1 * Y)	0.00321	0.00322	0.00322
	(A2 * !B1 * !D1 * Y)	-0.00450	-0.00451	-0.00452
	(A1 * !A2 * B1 * !D1 * Y)	0.00623	0.00632	0.00626
	(A1 * !A2 * B1 * !D1 * Y)	-0.00445	-0.00448	-0.00445
	(!A2 * !B1 * D1 * Y)	0.00273	0.00271	0.00272
	(!A2 * !B1 * D1 * Y)	-0.00447	-0.00445	-0.00445
	(!A2 * !B1 * !D1 * Y)	0.00321	0.00326	0.00322
	(!A2 * !B1 * !D1 * Y)	-0.00451	-0.00455	-0.00452
	(!A1 * !A2 * B1 * D1 * Y)	0.00261	0.00260	0.00262
	(!A1 * !A2 * B1 * D1 * Y)	-0.00446	-0.00446	-0.00444
	(!A1 * !A2 * B1 * !D1 * Y)	0.00337	0.00340	0.00337
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00449	-0.00452	-0.00450

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)**	-0.00146	-0.00161	-0.00161
	(A2 * B1 * !D1 * Y)	0.00230	0.00218	0.00217
	(A2 * !B1 * D1 * Y)	-0.00070	-0.00070	-0.00070
	(A2 * !B1 * D1 * Y)	0.00221	0.00223	0.00217
	(A2 * !B1 * !D1 * Y)	-0.00084	-0.00084	-0.00084
	(A2 * !B1 * !D1 * Y)	0.00227	0.00229	0.00219
	(A1 * !A2 * B1 * !D1 * Y)	-0.00145	-0.00162	-0.00161
	(A1 * !A2 * B1 * !D1 * Y)	0.00231	0.00219	0.00217
	(!A2 * !B1 * D1 * Y)	-0.00069	-0.00070	-0.00070
	(!A2 * !B1 * D1 * Y)	0.00220	0.00223	0.00217
	(!A2 * !B1 * !D1 * Y)	-0.00084	-0.00085	-0.00084
	(!A2 * !B1 * !D1 * Y)	0.00227	0.00229	0.00219
	(!A1 * !A2 * B1 * D1 * Y)	-0.00066	-0.00067	-0.00067
	(!A1 * !A2 * B1 * D1 * Y)	0.00220	0.00223	0.00217
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00090	-0.00090	-0.00090
	(!A1 * !A2 * B1 * !D1 * Y)	0.00229	0.00226	0.00218

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	-0.00276	-0.00320	-0.00318
	(A2 * B1 * !D1 * Y)	0.00456	0.00427	0.00424
	(A2 * !B1 * D1 * Y)	-0.00136	-0.00138	-0.00141
	(A2 * !B1 * D1 * Y)	0.00433	0.00439	0.00427
	(A2 * !B1 * !D1 * Y)	-0.00175	-0.00175	-0.00175
	(A2 * !B1 * !D1 * Y)	0.00444	0.00450	0.00430
	(A1 * !A2 * B1 * !D1 * Y)	-0.00272	-0.00320	-0.00318
	(A1 * !A2 * B1 * !D1 * Y)	0.00458	0.00428	0.00424
	(!A2 * !B1 * D1 * Y)	-0.00136	-0.00138	-0.00141
	(!A2 * !B1 * D1 * Y)	0.00432	0.00439	0.00427
	(!A2 * !B1 * !D1 * Y)	-0.00175	-0.00176	-0.00175
	(!A2 * !B1 * !D1 * Y)	0.00445	0.00450	0.00430
	(!A1 * !A2 * B1 * D1 * Y)	-0.00132	-0.00134	-0.00137
	(!A1 * !A2 * B1 * D1 * Y)	0.00433	0.00438	0.00427
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00179	-0.00180	-0.00179
	(!A1 * !A2 * B1 * !D1 * Y)	0.00450	0.00441	0.00425

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * !D1 * Y)**	-0.00540	-0.00629	-0.00626
	(A2 * B1 * !D1 * Y)	0.00521	0.00452	0.00447
	(A2 * !B1 * D1 * Y)	-0.00259	-0.00260	-0.00264
	(A2 * !B1 * D1 * Y)	0.00470	0.00473	0.00453
	(A2 * !B1 * !D1 * Y)	-0.00321	-0.00322	-0.00322
	(A2 * !B1 * !D1 * Y)	0.00491	0.00497	0.00461
	(A1 * !A2 * B1 * !D1 * Y)	-0.00536	-0.00632	-0.00626
	(A1 * !A2 * B1 * !D1 * Y)	0.00525	0.00453	0.00447
	(!A2 * !B1 * D1 * Y)	-0.00259	-0.00259	-0.00264
	(!A2 * !B1 * D1 * Y)	0.00470	0.00472	0.00453
	(!A2 * !B1 * !D1 * Y)	-0.00321	-0.00326	-0.00322
	(!A2 * !B1 * !D1 * Y)	0.00491	0.00497	0.00461
	(!A1 * !A2 * B1 * D1 * Y)	-0.00252	-0.00252	-0.00256
	(!A1 * !A2 * B1 * D1 * Y)	0.00470	0.00472	0.00453
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00337	-0.00340	-0.00337
	(!A1 * !A2 * B1 * !D1 * Y)	0.00513	0.00478	0.00452

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111ai_1	**(A2 * !C1 * Y)**	0.00054	0.00053	0.00052
	(A2 * !C1 * Y)	-0.00249	-0.00249	-0.00252
	(A2 * !B1 * C1 * Y)	0.00055	0.00055	0.00051
	(A2 * !B1 * C1 * Y)	-0.00244	-0.00244	-0.00252
	(!A2 * !C1 * Y)	0.00053	0.00053	0.00052
	(!A2 * !C1 * Y)	-0.00247	-0.00249	-0.00252
	(!A2 * !B1 * C1 * Y)	0.00054	0.00055	0.00051
	(!A2 * !B1 * C1 * Y)	-0.00242	-0.00244	-0.00252
	(!A1 * !A2 * B1 * C1 * Y)	0.00060	0.00060	0.00053
	(!A1 * !A2 * B1 * C1 * Y)	-0.00233	-0.00236	-0.00250

sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	0.00123	0.00123	0.00118
	(A2 * !C1 * Y)	-0.00475	-0.00478	-0.00486
	(A2 * !B1 * C1 * Y)	0.00123	0.00123	0.00113
	(A2 * !B1 * C1 * Y)	-0.00463	-0.00467	-0.00484
	(!A2 * !C1 * Y)	0.00123	0.00123	0.00118
	(!A2 * !C1 * Y)	-0.00475	-0.00478	-0.00486
	(!A2 * !B1 * C1 * Y)	0.00123	0.00123	0.00113
	(!A2 * !B1 * C1 * Y)	-0.00463	-0.00467	-0.00484
	(!A1 * !A2 * B1 * C1 * Y)	0.00129	0.00129	0.00113
	(!A1 * !A2 * B1 * C1 * Y)	-0.00445	-0.00449	-0.00481
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	0.00219	0.00218	0.00209
	(A2 * !C1 * Y)	-0.00566	-0.00568	-0.00583
	(A2 * !B1 * C1 * Y)	0.00217	0.00218	0.00202
	(A2 * !B1 * C1 * Y)	-0.00539	-0.00545	-0.00579
	(!A2 * !C1 * Y)	0.00217	0.00218	0.00209
	(!A2 * !C1 * Y)	-0.00564	-0.00567	-0.00583
	(!A2 * !B1 * C1 * Y)	0.00217	0.00218	0.00202
	(!A2 * !B1 * C1 * Y)	-0.00541	-0.00545	-0.00579
	(!A1 * !A2 * B1 * C1 * Y)	0.00231	0.00232	0.00203
	(!A1 * !A2 * B1 * C1 * Y)	-0.00504	-0.00510	-0.00572

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

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

sky130_fd_sc_hs__o2111ai_1	**(A2 * !C1 * Y)**	-0.00051	-0.00052	-0.00051
	(A2 * !C1 * Y)	0.00252	0.00257	0.00253
	(A2 * !B1 * C1 * Y)	-0.00051	-0.00051	-0.00050
	(A2 * !B1 * C1 * Y)	0.00253	0.00255	0.00252
	(!A2 * !C1 * Y)	-0.00051	-0.00052	-0.00051
	(!A2 * !C1 * Y)	0.00252	0.00257	0.00253
	(!A2 * !B1 * C1 * Y)	-0.00051	-0.00051	-0.00050
	(!A2 * !B1 * C1 * Y)	0.00253	0.00255	0.00252
	(!A1 * !A2 * B1 * C1 * Y)	-0.00051	-0.00051	-0.00050
	(!A1 * !A2 * B1 * C1 * Y)	0.00253	0.00255	0.00252
sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	-0.00115	-0.00117	-0.00115
	(A2 * !C1 * Y)	0.00486	0.00495	0.00487
	(A2 * !B1 * C1 * Y)	-0.00112	-0.00114	-0.00112
	(A2 * !B1 * C1 * Y)	0.00485	0.00495	0.00487
	(!A2 * !C1 * Y)	-0.00115	-0.00117	-0.00115
	(!A2 * !C1 * Y)	0.00486	0.00495	0.00487
	(!A2 * !B1 * C1 * Y)	-0.00112	-0.00114	-0.00112
	(!A2 * !B1 * C1 * Y)	0.00486	0.00495	0.00487
	(!A1 * !A2 * B1 * C1 * Y)	-0.00111	-0.00111	-0.00111
	(!A1 * !A2 * B1 * C1 * Y)	0.00485	0.00488	0.00487
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	-0.00206	-0.00204	-0.00204
	(A2 * !C1 * Y)	0.00586	0.00584	0.00584
	(A2 * !B1 * C1 * Y)	-0.00201	-0.00200	-0.00198
	(A2 * !B1 * C1 * Y)	0.00585	0.00584	0.00583
	(!A2 * !C1 * Y)	-0.00204	-0.00208	-0.00204
	(!A2 * !C1 * Y)	0.00582	0.00593	0.00584
	(!A2 * !B1 * C1 * Y)	-0.00199	-0.00203	-0.00198
	(!A2 * !B1 * C1 * Y)	0.00581	0.00592	0.00583
	(!A1 * !A2 * B1 * C1 * Y)	-0.00197	-0.00197	-0.00197
	(!A1 * !A2 * B1 * C1 * Y)	0.00579	0.00580	0.00583

SKY130_FD_SC_HS__O2111Ax

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00263	0.00269	0.00249	0.00270	0.00271	1.15970
sky130_fd_sc_hs__o2111a_2	0.00266	0.00266	0.00262	0.00271	0.00281	2.37304
sky130_fd_sc_hs__o2111a_4	0.00508	0.00546	0.00464	0.00477	0.00481	4.38110

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2111a_1	0.00000	0.20647	1.53494
sky130_fd_sc_hs__o2111a_2	0.00000	0.20736	0.80132
sky130_fd_sc_hs__o2111a_4	0.00000	0.55367	3.08473

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)	0.11732	0.60085	6.10810
	A2->X (RR)	0.10348	0.58051	6.09402
	B1->X (RR)	0.11141	0.61361	6.39232
	C1->X (RR)	0.10578	0.61947	6.45839
	D1->X (RR)	0.09726	0.61081	6.39575
sky130_fd_sc_hs__o2111a_2	A1->X (RR)	0.12833	0.52682	6.15021
	A2->X (RR)	0.11428	0.50745	6.14075
	B1->X (RR)	0.12304	0.54324	6.44989
	C1->X (RR)	0.11710	0.55345	6.52690
	D1->X (RR)	0.10781	0.54943	6.51016
sky130_fd_sc_hs__o2111a_4	A1->X (RR)	0.15127	0.47478	6.11426
	A2->X (RR)	0.13784	0.46659	6.10935
	B1->X (RR)	0.14567	0.50229	6.50474
	C1->X (RR)	0.13930	0.53107	6.67176
	D1->X (RR)	0.12478	0.52033	6.67872

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111a_1	A1->X (FF)	0.17192	0.61826	4.87373
	A2->X (FF)	0.15980	0.62607	4.89813
	B1->X (FF)	0.09925	0.54393	4.61465
	C1->X (FF)	0.08926	0.52174	4.53070
	D1->X (FF)	0.07429	0.48862	4.44256
sky130_fd_sc_hs__o2111a_2	A1->X (FF)	0.19879	0.63924	5.13336
	A2->X (FF)	0.18667	0.65005	5.16622
	B1->X (FF)	0.09715	0.52354	4.75140
	C1->X (FF)	0.08939	0.50550	4.67315
	D1->X (FF)	0.07705	0.47723	4.58503
sky130_fd_sc_hs__o2111a_4	A1->X (FF)	0.23495	0.64091	5.14409
	A2->X (FF)	0.22406	0.67207	5.30522
	B1->X (FF)	0.12557	0.54141	4.85061
	C1->X (FF)	0.11614	0.51985	4.71597
	D1->X (FF)	0.10081	0.49100	4.63389

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111a_1	A1	0.01489	0.01528	0.04028
	A1	0.00538	0.00576	0.03119
	A2	0.01299	0.01348	0.04682
	A2	0.00454	0.00503	0.03880
	B1	0.01132	0.01235	0.05490
	B1	0.00462	0.00565	0.04857
	C1	0.01031	0.01142	0.05300
	C1	0.00460	0.00573	0.04762
	D1	0.00925	0.01071	0.04601
	D1	0.00457	0.00603	0.04169
sky130_fd_sc_hs__o2111a_2	A1	0.01826	0.01876	0.04317
	A1	0.00875	0.00927	0.03456
	A2	0.01625	0.01683	0.04927
	A2	0.00788	0.00846	0.04181
	B1	0.01464	0.01554	0.05538
	B1	0.00772	0.00862	0.04918
	C1	0.01359	0.01445	0.05222
	C1	0.00775	0.00863	0.04684
	D1	0.01251	0.01398	0.05035
	D1	0.00761	0.00910	0.04602

sky130_fd_sc_hs__o2111a_4	**A1**	0.03780	0.03797	0.07943
	A1	0.01844	0.01864	0.06181
	A2	0.03433	0.03474	0.08464
	A2	0.01670	0.01720	0.06878
	B1	0.03041	0.03181	0.10972
	B1	0.01665	0.01810	0.09704
	C1	0.02823	0.02969	0.10282
	C1	0.01662	0.01814	0.09192
	D1	0.02579	0.02812	0.10608
	D1	0.01652	0.01895	0.09747

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**A1**	0.00571	0.00623	0.03217
	A1	0.01492	0.01545	0.04078
	A2	0.00576	0.00731	0.04317
	A2	0.01392	0.01545	0.05035
	B1	0.00452	0.00703	0.05098
	B1	0.01213	0.01436	0.05698
	C1	0.00400	0.00644	0.04944
	C1	0.01066	0.01296	0.05460
	D1	0.00333	0.00576	0.04856
	D1	0.00902	0.01122	0.05257

sky130_fd_sc_hs__o2111a_2	**A1**	0.00932	0.00936	0.03536
	A1	0.01854	0.01861	0.04343
	A2	0.00941	0.01038	0.04587
	A2	0.01747	0.01847	0.05290
	B1	0.00740	0.00971	0.05178
	B1	0.01524	0.01737	0.05803
	C1	0.00684	0.00933	0.05129
	C1	0.01366	0.01593	0.05541
	D1	0.00601	0.00836	0.05080
	D1	0.01190	0.01414	0.05395
sky130_fd_sc_hs__o2111a_4	**A1**	0.01915	0.01778	0.06404
	A1	0.03792	0.03660	0.08206
	A2	0.01923	0.01915	0.08152
	A2	0.03622	0.03609	0.09568
	B1	0.01527	0.01928	0.10212
	B1	0.03094	0.03471	0.11174
	C1	0.01410	0.01800	0.09654
	C1	0.02760	0.03124	0.10434
	D1	0.01183	0.01612	0.09414
	D1	0.02312	0.02720	0.10071

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)**	0.00205	0.00180	0.00176
	(A2 * B1 * C1 * D1 * X)	-0.00158	-0.00188	-0.00189
	(A2 * B1 * C1 * !D1 * !X)	0.00174	0.00175	0.00174
	(A2 * B1 * C1 * !D1 * !X)	-0.00187	-0.00190	-0.00190
	(A2 * B1 * !C1 * !X)	0.00174	0.00175	0.00174
	(A2 * B1 * !C1 * !X)	-0.00187	-0.00190	-0.00190
	(A2 * !B1 * !X)	0.00174	0.00175	0.00174
	(A2 * !B1 * !X)	-0.00187	-0.00190	-0.00190
	(!A2 * B1 * C1 * !D1 * !X)	0.00161	0.00162	0.00161
	(!A2 * B1 * C1 * !D1 * !X)	-0.00192	-0.00192	-0.00191
	(!A2 * B1 * !C1 * D1 * !X)	0.00163	0.00163	0.00162
	(!A2 * B1 * !C1 * D1 * !X)	-0.00192	-0.00192	-0.00192
	(!A2 * B1 * !C1 * !D1 * !X)	0.00163	0.00163	0.00162
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00192	-0.00192	-0.00192
	(!A2 * !B1 * C1 * D1 * !X)	0.00166	0.00166	0.00166
	(!A2 * !B1 * C1 * D1 * !X)	-0.00191	-0.00192	-0.00192
	(!A2 * !B1 * !D1 * !X)	0.00166	0.00166	0.00166
	(!A2 * !B1 * !D1 * !X)	-0.00191	-0.00192	-0.00192
	(!A2 * !B1 * !C1 * D1 * !X)	0.00166	0.00166	0.00166
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00191	-0.00192	-0.00192

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	0.00211	0.00185	0.00181
	(A2 * B1 * C1 * D1 * X)	-0.00157	-0.00187	-0.00188
	(A2 * B1 * C1 * !D1 * !X)	0.00181	0.00182	0.00181
	(A2 * B1 * C1 * !D1 * !X)	-0.00185	-0.00188	-0.00188
	(A2 * B1 * !C1 * !X)	0.00181	0.00182	0.00181
	(A2 * B1 * !C1 * !X)	-0.00185	-0.00188	-0.00188
	(A2 * !B1 * !X)	0.00181	0.00182	0.00181
	(A2 * !B1 * !X)	-0.00185	-0.00188	-0.00188
	(!A2 * B1 * C1 * !D1 * !X)	0.00171	0.00172	0.00171
	(!A2 * B1 * C1 * !D1 * !X)	-0.00190	-0.00190	-0.00189
	(!A2 * B1 * !C1 * D1 * !X)	0.00172	0.00173	0.00172
	(!A2 * B1 * !C1 * D1 * !X)	-0.00190	-0.00191	-0.00190
	(!A2 * B1 * !C1 * !D1 * !X)	0.00172	0.00173	0.00172
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00190	-0.00191	-0.00190
	(!A2 * !B1 * C1 * D1 * !X)	0.00172	0.00175	0.00173
	(!A2 * !B1 * C1 * D1 * !X)	-0.00189	-0.00191	-0.00190
	(!A2 * !B1 * !D1 * !X)	0.00172	0.00175	0.00173
	(!A2 * !B1 * !D1 * !X)	-0.00189	-0.00191	-0.00190
	(!A2 * !B1 * !C1 * D1 * !X)	0.00172	0.00175	0.00173
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00189	-0.00191	-0.00190

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	0.00412	0.00359	0.00351
	(A2 * B1 * C1 * D1 * X)	-0.00304	-0.00366	-0.00369
	(A2 * B1 * C1 * !D1 * !X)	0.00323	0.00327	0.00323
	(A2 * B1 * C1 * !D1 * !X)	-0.00389	-0.00397	-0.00395
	(A2 * B1 * !C1 * !X)	0.00323	0.00327	0.00323
	(A2 * B1 * !C1 * !X)	-0.00389	-0.00397	-0.00395
	(A2 * !B1 * !X)	0.00323	0.00327	0.00323
	(A2 * !B1 * !X)	-0.00389	-0.00397	-0.00395
	(!A2 * B1 * C1 * !D1 * !X)	0.00305	0.00303	0.00304
	(!A2 * B1 * C1 * !D1 * !X)	-0.00400	-0.00399	-0.00400
	(!A2 * B1 * !C1 * D1 * !X)	0.00307	0.00307	0.00306
	(!A2 * B1 * !C1 * D1 * !X)	-0.00400	-0.00400	-0.00400
	(!A2 * B1 * !C1 * !D1 * !X)	0.00307	0.00307	0.00306
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00400	-0.00401	-0.00400
	(!A2 * !B1 * C1 * D1 * !X)	0.00309	0.00311	0.00310
	(!A2 * !B1 * C1 * D1 * !X)	-0.00399	-0.00400	-0.00400
	(!A2 * !B1 * !D1 * !X)	0.00309	0.00313	0.00310
	(!A2 * !B1 * !D1 * !X)	-0.00399	-0.00402	-0.00400
	(!A2 * !B1 * !C1 * D1 * !X)	0.00308	0.00313	0.00309
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00399	-0.00402	-0.00400

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)**	-0.00172	-0.00173	-0.00172
	(A2 * B1 * C1 * D1 * X)	0.00190	0.00192	0.00192
	(A2 * B1 * C1 * !D1 * !X)	-0.00174	-0.00174	-0.00174
	(A2 * B1 * C1 * !D1 * !X)	0.00190	0.00191	0.00190
	(A2 * B1 * !C1 * !X)	-0.00174	-0.00174	-0.00174
	(A2 * B1 * !C1 * !X)	0.00190	0.00191	0.00190
	(A2 * !B1 * !X)	-0.00173	-0.00174	-0.00174
	(A2 * !B1 * !X)	0.00189	0.00191	0.00190
	(!A2 * B1 * C1 * !D1 * !X)	-0.00147	-0.00162	-0.00161
	(!A2 * B1 * C1 * !D1 * !X)	0.00192	0.00194	0.00192
	(!A2 * B1 * !C1 * D1 * !X)	-0.00151	-0.00163	-0.00162
	(!A2 * B1 * !C1 * D1 * !X)	0.00192	0.00194	0.00192
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00151	-0.00163	-0.00162
	(!A2 * B1 * !C1 * !D1 * !X)	0.00192	0.00194	0.00192
	(!A2 * !B1 * C1 * D1 * !X)	-0.00158	-0.00166	-0.00166
	(!A2 * !B1 * C1 * D1 * !X)	0.00191	0.00194	0.00192
	(!A2 * !B1 * !D1 * !X)	-0.00158	-0.00166	-0.00166
	(!A2 * !B1 * !D1 * !X)	0.00191	0.00194	0.00192
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00158	-0.00166	-0.00166
	(!A2 * !B1 * !C1 * D1 * !X)	0.00191	0.00194	0.00192

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	-0.00179	-0.00179	-0.00179
	(A2 * B1 * C1 * D1 * X)	0.00188	0.00190	0.00190
	(A2 * B1 * C1 * !D1 * !X)	-0.00179	-0.00181	-0.00180
	(A2 * B1 * C1 * !D1 * !X)	0.00187	0.00189	0.00188
	(A2 * B1 * !C1 * !X)	-0.00180	-0.00181	-0.00180
	(A2 * B1 * !C1 * !X)	0.00188	0.00189	0.00188
	(A2 * !B1 * !X)	-0.00180	-0.00181	-0.00180
	(A2 * !B1 * !X)	0.00187	0.00189	0.00188
	(!A2 * B1 * C1 * !D1 * !X)	-0.00155	-0.00172	-0.00171
	(!A2 * B1 * C1 * !D1 * !X)	0.00190	0.00192	0.00190
	(!A2 * B1 * !C1 * D1 * !X)	-0.00158	-0.00173	-0.00172
	(!A2 * B1 * !C1 * D1 * !X)	0.00190	0.00192	0.00190
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00158	-0.00172	-0.00172
	(!A2 * B1 * !C1 * !D1 * !X)	0.00190	0.00192	0.00190
	(!A2 * !B1 * C1 * D1 * !X)	-0.00165	-0.00174	-0.00173
	(!A2 * !B1 * C1 * D1 * !X)	0.00190	0.00192	0.00190
	(!A2 * !B1 * !D1 * !X)	-0.00165	-0.00174	-0.00173
	(!A2 * !B1 * !D1 * !X)	0.00190	0.00192	0.00190
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00165	-0.00174	-0.00173
	(!A2 * !B1 * !C1 * D1 * !X)	0.00190	0.00192	0.00190

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	-0.00344	-0.00345	-0.00343
	(A2 * B1 * C1 * D1 * X)	0.00371	0.00375	0.00374
	(A2 * B1 * C1 * !D1 * !X)	-0.00322	-0.00323	-0.00322
	(A2 * B1 * C1 * !D1 * !X)	0.00395	0.00397	0.00395
	(A2 * B1 * !C1 * !X)	-0.00322	-0.00323	-0.00322
	(A2 * B1 * !C1 * !X)	0.00395	0.00397	0.00395
	(A2 * !B1 * !X)	-0.00322	-0.00323	-0.00322
	(A2 * !B1 * !X)	0.00396	0.00397	0.00395
	(!A2 * B1 * C1 * !D1 * !X)	-0.00278	-0.00303	-0.00304
	(!A2 * B1 * C1 * !D1 * !X)	0.00400	0.00406	0.00401
	(!A2 * B1 * !C1 * D1 * !X)	-0.00281	-0.00305	-0.00306
	(!A2 * B1 * !C1 * D1 * !X)	0.00400	0.00404	0.00401
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00281	-0.00305	-0.00306
	(!A2 * B1 * !C1 * !D1 * !X)	0.00400	0.00404	0.00401
	(!A2 * !B1 * C1 * D1 * !X)	-0.00292	-0.00309	-0.00310
	(!A2 * !B1 * C1 * D1 * !X)	0.00400	0.00405	0.00401
	(!A2 * !B1 * !D1 * !X)	-0.00292	-0.00309	-0.00310
	(!A2 * !B1 * !D1 * !X)	0.00400	0.00405	0.00401
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00292	-0.00309	-0.00309
	(!A2 * !B1 * !C1 * D1 * !X)	0.00400	0.00405	0.00401

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)**	0.00182	0.00184	0.00182
	(A1 * B1 * C1 * D1 * X)	-0.00091	-0.00092	-0.00091
	(A1 * B1 * C1 * !D1 * !X)	0.00165	0.00166	0.00166
	(A1 * B1 * C1 * !D1 * !X)	-0.00184	-0.00186	-0.00186
	(A1 * B1 * !C1 * D1 * !X)	0.00165	0.00166	0.00166
	(A1 * B1 * !C1 * D1 * !X)	-0.00184	-0.00187	-0.00186
	(A1 * B1 * !C1 * !D1 * !X)	0.00165	0.00168	0.00166
	(A1 * B1 * !C1 * !D1 * !X)	-0.00184	-0.00187	-0.00186
	(A1 * !B1 * C1 * D1 * !X)	0.00165	0.00167	0.00166
	(A1 * !B1 * C1 * D1 * !X)	-0.00184	-0.00187	-0.00186
	(A1 * !B1 * !D1 * !X)	0.00165	0.00168	0.00166
	(A1 * !B1 * !D1 * !X)	-0.00184	-0.00187	-0.00186
	(A1 * !B1 * !C1 * D1 * !X)	0.00165	0.00168	0.00166
	(A1 * !B1 * !C1 * D1 * !X)	-0.00184	-0.00187	-0.00186
	(!A1 * B1 * C1 * !D1 * !X)	0.00153	0.00154	0.00154
	(!A1 * B1 * C1 * !D1 * !X)	-0.00188	-0.00189	-0.00188
	(!A1 * B1 * !C1 * D1 * !X)	0.00157	0.00158	0.00157
	(!A1 * B1 * !C1 * D1 * !X)	-0.00188	-0.00189	-0.00188
	(!A1 * B1 * !C1 * !D1 * !X)	0.00155	0.00157	0.00155
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00189	-0.00189	-0.00188
	(!A1 * !B1 * C1 * D1 * !X)	0.00159	0.00160	0.00158
	(!A1 * !B1 * C1 * D1 * !X)	-0.00188	-0.00190	-0.00188
	(!A1 * !B1 * !D1 * !X)	0.00159	0.00161	0.00160
	(!A1 * !B1 * !D1 * !X)	-0.00188	-0.00189	-0.00188
	(!A1 * !B1 * !C1 * D1 * !X)	0.00158	0.00161	0.00159
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00188	-0.00189	-0.00188

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	0.00181	0.00183	0.00181
	(A1 * B1 * C1 * D1 * X)	-0.00088	-0.00090	-0.00089
	(A1 * B1 * C1 * !D1 * !X)	0.00166	0.00167	0.00167
	(A1 * B1 * C1 * !D1 * !X)	-0.00180	-0.00182	-0.00182
	(A1 * B1 * !C1 * D1 * !X)	0.00166	0.00167	0.00167
	(A1 * B1 * !C1 * D1 * !X)	-0.00180	-0.00182	-0.00182
	(A1 * B1 * !C1 * !D1 * !X)	0.00166	0.00169	0.00166
	(A1 * B1 * !C1 * !D1 * !X)	-0.00180	-0.00183	-0.00182
	(A1 * !B1 * C1 * D1 * !X)	0.00166	0.00167	0.00167
	(A1 * !B1 * C1 * D1 * !X)	-0.00180	-0.00182	-0.00182
	(A1 * !B1 * !D1 * !X)	0.00166	0.00169	0.00166
	(A1 * !B1 * !D1 * !X)	-0.00180	-0.00183	-0.00182
	(A1 * !B1 * !C1 * D1 * !X)	0.00166	0.00169	0.00166
	(A1 * !B1 * !C1 * D1 * !X)	-0.00180	-0.00183	-0.00182
	(!A1 * B1 * C1 * !D1 * !X)	0.00155	0.00157	0.00155
	(!A1 * B1 * C1 * !D1 * !X)	-0.00184	-0.00185	-0.00184
	(!A1 * B1 * !C1 * D1 * !X)	0.00157	0.00157	0.00156
	(!A1 * B1 * !C1 * D1 * !X)	-0.00184	-0.00185	-0.00184
	(!A1 * B1 * !C1 * !D1 * !X)	0.00157	0.00157	0.00156
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00184	-0.00185	-0.00184
	(!A1 * !B1 * C1 * D1 * !X)	0.00158	0.00161	0.00159
	(!A1 * !B1 * C1 * D1 * !X)	-0.00184	-0.00186	-0.00184
	(!A1 * !B1 * !D1 * !X)	0.00158	0.00160	0.00159
	(!A1 * !B1 * !D1 * !X)	-0.00184	-0.00185	-0.00184
	(!A1 * !B1 * !C1 * D1 * !X)	0.00158	0.00160	0.00159
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00184	-0.00185	-0.00184

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	0.00398	0.00402	0.00399
	(A1 * B1 * C1 * D1 * X)	-0.00181	-0.00183	-0.00181
	(A1 * B1 * C1 * !D1 * !X)	0.00338	0.00342	0.00339
	(A1 * B1 * C1 * !D1 * !X)	-0.00391	-0.00398	-0.00397
	(A1 * B1 * !C1 * D1 * !X)	0.00338	0.00342	0.00339
	(A1 * B1 * !C1 * D1 * !X)	-0.00391	-0.00398	-0.00397
	(A1 * B1 * !C1 * !D1 * !X)	0.00338	0.00344	0.00339
	(A1 * B1 * !C1 * !D1 * !X)	-0.00391	-0.00398	-0.00397
	(A1 * !B1 * C1 * D1 * !X)	0.00338	0.00341	0.00339
	(A1 * !B1 * C1 * D1 * !X)	-0.00391	-0.00398	-0.00397
	(A1 * !B1 * !D1 * !X)	0.00338	0.00344	0.00339
	(A1 * !B1 * !D1 * !X)	-0.00391	-0.00399	-0.00397
	(A1 * !B1 * !C1 * D1 * !X)	0.00338	0.00344	0.00339
	(A1 * !B1 * !C1 * D1 * !X)	-0.00391	-0.00399	-0.00397
	(!A1 * B1 * C1 * !D1 * !X)	0.00314	0.00317	0.00314
	(!A1 * B1 * C1 * !D1 * !X)	-0.00402	-0.00404	-0.00402
	(!A1 * B1 * !C1 * D1 * !X)	0.00315	0.00315	0.00314
	(!A1 * B1 * !C1 * D1 * !X)	-0.00404	-0.00403	-0.00402
	(!A1 * B1 * !C1 * !D1 * !X)	0.00316	0.00315	0.00315
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00403	-0.00403	-0.00402
	(!A1 * !B1 * C1 * D1 * !X)	0.00320	0.00324	0.00322
	(!A1 * !B1 * C1 * D1 * !X)	-0.00402	-0.00404	-0.00402
	(!A1 * !B1 * !D1 * !X)	0.00321	0.00326	0.00322
	(!A1 * !B1 * !D1 * !X)	-0.00402	-0.00405	-0.00402
	(!A1 * !B1 * !C1 * D1 * !X)	0.00321	0.00326	0.00322
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00402	-0.00405	-0.00402

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)**	-0.00175	-0.00176	-0.00179
	(A1 * B1 * C1 * D1 * X)	0.00098	0.00098	0.00095
	(A1 * B1 * C1 * !D1 * !X)	-0.00165	-0.00166	-0.00165
	(A1 * B1 * C1 * !D1 * !X)	0.00185	0.00186	0.00186
	(A1 * B1 * !C1 * D1 * !X)	-0.00165	-0.00166	-0.00165
	(A1 * B1 * !C1 * D1 * !X)	0.00185	0.00187	0.00186
	(A1 * B1 * !C1 * !D1 * !X)	-0.00165	-0.00166	-0.00165
	(A1 * B1 * !C1 * !D1 * !X)	0.00186	0.00187	0.00186
	(A1 * !B1 * C1 * D1 * !X)	-0.00165	-0.00166	-0.00165
	(A1 * !B1 * C1 * D1 * !X)	0.00186	0.00187	0.00186
	(A1 * !B1 * !D1 * !X)	-0.00165	-0.00166	-0.00165
	(A1 * !B1 * !D1 * !X)	0.00186	0.00187	0.00186
	(A1 * !B1 * !C1 * D1 * !X)	-0.00165	-0.00166	-0.00165
	(A1 * !B1 * !C1 * D1 * !X)	0.00186	0.00187	0.00186
	(!A1 * B1 * C1 * !D1 * !X)	-0.00139	-0.00154	-0.00154
	(!A1 * B1 * C1 * !D1 * !X)	0.00188	0.00191	0.00189
	(!A1 * B1 * !C1 * D1 * !X)	-0.00143	-0.00157	-0.00157
	(!A1 * B1 * !C1 * D1 * !X)	0.00189	0.00191	0.00189
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00143	-0.00157	-0.00155
	(!A1 * B1 * !C1 * !D1 * !X)	0.00189	0.00191	0.00189
	(!A1 * !B1 * C1 * D1 * !X)	-0.00150	-0.00159	-0.00158
	(!A1 * !B1 * C1 * D1 * !X)	0.00188	0.00190	0.00189
	(!A1 * !B1 * !D1 * !X)	-0.00150	-0.00159	-0.00160
	(!A1 * !B1 * !D1 * !X)	0.00188	0.00190	0.00189
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00150	-0.00159	-0.00159
	(!A1 * !B1 * !C1 * D1 * !X)	0.00188	0.00190	0.00189

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	-0.00175	-0.00176	-0.00180
	(A1 * B1 * C1 * D1 * X)	0.00095	0.00095	0.00091
	(A1 * B1 * C1 * !D1 * !X)	-0.00165	-0.00167	-0.00166
	(A1 * B1 * C1 * !D1 * !X)	0.00181	0.00182	0.00182
	(A1 * B1 * !C1 * D1 * !X)	-0.00166	-0.00167	-0.00166
	(A1 * B1 * !C1 * D1 * !X)	0.00182	0.00182	0.00182
	(A1 * B1 * !C1 * !D1 * !X)	-0.00166	-0.00166	-0.00166
	(A1 * B1 * !C1 * !D1 * !X)	0.00183	0.00183	0.00182
	(A1 * !B1 * C1 * D1 * !X)	-0.00166	-0.00167	-0.00166
	(A1 * !B1 * C1 * D1 * !X)	0.00182	0.00183	0.00182
	(A1 * !B1 * !D1 * !X)	-0.00166	-0.00166	-0.00166
	(A1 * !B1 * !D1 * !X)	0.00183	0.00183	0.00182
	(A1 * !B1 * !C1 * D1 * !X)	-0.00166	-0.00166	-0.00166
	(A1 * !B1 * !C1 * D1 * !X)	0.00183	0.00183	0.00182
	(!A1 * B1 * C1 * !D1 * !X)	-0.00141	-0.00157	-0.00155
	(!A1 * B1 * C1 * !D1 * !X)	0.00184	0.00187	0.00185
	(!A1 * B1 * !C1 * D1 * !X)	-0.00144	-0.00157	-0.00156
	(!A1 * B1 * !C1 * D1 * !X)	0.00184	0.00187	0.00185
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00144	-0.00157	-0.00156
	(!A1 * B1 * !C1 * !D1 * !X)	0.00184	0.00187	0.00185
	(!A1 * !B1 * C1 * D1 * !X)	-0.00151	-0.00160	-0.00159
	(!A1 * !B1 * C1 * D1 * !X)	0.00185	0.00186	0.00185
	(!A1 * !B1 * !D1 * !X)	-0.00152	-0.00160	-0.00159
	(!A1 * !B1 * !D1 * !X)	0.00185	0.00186	0.00185
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00152	-0.00160	-0.00159
	(!A1 * !B1 * !C1 * D1 * !X)	0.00185	0.00186	0.00185

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	-0.00382	-0.00384	-0.00393
	(A1 * B1 * C1 * D1 * X)	0.00197	0.00197	0.00188
	(A1 * B1 * C1 * !D1 * !X)	-0.00337	-0.00339	-0.00338
	(A1 * B1 * C1 * !D1 * !X)	0.00395	0.00398	0.00397
	(A1 * B1 * !C1 * D1 * !X)	-0.00337	-0.00340	-0.00338
	(A1 * B1 * !C1 * D1 * !X)	0.00395	0.00398	0.00397
	(A1 * B1 * !C1 * !D1 * !X)	-0.00337	-0.00339	-0.00338
	(A1 * B1 * !C1 * !D1 * !X)	0.00396	0.00398	0.00397
	(A1 * !B1 * C1 * D1 * !X)	-0.00337	-0.00339	-0.00338
	(A1 * !B1 * C1 * D1 * !X)	0.00396	0.00398	0.00397
	(A1 * !B1 * !D1 * !X)	-0.00337	-0.00340	-0.00338
	(A1 * !B1 * !D1 * !X)	0.00396	0.00399	0.00397
	(A1 * !B1 * !C1 * D1 * !X)	-0.00337	-0.00340	-0.00338
	(A1 * !B1 * !C1 * D1 * !X)	0.00396	0.00399	0.00397
	(!A1 * B1 * C1 * !D1 * !X)	-0.00282	-0.00317	-0.00314
	(!A1 * B1 * C1 * !D1 * !X)	0.00404	0.00407	0.00404
	(!A1 * B1 * !C1 * D1 * !X)	-0.00287	-0.00315	-0.00314
	(!A1 * B1 * !C1 * D1 * !X)	0.00404	0.00407	0.00404
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00287	-0.00315	-0.00315
	(!A1 * B1 * !C1 * !D1 * !X)	0.00403	0.00408	0.00404
	(!A1 * !B1 * C1 * D1 * !X)	-0.00300	-0.00323	-0.00322
	(!A1 * !B1 * C1 * D1 * !X)	0.00402	0.00407	0.00404
	(!A1 * !B1 * !D1 * !X)	-0.00302	-0.00323	-0.00322
	(!A1 * !B1 * !D1 * !X)	0.00402	0.00407	0.00404
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00302	-0.00323	-0.00322
	(!A1 * !B1 * !C1 * D1 * !X)	0.00402	0.00407	0.00404

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)**	0.00152	0.00154	0.00152
	(A2 * C1 * !D1 * !X)	-0.00165	-0.00166	-0.00165
	(A2 * !C1 * D1 * !X)	0.00153	0.00154	0.00154
	(A2 * !C1 * D1 * !X)	-0.00165	-0.00165	-0.00165
	(A2 * !C1 * !D1 * !X)	0.00153	0.00155	0.00154
	(A2 * !C1 * !D1 * !X)	-0.00165	-0.00166	-0.00165
	(A1 * !A2 * C1 * !D1 * !X)	0.00150	0.00151	0.00151
	(A1 * !A2 * C1 * !D1 * !X)	-0.00164	-0.00165	-0.00165
	(A1 * !A2 * !C1 * D1 * !X)	0.00153	0.00156	0.00154
	(A1 * !A2 * !C1 * D1 * !X)	-0.00164	-0.00166	-0.00165
	(A1 * !A2 * !C1 * !D1 * !X)	0.00153	0.00154	0.00153
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00165	-0.00165	-0.00165
	(!A1 * !A2 * C1 * D1 * !X)	0.00070	0.00071	0.00069
	(!A1 * !A2 * C1 * D1 * !X)	-0.00162	-0.00162	-0.00161
	(!A1 * !A2 * C1 * !D1 * !X)	0.00081	0.00083	0.00082
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00164	-0.00166	-0.00165
	(!A1 * !A2 * !C1 * D1 * !X)	0.00087	0.00087	0.00087
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00165	-0.00165	-0.00165
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00089	0.00089	0.00089
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00165	-0.00165	-0.00165

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	0.00153	0.00153	0.00153
	(A2 * C1 * !D1 * !X)	-0.00189	-0.00189	-0.00189
	(A2 * !C1 * D1 * !X)	0.00157	0.00157	0.00157
	(A2 * !C1 * D1 * !X)	-0.00188	-0.00189	-0.00189
	(A2 * !C1 * !D1 * !X)	0.00155	0.00158	0.00157
	(A2 * !C1 * !D1 * !X)	-0.00188	-0.00190	-0.00189
	(A1 * !A2 * C1 * !D1 * !X)	0.00153	0.00154	0.00153
	(A1 * !A2 * C1 * !D1 * !X)	-0.00189	-0.00189	-0.00189
	(A1 * !A2 * !C1 * D1 * !X)	0.00156	0.00157	0.00157
	(A1 * !A2 * !C1 * D1 * !X)	-0.00188	-0.00189	-0.00189
	(A1 * !A2 * !C1 * !D1 * !X)	0.00156	0.00157	0.00157
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00188	-0.00189	-0.00189
	(!A1 * !A2 * C1 * D1 * !X)	0.00075	0.00075	0.00074
	(!A1 * !A2 * C1 * D1 * !X)	-0.00185	-0.00186	-0.00184
	(!A1 * !A2 * C1 * !D1 * !X)	0.00088	0.00090	0.00089
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00188	-0.00190	-0.00189
	(!A1 * !A2 * !C1 * D1 * !X)	0.00092	0.00091	0.00092
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00189	-0.00188	-0.00189
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00093	0.00095	0.00094
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00188	-0.00190	-0.00189

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	0.00307	0.00310	0.00307
	(A2 * C1 * !D1 * !X)	-0.00326	-0.00327	-0.00325
	(A2 * !C1 * D1 * !X)	0.00311	0.00312	0.00311
	(A2 * !C1 * D1 * !X)	-0.00325	-0.00326	-0.00325
	(A2 * !C1 * !D1 * !X)	0.00310	0.00310	0.00311
	(A2 * !C1 * !D1 * !X)	-0.00325	-0.00325	-0.00325
	(A1 * !A2 * C1 * !D1 * !X)	0.00307	0.00308	0.00307
	(A1 * !A2 * C1 * !D1 * !X)	-0.00326	-0.00326	-0.00325
	(A1 * !A2 * !C1 * D1 * !X)	0.00306	0.00311	0.00308
	(A1 * !A2 * !C1 * D1 * !X)	-0.00324	-0.00327	-0.00325
	(A1 * !A2 * !C1 * !D1 * !X)	0.00306	0.00311	0.00308
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00324	-0.00327	-0.00325
	(!A1 * !A2 * C1 * D1 * !X)	0.00137	0.00139	0.00138
	(!A1 * !A2 * C1 * D1 * !X)	-0.00317	-0.00319	-0.00315
	(!A1 * !A2 * C1 * !D1 * !X)	0.00168	0.00170	0.00168
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00327	-0.00329	-0.00327
	(!A1 * !A2 * !C1 * D1 * !X)	0.00168	0.00170	0.00168
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00327	-0.00328	-0.00326
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00174	0.00175	0.00173
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00326	-0.00328	-0.00326

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)**	-0.00136	-0.00151	-0.00152
	(A2 * C1 * !D1 * !X)	0.00166	0.00167	0.00165
	(A2 * !C1 * D1 * !X)	-0.00145	-0.00154	-0.00154
	(A2 * !C1 * D1 * !X)	0.00165	0.00167	0.00166
	(A2 * !C1 * !D1 * !X)	-0.00147	-0.00154	-0.00154
	(A2 * !C1 * !D1 * !X)	0.00165	0.00167	0.00166
	(A1 * !A2 * C1 * !D1 * !X)	-0.00133	-0.00150	-0.00151
	(A1 * !A2 * C1 * !D1 * !X)	0.00167	0.00166	0.00165
	(A1 * !A2 * !C1 * D1 * !X)	-0.00143	-0.00153	-0.00154
	(A1 * !A2 * !C1 * D1 * !X)	0.00165	0.00166	0.00166
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00146	-0.00153	-0.00153
	(A1 * !A2 * !C1 * !D1 * !X)	0.00165	0.00166	0.00166
	(!A1 * !A2 * C1 * D1 * !X)	-0.00064	-0.00065	-0.00065
	(!A1 * !A2 * C1 * D1 * !X)	0.00168	0.00171	0.00167
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00081	-0.00083	-0.00082
	(!A1 * !A2 * C1 * !D1 * !X)	0.00167	0.00170	0.00166
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00087	-0.00087	-0.00087
	(!A1 * !A2 * !C1 * D1 * !X)	0.00177	0.00175	0.00167
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00089	-0.00089	-0.00089
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00165	0.00167	0.00166

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	-0.00141	-0.00153	-0.00153
	(A2 * C1 * !D1 * !X)	0.00190	0.00192	0.00190
	(A2 * !C1 * D1 * !X)	-0.00149	-0.00157	-0.00157
	(A2 * !C1 * D1 * !X)	0.00188	0.00191	0.00190
	(A2 * !C1 * !D1 * !X)	-0.00150	-0.00158	-0.00157
	(A2 * !C1 * !D1 * !X)	0.00188	0.00191	0.00190
	(A1 * !A2 * C1 * !D1 * !X)	-0.00137	-0.00154	-0.00153
	(A1 * !A2 * C1 * !D1 * !X)	0.00190	0.00190	0.00190
	(A1 * !A2 * !C1 * D1 * !X)	-0.00149	-0.00157	-0.00157
	(A1 * !A2 * !C1 * D1 * !X)	0.00190	0.00190	0.00190
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00151	-0.00157	-0.00157
	(A1 * !A2 * !C1 * !D1 * !X)	0.00190	0.00190	0.00190
	(!A1 * !A2 * C1 * D1 * !X)	-0.00068	-0.00069	-0.00068
	(!A1 * !A2 * C1 * D1 * !X)	0.00192	0.00194	0.00191
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00088	-0.00090	-0.00089
	(!A1 * !A2 * C1 * !D1 * !X)	0.00190	0.00193	0.00189
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00092	-0.00091	-0.00092
	(!A1 * !A2 * !C1 * D1 * !X)	0.00198	0.00197	0.00191
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00093	-0.00095	-0.00094
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00189	0.00192	0.00190

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	-0.00279	-0.00304	-0.00307
	(A2 * C1 * !D1 * !X)	0.00328	0.00329	0.00327
	(A2 * !C1 * D1 * !X)	-0.00293	-0.00309	-0.00311
	(A2 * !C1 * D1 * !X)	0.00325	0.00326	0.00327
	(A2 * !C1 * !D1 * !X)	-0.00295	-0.00310	-0.00311
	(A2 * !C1 * !D1 * !X)	0.00325	0.00326	0.00327
	(A1 * !A2 * C1 * !D1 * !X)	-0.00272	-0.00307	-0.00307
	(A1 * !A2 * C1 * !D1 * !X)	0.00329	0.00328	0.00327
	(A1 * !A2 * !C1 * D1 * !X)	-0.00290	-0.00311	-0.00308
	(A1 * !A2 * !C1 * D1 * !X)	0.00325	0.00328	0.00327
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00293	-0.00311	-0.00308
	(A1 * !A2 * !C1 * !D1 * !X)	0.00325	0.00329	0.00327
	(!A1 * !A2 * C1 * D1 * !X)	-0.00127	-0.00128	-0.00127
	(!A1 * !A2 * C1 * D1 * !X)	0.00333	0.00334	0.00329
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00168	-0.00170	-0.00168
	(!A1 * !A2 * C1 * !D1 * !X)	0.00328	0.00336	0.00328
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00168	-0.00170	-0.00168
	(!A1 * !A2 * !C1 * D1 * !X)	0.00339	0.00339	0.00329
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00174	-0.00175	-0.00173
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00326	0.00331	0.00328

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)**	0.00153	0.00154	0.00153
	(A2 * B1 * !D1 * !X)	-0.00174	-0.00175	-0.00174
	(A2 * !B1 * D1 * !X)	0.00064	0.00064	0.00064
	(A2 * !B1 * D1 * !X)	-0.00174	-0.00174	-0.00174
	(A2 * !B1 * !D1 * !X)	0.00075	0.00075	0.00074
	(A2 * !B1 * !D1 * !X)	-0.00176	-0.00176	-0.00175
	(A1 * !A2 * B1 * !D1 * !X)	0.00153	0.00154	0.00153
	(A1 * !A2 * B1 * !D1 * !X)	-0.00174	-0.00175	-0.00174
	(!A2 * !B1 * D1 * !X)	0.00064	0.00064	0.00064
	(!A2 * !B1 * D1 * !X)	-0.00174	-0.00174	-0.00174
	(!A2 * !B1 * !D1 * !X)	0.00074	0.00074	0.00074
	(!A2 * !B1 * !D1 * !X)	-0.00174	-0.00175	-0.00175
	(!A1 * !A2 * B1 * D1 * !X)	0.00066	0.00066	0.00065
	(!A1 * !A2 * B1 * D1 * !X)	-0.00175	-0.00176	-0.00174
	(!A1 * !A2 * B1 * !D1 * !X)	0.00084	0.00085	0.00084
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00174	-0.00175	-0.00175

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	0.00155	0.00156	0.00155
	(A2 * B1 * !D1 * !X)	-0.00196	-0.00196	-0.00195
	(A2 * !B1 * D1 * !X)	0.00068	0.00069	0.00069
	(A2 * !B1 * D1 * !X)	-0.00195	-0.00196	-0.00194
	(A2 * !B1 * !D1 * !X)	0.00081	0.00082	0.00081
	(A2 * !B1 * !D1 * !X)	-0.00195	-0.00197	-0.00195
	(A1 * !A2 * B1 * !D1 * !X)	0.00156	0.00157	0.00156
	(A1 * !A2 * B1 * !D1 * !X)	-0.00196	-0.00196	-0.00195
	(!A2 * !B1 * D1 * !X)	0.00068	0.00069	0.00069
	(!A2 * !B1 * D1 * !X)	-0.00195	-0.00196	-0.00194
	(!A2 * !B1 * !D1 * !X)	0.00081	0.00081	0.00081
	(!A2 * !B1 * !D1 * !X)	-0.00195	-0.00195	-0.00195
	(!A1 * !A2 * B1 * D1 * !X)	0.00068	0.00067	0.00068
	(!A1 * !A2 * B1 * D1 * !X)	-0.00195	-0.00194	-0.00194
	(!A1 * !A2 * B1 * !D1 * !X)	0.00089	0.00090	0.00089
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00195	-0.00196	-0.00195

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	0.00320	0.00323	0.00320
	(A2 * B1 * !D1 * !X)	-0.00333	-0.00335	-0.00333
	(A2 * !B1 * D1 * !X)	0.00142	0.00142	0.00143
	(A2 * !B1 * D1 * !X)	-0.00333	-0.00333	-0.00331
	(A2 * !B1 * !D1 * !X)	0.00171	0.00171	0.00170
	(A2 * !B1 * !D1 * !X)	-0.00336	-0.00336	-0.00335
	(A1 * !A2 * B1 * !D1 * !X)	0.00319	0.00322	0.00320
	(A1 * !A2 * B1 * !D1 * !X)	-0.00333	-0.00335	-0.00333
	(!A2 * !B1 * D1 * !X)	0.00141	0.00141	0.00143
	(!A2 * !B1 * D1 * !X)	-0.00332	-0.00333	-0.00331
	(!A2 * !B1 * !D1 * !X)	0.00171	0.00171	0.00170
	(!A2 * !B1 * !D1 * !X)	-0.00336	-0.00336	-0.00335
	(!A1 * !A2 * B1 * D1 * !X)	0.00135	0.00135	0.00139
	(!A1 * !A2 * B1 * D1 * !X)	-0.00333	-0.00333	-0.00332
	(!A1 * !A2 * B1 * !D1 * !X)	0.00177	0.00179	0.00178
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00334	-0.00337	-0.00335

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)**	-0.00138	-0.00154	-0.00153
	(A2 * B1 * !D1 * !X)	0.00187	0.00176	0.00175
	(A2 * !B1 * D1 * !X)	-0.00061	-0.00062	-0.00062
	(A2 * !B1 * D1 * !X)	0.00178	0.00180	0.00176
	(A2 * !B1 * !D1 * !X)	-0.00075	-0.00075	-0.00074
	(A2 * !B1 * !D1 * !X)	0.00185	0.00186	0.00177
	(A1 * !A2 * B1 * !D1 * !X)	-0.00137	-0.00154	-0.00153
	(A1 * !A2 * B1 * !D1 * !X)	0.00188	0.00177	0.00175
	(!A2 * !B1 * D1 * !X)	-0.00061	-0.00062	-0.00062
	(!A2 * !B1 * D1 * !X)	0.00178	0.00180	0.00176
	(!A2 * !B1 * !D1 * !X)	-0.00074	-0.00074	-0.00074
	(!A2 * !B1 * !D1 * !X)	0.00185	0.00186	0.00177
	(!A1 * !A2 * B1 * D1 * !X)	-0.00060	-0.00061	-0.00061
	(!A1 * !A2 * B1 * D1 * !X)	0.00178	0.00180	0.00176
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00084	-0.00085	-0.00084
	(!A1 * !A2 * B1 * !D1 * !X)	0.00188	0.00184	0.00176

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	-0.00139	-0.00154	-0.00155
	(A2 * B1 * !D1 * !X)	0.00206	0.00196	0.00196
	(A2 * !B1 * D1 * !X)	-0.00064	-0.00066	-0.00066
	(A2 * !B1 * D1 * !X)	0.00199	0.00201	0.00196
	(A2 * !B1 * !D1 * !X)	-0.00081	-0.00082	-0.00081
	(A2 * !B1 * !D1 * !X)	0.00205	0.00207	0.00198
	(A1 * !A2 * B1 * !D1 * !X)	-0.00139	-0.00155	-0.00155
	(A1 * !A2 * B1 * !D1 * !X)	0.00209	0.00197	0.00196
	(!A2 * !B1 * D1 * !X)	-0.00064	-0.00066	-0.00066
	(!A2 * !B1 * D1 * !X)	0.00199	0.00201	0.00196
	(!A2 * !B1 * !D1 * !X)	-0.00081	-0.00081	-0.00081
	(!A2 * !B1 * !D1 * !X)	0.00205	0.00207	0.00198
	(!A1 * !A2 * B1 * D1 * !X)	-0.00063	-0.00065	-0.00065
	(!A1 * !A2 * B1 * D1 * !X)	0.00199	0.00202	0.00196
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00089	-0.00090	-0.00089
	(!A1 * !A2 * B1 * !D1 * !X)	0.00206	0.00203	0.00196

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	-0.00280	-0.00321	-0.00320
	(A2 * B1 * !D1 * !X)	0.00363	0.00336	0.00335
	(A2 * !B1 * D1 * !X)	-0.00133	-0.00135	-0.00137
	(A2 * !B1 * D1 * !X)	0.00345	0.00348	0.00337
	(A2 * !B1 * !D1 * !X)	-0.00171	-0.00171	-0.00170
	(A2 * !B1 * !D1 * !X)	0.00354	0.00359	0.00341
	(A1 * !A2 * B1 * !D1 * !X)	-0.00275	-0.00321	-0.00320
	(A1 * !A2 * B1 * !D1 * !X)	0.00366	0.00337	0.00335
	(!A2 * !B1 * D1 * !X)	-0.00133	-0.00135	-0.00137
	(!A2 * !B1 * D1 * !X)	0.00345	0.00348	0.00337
	(!A2 * !B1 * !D1 * !X)	-0.00171	-0.00171	-0.00170
	(!A2 * !B1 * !D1 * !X)	0.00354	0.00359	0.00341
	(!A1 * !A2 * B1 * D1 * !X)	-0.00129	-0.00131	-0.00133
	(!A1 * !A2 * B1 * D1 * !X)	0.00345	0.00348	0.00337
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00177	-0.00179	-0.00178
	(!A1 * !A2 * B1 * !D1 * !X)	0.00359	0.00348	0.00336

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	0.00055	0.00055	0.00054
	(A2 * !C1 * !X)	-0.00209	-0.00210	-0.00213
	(A2 * !B1 * C1 * !X)	0.00055	0.00055	0.00052
	(A2 * !B1 * C1 * !X)	-0.00205	-0.00205	-0.00212
	(!A2 * !C1 * !X)	0.00055	0.00055	0.00054
	(!A2 * !C1 * !X)	-0.00209	-0.00210	-0.00213
	(!A2 * !B1 * C1 * !X)	0.00055	0.00055	0.00052
	(!A2 * !B1 * C1 * !X)	-0.00205	-0.00205	-0.00212
	(!A1 * !A2 * B1 * C1 * !X)	0.00061	0.00061	0.00054
	(!A1 * !A2 * B1 * C1 * !X)	-0.00195	-0.00197	-0.00211

sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	0.00058	0.00058	0.00056
	(A2 * !C1 * !X)	-0.00235	-0.00234	-0.00238
	(A2 * !B1 * C1 * !X)	0.00057	0.00057	0.00054
	(A2 * !B1 * C1 * !X)	-0.00230	-0.00229	-0.00238
	(!A2 * !C1 * !X)	0.00058	0.00058	0.00056
	(!A2 * !C1 * !X)	-0.00235	-0.00234	-0.00238
	(!A2 * !B1 * C1 * !X)	0.00057	0.00057	0.00054
	(!A2 * !B1 * C1 * !X)	-0.00230	-0.00229	-0.00238
	(!A1 * !A2 * B1 * C1 * !X)	0.00063	0.00063	0.00055
	(!A1 * !A2 * B1 * C1 * !X)	-0.00220	-0.00221	-0.00236
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	0.00122	0.00122	0.00116
	(A2 * !C1 * !X)	-0.00389	-0.00391	-0.00399
	(A2 * !B1 * C1 * !X)	0.00117	0.00118	0.00108
	(A2 * !B1 * C1 * !X)	-0.00378	-0.00380	-0.00397
	(!A2 * !C1 * !X)	0.00122	0.00122	0.00116
	(!A2 * !C1 * !X)	-0.00389	-0.00391	-0.00399
	(!A2 * !B1 * C1 * !X)	0.00117	0.00118	0.00108
	(!A2 * !B1 * C1 * !X)	-0.00378	-0.00380	-0.00397
	(!A1 * !A2 * B1 * C1 * !X)	0.00125	0.00125	0.00109
	(!A1 * !A2 * B1 * C1 * !X)	-0.00359	-0.00362	-0.00394

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

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

sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	-0.00053	-0.00054	-0.00053
	(A2 * !C1 * !X)	0.00212	0.00216	0.00213
	(A2 * !B1 * C1 * !X)	-0.00052	-0.00052	-0.00052
	(A2 * !B1 * C1 * !X)	0.00212	0.00215	0.00213
	(!A2 * !C1 * !X)	-0.00053	-0.00054	-0.00053
	(!A2 * !C1 * !X)	0.00212	0.00216	0.00213
	(!A2 * !B1 * C1 * !X)	-0.00052	-0.00052	-0.00052
	(!A2 * !B1 * C1 * !X)	0.00212	0.00215	0.00213
	(!A1 * !A2 * B1 * C1 * !X)	-0.00052	-0.00053	-0.00052
	(!A1 * !A2 * B1 * C1 * !X)	0.00212	0.00215	0.00213
sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	-0.00055	-0.00056	-0.00055
	(A2 * !C1 * !X)	0.00238	0.00243	0.00239
	(A2 * !B1 * C1 * !X)	-0.00053	-0.00055	-0.00053
	(A2 * !B1 * C1 * !X)	0.00238	0.00243	0.00239
	(!A2 * !C1 * !X)	-0.00055	-0.00056	-0.00055
	(!A2 * !C1 * !X)	0.00238	0.00243	0.00239
	(!A2 * !B1 * C1 * !X)	-0.00053	-0.00055	-0.00053
	(!A2 * !B1 * C1 * !X)	0.00238	0.00243	0.00239
	(!A1 * !A2 * B1 * C1 * !X)	-0.00054	-0.00054	-0.00053
	(!A1 * !A2 * B1 * C1 * !X)	0.00238	0.00241	0.00239
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	-0.00112	-0.00115	-0.00112
	(A2 * !C1 * !X)	0.00399	0.00407	0.00401
	(A2 * !B1 * C1 * !X)	-0.00108	-0.00111	-0.00108
	(A2 * !B1 * C1 * !X)	0.00399	0.00407	0.00400
	(!A2 * !C1 * !X)	-0.00112	-0.00115	-0.00112
	(!A2 * !C1 * !X)	0.00399	0.00407	0.00401
	(!A2 * !B1 * C1 * !X)	-0.00108	-0.00111	-0.00108
	(!A2 * !B1 * C1 * !X)	0.00399	0.00406	0.00400
	(!A1 * !A2 * B1 * C1 * !X)	-0.00107	-0.00110	-0.00108
	(!A1 * !A2 * B1 * C1 * !X)	0.00399	0.00406	0.00400

SKY130_FD_SC_HS__O211AIx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00274	0.00286	0.00290	0.00283	0.59867
sky130_fd_sc_hs__o211ai_2	0.00534	0.00547	0.00546	0.00533	1.08833
sky130_fd_sc_hs__o211ai_4	0.01053	0.01081	0.00776	0.00798	1.96085

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o211ai_1	0.00000	0.03949	0.23065
sky130_fd_sc_hs__o211ai_2	0.00000	0.07897	0.46129
sky130_fd_sc_hs__o211ai_4	0.00000	0.10027	0.61505

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)	0.11555	0.93796	10.35130
	A2->Y (FR)	0.10329	0.93901	10.61570
	B1->Y (FR)	0.04612	0.64336	7.73174
	C1->Y (FR)	0.03740	0.63468	7.71911
sky130_fd_sc_hs__o211ai_2	A1->Y (FR)	0.10993	0.81768	10.33240
	A2->Y (FR)	0.09159	0.81664	10.62220
	B1->Y (FR)	0.03817	0.55398	7.40200
	C1->Y (FR)	0.02744	0.53867	7.33167
sky130_fd_sc_hs__o211ai_4	A1->Y (FR)	0.10469	0.69900	9.97859
	A2->Y (FR)	0.08742	0.70870	10.39750
	B1->Y (FR)	0.05788	0.66916	10.00310
	C1->Y (FR)	0.03671	0.64311	9.83757

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211ai_1	A1->Y (RF)	0.05325	0.42054	4.46839
	A2->Y (RF)	0.04407	0.40156	4.37642
	B1->Y (RF)	0.04831	0.47231	5.25829
	C1->Y (RF)	0.04067	0.49528	5.63870
sky130_fd_sc_hs__o211ai_2	A1->Y (RF)	0.05095	0.34640	4.27479
	A2->Y (RF)	0.04133	0.33343	4.27475
	B1->Y (RF)	0.04647	0.41943	5.37869
	C1->Y (RF)	0.03574	0.43912	5.79239
sky130_fd_sc_hs__o211ai_4	A1->Y (RF)	0.05213	0.30240	4.36559
	A2->Y (RF)	0.03901	0.27865	4.21673
	B1->Y (RF)	0.04321	0.36119	5.37960
	C1->Y (RF)	0.03341	0.40311	6.14540

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.00185	0.00181	0.00766
	A1	0.01025	0.01022	0.01610
	A2	0.00187	0.00248	0.01222
	A2	0.00913	0.00976	0.01954
	B1	0.00068	0.00162	0.01379
	B1	0.00662	0.00758	0.01984
	C1	-0.00003	0.00095	0.01285
	C1	0.00480	0.00578	0.01768
sky130_fd_sc_hs__o211ai_2	A1	0.00221	0.00214	0.01326
	A1	0.01919	0.01915	0.03024
	A2	0.00222	0.00307	0.02168
	A2	0.01675	0.01762	0.03632
	B1	0.00053	0.00286	0.02595
	B1	0.01235	0.01469	0.03772
	C1	-0.00174	0.00083	0.02360
	C1	0.00769	0.01036	0.03336
sky130_fd_sc_hs__o211ai_4	A1	0.00430	0.00408	0.02554
	A1	0.03739	0.03721	0.05876
	A2	0.00427	0.00624	0.04055
	A2	0.03261	0.03429	0.06911
	B1	0.00031	0.00308	0.02832
	B1	0.02381	0.02609	0.05011
	C1	-0.00347	-0.00077	0.02488
	C1	0.01066	0.01331	0.03896

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.01086	0.01082	0.01532
	A1	0.00231	0.00226	0.00674
	A2	0.00879	0.00885	0.01320
	A2	0.00135	0.00136	0.00572
	B1	0.00724	0.00738	0.01275
	B1	0.00123	0.00128	0.00621
	C1	0.00604	0.00636	0.01221
	C1	0.00121	0.00141	0.00721
sky130_fd_sc_hs__o211ai_2	A1	0.02128	0.02113	0.03146
	A1	0.00402	0.00380	0.01312
	A2	0.01599	0.01619	0.02537
	A2	0.00108	0.00120	0.01021
	B1	0.01274	0.01292	0.02384
	B1	0.00080	0.00093	0.01072
	C1	0.01009	0.01080	0.02285
	C1	0.00067	0.00134	0.01277
sky130_fd_sc_hs__o211ai_4	A1	0.03909	0.03865	0.05845
	A1	0.00541	0.00495	0.02321
	A2	0.02883	0.02914	0.04798
	A2	-0.00030	-0.00006	0.01775
	B1	0.03147	0.03172	0.04094
	B1	0.00225	0.00257	0.01316
	C1	0.02674	0.02731	0.03848
	C1	0.00209	0.00281	0.01452

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)**	0.00204	0.00177	0.00174
	(A2 * B1 * C1 * !Y)	-0.00175	-0.00206	-0.00207
	(A2 * B1 * !C1 * Y)	0.00174	0.00175	0.00174
	(A2 * B1 * !C1 * Y)	-0.00203	-0.00206	-0.00206
	(A2 * !B1 * Y)	0.00174	0.00175	0.00174
	(A2 * !B1 * Y)	-0.00203	-0.00206	-0.00206
	(!A2 * B1 * !C1 * Y)	0.00161	0.00161	0.00162
	(!A2 * B1 * !C1 * Y)	-0.00207	-0.00208	-0.00208
	(!A2 * !B1 * C1 * Y)	0.00166	0.00167	0.00166
	(!A2 * !B1 * C1 * Y)	-0.00208	-0.00209	-0.00208
	(!A2 * !B1 * !C1 * Y)	0.00166	0.00166	0.00166
	(!A2 * !B1 * !C1 * Y)	-0.00208	-0.00208	-0.00208
sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	0.00411	0.00349	0.00341
	(A2 * B1 * C1 * !Y)	-0.00345	-0.00419	-0.00421
	(A2 * B1 * !C1 * Y)	0.00340	0.00344	0.00340
	(A2 * B1 * !C1 * Y)	-0.00411	-0.00424	-0.00421
	(A2 * !B1 * Y)	0.00340	0.00344	0.00340
	(A2 * !B1 * Y)	-0.00411	-0.00424	-0.00421
	(!A2 * B1 * !C1 * Y)	0.00320	0.00321	0.00319
	(!A2 * B1 * !C1 * Y)	-0.00429	-0.00429	-0.00428
	(!A2 * !B1 * C1 * Y)	0.00323	0.00325	0.00324
	(!A2 * !B1 * C1 * Y)	-0.00427	-0.00428	-0.00428
	(!A2 * !B1 * !C1 * Y)	0.00323	0.00325	0.00324
	(!A2 * !B1 * !C1 * Y)	-0.00427	-0.00429	-0.00428

sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	0.00806	0.00683	0.00668
	(A2 * B1 * C1 * !Y)	-0.00688	-0.00833	-0.00837
	(A2 * B1 * !C1 * Y)	0.00666	0.00674	0.00666
	(A2 * B1 * !C1 * Y)	-0.00818	-0.00838	-0.00834
	(A2 * !B1 * Y)	0.00666	0.00674	0.00666
	(A2 * !B1 * Y)	-0.00818	-0.00836	-0.00834
	(!A2 * B1 * !C1 * Y)	0.00627	0.00631	0.00625
	(!A2 * B1 * !C1 * Y)	-0.00850	-0.00852	-0.00848
	(!A2 * !B1 * C1 * Y)	0.00632	0.00639	0.00634
	(!A2 * !B1 * C1 * Y)	-0.00846	-0.00852	-0.00848
	(!A2 * !B1 * !C1 * Y)	0.00631	0.00638	0.00633
	(!A2 * !B1 * !C1 * Y)	-0.00846	-0.00851	-0.00848

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)**	-0.00172	-0.00173	-0.00173
	(A2 * B1 * C1 * !Y)	0.00205	0.00206	0.00207
	(A2 * B1 * !C1 * Y)	-0.00174	-0.00174	-0.00174
	(A2 * B1 * !C1 * Y)	0.00206	0.00207	0.00206
	(A2 * !B1 * Y)	-0.00173	-0.00174	-0.00174
	(A2 * !B1 * Y)	0.00205	0.00207	0.00206
	(!A2 * B1 * !C1 * Y)	-0.00151	-0.00161	-0.00162
	(!A2 * B1 * !C1 * Y)	0.00208	0.00211	0.00209
	(!A2 * !B1 * C1 * Y)	-0.00158	-0.00167	-0.00166
	(!A2 * !B1 * C1 * Y)	0.00208	0.00211	0.00209
	(!A2 * !B1 * !C1 * Y)	-0.00158	-0.00166	-0.00166
	(!A2 * !B1 * !C1 * Y)	0.00208	0.00211	0.00209

sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	-0.00340	-0.00340	-0.00339
	(A2 * B1 * C1 * !Y)	0.00421	0.00422	0.00421
	(A2 * B1 * !C1 * Y)	-0.00339	-0.00341	-0.00339
	(A2 * B1 * !C1 * Y)	0.00420	0.00424	0.00421
	(A2 * !B1 * Y)	-0.00339	-0.00341	-0.00339
	(A2 * !B1 * Y)	0.00420	0.00424	0.00421
	(!A2 * B1 * !C1 * Y)	-0.00299	-0.00321	-0.00319
	(!A2 * B1 * !C1 * Y)	0.00429	0.00434	0.00429
	(!A2 * !B1 * C1 * Y)	-0.00308	-0.00325	-0.00324
	(!A2 * !B1 * C1 * Y)	0.00427	0.00432	0.00429
	(!A2 * !B1 * !C1 * Y)	-0.00308	-0.00325	-0.00324
	(!A2 * !B1 * !C1 * Y)	0.00427	0.00432	0.00429
sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	-0.00665	-0.00667	-0.00662
	(A2 * B1 * C1 * !Y)	0.00836	0.00843	0.00837
	(A2 * B1 * !C1 * Y)	-0.00666	-0.00666	-0.00665
	(A2 * B1 * !C1 * Y)	0.00835	0.00838	0.00834
	(A2 * !B1 * Y)	-0.00666	-0.00666	-0.00665
	(A2 * !B1 * Y)	0.00835	0.00836	0.00834
	(!A2 * B1 * !C1 * Y)	-0.00574	-0.00628	-0.00625
	(!A2 * B1 * !C1 * Y)	0.00853	0.00858	0.00850
	(!A2 * !B1 * C1 * Y)	-0.00594	-0.00637	-0.00634
	(!A2 * !B1 * C1 * Y)	0.00848	0.00858	0.00850
	(!A2 * !B1 * !C1 * Y)	-0.00595	-0.00637	-0.00633
	(!A2 * !B1 * !C1 * Y)	0.00848	0.00858	0.00850

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)**	0.00186	0.00188	0.00186
	(A1 * B1 * C1 * !Y)	-0.00101	-0.00102	-0.00101
	(A1 * B1 * !C1 * Y)	0.00169	0.00172	0.00170
	(A1 * B1 * !C1 * Y)	-0.00204	-0.00208	-0.00207
	(A1 * !B1 * C1 * Y)	0.00169	0.00172	0.00170
	(A1 * !B1 * C1 * Y)	-0.00204	-0.00208	-0.00207
	(A1 * !B1 * !C1 * Y)	0.00169	0.00172	0.00170
	(A1 * !B1 * !C1 * Y)	-0.00204	-0.00209	-0.00207
	(!A1 * B1 * !C1 * Y)	0.00161	0.00163	0.00162
	(!A1 * B1 * !C1 * Y)	-0.00210	-0.00210	-0.00210
	(!A1 * !B1 * C1 * Y)	0.00162	0.00163	0.00162
	(!A1 * !B1 * C1 * Y)	-0.00209	-0.00211	-0.00210
	(!A1 * !B1 * !C1 * Y)	0.00161	0.00161	0.00162
	(!A1 * !B1 * !C1 * Y)	-0.00209	-0.00209	-0.00210
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	0.00384	0.00388	0.00385
	(A1 * B1 * C1 * !Y)	-0.00196	-0.00197	-0.00195
	(A1 * B1 * !C1 * Y)	0.00339	0.00346	0.00341
	(A1 * B1 * !C1 * Y)	-0.00405	-0.00418	-0.00416
	(A1 * !B1 * C1 * Y)	0.00340	0.00346	0.00341
	(A1 * !B1 * C1 * Y)	-0.00405	-0.00418	-0.00416
	(A1 * !B1 * !C1 * Y)	0.00341	0.00345	0.00341
	(A1 * !B1 * !C1 * Y)	-0.00406	-0.00418	-0.00417
	(!A1 * B1 * !C1 * Y)	0.00316	0.00318	0.00317
	(!A1 * B1 * !C1 * Y)	-0.00422	-0.00424	-0.00423
	(!A1 * !B1 * C1 * Y)	0.00324	0.00327	0.00323
	(!A1 * !B1 * C1 * Y)	-0.00421	-0.00426	-0.00423
	(!A1 * !B1 * !C1 * Y)	0.00324	0.00324	0.00323
	(!A1 * !B1 * !C1 * Y)	-0.00421	-0.00423	-0.00423

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	0.00754	0.00764	0.00752
	(A1 * B1 * C1 * !Y)	-0.00399	-0.00403	-0.00396
	(A1 * B1 * !C1 * Y)	0.00670	0.00672	0.00666
	(A1 * B1 * !C1 * Y)	-0.00824	-0.00836	-0.00834
	(A1 * !B1 * C1 * Y)	0.00670	0.00672	0.00666
	(A1 * !B1 * C1 * Y)	-0.00824	-0.00836	-0.00834
	(A1 * !B1 * !C1 * Y)	0.00670	0.00670	0.00666
	(A1 * !B1 * !C1 * Y)	-0.00825	-0.00842	-0.00836
	(!A1 * B1 * !C1 * Y)	0.00620	0.00629	0.00621
	(!A1 * B1 * !C1 * Y)	-0.00850	-0.00856	-0.00850
	(!A1 * !B1 * C1 * Y)	0.00634	0.00631	0.00632
	(!A1 * !B1 * C1 * Y)	-0.00850	-0.00850	-0.00850
	(!A1 * !B1 * !C1 * Y)	0.00635	0.00641	0.00638
	(!A1 * !B1 * !C1 * Y)	-0.00848	-0.00853	-0.00850

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)**	-0.00180	-0.00181	-0.00185
	(A1 * B1 * C1 * !Y)	0.00106	0.00106	0.00102
	(A1 * B1 * !C1 * Y)	-0.00169	-0.00170	-0.00169
	(A1 * B1 * !C1 * Y)	0.00206	0.00208	0.00207
	(A1 * !B1 * C1 * Y)	-0.00169	-0.00170	-0.00169
	(A1 * !B1 * C1 * Y)	0.00206	0.00208	0.00207
	(A1 * !B1 * !C1 * Y)	-0.00169	-0.00170	-0.00169
	(A1 * !B1 * !C1 * Y)	0.00207	0.00209	0.00207
	(!A1 * B1 * !C1 * Y)	-0.00147	-0.00161	-0.00162
	(!A1 * B1 * !C1 * Y)	0.00210	0.00212	0.00210
	(!A1 * !B1 * C1 * Y)	-0.00153	-0.00162	-0.00162
	(!A1 * !B1 * C1 * Y)	0.00209	0.00212	0.00210
	(!A1 * !B1 * !C1 * Y)	-0.00154	-0.00161	-0.00162
	(!A1 * !B1 * !C1 * Y)	0.00209	0.00212	0.00210
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	-0.00365	-0.00368	-0.00382
	(A1 * B1 * C1 * !Y)	0.00213	0.00213	0.00200
	(A1 * B1 * !C1 * Y)	-0.00339	-0.00342	-0.00340
	(A1 * B1 * !C1 * Y)	0.00417	0.00418	0.00416
	(A1 * !B1 * C1 * Y)	-0.00340	-0.00341	-0.00340
	(A1 * !B1 * C1 * Y)	0.00416	0.00418	0.00416
	(A1 * !B1 * !C1 * Y)	-0.00339	-0.00341	-0.00340
	(A1 * !B1 * !C1 * Y)	0.00414	0.00418	0.00417
	(!A1 * B1 * !C1 * Y)	-0.00297	-0.00318	-0.00317
	(!A1 * B1 * !C1 * Y)	0.00424	0.00428	0.00424
	(!A1 * !B1 * C1 * Y)	-0.00306	-0.00325	-0.00323
	(!A1 * !B1 * C1 * Y)	0.00421	0.00427	0.00424
	(!A1 * !B1 * !C1 * Y)	-0.00307	-0.00324	-0.00323
	(!A1 * !B1 * !C1 * Y)	0.00421	0.00427	0.00424

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	-0.00717	-0.00722	-0.00747
	(A1 * B1 * C1 * !Y)	0.00427	0.00428	0.00404
	(A1 * B1 * !C1 * Y)	-0.00662	-0.00666	-0.00665
	(A1 * B1 * !C1 * Y)	0.00830	0.00836	0.00834
	(A1 * !B1 * C1 * Y)	-0.00665	-0.00666	-0.00665
	(A1 * !B1 * C1 * Y)	0.00834	0.00836	0.00834
	(A1 * !B1 * !C1 * Y)	-0.00665	-0.00668	-0.00665
	(A1 * !B1 * !C1 * Y)	0.00836	0.00842	0.00836
	(!A1 * B1 * !C1 * Y)	-0.00569	-0.00627	-0.00621
	(!A1 * B1 * !C1 * Y)	0.00853	0.00861	0.00853
	(!A1 * !B1 * C1 * Y)	-0.00593	-0.00631	-0.00632
	(!A1 * !B1 * C1 * Y)	0.00850	0.00859	0.00853
	(!A1 * !B1 * !C1 * Y)	-0.00594	-0.00634	-0.00638
	(!A1 * !B1 * !C1 * Y)	0.00849	0.00859	0.00853

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	0.00158	0.00159	0.00158
	(A2 * !C1 * Y)	-0.00219	-0.00220	-0.00219
	(A1 * !A2 * !C1 * Y)	0.00159	0.00159	0.00159
	(A1 * !A2 * !C1 * Y)	-0.00220	-0.00220	-0.00219
	(!A1 * !A2 * C1 * Y)	0.00073	0.00073	0.00073
	(!A1 * !A2 * C1 * Y)	-0.00220	-0.00219	-0.00219
	(!A1 * !A2 * !C1 * Y)	0.00092	0.00093	0.00092
	(!A1 * !A2 * !C1 * Y)	-0.00219	-0.00221	-0.00220
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	0.00320	0.00322	0.00320
	(A2 * !C1 * Y)	-0.00432	-0.00432	-0.00430
	(A1 * !A2 * !C1 * Y)	0.00318	0.00322	0.00320
	(A1 * !A2 * !C1 * Y)	-0.00429	-0.00433	-0.00430
	(!A1 * !A2 * C1 * Y)	0.00138	0.00137	0.00140
	(!A1 * !A2 * C1 * Y)	-0.00431	-0.00430	-0.00429
	(!A1 * !A2 * !C1 * Y)	0.00175	0.00177	0.00175
	(!A1 * !A2 * !C1 * Y)	-0.00433	-0.00436	-0.00433
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	0.00629	0.00638	0.00632
	(A2 * !C1 * Y)	-0.00431	-0.00434	-0.00431
	(A1 * !A2 * !C1 * Y)	0.00632	0.00635	0.00633
	(A1 * !A2 * !C1 * Y)	-0.00432	-0.00433	-0.00432
	(!A1 * !A2 * C1 * Y)	0.00265	0.00270	0.00271
	(!A1 * !A2 * C1 * Y)	-0.00428	-0.00433	-0.00428
	(!A1 * !A2 * !C1 * Y)	0.00336	0.00338	0.00338
	(!A1 * !A2 * !C1 * Y)	-0.00434	-0.00435	-0.00435

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	-0.00146	-0.00159	-0.00158
	(A2 * !C1 * Y)	0.00228	0.00222	0.00220
	(A1 * !A2 * !C1 * Y)	-0.00144	-0.00158	-0.00159
	(A1 * !A2 * !C1 * Y)	0.00231	0.00220	0.00220
	(!A1 * !A2 * C1 * Y)	-0.00069	-0.00070	-0.00070
	(!A1 * !A2 * C1 * Y)	0.00224	0.00226	0.00221
	(!A1 * !A2 * !C1 * Y)	-0.00092	-0.00093	-0.00092
	(!A1 * !A2 * !C1 * Y)	0.00235	0.00233	0.00223
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	-0.00287	-0.00319	-0.00320
	(A2 * !C1 * Y)	0.00450	0.00435	0.00432
	(A1 * !A2 * !C1 * Y)	-0.00283	-0.00320	-0.00320
	(A1 * !A2 * !C1 * Y)	0.00458	0.00435	0.00432
	(!A1 * !A2 * C1 * Y)	-0.00129	-0.00132	-0.00135
	(!A1 * !A2 * C1 * Y)	0.00442	0.00451	0.00435
	(!A1 * !A2 * !C1 * Y)	-0.00175	-0.00177	-0.00175
	(!A1 * !A2 * !C1 * Y)	0.00458	0.00461	0.00439
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	-0.00571	-0.00633	-0.00632
	(A2 * !C1 * Y)	0.00470	0.00437	0.00433
	(A1 * !A2 * !C1 * Y)	-0.00558	-0.00635	-0.00633
	(A1 * !A2 * !C1 * Y)	0.00488	0.00436	0.00433
	(!A1 * !A2 * C1 * Y)	-0.00253	-0.00255	-0.00260
	(!A1 * !A2 * C1 * Y)	0.00453	0.00457	0.00438
	(!A1 * !A2 * !C1 * Y)	-0.00336	-0.00338	-0.00338
	(!A1 * !A2 * !C1 * Y)	0.00486	0.00484	0.00447

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	0.00057	0.00056	0.00055
	(A2 * !B1 * Y)	-0.00246	-0.00246	-0.00250
	(!A2 * !B1 * Y)	0.00056	0.00057	0.00055
	(!A2 * !B1 * Y)	-0.00244	-0.00246	-0.00250
	(!A1 * !A2 * B1 * Y)	0.00059	0.00059	0.00054
	(!A1 * !A2 * B1 * Y)	-0.00238	-0.00239	-0.00249
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	0.00119	0.00120	0.00113
	(A2 * !B1 * Y)	-0.00476	-0.00479	-0.00488
	(!A2 * !B1 * Y)	0.00119	0.00120	0.00113
	(!A2 * !B1 * Y)	-0.00476	-0.00479	-0.00488
	(!A1 * !A2 * B1 * Y)	0.00118	0.00118	0.00106
	(!A1 * !A2 * B1 * Y)	-0.00461	-0.00465	-0.00485
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	0.00226	0.00227	0.00217
	(A2 * !B1 * Y)	-0.00552	-0.00556	-0.00572
	(!A2 * !B1 * Y)	0.00227	0.00227	0.00217
	(!A2 * !B1 * Y)	-0.00552	-0.00555	-0.00572
	(!A1 * !A2 * B1 * Y)	0.00225	0.00226	0.00205
	(!A1 * !A2 * B1 * Y)	-0.00519	-0.00523	-0.00567

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	-0.00054	-0.00054	-0.00053
	(A2 * !B1 * Y)	0.00251	0.00254	0.00250
	(!A2 * !B1 * Y)	-0.00054	-0.00054	-0.00053
	(!A2 * !B1 * Y)	0.00251	0.00254	0.00250
	(!A1 * !A2 * B1 * Y)	-0.00053	-0.00053	-0.00052
	(!A1 * !A2 * B1 * Y)	0.00250	0.00254	0.00250
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	-0.00110	-0.00112	-0.00110
	(A2 * !B1 * Y)	0.00487	0.00497	0.00489
	(!A2 * !B1 * Y)	-0.00110	-0.00112	-0.00110
	(!A2 * !B1 * Y)	0.00487	0.00497	0.00489
	(!A1 * !A2 * B1 * Y)	-0.00106	-0.00106	-0.00106
	(!A1 * !A2 * B1 * Y)	0.00486	0.00488	0.00489
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	-0.00211	-0.00212	-0.00211
	(A2 * !B1 * Y)	0.00571	0.00576	0.00573
	(!A2 * !B1 * Y)	-0.00210	-0.00215	-0.00211
	(!A2 * !B1 * Y)	0.00571	0.00582	0.00573
	(!A1 * !A2 * B1 * Y)	-0.00203	-0.00203	-0.00204
	(!A1 * !A2 * B1 * Y)	0.00570	0.00571	0.00572

SKY130_FD_SC_HS__O211Ax

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00264	0.00284	0.00261	0.00257	1.23344
sky130_fd_sc_hs__o211a_2	0.00280	0.00279	0.00279	0.00272	2.38125
sky130_fd_sc_hs__o211a_4	0.00508	0.00484	0.00500	0.00442	4.36376

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o211a_1	0.00000	0.15962	0.59728
sky130_fd_sc_hs__o211a_2	0.00000	0.22232	0.60471
sky130_fd_sc_hs__o211a_4	0.00000	0.63221	2.19748

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)	0.10653	0.58487	6.09557
	A2->X (RR)	0.09388	0.56456	6.08203
	B1->X (RR)	0.10014	0.59815	6.42936
	C1->X (RR)	0.09292	0.59489	6.46473
sky130_fd_sc_hs__o211a_2	A1->X (RR)	0.10792	0.50203	6.07597
	A2->X (RR)	0.09279	0.48109	6.04479
	B1->X (RR)	0.10245	0.52572	6.42218
	C1->X (RR)	0.09511	0.52462	6.45578
sky130_fd_sc_hs__o211a_4	A1->X (RR)	0.10869	0.43943	6.15873
	A2->X (RR)	0.09952	0.41941	6.15765
	B1->X (RR)	0.10155	0.45375	6.41418
	C1->X (RR)	0.09248	0.44815	6.43921

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211a_1	A1->X (FF)	0.15654	0.59916	4.95601
	A2->X (FF)	0.14480	0.60598	4.98713
	B1->X (FF)	0.07580	0.50091	4.60765
	C1->X (FF)	0.06781	0.48061	4.56454
sky130_fd_sc_hs__o211a_2	A1->X (FF)	0.18118	0.61231	5.07528
	A2->X (FF)	0.16767	0.62138	5.11422
	B1->X (FF)	0.08872	0.50522	4.71854
	C1->X (FF)	0.07999	0.48547	4.65803
sky130_fd_sc_hs__o211a_4	A1->X (FF)	0.17080	0.55954	4.93512
	A2->X (FF)	0.15427	0.56189	4.95823
	B1->X (FF)	0.09197	0.47254	4.64926
	C1->X (FF)	0.09082	0.47108	4.68934

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.01373	0.01416	0.03742
	A1	0.00559	0.00602	0.02975
	A2	0.01224	0.01280	0.04375
	A2	0.00478	0.00534	0.03676
	B1	0.01035	0.01145	0.05286
	B1	0.00458	0.00568	0.04747
	C1	0.00934	0.01107	0.05511
	C1	0.00454	0.00628	0.05059
sky130_fd_sc_hs__o211a_2	A1	0.01690	0.01754	0.03961
	A1	0.00834	0.00903	0.03199
	A2	0.01487	0.01566	0.04477
	A2	0.00737	0.00823	0.03824
	B1	0.01336	0.01458	0.05568
	B1	0.00724	0.00854	0.05037
	C1	0.01224	0.01402	0.05739
	C1	0.00721	0.00901	0.05308
sky130_fd_sc_hs__o211a_4	A1	0.03141	0.03276	0.08299
	A1	0.01589	0.01731	0.06914
	A2	0.02703	0.02860	0.09487
	A2	0.01393	0.01555	0.08342
	B1	0.02460	0.02718	0.10292
	B1	0.01396	0.01670	0.09363
	C1	0.02194	0.02556	0.11169
	C1	0.01405	0.01779	0.10486

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.00541	0.00580	0.03168
	A1	0.01339	0.01376	0.03880
	A2	0.00497	0.00667	0.04143
	A2	0.01224	0.01394	0.04796
	B1	0.00420	0.00657	0.04967
	B1	0.00992	0.01224	0.05477
	C1	0.00371	0.00624	0.05064
	C1	0.00851	0.01088	0.05487
sky130_fd_sc_hs__o211a_2	A1	0.00837	0.00852	0.03409
	A1	0.01677	0.01691	0.04155
	A2	0.00839	0.00959	0.04395
	A2	0.01571	0.01689	0.05100
	B1	0.00683	0.00935	0.05236
	B1	0.01398	0.01637	0.05724
	C1	0.00624	0.00895	0.05270
	C1	0.01231	0.01470	0.05639
sky130_fd_sc_hs__o211a_4	A1	0.01608	0.01694	0.06791
	A1	0.03129	0.03202	0.08173
	A2	0.01649	0.01907	0.08802
	A2	0.02925	0.03181	0.10024
	B1	0.01241	0.01761	0.10454
	B1	0.02509	0.02979	0.11354
	C1	0.01238	0.01733	0.10058
	C1	0.02221	0.02710	0.11031

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)**	0.00197	0.00172	0.00168
	(A2 * B1 * C1 * X)	-0.00158	-0.00187	-0.00188
	(A2 * B1 * !C1 * !X)	0.00149	0.00150	0.00149
	(A2 * B1 * !C1 * !X)	-0.00205	-0.00208	-0.00207
	(A2 * !B1 * !X)	0.00149	0.00151	0.00149
	(A2 * !B1 * !X)	-0.00205	-0.00208	-0.00207
	(!A2 * B1 * !C1 * !X)	0.00141	0.00142	0.00141
	(!A2 * B1 * !C1 * !X)	-0.00210	-0.00211	-0.00210
	(!A2 * !B1 * C1 * !X)	0.00141	0.00142	0.00141
	(!A2 * !B1 * C1 * !X)	-0.00210	-0.00210	-0.00210
	(!A2 * !B1 * !C1 * !X)	0.00141	0.00143	0.00141
	(!A2 * !B1 * !C1 * !X)	-0.00210	-0.00211	-0.00210
sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	0.00217	0.00192	0.00188
	(A2 * B1 * C1 * X)	-0.00153	-0.00182	-0.00183
	(A2 * B1 * !C1 * !X)	0.00162	0.00164	0.00162
	(A2 * B1 * !C1 * !X)	-0.00206	-0.00209	-0.00209
	(A2 * !B1 * !X)	0.00162	0.00164	0.00162
	(A2 * !B1 * !X)	-0.00206	-0.00209	-0.00209
	(!A2 * B1 * !C1 * !X)	0.00153	0.00153	0.00153
	(!A2 * B1 * !C1 * !X)	-0.00211	-0.00211	-0.00211
	(!A2 * !B1 * C1 * !X)	0.00155	0.00157	0.00156
	(!A2 * !B1 * C1 * !X)	-0.00210	-0.00212	-0.00211
	(!A2 * !B1 * !C1 * !X)	0.00155	0.00157	0.00155
	(!A2 * !B1 * !C1 * !X)	-0.00210	-0.00212	-0.00211

sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	0.00389	0.00341	0.00334
	(A2 * B1 * C1 * X)	-0.00313	-0.00374	-0.00375
	(A2 * B1 * !C1 * !X)	0.00326	0.00332	0.00328
	(A2 * B1 * !C1 * !X)	-0.00371	-0.00379	-0.00379
	(A2 * !B1 * !X)	0.00327	0.00332	0.00328
	(A2 * !B1 * !X)	-0.00372	-0.00379	-0.00379
	(!A2 * B1 * !C1 * !X)	0.00312	0.00316	0.00313
	(!A2 * B1 * !C1 * !X)	-0.00383	-0.00386	-0.00384
	(!A2 * !B1 * C1 * !X)	0.00314	0.00316	0.00315
	(!A2 * !B1 * C1 * !X)	-0.00384	-0.00385	-0.00384
	(!A2 * !B1 * !C1 * !X)	0.00318	0.00321	0.00318
	(!A2 * !B1 * !C1 * !X)	-0.00384	-0.00386	-0.00384

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)**	-0.00166	-0.00167	-0.00166
	(A2 * B1 * C1 * X)	0.00189	0.00190	0.00190
	(A2 * B1 * !C1 * !X)	-0.00147	-0.00149	-0.00148
	(A2 * B1 * !C1 * !X)	0.00205	0.00208	0.00207
	(A2 * !B1 * !X)	-0.00148	-0.00149	-0.00148
	(A2 * !B1 * !X)	0.00207	0.00208	0.00207
	(!A2 * B1 * !C1 * !X)	-0.00128	-0.00141	-0.00141
	(!A2 * B1 * !C1 * !X)	0.00211	0.00213	0.00210
	(!A2 * !B1 * C1 * !X)	-0.00134	-0.00142	-0.00141
	(!A2 * !B1 * C1 * !X)	0.00211	0.00213	0.00210
	(!A2 * !B1 * !C1 * !X)	-0.00134	-0.00143	-0.00141
	(!A2 * !B1 * !C1 * !X)	0.00211	0.00213	0.00210

sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	-0.00186	-0.00187	-0.00186
	(A2 * B1 * C1 * X)	0.00183	0.00186	0.00184
	(A2 * B1 * !C1 * !X)	-0.00162	-0.00162	-0.00162
	(A2 * B1 * !C1 * !X)	0.00209	0.00209	0.00209
	(A2 * !B1 * !X)	-0.00161	-0.00162	-0.00162
	(A2 * !B1 * !X)	0.00208	0.00209	0.00209
	(!A2 * B1 * !C1 * !X)	-0.00141	-0.00153	-0.00153
	(!A2 * B1 * !C1 * !X)	0.00212	0.00214	0.00211
	(!A2 * !B1 * C1 * !X)	-0.00147	-0.00156	-0.00156
	(!A2 * !B1 * C1 * !X)	0.00212	0.00213	0.00212
	(!A2 * !B1 * !C1 * !X)	-0.00147	-0.00156	-0.00155
	(!A2 * !B1 * !C1 * !X)	0.00212	0.00213	0.00212
sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	-0.00329	-0.00330	-0.00328
	(A2 * B1 * C1 * X)	0.00377	0.00381	0.00379
	(A2 * B1 * !C1 * !X)	-0.00326	-0.00327	-0.00327
	(A2 * B1 * !C1 * !X)	0.00379	0.00379	0.00379
	(A2 * !B1 * !X)	-0.00327	-0.00327	-0.00327
	(A2 * !B1 * !X)	0.00379	0.00379	0.00379
	(!A2 * B1 * !C1 * !X)	-0.00290	-0.00315	-0.00313
	(!A2 * B1 * !C1 * !X)	0.00387	0.00389	0.00386
	(!A2 * !B1 * C1 * !X)	-0.00301	-0.00316	-0.00315
	(!A2 * !B1 * C1 * !X)	0.00386	0.00389	0.00386
	(!A2 * !B1 * !C1 * !X)	-0.00302	-0.00319	-0.00317
	(!A2 * !B1 * !C1 * !X)	0.00386	0.00389	0.00386

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)**	0.00214	0.00217	0.00214
	(A1 * B1 * C1 * X)	-0.00090	-0.00091	-0.00090
	(A1 * B1 * !C1 * !X)	0.00194	0.00194	0.00192
	(A1 * B1 * !C1 * !X)	-0.00188	-0.00190	-0.00189
	(A1 * !B1 * C1 * !X)	0.00194	0.00193	0.00192
	(A1 * !B1 * C1 * !X)	-0.00188	-0.00190	-0.00189
	(A1 * !B1 * !C1 * !X)	0.00194	0.00195	0.00192
	(A1 * !B1 * !C1 * !X)	-0.00188	-0.00190	-0.00190
	(!A1 * B1 * !C1 * !X)	0.00181	0.00184	0.00182
	(!A1 * B1 * !C1 * !X)	-0.00192	-0.00194	-0.00192
	(!A1 * !B1 * C1 * !X)	0.00185	0.00186	0.00184
	(!A1 * !B1 * C1 * !X)	-0.00193	-0.00194	-0.00193
	(!A1 * !B1 * !C1 * !X)	0.00186	0.00186	0.00185
	(!A1 * !B1 * !C1 * !X)	-0.00193	-0.00193	-0.00193
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	0.00189	0.00191	0.00189
	(A1 * B1 * C1 * X)	-0.00090	-0.00091	-0.00090
	(A1 * B1 * !C1 * !X)	0.00159	0.00161	0.00160
	(A1 * B1 * !C1 * !X)	-0.00195	-0.00198	-0.00198
	(A1 * !B1 * C1 * !X)	0.00159	0.00159	0.00160
	(A1 * !B1 * C1 * !X)	-0.00195	-0.00198	-0.00198
	(A1 * !B1 * !C1 * !X)	0.00159	0.00162	0.00160
	(A1 * !B1 * !C1 * !X)	-0.00195	-0.00199	-0.00198
	(!A1 * B1 * !C1 * !X)	0.00150	0.00151	0.00150
	(!A1 * B1 * !C1 * !X)	-0.00201	-0.00201	-0.00200
	(!A1 * !B1 * C1 * !X)	0.00154	0.00154	0.00153
	(!A1 * !B1 * C1 * !X)	-0.00201	-0.00201	-0.00201
	(!A1 * !B1 * !C1 * !X)	0.00154	0.00155	0.00153
	(!A1 * !B1 * !C1 * !X)	-0.00201	-0.00202	-0.00201

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	0.00321	0.00324	0.00322
	(A1 * B1 * C1 * X)	-0.00183	-0.00184	-0.00182
	(A1 * B1 * !C1 * !X)	0.00281	0.00283	0.00281
	(A1 * B1 * !C1 * !X)	-0.00374	-0.00380	-0.00380
	(A1 * !B1 * C1 * !X)	0.00281	0.00283	0.00281
	(A1 * !B1 * C1 * !X)	-0.00374	-0.00380	-0.00380
	(A1 * !B1 * !C1 * !X)	0.00280	0.00285	0.00281
	(A1 * !B1 * !C1 * !X)	-0.00374	-0.00382	-0.00380
	(!A1 * B1 * !C1 * !X)	0.00268	0.00270	0.00267
	(!A1 * B1 * !C1 * !X)	-0.00387	-0.00388	-0.00386
	(!A1 * !B1 * C1 * !X)	0.00265	0.00269	0.00266
	(!A1 * !B1 * C1 * !X)	-0.00385	-0.00388	-0.00386
	(!A1 * !B1 * !C1 * !X)	0.00265	0.00269	0.00266
	(!A1 * !B1 * !C1 * !X)	-0.00384	-0.00388	-0.00386

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)**	-0.00207	-0.00209	-0.00212
	(A1 * B1 * C1 * X)	0.00095	0.00096	0.00092
	(A1 * B1 * !C1 * !X)	-0.00191	-0.00193	-0.00192
	(A1 * B1 * !C1 * !X)	0.00188	0.00190	0.00189
	(A1 * !B1 * C1 * !X)	-0.00192	-0.00193	-0.00192
	(A1 * !B1 * C1 * !X)	0.00189	0.00190	0.00189
	(A1 * !B1 * !C1 * !X)	-0.00192	-0.00193	-0.00192
	(A1 * !B1 * !C1 * !X)	0.00189	0.00190	0.00190
	(!A1 * B1 * !C1 * !X)	-0.00170	-0.00184	-0.00182
	(!A1 * B1 * !C1 * !X)	0.00193	0.00194	0.00193
	(!A1 * !B1 * C1 * !X)	-0.00177	-0.00186	-0.00184
	(!A1 * !B1 * C1 * !X)	0.00193	0.00195	0.00193
	(!A1 * !B1 * !C1 * !X)	-0.00177	-0.00186	-0.00185
	(!A1 * !B1 * !C1 * !X)	0.00193	0.00195	0.00193
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	-0.00183	-0.00184	-0.00188
	(A1 * B1 * C1 * X)	0.00096	0.00096	0.00092
	(A1 * B1 * !C1 * !X)	-0.00159	-0.00160	-0.00159
	(A1 * B1 * !C1 * !X)	0.00197	0.00198	0.00198
	(A1 * !B1 * C1 * !X)	-0.00159	-0.00159	-0.00159
	(A1 * !B1 * C1 * !X)	0.00197	0.00199	0.00198
	(A1 * !B1 * !C1 * !X)	-0.00159	-0.00160	-0.00159
	(A1 * !B1 * !C1 * !X)	0.00198	0.00199	0.00198
	(!A1 * B1 * !C1 * !X)	-0.00138	-0.00151	-0.00150
	(!A1 * B1 * !C1 * !X)	0.00201	0.00203	0.00201
	(!A1 * !B1 * C1 * !X)	-0.00144	-0.00153	-0.00153
	(!A1 * !B1 * C1 * !X)	0.00201	0.00202	0.00201
	(!A1 * !B1 * !C1 * !X)	-0.00145	-0.00153	-0.00153
	(!A1 * !B1 * !C1 * !X)	0.00201	0.00202	0.00201

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	-0.00306	-0.00308	-0.00317
	(A1 * B1 * C1 * X)	0.00197	0.00197	0.00188
	(A1 * B1 * !C1 * !X)	-0.00279	-0.00281	-0.00280
	(A1 * B1 * !C1 * !X)	0.00378	0.00380	0.00380
	(A1 * !B1 * C1 * !X)	-0.00281	-0.00281	-0.00280
	(A1 * !B1 * C1 * !X)	0.00380	0.00380	0.00380
	(A1 * !B1 * !C1 * !X)	-0.00280	-0.00282	-0.00280
	(A1 * !B1 * !C1 * !X)	0.00381	0.00382	0.00380
	(!A1 * B1 * !C1 * !X)	-0.00242	-0.00267	-0.00267
	(!A1 * B1 * !C1 * !X)	0.00387	0.00391	0.00388
	(!A1 * !B1 * C1 * !X)	-0.00253	-0.00268	-0.00266
	(!A1 * !B1 * C1 * !X)	0.00387	0.00390	0.00387
	(!A1 * !B1 * !C1 * !X)	-0.00254	-0.00268	-0.00266
	(!A1 * !B1 * !C1 * !X)	0.00387	0.00390	0.00387

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	0.00130	0.00130	0.00130
	(A2 * !C1 * !X)	-0.00214	-0.00214	-0.00214
	(A1 * !A2 * !C1 * !X)	0.00129	0.00130	0.00130
	(A1 * !A2 * !C1 * !X)	-0.00214	-0.00214	-0.00214
	(!A1 * !A2 * C1 * !X)	0.00059	0.00058	0.00058
	(!A1 * !A2 * C1 * !X)	-0.00216	-0.00215	-0.00215
	(!A1 * !A2 * !C1 * !X)	0.00078	0.00078	0.00077
	(!A1 * !A2 * !C1 * !X)	-0.00218	-0.00218	-0.00217
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	0.00151	0.00152	0.00152
	(A2 * !C1 * !X)	-0.00202	-0.00203	-0.00202
	(A1 * !A2 * !C1 * !X)	0.00151	0.00153	0.00152
	(A1 * !A2 * !C1 * !X)	-0.00202	-0.00203	-0.00202
	(!A1 * !A2 * C1 * !X)	0.00067	0.00067	0.00066
	(!A1 * !A2 * C1 * !X)	-0.00205	-0.00206	-0.00204
	(!A1 * !A2 * !C1 * !X)	0.00085	0.00085	0.00084
	(!A1 * !A2 * !C1 * !X)	-0.00206	-0.00207	-0.00206
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	0.00324	0.00328	0.00326
	(A2 * !C1 * !X)	-0.00343	-0.00346	-0.00344
	(A1 * !A2 * !C1 * !X)	0.00325	0.00328	0.00326
	(A1 * !A2 * !C1 * !X)	-0.00345	-0.00346	-0.00344
	(!A1 * !A2 * C1 * !X)	0.00176	0.00179	0.00175
	(!A1 * !A2 * C1 * !X)	-0.00345	-0.00347	-0.00345
	(!A1 * !A2 * !C1 * !X)	0.00208	0.00209	0.00208
	(!A1 * !A2 * !C1 * !X)	-0.00347	-0.00349	-0.00348

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	-0.00120	-0.00130	-0.00130
	(A2 * !C1 * !X)	0.00224	0.00218	0.00215
	(A1 * !A2 * !C1 * !X)	-0.00118	-0.00130	-0.00130
	(A1 * !A2 * !C1 * !X)	0.00225	0.00218	0.00215
	(!A1 * !A2 * C1 * !X)	-0.00054	-0.00055	-0.00055
	(!A1 * !A2 * C1 * !X)	0.00219	0.00223	0.00217
	(!A1 * !A2 * !C1 * !X)	-0.00078	-0.00078	-0.00077
	(!A1 * !A2 * !C1 * !X)	0.00229	0.00228	0.00220
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	-0.00139	-0.00151	-0.00152
	(A2 * !C1 * !X)	0.00212	0.00206	0.00203
	(A1 * !A2 * !C1 * !X)	-0.00136	-0.00151	-0.00152
	(A1 * !A2 * !C1 * !X)	0.00214	0.00204	0.00203
	(!A1 * !A2 * C1 * !X)	-0.00062	-0.00063	-0.00063
	(!A1 * !A2 * C1 * !X)	0.00207	0.00210	0.00205
	(!A1 * !A2 * !C1 * !X)	-0.00085	-0.00085	-0.00084
	(!A1 * !A2 * !C1 * !X)	0.00222	0.00219	0.00210
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	-0.00306	-0.00328	-0.00326
	(A2 * !C1 * !X)	0.00359	0.00349	0.00346
	(A1 * !A2 * !C1 * !X)	-0.00305	-0.00328	-0.00326
	(A1 * !A2 * !C1 * !X)	0.00362	0.00349	0.00346
	(!A1 * !A2 * C1 * !X)	-0.00168	-0.00169	-0.00170
	(!A1 * !A2 * C1 * !X)	0.00355	0.00357	0.00349
	(!A1 * !A2 * !C1 * !X)	-0.00208	-0.00209	-0.00208
	(!A1 * !A2 * !C1 * !X)	0.00374	0.00372	0.00355

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	0.00047	0.00046	0.00045
	(A2 * !B1 * !X)	-0.00234	-0.00233	-0.00236
	(!A2 * !B1 * !X)	0.00047	0.00046	0.00045
	(!A2 * !B1 * !X)	-0.00233	-0.00233	-0.00236
	(!A1 * !A2 * B1 * !X)	0.00052	0.00052	0.00046
	(!A1 * !A2 * B1 * !X)	-0.00225	-0.00226	-0.00236
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	0.00058	0.00058	0.00056
	(A2 * !B1 * !X)	-0.00225	-0.00225	-0.00228
	(!A2 * !B1 * !X)	0.00058	0.00058	0.00056
	(!A2 * !B1 * !X)	-0.00225	-0.00225	-0.00228
	(!A1 * !A2 * B1 * !X)	0.00062	0.00062	0.00057
	(!A1 * !A2 * B1 * !X)	-0.00218	-0.00219	-0.00228
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	0.00085	0.00086	0.00082
	(A2 * !B1 * !X)	-0.00379	-0.00381	-0.00387
	(!A2 * !B1 * !X)	0.00086	0.00086	0.00082
	(!A2 * !B1 * !X)	-0.00380	-0.00381	-0.00387
	(!A1 * !A2 * B1 * !X)	0.00093	0.00093	0.00082
	(!A1 * !A2 * B1 * !X)	-0.00363	-0.00365	-0.00383

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	-0.00044	-0.00045	-0.00044
	(A2 * !B1 * !X)	0.00236	0.00241	0.00237
	(!A2 * !B1 * !X)	-0.00044	-0.00045	-0.00044
	(!A2 * !B1 * !X)	0.00236	0.00241	0.00237
	(!A1 * !A2 * B1 * !X)	-0.00043	-0.00044	-0.00043
	(!A1 * !A2 * B1 * !X)	0.00236	0.00241	0.00237
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	-0.00055	-0.00056	-0.00055
	(A2 * !B1 * !X)	0.00228	0.00232	0.00229
	(!A2 * !B1 * !X)	-0.00055	-0.00056	-0.00055
	(!A2 * !B1 * !X)	0.00228	0.00232	0.00229
	(!A1 * !A2 * B1 * !X)	-0.00054	-0.00055	-0.00054
	(!A1 * !A2 * B1 * !X)	0.00228	0.00231	0.00229
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	-0.00080	-0.00082	-0.00080
	(A2 * !B1 * !X)	0.00387	0.00394	0.00388
	(!A2 * !B1 * !X)	-0.00080	-0.00082	-0.00080
	(!A2 * !B1 * !X)	0.00387	0.00394	0.00388
	(!A1 * !A2 * B1 * !X)	-0.00077	-0.00079	-0.00076
	(!A1 * !A2 * B1 * !X)	0.00387	0.00393	0.00388

SKY130_FD_SC_HS__O21AIx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00287	0.00295	0.00288	0.60249
sky130_fd_sc_hs__o21ai_2	0.00582	0.00539	0.00532	1.11523
sky130_fd_sc_hs__o21ai_4	0.01034	0.01066	0.00790	1.93006

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21ai_1	0.00000	0.04726	0.15376
sky130_fd_sc_hs__o21ai_2	0.00000	0.09452	0.30753
sky130_fd_sc_hs__o21ai_4	0.00000	0.13137	0.46129

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)	0.09209	0.91437	10.37030
	A2->Y (FR)	0.07918	0.91769	10.63500
	B1->Y (FR)	0.03169	0.62148	7.63139
sky130_fd_sc_hs__o21ai_2	A1->Y (FR)	0.08166	0.77195	10.16570
	A2->Y (FR)	0.06425	0.77258	10.41600
	B1->Y (FR)	0.02414	0.54716	7.52941
sky130_fd_sc_hs__o21ai_4	A1->Y (FR)	0.08201	0.67337	9.95090
	A2->Y (FR)	0.06503	0.69510	10.48670
	B1->Y (FR)	0.03334	0.67180	10.42920

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ai_1	A1->Y (RF)	0.03568	0.37290	4.13751
	A2->Y (RF)	0.02943	0.35961	4.07989
	B1->Y (RF)	0.02993	0.42361	4.85076
sky130_fd_sc_hs__o21ai_2	A1->Y (RF)	0.02948	0.30386	3.94367
	A2->Y (RF)	0.02540	0.29573	3.96875
	B1->Y (RF)	0.01866	0.34206	4.75934
sky130_fd_sc_hs__o21ai_4	A1->Y (RF)	0.02919	0.25358	3.76641
	A2->Y (RF)	0.02427	0.24130	3.75856
	B1->Y (RF)	0.01546	0.27797	4.53725

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.00070	0.00068	0.00682
	A1	0.00819	0.00816	0.01436
	A2	0.00075	0.00121	0.01180
	A2	0.00702	0.00749	0.01815
	B1	-0.00044	0.00082	0.01398
	B1	0.00454	0.00575	0.01910
sky130_fd_sc_hs__o21ai_2	A1	0.00077	0.00075	0.01321
	A1	0.01512	0.01513	0.02760
	A2	0.00077	0.00199	0.02222
	A2	0.01241	0.01366	0.03401
	B1	-0.00210	0.00073	0.02636
	B1	0.00683	0.00974	0.03531
sky130_fd_sc_hs__o21ai_4	A1	0.00112	0.00124	0.02668
	A1	0.02899	0.02914	0.05461
	A2	0.00074	0.00334	0.04248
	A2	0.02407	0.02665	0.06598
	B1	-0.00391	-0.00020	0.02921
	B1	0.00950	0.01327	0.04306

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.00888	0.00891	0.01366
	A1	0.00133	0.00133	0.00614
	A2	0.00672	0.00687	0.01152
	A2	0.00036	0.00046	0.00511
	B1	0.00506	0.00538	0.01234
	B1	0.00009	0.00037	0.00697
sky130_fd_sc_hs__o21ai_2	A1	0.01658	0.01654	0.02620
	A1	0.00212	0.00205	0.01166
	A2	0.01149	0.01186	0.02116
	A2	-0.00035	-0.00002	0.00931
	B1	0.00826	0.00924	0.02257
	B1	-0.00068	0.00026	0.01330
sky130_fd_sc_hs__o21ai_4	A1	0.03138	0.03148	0.05204
	A1	0.00340	0.00346	0.02331
	A2	0.02168	0.02260	0.04173
	A2	-0.00198	-0.00113	0.01792
	B1	0.02407	0.02483	0.03827
	B1	0.00039	0.00158	0.01540

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	0.00222	0.00196	0.00192
	(A2 * B1 * !Y)	-0.00173	-0.00204	-0.00204
	(A2 * !B1 * Y)	0.00177	0.00179	0.00177
	(A2 * !B1 * Y)	-0.00215	-0.00219	-0.00218
	(!A2 * !B1 * Y)	0.00168	0.00170	0.00168
	(!A2 * !B1 * Y)	-0.00220	-0.00222	-0.00221
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	0.00423	0.00366	0.00359
	(A2 * B1 * !Y)	-0.00345	-0.00411	-0.00414
	(A2 * !B1 * Y)	0.00338	0.00342	0.00338
	(A2 * !B1 * Y)	-0.00425	-0.00433	-0.00432
	(!A2 * !B1 * Y)	0.00323	0.00328	0.00325
	(!A2 * !B1 * Y)	-0.00437	-0.00440	-0.00438
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	0.00787	0.00672	0.00657
	(A2 * B1 * !Y)	-0.00685	-0.00822	-0.00825
	(A2 * !B1 * Y)	0.00654	0.00662	0.00654
	(A2 * !B1 * Y)	-0.00808	-0.00829	-0.00825
	(!A2 * !B1 * Y)	0.00623	0.00627	0.00625
	(!A2 * !B1 * Y)	-0.00837	-0.00839	-0.00838

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	-0.00191	-0.00191	-0.00191
	(A2 * B1 * !Y)	0.00203	0.00204	0.00204
	(A2 * !B1 * Y)	-0.00176	-0.00177	-0.00177
	(A2 * !B1 * Y)	0.00216	0.00219	0.00218
	(!A2 * !B1 * Y)	-0.00159	-0.00170	-0.00168
	(!A2 * !B1 * Y)	0.00223	0.00223	0.00221
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	-0.00357	-0.00358	-0.00356
	(A2 * B1 * !Y)	0.00413	0.00416	0.00414
	(A2 * !B1 * Y)	-0.00338	-0.00338	-0.00337
	(A2 * !B1 * Y)	0.00433	0.00433	0.00432
	(!A2 * !B1 * Y)	-0.00303	-0.00324	-0.00325
	(!A2 * !B1 * Y)	0.00443	0.00443	0.00439
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	-0.00651	-0.00658	-0.00653
	(A2 * B1 * !Y)	0.00816	0.00832	0.00825
	(A2 * !B1 * Y)	-0.00654	-0.00655	-0.00653
	(A2 * !B1 * Y)	0.00826	0.00829	0.00825
	(!A2 * !B1 * Y)	-0.00582	-0.00627	-0.00625
	(!A2 * !B1 * Y)	0.00851	0.00849	0.00841

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	0.00196	0.00199	0.00197
	(A1 * B1 * !Y)	-0.00097	-0.00098	-0.00097
	(A1 * !B1 * Y)	0.00160	0.00163	0.00161
	(A1 * !B1 * Y)	-0.00218	-0.00223	-0.00222
	(!A1 * !B1 * Y)	0.00155	0.00153	0.00154
	(!A1 * !B1 * Y)	-0.00225	-0.00224	-0.00225
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	0.00358	0.00360	0.00357
	(A1 * B1 * !Y)	-0.00197	-0.00197	-0.00195
	(A1 * !B1 * Y)	0.00327	0.00330	0.00328
	(A1 * !B1 * Y)	-0.00394	-0.00404	-0.00401
	(!A1 * !B1 * Y)	0.00311	0.00317	0.00314
	(!A1 * !B1 * Y)	-0.00406	-0.00410	-0.00408
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	0.00755	0.00765	0.00753
	(A1 * B1 * !Y)	-0.00398	-0.00401	-0.00394
	(A1 * !B1 * Y)	0.00663	0.00671	0.00664
	(A1 * !B1 * Y)	-0.00821	-0.00838	-0.00835
	(!A1 * !B1 * Y)	0.00636	0.00642	0.00634
	(!A1 * !B1 * Y)	-0.00855	-0.00858	-0.00852

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	-0.00190	-0.00192	-0.00196
	(A1 * B1 * !Y)	0.00101	0.00102	0.00098
	(A1 * !B1 * Y)	-0.00160	-0.00161	-0.00160
	(A1 * !B1 * Y)	0.00222	0.00223	0.00222
	(!A1 * !B1 * Y)	-0.00145	-0.00153	-0.00154
	(!A1 * !B1 * Y)	0.00226	0.00227	0.00225
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	-0.00341	-0.00345	-0.00355
	(A1 * B1 * !Y)	0.00206	0.00209	0.00199
	(A1 * !B1 * Y)	-0.00327	-0.00329	-0.00328
	(A1 * !B1 * Y)	0.00401	0.00404	0.00401
	(!A1 * !B1 * Y)	-0.00294	-0.00314	-0.00314
	(!A1 * !B1 * Y)	0.00412	0.00412	0.00409
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	-0.00717	-0.00724	-0.00749
	(A1 * B1 * !Y)	0.00422	0.00426	0.00402
	(A1 * !B1 * Y)	-0.00661	-0.00665	-0.00662
	(A1 * !B1 * Y)	0.00831	0.00838	0.00835
	(!A1 * !B1 * Y)	-0.00589	-0.00636	-0.00634
	(!A1 * !B1 * Y)	0.00865	0.00862	0.00855

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	0.00061	0.00061	0.00057
	(!A1 * !A2 * Y)	-0.00253	-0.00253	-0.00259
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	0.00124	0.00124	0.00116
	(!A1 * !A2 * Y)	-0.00465	-0.00467	-0.00479
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	0.00216	0.00216	0.00203
	(!A1 * !A2 * Y)	-0.00539	-0.00542	-0.00566

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	-0.00056	-0.00056	-0.00056
	(!A1 * !A2 * Y)	0.00260	0.00259	0.00260
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	-0.00113	-0.00113	-0.00113
	(!A1 * !A2 * Y)	0.00478	0.00482	0.00481
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	-0.00197	-0.00197	-0.00197
	(!A1 * !A2 * Y)	0.00566	0.00567	0.00567

SKY130_FD_SC_HS__O21Ax

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00247	0.00249	0.00245	1.20995
sky130_fd_sc_hs__o21a_2	0.00268	0.00265	0.00274	2.35750
sky130_fd_sc_hs__o21a_4	0.00513	0.00476	0.00455	4.45172

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21a_1	0.00000	0.25761	0.64768
sky130_fd_sc_hs__o21a_2	0.00000	0.21426	0.40809
sky130_fd_sc_hs__o21a_4	0.00000	0.61689	1.31022

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)	0.07434	0.54692	6.06625
	A2->X (RR)	0.06512	0.52478	6.04283
	B1->X (RR)	0.06869	0.54901	6.26788
sky130_fd_sc_hs__o21a_2	A1->X (RR)	0.07696	0.47009	6.08817
	A2->X (RR)	0.06856	0.45277	6.05854
	B1->X (RR)	0.07145	0.47630	6.27097
sky130_fd_sc_hs__o21a_4	A1->X (RR)	0.08152	0.40462	6.07588
	A2->X (RR)	0.07376	0.38444	6.06531
	B1->X (RR)	0.07204	0.40584	6.23562

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21a_1	A1->X (FF)	0.12554	0.54220	4.78472
	A2->X (FF)	0.11145	0.54083	4.81455
	B1->X (FF)	0.06485	0.47055	4.58596
sky130_fd_sc_hs__o21a_2	A1->X (FF)	0.15758	0.57060	4.93455
	A2->X (FF)	0.14492	0.57871	4.97023
	B1->X (FF)	0.07251	0.46424	4.60511
sky130_fd_sc_hs__o21a_4	A1->X (FF)	0.15369	0.53250	4.92095
	A2->X (FF)	0.13547	0.53180	4.94316
	B1->X (FF)	0.07928	0.45020	4.70505

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.01089	0.01166	0.03826
	A1	0.00450	0.00527	0.03232
	A2	0.00883	0.00991	0.04526
	A2	0.00351	0.00509	0.04039
	B1	0.00755	0.00945	0.05181
	B1	0.00361	0.00551	0.04830
sky130_fd_sc_hs__o21a_2	A1	0.01435	0.01535	0.04177
	A1	0.00740	0.00848	0.03572
	A2	0.01233	0.01353	0.04852
	A2	0.00656	0.00776	0.04366
	B1	0.01083	0.01290	0.05209
	B1	0.00638	0.00849	0.04853
sky130_fd_sc_hs__o21a_4	A1	0.02780	0.02967	0.08175
	A1	0.01471	0.01659	0.07044
	A2	0.02329	0.02555	0.09413
	A2	0.01266	0.01496	0.08532
	B1	0.02037	0.02408	0.10391
	B1	0.01271	0.01648	0.09799

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.00438	0.00513	0.03257
	A1	0.01070	0.01144	0.03781
	A2	0.00438	0.00642	0.04294
	A2	0.00961	0.01163	0.04735
	B1	0.00328	0.00610	0.05382
	B1	0.00723	0.00999	0.05741
sky130_fd_sc_hs__o21a_2	A1	0.00786	0.00848	0.03592
	A1	0.01469	0.01526	0.04143
	A2	0.00791	0.00970	0.04669
	A2	0.01357	0.01534	0.05118
	B1	0.00612	0.00897	0.05456
	B1	0.01055	0.01326	0.05835
sky130_fd_sc_hs__o21a_4	A1	0.01454	0.01555	0.06696
	A1	0.02748	0.02847	0.07980
	A2	0.01498	0.01821	0.08819
	A2	0.02540	0.02862	0.09834
	B1	0.01180	0.01716	0.10797
	B1	0.02156	0.02695	0.11363

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	0.00182	0.00158	0.00154
	(A2 * B1 * X)	-0.00160	-0.00189	-0.00191
	(A2 * !B1 * !X)	0.00153	0.00155	0.00153
	(A2 * !B1 * !X)	-0.00188	-0.00192	-0.00191
	(!A2 * !B1 * !X)	0.00145	0.00146	0.00146
	(!A2 * !B1 * !X)	-0.00192	-0.00192	-0.00192
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	0.00213	0.00187	0.00183
	(A2 * B1 * X)	-0.00157	-0.00187	-0.00188
	(A2 * !B1 * !X)	0.00183	0.00184	0.00183
	(A2 * !B1 * !X)	-0.00185	-0.00188	-0.00188
	(!A2 * !B1 * !X)	0.00174	0.00174	0.00175
	(!A2 * !B1 * !X)	-0.00189	-0.00189	-0.00189
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	0.00395	0.00347	0.00340
	(A2 * B1 * X)	-0.00306	-0.00366	-0.00367
	(A2 * !B1 * !X)	0.00330	0.00335	0.00331
	(A2 * !B1 * !X)	-0.00368	-0.00378	-0.00375
	(!A2 * !B1 * !X)	0.00316	0.00318	0.00316
	(!A2 * !B1 * !X)	-0.00380	-0.00381	-0.00380

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	-0.00152	-0.00152	-0.00151
	(A2 * B1 * X)	0.00192	0.00193	0.00192
	(A2 * !B1 * !X)	-0.00152	-0.00153	-0.00153
	(A2 * !B1 * !X)	0.00189	0.00192	0.00191
	(!A2 * !B1 * !X)	-0.00137	-0.00146	-0.00146
	(!A2 * !B1 * !X)	0.00196	0.00195	0.00193
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	-0.00181	-0.00182	-0.00181
	(A2 * B1 * X)	0.00188	0.00189	0.00189
	(A2 * !B1 * !X)	-0.00182	-0.00183	-0.00182
	(A2 * !B1 * !X)	0.00188	0.00189	0.00188
	(!A2 * !B1 * !X)	-0.00165	-0.00174	-0.00175
	(!A2 * !B1 * !X)	0.00193	0.00192	0.00190
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	-0.00337	-0.00338	-0.00336
	(A2 * B1 * X)	0.00367	0.00371	0.00369
	(A2 * !B1 * !X)	-0.00330	-0.00331	-0.00330
	(A2 * !B1 * !X)	0.00375	0.00378	0.00375
	(!A2 * !B1 * !X)	-0.00301	-0.00318	-0.00316
	(!A2 * !B1 * !X)	0.00386	0.00385	0.00381

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	0.00157	0.00159	0.00157
	(A1 * B1 * X)	-0.00095	-0.00096	-0.00095
	(A1 * !B1 * !X)	0.00145	0.00147	0.00146
	(A1 * !B1 * !X)	-0.00182	-0.00186	-0.00185
	(!A1 * !B1 * !X)	0.00139	0.00139	0.00139
	(!A1 * !B1 * !X)	-0.00188	-0.00187	-0.00187
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	0.00180	0.00182	0.00180
	(A1 * B1 * X)	-0.00089	-0.00090	-0.00089
	(A1 * !B1 * !X)	0.00165	0.00167	0.00165
	(A1 * !B1 * !X)	-0.00180	-0.00184	-0.00183
	(!A1 * !B1 * !X)	0.00156	0.00159	0.00157
	(!A1 * !B1 * !X)	-0.00184	-0.00186	-0.00185
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	0.00313	0.00316	0.00314
	(A1 * B1 * X)	-0.00180	-0.00182	-0.00180
	(A1 * !B1 * !X)	0.00278	0.00281	0.00278
	(A1 * !B1 * !X)	-0.00366	-0.00374	-0.00372
	(!A1 * !B1 * !X)	0.00266	0.00266	0.00265
	(!A1 * !B1 * !X)	-0.00379	-0.00379	-0.00378

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	-0.00150	-0.00151	-0.00156
	(A1 * B1 * X)	0.00101	0.00101	0.00097
	(A1 * !B1 * !X)	-0.00145	-0.00146	-0.00145
	(A1 * !B1 * !X)	0.00184	0.00186	0.00185
	(!A1 * !B1 * !X)	-0.00129	-0.00139	-0.00139
	(!A1 * !B1 * !X)	0.00190	0.00190	0.00188
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	-0.00174	-0.00175	-0.00179
	(A1 * B1 * X)	0.00094	0.00094	0.00091
	(A1 * !B1 * !X)	-0.00165	-0.00165	-0.00164
	(A1 * !B1 * !X)	0.00183	0.00184	0.00183
	(!A1 * !B1 * !X)	-0.00149	-0.00158	-0.00157
	(!A1 * !B1 * !X)	0.00188	0.00187	0.00186
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	-0.00299	-0.00301	-0.00311
	(A1 * B1 * X)	0.00193	0.00194	0.00184
	(A1 * !B1 * !X)	-0.00278	-0.00280	-0.00277
	(A1 * !B1 * !X)	0.00372	0.00374	0.00372
	(!A1 * !B1 * !X)	-0.00249	-0.00266	-0.00265
	(!A1 * !B1 * !X)	0.00384	0.00381	0.00379

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	0.00057	0.00056	0.00053
	(!A1 * !A2 * !X)	-0.00200	-0.00200	-0.00206
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	0.00062	0.00062	0.00058
	(!A1 * !A2 * !X)	-0.00227	-0.00227	-0.00234
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	0.00095	0.00095	0.00088
	(!A1 * !A2 * !X)	-0.00387	-0.00388	-0.00399

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	-0.00052	-0.00051	-0.00052
	(!A1 * !A2 * !X)	0.00206	0.00205	0.00206
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	-0.00056	-0.00057	-0.00056
	(!A1 * !A2 * !X)	0.00234	0.00238	0.00235
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	-0.00085	-0.00087	-0.00085
	(!A1 * !A2 * !X)	0.00401	0.00407	0.00401

SKY130_FD_SC_HS__O21BAIx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00274	0.00303	0.00236	0.59857
sky130_fd_sc_hs__o21bai_2	0.00578	0.00533	0.00261	1.12147
sky130_fd_sc_hs__o21bai_4	0.01045	0.01060	0.00356	2.02289

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21bai_1	0.00000	0.27119	0.45107
sky130_fd_sc_hs__o21bai_2	0.00000	0.19793	0.31774
sky130_fd_sc_hs__o21bai_4	0.00000	0.57872	0.91700

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)	0.08628	0.90851	10.33370
	A2->Y (FR)	0.07445	0.91324	10.60600
	B1_N->Y (RR)	0.05595	0.36293	2.80096
sky130_fd_sc_hs__o21bai_2	A1->Y (FR)	0.07913	0.76893	10.15100
	A2->Y (FR)	0.06264	0.77013	10.40530
	B1_N->Y (RR)	0.05582	0.31558	2.70537
sky130_fd_sc_hs__o21bai_4	A1->Y (FR)	0.08158	0.67856	10.11420
	A2->Y (FR)	0.06389	0.69204	10.54240
	B1_N->Y (RR)	0.07485	0.47828	6.27785

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21bai_1	A1->Y (RF)	0.03563	0.37337	4.15095
	A2->Y (RF)	0.02960	0.36118	4.10353
	B1_N->Y (FF)	0.07742	0.45900	3.91019
sky130_fd_sc_hs__o21bai_2	A1->Y (RF)	0.03242	0.30558	3.96540
	A2->Y (RF)	0.02779	0.29801	3.99058
	B1_N->Y (FF)	0.07802	0.45441	4.09719
sky130_fd_sc_hs__o21bai_4	A1->Y (RF)	0.03895	0.26731	3.99537
	A2->Y (RF)	0.02852	0.25017	3.91271
	B1_N->Y (FF)	0.07870	0.40006	4.00207

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.00065	0.00066	0.00684
	A1	0.00646	0.00646	0.01267
	A2	0.00060	0.00108	0.01181
	A2	0.00551	0.00600	0.01680
	B1_N	0.00749	0.00930	0.04943
	B1_N	0.00511	0.00695	0.04715
sky130_fd_sc_hs__o21bai_2	A1	0.00071	0.00075	0.01335
	A1	0.01242	0.01247	0.02521
	A2	0.00076	0.00265	0.02225
	A2	0.00959	0.01151	0.03123
	B1_N	0.01038	0.01248	0.05265
	B1_N	0.00883	0.01100	0.05152
sky130_fd_sc_hs__o21bai_4	A1	0.00133	0.00142	0.02481
	A1	0.02412	0.02430	0.04771
	A2	0.00110	0.00495	0.04283
	A2	0.01918	0.02300	0.06111
	B1_N	0.01377	0.01762	0.09777
	B1_N	0.01365	0.01761	0.09783

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.00827	0.00836	0.01311
	A1	0.00243	0.00244	0.00719
	A2	0.00621	0.00639	0.01132
	A2	0.00125	0.00137	0.00598
	B1_N	0.00627	0.00891	0.05352
	B1_N	0.00876	0.01136	0.05592
sky130_fd_sc_hs__o21bai_2	A1	0.01649	0.01646	0.02616
	A1	0.00476	0.00471	0.01429
	A2	0.01147	0.01183	0.02110
	A2	0.00253	0.00286	0.01216
	B1_N	0.01236	0.01502	0.06143
	B1_N	0.01404	0.01653	0.06279
sky130_fd_sc_hs__o21bai_4	A1	0.03295	0.03300	0.05245
	A1	0.01010	0.01004	0.02934
	A2	0.02293	0.02371	0.04242
	A2	0.00464	0.00542	0.02415
	B1_N	0.02485	0.02941	0.10998
	B1_N	0.02526	0.02976	0.10987

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)	0.00174	0.00174	0.00173
	(A2 * B1_N * Y)	-0.00202	-0.00206	-0.00206
	(A2 * !B1_N * !Y)	0.00203	0.00176	0.00173
	(A2 * !B1_N * !Y)	-0.00176	-0.00207	-0.00207
	(!A2 * B1_N * Y)	0.00167	0.00168	0.00168
	(!A2 * B1_N * Y)	-0.00208	-0.00208	-0.00208
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	0.00354	0.00359	0.00354
	(A2 * B1_N * Y)	-0.00421	-0.00430	-0.00429
	(A2 * !B1_N * !Y)	0.00423	0.00366	0.00359
	(A2 * !B1_N * !Y)	-0.00357	-0.00425	-0.00425
	(!A2 * B1_N * Y)	0.00344	0.00346	0.00345
	(!A2 * B1_N * Y)	-0.00433	-0.00434	-0.00434
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	0.00667	0.00672	0.00664
	(A2 * B1_N * Y)	-0.00819	-0.00836	-0.00834
	(A2 * !B1_N * !Y)	0.00804	0.00680	0.00665
	(A2 * !B1_N * !Y)	-0.00691	-0.00834	-0.00834
	(!A2 * B1_N * Y)	0.00642	0.00647	0.00642
	(!A2 * B1_N * Y)	-0.00847	-0.00850	-0.00845

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)	-0.00172	-0.00173	-0.00172
	(A2 * B1_N * Y)	0.00205	0.00208	0.00206
	(A2 * !B1_N * !Y)	-0.00171	-0.00173	-0.00172
	(A2 * !B1_N * !Y)	0.00205	0.00208	0.00207
	(!A2 * B1_N * Y)	-0.00159	-0.00167	-0.00168
	(!A2 * B1_N * Y)	0.00212	0.00211	0.00210
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	-0.00354	-0.00353	-0.00353
	(A2 * B1_N * Y)	0.00429	0.00430	0.00429
	(A2 * !B1_N * !Y)	-0.00356	-0.00359	-0.00357
	(A2 * !B1_N * !Y)	0.00422	0.00428	0.00425
	(!A2 * B1_N * Y)	-0.00329	-0.00345	-0.00345
	(!A2 * B1_N * Y)	0.00439	0.00439	0.00435
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	-0.00660	-0.00662	-0.00661
	(A2 * B1_N * Y)	0.00831	0.00836	0.00834
	(A2 * !B1_N * !Y)	-0.00663	-0.00665	-0.00660
	(A2 * !B1_N * !Y)	0.00832	0.00836	0.00834
	(!A2 * B1_N * Y)	-0.00607	-0.00646	-0.00642
	(!A2 * B1_N * Y)	0.00860	0.00858	0.00850

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)	0.00176	0.00180	0.00177
	(A1 * B1_N * Y)	-0.00219	-0.00225	-0.00224
	(A1 * !B1_N * !Y)	0.00200	0.00202	0.00200
	(A1 * !B1_N * !Y)	-0.00110	-0.00111	-0.00110
	(!A1 * B1_N * Y)	0.00172	0.00174	0.00172
	(!A1 * B1_N * Y)	-0.00227	-0.00228	-0.00226
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	0.00322	0.00327	0.00324
	(A1 * B1_N * Y)	-0.00393	-0.00405	-0.00401
	(A1 * !B1_N * !Y)	0.00354	0.00356	0.00353
	(A1 * !B1_N * !Y)	-0.00196	-0.00196	-0.00194
	(!A1 * B1_N * Y)	0.00314	0.00315	0.00315
	(!A1 * B1_N * Y)	-0.00407	-0.00408	-0.00408
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	0.00659	0.00666	0.00658
	(A1 * B1_N * Y)	-0.00820	-0.00837	-0.00834
	(A1 * !B1_N * !Y)	0.00737	0.00752	0.00740
	(A1 * !B1_N * !Y)	-0.00396	-0.00404	-0.00397
	(!A1 * B1_N * Y)	0.00638	0.00643	0.00637
	(!A1 * B1_N * Y)	-0.00850	-0.00853	-0.00848

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)	-0.00176	-0.00177	-0.00176
	(A1 * B1_N * Y)	0.00223	0.00225	0.00224
	(A1 * !B1_N * !Y)	-0.00193	-0.00195	-0.00199
	(A1 * !B1_N * !Y)	0.00115	0.00117	0.00112
	(!A1 * B1_N * Y)	-0.00162	-0.00171	-0.00172
	(!A1 * B1_N * Y)	0.00229	0.00229	0.00228
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	-0.00322	-0.00325	-0.00323
	(A1 * B1_N * Y)	0.00401	0.00405	0.00401
	(A1 * !B1_N * !Y)	-0.00338	-0.00341	-0.00351
	(A1 * !B1_N * !Y)	0.00206	0.00208	0.00198
	(!A1 * B1_N * Y)	-0.00300	-0.00315	-0.00315
	(!A1 * B1_N * Y)	0.00412	0.00413	0.00410
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	-0.00656	-0.00658	-0.00655
	(A1 * B1_N * Y)	0.00834	0.00837	0.00834
	(A1 * !B1_N * !Y)	-0.00708	-0.00712	-0.00736
	(A1 * !B1_N * !Y)	0.00428	0.00429	0.00405
	(!A1 * B1_N * Y)	-0.00602	-0.00639	-0.00637
	(!A1 * B1_N * Y)	0.00860	0.00859	0.00852

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)	0.00621	0.00809	0.05331
	(!A1 * !A2 * Y)	0.00223	0.00408	0.04931
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.00910	0.01077	0.05843
	(!A1 * !A2 * Y)	0.00455	0.00619	0.05387
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.01093	0.01408	0.09355
	(!A1 * !A2 * Y)	0.00468	0.00780	0.08729

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)	0.00015	0.00277	0.04811
	(!A1 * !A2 * Y)	0.00417	0.00680	0.05213
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.00074	0.00299	0.05030
	(!A1 * !A2 * Y)	0.00534	0.00761	0.05489
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.00149	0.00586	0.08579
	(!A1 * !A2 * Y)	0.00782	0.01225	0.09210

SKY130_FD_SC_HS__O21BAx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00250	0.00265	0.00217	1.09185
sky130_fd_sc_hs__o21ba_2	0.00260	0.00272	0.00230	2.08622
sky130_fd_sc_hs__o21ba_4	0.00520	0.00495	0.00280	3.87096

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21ba_1	0.00000	0.38891	0.53074
sky130_fd_sc_hs__o21ba_2	0.00000	0.43820	0.60483
sky130_fd_sc_hs__o21ba_4	0.00000	0.65904	1.31765

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)	0.08307	0.57675	6.13727
	A2->X (RR)	0.07381	0.55633	6.11548
	B1_N->X (FR)	0.12950	0.76481	8.29233
sky130_fd_sc_hs__o21ba_2	A1->X (RR)	0.08207	0.47248	5.82027
	A2->X (RR)	0.07212	0.45373	5.78658
	B1_N->X (FR)	0.13189	0.65917	7.97526
sky130_fd_sc_hs__o21ba_4	A1->X (RR)	0.08789	0.41433	5.91181
	A2->X (RR)	0.08080	0.39452	5.90213
	B1_N->X (FR)	0.13996	0.62440	8.21259

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ba_1	A1->X (FF)	0.12999	0.54294	4.54986
	A2->X (FF)	0.11807	0.54474	4.57988
	B1_N->X (RF)	0.09081	0.30450	1.90781
sky130_fd_sc_hs__o21ba_2	A1->X (FF)	0.15481	0.56191	4.70998
	A2->X (FF)	0.14236	0.57028	4.74729
	B1_N->X (RF)	0.10036	0.29291	2.00799
sky130_fd_sc_hs__o21ba_4	A1->X (FF)	0.15233	0.52206	4.55500
	A2->X (FF)	0.13434	0.52220	4.57559
	B1_N->X (RF)	0.10542	0.26876	1.74067

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.01151	0.01226	0.03884
	A1	0.00618	0.00694	0.03389
	A2	0.00970	0.01067	0.04594
	A2	0.00522	0.00620	0.04185
	B1_N	0.01017	0.01291	0.05991
	B1_N	0.01248	0.01523	0.06223
sky130_fd_sc_hs__o21ba_2	A1	0.01428	0.01531	0.04177
	A1	0.00879	0.00985	0.03645
	A2	0.01237	0.01357	0.04861
	A2	0.00777	0.00897	0.04424
	B1_N	0.01269	0.01568	0.05975
	B1_N	0.01524	0.01824	0.06274
sky130_fd_sc_hs__o21ba_4	A1	0.02773	0.02954	0.08143
	A1	0.01684	0.01872	0.07066
	A2	0.02329	0.02546	0.09369
	A2	0.01488	0.01712	0.08537
	B1_N	0.02410	0.02791	0.07637
	B1_N	0.02622	0.03025	0.07876

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.00439	0.00534	0.03156
	A1	0.00967	0.01051	0.03672
	A2	0.00438	0.00636	0.04203
	A2	0.00879	0.01076	0.04642
	B1_N	0.01105	0.01285	0.05641
	B1_N	0.00883	0.01059	0.05381
sky130_fd_sc_hs__o21ba_2	A1	0.00733	0.00795	0.03490
	A1	0.01277	0.01337	0.03960
	A2	0.00736	0.00921	0.04612
	A2	0.01190	0.01364	0.04952
	B1_N	0.01413	0.01579	0.05891
	B1_N	0.01166	0.01325	0.05541
sky130_fd_sc_hs__o21ba_4	A1	0.01428	0.01567	0.06803
	A1	0.02509	0.02606	0.07693
	A2	0.01456	0.01820	0.08944
	A2	0.02283	0.02605	0.09553
	B1_N	0.02391	0.02613	0.07185
	B1_N	0.02183	0.02405	0.06978

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)	0.00153	0.00153	0.00152
	(A2 * B1_N * !X)	-0.00189	-0.00192	-0.00192
	(A2 * !B1_N * X)	0.00182	0.00156	0.00152
	(A2 * !B1_N * X)	-0.00162	-0.00192	-0.00192
	(!A2 * B1_N * !X)	0.00146	0.00147	0.00147
	(!A2 * B1_N * !X)	-0.00193	-0.00193	-0.00193
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	0.00174	0.00175	0.00173
	(A2 * B1_N * !X)	-0.00185	-0.00189	-0.00188
	(A2 * !B1_N * X)	0.00204	0.00178	0.00174
	(A2 * !B1_N * X)	-0.00158	-0.00187	-0.00188
	(!A2 * B1_N * !X)	0.00167	0.00168	0.00167
	(!A2 * B1_N * !X)	-0.00189	-0.00189	-0.00189
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	0.00336	0.00342	0.00338
	(A2 * B1_N * !X)	-0.00373	-0.00385	-0.00381
	(A2 * !B1_N * X)	0.00396	0.00347	0.00340
	(A2 * !B1_N * X)	-0.00317	-0.00380	-0.00380
	(!A2 * B1_N * !X)	0.00328	0.00331	0.00328
	(!A2 * B1_N * !X)	-0.00387	-0.00389	-0.00387

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)	-0.00151	-0.00152	-0.00151
	(A2 * B1_N * !X)	0.00192	0.00193	0.00192
	(A2 * !B1_N * X)	-0.00150	-0.00151	-0.00150
	(A2 * !B1_N * X)	0.00192	0.00194	0.00193
	(!A2 * B1_N * !X)	-0.00140	-0.00147	-0.00147
	(!A2 * B1_N * !X)	0.00198	0.00196	0.00195
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	-0.00171	-0.00173	-0.00172
	(A2 * B1_N * !X)	0.00187	0.00190	0.00188
	(A2 * !B1_N * X)	-0.00172	-0.00173	-0.00172
	(A2 * !B1_N * X)	0.00188	0.00190	0.00189
	(!A2 * B1_N * !X)	-0.00158	-0.00167	-0.00167
	(!A2 * B1_N * !X)	0.00192	0.00192	0.00191
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	-0.00336	-0.00338	-0.00336
	(A2 * B1_N * !X)	0.00381	0.00385	0.00381
	(A2 * !B1_N * X)	-0.00337	-0.00338	-0.00336
	(A2 * !B1_N * X)	0.00381	0.00384	0.00382
	(!A2 * B1_N * !X)	-0.00314	-0.00330	-0.00328
	(!A2 * B1_N * !X)	0.00394	0.00392	0.00388

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)	0.00160	0.00159	0.00160
	(A1 * B1_N * !X)	-0.00190	-0.00192	-0.00193
	(A1 * !B1_N * X)	0.00168	0.00170	0.00168
	(A1 * !B1_N * X)	-0.00106	-0.00107	-0.00106
	(!A1 * B1_N * !X)	0.00156	0.00156	0.00155
	(!A1 * B1_N * !X)	-0.00195	-0.00195	-0.00195
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	0.00177	0.00180	0.00177
	(A1 * B1_N * !X)	-0.00187	-0.00191	-0.00190
	(A1 * !B1_N * X)	0.00189	0.00191	0.00189
	(A1 * !B1_N * X)	-0.00099	-0.00100	-0.00099
	(!A1 * B1_N * !X)	0.00172	0.00172	0.00172
	(!A1 * B1_N * !X)	-0.00192	-0.00192	-0.00191
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	0.00286	0.00290	0.00287
	(A1 * B1_N * !X)	-0.00376	-0.00384	-0.00382
	(A1 * !B1_N * X)	0.00323	0.00324	0.00321
	(A1 * !B1_N * X)	-0.00192	-0.00192	-0.00190
	(!A1 * B1_N * !X)	0.00276	0.00281	0.00277
	(!A1 * B1_N * !X)	-0.00389	-0.00392	-0.00389

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)	-0.00159	-0.00159	-0.00159
	(A1 * B1_N * !X)	0.00193	0.00194	0.00193
	(A1 * !B1_N * X)	-0.00162	-0.00164	-0.00167
	(A1 * !B1_N * X)	0.00111	0.00111	0.00108
	(!A1 * B1_N * !X)	-0.00148	-0.00155	-0.00155
	(!A1 * B1_N * !X)	0.00199	0.00197	0.00196
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	-0.00176	-0.00177	-0.00176
	(A1 * B1_N * !X)	0.00190	0.00191	0.00190
	(A1 * !B1_N * X)	-0.00183	-0.00184	-0.00188
	(A1 * !B1_N * X)	0.00105	0.00105	0.00101
	(!A1 * B1_N * !X)	-0.00164	-0.00172	-0.00172
	(!A1 * B1_N * !X)	0.00195	0.00194	0.00193
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	-0.00285	-0.00289	-0.00286
	(A1 * B1_N * !X)	0.00380	0.00384	0.00382
	(A1 * !B1_N * X)	-0.00307	-0.00309	-0.00318
	(A1 * !B1_N * X)	0.00204	0.00204	0.00195
	(!A1 * B1_N * !X)	-0.00259	-0.00277	-0.00277
	(!A1 * B1_N * !X)	0.00396	0.00394	0.00391

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)	0.00575	0.00766	0.05191
	(!A1 * !A2 * !X)	0.00203	0.00393	0.04820
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00629	0.00807	0.05210
	(!A1 * !A2 * !X)	0.00237	0.00416	0.04818
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.00882	0.01055	0.05534
	(!A1 * !A2 * !X)	0.00400	0.00571	0.05051

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)	0.00026	0.00283	0.04712
	(!A1 * !A2 * !X)	0.00400	0.00657	0.05085
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00019	0.00272	0.04683
	(!A1 * !A2 * !X)	0.00413	0.00667	0.05076
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.00043	0.00261	0.04725
	(!A1 * !A2 * !X)	0.00532	0.00751	0.05211

SKY130_FD_SC_HS__O221AIx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00283	0.00298	0.00294	0.00286	0.00290	0.59502
sky130_fd_sc_hs__o221ai_2	0.00579	0.00530	0.00606	0.00530	0.00535	1.09300
sky130_fd_sc_hs__o221ai_4	0.01102	0.01051	0.01115	0.01048	0.01066	2.03953

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221ai_1	0.00000	0.04724	0.23065
sky130_fd_sc_hs__o221ai_2	0.00000	0.09449	0.46129
sky130_fd_sc_hs__o221ai_4	0.00000	0.18897	0.92258

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)	0.13373	0.95758	10.34410
	A2->Y (FR)	0.12105	0.95833	10.61360
	B1->Y (FR)	0.10037	0.91294	10.22460
	B2->Y (FR)	0.08427	0.91126	10.49400
	C1->Y (FR)	0.03455	0.61796	7.53617
sky130_fd_sc_hs__o221ai_2	A1->Y (FR)	0.12184	0.81271	10.09930
	A2->Y (FR)	0.10548	0.81162	10.35350
	B1->Y (FR)	0.09177	0.77480	10.02750
	B2->Y (FR)	0.07472	0.77494	10.27670
	C1->Y (FR)	0.02704	0.53811	7.33019
sky130_fd_sc_hs__o221ai_4	A1->Y (FR)	0.11273	0.70040	9.85698
	A2->Y (FR)	0.09711	0.70873	10.21810
	B1->Y (FR)	0.09183	0.68602	10.12050
	B2->Y (FR)	0.07138	0.69167	10.46330
	C1->Y (FR)	0.02702	0.48759	7.40946

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221ai_1	A1->Y (RF)	0.06895	0.44301	4.47441
	A2->Y (RF)	0.06002	0.42971	4.43949
	B1->Y (RF)	0.06191	0.49420	5.32109
	B2->Y (RF)	0.05157	0.47277	5.19700
	C1->Y (RF)	0.05190	0.53263	5.94149
sky130_fd_sc_hs__o221ai_2	A1->Y (RF)	0.05423	0.35625	4.35133
	A2->Y (RF)	0.04634	0.34830	4.39503
	B1->Y (RF)	0.04683	0.40698	5.21289
	B2->Y (RF)	0.03924	0.41191	5.45265
	C1->Y (RF)	0.02578	0.43822	6.02588
sky130_fd_sc_hs__o221ai_4	A1->Y (RF)	0.06020	0.31717	4.53843
	A2->Y (RF)	0.04896	0.30358	4.56017
	B1->Y (RF)	0.05344	0.37926	5.59926
	B2->Y (RF)	0.04187	0.36583	5.66294
	C1->Y (RF)	0.02823	0.40607	6.50186

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221ai_1	A1	0.00258	0.00248	0.00834
	A1	0.01288	0.01281	0.01847
	A2	0.00268	0.00321	0.01296
	A2	0.01183	0.01236	0.02171
	B1	0.00086	0.00076	0.00660
	B1	0.00972	0.00960	0.01521
	B2	0.00086	0.00151	0.01128
	B2	0.00844	0.00903	0.01824
	C1	-0.00056	0.00056	0.01272
	C1	0.00475	0.00578	0.01804
sky130_fd_sc_hs__o221ai_2	A1	0.00415	0.00393	0.01560
	A1	0.02410	0.02393	0.03529
	A2	0.00420	0.00565	0.02431
	A2	0.02139	0.02286	0.04096
	B1	0.00098	0.00076	0.01244
	B1	0.01831	0.01811	0.02942
	B2	0.00115	0.00219	0.02069
	B2	0.01566	0.01658	0.03476
	C1	-0.00195	0.00064	0.02432
	C1	0.00771	0.01039	0.03433

sky130_fd_sc_hs__o221ai_4	**A1**	0.00692	0.00657	0.02759
	A1	0.04637	0.04610	0.06656
	A2	0.00715	0.00860	0.04129
	A2	0.04131	0.04251	0.07457
	B1	0.00144	0.00117	0.02637
	B1	0.03551	0.03525	0.05966
	B2	0.00141	0.00358	0.04129
	B2	0.03044	0.03243	0.06855
	C1	-0.00362	0.00145	0.06045
	C1	0.01554	0.02069	0.08020

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221ai_1	**A1**	0.01396	0.01391	0.01861
	A1	0.00324	0.00315	0.00757
	A2	0.01172	0.01170	0.01615
	A2	0.00212	0.00207	0.00633
	B1	0.01211	0.01205	0.01618
	B1	0.00197	0.00193	0.00628
	B2	0.00753	0.00765	0.01196
	B2	0.00104	0.00110	0.00547
	C1	0.00613	0.00638	0.01271
	C1	0.00082	0.00102	0.00695

sky130_fd_sc_hs__o221ai_2	**A1**	0.02642	0.02622	0.03499
	A1	0.00573	0.00545	0.01436
	A2	0.02155	0.02164	0.03061
	A2	0.00352	0.00351	0.01214
	B1	0.02316	0.02309	0.03171
	B1	0.00328	0.00313	0.01186
	B2	0.01806	0.01816	0.02640
	B2	0.00091	0.00107	0.00920
	C1	0.01016	0.01085	0.02275
	C1	0.00051	0.00115	0.01304
sky130_fd_sc_hs__o221ai_4	**A1**	0.05229	0.05192	0.07124
	A1	0.01137	0.01092	0.02966
	A2	0.04278	0.04273	0.06188
	A2	0.00694	0.00681	0.02499
	B1	0.04555	0.04541	0.06540
	B1	0.00638	0.00627	0.02709
	B2	0.03627	0.03651	0.05557
	B2	0.00188	0.00234	0.02234
	C1	0.02000	0.02193	0.05480
	C1	0.00092	0.00283	0.03509

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)**	0.00212	0.00187	0.00184
	(A2 * B2 * C1 * !Y)	-0.00180	-0.00210	-0.00211
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00184	0.00186	0.00184
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00206	-0.00211	-0.00210
	(A2 * B1 * !B2 * C1 * !Y)	0.00213	0.00187	0.00184
	(A2 * B1 * !B2 * C1 * !Y)	-0.00180	-0.00210	-0.00211
	(A2 * !B1 * !B2 * Y)	0.00184	0.00186	0.00184
	(A2 * !B1 * !B2 * Y)	-0.00206	-0.00211	-0.00210
	(!A2 * B2 * !C1 * Y)	0.00171	0.00172	0.00171
	(!A2 * B2 * !C1 * Y)	-0.00212	-0.00213	-0.00212
	(!A2 * B1 * !B2 * !C1 * Y)	0.00172	0.00173	0.00172
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00212	-0.00213	-0.00212
	(!A2 * !B1 * !B2 * C1 * Y)	0.00175	0.00176	0.00174
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00212	-0.00213	-0.00212
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00175	0.00176	0.00174
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00212	-0.00213	-0.00212

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.00417	0.00359	0.00352
	(A2 * B2 * C1 * !Y)	-0.00350	-0.00419	-0.00419
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00340	0.00344	0.00339
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00423	-0.00434	-0.00430
	(A2 * B1 * !B2 * C1 * !Y)	0.00417	0.00359	0.00352
	(A2 * B1 * !B2 * C1 * !Y)	-0.00350	-0.00419	-0.00419
	(A2 * !B1 * !B2 * Y)	0.00340	0.00344	0.00340
	(A2 * !B1 * !B2 * Y)	-0.00423	-0.00434	-0.00430
	(!A2 * B2 * !C1 * Y)	0.00319	0.00321	0.00318
	(!A2 * B2 * !C1 * Y)	-0.00434	-0.00438	-0.00436
	(!A2 * B1 * !B2 * !C1 * Y)	0.00321	0.00324	0.00320
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00436	-0.00438	-0.00436
	(!A2 * !B1 * !B2 * C1 * Y)	0.00323	0.00326	0.00324
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00434	-0.00437	-0.00436
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00323	0.00326	0.00325
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00434	-0.00437	-0.00436

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.00826	0.00709	0.00693
	(A2 * B2 * C1 * !Y)	-0.00686	-0.00819	-0.00825
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00687	0.00695	0.00687
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00816	-0.00834	-0.00828
	(A2 * B1 * !B2 * C1 * !Y)	0.00826	0.00709	0.00693
	(A2 * B1 * !B2 * C1 * !Y)	-0.00686	-0.00822	-0.00826
	(A2 * !B1 * !B2 * Y)	0.00687	0.00695	0.00687
	(A2 * !B1 * !B2 * Y)	-0.00816	-0.00833	-0.00828
	(!A2 * B2 * !C1 * Y)	0.00643	0.00647	0.00641
	(!A2 * B2 * !C1 * Y)	-0.00841	-0.00846	-0.00841
	(!A2 * B1 * !B2 * !C1 * Y)	0.00649	0.00648	0.00646
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00838	-0.00842	-0.00841
	(!A2 * !B1 * !B2 * C1 * Y)	0.00653	0.00663	0.00655
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00840	-0.00846	-0.00841
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00654	0.00662	0.00656
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00840	-0.00845	-0.00841

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)**	-0.00183	-0.00183	-0.00183
	(A2 * B2 * C1 * !Y)	0.00210	0.00211	0.00211
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00183	-0.00184	-0.00184
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00209	0.00211	0.00210
	(A2 * B1 * !B2 * C1 * !Y)	-0.00183	-0.00183	-0.00183
	(A2 * B1 * !B2 * C1 * !Y)	0.00210	0.00211	0.00211
	(A2 * !B1 * !B2 * Y)	-0.00182	-0.00184	-0.00184
	(A2 * !B1 * !B2 * Y)	0.00208	0.00211	0.00210
	(!A2 * B2 * !C1 * Y)	-0.00156	-0.00172	-0.00171
	(!A2 * B2 * !C1 * Y)	0.00212	0.00215	0.00213
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00160	-0.00173	-0.00172
	(!A2 * B1 * !B2 * !C1 * Y)	0.00212	0.00215	0.00213
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00164	-0.00176	-0.00174
	(!A2 * !B1 * !B2 * C1 * Y)	0.00212	0.00215	0.00213
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00165	-0.00176	-0.00174
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00212	0.00215	0.00213

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00349	-0.00352	-0.00350
	(A2 * B2 * C1 * !Y)	0.00415	0.00420	0.00419
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00339	-0.00340	-0.00339
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00431	0.00434	0.00430
	(A2 * B1 * !B2 * C1 * !Y)	-0.00349	-0.00352	-0.00350
	(A2 * B1 * !B2 * C1 * !Y)	0.00415	0.00420	0.00419
	(A2 * !B1 * !B2 * Y)	-0.00339	-0.00340	-0.00339
	(A2 * !B1 * !B2 * Y)	0.00431	0.00434	0.00430
	(!A2 * B2 * !C1 * Y)	-0.00285	-0.00318	-0.00318
	(!A2 * B2 * !C1 * Y)	0.00434	0.00442	0.00437
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00292	-0.00321	-0.00320
	(!A2 * B1 * !B2 * !C1 * Y)	0.00436	0.00442	0.00437
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00302	-0.00324	-0.00324
	(!A2 * !B1 * !B2 * C1 * Y)	0.00434	0.00441	0.00437
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00303	-0.00324	-0.00325
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00434	0.00440	0.00437

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	-0.00688	-0.00688	-0.00688
	(A2 * B2 * C1 * !Y)	0.00819	0.00819	0.00825
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00686	-0.00688	-0.00685
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00829	0.00834	0.00828
	(A2 * B1 * !B2 * C1 * !Y)	-0.00688	-0.00693	-0.00688
	(A2 * B1 * !B2 * C1 * !Y)	0.00819	0.00832	0.00826
	(A2 * !B1 * !B2 * Y)	-0.00681	-0.00687	-0.00685
	(A2 * !B1 * !B2 * Y)	0.00822	0.00833	0.00828
	(!A2 * B2 * !C1 * Y)	-0.00574	-0.00639	-0.00641
	(!A2 * B2 * !C1 * Y)	0.00841	0.00853	0.00843
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00587	-0.00646	-0.00646
	(!A2 * B1 * !B2 * !C1 * Y)	0.00838	0.00853	0.00843
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00610	-0.00655	-0.00655
	(!A2 * !B1 * !B2 * C1 * Y)	0.00841	0.00851	0.00843
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00612	-0.00654	-0.00656
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00841	0.00851	0.00843

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)**	0.00193	0.00195	0.00193
	(A1 * B2 * C1 * !Y)	-0.00108	-0.00109	-0.00108
	(A1 * B2 * !C1 * Y)	0.00166	0.00169	0.00167
	(A1 * B2 * !C1 * Y)	-0.00219	-0.00225	-0.00223
	(A1 * B1 * !B2 * C1 * !Y)	0.00193	0.00195	0.00193
	(A1 * B1 * !B2 * C1 * !Y)	-0.00108	-0.00109	-0.00108
	(A1 * B1 * !B2 * !C1 * Y)	0.00166	0.00168	0.00167
	(A1 * B1 * !B2 * !C1 * Y)	-0.00220	-0.00224	-0.00223
	(A1 * !B1 * !B2 * C1 * Y)	0.00166	0.00168	0.00167
	(A1 * !B1 * !B2 * C1 * Y)	-0.00219	-0.00223	-0.00223
	(A1 * !B1 * !B2 * !C1 * Y)	0.00167	0.00169	0.00167
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00220	-0.00225	-0.00223
	(!A1 * B2 * !C1 * Y)	0.00154	0.00155	0.00154
	(!A1 * B2 * !C1 * Y)	-0.00226	-0.00227	-0.00226
	(!A1 * B1 * !B2 * !C1 * Y)	0.00158	0.00160	0.00159
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00226	-0.00227	-0.00226
	(!A1 * !B1 * !B2 * C1 * Y)	0.00160	0.00161	0.00160
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00227	-0.00227	-0.00226
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00159	0.00160	0.00158
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00227	-0.00227	-0.00226

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	0.00353	0.00355	0.00352
	(A1 * B2 * C1 * !Y)	-0.00195	-0.00196	-0.00194
	(A1 * B2 * !C1 * Y)	0.00321	0.00326	0.00322
	(A1 * B2 * !C1 * Y)	-0.00394	-0.00404	-0.00400
	(A1 * B1 * !B2 * C1 * !Y)	0.00353	0.00355	0.00352
	(A1 * B1 * !B2 * C1 * !Y)	-0.00195	-0.00195	-0.00194
	(A1 * B1 * !B2 * !C1 * Y)	0.00321	0.00325	0.00322
	(A1 * B1 * !B2 * !C1 * Y)	-0.00394	-0.00404	-0.00400
	(A1 * !B1 * !B2 * C1 * Y)	0.00321	0.00326	0.00322
	(A1 * !B1 * !B2 * C1 * Y)	-0.00394	-0.00402	-0.00400
	(A1 * !B1 * !B2 * !C1 * Y)	0.00321	0.00324	0.00322
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00394	-0.00403	-0.00401
	(!A1 * B2 * !C1 * Y)	0.00302	0.00306	0.00303
	(!A1 * B2 * !C1 * Y)	-0.00407	-0.00410	-0.00407
	(!A1 * B1 * !B2 * !C1 * Y)	0.00304	0.00307	0.00305
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00407	-0.00409	-0.00407
	(!A1 * !B1 * !B2 * C1 * Y)	0.00310	0.00311	0.00309
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00408	-0.00409	-0.00408
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00310	0.00311	0.00310
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00408	-0.00409	-0.00408

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	0.00706	0.00717	0.00711
	(A1 * B2 * C1 * !Y)	-0.00384	-0.00391	-0.00387
	(A1 * B2 * !C1 * Y)	0.00627	0.00636	0.00629
	(A1 * B2 * !C1 * Y)	-0.00809	-0.00826	-0.00823
	(A1 * B1 * !B2 * C1 * !Y)	0.00706	0.00722	0.00711
	(A1 * B1 * !B2 * C1 * !Y)	-0.00383	-0.00393	-0.00387
	(A1 * B1 * !B2 * !C1 * Y)	0.00629	0.00635	0.00629
	(A1 * B1 * !B2 * !C1 * Y)	-0.00811	-0.00825	-0.00823
	(A1 * !B1 * !B2 * C1 * Y)	0.00627	0.00636	0.00629
	(A1 * !B1 * !B2 * C1 * Y)	-0.00809	-0.00824	-0.00821
	(A1 * !B1 * !B2 * !C1 * Y)	0.00629	0.00631	0.00629
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00811	-0.00827	-0.00823
	(!A1 * B2 * !C1 * Y)	0.00590	0.00593	0.00591
	(!A1 * B2 * !C1 * Y)	-0.00836	-0.00838	-0.00837
	(!A1 * B1 * !B2 * !C1 * Y)	0.00595	0.00600	0.00595
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00837	-0.00840	-0.00837
	(!A1 * !B1 * !B2 * C1 * Y)	0.00599	0.00608	0.00604
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00833	-0.00841	-0.00837
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00600	0.00610	0.00603
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00834	-0.00842	-0.00837

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)**	-0.00186	-0.00187	-0.00192
	(A1 * B2 * C1 * !Y)	0.00114	0.00114	0.00110
	(A1 * B2 * !C1 * Y)	-0.00166	-0.00168	-0.00167
	(A1 * B2 * !C1 * Y)	0.00222	0.00225	0.00223
	(A1 * B1 * !B2 * C1 * !Y)	-0.00186	-0.00187	-0.00192
	(A1 * B1 * !B2 * C1 * !Y)	0.00114	0.00114	0.00110
	(A1 * B1 * !B2 * !C1 * Y)	-0.00166	-0.00168	-0.00167
	(A1 * B1 * !B2 * !C1 * Y)	0.00222	0.00225	0.00223
	(A1 * !B1 * !B2 * C1 * Y)	-0.00166	-0.00167	-0.00167
	(A1 * !B1 * !B2 * C1 * Y)	0.00223	0.00223	0.00223
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00166	-0.00168	-0.00167
	(A1 * !B1 * !B2 * !C1 * Y)	0.00222	0.00225	0.00223
	(!A1 * B2 * !C1 * Y)	-0.00142	-0.00155	-0.00154
	(!A1 * B2 * !C1 * Y)	0.00226	0.00229	0.00227
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00145	-0.00160	-0.00159
	(!A1 * B1 * !B2 * !C1 * Y)	0.00226	0.00229	0.00226
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00150	-0.00160	-0.00160
	(!A1 * !B1 * !B2 * C1 * Y)	0.00227	0.00229	0.00227
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00150	-0.00160	-0.00158
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00227	0.00229	0.00227

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	-0.00337	-0.00340	-0.00350
	(A1 * B2 * C1 * !Y)	0.00207	0.00207	0.00197
	(A1 * B2 * !C1 * Y)	-0.00320	-0.00323	-0.00321
	(A1 * B2 * !C1 * Y)	0.00398	0.00404	0.00400
	(A1 * B1 * !B2 * C1 * !Y)	-0.00337	-0.00340	-0.00350
	(A1 * B1 * !B2 * C1 * !Y)	0.00207	0.00207	0.00197
	(A1 * B1 * !B2 * !C1 * Y)	-0.00321	-0.00323	-0.00321
	(A1 * B1 * !B2 * !C1 * Y)	0.00399	0.00404	0.00400
	(A1 * !B1 * !B2 * C1 * Y)	-0.00321	-0.00323	-0.00321
	(A1 * !B1 * !B2 * C1 * Y)	0.00399	0.00402	0.00400
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00321	-0.00323	-0.00321
	(A1 * !B1 * !B2 * !C1 * Y)	0.00400	0.00403	0.00401
	(!A1 * B2 * !C1 * Y)	-0.00272	-0.00302	-0.00303
	(!A1 * B2 * !C1 * Y)	0.00407	0.00413	0.00409
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00279	-0.00304	-0.00305
	(!A1 * B1 * !B2 * !C1 * Y)	0.00407	0.00413	0.00409
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00289	-0.00308	-0.00309
	(!A1 * !B1 * !B2 * C1 * Y)	0.00409	0.00411	0.00409
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00290	-0.00308	-0.00310
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00409	0.00412	0.00409

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	-0.00681	-0.00686	-0.00707
	(A1 * B2 * C1 * !Y)	0.00414	0.00415	0.00394
	(A1 * B2 * !C1 * Y)	-0.00626	-0.00629	-0.00627
	(A1 * B2 * !C1 * Y)	0.00819	0.00826	0.00823
	(A1 * B1 * !B2 * C1 * !Y)	-0.00678	-0.00686	-0.00706
	(A1 * B1 * !B2 * C1 * !Y)	0.00410	0.00415	0.00394
	(A1 * B1 * !B2 * !C1 * Y)	-0.00626	-0.00629	-0.00627
	(A1 * B1 * !B2 * !C1 * Y)	0.00819	0.00825	0.00823
	(A1 * !B1 * !B2 * C1 * Y)	-0.00627	-0.00630	-0.00627
	(A1 * !B1 * !B2 * C1 * Y)	0.00821	0.00824	0.00821
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00628	-0.00630	-0.00627
	(A1 * !B1 * !B2 * !C1 * Y)	0.00823	0.00827	0.00823
	(!A1 * B2 * !C1 * Y)	-0.00534	-0.00592	-0.00591
	(!A1 * B2 * !C1 * Y)	0.00837	0.00848	0.00839
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00546	-0.00596	-0.00595
	(!A1 * B1 * !B2 * !C1 * Y)	0.00840	0.00847	0.00839
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00564	-0.00602	-0.00604
	(!A1 * !B1 * !B2 * C1 * Y)	0.00839	0.00845	0.00839
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00565	-0.00601	-0.00603
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00839	0.00845	0.00839

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)**	0.00221	0.00196	0.00192
	(A2 * B2 * C1 * !Y)	-0.00174	-0.00205	-0.00205
	(A2 * !B2 * !C1 * Y)	0.00169	0.00170	0.00168
	(A2 * !B2 * !C1 * Y)	-0.00225	-0.00226	-0.00224
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00175	0.00177	0.00175
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00219	-0.00222	-0.00222
	(A1 * !A2 * B2 * C1 * !Y)	0.00221	0.00196	0.00192
	(A1 * !A2 * B2 * C1 * !Y)	-0.00174	-0.00205	-0.00205
	(A1 * !A2 * !B2 * !C1 * Y)	0.00169	0.00170	0.00168
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00225	-0.00226	-0.00224
	(!A1 * !A2 * B2 * C1 * Y)	0.00078	0.00079	0.00078
	(!A1 * !A2 * B2 * C1 * Y)	-0.00220	-0.00225	-0.00224
	(!A1 * !A2 * B2 * !C1 * Y)	0.00100	0.00101	0.00100
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00220	-0.00224	-0.00223
	(!A1 * !A2 * !B2 * C1 * Y)	0.00081	0.00080	0.00082
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00225	-0.00224	-0.00223
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00105	0.00105	0.00105
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00225	-0.00225	-0.00225

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.00438	0.00383	0.00377
	(A2 * B2 * C1 * !Y)	-0.00341	-0.00407	-0.00407
	(A2 * !B2 * !C1 * Y)	0.00325	0.00329	0.00327
	(A2 * !B2 * !C1 * Y)	-0.00444	-0.00446	-0.00445
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00341	0.00346	0.00341
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00434	-0.00442	-0.00440
	(A1 * !A2 * B2 * C1 * !Y)	0.00438	0.00383	0.00377
	(A1 * !A2 * B2 * C1 * !Y)	-0.00341	-0.00407	-0.00407
	(A1 * !A2 * !B2 * !C1 * Y)	0.00327	0.00330	0.00327
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00445	-0.00447	-0.00445
	(!A1 * !A2 * B2 * C1 * Y)	0.00142	0.00143	0.00142
	(!A1 * !A2 * B2 * C1 * Y)	-0.00434	-0.00445	-0.00443
	(!A1 * !A2 * B2 * !C1 * Y)	0.00183	0.00185	0.00183
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00434	-0.00444	-0.00441
	(!A1 * !A2 * !B2 * C1 * Y)	0.00148	0.00148	0.00149
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00443	-0.00445	-0.00442
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00193	0.00195	0.00193
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00445	-0.00448	-0.00446

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.00835	0.00719	0.00707
	(A2 * B2 * C1 * !Y)	-0.00668	-0.00810	-0.00809
	(A2 * !B2 * !C1 * Y)	0.00628	0.00634	0.00629
	(A2 * !B2 * !C1 * Y)	-0.00861	-0.00865	-0.00861
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00660	0.00670	0.00662
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00834	-0.00857	-0.00850
	(A1 * !A2 * B2 * C1 * !Y)	0.00835	0.00719	0.00707
	(A1 * !A2 * B2 * C1 * !Y)	-0.00667	-0.00810	-0.00809
	(A1 * !A2 * !B2 * !C1 * Y)	0.00629	0.00634	0.00630
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00861	-0.00864	-0.00861
	(!A1 * !A2 * B2 * C1 * Y)	0.00264	0.00266	0.00264
	(!A1 * !A2 * B2 * C1 * Y)	-0.00839	-0.00860	-0.00856
	(!A1 * !A2 * B2 * !C1 * Y)	0.00342	0.00345	0.00341
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00839	-0.00861	-0.00852
	(!A1 * !A2 * !B2 * C1 * Y)	0.00279	0.00279	0.00278
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00862	-0.00863	-0.00856
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00359	0.00364	0.00361
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00860	-0.00869	-0.00863

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)**	-0.00191	-0.00191	-0.00191
	(A2 * B2 * C1 * !Y)	0.00204	0.00205	0.00205
	(A2 * !B2 * !C1 * Y)	-0.00158	-0.00170	-0.00168
	(A2 * !B2 * !C1 * Y)	0.00229	0.00227	0.00225
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00174	-0.00175	-0.00174
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00221	0.00222	0.00222
	(A1 * !A2 * B2 * C1 * !Y)	-0.00191	-0.00192	-0.00191
	(A1 * !A2 * B2 * C1 * !Y)	0.00204	0.00206	0.00205
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00155	-0.00170	-0.00168
	(A1 * !A2 * !B2 * !C1 * Y)	0.00230	0.00227	0.00225
	(!A1 * !A2 * B2 * C1 * Y)	-0.00074	-0.00075	-0.00077
	(!A1 * !A2 * B2 * C1 * Y)	0.00227	0.00229	0.00224
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00100	-0.00101	-0.00100
	(!A1 * !A2 * B2 * !C1 * Y)	0.00223	0.00225	0.00223
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00076	-0.00077	-0.00078
	(!A1 * !A2 * !B2 * C1 * Y)	0.00230	0.00233	0.00227
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00105	-0.00105	-0.00105
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00231	0.00232	0.00226

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00373	-0.00375	-0.00374
	(A2 * B2 * C1 * !Y)	0.00403	0.00407	0.00407
	(A2 * !B2 * !C1 * Y)	-0.00299	-0.00328	-0.00327
	(A2 * !B2 * !C1 * Y)	0.00458	0.00450	0.00446
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00341	-0.00341	-0.00341
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00441	0.00442	0.00440
	(A1 * !A2 * B2 * C1 * !Y)	-0.00373	-0.00376	-0.00374
	(A1 * !A2 * B2 * C1 * !Y)	0.00403	0.00408	0.00407
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00296	-0.00328	-0.00327
	(A1 * !A2 * !B2 * !C1 * Y)	0.00460	0.00450	0.00446
	(!A1 * !A2 * B2 * C1 * Y)	-0.00134	-0.00135	-0.00140
	(!A1 * !A2 * B2 * C1 * Y)	0.00453	0.00456	0.00443
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00183	-0.00185	-0.00183
	(!A1 * !A2 * B2 * !C1 * Y)	0.00447	0.00453	0.00441
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00136	-0.00139	-0.00142
	(!A1 * !A2 * !B2 * C1 * Y)	0.00458	0.00467	0.00449
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00193	-0.00195	-0.00193
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00465	0.00468	0.00449

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	-0.00703	-0.00707	-0.00702
	(A2 * B2 * C1 * !Y)	0.00804	0.00813	0.00809
	(A2 * !B2 * !C1 * Y)	-0.00567	-0.00634	-0.00629
	(A2 * !B2 * !C1 * Y)	0.00893	0.00868	0.00863
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00659	-0.00664	-0.00661
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00846	0.00857	0.00850
	(A1 * !A2 * B2 * C1 * !Y)	-0.00702	-0.00706	-0.00702
	(A1 * !A2 * B2 * C1 * !Y)	0.00804	0.00812	0.00809
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00557	-0.00634	-0.00630
	(A1 * !A2 * !B2 * !C1 * Y)	0.00898	0.00869	0.00863
	(!A1 * !A2 * B2 * C1 * Y)	-0.00250	-0.00252	-0.00260
	(!A1 * !A2 * B2 * C1 * Y)	0.00876	0.00881	0.00856
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00342	-0.00345	-0.00341
	(!A1 * !A2 * B2 * !C1 * Y)	0.00863	0.00871	0.00852
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00255	-0.00262	-0.00265
	(!A1 * !A2 * !B2 * C1 * Y)	0.00885	0.00902	0.00869
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00359	-0.00364	-0.00361
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00904	0.00893	0.00871

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)**	0.00188	0.00190	0.00189
	(A2 * B1 * C1 * !Y)	-0.00098	-0.00099	-0.00098
	(A2 * B1 * !C1 * Y)	0.00166	0.00169	0.00167
	(A2 * B1 * !C1 * Y)	-0.00206	-0.00209	-0.00209
	(A2 * !B1 * !C1 * Y)	0.00161	0.00162	0.00161
	(A2 * !B1 * !C1 * Y)	-0.00212	-0.00212	-0.00212
	(A1 * !A2 * B1 * C1 * !Y)	0.00188	0.00192	0.00189
	(A1 * !A2 * B1 * C1 * !Y)	-0.00098	-0.00099	-0.00098
	(A1 * !A2 * B1 * !C1 * Y)	0.00166	0.00167	0.00167
	(A1 * !A2 * B1 * !C1 * Y)	-0.00206	-0.00210	-0.00209
	(A1 * !A2 * !B1 * !C1 * Y)	0.00162	0.00162	0.00161
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00212	-0.00212	-0.00212
	(!A1 * !A2 * B1 * C1 * Y)	0.00071	0.00072	0.00071
	(!A1 * !A2 * B1 * C1 * Y)	-0.00207	-0.00210	-0.00210
	(!A1 * !A2 * B1 * !C1 * Y)	0.00093	0.00094	0.00093
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00207	-0.00212	-0.00210
	(!A1 * !A2 * !B1 * C1 * Y)	0.00074	0.00074	0.00075
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00212	-0.00212	-0.00210
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00098	0.00099	0.00098
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00212	-0.00214	-0.00213

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	0.00349	0.00355	0.00350
	(A2 * B1 * C1 * !Y)	-0.00193	-0.00196	-0.00193
	(A2 * B1 * !C1 * Y)	0.00318	0.00321	0.00319
	(A2 * B1 * !C1 * Y)	-0.00395	-0.00404	-0.00401
	(A2 * !B1 * !C1 * Y)	0.00308	0.00309	0.00307
	(A2 * !B1 * !C1 * Y)	-0.00408	-0.00409	-0.00407
	(A1 * !A2 * B1 * C1 * !Y)	0.00349	0.00355	0.00350
	(A1 * !A2 * B1 * C1 * !Y)	-0.00193	-0.00196	-0.00193
	(A1 * !A2 * B1 * !C1 * Y)	0.00318	0.00322	0.00319
	(A1 * !A2 * B1 * !C1 * Y)	-0.00394	-0.00403	-0.00401
	(A1 * !A2 * !B1 * !C1 * Y)	0.00307	0.00310	0.00307
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00408	-0.00409	-0.00407
	(!A1 * !A2 * B1 * C1 * Y)	0.00126	0.00128	0.00127
	(!A1 * !A2 * B1 * C1 * Y)	-0.00394	-0.00405	-0.00403
	(!A1 * !A2 * B1 * !C1 * Y)	0.00168	0.00169	0.00168
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00395	-0.00404	-0.00402
	(!A1 * !A2 * !B1 * C1 * Y)	0.00133	0.00135	0.00134
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00406	-0.00409	-0.00404
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00178	0.00180	0.00178
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00407	-0.00411	-0.00408

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	0.00711	0.00724	0.00713
	(A2 * B1 * C1 * !Y)	-0.00386	-0.00393	-0.00386
	(A2 * B1 * !C1 * Y)	0.00645	0.00650	0.00647
	(A2 * B1 * !C1 * Y)	-0.00794	-0.00812	-0.00807
	(A2 * !B1 * !C1 * Y)	0.00616	0.00623	0.00620
	(A2 * !B1 * !C1 * Y)	-0.00817	-0.00823	-0.00820
	(A1 * !A2 * B1 * C1 * !Y)	0.00711	0.00724	0.00713
	(A1 * !A2 * B1 * C1 * !Y)	-0.00386	-0.00393	-0.00386
	(A1 * !A2 * B1 * !C1 * Y)	0.00646	0.00652	0.00647
	(A1 * !A2 * B1 * !C1 * Y)	-0.00796	-0.00811	-0.00807
	(A1 * !A2 * !B1 * !C1 * Y)	0.00618	0.00627	0.00620
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00818	-0.00825	-0.00820
	(!A1 * !A2 * B1 * C1 * Y)	0.00253	0.00256	0.00254
	(!A1 * !A2 * B1 * C1 * Y)	-0.00793	-0.00814	-0.00811
	(!A1 * !A2 * B1 * !C1 * Y)	0.00331	0.00336	0.00331
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00795	-0.00819	-0.00810
	(!A1 * !A2 * !B1 * C1 * Y)	0.00266	0.00270	0.00268
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00817	-0.00824	-0.00815
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00351	0.00355	0.00351
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00822	-0.00828	-0.00823

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)**	-0.00183	-0.00184	-0.00188
	(A2 * B1 * C1 * !Y)	0.00103	0.00103	0.00099
	(A2 * B1 * !C1 * Y)	-0.00166	-0.00167	-0.00166
	(A2 * B1 * !C1 * Y)	0.00208	0.00209	0.00209
	(A2 * !B1 * !C1 * Y)	-0.00152	-0.00161	-0.00161
	(A2 * !B1 * !C1 * Y)	0.00215	0.00214	0.00212
	(A1 * !A2 * B1 * C1 * !Y)	-0.00183	-0.00183	-0.00188
	(A1 * !A2 * B1 * C1 * !Y)	0.00103	0.00102	0.00099
	(A1 * !A2 * B1 * !C1 * Y)	-0.00166	-0.00167	-0.00166
	(A1 * !A2 * B1 * !C1 * Y)	0.00207	0.00210	0.00209
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00149	-0.00162	-0.00161
	(A1 * !A2 * !B1 * !C1 * Y)	0.00216	0.00214	0.00212
	(!A1 * !A2 * B1 * C1 * Y)	-0.00068	-0.00069	-0.00070
	(!A1 * !A2 * B1 * C1 * Y)	0.00213	0.00214	0.00210
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00093	-0.00094	-0.00093
	(!A1 * !A2 * B1 * !C1 * Y)	0.00210	0.00212	0.00210
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00069	-0.00070	-0.00071
	(!A1 * !A2 * !B1 * C1 * Y)	0.00216	0.00219	0.00214
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00098	-0.00099	-0.00098
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00217	0.00218	0.00213

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	-0.00334	-0.00337	-0.00348
	(A2 * B1 * C1 * !Y)	0.00204	0.00206	0.00197
	(A2 * B1 * !C1 * Y)	-0.00318	-0.00320	-0.00318
	(A2 * B1 * !C1 * Y)	0.00399	0.00405	0.00401
	(A2 * !B1 * !C1 * Y)	-0.00277	-0.00308	-0.00307
	(A2 * !B1 * !C1 * Y)	0.00419	0.00412	0.00408
	(A1 * !A2 * B1 * C1 * !Y)	-0.00336	-0.00337	-0.00348
	(A1 * !A2 * B1 * C1 * !Y)	0.00206	0.00206	0.00197
	(A1 * !A2 * B1 * !C1 * Y)	-0.00318	-0.00320	-0.00318
	(A1 * !A2 * B1 * !C1 * Y)	0.00399	0.00403	0.00401
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00274	-0.00308	-0.00307
	(A1 * !A2 * !B1 * !C1 * Y)	0.00421	0.00410	0.00408
	(!A1 * !A2 * B1 * C1 * Y)	-0.00122	-0.00122	-0.00126
	(!A1 * !A2 * B1 * C1 * Y)	0.00412	0.00412	0.00403
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00168	-0.00169	-0.00168
	(!A1 * !A2 * B1 * !C1 * Y)	0.00403	0.00406	0.00402
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00123	-0.00126	-0.00128
	(!A1 * !A2 * !B1 * C1 * Y)	0.00418	0.00425	0.00411
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00178	-0.00180	-0.00178
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00423	0.00425	0.00410

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	-0.00681	-0.00687	-0.00709
	(A2 * B1 * C1 * !Y)	0.00407	0.00411	0.00393
	(A2 * B1 * !C1 * Y)	-0.00644	-0.00649	-0.00645
	(A2 * B1 * !C1 * Y)	0.00803	0.00814	0.00807
	(A2 * !B1 * !C1 * Y)	-0.00555	-0.00623	-0.00620
	(A2 * !B1 * !C1 * Y)	0.00851	0.00829	0.00823
	(A1 * !A2 * B1 * C1 * !Y)	-0.00685	-0.00686	-0.00709
	(A1 * !A2 * B1 * C1 * !Y)	0.00412	0.00411	0.00393
	(A1 * !A2 * B1 * !C1 * Y)	-0.00643	-0.00648	-0.00645
	(A1 * !A2 * B1 * !C1 * Y)	0.00802	0.00811	0.00807
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00547	-0.00624	-0.00620
	(A1 * !A2 * !B1 * !C1 * Y)	0.00859	0.00826	0.00822
	(!A1 * !A2 * B1 * C1 * Y)	-0.00243	-0.00243	-0.00251
	(!A1 * !A2 * B1 * C1 * Y)	0.00832	0.00831	0.00811
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00331	-0.00336	-0.00331
	(!A1 * !A2 * B1 * !C1 * Y)	0.00818	0.00832	0.00810
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00247	-0.00250	-0.00255
	(!A1 * !A2 * !B1 * C1 * Y)	0.00843	0.00853	0.00829
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00351	-0.00355	-0.00351
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00859	0.00861	0.00829

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)	0.00069	0.00069	0.00065
	(A2 * !B1 * !B2 * Y)	-0.00255	-0.00255	-0.00261
	(!A2 * !B1 * !B2 * Y)	0.00068	0.00069	0.00065
	(!A2 * !B1 * !B2 * Y)	-0.00253	-0.00255	-0.00261
	(!A1 * !A2 * B2 * Y)	0.00072	0.00071	0.00062
	(!A1 * !A2 * B2 * Y)	-0.00240	-0.00240	-0.00259
	(!A1 * !A2 * B1 * !B2 * Y)	0.00071	0.00072	0.00063
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00241	-0.00243	-0.00259
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	0.00125	0.00125	0.00117
	(A2 * !B1 * !B2 * Y)	-0.00473	-0.00475	-0.00487
	(!A2 * !B1 * !B2 * Y)	0.00124	0.00125	0.00117
	(!A2 * !B1 * !B2 * Y)	-0.00472	-0.00476	-0.00487
	(!A1 * !A2 * B2 * Y)	0.00130	0.00131	0.00113
	(!A1 * !A2 * B2 * Y)	-0.00447	-0.00450	-0.00484
	(!A1 * !A2 * B1 * !B2 * Y)	0.00131	0.00132	0.00115
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00451	-0.00455	-0.00484
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	0.00214	0.00215	0.00202
	(A2 * !B1 * !B2 * Y)	-0.00961	-0.00966	-0.00987
	(!A2 * !B1 * !B2 * Y)	0.00215	0.00215	0.00202
	(!A2 * !B1 * !B2 * Y)	-0.00964	-0.00967	-0.00987
	(!A1 * !A2 * B2 * Y)	0.00226	0.00226	0.00196
	(!A1 * !A2 * B2 * Y)	-0.00915	-0.00919	-0.00980
	(!A1 * !A2 * B1 * !B2 * Y)	0.00228	0.00228	0.00200
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00923	-0.00928	-0.00981

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)	-0.00063	-0.00063	-0.00063
	(A2 * !B1 * !B2 * Y)	0.00263	0.00262	0.00262
	(!A2 * !B1 * !B2 * Y)	-0.00062	-0.00064	-0.00063
	(!A2 * !B1 * !B2 * Y)	0.00260	0.00266	0.00262
	(!A1 * !A2 * B2 * Y)	-0.00060	-0.00060	-0.00060
	(!A1 * !A2 * B2 * Y)	0.00261	0.00262	0.00262
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00061	-0.00062	-0.00061
	(!A1 * !A2 * B1 * !B2 * Y)	0.00260	0.00266	0.00262
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	-0.00114	-0.00114	-0.00114
	(A2 * !B1 * !B2 * Y)	0.00487	0.00491	0.00489
	(!A2 * !B1 * !B2 * Y)	-0.00113	-0.00116	-0.00114
	(!A2 * !B1 * !B2 * Y)	0.00486	0.00497	0.00489
	(!A1 * !A2 * B2 * Y)	-0.00110	-0.00110	-0.00109
	(!A1 * !A2 * B2 * Y)	0.00487	0.00491	0.00489
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00111	-0.00111	-0.00111
	(!A1 * !A2 * B1 * !B2 * Y)	0.00487	0.00490	0.00489
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	-0.00196	-0.00197	-0.00196
	(A2 * !B1 * !B2 * Y)	0.00987	0.00992	0.00990
	(!A2 * !B1 * !B2 * Y)	-0.00196	-0.00200	-0.00196
	(!A2 * !B1 * !B2 * Y)	0.00985	0.01006	0.00990
	(!A1 * !A2 * B2 * Y)	-0.00189	-0.00190	-0.00188
	(!A1 * !A2 * B2 * Y)	0.00986	0.00993	0.00990
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00191	-0.00195	-0.00190
	(!A1 * !A2 * B1 * !B2 * Y)	0.00985	0.01006	0.00990

SKY130_FD_SC_HS__O221Ax

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00260	0.00258	0.00253	0.00269	0.00265	1.16846
sky130_fd_sc_hs__o221a_2	0.00276	0.00271	0.00271	0.00282	0.00277	2.32474
sky130_fd_sc_hs__o221a_4	0.00518	0.00470	0.00549	0.00471	0.00478	4.45140

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221a_1	0.00000	0.17044	0.59728
sky130_fd_sc_hs__o221a_2	0.00000	0.22626	0.60470
sky130_fd_sc_hs__o221a_4	0.00000	0.45557	1.20941

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)	0.12283	0.62319	6.17374
	A2->X (RR)	0.11483	0.61108	6.17530
	B1->X (RR)	0.11523	0.64099	6.36442
	B2->X (RR)	0.10789	0.62076	6.35048
	C1->X (RR)	0.10443	0.63214	6.56085
sky130_fd_sc_hs__o221a_2	A1->X (RR)	0.12021	0.52619	6.09828
	A2->X (RR)	0.11310	0.51640	6.09406
	B1->X (RR)	0.11300	0.54893	6.29354
	B2->X (RR)	0.10864	0.53360	6.28339
	C1->X (RR)	0.10290	0.54388	6.47901
sky130_fd_sc_hs__o221a_4	A1->X (RR)	0.13023	0.47127	6.27784
	A2->X (RR)	0.12199	0.46253	6.30630
	B1->X (RR)	0.12383	0.49505	6.44591
	B2->X (RR)	0.11496	0.47340	6.44070
	C1->X (RR)	0.10947	0.48991	6.66172

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221a_1	A1->X (FF)	0.17071	0.63569	4.88471
	A2->X (FF)	0.15674	0.64329	4.95462
	B1->X (FF)	0.14611	0.59454	4.72055
	B2->X (FF)	0.13337	0.59929	4.75743
	C1->X (FF)	0.06773	0.47484	4.40349
sky130_fd_sc_hs__o221a_2	A1->X (FF)	0.19933	0.65039	5.07606
	A2->X (FF)	0.18401	0.65934	5.13919
	B1->X (FF)	0.16904	0.60497	4.91672
	B2->X (FF)	0.15636	0.61445	4.94595
	C1->X (FF)	0.07789	0.47713	4.54561
sky130_fd_sc_hs__o221a_4	A1->X (FF)	0.17942	0.58964	5.04471
	A2->X (FF)	0.16219	0.59327	5.09017
	B1->X (FF)	0.16179	0.56016	4.91956
	B2->X (FF)	0.14324	0.56088	4.94892
	C1->X (FF)	0.07422	0.45159	4.57319

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221a_1	A1	0.01634	0.01619	0.03427
	A1	0.00561	0.00556	0.02468
	A2	0.01447	0.01476	0.03935
	A2	0.00479	0.00516	0.03098
	B1	0.01463	0.01476	0.03797
	B1	0.00571	0.00614	0.03148
	B2	0.01289	0.01307	0.04419
	B2	0.00474	0.00533	0.03884
	C1	0.00942	0.01114	0.05546
	C1	0.00454	0.00626	0.05082
sky130_fd_sc_hs__o221a_2	A1	0.01989	0.01994	0.03800
	A1	0.00968	0.00976	0.02871
	A2	0.01642	0.01704	0.04225
	A2	0.00764	0.00826	0.03436
	B1	0.01800	0.01829	0.04146
	B1	0.00965	0.00995	0.03382
	B2	0.01630	0.01661	0.04749
	B2	0.00757	0.00835	0.04217
	C1	0.01254	0.01427	0.05800
	C1	0.00734	0.00910	0.05356

sky130_fd_sc_hs__o221a_4	**A1**	0.03725	0.03780	0.08055
	A1	0.01609	0.01701	0.06247
	A2	0.02935	0.03057	0.08798
	A2	0.01406	0.01537	0.07415
	B1	0.03452	0.03536	0.08198
	B1	0.01597	0.01736	0.06812
	B2	0.02525	0.02692	0.09228
	B2	0.01401	0.01579	0.08212
	C1	0.02240	0.02612	0.11213
	C1	0.01349	0.01734	0.10411

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221a_1	**A1**	0.00586	0.00603	0.02849
	A1	0.01515	0.01535	0.03706
	A2	0.00584	0.00706	0.04017
	A2	0.01407	0.01531	0.04765
	B1	0.00495	0.00555	0.02935
	B1	0.01281	0.01327	0.03575
	B2	0.00474	0.00664	0.04001
	B2	0.01182	0.01350	0.04483
	C1	0.00357	0.00608	0.04820
	C1	0.01043	0.01267	0.05048

sky130_fd_sc_hs__o221a_2	**A1**	0.00914	0.00877	0.03106
	A1	0.01909	0.01878	0.04091
	A2	0.00928	0.00987	0.04431
	A2	0.01797	0.01873	0.05145
	B1	0.00800	0.00819	0.03288
	B1	0.01627	0.01647	0.03943
	B2	0.00783	0.00925	0.04304
	B2	0.01522	0.01665	0.04881
	C1	0.00598	0.00889	0.05129
	C1	0.01320	0.01565	0.05419
sky130_fd_sc_hs__o221a_4	**A1**	0.01712	0.01719	0.06351
	A1	0.03539	0.03545	0.08170
	A2	0.01761	0.01955	0.08720
	A2	0.03330	0.03522	0.10100
	B1	0.01501	0.01545	0.06185
	B1	0.03089	0.03132	0.07748
	B2	0.01558	0.01842	0.08227
	B2	0.02863	0.03142	0.09523
	C1	0.01195	0.01751	0.10264
	C1	0.02498	0.02989	0.10684

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)**	0.00193	0.00166	0.00163
	(A2 * B2 * C1 * X)	-0.00154	-0.00184	-0.00185
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00141	0.00143	0.00141
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00203	-0.00206	-0.00206
	(A2 * B1 * !B2 * C1 * X)	0.00193	0.00166	0.00163
	(A2 * B1 * !B2 * C1 * X)	-0.00154	-0.00184	-0.00185
	(A2 * !B1 * !B2 * !X)	0.00141	0.00143	0.00141
	(A2 * !B1 * !B2 * !X)	-0.00203	-0.00206	-0.00205
	(!A2 * B2 * !C1 * !X)	0.00133	0.00134	0.00133
	(!A2 * B2 * !C1 * !X)	-0.00207	-0.00209	-0.00207
	(!A2 * B1 * !B2 * !C1 * !X)	0.00132	0.00132	0.00132
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00207	-0.00208	-0.00207
	(!A2 * !B1 * !B2 * C1 * !X)	0.00134	0.00135	0.00134
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00208	-0.00209	-0.00208
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00134	0.00135	0.00133
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00208	-0.00209	-0.00208

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00217	0.00191	0.00187
	(A2 * B2 * C1 * X)	-0.00153	-0.00182	-0.00184
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00163	0.00166	0.00164
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00204	-0.00208	-0.00207
	(A2 * B1 * !B2 * C1 * X)	0.00217	0.00192	0.00187
	(A2 * B1 * !B2 * C1 * X)	-0.00152	-0.00182	-0.00183
	(A2 * !B1 * !B2 * !X)	0.00164	0.00166	0.00164
	(A2 * !B1 * !B2 * !X)	-0.00204	-0.00208	-0.00207
	(!A2 * B2 * !C1 * !X)	0.00151	0.00153	0.00151
	(!A2 * B2 * !C1 * !X)	-0.00209	-0.00210	-0.00209
	(!A2 * B1 * !B2 * !C1 * !X)	0.00154	0.00156	0.00154
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00209	-0.00210	-0.00209
	(!A2 * !B1 * !B2 * C1 * !X)	0.00156	0.00157	0.00155
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00209	-0.00210	-0.00208
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00156	0.00157	0.00155
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00209	-0.00210	-0.00208

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00397	0.00350	0.00343
	(A2 * B2 * C1 * X)	-0.00304	-0.00364	-0.00365
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00313	0.00318	0.00315
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00384	-0.00392	-0.00392
	(A2 * B1 * !B2 * C1 * X)	0.00397	0.00350	0.00343
	(A2 * B1 * !B2 * C1 * X)	-0.00304	-0.00364	-0.00365
	(A2 * !B1 * !B2 * !X)	0.00313	0.00319	0.00315
	(A2 * !B1 * !B2 * !X)	-0.00384	-0.00392	-0.00392
	(!A2 * B2 * !C1 * !X)	0.00296	0.00298	0.00297
	(!A2 * B2 * !C1 * !X)	-0.00395	-0.00396	-0.00396
	(!A2 * B1 * !B2 * !C1 * !X)	0.00299	0.00302	0.00300
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00395	-0.00397	-0.00396
	(!A2 * !B1 * !B2 * C1 * !X)	0.00304	0.00307	0.00304
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00395	-0.00397	-0.00396
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00304	0.00306	0.00304
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00395	-0.00397	-0.00396

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)**	-0.00160	-0.00161	-0.00161
	(A2 * B2 * C1 * X)	0.00184	0.00186	0.00186
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00141	-0.00141	-0.00141
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00206	0.00206	0.00206
	(A2 * B1 * !B2 * C1 * X)	-0.00161	-0.00161	-0.00161
	(A2 * B1 * !B2 * C1 * X)	0.00186	0.00186	0.00186
	(A2 * !B1 * !B2 * !X)	-0.00140	-0.00141	-0.00141
	(A2 * !B1 * !B2 * !X)	0.00205	0.00206	0.00205
	(!A2 * B2 * !C1 * !X)	-0.00120	-0.00134	-0.00133
	(!A2 * B2 * !C1 * !X)	0.00208	0.00210	0.00208
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00122	-0.00132	-0.00132
	(!A2 * B1 * !B2 * !C1 * !X)	0.00208	0.00210	0.00208
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00126	-0.00134	-0.00134
	(!A2 * !B1 * !B2 * C1 * !X)	0.00208	0.00209	0.00208
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00126	-0.00135	-0.00133
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00208	0.00210	0.00208

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	-0.00185	-0.00186	-0.00185
	(A2 * B2 * C1 * X)	0.00183	0.00185	0.00185
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00163	-0.00164	-0.00163
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00207	0.00208	0.00207
	(A2 * B1 * !B2 * C1 * X)	-0.00185	-0.00186	-0.00185
	(A2 * B1 * !B2 * C1 * X)	0.00183	0.00185	0.00185
	(A2 * !B1 * !B2 * !X)	-0.00162	-0.00163	-0.00163
	(A2 * !B1 * !B2 * !X)	0.00205	0.00208	0.00207
	(!A2 * B2 * !C1 * !X)	-0.00139	-0.00153	-0.00151
	(!A2 * B2 * !C1 * !X)	0.00209	0.00211	0.00209
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00142	-0.00156	-0.00154
	(!A2 * B1 * !B2 * !C1 * !X)	0.00209	0.00211	0.00209
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00146	-0.00157	-0.00155
	(!A2 * !B1 * !B2 * C1 * !X)	0.00209	0.00211	0.00209
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00147	-0.00157	-0.00155
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00209	0.00211	0.00209

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	-0.00339	-0.00342	-0.00339
	(A2 * B2 * C1 * X)	0.00363	0.00369	0.00366
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00313	-0.00314	-0.00314
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00391	0.00392	0.00392
	(A2 * B1 * !B2 * C1 * X)	-0.00339	-0.00342	-0.00339
	(A2 * B1 * !B2 * C1 * X)	0.00363	0.00369	0.00366
	(A2 * !B1 * !B2 * !X)	-0.00313	-0.00314	-0.00314
	(A2 * !B1 * !B2 * !X)	0.00391	0.00392	0.00392
	(!A2 * B2 * !C1 * !X)	-0.00272	-0.00298	-0.00297
	(!A2 * B2 * !C1 * !X)	0.00396	0.00401	0.00397
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00277	-0.00302	-0.00300
	(!A2 * B1 * !B2 * !C1 * !X)	0.00396	0.00401	0.00397
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00283	-0.00304	-0.00303
	(!A2 * !B1 * !B2 * C1 * !X)	0.00395	0.00401	0.00397
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00284	-0.00305	-0.00303
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00395	0.00401	0.00397

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)**	0.00165	0.00167	0.00166
	(A1 * B2 * C1 * X)	-0.00091	-0.00092	-0.00091
	(A1 * B2 * !C1 * !X)	0.00144	0.00144	0.00145
	(A1 * B2 * !C1 * !X)	-0.00188	-0.00191	-0.00191
	(A1 * B1 * !B2 * C1 * X)	0.00165	0.00167	0.00166
	(A1 * B1 * !B2 * C1 * X)	-0.00091	-0.00092	-0.00091
	(A1 * B1 * !B2 * !C1 * !X)	0.00144	0.00145	0.00145
	(A1 * B1 * !B2 * !C1 * !X)	-0.00188	-0.00191	-0.00191
	(A1 * !B1 * !B2 * C1 * !X)	0.00144	0.00146	0.00145
	(A1 * !B1 * !B2 * C1 * !X)	-0.00188	-0.00191	-0.00190
	(A1 * !B1 * !B2 * !C1 * !X)	0.00144	0.00147	0.00145
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00188	-0.00191	-0.00191
	(!A1 * B2 * !C1 * !X)	0.00133	0.00134	0.00133
	(!A1 * B2 * !C1 * !X)	-0.00193	-0.00194	-0.00193
	(!A1 * B1 * !B2 * !C1 * !X)	0.00135	0.00136	0.00134
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00193	-0.00194	-0.00193
	(!A1 * !B1 * !B2 * C1 * !X)	0.00137	0.00138	0.00137
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00193	-0.00194	-0.00193
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00137	0.00138	0.00136
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00193	-0.00194	-0.00193

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	0.00187	0.00189	0.00188
	(A1 * B2 * C1 * X)	-0.00090	-0.00091	-0.00090
	(A1 * B2 * !C1 * !X)	0.00166	0.00169	0.00166
	(A1 * B2 * !C1 * !X)	-0.00187	-0.00191	-0.00189
	(A1 * B1 * !B2 * C1 * X)	0.00187	0.00189	0.00188
	(A1 * B1 * !B2 * C1 * X)	-0.00090	-0.00091	-0.00090
	(A1 * B1 * !B2 * !C1 * !X)	0.00166	0.00169	0.00166
	(A1 * B1 * !B2 * !C1 * !X)	-0.00186	-0.00189	-0.00190
	(A1 * !B1 * !B2 * C1 * !X)	0.00166	0.00167	0.00166
	(A1 * !B1 * !B2 * C1 * !X)	-0.00187	-0.00190	-0.00189
	(A1 * !B1 * !B2 * !C1 * !X)	0.00166	0.00168	0.00166
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00186	-0.00191	-0.00190
	(!A1 * B2 * !C1 * !X)	0.00152	0.00154	0.00153
	(!A1 * B2 * !C1 * !X)	-0.00192	-0.00192	-0.00192
	(!A1 * B1 * !B2 * !C1 * !X)	0.00154	0.00156	0.00154
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00192	-0.00193	-0.00192
	(!A1 * !B1 * !B2 * C1 * !X)	0.00158	0.00158	0.00157
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00192	-0.00192	-0.00192
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00158	0.00159	0.00157
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00192	-0.00193	-0.00192

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	0.00306	0.00309	0.00306
	(A1 * B2 * C1 * X)	-0.00180	-0.00181	-0.00179
	(A1 * B2 * !C1 * !X)	0.00270	0.00273	0.00271
	(A1 * B2 * !C1 * !X)	-0.00365	-0.00369	-0.00371
	(A1 * B1 * !B2 * C1 * X)	0.00306	0.00309	0.00306
	(A1 * B1 * !B2 * C1 * X)	-0.00180	-0.00181	-0.00179
	(A1 * B1 * !B2 * !C1 * !X)	0.00270	0.00273	0.00271
	(A1 * B1 * !B2 * !C1 * !X)	-0.00365	-0.00373	-0.00372
	(A1 * !B1 * !B2 * C1 * !X)	0.00270	0.00273	0.00271
	(A1 * !B1 * !B2 * C1 * !X)	-0.00365	-0.00371	-0.00371
	(A1 * !B1 * !B2 * !C1 * !X)	0.00270	0.00272	0.00271
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00365	-0.00373	-0.00372
	(!A1 * B2 * !C1 * !X)	0.00253	0.00253	0.00253
	(!A1 * B2 * !C1 * !X)	-0.00377	-0.00377	-0.00377
	(!A1 * B1 * !B2 * !C1 * !X)	0.00255	0.00256	0.00255
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00378	-0.00377	-0.00377
	(!A1 * !B1 * !B2 * C1 * !X)	0.00259	0.00260	0.00258
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00378	-0.00378	-0.00377
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00256	0.00261	0.00258
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00375	-0.00379	-0.00377

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)**	-0.00160	-0.00161	-0.00165
	(A1 * B2 * C1 * X)	0.00096	0.00096	0.00092
	(A1 * B2 * !C1 * !X)	-0.00144	-0.00144	-0.00144
	(A1 * B2 * !C1 * !X)	0.00190	0.00191	0.00191
	(A1 * B1 * !B2 * C1 * X)	-0.00160	-0.00161	-0.00165
	(A1 * B1 * !B2 * C1 * X)	0.00096	0.00096	0.00093
	(A1 * B1 * !B2 * !C1 * !X)	-0.00144	-0.00145	-0.00144
	(A1 * B1 * !B2 * !C1 * !X)	0.00190	0.00191	0.00191
	(A1 * !B1 * !B2 * C1 * !X)	-0.00144	-0.00145	-0.00144
	(A1 * !B1 * !B2 * C1 * !X)	0.00190	0.00191	0.00190
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00144	-0.00145	-0.00144
	(A1 * !B1 * !B2 * !C1 * !X)	0.00191	0.00191	0.00191
	(!A1 * B2 * !C1 * !X)	-0.00122	-0.00134	-0.00133
	(!A1 * B2 * !C1 * !X)	0.00193	0.00195	0.00194
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00124	-0.00136	-0.00134
	(!A1 * B1 * !B2 * !C1 * !X)	0.00193	0.00195	0.00194
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00128	-0.00137	-0.00137
	(!A1 * !B1 * !B2 * C1 * !X)	0.00193	0.00195	0.00194
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00128	-0.00137	-0.00136
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00193	0.00195	0.00194

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	-0.00181	-0.00182	-0.00187
	(A1 * B2 * C1 * X)	0.00096	0.00096	0.00092
	(A1 * B2 * !C1 * !X)	-0.00165	-0.00167	-0.00166
	(A1 * B2 * !C1 * !X)	0.00189	0.00191	0.00189
	(A1 * B1 * !B2 * C1 * X)	-0.00181	-0.00182	-0.00186
	(A1 * B1 * !B2 * C1 * X)	0.00096	0.00096	0.00092
	(A1 * B1 * !B2 * !C1 * !X)	-0.00165	-0.00166	-0.00166
	(A1 * B1 * !B2 * !C1 * !X)	0.00189	0.00189	0.00190
	(A1 * !B1 * !B2 * C1 * !X)	-0.00165	-0.00167	-0.00166
	(A1 * !B1 * !B2 * C1 * !X)	0.00189	0.00191	0.00189
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00166	-0.00167	-0.00166
	(A1 * !B1 * !B2 * !C1 * !X)	0.00190	0.00191	0.00190
	(!A1 * B2 * !C1 * !X)	-0.00140	-0.00154	-0.00153
	(!A1 * B2 * !C1 * !X)	0.00192	0.00194	0.00192
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00143	-0.00156	-0.00154
	(!A1 * B1 * !B2 * !C1 * !X)	0.00192	0.00194	0.00192
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00148	-0.00158	-0.00157
	(!A1 * !B1 * !B2 * C1 * !X)	0.00192	0.00193	0.00192
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00148	-0.00158	-0.00157
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00192	0.00193	0.00192

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	-0.00293	-0.00295	-0.00304
	(A1 * B2 * C1 * X)	0.00192	0.00193	0.00183
	(A1 * B2 * !C1 * !X)	-0.00269	-0.00269	-0.00270
	(A1 * B2 * !C1 * !X)	0.00369	0.00369	0.00371
	(A1 * B1 * !B2 * C1 * X)	-0.00293	-0.00294	-0.00304
	(A1 * B1 * !B2 * C1 * X)	0.00192	0.00193	0.00183
	(A1 * B1 * !B2 * !C1 * !X)	-0.00269	-0.00272	-0.00270
	(A1 * B1 * !B2 * !C1 * !X)	0.00370	0.00374	0.00372
	(A1 * !B1 * !B2 * C1 * !X)	-0.00269	-0.00271	-0.00270
	(A1 * !B1 * !B2 * C1 * !X)	0.00369	0.00371	0.00371
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00269	-0.00272	-0.00270
	(A1 * !B1 * !B2 * !C1 * !X)	0.00370	0.00374	0.00372
	(!A1 * B2 * !C1 * !X)	-0.00225	-0.00253	-0.00253
	(!A1 * B2 * !C1 * !X)	0.00378	0.00382	0.00378
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00230	-0.00256	-0.00255
	(!A1 * B1 * !B2 * !C1 * !X)	0.00378	0.00382	0.00378
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00239	-0.00257	-0.00258
	(!A1 * !B1 * !B2 * C1 * !X)	0.00379	0.00381	0.00378
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00239	-0.00257	-0.00258
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00379	0.00381	0.00378

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)**	0.00181	0.00156	0.00152
	(A2 * B2 * C1 * X)	-0.00158	-0.00186	-0.00188
	(A2 * !B2 * !C1 * !X)	0.00138	0.00141	0.00139
	(A2 * !B2 * !C1 * !X)	-0.00196	-0.00198	-0.00197
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00144	0.00146	0.00144
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00193	-0.00197	-0.00195
	(A1 * !A2 * B2 * C1 * X)	0.00181	0.00156	0.00152
	(A1 * !A2 * B2 * C1 * X)	-0.00158	-0.00186	-0.00188
	(A1 * !A2 * !B2 * !C1 * !X)	0.00140	0.00141	0.00140
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00198	-0.00198	-0.00197
	(!A1 * !A2 * B2 * C1 * !X)	0.00061	0.00062	0.00061
	(!A1 * !A2 * B2 * C1 * !X)	-0.00193	-0.00197	-0.00196
	(!A1 * !A2 * B2 * !C1 * !X)	0.00079	0.00080	0.00079
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00193	-0.00197	-0.00196
	(!A1 * !A2 * !B2 * C1 * !X)	0.00062	0.00062	0.00064
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00197	-0.00197	-0.00195
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00083	0.00084	0.00083
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00197	-0.00199	-0.00198

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00206	0.00181	0.00178
	(A2 * B2 * C1 * X)	-0.00154	-0.00184	-0.00185
	(A2 * !B2 * !C1 * !X)	0.00157	0.00160	0.00158
	(A2 * !B2 * !C1 * !X)	-0.00198	-0.00200	-0.00199
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00165	0.00166	0.00165
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00194	-0.00197	-0.00197
	(A1 * !A2 * B2 * C1 * X)	0.00206	0.00181	0.00178
	(A1 * !A2 * B2 * C1 * X)	-0.00154	-0.00184	-0.00184
	(A1 * !A2 * !B2 * !C1 * !X)	0.00158	0.00160	0.00159
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00198	-0.00200	-0.00199
	(!A1 * !A2 * B2 * C1 * !X)	0.00068	0.00069	0.00068
	(!A1 * !A2 * B2 * C1 * !X)	-0.00195	-0.00199	-0.00198
	(!A1 * !A2 * B2 * !C1 * !X)	0.00088	0.00089	0.00088
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00196	-0.00199	-0.00198
	(!A1 * !A2 * !B2 * C1 * !X)	0.00070	0.00070	0.00072
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00199	-0.00198	-0.00198
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00093	0.00094	0.00093
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00200	-0.00202	-0.00200

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00432	0.00384	0.00378
	(A2 * B2 * C1 * X)	-0.00306	-0.00367	-0.00367
	(A2 * !B2 * !C1 * !X)	0.00340	0.00343	0.00340
	(A2 * !B2 * !C1 * !X)	-0.00395	-0.00397	-0.00395
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00352	0.00357	0.00353
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00383	-0.00391	-0.00390
	(A1 * !A2 * B2 * C1 * X)	0.00433	0.00384	0.00378
	(A1 * !A2 * B2 * C1 * X)	-0.00306	-0.00367	-0.00367
	(A1 * !A2 * !B2 * !C1 * !X)	0.00340	0.00339	0.00340
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00395	-0.00394	-0.00395
	(!A1 * !A2 * B2 * C1 * !X)	0.00175	0.00177	0.00175
	(!A1 * !A2 * B2 * C1 * !X)	-0.00385	-0.00396	-0.00394
	(!A1 * !A2 * B2 * !C1 * !X)	0.00208	0.00211	0.00209
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00386	-0.00397	-0.00394
	(!A1 * !A2 * !B2 * C1 * !X)	0.00178	0.00180	0.00182
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00395	-0.00398	-0.00393
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00217	0.00220	0.00217
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00397	-0.00401	-0.00398

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)**	-0.00151	-0.00151	-0.00150
	(A2 * B2 * C1 * X)	0.00189	0.00188	0.00189
	(A2 * !B2 * !C1 * !X)	-0.00130	-0.00139	-0.00139
	(A2 * !B2 * !C1 * !X)	0.00201	0.00198	0.00198
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00144	-0.00144	-0.00144
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00196	0.00197	0.00195
	(A1 * !A2 * B2 * C1 * X)	-0.00151	-0.00151	-0.00150
	(A1 * !A2 * B2 * C1 * X)	0.00189	0.00190	0.00189
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00128	-0.00139	-0.00140
	(A1 * !A2 * !B2 * !C1 * !X)	0.00202	0.00199	0.00198
	(!A1 * !A2 * B2 * C1 * !X)	-0.00058	-0.00059	-0.00060
	(!A1 * !A2 * B2 * C1 * !X)	0.00201	0.00202	0.00197
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00079	-0.00080	-0.00079
	(!A1 * !A2 * B2 * !C1 * !X)	0.00198	0.00199	0.00196
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00059	-0.00060	-0.00062
	(!A1 * !A2 * !B2 * C1 * !X)	0.00202	0.00204	0.00199
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00083	-0.00084	-0.00083
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00203	0.00205	0.00199

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	-0.00175	-0.00177	-0.00175
	(A2 * B2 * C1 * X)	0.00184	0.00187	0.00186
	(A2 * !B2 * !C1 * !X)	-0.00147	-0.00159	-0.00158
	(A2 * !B2 * !C1 * !X)	0.00204	0.00201	0.00200
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00164	-0.00164	-0.00164
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00197	0.00197	0.00197
	(A1 * !A2 * B2 * C1 * X)	-0.00176	-0.00176	-0.00175
	(A1 * !A2 * B2 * C1 * X)	0.00186	0.00186	0.00186
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00144	-0.00159	-0.00159
	(A1 * !A2 * !B2 * !C1 * !X)	0.00204	0.00201	0.00200
	(!A1 * !A2 * B2 * C1 * !X)	-0.00064	-0.00065	-0.00067
	(!A1 * !A2 * B2 * C1 * !X)	0.00202	0.00204	0.00199
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00088	-0.00089	-0.00088
	(!A1 * !A2 * B2 * !C1 * !X)	0.00199	0.00201	0.00198
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00066	-0.00067	-0.00068
	(!A1 * !A2 * !B2 * C1 * !X)	0.00205	0.00207	0.00201
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00093	-0.00094	-0.00093
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00207	0.00209	0.00202

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	-0.00376	-0.00377	-0.00374
	(A2 * B2 * C1 * X)	0.00366	0.00369	0.00368
	(A2 * !B2 * !C1 * !X)	-0.00321	-0.00343	-0.00340
	(A2 * !B2 * !C1 * !X)	0.00404	0.00400	0.00396
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00352	-0.00352	-0.00352
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00389	0.00391	0.00390
	(A1 * !A2 * B2 * C1 * X)	-0.00375	-0.00376	-0.00374
	(A1 * !A2 * B2 * C1 * X)	0.00366	0.00369	0.00368
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00317	-0.00339	-0.00340
	(A1 * !A2 * !B2 * !C1 * !X)	0.00407	0.00399	0.00396
	(!A1 * !A2 * B2 * C1 * !X)	-0.00164	-0.00166	-0.00172
	(!A1 * !A2 * B2 * C1 * !X)	0.00409	0.00412	0.00397
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00208	-0.00211	-0.00209
	(!A1 * !A2 * B2 * !C1 * !X)	0.00402	0.00403	0.00394
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00170	-0.00172	-0.00175
	(!A1 * !A2 * !B2 * C1 * !X)	0.00407	0.00411	0.00401
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00217	-0.00220	-0.00217
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00414	0.00418	0.00403

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)**	0.00185	0.00187	0.00185
	(A2 * B1 * C1 * X)	-0.00092	-0.00093	-0.00092
	(A2 * B1 * !C1 * !X)	0.00160	0.00162	0.00160
	(A2 * B1 * !C1 * !X)	-0.00193	-0.00196	-0.00196
	(A2 * !B1 * !C1 * !X)	0.00155	0.00156	0.00155
	(A2 * !B1 * !C1 * !X)	-0.00198	-0.00199	-0.00198
	(A1 * !A2 * B1 * C1 * X)	0.00185	0.00188	0.00186
	(A1 * !A2 * B1 * C1 * X)	-0.00092	-0.00094	-0.00092
	(A1 * !A2 * B1 * !C1 * !X)	0.00160	0.00162	0.00160
	(A1 * !A2 * B1 * !C1 * !X)	-0.00193	-0.00196	-0.00196
	(A1 * !A2 * !B1 * !C1 * !X)	0.00156	0.00156	0.00156
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00198	-0.00198	-0.00198
	(!A1 * !A2 * B1 * C1 * !X)	0.00071	0.00072	0.00071
	(!A1 * !A2 * B1 * C1 * !X)	-0.00193	-0.00197	-0.00197
	(!A1 * !A2 * B1 * !C1 * !X)	0.00089	0.00090	0.00089
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00193	-0.00198	-0.00197
	(!A1 * !A2 * !B1 * C1 * !X)	0.00073	0.00073	0.00075
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00198	-0.00198	-0.00196
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00095	0.00094	0.00094
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00199	-0.00199	-0.00198

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	0.00200	0.00202	0.00200
	(A2 * B1 * C1 * X)	-0.00090	-0.00091	-0.00090
	(A2 * B1 * !C1 * !X)	0.00176	0.00177	0.00177
	(A2 * B1 * !C1 * !X)	-0.00190	-0.00193	-0.00192
	(A2 * !B1 * !C1 * !X)	0.00170	0.00171	0.00170
	(A2 * !B1 * !C1 * !X)	-0.00196	-0.00195	-0.00195
	(A1 * !A2 * B1 * C1 * X)	0.00200	0.00203	0.00200
	(A1 * !A2 * B1 * C1 * X)	-0.00090	-0.00092	-0.00090
	(A1 * !A2 * B1 * !C1 * !X)	0.00176	0.00177	0.00177
	(A1 * !A2 * B1 * !C1 * !X)	-0.00190	-0.00193	-0.00192
	(A1 * !A2 * !B1 * !C1 * !X)	0.00172	0.00172	0.00171
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00195	-0.00195	-0.00195
	(!A1 * !A2 * B1 * C1 * !X)	0.00075	0.00075	0.00075
	(!A1 * !A2 * B1 * C1 * !X)	-0.00191	-0.00194	-0.00195
	(!A1 * !A2 * B1 * !C1 * !X)	0.00094	0.00096	0.00094
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00192	-0.00196	-0.00194
	(!A1 * !A2 * !B1 * C1 * !X)	0.00077	0.00078	0.00078
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00195	-0.00195	-0.00194
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00100	0.00100	0.00099
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00197	-0.00197	-0.00197

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	0.00316	0.00319	0.00317
	(A2 * B1 * C1 * X)	-0.00181	-0.00182	-0.00180
	(A2 * B1 * !C1 * !X)	0.00276	0.00279	0.00277
	(A2 * B1 * !C1 * !X)	-0.00371	-0.00378	-0.00378
	(A2 * !B1 * !C1 * !X)	0.00267	0.00271	0.00268
	(A2 * !B1 * !C1 * !X)	-0.00382	-0.00385	-0.00383
	(A1 * !A2 * B1 * C1 * X)	0.00316	0.00321	0.00317
	(A1 * !A2 * B1 * C1 * X)	-0.00181	-0.00184	-0.00180
	(A1 * !A2 * B1 * !C1 * !X)	0.00277	0.00279	0.00277
	(A1 * !A2 * B1 * !C1 * !X)	-0.00372	-0.00378	-0.00377
	(A1 * !A2 * !B1 * !C1 * !X)	0.00267	0.00271	0.00269
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00382	-0.00385	-0.00383
	(!A1 * !A2 * B1 * C1 * !X)	0.00108	0.00109	0.00108
	(!A1 * !A2 * B1 * C1 * !X)	-0.00373	-0.00381	-0.00381
	(!A1 * !A2 * B1 * !C1 * !X)	0.00142	0.00141	0.00142
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00374	-0.00380	-0.00381
	(!A1 * !A2 * !B1 * C1 * !X)	0.00110	0.00112	0.00114
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00383	-0.00385	-0.00381
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00150	0.00151	0.00150
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00386	-0.00388	-0.00386

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)**	-0.00179	-0.00181	-0.00184
	(A2 * B1 * C1 * X)	0.00098	0.00099	0.00094
	(A2 * B1 * !C1 * !X)	-0.00160	-0.00161	-0.00160
	(A2 * B1 * !C1 * !X)	0.00195	0.00196	0.00196
	(A2 * !B1 * !C1 * !X)	-0.00146	-0.00155	-0.00155
	(A2 * !B1 * !C1 * !X)	0.00202	0.00199	0.00198
	(A1 * !A2 * B1 * C1 * X)	-0.00179	-0.00178	-0.00184
	(A1 * !A2 * B1 * C1 * X)	0.00099	0.00097	0.00094
	(A1 * !A2 * B1 * !C1 * !X)	-0.00160	-0.00161	-0.00160
	(A1 * !A2 * B1 * !C1 * !X)	0.00195	0.00196	0.00196
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00143	-0.00155	-0.00156
	(A1 * !A2 * !B1 * !C1 * !X)	0.00203	0.00199	0.00198
	(!A1 * !A2 * B1 * C1 * !X)	-0.00066	-0.00067	-0.00070
	(!A1 * !A2 * B1 * C1 * !X)	0.00205	0.00207	0.00198
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00089	-0.00090	-0.00089
	(!A1 * !A2 * B1 * !C1 * !X)	0.00200	0.00201	0.00197
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00070	-0.00071	-0.00072
	(!A1 * !A2 * !B1 * C1 * !X)	0.00204	0.00205	0.00200
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00095	-0.00094	-0.00094
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00206	0.00208	0.00200

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	-0.00195	-0.00196	-0.00199
	(A2 * B1 * C1 * X)	0.00095	0.00095	0.00092
	(A2 * B1 * !C1 * !X)	-0.00176	-0.00177	-0.00176
	(A2 * B1 * !C1 * !X)	0.00192	0.00193	0.00192
	(A2 * !B1 * !C1 * !X)	-0.00159	-0.00171	-0.00170
	(A2 * !B1 * !C1 * !X)	0.00200	0.00197	0.00196
	(A1 * !A2 * B1 * C1 * X)	-0.00195	-0.00196	-0.00199
	(A1 * !A2 * B1 * C1 * X)	0.00095	0.00096	0.00092
	(A1 * !A2 * B1 * !C1 * !X)	-0.00176	-0.00177	-0.00176
	(A1 * !A2 * B1 * !C1 * !X)	0.00192	0.00193	0.00192
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00156	-0.00171	-0.00171
	(A1 * !A2 * !B1 * !C1 * !X)	0.00201	0.00197	0.00196
	(!A1 * !A2 * B1 * C1 * !X)	-0.00069	-0.00070	-0.00073
	(!A1 * !A2 * B1 * C1 * !X)	0.00202	0.00203	0.00195
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00094	-0.00096	-0.00094
	(!A1 * !A2 * B1 * !C1 * !X)	0.00197	0.00199	0.00194
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00072	-0.00074	-0.00075
	(!A1 * !A2 * !B1 * C1 * !X)	0.00200	0.00203	0.00197
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00100	-0.00100	-0.00099
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00204	0.00206	0.00199

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	-0.00302	-0.00306	-0.00315
	(A2 * B1 * C1 * X)	0.00191	0.00194	0.00184
	(A2 * B1 * !C1 * !X)	-0.00276	-0.00277	-0.00276
	(A2 * B1 * !C1 * !X)	0.00377	0.00378	0.00378
	(A2 * !B1 * !C1 * !X)	-0.00247	-0.00268	-0.00268
	(A2 * !B1 * !C1 * !X)	0.00391	0.00387	0.00384
	(A1 * !A2 * B1 * C1 * X)	-0.00302	-0.00303	-0.00314
	(A1 * !A2 * B1 * C1 * X)	0.00191	0.00192	0.00184
	(A1 * !A2 * B1 * !C1 * !X)	-0.00276	-0.00277	-0.00276
	(A1 * !A2 * B1 * !C1 * !X)	0.00377	0.00378	0.00377
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00244	-0.00269	-0.00269
	(A1 * !A2 * !B1 * !C1 * !X)	0.00394	0.00387	0.00384
	(!A1 * !A2 * B1 * C1 * !X)	-0.00102	-0.00103	-0.00106
	(!A1 * !A2 * B1 * C1 * !X)	0.00392	0.00393	0.00381
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00142	-0.00141	-0.00142
	(!A1 * !A2 * B1 * !C1 * !X)	0.00385	0.00387	0.00381
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00105	-0.00107	-0.00109
	(!A1 * !A2 * !B1 * C1 * !X)	0.00392	0.00396	0.00388
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00150	-0.00151	-0.00150
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00398	0.00405	0.00390

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)	0.00061	0.00061	0.00057
	(A2 * !B1 * !B2 * !X)	-0.00230	-0.00230	-0.00236
	(!A2 * !B1 * !B2 * !X)	0.00061	0.00061	0.00057
	(!A2 * !B1 * !B2 * !X)	-0.00230	-0.00230	-0.00236
	(!A1 * !A2 * B2 * !X)	0.00060	0.00060	0.00052
	(!A1 * !A2 * B2 * !X)	-0.00219	-0.00220	-0.00235
	(!A1 * !A2 * B1 * !B2 * !X)	0.00061	0.00060	0.00053
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00221	-0.00221	-0.00235
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	0.00071	0.00070	0.00066
	(A2 * !B1 * !B2 * !X)	-0.00231	-0.00231	-0.00238
	(!A2 * !B1 * !B2 * !X)	0.00070	0.00070	0.00066
	(!A2 * !B1 * !B2 * !X)	-0.00231	-0.00231	-0.00238
	(!A1 * !A2 * B2 * !X)	0.00072	0.00071	0.00063
	(!A1 * !A2 * B2 * !X)	-0.00218	-0.00218	-0.00235
	(!A1 * !A2 * B1 * !B2 * !X)	0.00072	0.00071	0.00064
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00221	-0.00220	-0.00236
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	0.00102	0.00103	0.00095
	(A2 * !B1 * !B2 * !X)	-0.00433	-0.00436	-0.00447
	(!A2 * !B1 * !B2 * !X)	0.00102	0.00103	0.00095
	(!A2 * !B1 * !B2 * !X)	-0.00433	-0.00436	-0.00447
	(!A1 * !A2 * B2 * !X)	0.00101	0.00102	0.00088
	(!A1 * !A2 * B2 * !X)	-0.00411	-0.00416	-0.00444
	(!A1 * !A2 * B1 * !B2 * !X)	0.00102	0.00103	0.00090
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00416	-0.00419	-0.00444

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)	-0.00055	-0.00056	-0.00055
	(A2 * !B1 * !B2 * !X)	0.00236	0.00241	0.00237
	(!A2 * !B1 * !B2 * !X)	-0.00055	-0.00056	-0.00055
	(!A2 * !B1 * !B2 * !X)	0.00236	0.00241	0.00237
	(!A1 * !A2 * B2 * !X)	-0.00052	-0.00053	-0.00052
	(!A1 * !A2 * B2 * !X)	0.00237	0.00238	0.00237
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00053	-0.00054	-0.00053
	(!A1 * !A2 * B1 * !B2 * !X)	0.00237	0.00241	0.00237
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	-0.00064	-0.00066	-0.00064
	(A2 * !B1 * !B2 * !X)	0.00238	0.00242	0.00239
	(!A2 * !B1 * !B2 * !X)	-0.00064	-0.00066	-0.00064
	(!A2 * !B1 * !B2 * !X)	0.00238	0.00242	0.00239
	(!A1 * !A2 * B2 * !X)	-0.00062	-0.00064	-0.00062
	(!A1 * !A2 * B2 * !X)	0.00236	0.00242	0.00238
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00063	-0.00064	-0.00063
	(!A1 * !A2 * B1 * !B2 * !X)	0.00238	0.00242	0.00238
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	-0.00091	-0.00094	-0.00092
	(A2 * !B1 * !B2 * !X)	0.00446	0.00456	0.00449
	(!A2 * !B1 * !B2 * !X)	-0.00091	-0.00094	-0.00092
	(!A2 * !B1 * !B2 * !X)	0.00446	0.00456	0.00449
	(!A1 * !A2 * B2 * !X)	-0.00087	-0.00089	-0.00087
	(!A1 * !A2 * B2 * !X)	0.00447	0.00456	0.00449
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00087	-0.00090	-0.00088
	(!A1 * !A2 * B1 * !B2 * !X)	0.00446	0.00456	0.00449

SKY130_FD_SC_HS__O22AIx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00283	0.00279	0.00287	0.00294	0.59837
sky130_fd_sc_hs__o22ai_2	0.00534	0.00549	0.00548	0.00540	1.07484
sky130_fd_sc_hs__o22ai_4	0.01099	0.01049	0.01138	0.01068	1.85688

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o22ai_1	0.00000	0.04703	0.15376
sky130_fd_sc_hs__o22ai_2	0.00000	0.09405	0.30753
sky130_fd_sc_hs__o22ai_4	0.00000	0.18810	0.61505

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)	0.11124	0.93100	10.34360
	A2->Y (FR)	0.09688	0.93314	10.61680
	B1->Y (FR)	0.07202	0.89242	10.31270
	B2->Y (FR)	0.05654	0.89232	10.57630
sky130_fd_sc_hs__o22ai_2	A1->Y (FR)	0.11199	0.81296	10.26820
	A2->Y (FR)	0.09327	0.81331	10.56140
	B1->Y (FR)	0.06897	0.76687	10.18120
	B2->Y (FR)	0.04657	0.76556	10.47740
sky130_fd_sc_hs__o22ai_4	A1->Y (FR)	0.10837	0.68478	9.60154
	A2->Y (FR)	0.09149	0.70100	10.05450
	B1->Y (FR)	0.06610	0.64868	9.63451
	B2->Y (FR)	0.04809	0.65963	10.00300

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22ai_1	A1->Y (RF)	0.04543	0.39202	4.20070
	A2->Y (RF)	0.03876	0.38158	4.17744
	B1->Y (RF)	0.03672	0.43633	4.88733
	B2->Y (RF)	0.03055	0.42265	4.81950
sky130_fd_sc_hs__o22ai_2	A1->Y (RF)	0.04648	0.33969	4.11046
	A2->Y (RF)	0.03770	0.32599	4.07096
	B1->Y (RF)	0.03703	0.38619	4.89407
	B2->Y (RF)	0.02795	0.36577	4.78232
sky130_fd_sc_hs__o22ai_4	A1->Y (RF)	0.03437	0.25630	3.65461
	A2->Y (RF)	0.02904	0.24160	3.62429
	B1->Y (RF)	0.02598	0.30176	4.51408
	B2->Y (RF)	0.02647	0.31933	4.73700

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.00181	0.00173	0.00811
	A1	0.01059	0.01054	0.01662
	A2	0.00190	0.00233	0.01328
	A2	0.00933	0.00978	0.02014
	B1	-0.00024	-0.00023	0.00613
	B1	0.00710	0.00710	0.01320
	B2	-0.00025	0.00065	0.01125
	B2	0.00472	0.00561	0.01629
sky130_fd_sc_hs__o22ai_2	A1	0.00326	0.00307	0.01560
	A1	0.02076	0.02063	0.03245
	A2	0.00317	0.00411	0.02536
	A2	0.01832	0.01922	0.03927
	B1	-0.00078	-0.00074	0.01172
	B1	0.01154	0.01159	0.02410
	B2	-0.00099	0.00123	0.02168
	B2	0.00874	0.01096	0.03154
sky130_fd_sc_hs__o22ai_4	A1	0.00489	0.00488	0.03436
	A1	0.03944	0.03954	0.06755
	A2	0.00484	0.00748	0.05318
	A2	0.03422	0.03675	0.08072
	B1	-0.00188	-0.00146	0.02733
	B1	0.02739	0.02774	0.05499
	B2	-0.00182	0.00268	0.04641
	B2	0.01753	0.02207	0.06574

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.01149	0.01156	0.01651
	A1	0.00239	0.00237	0.00704
	A2	0.00916	0.00924	0.01370
	A2	0.00018	0.00026	0.00490
	B1	0.00967	0.00981	0.01509
	B1	0.00112	0.00131	0.00698
	B2	0.00513	0.00546	0.01136
	B2	0.00017	0.00050	0.00609
sky130_fd_sc_hs__o22ai_2	A1	0.02365	0.02353	0.03333
	A1	0.00563	0.00548	0.01476
	A2	0.01865	0.01887	0.02811
	A2	0.00288	0.00302	0.01203
	B1	0.02005	0.02029	0.03045
	B1	0.00260	0.00286	0.01420
	B2	0.01470	0.01525	0.02590
	B2	-0.00046	0.00029	0.01145
sky130_fd_sc_hs__o22ai_4	A1	0.04453	0.04429	0.06604
	A1	0.00893	0.00871	0.02946
	A2	0.03509	0.03541	0.05527
	A2	-0.00054	-0.00001	0.02096
	B1	0.03785	0.03860	0.06151
	B1	0.00406	0.00495	0.02897
	B2	0.02844	0.02977	0.05144
	B2	-0.00059	0.00114	0.02445

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00211	0.00185	0.00182
	(A2 * B2 * !Y)	-0.00181	-0.00212	-0.00212
	(A2 * B1 * !B2 * !Y)	0.00211	0.00185	0.00182
	(A2 * B1 * !B2 * !Y)	-0.00181	-0.00212	-0.00212
	(A2 * !B1 * !B2 * Y)	0.00182	0.00184	0.00182
	(A2 * !B1 * !B2 * Y)	-0.00208	-0.00212	-0.00211
	(!A2 * !B1 * !B2 * Y)	0.00171	0.00173	0.00172
	(!A2 * !B1 * !B2 * Y)	-0.00212	-0.00213	-0.00213
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00405	0.00346	0.00338
	(A2 * B2 * !Y)	-0.00346	-0.00417	-0.00418
	(A2 * B1 * !B2 * !Y)	0.00405	0.00346	0.00339
	(A2 * B1 * !B2 * !Y)	-0.00346	-0.00417	-0.00418
	(A2 * !B1 * !B2 * Y)	0.00337	0.00341	0.00337
	(A2 * !B1 * !B2 * Y)	-0.00409	-0.00422	-0.00419
	(!A2 * !B1 * !B2 * Y)	0.00322	0.00328	0.00324
	(!A2 * !B1 * !B2 * Y)	-0.00423	-0.00427	-0.00424
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.00816	0.00696	0.00681
	(A2 * B2 * !Y)	-0.00687	-0.00825	-0.00827
	(A2 * B1 * !B2 * !Y)	0.00816	0.00696	0.00681
	(A2 * B1 * !B2 * !Y)	-0.00687	-0.00825	-0.00827
	(A2 * !B1 * !B2 * Y)	0.00662	0.00669	0.00661
	(A2 * !B1 * !B2 * Y)	-0.00832	-0.00847	-0.00842
	(!A2 * !B1 * !B2 * Y)	0.00624	0.00629	0.00627
	(!A2 * !B1 * !B2 * Y)	-0.00855	-0.00859	-0.00856

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00182	-0.00182	-0.00181
	(A2 * B2 * !Y)	0.00212	0.00212	0.00212
	(A2 * B1 * !B2 * !Y)	-0.00182	-0.00182	-0.00181
	(A2 * B1 * !B2 * !Y)	0.00212	0.00212	0.00212
	(A2 * !B1 * !B2 * Y)	-0.00181	-0.00182	-0.00182
	(A2 * !B1 * !B2 * Y)	0.00209	0.00212	0.00211
	(!A2 * !B1 * !B2 * Y)	-0.00163	-0.00173	-0.00172
	(!A2 * !B1 * !B2 * Y)	0.00215	0.00215	0.00213
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00337	-0.00339	-0.00337
	(A2 * B2 * !Y)	0.00416	0.00420	0.00418
	(A2 * B1 * !B2 * !Y)	-0.00337	-0.00339	-0.00337
	(A2 * B1 * !B2 * !Y)	0.00416	0.00420	0.00418
	(A2 * !B1 * !B2 * Y)	-0.00336	-0.00338	-0.00337
	(A2 * !B1 * !B2 * Y)	0.00417	0.00422	0.00419
	(!A2 * !B1 * !B2 * Y)	-0.00300	-0.00324	-0.00324
	(!A2 * !B1 * !B2 * Y)	0.00431	0.00430	0.00426
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00678	-0.00679	-0.00675
	(A2 * B2 * !Y)	0.00824	0.00828	0.00827
	(A2 * B1 * !B2 * !Y)	-0.00678	-0.00679	-0.00675
	(A2 * B1 * !B2 * !Y)	0.00825	0.00828	0.00827
	(A2 * !B1 * !B2 * Y)	-0.00659	-0.00662	-0.00659
	(A2 * !B1 * !B2 * Y)	0.00841	0.00847	0.00842
	(!A2 * !B1 * !B2 * Y)	-0.00583	-0.00629	-0.00627
	(!A2 * !B1 * !B2 * Y)	0.00866	0.00867	0.00859

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	0.00179	0.00181	0.00179
	(A1 * B2 * !Y)	-0.00100	-0.00101	-0.00100
	(A1 * B1 * !B2 * !Y)	0.00179	0.00181	0.00179
	(A1 * B1 * !B2 * !Y)	-0.00100	-0.00101	-0.00100
	(A1 * !B1 * !B2 * Y)	0.00165	0.00167	0.00166
	(A1 * !B1 * !B2 * Y)	-0.00199	-0.00202	-0.00202
	(!A1 * !B1 * !B2 * Y)	0.00158	0.00158	0.00157
	(!A1 * !B1 * !B2 * Y)	-0.00205	-0.00205	-0.00205
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	0.00383	0.00387	0.00384
	(A1 * B2 * !Y)	-0.00198	-0.00199	-0.00197
	(A1 * B1 * !B2 * !Y)	0.00383	0.00390	0.00384
	(A1 * B1 * !B2 * !Y)	-0.00197	-0.00201	-0.00197
	(A1 * !B1 * !B2 * Y)	0.00339	0.00340	0.00337
	(A1 * !B1 * !B2 * Y)	-0.00415	-0.00420	-0.00421
	(!A1 * !B1 * !B2 * Y)	0.00319	0.00323	0.00320
	(!A1 * !B1 * !B2 * Y)	-0.00429	-0.00431	-0.00429
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	0.00711	0.00714	0.00708
	(A1 * B2 * !Y)	-0.00388	-0.00388	-0.00384
	(A1 * B1 * !B2 * !Y)	0.00711	0.00715	0.00708
	(A1 * B1 * !B2 * !Y)	-0.00388	-0.00388	-0.00384
	(A1 * !B1 * !B2 * Y)	0.00649	0.00658	0.00651
	(A1 * !B1 * !B2 * Y)	-0.00784	-0.00796	-0.00795
	(!A1 * !B1 * !B2 * Y)	0.00620	0.00623	0.00617
	(!A1 * !B1 * !B2 * Y)	-0.00815	-0.00817	-0.00813

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	-0.00173	-0.00174	-0.00179
	(A1 * B2 * !Y)	0.00106	0.00106	0.00101
	(A1 * B1 * !B2 * !Y)	-0.00173	-0.00174	-0.00179
	(A1 * B1 * !B2 * !Y)	0.00106	0.00106	0.00101
	(A1 * !B1 * !B2 * Y)	-0.00165	-0.00166	-0.00165
	(A1 * !B1 * !B2 * Y)	0.00202	0.00202	0.00202
	(!A1 * !B1 * !B2 * Y)	-0.00148	-0.00158	-0.00157
	(!A1 * !B1 * !B2 * Y)	0.00206	0.00207	0.00205
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	-0.00365	-0.00368	-0.00382
	(A1 * B2 * !Y)	0.00214	0.00214	0.00201
	(A1 * B1 * !B2 * !Y)	-0.00365	-0.00368	-0.00382
	(A1 * B1 * !B2 * !Y)	0.00214	0.00215	0.00201
	(A1 * !B1 * !B2 * Y)	-0.00335	-0.00336	-0.00336
	(A1 * !B1 * !B2 * Y)	0.00420	0.00420	0.00421
	(!A1 * !B1 * !B2 * Y)	-0.00298	-0.00322	-0.00320
	(!A1 * !B1 * !B2 * Y)	0.00434	0.00433	0.00430
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	-0.00679	-0.00684	-0.00705
	(A1 * B2 * !Y)	0.00408	0.00410	0.00391
	(A1 * B1 * !B2 * !Y)	-0.00680	-0.00684	-0.00705
	(A1 * B1 * !B2 * !Y)	0.00409	0.00410	0.00391
	(A1 * !B1 * !B2 * Y)	-0.00648	-0.00650	-0.00649
	(A1 * !B1 * !B2 * Y)	0.00793	0.00796	0.00795
	(!A1 * !B1 * !B2 * Y)	-0.00577	-0.00621	-0.00617
	(!A1 * !B1 * !B2 * Y)	0.00823	0.00821	0.00815

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00218	0.00192	0.00188
	(A2 * B2 * !Y)	-0.00176	-0.00207	-0.00207
	(A1 * !A2 * B2 * !Y)	0.00218	0.00192	0.00188
	(A1 * !A2 * B2 * !Y)	-0.00176	-0.00207	-0.00207
	(!A1 * !A2 * B2 * Y)	0.00065	0.00065	0.00065
	(!A1 * !A2 * B2 * Y)	-0.00247	-0.00251	-0.00249
	(!A1 * !A2 * !B2 * Y)	0.00073	0.00073	0.00068
	(!A1 * !A2 * !B2 * Y)	-0.00240	-0.00242	-0.00251
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00406	0.00344	0.00336
	(A2 * B2 * !Y)	-0.00349	-0.00421	-0.00424
	(A1 * !A2 * B2 * !Y)	0.00406	0.00344	0.00336
	(A1 * !A2 * B2 * !Y)	-0.00349	-0.00422	-0.00424
	(!A1 * !A2 * B2 * Y)	0.00108	0.00109	0.00108
	(!A1 * !A2 * B2 * Y)	-0.00484	-0.00497	-0.00494
	(!A1 * !A2 * !B2 * Y)	0.00124	0.00124	0.00113
	(!A1 * !A2 * !B2 * Y)	-0.00479	-0.00483	-0.00500
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.00850	0.00732	0.00718
	(A2 * B2 * !Y)	-0.00670	-0.00806	-0.00806
	(A1 * !A2 * B2 * !Y)	0.00850	0.00731	0.00718
	(A1 * !A2 * B2 * !Y)	-0.00670	-0.00806	-0.00806
	(!A1 * !A2 * B2 * Y)	0.00205	0.00206	0.00203
	(!A1 * !A2 * B2 * Y)	-0.00989	-0.01010	-0.01002
	(!A1 * !A2 * !B2 * Y)	0.00231	0.00231	0.00213
	(!A1 * !A2 * !B2 * Y)	-0.00979	-0.00985	-0.01012

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00187	-0.00188	-0.00187
	(A2 * B2 * !Y)	0.00206	0.00208	0.00207
	(A1 * !A2 * B2 * !Y)	-0.00187	-0.00188	-0.00187
	(A1 * !A2 * B2 * !Y)	0.00206	0.00208	0.00207
	(!A1 * !A2 * B2 * Y)	-0.00064	-0.00064	-0.00065
	(!A1 * !A2 * B2 * Y)	0.00250	0.00252	0.00249
	(!A1 * !A2 * !B2 * Y)	-0.00066	-0.00067	-0.00065
	(!A1 * !A2 * !B2 * Y)	0.00253	0.00257	0.00252
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00335	-0.00334	-0.00334
	(A2 * B2 * !Y)	0.00424	0.00421	0.00424
	(A1 * !A2 * B2 * !Y)	-0.00335	-0.00335	-0.00334
	(A1 * !A2 * B2 * !Y)	0.00424	0.00423	0.00424
	(!A1 * !A2 * B2 * Y)	-0.00106	-0.00107	-0.00108
	(!A1 * !A2 * B2 * Y)	0.00494	0.00498	0.00494
	(!A1 * !A2 * !B2 * Y)	-0.00109	-0.00111	-0.00109
	(!A1 * !A2 * !B2 * Y)	0.00500	0.00510	0.00502
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00717	-0.00718	-0.00715
	(A2 * B2 * !Y)	0.00805	0.00810	0.00806
	(A1 * !A2 * B2 * !Y)	-0.00717	-0.00719	-0.00714
	(A1 * !A2 * B2 * !Y)	0.00805	0.00811	0.00806
	(!A1 * !A2 * B2 * Y)	-0.00201	-0.00202	-0.00203
	(!A1 * !A2 * B2 * Y)	0.01006	0.01010	0.01002
	(!A1 * !A2 * !B2 * Y)	-0.00206	-0.00207	-0.00206
	(!A1 * !A2 * !B2 * Y)	0.01012	0.01020	0.01016

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	0.00193	0.00195	0.00193
	(A2 * B1 * !Y)	-0.00096	-0.00097	-0.00096
	(A1 * !A2 * B1 * !Y)	0.00193	0.00196	0.00193
	(A1 * !A2 * B1 * !Y)	-0.00096	-0.00098	-0.00096
	(!A1 * !A2 * B1 * Y)	0.00054	0.00054	0.00053
	(!A1 * !A2 * B1 * Y)	-0.00246	-0.00248	-0.00247
	(!A1 * !A2 * !B1 * Y)	0.00061	0.00061	0.00056
	(!A1 * !A2 * !B1 * Y)	-0.00240	-0.00241	-0.00249
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	0.00366	0.00374	0.00368
	(A2 * B1 * !Y)	-0.00197	-0.00201	-0.00198
	(A1 * !A2 * B1 * !Y)	0.00366	0.00374	0.00368
	(A1 * !A2 * B1 * !Y)	-0.00196	-0.00201	-0.00198
	(!A1 * !A2 * B1 * Y)	0.00103	0.00103	0.00102
	(!A1 * !A2 * B1 * Y)	-0.00478	-0.00486	-0.00484
	(!A1 * !A2 * !B1 * Y)	0.00119	0.00119	0.00107
	(!A1 * !A2 * !B1 * Y)	-0.00473	-0.00476	-0.00492
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	0.00716	0.00728	0.00717
	(A2 * B1 * !Y)	-0.00389	-0.00395	-0.00387
	(A1 * !A2 * B1 * !Y)	0.00715	0.00728	0.00717
	(A1 * !A2 * B1 * !Y)	-0.00389	-0.00395	-0.00387
	(!A1 * !A2 * B1 * Y)	0.00194	0.00193	0.00192
	(!A1 * !A2 * B1 * Y)	-0.00944	-0.00957	-0.00950
	(!A1 * !A2 * !B1 * Y)	0.00218	0.00220	0.00201
	(!A1 * !A2 * !B1 * Y)	-0.00928	-0.00938	-0.00964

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	-0.00187	-0.00189	-0.00193
	(A2 * B1 * !Y)	0.00101	0.00102	0.00098
	(A1 * !A2 * B1 * !Y)	-0.00187	-0.00187	-0.00192
	(A1 * !A2 * B1 * !Y)	0.00101	0.00101	0.00098
	(!A1 * !A2 * B1 * Y)	-0.00053	-0.00053	-0.00053
	(!A1 * !A2 * B1 * Y)	0.00247	0.00248	0.00247
	(!A1 * !A2 * !B1 * Y)	-0.00054	-0.00054	-0.00054
	(!A1 * !A2 * !B1 * Y)	0.00251	0.00250	0.00251
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	-0.00348	-0.00352	-0.00366
	(A2 * B1 * !Y)	0.00213	0.00215	0.00202
	(A1 * !A2 * B1 * !Y)	-0.00348	-0.00350	-0.00365
	(A1 * !A2 * B1 * !Y)	0.00213	0.00214	0.00202
	(!A1 * !A2 * B1 * Y)	-0.00102	-0.00102	-0.00102
	(!A1 * !A2 * B1 * Y)	0.00485	0.00486	0.00484
	(!A1 * !A2 * !B1 * Y)	-0.00103	-0.00104	-0.00103
	(!A1 * !A2 * !B1 * Y)	0.00491	0.00494	0.00494
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	-0.00687	-0.00691	-0.00714
	(A2 * B1 * !Y)	0.00410	0.00411	0.00394
	(A1 * !A2 * B1 * !Y)	-0.00686	-0.00692	-0.00714
	(A1 * !A2 * B1 * !Y)	0.00409	0.00412	0.00394
	(!A1 * !A2 * B1 * Y)	-0.00189	-0.00191	-0.00192
	(!A1 * !A2 * B1 * Y)	0.00951	0.00957	0.00950
	(!A1 * !A2 * !B1 * Y)	-0.00194	-0.00195	-0.00194
	(!A1 * !A2 * !B1 * Y)	0.00965	0.00971	0.00968

SKY130_FD_SC_HS__O22Ax

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00244	0.00254	0.00262	0.00280	1.23607
sky130_fd_sc_hs__o22a_2	0.00262	0.00267	0.00278	0.00275	2.35722
sky130_fd_sc_hs__o22a_4	0.00510	0.00474	0.00523	0.00495	4.36806

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o22a_1	0.00000	0.14792	0.40066
sky130_fd_sc_hs__o22a_2	0.00000	0.18394	0.40809
sky130_fd_sc_hs__o22a_4	0.00000	0.37148	0.81618

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)	0.08708	0.56803	6.05318
	A2->X (RR)	0.07984	0.54952	6.03889
	B1->X (RR)	0.07944	0.56849	6.08982
	B2->X (RR)	0.07175	0.54587	6.06513
sky130_fd_sc_hs__o22a_2	A1->X (RR)	0.08875	0.49017	6.05389
	A2->X (RR)	0.08119	0.47454	6.03356
	B1->X (RR)	0.08117	0.49700	6.10166
	B2->X (RR)	0.07246	0.47327	6.04454
sky130_fd_sc_hs__o22a_4	A1->X (RR)	0.09406	0.43309	6.10075
	A2->X (RR)	0.08886	0.41581	6.09211
	B1->X (RR)	0.08528	0.43579	6.13160
	B2->X (RR)	0.08132	0.42754	6.16365

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22a_1	A1->X (FF)	0.13720	0.58542	4.95113
	A2->X (FF)	0.12429	0.58976	4.99670
	B1->X (FF)	0.10826	0.53337	4.81856
	B2->X (FF)	0.09557	0.53654	4.87466
sky130_fd_sc_hs__o22a_2	A1->X (FF)	0.16692	0.60564	5.06834
	A2->X (FF)	0.15338	0.61452	5.11338
	B1->X (FF)	0.13597	0.55361	4.92606
	B2->X (FF)	0.12157	0.55984	4.97888
sky130_fd_sc_hs__o22a_4	A1->X (FF)	0.16132	0.56192	4.97839
	A2->X (FF)	0.14348	0.56504	5.01869
	B1->X (FF)	0.13574	0.51960	4.86767
	B2->X (FF)	0.11940	0.51990	4.89058

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.01351	0.01410	0.03978
	A1	0.00439	0.00505	0.03216
	A2	0.01015	0.01102	0.04623
	A2	0.00346	0.00435	0.04003
	B1	0.01192	0.01286	0.03984
	B1	0.00420	0.00538	0.03413
	B2	0.00839	0.00991	0.04640
	B2	0.00347	0.00500	0.04150
sky130_fd_sc_hs__o22a_2	A1	0.01544	0.01642	0.04277
	A1	0.00729	0.00828	0.03558
	A2	0.01343	0.01455	0.04931
	A2	0.00634	0.00747	0.04319
	B1	0.01517	0.01642	0.04157
	B1	0.00725	0.00873	0.03595
	B2	0.01102	0.01266	0.04634
	B2	0.00633	0.00803	0.04176
sky130_fd_sc_hs__o22a_4	A1	0.03020	0.03209	0.08461
	A1	0.01490	0.01694	0.07117
	A2	0.02563	0.02788	0.09656
	A2	0.01275	0.01503	0.08554
	B1	0.03057	0.03291	0.08654
	B1	0.01488	0.01758	0.07515
	B2	0.02150	0.02457	0.09299
	B2	0.01272	0.01584	0.08606

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.00478	0.00542	0.03190
	A1	0.01273	0.01336	0.03943
	A2	0.00477	0.00656	0.04197
	A2	0.01172	0.01349	0.04886
	B1	0.00349	0.00429	0.03359
	B1	0.01011	0.01077	0.03826
	B2	0.00291	0.00510	0.04338
	B2	0.00888	0.01087	0.04700
sky130_fd_sc_hs__o22a_2	A1	0.00824	0.00866	0.03614
	A1	0.01657	0.01698	0.04285
	A2	0.00828	0.00984	0.04637
	A2	0.01553	0.01708	0.05254
	B1	0.00650	0.00733	0.03422
	B1	0.01323	0.01362	0.03987
	B2	0.00641	0.00829	0.04361
	B2	0.01205	0.01392	0.04913
sky130_fd_sc_hs__o22a_4	A1	0.01566	0.01642	0.06757
	A1	0.03159	0.03234	0.08320
	A2	0.01605	0.01965	0.08873
	A2	0.02951	0.03242	0.10208
	B1	0.01304	0.01427	0.06905
	B1	0.02625	0.02716	0.08015
	B2	0.01366	0.01725	0.08589
	B2	0.02440	0.02772	0.09662

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00177	0.00152	0.00148
	(A2 * B2 * X)	-0.00162	-0.00192	-0.00193
	(A2 * B1 * !B2 * X)	0.00177	0.00152	0.00148
	(A2 * B1 * !B2 * X)	-0.00162	-0.00192	-0.00193
	(A2 * !B1 * !B2 * !X)	0.00148	0.00149	0.00148
	(A2 * !B1 * !B2 * !X)	-0.00190	-0.00194	-0.00193
	(!A2 * !B1 * !B2 * !X)	0.00140	0.00141	0.00140
	(!A2 * !B1 * !B2 * !X)	-0.00195	-0.00196	-0.00195
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00203	0.00178	0.00174
	(A2 * B2 * X)	-0.00160	-0.00190	-0.00191
	(A2 * B1 * !B2 * X)	0.00203	0.00178	0.00174
	(A2 * B1 * !B2 * X)	-0.00160	-0.00190	-0.00191
	(A2 * !B1 * !B2 * !X)	0.00174	0.00176	0.00174
	(A2 * !B1 * !B2 * !X)	-0.00187	-0.00192	-0.00190
	(!A2 * !B1 * !B2 * !X)	0.00164	0.00166	0.00165
	(!A2 * !B1 * !B2 * !X)	-0.00191	-0.00193	-0.00192
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00386	0.00338	0.00331
	(A2 * B2 * X)	-0.00308	-0.00368	-0.00369
	(A2 * B1 * !B2 * X)	0.00386	0.00338	0.00332
	(A2 * B1 * !B2 * X)	-0.00308	-0.00368	-0.00369
	(A2 * !B1 * !B2 * !X)	0.00321	0.00326	0.00322
	(A2 * !B1 * !B2 * !X)	-0.00369	-0.00377	-0.00377
	(!A2 * !B1 * !B2 * !X)	0.00310	0.00314	0.00311
	(!A2 * !B1 * !B2 * !X)	-0.00381	-0.00383	-0.00382

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00147	-0.00148	-0.00146
	(A2 * B2 * X)	0.00193	0.00195	0.00194
	(A2 * B1 * !B2 * X)	-0.00147	-0.00147	-0.00146
	(A2 * B1 * !B2 * X)	0.00194	0.00195	0.00194
	(A2 * !B1 * !B2 * !X)	-0.00146	-0.00148	-0.00147
	(A2 * !B1 * !B2 * !X)	0.00191	0.00195	0.00193
	(!A2 * !B1 * !B2 * !X)	-0.00129	-0.00140	-0.00140
	(!A2 * !B1 * !B2 * !X)	0.00198	0.00197	0.00196
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00173	-0.00173	-0.00172
	(A2 * B2 * X)	0.00191	0.00192	0.00191
	(A2 * B1 * !B2 * X)	-0.00172	-0.00173	-0.00172
	(A2 * B1 * !B2 * X)	0.00190	0.00193	0.00191
	(A2 * !B1 * !B2 * !X)	-0.00172	-0.00174	-0.00173
	(A2 * !B1 * !B2 * !X)	0.00189	0.00192	0.00190
	(!A2 * !B1 * !B2 * !X)	-0.00156	-0.00166	-0.00165
	(!A2 * !B1 * !B2 * !X)	0.00194	0.00194	0.00193
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00329	-0.00331	-0.00328
	(A2 * B2 * X)	0.00369	0.00372	0.00370
	(A2 * B1 * !B2 * X)	-0.00329	-0.00331	-0.00328
	(A2 * B1 * !B2 * X)	0.00369	0.00372	0.00370
	(A2 * !B1 * !B2 * !X)	-0.00321	-0.00321	-0.00321
	(A2 * !B1 * !B2 * !X)	0.00376	0.00377	0.00377
	(!A2 * !B1 * !B2 * !X)	-0.00288	-0.00312	-0.00310
	(!A2 * !B1 * !B2 * !X)	0.00386	0.00387	0.00384

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	0.00163	0.00165	0.00164
	(A1 * B2 * X)	-0.00092	-0.00094	-0.00093
	(A1 * B1 * !B2 * X)	0.00163	0.00165	0.00164
	(A1 * B1 * !B2 * X)	-0.00092	-0.00093	-0.00093
	(A1 * !B1 * !B2 * !X)	0.00143	0.00144	0.00143
	(A1 * !B1 * !B2 * !X)	-0.00189	-0.00192	-0.00192
	(!A1 * !B1 * !B2 * !X)	0.00134	0.00135	0.00134
	(!A1 * !B1 * !B2 * !X)	-0.00195	-0.00195	-0.00194
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	0.00178	0.00180	0.00179
	(A1 * B2 * X)	-0.00094	-0.00095	-0.00094
	(A1 * B1 * !B2 * X)	0.00178	0.00180	0.00179
	(A1 * B1 * !B2 * X)	-0.00094	-0.00095	-0.00094
	(A1 * !B1 * !B2 * !X)	0.00166	0.00167	0.00167
	(A1 * !B1 * !B2 * !X)	-0.00181	-0.00184	-0.00184
	(!A1 * !B1 * !B2 * !X)	0.00159	0.00160	0.00159
	(!A1 * !B1 * !B2 * !X)	-0.00187	-0.00187	-0.00186
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	0.00309	0.00312	0.00309
	(A1 * B2 * X)	-0.00185	-0.00187	-0.00185
	(A1 * B1 * !B2 * X)	0.00309	0.00312	0.00309
	(A1 * B1 * !B2 * X)	-0.00185	-0.00187	-0.00185
	(A1 * !B1 * !B2 * !X)	0.00275	0.00278	0.00276
	(A1 * !B1 * !B2 * !X)	-0.00369	-0.00377	-0.00375
	(!A1 * !B1 * !B2 * !X)	0.00262	0.00264	0.00261
	(!A1 * !B1 * !B2 * !X)	-0.00383	-0.00384	-0.00382

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	-0.00158	-0.00159	-0.00163
	(A1 * B2 * X)	0.00098	0.00098	0.00094
	(A1 * B1 * !B2 * X)	-0.00158	-0.00159	-0.00163
	(A1 * B1 * !B2 * X)	0.00098	0.00098	0.00094
	(A1 * !B1 * !B2 * !X)	-0.00142	-0.00143	-0.00142
	(A1 * !B1 * !B2 * !X)	0.00191	0.00192	0.00192
	(!A1 * !B1 * !B2 * !X)	-0.00125	-0.00135	-0.00134
	(!A1 * !B1 * !B2 * !X)	0.00197	0.00196	0.00195
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	-0.00173	-0.00174	-0.00178
	(A1 * B2 * X)	0.00099	0.00099	0.00095
	(A1 * B1 * !B2 * X)	-0.00173	-0.00174	-0.00178
	(A1 * B1 * !B2 * X)	0.00099	0.00100	0.00095
	(A1 * !B1 * !B2 * !X)	-0.00166	-0.00167	-0.00166
	(A1 * !B1 * !B2 * !X)	0.00184	0.00184	0.00184
	(!A1 * !B1 * !B2 * !X)	-0.00149	-0.00160	-0.00159
	(!A1 * !B1 * !B2 * !X)	0.00189	0.00189	0.00187
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	-0.00296	-0.00298	-0.00308
	(A1 * B2 * X)	0.00197	0.00197	0.00188
	(A1 * B1 * !B2 * X)	-0.00296	-0.00298	-0.00308
	(A1 * B1 * !B2 * X)	0.00197	0.00197	0.00188
	(A1 * !B1 * !B2 * !X)	-0.00275	-0.00277	-0.00275
	(A1 * !B1 * !B2 * !X)	0.00375	0.00377	0.00375
	(!A1 * !B1 * !B2 * !X)	-0.00242	-0.00262	-0.00261
	(!A1 * !B1 * !B2 * !X)	0.00388	0.00386	0.00383

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00186	0.00161	0.00157
	(A2 * B2 * X)	-0.00167	-0.00196	-0.00196
	(A1 * !A2 * B2 * X)	0.00186	0.00161	0.00157
	(A1 * !A2 * B2 * X)	-0.00167	-0.00196	-0.00196
	(!A1 * !A2 * B2 * !X)	0.00045	0.00045	0.00044
	(!A1 * !A2 * B2 * !X)	-0.00238	-0.00243	-0.00241
	(!A1 * !A2 * !B2 * !X)	0.00051	0.00050	0.00046
	(!A1 * !A2 * !B2 * !X)	-0.00235	-0.00236	-0.00243
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00211	0.00186	0.00183
	(A2 * B2 * X)	-0.00154	-0.00184	-0.00185
	(A1 * !A2 * B2 * X)	0.00212	0.00186	0.00183
	(A1 * !A2 * B2 * X)	-0.00154	-0.00184	-0.00185
	(!A1 * !A2 * B2 * !X)	0.00054	0.00054	0.00054
	(!A1 * !A2 * B2 * !X)	-0.00232	-0.00236	-0.00235
	(!A1 * !A2 * !B2 * !X)	0.00062	0.00062	0.00056
	(!A1 * !A2 * !B2 * !X)	-0.00227	-0.00228	-0.00237
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00406	0.00354	0.00348
	(A2 * B2 * X)	-0.00305	-0.00367	-0.00368
	(A1 * !A2 * B2 * X)	0.00406	0.00354	0.00348
	(A1 * !A2 * B2 * X)	-0.00305	-0.00367	-0.00367
	(!A1 * !A2 * B2 * !X)	0.00139	0.00141	0.00139
	(!A1 * !A2 * B2 * !X)	-0.00429	-0.00440	-0.00437
	(!A1 * !A2 * !B2 * !X)	0.00150	0.00152	0.00143
	(!A1 * !A2 * !B2 * !X)	-0.00425	-0.00429	-0.00441

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00156	-0.00157	-0.00156
	(A2 * B2 * X)	0.00196	0.00198	0.00197
	(A1 * !A2 * B2 * X)	-0.00156	-0.00157	-0.00156
	(A1 * !A2 * B2 * X)	0.00196	0.00198	0.00197
	(!A1 * !A2 * B2 * !X)	-0.00044	-0.00044	-0.00044
	(!A1 * !A2 * B2 * !X)	0.00241	0.00243	0.00241
	(!A1 * !A2 * !B2 * !X)	-0.00045	-0.00046	-0.00045
	(!A1 * !A2 * !B2 * !X)	0.00243	0.00248	0.00244
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00181	-0.00181	-0.00181
	(A2 * B2 * X)	0.00183	0.00185	0.00185
	(A1 * !A2 * B2 * X)	-0.00181	-0.00181	-0.00181
	(A1 * !A2 * B2 * X)	0.00184	0.00185	0.00185
	(!A1 * !A2 * B2 * !X)	-0.00053	-0.00053	-0.00053
	(!A1 * !A2 * B2 * !X)	0.00234	0.00236	0.00235
	(!A1 * !A2 * !B2 * !X)	-0.00054	-0.00055	-0.00054
	(!A1 * !A2 * !B2 * !X)	0.00237	0.00241	0.00238
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00344	-0.00347	-0.00345
	(A2 * B2 * X)	0.00364	0.00370	0.00368
	(A1 * !A2 * B2 * X)	-0.00344	-0.00347	-0.00345
	(A1 * !A2 * B2 * X)	0.00365	0.00370	0.00368
	(!A1 * !A2 * B2 * !X)	-0.00137	-0.00138	-0.00139
	(!A1 * !A2 * B2 * !X)	0.00439	0.00443	0.00437
	(!A1 * !A2 * !B2 * !X)	-0.00140	-0.00141	-0.00140
	(!A1 * !A2 * !B2 * !X)	0.00442	0.00445	0.00443

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	0.00212	0.00215	0.00211
	(A2 * B1 * X)	-0.00090	-0.00092	-0.00090
	(A1 * !A2 * B1 * X)	0.00212	0.00215	0.00211
	(A1 * !A2 * B1 * X)	-0.00090	-0.00092	-0.00090
	(!A1 * !A2 * B1 * !X)	0.00091	0.00091	0.00090
	(!A1 * !A2 * B1 * !X)	-0.00213	-0.00217	-0.00216
	(!A1 * !A2 * !B1 * !X)	0.00097	0.00098	0.00093
	(!A1 * !A2 * !B1 * !X)	-0.00210	-0.00212	-0.00218
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	0.00183	0.00185	0.00183
	(A2 * B1 * X)	-0.00091	-0.00092	-0.00091
	(A1 * !A2 * B1 * X)	0.00183	0.00186	0.00183
	(A1 * !A2 * B1 * X)	-0.00091	-0.00093	-0.00091
	(!A1 * !A2 * B1 * !X)	0.00052	0.00053	0.00052
	(!A1 * !A2 * B1 * !X)	-0.00220	-0.00223	-0.00222
	(!A1 * !A2 * !B1 * !X)	0.00060	0.00060	0.00055
	(!A1 * !A2 * !B1 * !X)	-0.00215	-0.00216	-0.00224
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	0.00326	0.00329	0.00327
	(A2 * B1 * X)	-0.00183	-0.00185	-0.00183
	(A1 * !A2 * B1 * X)	0.00326	0.00329	0.00327
	(A1 * !A2 * B1 * X)	-0.00183	-0.00185	-0.00183
	(!A1 * !A2 * B1 * !X)	0.00082	0.00083	0.00083
	(!A1 * !A2 * B1 * !X)	-0.00437	-0.00446	-0.00444
	(!A1 * !A2 * !B1 * !X)	0.00095	0.00095	0.00087
	(!A1 * !A2 * !B1 * !X)	-0.00436	-0.00438	-0.00449

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	-0.00206	-0.00206	-0.00211
	(A2 * B1 * X)	0.00094	0.00094	0.00091
	(A1 * !A2 * B1 * X)	-0.00206	-0.00207	-0.00211
	(A1 * !A2 * B1 * X)	0.00094	0.00095	0.00091
	(!A1 * !A2 * B1 * !X)	-0.00089	-0.00089	-0.00090
	(!A1 * !A2 * B1 * !X)	0.00219	0.00220	0.00216
	(!A1 * !A2 * !B1 * !X)	-0.00091	-0.00092	-0.00091
	(!A1 * !A2 * !B1 * !X)	0.00218	0.00220	0.00219
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	-0.00178	-0.00179	-0.00183
	(A2 * B1 * X)	0.00096	0.00096	0.00092
	(A1 * !A2 * B1 * X)	-0.00178	-0.00179	-0.00183
	(A1 * !A2 * B1 * X)	0.00096	0.00096	0.00092
	(!A1 * !A2 * B1 * !X)	-0.00051	-0.00053	-0.00052
	(!A1 * !A2 * B1 * !X)	0.00222	0.00226	0.00222
	(!A1 * !A2 * !B1 * !X)	-0.00052	-0.00054	-0.00053
	(!A1 * !A2 * !B1 * !X)	0.00225	0.00229	0.00226
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	-0.00314	-0.00316	-0.00325
	(A2 * B1 * X)	0.00195	0.00196	0.00186
	(A1 * !A2 * B1 * X)	-0.00314	-0.00316	-0.00325
	(A1 * !A2 * B1 * X)	0.00196	0.00196	0.00186
	(!A1 * !A2 * B1 * !X)	-0.00080	-0.00081	-0.00082
	(!A1 * !A2 * B1 * !X)	0.00449	0.00449	0.00444
	(!A1 * !A2 * !B1 * !X)	-0.00083	-0.00086	-0.00083
	(!A1 * !A2 * !B1 * !X)	0.00449	0.00458	0.00452

SKY130_FD_SC_HS__O2BB2AIx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00228	0.00247	0.00277	0.00293	0.60598
sky130_fd_sc_hs__o2bb2ai_2	0.00516	0.00455	0.00563	0.00524	1.17481
sky130_fd_sc_hs__o2bb2ai_4	0.01070	0.01078	0.01052	0.01080	2.01899

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2bb2ai_1	0.00000	0.29455	0.89470
sky130_fd_sc_hs__o2bb2ai_2	0.00000	0.58909	1.78940
sky130_fd_sc_hs__o2bb2ai_4	0.00000	0.43982	0.64477

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)	0.06464	0.37444	2.83658
	A2_N->Y (RR)	0.06182	0.37188	2.84322
	B1->Y (FR)	0.08575	0.91094	10.40030
	B2->Y (FR)	0.07318	0.91360	10.66760
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (RR)	0.05832	0.29984	2.76539
	A2_N->Y (RR)	0.05387	0.29493	2.80236
	B1->Y (FR)	0.07627	0.76627	10.26940
	B2->Y (FR)	0.06051	0.76915	10.52570
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (RR)	0.06399	0.25071	2.51389
	A2_N->Y (RR)	0.05939	0.25656	2.60804
	B1->Y (FR)	0.08320	0.67895	10.10700
	B2->Y (FR)	0.06590	0.69281	10.53150

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)	0.09135	0.50014	4.14210
	A2_N->Y (FF)	0.08108	0.47379	4.07942
	B1->Y (RF)	0.03631	0.37891	4.22755
	B2->Y (RF)	0.02937	0.36538	4.17066
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (FF)	0.07694	0.44026	4.11708
	A2_N->Y (FF)	0.07205	0.42537	4.13065
	B1->Y (RF)	0.03157	0.30992	4.09509
	B2->Y (RF)	0.02660	0.30171	4.11310
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (FF)	0.08515	0.42808	4.27246
	A2_N->Y (FF)	0.07350	0.39560	4.14383
	B1->Y (RF)	0.03652	0.26718	3.99741
	B2->Y (RF)	0.02720	0.24927	3.90111

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	0.00867	0.01038	0.05602
	A1_N	0.00515	0.00688	0.05267
	A2_N	0.00779	0.00979	0.05119
	A2_N	0.00515	0.00719	0.04865
	B1	0.00059	0.00059	0.00670
	B1	0.00634	0.00634	0.01251
	B2	0.00056	0.00133	0.01158
	B2	0.00530	0.00608	0.01640
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.01612	0.01912	0.10228
	A1_N	0.00830	0.01136	0.09458
	A2_N	0.01373	0.01787	0.10920
	A2_N	0.00866	0.01285	0.10430
	B1	0.00080	0.00083	0.01320
	B1	0.01233	0.01238	0.02483
	B2	0.00079	0.00205	0.02211
	B2	0.00952	0.01080	0.03098
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.03522	0.04017	0.20049
	A1_N	0.01810	0.02315	0.18339
	A2_N	0.03023	0.03657	0.19334
	A2_N	0.01798	0.02452	0.18127
	B1	0.00110	0.00117	0.02468
	B1	0.02411	0.02423	0.04775
	B2	0.00089	0.00345	0.04237
	B2	0.01919	0.02180	0.06094

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	A1_N	0.00673	0.00947	0.05571
	A1_N	0.01031	0.01299	0.05925
	A2_N	0.00627	0.00912	0.05586
	A2_N	0.00900	0.01182	0.05848
	B1	0.00830	0.00835	0.01337
	B1	0.00251	0.00252	0.00721
	B2	0.00620	0.00634	0.01091
	B2	0.00138	0.00152	0.00610
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.01228	0.01751	0.10767
	A1_N	0.02014	0.02532	0.11535
	A2_N	0.01155	0.01697	0.10749
	A2_N	0.01675	0.02215	0.11240
	B1	0.01620	0.01624	0.02586
	B1	0.00465	0.00464	0.01413
	B2	0.01124	0.01160	0.02188
	B2	0.00240	0.00276	0.01195
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.02685	0.03556	0.19931
	A1_N	0.04413	0.05279	0.21617
	A2_N	0.02395	0.03223	0.19567
	A2_N	0.03658	0.04487	0.20835
	B1	0.03358	0.03362	0.05426
	B1	0.01052	0.01049	0.02997
	B2	0.02357	0.02433	0.04342
	B2	0.00505	0.00574	0.02456

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)	0.00751	0.00906	0.05472
	(A2_N * !B1 * !B2 * Y)	0.00255	0.00407	0.04974
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00144	0.00145	0.00145
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00164	-0.00165	-0.00164
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.01466	0.01766	0.10797
	(A2_N * !B1 * !B2 * Y)	0.00401	0.00698	0.09733
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00283	0.00287	0.00284
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00393	-0.00396	-0.00394
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.03215	0.03645	0.19714
	(A2_N * !B1 * !B2 * Y)	0.00904	0.01324	0.17398
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00635	0.00643	0.00636
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00846	-0.00851	-0.00845

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)	0.00052	0.00307	0.04917
	(A2_N * !B1 * !B2 * Y)	0.00552	0.00807	0.05412
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00136	-0.00144	-0.00145
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00173	0.00167	0.00165
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.00081	0.00587	0.09674
	(A2_N * !B1 * !B2 * Y)	0.01150	0.01660	0.10737
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00265	-0.00285	-0.00284
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00407	0.00398	0.00395
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.00214	0.01006	0.17292
	(A2_N * !B1 * !B2 * Y)	0.02539	0.03340	0.19604
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00589	-0.00642	-0.00636
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00878	0.00857	0.00849

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)	0.00668	0.00873	0.05657
	(A1_N * !B1 * !B2 * Y)	0.00255	0.00457	0.05243
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00050	0.00050	0.00049
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00202	-0.00202	-0.00205
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	0.01244	0.01627	0.10684
	(A1_N * !B1 * !B2 * Y)	0.00442	0.00820	0.09882
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00094	0.00094	0.00091
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00379	-0.00381	-0.00387
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	0.02748	0.03336	0.19640
	(A1_N * !B1 * !B2 * Y)	0.00891	0.01473	0.17782
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00215	0.00215	0.00205
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00974	-0.00977	-0.00992

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)	0.00012	0.00273	0.05061
	(A1_N * !B1 * !B2 * Y)	0.00427	0.00691	0.05477
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00047	-0.00048	-0.00047
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00205	0.00209	0.00205
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	-0.00009	0.00495	0.09521
	(A1_N * !B1 * !B2 * Y)	0.00801	0.01306	0.10329
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00088	-0.00090	-0.00088
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00386	0.00394	0.00388
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	-0.00078	0.00735	0.17136
	(A1_N * !B1 * !B2 * Y)	0.01785	0.02605	0.19002
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00200	-0.00203	-0.00199
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00995	0.01011	0.00995

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)	0.00174	0.00175	0.00174
	(A1_N * A2_N * B2 * Y)	-0.00206	-0.00209	-0.00210
	(A1_N * A2_N * !B2 * Y)	0.00168	0.00169	0.00169
	(A1_N * A2_N * !B2 * Y)	-0.00210	-0.00211	-0.00211
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00203	0.00178	0.00174
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00179	-0.00209	-0.00210
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	0.00346	0.00350	0.00346
	(A1_N * A2_N * B2 * Y)	-0.00419	-0.00430	-0.00429
	(A1_N * A2_N * !B2 * Y)	0.00336	0.00341	0.00338
	(A1_N * A2_N * !B2 * Y)	-0.00430	-0.00434	-0.00431
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00412	0.00357	0.00350
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00358	-0.00424	-0.00425
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	0.00667	0.00676	0.00668
	(A1_N * A2_N * B2 * Y)	-0.00818	-0.00840	-0.00834
	(A1_N * A2_N * !B2 * Y)	0.00647	0.00654	0.00649
	(A1_N * A2_N * !B2 * Y)	-0.00845	-0.00850	-0.00846
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00807	0.00684	0.00668
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00688	-0.00833	-0.00837

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)	-0.00172	-0.00173	-0.00172
	(A1_N * A2_N * B2 * Y)	0.00209	0.00212	0.00210
	(A1_N * A2_N * !B2 * Y)	-0.00159	-0.00168	-0.00168
	(A1_N * A2_N * !B2 * Y)	0.00215	0.00215	0.00213
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00172	-0.00174	-0.00173
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00208	0.00211	0.00210
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	-0.00340	-0.00344	-0.00342
	(A1_N * A2_N * B2 * Y)	0.00426	0.00432	0.00429
	(A1_N * A2_N * !B2 * Y)	-0.00319	-0.00334	-0.00335
	(A1_N * A2_N * !B2 * Y)	0.00439	0.00439	0.00436
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00347	-0.00349	-0.00347
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00422	0.00426	0.00425
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	-0.00666	-0.00669	-0.00665
	(A1_N * A2_N * B2 * Y)	0.00835	0.00843	0.00834
	(A1_N * A2_N * !B2 * Y)	-0.00608	-0.00648	-0.00649
	(A1_N * A2_N * !B2 * Y)	0.00860	0.00858	0.00850
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00665	-0.00668	-0.00662
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00837	0.00844	0.00837

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)	0.00180	0.00183	0.00181
	(A1_N * A2_N * B1 * Y)	-0.00206	-0.00212	-0.00211
	(A1_N * A2_N * !B1 * Y)	0.00176	0.00177	0.00175
	(A1_N * A2_N * !B1 * Y)	-0.00213	-0.00214	-0.00212
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00193	0.00195	0.00193
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00109	-0.00110	-0.00109
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	0.00321	0.00325	0.00323
	(A1_N * A2_N * B1 * Y)	-0.00390	-0.00399	-0.00401
	(A1_N * A2_N * !B1 * Y)	0.00314	0.00316	0.00315
	(A1_N * A2_N * !B1 * Y)	-0.00403	-0.00404	-0.00404
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00351	0.00353	0.00350
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00195	-0.00195	-0.00193
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	0.00672	0.00670	0.00668
	(A1_N * A2_N * B1 * Y)	-0.00828	-0.00843	-0.00840
	(A1_N * A2_N * !B1 * Y)	0.00645	0.00649	0.00648
	(A1_N * A2_N * !B1 * Y)	-0.00850	-0.00853	-0.00853
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00757	0.00768	0.00755
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00401	-0.00404	-0.00397

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)	-0.00178	-0.00179	-0.00179
	(A1_N * A2_N * B1 * Y)	0.00210	0.00212	0.00212
	(A1_N * A2_N * !B1 * Y)	-0.00165	-0.00175	-0.00175
	(A1_N * A2_N * !B1 * Y)	0.00216	0.00217	0.00215
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00186	-0.00188	-0.00192
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00114	0.00115	0.00111
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	-0.00319	-0.00319	-0.00320
	(A1_N * A2_N * B1 * Y)	0.00399	0.00399	0.00401
	(A1_N * A2_N * !B1 * Y)	-0.00297	-0.00312	-0.00313
	(A1_N * A2_N * !B1 * Y)	0.00409	0.00411	0.00409
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00334	-0.00337	-0.00348
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00205	0.00207	0.00197
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	-0.00666	-0.00670	-0.00665
	(A1_N * A2_N * B1 * Y)	0.00840	0.00847	0.00840
	(A1_N * A2_N * !B1 * Y)	-0.00609	-0.00647	-0.00648
	(A1_N * A2_N * !B1 * Y)	0.00868	0.00863	0.00856
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00719	-0.00727	-0.00750
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00424	0.00428	0.00405

SKY130_FD_SC_HS__O2BB2Ax

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00227	0.00242	0.00245	0.00265	1.19064
sky130_fd_sc_hs__o2bb2a_2	0.00229	0.00250	0.00262	0.00271	2.18723
sky130_fd_sc_hs__o2bb2a_4	0.00227	0.00244	0.00490	0.00483	4.42466

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2bb2a_1	0.00000	0.57057	0.97437
sky130_fd_sc_hs__o2bb2a_2	0.00000	0.46817	1.04847
sky130_fd_sc_hs__o2bb2a_4	0.00000	0.99013	1.32044

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)	0.12995	0.75398	8.24533
	A2_N->X (FR)	0.12001	0.72660	8.10749
	B1->X (RR)	0.07968	0.55115	6.01423
	B2->X (RR)	0.07070	0.53095	5.99212
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (FR)	0.14180	0.68402	8.23576
	A2_N->X (FR)	0.13003	0.65515	8.09762
	B1->X (RR)	0.08275	0.47342	5.92112
	B2->X (RR)	0.07310	0.45604	5.89352
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (FR)	0.16594	0.65204	8.39750
	A2_N->X (FR)	0.15494	0.62669	8.25007
	B1->X (RR)	0.09460	0.41985	6.10097
	B2->X (RR)	0.08182	0.39541	6.06258

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)	0.10179	0.32079	2.07678
	A2_N->X (RF)	0.09912	0.32000	2.14714
	B1->X (FF)	0.12996	0.55217	4.79152
	B2->X (FF)	0.11838	0.55376	4.82087
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (RF)	0.11530	0.30168	1.91157
	A2_N->X (RF)	0.11286	0.29975	1.95637
	B1->X (FF)	0.16034	0.57297	4.77468
	B2->X (FF)	0.14791	0.58251	4.81532
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (RF)	0.12913	0.32077	2.22958
	A2_N->X (RF)	0.12653	0.32200	2.27110
	B1->X (FF)	0.16447	0.54779	4.94070
	B2->X (FF)	0.14479	0.54969	4.97724

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	0.00978	0.01268	0.06094
	A1_N	0.01325	0.01616	0.06452
	A2_N	0.00929	0.01243	0.06186
	A2_N	0.01181	0.01495	0.06453
	B1	0.01110	0.01185	0.03849
	B1	0.00576	0.00651	0.03360
	B2	0.00933	0.01030	0.04557
	B2	0.00479	0.00576	0.04149
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.01336	0.01646	0.06435
	A1_N	0.01691	0.02003	0.06801
	A2_N	0.01263	0.01604	0.06389
	A2_N	0.01531	0.01874	0.06686
	B1	0.01478	0.01573	0.04218
	B1	0.00906	0.01005	0.03649
	B2	0.01290	0.01404	0.04902
	B2	0.00808	0.00921	0.04427
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.02606	0.02966	0.07931
	A1_N	0.02817	0.03182	0.08994
	A2_N	0.02545	0.02914	0.07798
	A2_N	0.02662	0.03032	0.07952
	B1	0.02914	0.03069	0.08101
	B1	0.01833	0.01996	0.07202
	B2	0.02402	0.02612	0.09196
	B2	0.01542	0.01754	0.08519

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	A1_N	0.01228	0.01386	0.06012
	A1_N	0.00886	0.01037	0.05614
	A2_N	0.01128	0.01350	0.06344
	A2_N	0.00885	0.01097	0.06010
	B1	0.00462	0.00544	0.03265
	B1	0.00993	0.01073	0.03696
	B2	0.00460	0.00656	0.04323
	B2	0.00908	0.01102	0.04667
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.01568	0.01731	0.06122
	A1_N	0.01211	0.01372	0.05730
	A2_N	0.01476	0.01667	0.06364
	A2_N	0.01210	0.01399	0.06076
	B1	0.00790	0.00863	0.03584
	B1	0.01355	0.01425	0.04039
	B2	0.00788	0.00978	0.04721
	B2	0.01266	0.01447	0.05034
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.02399	0.02616	0.07167
	A1_N	0.02217	0.02411	0.06785
	A2_N	0.02301	0.02564	0.07504
	A2_N	0.02219	0.02454	0.07246
	B1	0.01530	0.01592	0.06535
	B1	0.02607	0.02653	0.07576
	B2	0.01539	0.01819	0.08754
	B2	0.02389	0.02653	0.09354

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)	0.00675	0.00840	0.05443
	(A2_N * !B1 * !B2 * !X)	0.00184	0.00347	0.04952
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00152	0.00153	0.00152
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00159	-0.00160	-0.00159
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00715	0.00870	0.05355
	(A2_N * !B1 * !B2 * !X)	0.00210	0.00363	0.04849
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00160	0.00162	0.00160
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00156	-0.00157	-0.00156
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.00852	0.00982	0.05385
	(A2_N * !B1 * !B2 * !X)	0.00346	0.00475	0.04879
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00159	0.00160	0.00160
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00152	-0.00153	-0.00153

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)	0.00052	0.00316	0.04954
	(A2_N * !B1 * !B2 * !X)	0.00548	0.00811	0.05446
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00143	-0.00151	-0.00152
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00169	0.00163	0.00161
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00053	0.00309	0.04829
	(A2_N * !B1 * !B2 * !X)	0.00563	0.00819	0.05334
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00150	-0.00159	-0.00160
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00164	0.00159	0.00157
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.00113	0.00346	0.04812
	(A2_N * !B1 * !B2 * !X)	0.00626	0.00859	0.05319
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00148	-0.00159	-0.00159
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00162	0.00157	0.00155

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)	0.00598	0.00812	0.05617
	(A1_N * !B1 * !B2 * !X)	0.00198	0.00410	0.05216
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00047	0.00047	0.00045
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00199	-0.00199	-0.00202
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	0.00647	0.00840	0.05528
	(A1_N * !B1 * !B2 * !X)	0.00225	0.00418	0.05106
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00055	0.00055	0.00054
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00203	-0.00203	-0.00205
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.00778	0.00953	0.05558
	(A1_N * !B1 * !B2 * !X)	0.00364	0.00536	0.05142
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00050	0.00050	0.00049
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00197	-0.00197	-0.00200

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)	0.00002	0.00278	0.05084
	(A1_N * !B1 * !B2 * !X)	0.00405	0.00682	0.05487
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00044	-0.00045	-0.00044
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00202	0.00206	0.00203
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	-0.00001	0.00260	0.04944
	(A1_N * !B1 * !B2 * !X)	0.00423	0.00685	0.05368
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00052	-0.00053	-0.00052
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00205	0.00209	0.00206
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.00069	0.00302	0.04910
	(A1_N * !B1 * !B2 * !X)	0.00488	0.00722	0.05328
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00046	-0.00047	-0.00046
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00201	0.00205	0.00202

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)	0.00152	0.00153	0.00152
	(A1_N * A2_N * B2 * !X)	-0.00184	-0.00187	-0.00187
	(A1_N * A2_N * !B2 * !X)	0.00147	0.00148	0.00147
	(A1_N * A2_N * !B2 * !X)	-0.00188	-0.00188	-0.00188
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00182	0.00156	0.00152
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00157	-0.00186	-0.00187
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	0.00172	0.00173	0.00172
	(A1_N * A2_N * B2 * !X)	-0.00189	-0.00192	-0.00192
	(A1_N * A2_N * !B2 * !X)	0.00167	0.00169	0.00167
	(A1_N * A2_N * !B2 * !X)	-0.00193	-0.00194	-0.00193
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00202	0.00175	0.00171
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00163	-0.00192	-0.00193
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	0.00306	0.00310	0.00306
	(A1_N * A2_N * B2 * !X)	-0.00374	-0.00386	-0.00385
	(A1_N * A2_N * !B2 * !X)	0.00294	0.00299	0.00296
	(A1_N * A2_N * !B2 * !X)	-0.00387	-0.00391	-0.00389
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00378	0.00316	0.00307
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00307	-0.00379	-0.00384

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)	-0.00150	-0.00150	-0.00150
	(A1_N * A2_N * B2 * !X)	0.00187	0.00189	0.00188
	(A1_N * A2_N * !B2 * !X)	-0.00138	-0.00146	-0.00147
	(A1_N * A2_N * !B2 * !X)	0.00193	0.00192	0.00191
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00150	-0.00150	-0.00150
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00188	0.00189	0.00189
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	-0.00169	-0.00171	-0.00170
	(A1_N * A2_N * B2 * !X)	0.00192	0.00195	0.00193
	(A1_N * A2_N * !B2 * !X)	-0.00158	-0.00166	-0.00166
	(A1_N * A2_N * !B2 * !X)	0.00197	0.00198	0.00196
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00169	-0.00171	-0.00169
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00192	0.00195	0.00194
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	-0.00303	-0.00305	-0.00303
	(A1_N * A2_N * B2 * !X)	0.00384	0.00388	0.00385
	(A1_N * A2_N * !B2 * !X)	-0.00277	-0.00295	-0.00296
	(A1_N * A2_N * !B2 * !X)	0.00400	0.00396	0.00392
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00303	-0.00304	-0.00303
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00384	0.00385	0.00386

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)	0.00162	0.00163	0.00162
	(A1_N * A2_N * B1 * !X)	-0.00188	-0.00191	-0.00191
	(A1_N * A2_N * !B1 * !X)	0.00156	0.00158	0.00157
	(A1_N * A2_N * !B1 * !X)	-0.00191	-0.00193	-0.00192
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00173	0.00174	0.00173
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00101	-0.00102	-0.00101
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	0.00184	0.00185	0.00184
	(A1_N * A2_N * B1 * !X)	-0.00183	-0.00186	-0.00187
	(A1_N * A2_N * !B1 * !X)	0.00179	0.00179	0.00180
	(A1_N * A2_N * !B1 * !X)	-0.00187	-0.00188	-0.00188
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00183	0.00185	0.00183
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00108	-0.00109	-0.00108
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	0.00296	0.00299	0.00296
	(A1_N * A2_N * B1 * !X)	-0.00372	-0.00382	-0.00381
	(A1_N * A2_N * !B1 * !X)	0.00287	0.00292	0.00289
	(A1_N * A2_N * !B1 * !X)	-0.00384	-0.00389	-0.00386
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00324	0.00327	0.00324
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00196	-0.00198	-0.00196

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)	-0.00160	-0.00161	-0.00160
	(A1_N * A2_N * B1 * !X)	0.00191	0.00192	0.00192
	(A1_N * A2_N * !B1 * !X)	-0.00147	-0.00156	-0.00157
	(A1_N * A2_N * !B1 * !X)	0.00197	0.00196	0.00194
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00167	-0.00168	-0.00171
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00107	0.00107	0.00103
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	-0.00182	-0.00183	-0.00182
	(A1_N * A2_N * B1 * !X)	0.00187	0.00189	0.00187
	(A1_N * A2_N * !B1 * !X)	-0.00170	-0.00179	-0.00178
	(A1_N * A2_N * !B1 * !X)	0.00191	0.00192	0.00190
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00177	-0.00178	-0.00182
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00114	0.00114	0.00110
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	-0.00294	-0.00297	-0.00294
	(A1_N * A2_N * B1 * !X)	0.00382	0.00384	0.00381
	(A1_N * A2_N * !B1 * !X)	-0.00269	-0.00286	-0.00287
	(A1_N * A2_N * !B1 * !X)	0.00394	0.00392	0.00389
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00305	-0.00307	-0.00320
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00214	0.00214	0.00201

SKY130_FD_SC_HS__O311AIx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00269	0.00284	0.00276	0.00286	0.00293	0.40474
sky130_fd_sc_hs__o311ai_2	0.00526	0.00540	0.00547	0.00547	0.00555	0.70142
sky130_fd_sc_hs__o311ai_4	0.01037	0.01041	0.01090	0.00827	0.00782	1.33410

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311ai_1	0.00000	0.04208	0.23065
sky130_fd_sc_hs__o311ai_2	0.00000	0.08416	0.46129
sky130_fd_sc_hs__o311ai_4	0.00000	0.10104	0.61505

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)	0.18512	1.07248	9.94232
	A2->Y (FR)	0.17507	1.09583	10.51860
	A3->Y (FR)	0.14360	1.06657	10.58300
	B1->Y (FR)	0.04204	0.57125	6.35662
	C1->Y (FR)	0.03462	0.56254	6.34088
sky130_fd_sc_hs__o311ai_2	A1->Y (FR)	0.20529	0.95979	9.81358
	A2->Y (FR)	0.18787	0.97044	10.37760
	A3->Y (FR)	0.15457	0.95371	10.61980
	B1->Y (FR)	0.04209	0.51356	6.20447
	C1->Y (FR)	0.03319	0.50289	6.20890
sky130_fd_sc_hs__o311ai_4	A1->Y (FR)	0.18292	0.80897	9.63568
	A2->Y (FR)	0.17049	0.83718	10.38370
	A3->Y (FR)	0.13142	0.81096	10.53130
	B1->Y (FR)	0.05932	0.60296	8.12598
	C1->Y (FR)	0.03938	0.58861	8.20532

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311ai_1	A1->Y (RF)	0.05387	0.36140	3.22057
	A2->Y (RF)	0.05375	0.36162	3.29100
	A3->Y (RF)	0.04300	0.34437	3.24138
	B1->Y (RF)	0.04633	0.40740	3.98448
	C1->Y (RF)	0.03983	0.42898	4.27857
sky130_fd_sc_hs__o311ai_2	A1->Y (RF)	0.06287	0.33037	3.20697
	A2->Y (RF)	0.05839	0.31545	3.16948
	A3->Y (RF)	0.04763	0.29841	3.12293
	B1->Y (RF)	0.05525	0.37542	3.95979
	C1->Y (RF)	0.04677	0.42446	4.63888
sky130_fd_sc_hs__o311ai_4	A1->Y (RF)	0.06436	0.27775	3.14813
	A2->Y (RF)	0.05814	0.26427	3.11946
	A3->Y (RF)	0.04371	0.24333	3.05904
	B1->Y (RF)	0.05677	0.37068	4.55301
	C1->Y (RF)	0.04441	0.39336	5.02072

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	A1	0.00145	0.00129	0.00772
	A1	0.01126	0.01112	0.01752
	A2	0.00155	0.00143	0.00768
	A2	0.01024	0.01011	0.01638
	A3	0.00152	0.00204	0.01268
	A3	0.00902	0.00955	0.02020
	B1	0.00013	0.00126	0.01700
	B1	0.00733	0.00841	0.02417
	C1	-0.00055	0.00061	0.01594
	C1	0.00456	0.00565	0.02144
sky130_fd_sc_hs__o311ai_2	A1	0.00344	0.00302	0.01498
	A1	0.02335	0.02296	0.03496
	A2	0.00348	0.00319	0.01534
	A2	0.02102	0.02075	0.03290
	A3	0.00345	0.00406	0.02336
	A3	0.01867	0.01930	0.03861
	B1	0.00038	0.00295	0.03259
	B1	0.01472	0.01719	0.04574
	C1	-0.00110	0.00164	0.02971
	C1	0.00878	0.01149	0.03958

sky130_fd_sc_hs__o311ai_4	**A1**	0.00484	0.00430	0.02635
	A1	0.04384	0.04336	0.06532
	A2	0.00511	0.00461	0.02569
	A2	0.03928	0.03882	0.05991
	A3	0.00510	0.00639	0.04097
	A3	0.03495	0.03625	0.07089
	B1	0.00049	0.00303	0.03379
	B1	0.02968	0.03153	0.05955
	C1	-0.00284	0.00037	0.03031
	C1	0.02139	0.02345	0.05143

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311ai_1	**A1**	0.01317	0.01316	0.01849
	A1	0.00326	0.00314	0.00856
	A2	0.01120	0.01117	0.01627
	A2	0.00236	0.00229	0.00744
	A3	0.00883	0.00893	0.01400
	A3	0.00115	0.00124	0.00623
	B1	0.00949	0.00952	0.01594
	B1	0.00097	0.00106	0.00772
	C1	0.00844	0.00864	0.01607
	C1	0.00093	0.00116	0.00889

sky130_fd_sc_hs__o311ai_2	**A1**	0.02708	0.02668	0.03749
	A1	0.00697	0.00658	0.01709
	A2	0.02210	0.02198	0.03244
	A2	0.00419	0.00408	0.01426
	A3	0.01760	0.01775	0.02774
	A3	0.00195	0.00205	0.01185
	B1	0.01374	0.01394	0.02774
	B1	0.00163	0.00179	0.01547
	C1	0.01620	0.01661	0.03087
	C1	0.00154	0.00206	0.01663
sky130_fd_sc_hs__o311ai_4	**A1**	0.04962	0.04915	0.07186
	A1	0.01024	0.00972	0.03184
	A2	0.04114	0.04075	0.06191
	A2	0.00630	0.00585	0.02663
	A3	0.03083	0.03128	0.05173
	A3	0.00016	0.00064	0.02077
	B1	0.04180	0.04195	0.05389
	B1	0.00242	0.00267	0.01589
	C1	0.03677	0.03720	0.05082
	C1	0.00239	0.00309	0.01793

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)**	0.00171	0.00173	0.00171
	(A2 * B1 * !C1 * Y)	-0.00205	-0.00211	-0.00209
	(A2 * A3 * B1 * C1 * !Y)	0.00171	0.00173	0.00171
	(A2 * A3 * B1 * C1 * !Y)	-0.00204	-0.00211	-0.00209
	(A2 * !B1 * Y)	0.00171	0.00173	0.00171
	(A2 * !B1 * Y)	-0.00205	-0.00211	-0.00209
	(A2 * !A3 * B1 * C1 * !Y)	0.00178	0.00173	0.00171
	(A2 * !A3 * B1 * C1 * !Y)	-0.00196	-0.00211	-0.00209
	(!A2 * A3 * B1 * C1 * !Y)	0.00176	0.00173	0.00171
	(!A2 * A3 * B1 * C1 * !Y)	-0.00185	-0.00204	-0.00203
	(!A2 * A3 * B1 * !C1 * Y)	0.00171	0.00172	0.00171
	(!A2 * A3 * B1 * !C1 * Y)	-0.00188	-0.00204	-0.00202
	(!A2 * A3 * !B1 * Y)	0.00171	0.00172	0.00171
	(!A2 * A3 * !B1 * Y)	-0.00188	-0.00204	-0.00202
	(!A2 * !A3 * B1 * !C1 * Y)	0.00160	0.00162	0.00160
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00212	-0.00213	-0.00211
	(!A2 * !A3 * !B1 * C1 * Y)	0.00164	0.00165	0.00164
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00211	-0.00212	-0.00212
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00164	0.00167	0.00165
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00211	-0.00213	-0.00212

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	0.00333	0.00338	0.00334
	(A2 * B1 * !C1 * Y)	-0.00402	-0.00415	-0.00416
	(A2 * A3 * B1 * C1 * !Y)	0.00336	0.00339	0.00334
	(A2 * A3 * B1 * C1 * !Y)	-0.00399	-0.00415	-0.00415
	(A2 * !B1 * Y)	0.00333	0.00338	0.00334
	(A2 * !B1 * Y)	-0.00402	-0.00415	-0.00416
	(A2 * !A3 * B1 * C1 * !Y)	0.00348	0.00339	0.00334
	(A2 * !A3 * B1 * C1 * !Y)	-0.00384	-0.00415	-0.00415
	(!A2 * A3 * B1 * C1 * !Y)	0.00348	0.00339	0.00335
	(!A2 * A3 * B1 * C1 * !Y)	-0.00362	-0.00406	-0.00402
	(!A2 * A3 * B1 * !C1 * Y)	0.00334	0.00337	0.00334
	(!A2 * A3 * B1 * !C1 * Y)	-0.00372	-0.00406	-0.00402
	(!A2 * A3 * !B1 * Y)	0.00334	0.00337	0.00334
	(!A2 * A3 * !B1 * Y)	-0.00372	-0.00406	-0.00402
	(!A2 * !A3 * B1 * !C1 * Y)	0.00316	0.00314	0.00315
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00424	-0.00422	-0.00423
	(!A2 * !A3 * !B1 * C1 * Y)	0.00317	0.00320	0.00319
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00422	-0.00424	-0.00423
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00318	0.00323	0.00319
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00422	-0.00426	-0.00423

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	0.00669	0.00677	0.00668
	(A2 * B1 * !C1 * Y)	-0.00808	-0.00833	-0.00828
	(A2 * A3 * B1 * C1 * !Y)	0.00671	0.00677	0.00668
	(A2 * A3 * B1 * C1 * !Y)	-0.00805	-0.00833	-0.00829
	(A2 * !B1 * Y)	0.00669	0.00677	0.00668
	(A2 * !B1 * Y)	-0.00808	-0.00833	-0.00828
	(A2 * !A3 * B1 * C1 * !Y)	0.00692	0.00677	0.00668
	(A2 * !A3 * B1 * C1 * !Y)	-0.00778	-0.00833	-0.00830
	(!A2 * A3 * B1 * C1 * !Y)	0.00686	0.00677	0.00669
	(!A2 * A3 * B1 * C1 * !Y)	-0.00732	-0.00812	-0.00804
	(!A2 * A3 * B1 * !C1 * Y)	0.00666	0.00675	0.00668
	(!A2 * A3 * B1 * !C1 * Y)	-0.00747	-0.00812	-0.00804
	(!A2 * A3 * !B1 * Y)	0.00666	0.00675	0.00668
	(!A2 * A3 * !B1 * Y)	-0.00747	-0.00812	-0.00804
	(!A2 * !A3 * B1 * !C1 * Y)	0.00628	0.00633	0.00629
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00845	-0.00848	-0.00846
	(!A2 * !A3 * !B1 * C1 * Y)	0.00634	0.00643	0.00636
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00845	-0.00851	-0.00846
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00635	0.00644	0.00636
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00845	-0.00851	-0.00846

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)**	-0.00170	-0.00171	-0.00171
	(A2 * B1 * !C1 * Y)	0.00208	0.00211	0.00209
	(A2 * A3 * B1 * C1 * !Y)	-0.00170	-0.00171	-0.00171
	(A2 * A3 * B1 * C1 * !Y)	0.00208	0.00211	0.00209
	(A2 * !B1 * Y)	-0.00171	-0.00171	-0.00171
	(A2 * !B1 * Y)	0.00210	0.00211	0.00209
	(A2 * !A3 * B1 * C1 * !Y)	-0.00170	-0.00171	-0.00171
	(A2 * !A3 * B1 * C1 * !Y)	0.00208	0.00211	0.00209
	(!A2 * A3 * B1 * C1 * !Y)	-0.00170	-0.00171	-0.00170
	(!A2 * A3 * B1 * C1 * !Y)	0.00202	0.00204	0.00203
	(!A2 * A3 * B1 * !C1 * Y)	-0.00170	-0.00171	-0.00171
	(!A2 * A3 * B1 * !C1 * Y)	0.00202	0.00204	0.00202
	(!A2 * A3 * !B1 * Y)	-0.00171	-0.00171	-0.00171
	(!A2 * A3 * !B1 * Y)	0.00202	0.00204	0.00202
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00149	-0.00162	-0.00160
	(!A2 * !A3 * B1 * !C1 * Y)	0.00212	0.00214	0.00212
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00155	-0.00165	-0.00164
	(!A2 * !A3 * !B1 * C1 * Y)	0.00212	0.00214	0.00212
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00155	-0.00165	-0.00165
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00212	0.00214	0.00212

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	-0.00332	-0.00333	-0.00333
	(A2 * B1 * !C1 * Y)	0.00413	0.00415	0.00416
	(A2 * A3 * B1 * C1 * !Y)	-0.00332	-0.00333	-0.00333
	(A2 * A3 * B1 * C1 * !Y)	0.00413	0.00415	0.00415
	(A2 * !B1 * Y)	-0.00332	-0.00333	-0.00333
	(A2 * !B1 * Y)	0.00413	0.00415	0.00416
	(A2 * !A3 * B1 * C1 * !Y)	-0.00332	-0.00333	-0.00333
	(A2 * !A3 * B1 * C1 * !Y)	0.00413	0.00415	0.00415
	(!A2 * A3 * B1 * C1 * !Y)	-0.00334	-0.00335	-0.00333
	(!A2 * A3 * B1 * C1 * !Y)	0.00402	0.00406	0.00402
	(!A2 * A3 * B1 * !C1 * Y)	-0.00333	-0.00335	-0.00333
	(!A2 * A3 * B1 * !C1 * Y)	0.00403	0.00406	0.00402
	(!A2 * A3 * !B1 * Y)	-0.00333	-0.00335	-0.00333
	(!A2 * A3 * !B1 * Y)	0.00403	0.00406	0.00402
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00284	-0.00312	-0.00315
	(!A2 * !A3 * B1 * !C1 * Y)	0.00424	0.00425	0.00424
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00293	-0.00319	-0.00319
	(!A2 * !A3 * !B1 * C1 * Y)	0.00422	0.00428	0.00424
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00294	-0.00319	-0.00319
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00422	0.00428	0.00424

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	-0.00665	-0.00669	-0.00667
	(A2 * B1 * !C1 * Y)	0.00825	0.00833	0.00828
	(A2 * A3 * B1 * C1 * !Y)	-0.00665	-0.00668	-0.00667
	(A2 * A3 * B1 * C1 * !Y)	0.00825	0.00833	0.00829
	(A2 * !B1 * Y)	-0.00665	-0.00669	-0.00667
	(A2 * !B1 * Y)	0.00824	0.00833	0.00828
	(A2 * !A3 * B1 * C1 * !Y)	-0.00664	-0.00668	-0.00666
	(A2 * !A3 * B1 * C1 * !Y)	0.00824	0.00833	0.00830
	(!A2 * A3 * B1 * C1 * !Y)	-0.00665	-0.00670	-0.00666
	(!A2 * A3 * B1 * C1 * !Y)	0.00801	0.00812	0.00804
	(!A2 * A3 * B1 * !C1 * Y)	-0.00665	-0.00670	-0.00666
	(!A2 * A3 * B1 * !C1 * Y)	0.00801	0.00812	0.00804
	(!A2 * A3 * !B1 * Y)	-0.00665	-0.00670	-0.00666
	(!A2 * A3 * !B1 * Y)	0.00801	0.00812	0.00804
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00581	-0.00627	-0.00629
	(!A2 * !A3 * B1 * !C1 * Y)	0.00848	0.00858	0.00848
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00595	-0.00636	-0.00636
	(!A2 * !A3 * !B1 * C1 * Y)	0.00846	0.00856	0.00848
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00596	-0.00637	-0.00636
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00846	0.00856	0.00848

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)**	0.00184	0.00187	0.00177
	(A1 * A3 * B1 * C1 * !Y)	-0.00132	-0.00133	-0.00133
	(A1 * A3 * B1 * !C1 * Y)	0.00164	0.00165	0.00163
	(A1 * A3 * B1 * !C1 * Y)	-0.00152	-0.00151	-0.00151
	(A1 * A3 * !B1 * Y)	0.00164	0.00165	0.00163
	(A1 * A3 * !B1 * Y)	-0.00151	-0.00151	-0.00151
	(A1 * !A3 * B1 * C1 * !Y)	0.00172	0.00174	0.00171
	(A1 * !A3 * B1 * C1 * !Y)	-0.00110	-0.00111	-0.00111
	(A1 * !A3 * B1 * !C1 * Y)	0.00164	0.00165	0.00163
	(A1 * !A3 * B1 * !C1 * Y)	-0.00210	-0.00213	-0.00212
	(A1 * !A3 * !B1 * C1 * Y)	0.00164	0.00165	0.00163
	(A1 * !A3 * !B1 * C1 * Y)	-0.00211	-0.00212	-0.00212
	(A1 * !A3 * !B1 * !C1 * Y)	0.00164	0.00164	0.00163
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00211	-0.00212	-0.00212
	(!A1 * A3 * B1 * C1 * !Y)	0.00212	0.00174	0.00170
	(!A1 * A3 * B1 * C1 * !Y)	-0.00164	-0.00205	-0.00206
	(!A1 * A3 * B1 * !C1 * Y)	0.00164	0.00165	0.00163
	(!A1 * A3 * B1 * !C1 * Y)	-0.00210	-0.00213	-0.00212
	(!A1 * A3 * !B1 * Y)	0.00162	0.00165	0.00163
	(!A1 * A3 * !B1 * Y)	-0.00207	-0.00212	-0.00212
	(!A1 * !A3 * B1 * !C1 * Y)	0.00152	0.00154	0.00152
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00215	-0.00216	-0.00215
	(!A1 * !A3 * !B1 * C1 * Y)	0.00154	0.00155	0.00154
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00215	-0.00215	-0.00215
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00155	0.00156	0.00155
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00215	-0.00215	-0.00215

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00374	0.00374	0.00355
	(A1 * A3 * B1 * C1 * !Y)	-0.00278	-0.00279	-0.00278
	(A1 * A3 * B1 * !C1 * Y)	0.00337	0.00340	0.00337
	(A1 * A3 * B1 * !C1 * Y)	-0.00305	-0.00306	-0.00305
	(A1 * A3 * !B1 * Y)	0.00337	0.00340	0.00337
	(A1 * A3 * !B1 * Y)	-0.00305	-0.00306	-0.00305
	(A1 * !A3 * B1 * C1 * !Y)	0.00343	0.00346	0.00340
	(A1 * !A3 * B1 * C1 * !Y)	-0.00229	-0.00231	-0.00231
	(A1 * !A3 * B1 * !C1 * Y)	0.00339	0.00340	0.00337
	(A1 * !A3 * B1 * !C1 * Y)	-0.00415	-0.00417	-0.00420
	(A1 * !A3 * !B1 * C1 * Y)	0.00339	0.00340	0.00337
	(A1 * !A3 * !B1 * C1 * Y)	-0.00415	-0.00423	-0.00420
	(A1 * !A3 * !B1 * !C1 * Y)	0.00339	0.00339	0.00337
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00415	-0.00423	-0.00420
	(!A1 * A3 * B1 * C1 * !Y)	0.00421	0.00340	0.00338
	(!A1 * A3 * B1 * C1 * !Y)	-0.00343	-0.00422	-0.00425
	(!A1 * A3 * B1 * !C1 * Y)	0.00339	0.00336	0.00337
	(!A1 * A3 * B1 * !C1 * Y)	-0.00421	-0.00425	-0.00424
	(!A1 * A3 * !B1 * Y)	0.00339	0.00337	0.00336
	(!A1 * A3 * !B1 * Y)	-0.00421	-0.00426	-0.00424
	(!A1 * !A3 * B1 * !C1 * Y)	0.00314	0.00318	0.00314
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00430	-0.00433	-0.00430
	(!A1 * !A3 * !B1 * C1 * Y)	0.00319	0.00321	0.00318
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00432	-0.00433	-0.00430
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00320	0.00320	0.00319
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00432	-0.00431	-0.00430

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	0.00727	0.00744	0.00700
	(A1 * A3 * B1 * C1 * !Y)	-0.00531	-0.00535	-0.00533
	(A1 * A3 * B1 * !C1 * Y)	0.00656	0.00669	0.00661
	(A1 * A3 * B1 * !C1 * Y)	-0.00593	-0.00598	-0.00594
	(A1 * A3 * !B1 * Y)	0.00663	0.00669	0.00661
	(A1 * A3 * !B1 * Y)	-0.00593	-0.00598	-0.00594
	(A1 * !A3 * B1 * C1 * !Y)	0.00679	0.00682	0.00672
	(A1 * !A3 * B1 * C1 * !Y)	-0.00446	-0.00446	-0.00445
	(A1 * !A3 * B1 * !C1 * Y)	0.00657	0.00667	0.00660
	(A1 * !A3 * B1 * !C1 * Y)	-0.00812	-0.00830	-0.00824
	(A1 * !A3 * !B1 * C1 * Y)	0.00657	0.00668	0.00660
	(A1 * !A3 * !B1 * C1 * Y)	-0.00812	-0.00830	-0.00825
	(A1 * !A3 * !B1 * !C1 * Y)	0.00656	0.00668	0.00660
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00812	-0.00831	-0.00826
	(!A1 * A3 * B1 * C1 * !Y)	0.00843	0.00678	0.00669
	(!A1 * A3 * B1 * C1 * !Y)	-0.00642	-0.00823	-0.00828
	(!A1 * A3 * B1 * !C1 * Y)	0.00658	0.00663	0.00660
	(!A1 * A3 * B1 * !C1 * Y)	-0.00818	-0.00838	-0.00834
	(!A1 * A3 * !B1 * Y)	0.00658	0.00663	0.00660
	(!A1 * A3 * !B1 * Y)	-0.00819	-0.00838	-0.00834
	(!A1 * !A3 * B1 * !C1 * Y)	0.00618	0.00623	0.00617
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00849	-0.00852	-0.00848
	(!A1 * !A3 * !B1 * C1 * Y)	0.00628	0.00633	0.00626
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00849	-0.00852	-0.00848
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00627	0.00631	0.00625
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00849	-0.00853	-0.00848

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)**	-0.00169	-0.00170	-0.00170
	(A1 * A3 * B1 * C1 * !Y)	0.00132	0.00133	0.00133
	(A1 * A3 * B1 * !C1 * Y)	-0.00163	-0.00163	-0.00162
	(A1 * A3 * B1 * !C1 * Y)	0.00152	0.00151	0.00151
	(A1 * A3 * !B1 * Y)	-0.00162	-0.00163	-0.00162
	(A1 * A3 * !B1 * Y)	0.00151	0.00151	0.00151
	(A1 * !A3 * B1 * C1 * !Y)	-0.00169	-0.00170	-0.00168
	(A1 * !A3 * B1 * C1 * !Y)	0.00114	0.00114	0.00115
	(A1 * !A3 * B1 * !C1 * Y)	-0.00162	-0.00164	-0.00163
	(A1 * !A3 * B1 * !C1 * Y)	0.00210	0.00213	0.00212
	(A1 * !A3 * !B1 * C1 * Y)	-0.00162	-0.00163	-0.00163
	(A1 * !A3 * !B1 * C1 * Y)	0.00211	0.00212	0.00212
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00162	-0.00163	-0.00163
	(A1 * !A3 * !B1 * !C1 * Y)	0.00211	0.00212	0.00212
	(!A1 * A3 * B1 * C1 * !Y)	-0.00169	-0.00169	-0.00169
	(!A1 * A3 * B1 * C1 * !Y)	0.00204	0.00205	0.00206
	(!A1 * A3 * B1 * !C1 * Y)	-0.00162	-0.00163	-0.00163
	(!A1 * A3 * B1 * !C1 * Y)	0.00211	0.00213	0.00212
	(!A1 * A3 * !B1 * Y)	-0.00162	-0.00163	-0.00162
	(!A1 * A3 * !B1 * Y)	0.00212	0.00212	0.00212
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00140	-0.00154	-0.00152
	(!A1 * !A3 * B1 * !C1 * Y)	0.00215	0.00217	0.00215
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00146	-0.00155	-0.00154
	(!A1 * !A3 * !B1 * C1 * Y)	0.00216	0.00217	0.00215
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00146	-0.00155	-0.00155
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00216	0.00217	0.00215

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00341	-0.00342	-0.00341
	(A1 * A3 * B1 * C1 * !Y)	0.00278	0.00279	0.00278
	(A1 * A3 * B1 * !C1 * Y)	-0.00335	-0.00337	-0.00336
	(A1 * A3 * B1 * !C1 * Y)	0.00305	0.00306	0.00305
	(A1 * A3 * !B1 * Y)	-0.00335	-0.00337	-0.00336
	(A1 * A3 * !B1 * Y)	0.00305	0.00306	0.00305
	(A1 * !A3 * B1 * C1 * !Y)	-0.00335	-0.00336	-0.00334
	(A1 * !A3 * B1 * C1 * !Y)	0.00238	0.00239	0.00238
	(A1 * !A3 * B1 * !C1 * Y)	-0.00335	-0.00335	-0.00336
	(A1 * !A3 * B1 * !C1 * Y)	0.00417	0.00417	0.00420
	(A1 * !A3 * !B1 * C1 * Y)	-0.00336	-0.00338	-0.00336
	(A1 * !A3 * !B1 * C1 * Y)	0.00420	0.00423	0.00420
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00336	-0.00338	-0.00336
	(A1 * !A3 * !B1 * !C1 * Y)	0.00420	0.00423	0.00420
	(!A1 * A3 * B1 * C1 * !Y)	-0.00336	-0.00337	-0.00335
	(!A1 * A3 * B1 * C1 * !Y)	0.00424	0.00427	0.00425
	(!A1 * A3 * B1 * !C1 * Y)	-0.00335	-0.00336	-0.00336
	(!A1 * A3 * B1 * !C1 * Y)	0.00423	0.00428	0.00424
	(!A1 * A3 * !B1 * Y)	-0.00336	-0.00337	-0.00336
	(!A1 * A3 * !B1 * Y)	0.00424	0.00428	0.00424
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00285	-0.00317	-0.00314
	(!A1 * !A3 * B1 * !C1 * Y)	0.00432	0.00436	0.00431
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00297	-0.00320	-0.00318
	(!A1 * !A3 * !B1 * C1 * Y)	0.00433	0.00435	0.00431
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00297	-0.00320	-0.00319
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00433	0.00435	0.00431

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00671	-0.00674	-0.00672
	(A1 * A3 * B1 * C1 * !Y)	0.00531	0.00535	0.00533
	(A1 * A3 * B1 * !C1 * Y)	-0.00656	-0.00662	-0.00660
	(A1 * A3 * B1 * !C1 * Y)	0.00593	0.00598	0.00594
	(A1 * A3 * !B1 * Y)	-0.00659	-0.00662	-0.00660
	(A1 * A3 * !B1 * Y)	0.00593	0.00598	0.00594
	(A1 * !A3 * B1 * C1 * !Y)	-0.00664	-0.00666	-0.00658
	(A1 * !A3 * B1 * C1 * !Y)	0.00454	0.00456	0.00460
	(A1 * !A3 * B1 * !C1 * Y)	-0.00657	-0.00663	-0.00659
	(A1 * !A3 * B1 * !C1 * Y)	0.00822	0.00830	0.00824
	(A1 * !A3 * !B1 * C1 * Y)	-0.00657	-0.00663	-0.00659
	(A1 * !A3 * !B1 * C1 * Y)	0.00825	0.00830	0.00825
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00656	-0.00662	-0.00659
	(A1 * !A3 * !B1 * !C1 * Y)	0.00826	0.00831	0.00826
	(!A1 * A3 * B1 * C1 * !Y)	-0.00666	-0.00669	-0.00664
	(!A1 * A3 * B1 * C1 * !Y)	0.00825	0.00833	0.00828
	(!A1 * A3 * B1 * !C1 * Y)	-0.00658	-0.00662	-0.00658
	(!A1 * A3 * B1 * !C1 * Y)	0.00833	0.00842	0.00834
	(!A1 * A3 * !B1 * Y)	-0.00658	-0.00662	-0.00658
	(!A1 * A3 * !B1 * Y)	0.00834	0.00842	0.00834
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00569	-0.00619	-0.00617
	(!A1 * !A3 * B1 * !C1 * Y)	0.00853	0.00858	0.00849
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00587	-0.00628	-0.00626
	(!A1 * !A3 * !B1 * C1 * Y)	0.00852	0.00856	0.00850
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00587	-0.00627	-0.00625
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00852	0.00856	0.00850

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)**	0.00181	0.00184	0.00182
	(A2 * B1 * C1 * !Y)	-0.00096	-0.00098	-0.00097
	(A2 * B1 * !C1 * Y)	0.00166	0.00168	0.00166
	(A2 * B1 * !C1 * Y)	-0.00196	-0.00204	-0.00202
	(A2 * !B1 * C1 * Y)	0.00166	0.00168	0.00166
	(A2 * !B1 * C1 * Y)	-0.00197	-0.00203	-0.00202
	(A2 * !B1 * !C1 * Y)	0.00166	0.00168	0.00166
	(A2 * !B1 * !C1 * Y)	-0.00196	-0.00202	-0.00202
	(A1 * !A2 * B1 * C1 * !Y)	0.00182	0.00184	0.00183
	(A1 * !A2 * B1 * C1 * !Y)	-0.00096	-0.00097	-0.00096
	(A1 * !A2 * B1 * !C1 * Y)	0.00166	0.00168	0.00166
	(A1 * !A2 * B1 * !C1 * Y)	-0.00177	-0.00196	-0.00194
	(A1 * !A2 * !B1 * C1 * Y)	0.00166	0.00168	0.00166
	(A1 * !A2 * !B1 * C1 * Y)	-0.00178	-0.00195	-0.00194
	(A1 * !A2 * !B1 * !C1 * Y)	0.00166	0.00168	0.00166
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00179	-0.00196	-0.00195
	(!A1 * !A2 * B1 * !C1 * Y)	0.00155	0.00157	0.00155
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00205	-0.00206	-0.00205
	(!A1 * !A2 * !B1 * C1 * Y)	0.00160	0.00161	0.00159
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00205	-0.00206	-0.00205
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00158	0.00159	0.00157
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00205	-0.00206	-0.00205

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	0.00375	0.00379	0.00375
	(A2 * B1 * C1 * !Y)	-0.00200	-0.00201	-0.00199
	(A2 * B1 * !C1 * Y)	0.00331	0.00334	0.00332
	(A2 * B1 * !C1 * Y)	-0.00408	-0.00422	-0.00420
	(A2 * !B1 * C1 * Y)	0.00331	0.00334	0.00332
	(A2 * !B1 * C1 * Y)	-0.00408	-0.00422	-0.00420
	(A2 * !B1 * !C1 * Y)	0.00332	0.00336	0.00332
	(A2 * !B1 * !C1 * Y)	-0.00410	-0.00422	-0.00420
	(A1 * !A2 * B1 * C1 * !Y)	0.00375	0.00381	0.00375
	(A1 * !A2 * B1 * C1 * !Y)	-0.00199	-0.00202	-0.00199
	(A1 * !A2 * B1 * !C1 * Y)	0.00332	0.00333	0.00332
	(A1 * !A2 * B1 * !C1 * Y)	-0.00376	-0.00405	-0.00402
	(A1 * !A2 * !B1 * C1 * Y)	0.00332	0.00333	0.00332
	(A1 * !A2 * !B1 * C1 * Y)	-0.00377	-0.00406	-0.00403
	(A1 * !A2 * !B1 * !C1 * Y)	0.00333	0.00336	0.00332
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00379	-0.00408	-0.00405
	(!A1 * !A2 * B1 * !C1 * Y)	0.00314	0.00317	0.00314
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00427	-0.00428	-0.00426
	(!A1 * !A2 * !B1 * C1 * Y)	0.00316	0.00320	0.00317
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00425	-0.00428	-0.00426
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00316	0.00320	0.00317
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00426	-0.00429	-0.00426

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	0.00765	0.00775	0.00763
	(A2 * B1 * C1 * !Y)	-0.00401	-0.00404	-0.00396
	(A2 * B1 * !C1 * Y)	0.00643	0.00644	0.00638
	(A2 * B1 * !C1 * Y)	-0.00853	-0.00878	-0.00875
	(A2 * !B1 * C1 * Y)	0.00642	0.00643	0.00638
	(A2 * !B1 * C1 * Y)	-0.00853	-0.00879	-0.00875
	(A2 * !B1 * !C1 * Y)	0.00642	0.00642	0.00638
	(A2 * !B1 * !C1 * Y)	-0.00854	-0.00882	-0.00876
	(A1 * !A2 * B1 * C1 * !Y)	0.00765	0.00776	0.00762
	(A1 * !A2 * B1 * C1 * !Y)	-0.00399	-0.00403	-0.00395
	(A1 * !A2 * B1 * !C1 * Y)	0.00636	0.00640	0.00638
	(A1 * !A2 * B1 * !C1 * Y)	-0.00766	-0.00830	-0.00828
	(A1 * !A2 * !B1 * C1 * Y)	0.00637	0.00640	0.00638
	(A1 * !A2 * !B1 * C1 * Y)	-0.00768	-0.00832	-0.00829
	(A1 * !A2 * !B1 * !C1 * Y)	0.00636	0.00640	0.00638
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00771	-0.00848	-0.00838
	(!A1 * !A2 * B1 * !C1 * Y)	0.00593	0.00601	0.00595
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00890	-0.00890	-0.00890
	(!A1 * !A2 * !B1 * C1 * Y)	0.00614	0.00618	0.00612
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00892	-0.00895	-0.00890
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00607	0.00611	0.00605
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00892	-0.00895	-0.00890

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)**	-0.00175	-0.00177	-0.00181
	(A2 * B1 * C1 * !Y)	0.00103	0.00103	0.00099
	(A2 * B1 * !C1 * Y)	-0.00165	-0.00167	-0.00166
	(A2 * B1 * !C1 * Y)	0.00201	0.00204	0.00202
	(A2 * !B1 * C1 * Y)	-0.00165	-0.00166	-0.00166
	(A2 * !B1 * C1 * Y)	0.00201	0.00203	0.00202
	(A2 * !B1 * !C1 * Y)	-0.00165	-0.00166	-0.00166
	(A2 * !B1 * !C1 * Y)	0.00202	0.00202	0.00202
	(A1 * !A2 * B1 * C1 * !Y)	-0.00168	-0.00169	-0.00180
	(A1 * !A2 * B1 * C1 * !Y)	0.00106	0.00107	0.00098
	(A1 * !A2 * B1 * !C1 * Y)	-0.00166	-0.00167	-0.00166
	(A1 * !A2 * B1 * !C1 * Y)	0.00193	0.00196	0.00194
	(A1 * !A2 * !B1 * C1 * Y)	-0.00165	-0.00167	-0.00166
	(A1 * !A2 * !B1 * C1 * Y)	0.00193	0.00195	0.00194
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00165	-0.00166	-0.00166
	(A1 * !A2 * !B1 * !C1 * Y)	0.00194	0.00196	0.00195
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00142	-0.00157	-0.00155
	(!A1 * !A2 * B1 * !C1 * Y)	0.00205	0.00207	0.00205
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00149	-0.00159	-0.00159
	(!A1 * !A2 * !B1 * C1 * Y)	0.00205	0.00207	0.00206
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00149	-0.00159	-0.00157
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00205	0.00207	0.00206

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	-0.00361	-0.00363	-0.00373
	(A2 * B1 * C1 * !Y)	0.00213	0.00214	0.00203
	(A2 * B1 * !C1 * Y)	-0.00330	-0.00333	-0.00331
	(A2 * B1 * !C1 * Y)	0.00418	0.00422	0.00420
	(A2 * !B1 * C1 * Y)	-0.00331	-0.00332	-0.00331
	(A2 * !B1 * C1 * Y)	0.00418	0.00422	0.00420
	(A2 * !B1 * !C1 * Y)	-0.00330	-0.00332	-0.00331
	(A2 * !B1 * !C1 * Y)	0.00418	0.00422	0.00420
	(A1 * !A2 * B1 * C1 * !Y)	-0.00337	-0.00341	-0.00369
	(A1 * !A2 * B1 * C1 * !Y)	0.00224	0.00226	0.00204
	(A1 * !A2 * B1 * !C1 * Y)	-0.00331	-0.00333	-0.00331
	(A1 * !A2 * B1 * !C1 * Y)	0.00401	0.00405	0.00402
	(A1 * !A2 * !B1 * C1 * Y)	-0.00331	-0.00333	-0.00331
	(A1 * !A2 * !B1 * C1 * Y)	0.00401	0.00406	0.00403
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00330	-0.00333	-0.00331
	(A1 * !A2 * !B1 * !C1 * Y)	0.00403	0.00408	0.00405
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00282	-0.00312	-0.00314
	(!A1 * !A2 * B1 * !C1 * Y)	0.00427	0.00432	0.00427
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00292	-0.00316	-0.00317
	(!A1 * !A2 * !B1 * C1 * Y)	0.00425	0.00431	0.00427
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00292	-0.00316	-0.00317
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00426	0.00431	0.00427

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	-0.00728	-0.00734	-0.00758
	(A2 * B1 * C1 * !Y)	0.00429	0.00430	0.00405
	(A2 * B1 * !C1 * Y)	-0.00638	-0.00639	-0.00636
	(A2 * B1 * !C1 * Y)	0.00877	0.00878	0.00875
	(A2 * !B1 * C1 * Y)	-0.00635	-0.00639	-0.00636
	(A2 * !B1 * C1 * Y)	0.00871	0.00879	0.00875
	(A2 * !B1 * !C1 * Y)	-0.00637	-0.00640	-0.00636
	(A2 * !B1 * !C1 * Y)	0.00876	0.00884	0.00876
	(A1 * !A2 * B1 * C1 * !Y)	-0.00693	-0.00699	-0.00751
	(A1 * !A2 * B1 * C1 * !Y)	0.00444	0.00445	0.00403
	(A1 * !A2 * B1 * !C1 * Y)	-0.00634	-0.00638	-0.00636
	(A1 * !A2 * B1 * !C1 * Y)	0.00824	0.00830	0.00828
	(A1 * !A2 * !B1 * C1 * Y)	-0.00635	-0.00639	-0.00636
	(A1 * !A2 * !B1 * C1 * Y)	0.00827	0.00832	0.00829
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00635	-0.00640	-0.00636
	(A1 * !A2 * !B1 * !C1 * Y)	0.00835	0.00848	0.00838
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00551	-0.00596	-0.00595
	(!A1 * !A2 * B1 * !C1 * Y)	0.00893	0.00890	0.00892
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00569	-0.00611	-0.00612
	(!A1 * !A2 * !B1 * C1 * Y)	0.00892	0.00898	0.00892
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00569	-0.00608	-0.00605
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00892	0.00898	0.00892

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

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

sky130_fd_sc_hs__o311ai_1	**(A3 * !C1 * Y)**	0.00156	0.00157	0.00157
	(A3 * !C1 * Y)	-0.00217	-0.00219	-0.00218
	(A2 * !A3 * !C1 * Y)	0.00156	0.00158	0.00157
	(A2 * !A3 * !C1 * Y)	-0.00218	-0.00220	-0.00218
	(A1 * !A2 * !A3 * !C1 * Y)	0.00156	0.00157	0.00156
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00218	-0.00219	-0.00218
	(!A1 * !A2 * !A3 * C1 * Y)	0.00069	0.00069	0.00069
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00219	-0.00219	-0.00218
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00089	0.00089	0.00089
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00220	-0.00221	-0.00220
sky130_fd_sc_hs__o311ai_2	**(A3 * !C1 * Y)**	0.00323	0.00326	0.00325
	(A3 * !C1 * Y)	-0.00428	-0.00429	-0.00429
	(A2 * !A3 * !C1 * Y)	0.00323	0.00328	0.00325
	(A2 * !A3 * !C1 * Y)	-0.00428	-0.00432	-0.00429
	(A1 * !A2 * !A3 * !C1 * Y)	0.00324	0.00327	0.00325
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00430	-0.00431	-0.00429
	(!A1 * !A2 * !A3 * C1 * Y)	0.00143	0.00145	0.00145
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00429	-0.00432	-0.00429
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00185	0.00188	0.00186
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00432	-0.00436	-0.00433
sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	0.00612	0.00619	0.00614
	(A3 * !C1 * Y)	-0.00488	-0.00491	-0.00488
	(A2 * !A3 * !C1 * Y)	0.00607	0.00610	0.00608
	(A2 * !A3 * !C1 * Y)	-0.00489	-0.00489	-0.00488
	(A1 * !A2 * !A3 * !C1 * Y)	0.00606	0.00611	0.00607
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00489	-0.00491	-0.00488
	(!A1 * !A2 * !A3 * C1 * Y)	0.00259	0.00260	0.00261
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00493	-0.00494	-0.00492
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00337	0.00341	0.00338
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00501	-0.00505	-0.00502

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !C1 * Y)	-0.00146	-0.00157	-0.00157
	(A3 * !C1 * Y)	0.00226	0.00221	0.00219
	(A2 * !A3 * !C1 * Y)	-0.00144	-0.00157	-0.00157
	(A2 * !A3 * !C1 * Y)	0.00227	0.00223	0.00219
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00144	-0.00157	-0.00156
	(A1 * !A2 * !A3 * !C1 * Y)	0.00230	0.00219	0.00219
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00066	-0.00066	-0.00066
	(!A1 * !A2 * !A3 * C1 * Y)	0.00224	0.00227	0.00220
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00089	-0.00089	-0.00089
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00236	0.00233	0.00223
sky130_fd_sc_hs__o311ai_2	(A3 * !C1 * Y)	-0.00302	-0.00325	-0.00325
	(A3 * !C1 * Y)	0.00444	0.00429	0.00431
	(A2 * !A3 * !C1 * Y)	-0.00299	-0.00328	-0.00325
	(A2 * !A3 * !C1 * Y)	0.00447	0.00434	0.00431
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00293	-0.00327	-0.00325
	(A1 * !A2 * !A3 * !C1 * Y)	0.00451	0.00433	0.00431
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00136	-0.00139	-0.00140
	(!A1 * !A2 * !A3 * C1 * Y)	0.00439	0.00448	0.00434
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00185	-0.00188	-0.00186
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00460	0.00458	0.00439

sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	-0.00547	-0.00617	-0.00614
	(A3 * !C1 * Y)	0.00536	0.00493	0.00490
	(A2 * !A3 * !C1 * Y)	-0.00536	-0.00610	-0.00608
	(A2 * !A3 * !C1 * Y)	0.00543	0.00492	0.00490
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00528	-0.00611	-0.00607
	(A1 * !A2 * !A3 * !C1 * Y)	0.00558	0.00494	0.00490
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00243	-0.00249	-0.00251
	(!A1 * !A2 * !A3 * C1 * Y)	0.00513	0.00522	0.00500
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00337	-0.00341	-0.00338
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00563	0.00548	0.00513

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	0.00061	0.00061	0.00059
	(A3 * !B1 * Y)	-0.00254	-0.00255	-0.00257
	(A2 * !A3 * !B1 * Y)	0.00061	0.00061	0.00059
	(A2 * !A3 * !B1 * Y)	-0.00253	-0.00254	-0.00257
	(!A2 * !A3 * !B1 * Y)	0.00061	0.00061	0.00059
	(!A2 * !A3 * !B1 * Y)	-0.00254	-0.00254	-0.00257
	(!A1 * !A2 * !A3 * B1 * Y)	0.00064	0.00065	0.00059
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00242	-0.00245	-0.00256
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	0.00118	0.00119	0.00114
	(A3 * !B1 * Y)	-0.00496	-0.00499	-0.00506
	(A2 * !A3 * !B1 * Y)	0.00118	0.00119	0.00114
	(A2 * !A3 * !B1 * Y)	-0.00496	-0.00500	-0.00506
	(!A2 * !A3 * !B1 * Y)	0.00118	0.00119	0.00114
	(!A2 * !A3 * !B1 * Y)	-0.00496	-0.00499	-0.00506
	(!A1 * !A2 * !A3 * B1 * Y)	0.00123	0.00124	0.00110
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00474	-0.00479	-0.00503
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	0.00221	0.00220	0.00212
	(A3 * !B1 * Y)	-0.00551	-0.00552	-0.00567
	(A2 * !A3 * !B1 * Y)	0.00219	0.00220	0.00212
	(A2 * !A3 * !B1 * Y)	-0.00549	-0.00551	-0.00567
	(!A2 * !A3 * !B1 * Y)	0.00219	0.00220	0.00212
	(!A2 * !A3 * !B1 * Y)	-0.00548	-0.00551	-0.00567
	(!A1 * !A2 * !A3 * B1 * Y)	0.00229	0.00230	0.00206
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00507	-0.00512	-0.00560

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	-0.00059	-0.00059	-0.00058
	(A3 * !B1 * Y)	0.00258	0.00262	0.00258
	(A2 * !A3 * !B1 * Y)	-0.00059	-0.00059	-0.00058
	(A2 * !A3 * !B1 * Y)	0.00258	0.00262	0.00258
	(!A2 * !A3 * !B1 * Y)	-0.00059	-0.00059	-0.00058
	(!A2 * !A3 * !B1 * Y)	0.00258	0.00262	0.00258
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00058	-0.00058	-0.00057
	(!A1 * !A2 * !A3 * B1 * Y)	0.00258	0.00260	0.00257
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	-0.00113	-0.00113	-0.00111
	(A3 * !B1 * Y)	0.00508	0.00516	0.00507
	(A2 * !A3 * !B1 * Y)	-0.00111	-0.00113	-0.00111
	(A2 * !A3 * !B1 * Y)	0.00504	0.00516	0.00507
	(!A2 * !A3 * !B1 * Y)	-0.00111	-0.00113	-0.00111
	(!A2 * !A3 * !B1 * Y)	0.00505	0.00515	0.00507
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00109	-0.00108	-0.00108
	(!A1 * !A2 * !A3 * B1 * Y)	0.00508	0.00505	0.00507
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	-0.00206	-0.00207	-0.00206
	(A3 * !B1 * Y)	0.00565	0.00569	0.00568
	(A2 * !A3 * !B1 * Y)	-0.00206	-0.00210	-0.00206
	(A2 * !A3 * !B1 * Y)	0.00566	0.00577	0.00568
	(!A2 * !A3 * !B1 * Y)	-0.00206	-0.00210	-0.00206
	(!A2 * !A3 * !B1 * Y)	0.00566	0.00576	0.00567
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00200	-0.00204	-0.00200
	(!A1 * !A2 * !A3 * B1 * Y)	0.00564	0.00575	0.00567

SKY130_FD_SC_HS__O311Ax

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00258	0.00306	0.00264	0.00259	0.00265	1.20568
sky130_fd_sc_hs__o311a_2	0.00286	0.00287	0.00286	0.00282	0.00279	2.36259
sky130_fd_sc_hs__o311a_4	0.00474	0.00519	0.00480	0.00580	0.00502	4.54798

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311a_1	0.00000	0.16375	0.59727
sky130_fd_sc_hs__o311a_2	0.00000	0.21784	0.48497
sky130_fd_sc_hs__o311a_4	0.00000	0.45087	1.20940

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)	0.11510	0.61184	6.12316
	A2->X (RR)	0.11186	0.60702	6.06607
	A3->X (RR)	0.10019	0.58270	6.03695
	B1->X (RR)	0.10607	0.62552	6.50357
	C1->X (RR)	0.10037	0.62514	6.53507
sky130_fd_sc_hs__o311a_2	A1->X (RR)	0.11801	0.52239	6.10762
	A2->X (RR)	0.11186	0.51033	6.02572
	A3->X (RR)	0.09544	0.48772	5.98014
	B1->X (RR)	0.11201	0.55043	6.48944
	C1->X (RR)	0.10494	0.55151	6.52261
sky130_fd_sc_hs__o311a_4	A1->X (RR)	0.12793	0.46888	6.15225
	A2->X (RR)	0.11862	0.45208	6.06094
	A3->X (RR)	0.10564	0.43504	6.06287
	B1->X (RR)	0.12219	0.49946	6.57417
	C1->X (RR)	0.11163	0.49337	6.62152

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311a_1	A1->X (FF)	0.26069	0.70914	5.03681
	A2->X (FF)	0.25065	0.72733	5.23298
	A3->X (FF)	0.20593	0.70312	5.19162
	B1->X (FF)	0.07583	0.50679	4.57918
	C1->X (FF)	0.06911	0.48869	4.52788
sky130_fd_sc_hs__o311a_2	A1->X (FF)	0.26501	0.69651	5.19230
	A2->X (FF)	0.24945	0.71539	5.43273
	A3->X (FF)	0.22219	0.70610	5.42138
	B1->X (FF)	0.09093	0.51317	4.79048
	C1->X (FF)	0.08227	0.49362	4.72893
sky130_fd_sc_hs__o311a_4	A1->X (FF)	0.31670	0.72695	5.33761
	A2->X (FF)	0.30091	0.73588	5.50428
	A3->X (FF)	0.25409	0.70993	5.47152
	B1->X (FF)	0.08337	0.46742	4.71746
	C1->X (FF)	0.07404	0.44820	4.67399

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	A1	0.01676	0.01660	0.03454
	A1	0.00734	0.00717	0.02555
	A2	0.01499	0.01507	0.03238
	A2	0.00637	0.00645	0.02421
	A3	0.01210	0.01249	0.03582
	A3	0.00474	0.00513	0.02891
	B1	0.01322	0.01393	0.05368
	B1	0.00465	0.00573	0.04741
	C1	0.01232	0.01360	0.05613
	C1	0.00460	0.00619	0.05048
sky130_fd_sc_hs__o311a_2	A1	0.01976	0.01953	0.03697
	A1	0.00955	0.00934	0.02765
	A2	0.01750	0.01803	0.03561
	A2	0.00844	0.00899	0.02750
	A3	0.01533	0.01601	0.03851
	A3	0.00739	0.00810	0.03152
	B1	0.01354	0.01464	0.05555
	B1	0.00731	0.00840	0.05012
	C1	0.01248	0.01414	0.05740
	C1	0.00727	0.00896	0.05292

sky130_fd_sc_hs__o311a_4	**A1**	0.03793	0.03844	0.08014
	A1	0.02017	0.02078	0.06414
	A2	0.03414	0.03499	0.07454
	A2	0.01789	0.01891	0.06017
	A3	0.02834	0.02970	0.08163
	A3	0.01436	0.01582	0.06949
	B1	0.02574	0.02781	0.10167
	B1	0.01401	0.01611	0.09130
	C1	0.02302	0.02643	0.11264
	C1	0.01403	0.01747	0.10475

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311a_1	**A1**	0.00584	0.00537	0.02579
	A1	0.01514	0.01466	0.03435
	A2	0.00589	0.00558	0.02554
	A2	0.01433	0.01406	0.03371
	A3	0.00588	0.00678	0.03511
	A3	0.01306	0.01400	0.04158
	B1	0.00380	0.00629	0.04655
	B1	0.01072	0.01308	0.05345
	C1	0.00333	0.00570	0.04660
	C1	0.00946	0.01182	0.05273

sky130_fd_sc_hs__o311a_2	**A1**	0.00925	0.00779	0.02859
	A1	0.01932	0.01820	0.03748
	A2	0.00925	0.00850	0.03056
	A2	0.01814	0.01736	0.03742
	A3	0.00918	0.00939	0.03857
	A3	0.01690	0.01711	0.04439
	B1	0.00690	0.00974	0.05114
	B1	0.01427	0.01691	0.05618
	C1	0.00631	0.00907	0.05211
	C1	0.01268	0.01513	0.05438
sky130_fd_sc_hs__o311a_4	**A1**	0.02079	0.01778	0.06097
	A1	0.03826	0.03528	0.07563
	A2	0.02055	0.01775	0.06004
	A2	0.03642	0.03361	0.07244
	A3	0.02079	0.01991	0.07895
	A3	0.03438	0.03365	0.08728
	B1	0.01361	0.01831	0.10011
	B1	0.02734	0.03182	0.11209
	C1	0.01239	0.01758	0.10257
	C1	0.02349	0.02853	0.11192

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)**	0.00151	0.00152	0.00150
	(A2 * B1 * !C1 * !X)	-0.00202	-0.00207	-0.00206
	(A2 * A3 * B1 * C1 * X)	0.00175	0.00176	0.00174
	(A2 * A3 * B1 * C1 * X)	-0.00177	-0.00183	-0.00182
	(A2 * !B1 * !X)	0.00151	0.00152	0.00150
	(A2 * !B1 * !X)	-0.00202	-0.00207	-0.00206
	(A2 * !A3 * B1 * C1 * X)	0.00179	0.00176	0.00175
	(A2 * !A3 * B1 * C1 * X)	-0.00172	-0.00182	-0.00182
	(!A2 * A3 * B1 * C1 * X)	0.00180	0.00176	0.00175
	(!A2 * A3 * B1 * C1 * X)	-0.00161	-0.00177	-0.00177
	(!A2 * A3 * B1 * !C1 * !X)	0.00150	0.00151	0.00150
	(!A2 * A3 * B1 * !C1 * !X)	-0.00189	-0.00201	-0.00200
	(!A2 * A3 * !B1 * !X)	0.00150	0.00151	0.00150
	(!A2 * A3 * !B1 * !X)	-0.00189	-0.00201	-0.00200
	(!A2 * !A3 * B1 * !C1 * !X)	0.00143	0.00144	0.00143
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00207	-0.00208	-0.00207
	(!A2 * !A3 * !B1 * C1 * !X)	0.00144	0.00145	0.00145
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00206	-0.00207	-0.00207
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00147	0.00149	0.00147
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00207	-0.00209	-0.00207

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	0.00160	0.00162	0.00160
	(A2 * B1 * !C1 * !X)	-0.00222	-0.00228	-0.00227
	(A2 * A3 * B1 * C1 * X)	0.00181	0.00183	0.00181
	(A2 * A3 * B1 * C1 * X)	-0.00200	-0.00207	-0.00206
	(A2 * !B1 * !X)	0.00160	0.00162	0.00160
	(A2 * !B1 * !X)	-0.00222	-0.00227	-0.00227
	(A2 * !A3 * B1 * C1 * X)	0.00188	0.00183	0.00181
	(A2 * !A3 * B1 * C1 * X)	-0.00192	-0.00207	-0.00206
	(!A2 * A3 * B1 * C1 * X)	0.00186	0.00182	0.00181
	(!A2 * A3 * B1 * C1 * X)	-0.00181	-0.00201	-0.00200
	(!A2 * A3 * B1 * !C1 * !X)	0.00160	0.00161	0.00160
	(!A2 * A3 * B1 * !C1 * !X)	-0.00205	-0.00222	-0.00220
	(!A2 * A3 * !B1 * !X)	0.00160	0.00161	0.00160
	(!A2 * A3 * !B1 * !X)	-0.00205	-0.00221	-0.00220
	(!A2 * !A3 * B1 * !C1 * !X)	0.00151	0.00153	0.00151
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00229	-0.00230	-0.00229
	(!A2 * !A3 * !B1 * C1 * !X)	0.00151	0.00154	0.00152
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00229	-0.00231	-0.00230
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00152	0.00154	0.00153
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00229	-0.00230	-0.00229

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	0.00274	0.00277	0.00274
	(A2 * B1 * !C1 * !X)	-0.00371	-0.00382	-0.00379
	(A2 * A3 * B1 * C1 * X)	0.00275	0.00278	0.00274
	(A2 * A3 * B1 * C1 * X)	-0.00370	-0.00382	-0.00380
	(A2 * !B1 * !X)	0.00274	0.00277	0.00274
	(A2 * !B1 * !X)	-0.00371	-0.00382	-0.00379
	(A2 * !A3 * B1 * C1 * X)	0.00292	0.00278	0.00275
	(A2 * !A3 * B1 * C1 * X)	-0.00349	-0.00379	-0.00380
	(!A2 * A3 * B1 * C1 * X)	0.00291	0.00279	0.00275
	(!A2 * A3 * B1 * C1 * X)	-0.00325	-0.00371	-0.00369
	(!A2 * A3 * B1 * !C1 * !X)	0.00274	0.00277	0.00274
	(!A2 * A3 * B1 * !C1 * !X)	-0.00340	-0.00370	-0.00367
	(!A2 * A3 * !B1 * !X)	0.00274	0.00277	0.00274
	(!A2 * A3 * !B1 * !X)	-0.00340	-0.00370	-0.00367
	(!A2 * !A3 * B1 * !C1 * !X)	0.00259	0.00261	0.00258
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00385	-0.00386	-0.00384
	(!A2 * !A3 * !B1 * C1 * !X)	0.00262	0.00263	0.00262
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00385	-0.00386	-0.00384
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00262	0.00264	0.00262
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00385	-0.00386	-0.00384

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)**	-0.00150	-0.00150	-0.00150
	(A2 * B1 * !C1 * !X)	0.00205	0.00207	0.00206
	(A2 * A3 * B1 * C1 * X)	-0.00173	-0.00174	-0.00174
	(A2 * A3 * B1 * C1 * X)	0.00181	0.00183	0.00182
	(A2 * !B1 * !X)	-0.00150	-0.00150	-0.00150
	(A2 * !B1 * !X)	0.00205	0.00207	0.00206
	(A2 * !A3 * B1 * C1 * X)	-0.00173	-0.00174	-0.00174
	(A2 * !A3 * B1 * C1 * X)	0.00182	0.00183	0.00182
	(!A2 * A3 * B1 * C1 * X)	-0.00173	-0.00173	-0.00173
	(!A2 * A3 * B1 * C1 * X)	0.00176	0.00178	0.00177
	(!A2 * A3 * B1 * !C1 * !X)	-0.00149	-0.00150	-0.00150
	(!A2 * A3 * B1 * !C1 * !X)	0.00199	0.00201	0.00200
	(!A2 * A3 * !B1 * !X)	-0.00150	-0.00150	-0.00150
	(!A2 * A3 * !B1 * !X)	0.00200	0.00201	0.00200
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00134	-0.00144	-0.00143
	(!A2 * !A3 * B1 * !C1 * !X)	0.00207	0.00210	0.00208
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00139	-0.00145	-0.00145
	(!A2 * !A3 * !B1 * C1 * !X)	0.00207	0.00210	0.00208
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00140	-0.00147	-0.00147
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00207	0.00210	0.00208

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	-0.00159	-0.00160	-0.00159
	(A2 * B1 * !C1 * !X)	0.00225	0.00228	0.00227
	(A2 * A3 * B1 * C1 * X)	-0.00179	-0.00180	-0.00180
	(A2 * A3 * B1 * C1 * X)	0.00205	0.00207	0.00206
	(A2 * !B1 * !X)	-0.00159	-0.00159	-0.00159
	(A2 * !B1 * !X)	0.00225	0.00227	0.00227
	(A2 * !A3 * B1 * C1 * X)	-0.00179	-0.00181	-0.00180
	(A2 * !A3 * B1 * C1 * X)	0.00205	0.00208	0.00206
	(!A2 * A3 * B1 * C1 * X)	-0.00179	-0.00180	-0.00179
	(!A2 * A3 * B1 * C1 * X)	0.00199	0.00201	0.00200
	(!A2 * A3 * B1 * !C1 * !X)	-0.00159	-0.00160	-0.00159
	(!A2 * A3 * B1 * !C1 * !X)	0.00219	0.00222	0.00220
	(!A2 * A3 * !B1 * !X)	-0.00159	-0.00160	-0.00159
	(!A2 * A3 * !B1 * !X)	0.00219	0.00221	0.00220
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00138	-0.00152	-0.00151
	(!A2 * !A3 * B1 * !C1 * !X)	0.00230	0.00232	0.00230
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00144	-0.00153	-0.00152
	(!A2 * !A3 * !B1 * C1 * !X)	0.00232	0.00232	0.00230
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00144	-0.00153	-0.00153
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00232	0.00232	0.00230

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	-0.00272	-0.00274	-0.00273
	(A2 * B1 * !C1 * !X)	0.00378	0.00383	0.00379
	(A2 * A3 * B1 * C1 * X)	-0.00272	-0.00274	-0.00272
	(A2 * A3 * B1 * C1 * X)	0.00378	0.00383	0.00380
	(A2 * !B1 * !X)	-0.00272	-0.00274	-0.00273
	(A2 * !B1 * !X)	0.00378	0.00383	0.00379
	(A2 * !A3 * B1 * C1 * X)	-0.00272	-0.00272	-0.00272
	(A2 * !A3 * B1 * C1 * X)	0.00380	0.00379	0.00380
	(!A2 * A3 * B1 * C1 * X)	-0.00271	-0.00273	-0.00271
	(!A2 * A3 * B1 * C1 * X)	0.00367	0.00371	0.00369
	(!A2 * A3 * B1 * !C1 * !X)	-0.00272	-0.00274	-0.00273
	(!A2 * A3 * B1 * !C1 * !X)	0.00366	0.00370	0.00367
	(!A2 * A3 * !B1 * !X)	-0.00272	-0.00274	-0.00273
	(!A2 * A3 * !B1 * !X)	0.00366	0.00370	0.00367
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00239	-0.00261	-0.00258
	(!A2 * !A3 * B1 * !C1 * !X)	0.00386	0.00390	0.00386
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00247	-0.00263	-0.00262
	(!A2 * !A3 * !B1 * C1 * !X)	0.00386	0.00390	0.00386
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00247	-0.00263	-0.00262
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00386	0.00388	0.00386

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)**	0.00194	0.00197	0.00187
	(A1 * A3 * B1 * C1 * X)	-0.00129	-0.00130	-0.00129
	(A1 * A3 * B1 * !C1 * !X)	0.00151	0.00152	0.00150
	(A1 * A3 * B1 * !C1 * !X)	-0.00170	-0.00172	-0.00170
	(A1 * A3 * !B1 * !X)	0.00151	0.00152	0.00150
	(A1 * A3 * !B1 * !X)	-0.00170	-0.00172	-0.00170
	(A1 * !A3 * B1 * C1 * X)	0.00181	0.00183	0.00180
	(A1 * !A3 * B1 * C1 * X)	-0.00104	-0.00106	-0.00106
	(A1 * !A3 * B1 * !C1 * !X)	0.00152	0.00152	0.00150
	(A1 * !A3 * B1 * !C1 * !X)	-0.00217	-0.00218	-0.00217
	(A1 * !A3 * !B1 * C1 * !X)	0.00152	0.00152	0.00150
	(A1 * !A3 * !B1 * C1 * !X)	-0.00217	-0.00218	-0.00218
	(A1 * !A3 * !B1 * !C1 * !X)	0.00152	0.00151	0.00150
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00217	-0.00217	-0.00218
	(!A1 * A3 * B1 * C1 * X)	0.00222	0.00183	0.00180
	(!A1 * A3 * B1 * C1 * X)	-0.00147	-0.00189	-0.00189
	(!A1 * A3 * B1 * !C1 * !X)	0.00152	0.00152	0.00150
	(!A1 * A3 * B1 * !C1 * !X)	-0.00215	-0.00218	-0.00218
	(!A1 * A3 * !B1 * !X)	0.00151	0.00152	0.00150
	(!A1 * A3 * !B1 * !X)	-0.00214	-0.00219	-0.00218
	(!A1 * !A3 * B1 * !C1 * !X)	0.00142	0.00144	0.00143
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00220	-0.00221	-0.00220
	(!A1 * !A3 * !B1 * C1 * !X)	0.00145	0.00146	0.00145
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00220	-0.00221	-0.00220
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00145	0.00146	0.00145
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00220	-0.00221	-0.00220

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	0.00183	0.00183	0.00174
	(A1 * A3 * B1 * C1 * X)	-0.00140	-0.00140	-0.00139
	(A1 * A3 * B1 * !C1 * !X)	0.00161	0.00162	0.00161
	(A1 * A3 * B1 * !C1 * !X)	-0.00155	-0.00156	-0.00155
	(A1 * A3 * !B1 * !X)	0.00161	0.00162	0.00161
	(A1 * A3 * !B1 * !X)	-0.00155	-0.00156	-0.00155
	(A1 * !A3 * B1 * C1 * X)	0.00169	0.00170	0.00168
	(A1 * !A3 * B1 * C1 * X)	-0.00115	-0.00116	-0.00116
	(A1 * !A3 * B1 * !C1 * !X)	0.00161	0.00162	0.00161
	(A1 * !A3 * B1 * !C1 * !X)	-0.00213	-0.00216	-0.00216
	(A1 * !A3 * !B1 * C1 * !X)	0.00161	0.00162	0.00161
	(A1 * !A3 * !B1 * C1 * !X)	-0.00213	-0.00216	-0.00216
	(A1 * !A3 * !B1 * !C1 * !X)	0.00161	0.00162	0.00161
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00213	-0.00216	-0.00216
	(!A1 * A3 * B1 * C1 * X)	0.00206	0.00170	0.00167
	(!A1 * A3 * B1 * C1 * X)	-0.00168	-0.00211	-0.00211
	(!A1 * A3 * B1 * !C1 * !X)	0.00159	0.00163	0.00160
	(!A1 * A3 * B1 * !C1 * !X)	-0.00212	-0.00217	-0.00216
	(!A1 * A3 * !B1 * !X)	0.00160	0.00163	0.00160
	(!A1 * A3 * !B1 * !X)	-0.00213	-0.00217	-0.00216
	(!A1 * !A3 * B1 * !C1 * !X)	0.00148	0.00149	0.00149
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00219	-0.00219	-0.00219
	(!A1 * !A3 * !B1 * C1 * !X)	0.00153	0.00154	0.00152
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00220	-0.00221	-0.00220
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00152	0.00153	0.00152
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00220	-0.00221	-0.00220

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	0.00337	0.00349	0.00327
	(A1 * A3 * B1 * C1 * X)	-0.00261	-0.00261	-0.00261
	(A1 * A3 * B1 * !C1 * !X)	0.00315	0.00318	0.00314
	(A1 * A3 * B1 * !C1 * !X)	-0.00283	-0.00286	-0.00283
	(A1 * A3 * !B1 * !X)	0.00315	0.00318	0.00314
	(A1 * A3 * !B1 * !X)	-0.00283	-0.00286	-0.00283
	(A1 * !A3 * B1 * C1 * X)	0.00317	0.00320	0.00315
	(A1 * !A3 * B1 * C1 * X)	-0.00212	-0.00214	-0.00213
	(A1 * !A3 * B1 * !C1 * !X)	0.00314	0.00317	0.00314
	(A1 * !A3 * B1 * !C1 * !X)	-0.00371	-0.00378	-0.00376
	(A1 * !A3 * !B1 * C1 * !X)	0.00314	0.00317	0.00314
	(A1 * !A3 * !B1 * C1 * !X)	-0.00371	-0.00378	-0.00376
	(A1 * !A3 * !B1 * !C1 * !X)	0.00314	0.00317	0.00314
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00371	-0.00378	-0.00376
	(!A1 * A3 * B1 * C1 * X)	0.00396	0.00318	0.00315
	(!A1 * A3 * B1 * C1 * X)	-0.00297	-0.00373	-0.00378
	(!A1 * A3 * B1 * !C1 * !X)	0.00317	0.00314	0.00314
	(!A1 * A3 * B1 * !C1 * !X)	-0.00371	-0.00378	-0.00377
	(!A1 * A3 * !B1 * !X)	0.00317	0.00314	0.00314
	(!A1 * A3 * !B1 * !X)	-0.00371	-0.00378	-0.00377
	(!A1 * !A3 * B1 * !C1 * !X)	0.00293	0.00297	0.00293
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00382	-0.00384	-0.00382
	(!A1 * !A3 * !B1 * C1 * !X)	0.00300	0.00301	0.00298
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00383	-0.00384	-0.00382
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00300	0.00301	0.00298
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00383	-0.00384	-0.00382

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)**	-0.00179	-0.00180	-0.00179
	(A1 * A3 * B1 * C1 * X)	0.00129	0.00130	0.00129
	(A1 * A3 * B1 * !C1 * !X)	-0.00150	-0.00151	-0.00150
	(A1 * A3 * B1 * !C1 * !X)	0.00170	0.00172	0.00170
	(A1 * A3 * !B1 * !X)	-0.00150	-0.00151	-0.00150
	(A1 * A3 * !B1 * !X)	0.00170	0.00172	0.00170
	(A1 * !A3 * B1 * C1 * X)	-0.00178	-0.00178	-0.00176
	(A1 * !A3 * B1 * C1 * X)	0.00108	0.00109	0.00110
	(A1 * !A3 * B1 * !C1 * !X)	-0.00150	-0.00150	-0.00150
	(A1 * !A3 * B1 * !C1 * !X)	0.00217	0.00218	0.00217
	(A1 * !A3 * !B1 * C1 * !X)	-0.00150	-0.00150	-0.00150
	(A1 * !A3 * !B1 * C1 * !X)	0.00218	0.00218	0.00218
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00150	-0.00150	-0.00150
	(A1 * !A3 * !B1 * !C1 * !X)	0.00218	0.00217	0.00218
	(!A1 * A3 * B1 * C1 * X)	-0.00178	-0.00178	-0.00177
	(!A1 * A3 * B1 * C1 * X)	0.00190	0.00190	0.00190
	(!A1 * A3 * B1 * !C1 * !X)	-0.00150	-0.00150	-0.00150
	(!A1 * A3 * B1 * !C1 * !X)	0.00218	0.00218	0.00218
	(!A1 * A3 * !B1 * !X)	-0.00150	-0.00151	-0.00150
	(!A1 * A3 * !B1 * !X)	0.00218	0.00219	0.00218
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00133	-0.00144	-0.00143
	(!A1 * !A3 * B1 * !C1 * !X)	0.00221	0.00223	0.00221
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00138	-0.00146	-0.00145
	(!A1 * !A3 * !B1 * C1 * !X)	0.00220	0.00223	0.00221
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00138	-0.00146	-0.00145
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00220	0.00223	0.00221

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	-0.00166	-0.00166	-0.00166
	(A1 * A3 * B1 * C1 * X)	0.00140	0.00140	0.00139
	(A1 * A3 * B1 * !C1 * !X)	-0.00160	-0.00160	-0.00160
	(A1 * A3 * B1 * !C1 * !X)	0.00155	0.00156	0.00155
	(A1 * A3 * !B1 * !X)	-0.00159	-0.00160	-0.00160
	(A1 * A3 * !B1 * !X)	0.00155	0.00156	0.00155
	(A1 * !A3 * B1 * C1 * X)	-0.00165	-0.00166	-0.00164
	(A1 * !A3 * B1 * C1 * X)	0.00120	0.00120	0.00120
	(A1 * !A3 * B1 * !C1 * !X)	-0.00160	-0.00160	-0.00160
	(A1 * !A3 * B1 * !C1 * !X)	0.00216	0.00216	0.00216
	(A1 * !A3 * !B1 * C1 * !X)	-0.00159	-0.00160	-0.00160
	(A1 * !A3 * !B1 * C1 * !X)	0.00215	0.00216	0.00216
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00159	-0.00160	-0.00160
	(A1 * !A3 * !B1 * !C1 * !X)	0.00215	0.00216	0.00216
	(!A1 * A3 * B1 * C1 * X)	-0.00165	-0.00166	-0.00165
	(!A1 * A3 * B1 * C1 * X)	0.00210	0.00211	0.00211
	(!A1 * A3 * B1 * !C1 * !X)	-0.00159	-0.00160	-0.00160
	(!A1 * A3 * B1 * !C1 * !X)	0.00216	0.00217	0.00216
	(!A1 * A3 * !B1 * !X)	-0.00160	-0.00160	-0.00160
	(!A1 * A3 * !B1 * !X)	0.00217	0.00217	0.00216
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00137	-0.00149	-0.00149
	(!A1 * !A3 * B1 * !C1 * !X)	0.00220	0.00222	0.00220
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00144	-0.00153	-0.00152
	(!A1 * !A3 * !B1 * C1 * !X)	0.00222	0.00222	0.00220
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00144	-0.00153	-0.00152
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00222	0.00222	0.00220

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	-0.00313	-0.00313	-0.00313
	(A1 * A3 * B1 * C1 * X)	0.00261	0.00261	0.00261
	(A1 * A3 * B1 * !C1 * !X)	-0.00312	-0.00314	-0.00313
	(A1 * A3 * B1 * !C1 * !X)	0.00283	0.00286	0.00283
	(A1 * A3 * !B1 * !X)	-0.00312	-0.00314	-0.00313
	(A1 * A3 * !B1 * !X)	0.00283	0.00286	0.00283
	(A1 * !A3 * B1 * C1 * X)	-0.00310	-0.00311	-0.00306
	(A1 * !A3 * B1 * C1 * X)	0.00219	0.00220	0.00222
	(A1 * !A3 * B1 * !C1 * !X)	-0.00313	-0.00315	-0.00313
	(A1 * !A3 * B1 * !C1 * !X)	0.00377	0.00378	0.00376
	(A1 * !A3 * !B1 * C1 * !X)	-0.00312	-0.00315	-0.00313
	(A1 * !A3 * !B1 * C1 * !X)	0.00375	0.00378	0.00376
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00312	-0.00314	-0.00313
	(A1 * !A3 * !B1 * !C1 * !X)	0.00375	0.00378	0.00376
	(!A1 * A3 * B1 * C1 * X)	-0.00312	-0.00312	-0.00310
	(!A1 * A3 * B1 * C1 * X)	0.00378	0.00380	0.00380
	(!A1 * A3 * B1 * !C1 * !X)	-0.00313	-0.00314	-0.00313
	(!A1 * A3 * B1 * !C1 * !X)	0.00377	0.00380	0.00377
	(!A1 * A3 * !B1 * !X)	-0.00313	-0.00314	-0.00313
	(!A1 * A3 * !B1 * !X)	0.00377	0.00380	0.00377
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00271	-0.00297	-0.00293
	(!A1 * !A3 * B1 * !C1 * !X)	0.00383	0.00387	0.00383
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00281	-0.00299	-0.00298
	(!A1 * !A3 * !B1 * C1 * !X)	0.00383	0.00385	0.00383
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00282	-0.00299	-0.00298
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00383	0.00385	0.00383

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)**	0.00167	0.00168	0.00167
	(A2 * B1 * C1 * X)	-0.00097	-0.00098	-0.00097
	(A2 * B1 * !C1 * !X)	0.00149	0.00151	0.00149
	(A2 * B1 * !C1 * !X)	-0.00188	-0.00195	-0.00193
	(A2 * !B1 * C1 * !X)	0.00149	0.00151	0.00149
	(A2 * !B1 * C1 * !X)	-0.00188	-0.00195	-0.00194
	(A2 * !B1 * !C1 * !X)	0.00149	0.00151	0.00149
	(A2 * !B1 * !C1 * !X)	-0.00188	-0.00195	-0.00194
	(A1 * !A2 * B1 * C1 * X)	0.00167	0.00168	0.00167
	(A1 * !A2 * B1 * C1 * X)	-0.00097	-0.00098	-0.00097
	(A1 * !A2 * B1 * !C1 * !X)	0.00149	0.00151	0.00149
	(A1 * !A2 * B1 * !C1 * !X)	-0.00175	-0.00187	-0.00186
	(A1 * !A2 * !B1 * C1 * !X)	0.00149	0.00151	0.00149
	(A1 * !A2 * !B1 * C1 * !X)	-0.00175	-0.00188	-0.00187
	(A1 * !A2 * !B1 * !C1 * !X)	0.00149	0.00150	0.00149
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00175	-0.00188	-0.00187
	(!A1 * !A2 * B1 * !C1 * !X)	0.00142	0.00143	0.00141
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00196	-0.00197	-0.00196
	(!A1 * !A2 * !B1 * C1 * !X)	0.00145	0.00146	0.00144
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00196	-0.00197	-0.00196
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00145	0.00145	0.00144
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00196	-0.00196	-0.00196

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	0.00184	0.00186	0.00184
	(A2 * B1 * C1 * X)	-0.00097	-0.00098	-0.00097
	(A2 * B1 * !C1 * !X)	0.00160	0.00161	0.00161
	(A2 * B1 * !C1 * !X)	-0.00205	-0.00211	-0.00210
	(A2 * !B1 * C1 * !X)	0.00160	0.00162	0.00161
	(A2 * !B1 * C1 * !X)	-0.00206	-0.00211	-0.00211
	(A2 * !B1 * !C1 * !X)	0.00160	0.00163	0.00161
	(A2 * !B1 * !C1 * !X)	-0.00206	-0.00211	-0.00211
	(A1 * !A2 * B1 * C1 * X)	0.00184	0.00186	0.00184
	(A1 * !A2 * B1 * C1 * X)	-0.00097	-0.00098	-0.00097
	(A1 * !A2 * B1 * !C1 * !X)	0.00160	0.00163	0.00161
	(A1 * !A2 * B1 * !C1 * !X)	-0.00187	-0.00204	-0.00202
	(A1 * !A2 * !B1 * C1 * !X)	0.00160	0.00163	0.00161
	(A1 * !A2 * !B1 * C1 * !X)	-0.00187	-0.00204	-0.00202
	(A1 * !A2 * !B1 * !C1 * !X)	0.00160	0.00162	0.00161
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00188	-0.00204	-0.00203
	(!A1 * !A2 * B1 * !C1 * !X)	0.00151	0.00152	0.00152
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00213	-0.00214	-0.00213
	(!A1 * !A2 * !B1 * C1 * !X)	0.00155	0.00155	0.00154
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00214	-0.00214	-0.00214
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00154	0.00156	0.00154
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00214	-0.00215	-0.00214

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	0.00318	0.00321	0.00318
	(A2 * B1 * C1 * X)	-0.00192	-0.00193	-0.00191
	(A2 * B1 * !C1 * !X)	0.00278	0.00280	0.00279
	(A2 * B1 * !C1 * !X)	-0.00375	-0.00389	-0.00387
	(A2 * !B1 * C1 * !X)	0.00278	0.00280	0.00279
	(A2 * !B1 * C1 * !X)	-0.00375	-0.00389	-0.00387
	(A2 * !B1 * !C1 * !X)	0.00278	0.00282	0.00279
	(A2 * !B1 * !C1 * !X)	-0.00375	-0.00387	-0.00388
	(A1 * !A2 * B1 * C1 * X)	0.00318	0.00321	0.00318
	(A1 * !A2 * B1 * C1 * X)	-0.00192	-0.00193	-0.00191
	(A1 * !A2 * B1 * !C1 * !X)	0.00278	0.00282	0.00279
	(A1 * !A2 * B1 * !C1 * !X)	-0.00346	-0.00374	-0.00372
	(A1 * !A2 * !B1 * C1 * !X)	0.00278	0.00282	0.00279
	(A1 * !A2 * !B1 * C1 * !X)	-0.00346	-0.00374	-0.00372
	(A1 * !A2 * !B1 * !C1 * !X)	0.00279	0.00282	0.00279
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00347	-0.00376	-0.00374
	(!A1 * !A2 * B1 * !C1 * !X)	0.00265	0.00268	0.00266
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00392	-0.00395	-0.00392
	(!A1 * !A2 * !B1 * C1 * !X)	0.00269	0.00270	0.00269
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00393	-0.00393	-0.00392
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00269	0.00271	0.00269
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00393	-0.00394	-0.00392

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)**	-0.00157	-0.00158	-0.00165
	(A2 * B1 * C1 * X)	0.00106	0.00106	0.00100
	(A2 * B1 * !C1 * !X)	-0.00149	-0.00149	-0.00148
	(A2 * B1 * !C1 * !X)	0.00193	0.00195	0.00193
	(A2 * !B1 * C1 * !X)	-0.00149	-0.00149	-0.00148
	(A2 * !B1 * C1 * !X)	0.00193	0.00195	0.00194
	(A2 * !B1 * !C1 * !X)	-0.00149	-0.00149	-0.00148
	(A2 * !B1 * !C1 * !X)	0.00194	0.00195	0.00194
	(A1 * !A2 * B1 * C1 * X)	-0.00150	-0.00151	-0.00164
	(A1 * !A2 * B1 * C1 * X)	0.00110	0.00110	0.00100
	(A1 * !A2 * B1 * !C1 * !X)	-0.00148	-0.00149	-0.00148
	(A1 * !A2 * B1 * !C1 * !X)	0.00186	0.00187	0.00186
	(A1 * !A2 * !B1 * C1 * !X)	-0.00148	-0.00149	-0.00148
	(A1 * !A2 * !B1 * C1 * !X)	0.00186	0.00188	0.00187
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00148	-0.00149	-0.00148
	(A1 * !A2 * !B1 * !C1 * !X)	0.00186	0.00188	0.00187
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00132	-0.00143	-0.00141
	(!A1 * !A2 * B1 * !C1 * !X)	0.00196	0.00198	0.00196
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00137	-0.00145	-0.00144
	(!A1 * !A2 * !B1 * C1 * !X)	0.00196	0.00198	0.00196
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00137	-0.00145	-0.00144
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00196	0.00198	0.00196

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	-0.00178	-0.00179	-0.00183
	(A2 * B1 * C1 * X)	0.00104	0.00104	0.00100
	(A2 * B1 * !C1 * !X)	-0.00160	-0.00161	-0.00160
	(A2 * B1 * !C1 * !X)	0.00210	0.00211	0.00210
	(A2 * !B1 * C1 * !X)	-0.00160	-0.00161	-0.00160
	(A2 * !B1 * C1 * !X)	0.00210	0.00211	0.00211
	(A2 * !B1 * !C1 * !X)	-0.00160	-0.00161	-0.00160
	(A2 * !B1 * !C1 * !X)	0.00211	0.00211	0.00211
	(A1 * !A2 * B1 * C1 * X)	-0.00170	-0.00171	-0.00182
	(A1 * !A2 * B1 * C1 * X)	0.00108	0.00108	0.00100
	(A1 * !A2 * B1 * !C1 * !X)	-0.00160	-0.00162	-0.00160
	(A1 * !A2 * B1 * !C1 * !X)	0.00202	0.00204	0.00202
	(A1 * !A2 * !B1 * C1 * !X)	-0.00160	-0.00162	-0.00160
	(A1 * !A2 * !B1 * C1 * !X)	0.00201	0.00204	0.00202
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00160	-0.00161	-0.00160
	(A1 * !A2 * !B1 * !C1 * !X)	0.00203	0.00204	0.00203
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00137	-0.00152	-0.00152
	(!A1 * !A2 * B1 * !C1 * !X)	0.00214	0.00216	0.00214
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00144	-0.00153	-0.00154
	(!A1 * !A2 * !B1 * C1 * !X)	0.00216	0.00216	0.00214
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00144	-0.00153	-0.00154
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00216	0.00216	0.00214

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	-0.00298	-0.00300	-0.00314
	(A2 * B1 * C1 * X)	0.00211	0.00212	0.00197
	(A2 * B1 * !C1 * !X)	-0.00278	-0.00279	-0.00277
	(A2 * B1 * !C1 * !X)	0.00387	0.00389	0.00387
	(A2 * !B1 * C1 * !X)	-0.00277	-0.00279	-0.00277
	(A2 * !B1 * C1 * !X)	0.00386	0.00389	0.00387
	(A2 * !B1 * !C1 * !X)	-0.00278	-0.00277	-0.00277
	(A2 * !B1 * !C1 * !X)	0.00388	0.00387	0.00388
	(A1 * !A2 * B1 * C1 * X)	-0.00281	-0.00285	-0.00311
	(A1 * !A2 * B1 * C1 * X)	0.00217	0.00219	0.00197
	(A1 * !A2 * B1 * !C1 * !X)	-0.00277	-0.00279	-0.00277
	(A1 * !A2 * B1 * !C1 * !X)	0.00371	0.00374	0.00372
	(A1 * !A2 * !B1 * C1 * !X)	-0.00277	-0.00279	-0.00277
	(A1 * !A2 * !B1 * C1 * !X)	0.00371	0.00374	0.00372
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00277	-0.00279	-0.00277
	(A1 * !A2 * !B1 * !C1 * !X)	0.00372	0.00376	0.00374
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00239	-0.00264	-0.00266
	(!A1 * !A2 * B1 * !C1 * !X)	0.00393	0.00397	0.00394
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00249	-0.00267	-0.00268
	(!A1 * !A2 * !B1 * C1 * !X)	0.00394	0.00396	0.00394
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00250	-0.00267	-0.00269
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00394	0.00396	0.00394

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

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

sky130_fd_sc_hs__o311a_1	**(A3 * !C1 * !X)**	0.00136	0.00137	0.00136
	(A3 * !C1 * !X)	-0.00199	-0.00200	-0.00199
	(A2 * !A3 * !C1 * !X)	0.00136	0.00137	0.00136
	(A2 * !A3 * !C1 * !X)	-0.00199	-0.00200	-0.00199
	(A1 * !A2 * !A3 * !C1 * !X)	0.00136	0.00138	0.00137
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00199	-0.00200	-0.00199
	(!A1 * !A2 * !A3 * C1 * !X)	0.00070	0.00069	0.00067
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00199	-0.00199	-0.00199
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00090	0.00090	0.00090
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00199	-0.00200	-0.00200
sky130_fd_sc_hs__o311a_2	**(A3 * !C1 * !X)**	0.00152	0.00153	0.00153
	(A3 * !C1 * !X)	-0.00206	-0.00207	-0.00206
	(A2 * !A3 * !C1 * !X)	0.00152	0.00154	0.00153
	(A2 * !A3 * !C1 * !X)	-0.00205	-0.00207	-0.00206
	(A1 * !A2 * !A3 * !C1 * !X)	0.00152	0.00154	0.00153
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00206	-0.00207	-0.00206
	(!A1 * !A2 * !A3 * C1 * !X)	0.00065	0.00066	0.00065
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00209	-0.00210	-0.00208
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00085	0.00085	0.00084
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00211	-0.00211	-0.00211
sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	0.00297	0.00301	0.00298
	(A3 * !C1 * !X)	-0.00441	-0.00444	-0.00442
	(A2 * !A3 * !C1 * !X)	0.00297	0.00299	0.00298
	(A2 * !A3 * !C1 * !X)	-0.00441	-0.00443	-0.00442
	(A1 * !A2 * !A3 * !C1 * !X)	0.00297	0.00299	0.00297
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00442	-0.00443	-0.00442
	(!A1 * !A2 * !A3 * C1 * !X)	0.00148	0.00149	0.00148
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00442	-0.00444	-0.00442
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00186	0.00189	0.00187
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00444	-0.00448	-0.00445

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !C1 * !X)	-0.00126	-0.00137	-0.00136
	(A3 * !C1 * !X)	0.00208	0.00202	0.00200
	(A2 * !A3 * !C1 * !X)	-0.00125	-0.00137	-0.00136
	(A2 * !A3 * !C1 * !X)	0.00208	0.00202	0.00200
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00125	-0.00137	-0.00137
	(A1 * !A2 * !A3 * !C1 * !X)	0.00211	0.00203	0.00200
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00062	-0.00063	-0.00063
	(!A1 * !A2 * !A3 * C1 * !X)	0.00203	0.00205	0.00200
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00090	-0.00090	-0.00090
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00214	0.00210	0.00202
sky130_fd_sc_hs__o311a_2	(A3 * !C1 * !X)	-0.00140	-0.00153	-0.00153
	(A3 * !C1 * !X)	0.00215	0.00209	0.00207
	(A2 * !A3 * !C1 * !X)	-0.00138	-0.00152	-0.00153
	(A2 * !A3 * !C1 * !X)	0.00216	0.00207	0.00207
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00137	-0.00152	-0.00153
	(A1 * !A2 * !A3 * !C1 * !X)	0.00218	0.00208	0.00207
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00061	-0.00062	-0.00062
	(!A1 * !A2 * !A3 * C1 * !X)	0.00212	0.00214	0.00210
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00085	-0.00085	-0.00084
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00227	0.00224	0.00215

sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	-0.00274	-0.00298	-0.00298
	(A3 * !C1 * !X)	0.00458	0.00447	0.00444
	(A2 * !A3 * !C1 * !X)	-0.00271	-0.00299	-0.00298
	(A2 * !A3 * !C1 * !X)	0.00461	0.00447	0.00443
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00269	-0.00299	-0.00297
	(A1 * !A2 * !A3 * !C1 * !X)	0.00467	0.00447	0.00444
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00138	-0.00141	-0.00142
	(!A1 * !A2 * !A3 * C1 * !X)	0.00452	0.00460	0.00447
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00186	-0.00189	-0.00187
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00472	0.00469	0.00451

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	0.00054	0.00054	0.00052
	(A3 * !B1 * !X)	-0.00231	-0.00231	-0.00233
	(A2 * !A3 * !B1 * !X)	0.00054	0.00054	0.00052
	(A2 * !A3 * !B1 * !X)	-0.00231	-0.00231	-0.00233
	(!A2 * !A3 * !B1 * !X)	0.00054	0.00054	0.00052
	(!A2 * !A3 * !B1 * !X)	-0.00231	-0.00231	-0.00233
	(!A1 * !A2 * !A3 * B1 * !X)	0.00064	0.00064	0.00056
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00218	-0.00220	-0.00232
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	0.00061	0.00060	0.00059
	(A3 * !B1 * !X)	-0.00233	-0.00233	-0.00236
	(A2 * !A3 * !B1 * !X)	0.00061	0.00060	0.00059
	(A2 * !A3 * !B1 * !X)	-0.00233	-0.00233	-0.00237
	(!A2 * !A3 * !B1 * !X)	0.00061	0.00061	0.00059
	(!A2 * !A3 * !B1 * !X)	-0.00233	-0.00234	-0.00236
	(!A1 * !A2 * !A3 * B1 * !X)	0.00064	0.00065	0.00059
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00223	-0.00226	-0.00236
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	0.00110	0.00111	0.00106
	(A3 * !B1 * !X)	-0.00436	-0.00438	-0.00445
	(A2 * !A3 * !B1 * !X)	0.00110	0.00111	0.00106
	(A2 * !A3 * !B1 * !X)	-0.00436	-0.00439	-0.00445
	(!A2 * !A3 * !B1 * !X)	0.00110	0.00111	0.00106
	(!A2 * !A3 * !B1 * !X)	-0.00436	-0.00439	-0.00445
	(!A1 * !A2 * !A3 * B1 * !X)	0.00116	0.00117	0.00103
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00415	-0.00419	-0.00442

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	-0.00052	-0.00052	-0.00051
	(A3 * !B1 * !X)	0.00234	0.00238	0.00234
	(A2 * !A3 * !B1 * !X)	-0.00052	-0.00052	-0.00051
	(A2 * !A3 * !B1 * !X)	0.00234	0.00238	0.00234
	(!A2 * !A3 * !B1 * !X)	-0.00052	-0.00052	-0.00051
	(!A2 * !A3 * !B1 * !X)	0.00234	0.00238	0.00234
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00052	-0.00052	-0.00050
	(!A1 * !A2 * !A3 * B1 * !X)	0.00234	0.00236	0.00234
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	-0.00058	-0.00059	-0.00057
	(A3 * !B1 * !X)	0.00238	0.00241	0.00237
	(A2 * !A3 * !B1 * !X)	-0.00058	-0.00059	-0.00057
	(A2 * !A3 * !B1 * !X)	0.00237	0.00241	0.00237
	(!A2 * !A3 * !B1 * !X)	-0.00058	-0.00059	-0.00057
	(!A2 * !A3 * !B1 * !X)	0.00237	0.00241	0.00237
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00057	-0.00057	-0.00056
	(!A1 * !A2 * !A3 * B1 * !X)	0.00238	0.00239	0.00237
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	-0.00102	-0.00105	-0.00103
	(A3 * !B1 * !X)	0.00445	0.00454	0.00447
	(A2 * !A3 * !B1 * !X)	-0.00102	-0.00105	-0.00103
	(A2 * !A3 * !B1 * !X)	0.00445	0.00454	0.00447
	(!A2 * !A3 * !B1 * !X)	-0.00102	-0.00105	-0.00103
	(!A2 * !A3 * !B1 * !X)	0.00445	0.00454	0.00447
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00098	-0.00100	-0.00098
	(!A1 * !A2 * !A3 * B1 * !X)	0.00444	0.00453	0.00447

SKY130_FD_SC_HS__O31AIx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00266	0.00312	0.00305	0.00277	0.40800
sky130_fd_sc_hs__o31ai_2	0.00544	0.00533	0.00560	0.00552	0.70603
sky130_fd_sc_hs__o31ai_4	0.01047	0.01047	0.01091	0.00808	1.29830

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o31ai_1	0.00000	0.04730	0.15376
sky130_fd_sc_hs__o31ai_2	0.00000	0.09460	0.30753
sky130_fd_sc_hs__o31ai_4	0.00000	0.12193	0.46129

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)	0.15511	1.04343	9.97053
	A2->Y (FR)	0.14823	1.06870	10.55190
	A3->Y (FR)	0.11689	1.04272	10.61840
	B1->Y (FR)	0.03161	0.55986	6.35399
sky130_fd_sc_hs__o31ai_2	A1->Y (FR)	0.16761	0.92101	9.82193
	A2->Y (FR)	0.14952	0.93177	10.38400
	A3->Y (FR)	0.11678	0.91782	10.63770
	B1->Y (FR)	0.02820	0.50222	6.26917
sky130_fd_sc_hs__o31ai_4	A1->Y (FR)	0.15668	0.78456	9.62383
	A2->Y (FR)	0.14050	0.80220	10.27880
	A3->Y (FR)	0.10433	0.79096	10.57870
	B1->Y (FR)	0.03554	0.58694	8.16891

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31ai_1	A1->Y (RF)	0.03694	0.32690	3.05650
	A2->Y (RF)	0.03793	0.32078	3.03951
	A3->Y (RF)	0.03052	0.30705	2.99730
	B1->Y (RF)	0.03123	0.37418	3.65238
sky130_fd_sc_hs__o31ai_2	A1->Y (RF)	0.03833	0.28929	2.99404
	A2->Y (RF)	0.03736	0.27781	2.96316
	A3->Y (RF)	0.03096	0.26480	2.93481
	B1->Y (RF)	0.02948	0.33348	3.65583
sky130_fd_sc_hs__o31ai_4	A1->Y (RF)	0.03977	0.24394	2.89011
	A2->Y (RF)	0.03720	0.22966	2.83292
	A3->Y (RF)	0.02764	0.20734	2.70891
	B1->Y (RF)	0.03027	0.32170	4.08451

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.00079	0.00066	0.00739
	A1	0.00951	0.00940	0.01612
	A2	0.00083	0.00070	0.00731
	A2	0.00877	0.00865	0.01528
	A3	0.00079	0.00123	0.01265
	A3	0.00752	0.00799	0.01942
	B1	-0.00048	0.00095	0.01767
	B1	0.00452	0.00591	0.02306
sky130_fd_sc_hs__o31ai_2	A1	0.00161	0.00121	0.01426
	A1	0.01923	0.01882	0.03167
	A2	0.00167	0.00145	0.01464
	A2	0.01671	0.01651	0.02971
	A3	0.00156	0.00271	0.02355
	A3	0.01444	0.01558	0.03648
	B1	-0.00192	0.00121	0.03339
	B1	0.00751	0.01065	0.04289
sky130_fd_sc_hs__o31ai_4	A1	0.00231	0.00168	0.02650
	A1	0.03657	0.03599	0.06074
	A2	0.00241	0.00207	0.02673
	A2	0.03183	0.03154	0.05617
	A3	0.00214	0.00452	0.04426
	A3	0.02714	0.02952	0.06923
	B1	-0.00358	0.00021	0.03612
	B1	0.01062	0.01444	0.05063

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.01138	0.01137	0.01711
	A1	0.00264	0.00259	0.00831
	A2	0.00963	0.00961	0.01517
	A2	0.00162	0.00160	0.00709
	A3	0.00727	0.00748	0.01280
	A3	0.00042	0.00059	0.00592
	B1	0.00521	0.00555	0.01431
	B1	0.00022	0.00055	0.00927
sky130_fd_sc_hs__o31ai_2	A1	0.02344	0.02319	0.03463
	A1	0.00579	0.00551	0.01685
	A2	0.01836	0.01842	0.02954
	A2	0.00312	0.00317	0.01414
	A3	0.01389	0.01424	0.02480
	A3	0.00074	0.00109	0.01160
	B1	0.00979	0.01073	0.02841
	B1	0.00038	0.00125	0.01890
sky130_fd_sc_hs__o31ai_4	A1	0.04360	0.04320	0.06631
	A1	0.00934	0.00889	0.03177
	A2	0.03405	0.03410	0.05623
	A2	0.00427	0.00433	0.02634
	A3	0.02468	0.02563	0.04723
	A3	-0.00078	0.00014	0.02160
	B1	0.03516	0.03588	0.05112
	B1	0.00142	0.00270	0.02089

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)**	0.00172	0.00173	0.00171
	(A2 * A3 * B1 * !Y)	-0.00199	-0.00205	-0.00204
	(A2 * !B1 * Y)	0.00172	0.00173	0.00171
	(A2 * !B1 * Y)	-0.00199	-0.00205	-0.00204
	(A2 * !A3 * B1 * !Y)	0.00178	0.00173	0.00171
	(A2 * !A3 * B1 * !Y)	-0.00191	-0.00204	-0.00204
	(!A2 * A3 * B1 * !Y)	0.00176	0.00173	0.00171
	(!A2 * A3 * B1 * !Y)	-0.00179	-0.00198	-0.00198
	(!A2 * A3 * !B1 * Y)	0.00171	0.00172	0.00171
	(!A2 * A3 * !B1 * Y)	-0.00183	-0.00198	-0.00197
	(!A2 * !A3 * !B1 * Y)	0.00162	0.00165	0.00163
	(!A2 * !A3 * !B1 * Y)	-0.00206	-0.00208	-0.00206
sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	0.00347	0.00350	0.00345
	(A2 * A3 * B1 * !Y)	-0.00405	-0.00420	-0.00421
	(A2 * !B1 * Y)	0.00344	0.00349	0.00345
	(A2 * !B1 * Y)	-0.00408	-0.00421	-0.00421
	(A2 * !A3 * B1 * !Y)	0.00362	0.00350	0.00345
	(A2 * !A3 * B1 * !Y)	-0.00386	-0.00424	-0.00421
	(!A2 * A3 * B1 * !Y)	0.00360	0.00350	0.00345
	(!A2 * A3 * B1 * !Y)	-0.00365	-0.00410	-0.00407
	(!A2 * A3 * !B1 * Y)	0.00345	0.00348	0.00345
	(!A2 * A3 * !B1 * Y)	-0.00376	-0.00410	-0.00407
	(!A2 * !A3 * !B1 * Y)	0.00327	0.00330	0.00329
	(!A2 * !A3 * !B1 * Y)	-0.00428	-0.00430	-0.00429

sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	0.00671	0.00675	0.00666
	(A2 * A3 * B1 * !Y)	-0.00807	-0.00835	-0.00832
	(A2 * !B1 * Y)	0.00668	0.00674	0.00665
	(A2 * !B1 * Y)	-0.00812	-0.00838	-0.00833
	(A2 * !A3 * B1 * !Y)	0.00699	0.00675	0.00666
	(A2 * !A3 * B1 * !Y)	-0.00773	-0.00837	-0.00833
	(!A2 * A3 * B1 * !Y)	0.00687	0.00675	0.00666
	(!A2 * A3 * B1 * !Y)	-0.00725	-0.00805	-0.00806
	(!A2 * A3 * !B1 * Y)	0.00663	0.00673	0.00665
	(!A2 * A3 * !B1 * Y)	-0.00744	-0.00805	-0.00806
	(!A2 * !A3 * !B1 * Y)	0.00626	0.00629	0.00627
	(!A2 * !A3 * !B1 * Y)	-0.00849	-0.00851	-0.00849

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)**	-0.00170	-0.00171	-0.00171
	(A2 * A3 * B1 * !Y)	0.00202	0.00205	0.00204
	(A2 * !B1 * Y)	-0.00170	-0.00171	-0.00171
	(A2 * !B1 * Y)	0.00202	0.00205	0.00204
	(A2 * !A3 * B1 * !Y)	-0.00170	-0.00171	-0.00171
	(A2 * !A3 * B1 * !Y)	0.00203	0.00204	0.00204
	(!A2 * A3 * B1 * !Y)	-0.00170	-0.00171	-0.00170
	(!A2 * A3 * B1 * !Y)	0.00197	0.00198	0.00198
	(!A2 * A3 * !B1 * Y)	-0.00170	-0.00171	-0.00171
	(!A2 * A3 * !B1 * Y)	0.00196	0.00198	0.00197
	(!A2 * !A3 * !B1 * Y)	-0.00155	-0.00165	-0.00163
	(!A2 * !A3 * !B1 * Y)	0.00208	0.00209	0.00207

sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	-0.00345	-0.00344	-0.00345
	(A2 * A3 * B1 * !Y)	0.00421	0.00420	0.00421
	(A2 * !B1 * Y)	-0.00343	-0.00344	-0.00344
	(A2 * !B1 * Y)	0.00419	0.00421	0.00421
	(A2 * !A3 * B1 * !Y)	-0.00344	-0.00346	-0.00344
	(A2 * !A3 * B1 * !Y)	0.00419	0.00425	0.00421
	(!A2 * A3 * B1 * !Y)	-0.00343	-0.00346	-0.00344
	(!A2 * A3 * B1 * !Y)	0.00405	0.00410	0.00407
	(!A2 * A3 * !B1 * Y)	-0.00343	-0.00346	-0.00344
	(!A2 * A3 * !B1 * Y)	0.00405	0.00410	0.00407
	(!A2 * !A3 * !B1 * Y)	-0.00303	-0.00329	-0.00329
	(!A2 * !A3 * !B1 * Y)	0.00435	0.00434	0.00430
sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	-0.00665	-0.00666	-0.00665
	(A2 * A3 * B1 * !Y)	0.00832	0.00835	0.00832
	(A2 * !B1 * Y)	-0.00664	-0.00666	-0.00664
	(A2 * !B1 * Y)	0.00833	0.00838	0.00833
	(A2 * !A3 * B1 * !Y)	-0.00665	-0.00667	-0.00665
	(A2 * !A3 * B1 * !Y)	0.00833	0.00837	0.00833
	(!A2 * A3 * B1 * !Y)	-0.00663	-0.00664	-0.00664
	(!A2 * A3 * B1 * !Y)	0.00803	0.00805	0.00806
	(!A2 * A3 * !B1 * Y)	-0.00663	-0.00664	-0.00664
	(!A2 * A3 * !B1 * Y)	0.00803	0.00805	0.00806
	(!A2 * !A3 * !B1 * Y)	-0.00584	-0.00629	-0.00627
	(!A2 * !A3 * !B1 * Y)	0.00856	0.00860	0.00851

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)**	0.00208	0.00211	0.00201
	(A1 * A3 * B1 * !Y)	-0.00138	-0.00139	-0.00138
	(A1 * A3 * !B1 * Y)	0.00171	0.00171	0.00170
	(A1 * A3 * !B1 * Y)	-0.00175	-0.00175	-0.00175
	(A1 * !A3 * B1 * !Y)	0.00196	0.00198	0.00195
	(A1 * !A3 * B1 * !Y)	-0.00116	-0.00117	-0.00117
	(A1 * !A3 * !B1 * Y)	0.00171	0.00172	0.00170
	(A1 * !A3 * !B1 * Y)	-0.00234	-0.00235	-0.00235
	(!A1 * A3 * B1 * !Y)	0.00236	0.00198	0.00194
	(!A1 * A3 * B1 * !Y)	-0.00170	-0.00211	-0.00212
	(!A1 * A3 * !B1 * Y)	0.00169	0.00172	0.00169
	(!A1 * A3 * !B1 * Y)	-0.00231	-0.00236	-0.00235
	(!A1 * !A3 * !B1 * Y)	0.00160	0.00162	0.00160
	(!A1 * !A3 * !B1 * Y)	-0.00239	-0.00240	-0.00238
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	0.00374	0.00377	0.00355
	(A1 * A3 * B1 * !Y)	-0.00274	-0.00274	-0.00273
	(A1 * A3 * !B1 * Y)	0.00335	0.00339	0.00334
	(A1 * A3 * !B1 * Y)	-0.00303	-0.00304	-0.00302
	(A1 * !A3 * B1 * !Y)	0.00343	0.00346	0.00341
	(A1 * !A3 * B1 * !Y)	-0.00224	-0.00226	-0.00225
	(A1 * !A3 * !B1 * Y)	0.00333	0.00338	0.00335
	(A1 * !A3 * !B1 * Y)	-0.00408	-0.00418	-0.00417
	(!A1 * A3 * B1 * !Y)	0.00419	0.00344	0.00339
	(!A1 * A3 * B1 * !Y)	-0.00338	-0.00415	-0.00418
	(!A1 * A3 * !B1 * Y)	0.00336	0.00336	0.00334
	(!A1 * A3 * !B1 * Y)	-0.00417	-0.00423	-0.00421
	(!A1 * !A3 * !B1 * Y)	0.00321	0.00321	0.00320
	(!A1 * !A3 * !B1 * Y)	-0.00428	-0.00428	-0.00427

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	0.00738	0.00750	0.00704
	(A1 * A3 * B1 * !Y)	-0.00540	-0.00546	-0.00542
	(A1 * A3 * !B1 * Y)	0.00660	0.00671	0.00662
	(A1 * A3 * !B1 * Y)	-0.00605	-0.00607	-0.00602
	(A1 * !A3 * B1 * !Y)	0.00679	0.00693	0.00677
	(A1 * !A3 * B1 * !Y)	-0.00444	-0.00453	-0.00450
	(A1 * !A3 * !B1 * Y)	0.00663	0.00669	0.00662
	(A1 * !A3 * !B1 * Y)	-0.00822	-0.00836	-0.00832
	(!A1 * A3 * B1 * !Y)	0.00843	0.00686	0.00672
	(!A1 * A3 * B1 * !Y)	-0.00659	-0.00831	-0.00834
	(!A1 * A3 * !B1 * Y)	0.00662	0.00669	0.00661
	(!A1 * A3 * !B1 * Y)	-0.00830	-0.00846	-0.00840
	(!A1 * !A3 * !B1 * Y)	0.00622	0.00632	0.00624
	(!A1 * !A3 * !B1 * Y)	-0.00853	-0.00860	-0.00854

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)**	-0.00194	-0.00194	-0.00194
	(A1 * A3 * B1 * !Y)	0.00138	0.00139	0.00138
	(A1 * A3 * !B1 * Y)	-0.00170	-0.00170	-0.00169
	(A1 * A3 * !B1 * Y)	0.00175	0.00175	0.00175
	(A1 * !A3 * B1 * !Y)	-0.00193	-0.00194	-0.00192
	(A1 * !A3 * B1 * !Y)	0.00120	0.00120	0.00120
	(A1 * !A3 * !B1 * Y)	-0.00169	-0.00170	-0.00169
	(A1 * !A3 * !B1 * Y)	0.00234	0.00235	0.00235
	(!A1 * A3 * B1 * !Y)	-0.00193	-0.00193	-0.00193
	(!A1 * A3 * B1 * !Y)	0.00210	0.00211	0.00212
	(!A1 * A3 * !B1 * Y)	-0.00169	-0.00170	-0.00169
	(!A1 * A3 * !B1 * Y)	0.00235	0.00236	0.00235
	(!A1 * !A3 * !B1 * Y)	-0.00151	-0.00161	-0.00160
	(!A1 * !A3 * !B1 * Y)	0.00241	0.00240	0.00239
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	-0.00342	-0.00343	-0.00342
	(A1 * A3 * B1 * !Y)	0.00274	0.00274	0.00273
	(A1 * A3 * !B1 * Y)	-0.00334	-0.00335	-0.00334
	(A1 * A3 * !B1 * Y)	0.00303	0.00304	0.00302
	(A1 * !A3 * B1 * !Y)	-0.00335	-0.00338	-0.00335
	(A1 * !A3 * B1 * !Y)	0.00230	0.00233	0.00233
	(A1 * !A3 * !B1 * Y)	-0.00333	-0.00335	-0.00334
	(A1 * !A3 * !B1 * Y)	0.00417	0.00418	0.00417
	(!A1 * A3 * B1 * !Y)	-0.00337	-0.00338	-0.00336
	(!A1 * A3 * B1 * !Y)	0.00415	0.00419	0.00418
	(!A1 * A3 * !B1 * Y)	-0.00334	-0.00335	-0.00334
	(!A1 * A3 * !B1 * Y)	0.00420	0.00423	0.00421
	(!A1 * !A3 * !B1 * Y)	-0.00293	-0.00319	-0.00320
	(!A1 * !A3 * !B1 * Y)	0.00429	0.00431	0.00428

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	-0.00675	-0.00680	-0.00677
	(A1 * A3 * B1 * !Y)	0.00540	0.00546	0.00542
	(A1 * A3 * !B1 * Y)	-0.00660	-0.00663	-0.00660
	(A1 * A3 * !B1 * Y)	0.00605	0.00607	0.00602
	(A1 * !A3 * B1 * !Y)	-0.00666	-0.00671	-0.00664
	(A1 * !A3 * B1 * !Y)	0.00459	0.00465	0.00464
	(A1 * !A3 * !B1 * Y)	-0.00660	-0.00663	-0.00660
	(A1 * !A3 * !B1 * Y)	0.00833	0.00836	0.00832
	(!A1 * A3 * B1 * !Y)	-0.00667	-0.00671	-0.00667
	(!A1 * A3 * B1 * !Y)	0.00827	0.00835	0.00834
	(!A1 * A3 * !B1 * Y)	-0.00657	-0.00663	-0.00660
	(!A1 * A3 * !B1 * Y)	0.00835	0.00846	0.00840
	(!A1 * !A3 * !B1 * Y)	-0.00579	-0.00632	-0.00624
	(!A1 * !A3 * !B1 * Y)	0.00861	0.00863	0.00856

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	0.00207	0.00209	0.00208
	(A2 * B1 * !Y)	-0.00099	-0.00100	-0.00099
	(A2 * !B1 * Y)	0.00164	0.00165	0.00163
	(A2 * !B1 * Y)	-0.00229	-0.00234	-0.00233
	(A1 * !A2 * B1 * !Y)	0.00207	0.00210	0.00208
	(A1 * !A2 * B1 * !Y)	-0.00099	-0.00099	-0.00098
	(A1 * !A2 * !B1 * Y)	0.00162	0.00165	0.00163
	(A1 * !A2 * !B1 * Y)	-0.00207	-0.00227	-0.00224
	(!A1 * !A2 * !B1 * Y)	0.00156	0.00158	0.00156
	(!A1 * !A2 * !B1 * Y)	-0.00236	-0.00237	-0.00236

sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	0.00387	0.00395	0.00389
	(A2 * B1 * !Y)	-0.00196	-0.00200	-0.00197
	(A2 * !B1 * Y)	0.00325	0.00329	0.00327
	(A2 * !B1 * Y)	-0.00425	-0.00439	-0.00437
	(A1 * !A2 * B1 * !Y)	0.00387	0.00395	0.00389
	(A1 * !A2 * B1 * !Y)	-0.00195	-0.00200	-0.00196
	(A1 * !A2 * !B1 * Y)	0.00327	0.00328	0.00326
	(A1 * !A2 * !B1 * Y)	-0.00391	-0.00421	-0.00419
	(!A1 * !A2 * !B1 * Y)	0.00311	0.00312	0.00310
	(!A1 * !A2 * !B1 * Y)	-0.00445	-0.00445	-0.00444
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	0.00759	0.00774	0.00761
	(A2 * B1 * !Y)	-0.00390	-0.00398	-0.00391
	(A2 * !B1 * Y)	0.00643	0.00648	0.00641
	(A2 * !B1 * Y)	-0.00844	-0.00871	-0.00866
	(A1 * !A2 * B1 * !Y)	0.00759	0.00775	0.00761
	(A1 * !A2 * B1 * !Y)	-0.00389	-0.00397	-0.00390
	(A1 * !A2 * !B1 * Y)	0.00644	0.00647	0.00641
	(A1 * !A2 * !B1 * Y)	-0.00769	-0.00822	-0.00822
	(!A1 * !A2 * !B1 * Y)	0.00609	0.00619	0.00612
	(!A1 * !A2 * !B1 * Y)	-0.00879	-0.00886	-0.00881

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

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

sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	-0.00200	-0.00202	-0.00207
	(A2 * B1 * !Y)	0.00104	0.00105	0.00101
	(A2 * !B1 * Y)	-0.00163	-0.00163	-0.00162
	(A2 * !B1 * Y)	0.00233	0.00234	0.00233
	(A1 * !A2 * B1 * !Y)	-0.00193	-0.00195	-0.00205
	(A1 * !A2 * B1 * !Y)	0.00108	0.00109	0.00100
	(A1 * !A2 * !B1 * Y)	-0.00162	-0.00164	-0.00162
	(A1 * !A2 * !B1 * Y)	0.00224	0.00227	0.00224
	(!A1 * !A2 * !B1 * Y)	-0.00146	-0.00155	-0.00156
	(!A1 * !A2 * !B1 * Y)	0.00238	0.00237	0.00236
sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	-0.00373	-0.00377	-0.00387
	(A2 * B1 * !Y)	0.00210	0.00211	0.00201
	(A2 * !B1 * Y)	-0.00325	-0.00327	-0.00326
	(A2 * !B1 * Y)	0.00437	0.00440	0.00437
	(A1 * !A2 * B1 * !Y)	-0.00352	-0.00356	-0.00382
	(A1 * !A2 * B1 * !Y)	0.00221	0.00222	0.00201
	(A1 * !A2 * !B1 * Y)	-0.00325	-0.00327	-0.00326
	(A1 * !A2 * !B1 * Y)	0.00418	0.00421	0.00419
	(!A1 * !A2 * !B1 * Y)	-0.00287	-0.00312	-0.00310
	(!A1 * !A2 * !B1 * Y)	0.00445	0.00448	0.00445
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	-0.00731	-0.00732	-0.00758
	(A2 * B1 * !Y)	0.00417	0.00415	0.00398
	(A2 * !B1 * Y)	-0.00640	-0.00643	-0.00639
	(A2 * !B1 * Y)	0.00866	0.00871	0.00866
	(A1 * !A2 * B1 * !Y)	-0.00692	-0.00692	-0.00749
	(A1 * !A2 * B1 * !Y)	0.00440	0.00437	0.00399
	(A1 * !A2 * !B1 * Y)	-0.00641	-0.00640	-0.00639
	(A1 * !A2 * !B1 * Y)	0.00823	0.00822	0.00822
	(!A1 * !A2 * !B1 * Y)	-0.00568	-0.00616	-0.00612
	(!A1 * !A2 * !B1 * Y)	0.00884	0.00889	0.00883

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)	0.00063	0.00062	0.00059
	(!A1 * !A2 * !A3 * Y)	-0.00240	-0.00241	-0.00248
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	0.00123	0.00123	0.00114
	(!A1 * !A2 * !A3 * Y)	-0.00476	-0.00479	-0.00495
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	0.00219	0.00219	0.00203
	(!A1 * !A2 * !A3 * Y)	-0.00549	-0.00552	-0.00583

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)	-0.00058	-0.00058	-0.00057
	(!A1 * !A2 * !A3 * Y)	0.00249	0.00253	0.00249
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	-0.00110	-0.00110	-0.00110
	(!A1 * !A2 * !A3 * Y)	0.00495	0.00497	0.00497
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	-0.00196	-0.00196	-0.00196
	(!A1 * !A2 * !A3 * Y)	0.00584	0.00585	0.00586

SKY130_FD_SC_HS__O31Ax

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00261	0.00256	0.00256	0.00236	1.16229
sky130_fd_sc_hs__o31a_2	0.00277	0.00269	0.00271	0.00283	2.01356
sky130_fd_sc_hs__o31a_4	0.00475	0.00506	0.00502	0.00498	4.43945

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o31a_1	0.00000	0.26854	0.64768
sky130_fd_sc_hs__o31a_2	0.00000	0.20538	0.40809
sky130_fd_sc_hs__o31a_4	0.00000	0.41393	0.81617

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)	0.08216	0.57113	5.98366
	A2->X (RR)	0.08026	0.56176	5.90587
	A3->X (RR)	0.07024	0.53958	5.87185
	B1->X (RR)	0.07444	0.57474	6.31003
sky130_fd_sc_hs__o31a_2	A1->X (RR)	0.08566	0.49425	5.75403
	A2->X (RR)	0.08408	0.48688	5.68316
	A3->X (RR)	0.07362	0.46769	5.63878
	B1->X (RR)	0.07869	0.50535	6.11482
sky130_fd_sc_hs__o31a_4	A1->X (RR)	0.09082	0.42819	6.10098
	A2->X (RR)	0.08756	0.41522	6.01053
	A3->X (RR)	0.07630	0.39710	6.00098
	B1->X (RR)	0.08286	0.44375	6.43549

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31a_1	A1->X (FF)	0.20651	0.62583	4.81986
	A2->X (FF)	0.19197	0.64143	5.00280
	A3->X (FF)	0.16213	0.62746	4.98834
	B1->X (FF)	0.07149	0.48315	4.54846
sky130_fd_sc_hs__o31a_2	A1->X (FF)	0.26063	0.66693	4.72031
	A2->X (FF)	0.24550	0.68596	4.91635
	A3->X (FF)	0.21515	0.67393	4.89132
	B1->X (FF)	0.07512	0.45937	4.23613
sky130_fd_sc_hs__o31a_4	A1->X (FF)	0.26477	0.65215	5.14154
	A2->X (FF)	0.24964	0.66288	5.29326
	A3->X (FF)	0.20806	0.64244	5.25955
	B1->X (FF)	0.07045	0.43791	4.64054

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.01354	0.01366	0.03146
	A1	0.00567	0.00580	0.02405
	A2	0.01167	0.01214	0.02943
	A2	0.00487	0.00534	0.02264
	A3	0.00966	0.01034	0.03340
	A3	0.00379	0.00447	0.02755
	B1	0.00799	0.01004	0.05885
	B1	0.00384	0.00590	0.05512
sky130_fd_sc_hs__o31a_2	A1	0.01706	0.01740	0.03241
	A1	0.00873	0.00907	0.02439
	A2	0.01510	0.01580	0.03038
	A2	0.00788	0.00859	0.02358
	A3	0.01309	0.01398	0.03278
	A3	0.00674	0.00765	0.02692
	B1	0.01133	0.01333	0.06040
	B1	0.00644	0.00846	0.05561
sky130_fd_sc_hs__o31a_4	A1	0.03284	0.03406	0.07876
	A1	0.01752	0.01884	0.06520
	A2	0.02932	0.03080	0.07301
	A2	0.01545	0.01697	0.06096
	A3	0.02397	0.02596	0.08123
	A3	0.01245	0.01447	0.07156
	B1	0.02051	0.02439	0.10923
	B1	0.01227	0.01623	0.10264

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.00463	0.00443	0.02535
	A1	0.01241	0.01223	0.03233
	A2	0.00465	0.00486	0.02628
	A2	0.01136	0.01156	0.03232
	A3	0.00463	0.00594	0.03521
	A3	0.01038	0.01169	0.04029
	B1	0.00337	0.00631	0.05257
	B1	0.00852	0.01128	0.05575
sky130_fd_sc_hs__o31a_2	A1	0.00858	0.00726	0.02694
	A1	0.01683	0.01550	0.03499
	A2	0.00856	0.00767	0.02862
	A2	0.01566	0.01484	0.03436
	A3	0.00852	0.00868	0.03662
	A3	0.01473	0.01494	0.04227
	B1	0.00583	0.00873	0.05388
	B1	0.01275	0.01547	0.05594
sky130_fd_sc_hs__o31a_4	A1	0.01771	0.01547	0.05882
	A1	0.03294	0.03098	0.07379
	A2	0.01713	0.01577	0.05848
	A2	0.03086	0.02948	0.07032
	A3	0.01765	0.01801	0.07536
	A3	0.02888	0.02933	0.08549
	B1	0.01165	0.01755	0.10740
	B1	0.02246	0.02774	0.11419

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)**	0.00165	0.00166	0.00164
	(A2 * A3 * B1 * X)	-0.00176	-0.00182	-0.00182
	(A2 * !B1 * !X)	0.00141	0.00143	0.00141
	(A2 * !B1 * !X)	-0.00200	-0.00205	-0.00204
	(A2 * !A3 * B1 * X)	0.00175	0.00166	0.00164
	(A2 * !A3 * B1 * X)	-0.00165	-0.00182	-0.00182
	(!A2 * A3 * B1 * X)	0.00172	0.00166	0.00164
	(!A2 * A3 * B1 * X)	-0.00156	-0.00177	-0.00176
	(!A2 * A3 * !B1 * !X)	0.00141	0.00142	0.00141
	(!A2 * A3 * !B1 * !X)	-0.00185	-0.00200	-0.00198
	(!A2 * !A3 * !B1 * !X)	0.00135	0.00135	0.00134
	(!A2 * !A3 * !B1 * !X)	-0.00207	-0.00207	-0.00206
sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	0.00181	0.00183	0.00181
	(A2 * A3 * B1 * X)	-0.00184	-0.00190	-0.00189
	(A2 * !B1 * !X)	0.00168	0.00171	0.00168
	(A2 * !B1 * !X)	-0.00197	-0.00202	-0.00202
	(A2 * !A3 * B1 * X)	0.00192	0.00183	0.00181
	(A2 * !A3 * B1 * X)	-0.00172	-0.00190	-0.00189
	(!A2 * A3 * B1 * X)	0.00189	0.00183	0.00181
	(!A2 * A3 * B1 * X)	-0.00163	-0.00185	-0.00184
	(!A2 * A3 * !B1 * !X)	0.00168	0.00170	0.00168
	(!A2 * A3 * !B1 * !X)	-0.00182	-0.00197	-0.00196
	(!A2 * !A3 * !B1 * !X)	0.00164	0.00164	0.00163
	(!A2 * !A3 * !B1 * !X)	-0.00204	-0.00204	-0.00203

sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	0.00278	0.00280	0.00277
	(A2 * A3 * B1 * X)	-0.00365	-0.00381	-0.00378
	(A2 * !B1 * !X)	0.00277	0.00280	0.00276
	(A2 * !B1 * !X)	-0.00368	-0.00381	-0.00378
	(A2 * !A3 * B1 * X)	0.00304	0.00281	0.00277
	(A2 * !A3 * B1 * X)	-0.00337	-0.00379	-0.00378
	(!A2 * A3 * B1 * X)	0.00299	0.00281	0.00277
	(!A2 * A3 * B1 * X)	-0.00320	-0.00369	-0.00366
	(!A2 * A3 * !B1 * !X)	0.00277	0.00280	0.00276
	(!A2 * A3 * !B1 * !X)	-0.00335	-0.00368	-0.00365
	(!A2 * !A3 * !B1 * !X)	0.00264	0.00266	0.00265
	(!A2 * !A3 * !B1 * !X)	-0.00385	-0.00386	-0.00386

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)**	-0.00163	-0.00164	-0.00163
	(A2 * A3 * B1 * X)	0.00181	0.00182	0.00182
	(A2 * !B1 * !X)	-0.00140	-0.00141	-0.00140
	(A2 * !B1 * !X)	0.00204	0.00205	0.00204
	(A2 * !A3 * B1 * X)	-0.00163	-0.00163	-0.00163
	(A2 * !A3 * B1 * X)	0.00181	0.00182	0.00182
	(!A2 * A3 * B1 * X)	-0.00162	-0.00163	-0.00163
	(!A2 * A3 * B1 * X)	0.00176	0.00177	0.00176
	(!A2 * A3 * !B1 * !X)	-0.00140	-0.00141	-0.00140
	(!A2 * A3 * !B1 * !X)	0.00198	0.00200	0.00198
	(!A2 * !A3 * !B1 * !X)	-0.00126	-0.00134	-0.00134
	(!A2 * !A3 * !B1 * !X)	0.00208	0.00208	0.00207

sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	-0.00179	-0.00181	-0.00180
	(A2 * A3 * B1 * X)	0.00187	0.00190	0.00189
	(A2 * !B1 * !X)	-0.00168	-0.00168	-0.00168
	(A2 * !B1 * !X)	0.00202	0.00202	0.00202
	(A2 * !A3 * B1 * X)	-0.00179	-0.00181	-0.00180
	(A2 * !A3 * B1 * X)	0.00188	0.00190	0.00189
	(!A2 * A3 * B1 * X)	-0.00180	-0.00181	-0.00180
	(!A2 * A3 * B1 * X)	0.00183	0.00185	0.00184
	(!A2 * A3 * !B1 * !X)	-0.00167	-0.00168	-0.00168
	(!A2 * A3 * !B1 * !X)	0.00195	0.00197	0.00196
	(!A2 * !A3 * !B1 * !X)	-0.00153	-0.00163	-0.00163
	(!A2 * !A3 * !B1 * !X)	0.00205	0.00206	0.00204
sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	-0.00276	-0.00277	-0.00276
	(A2 * A3 * B1 * X)	0.00378	0.00381	0.00378
	(A2 * !B1 * !X)	-0.00275	-0.00277	-0.00275
	(A2 * !B1 * !X)	0.00377	0.00382	0.00378
	(A2 * !A3 * B1 * X)	-0.00276	-0.00276	-0.00276
	(A2 * !A3 * B1 * X)	0.00377	0.00380	0.00378
	(!A2 * A3 * B1 * X)	-0.00274	-0.00276	-0.00274
	(!A2 * A3 * B1 * X)	0.00364	0.00369	0.00366
	(!A2 * A3 * !B1 * !X)	-0.00275	-0.00277	-0.00275
	(!A2 * A3 * !B1 * !X)	0.00364	0.00368	0.00365
	(!A2 * !A3 * !B1 * !X)	-0.00246	-0.00263	-0.00265
	(!A2 * !A3 * !B1 * !X)	0.00390	0.00390	0.00387

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)**	0.00167	0.00169	0.00160
	(A1 * A3 * B1 * X)	-0.00116	-0.00117	-0.00116
	(A1 * A3 * !B1 * !X)	0.00145	0.00147	0.00145
	(A1 * A3 * !B1 * !X)	-0.00132	-0.00133	-0.00132
	(A1 * !A3 * B1 * X)	0.00154	0.00156	0.00153
	(A1 * !A3 * B1 * X)	-0.00095	-0.00096	-0.00096
	(A1 * !A3 * !B1 * !X)	0.00147	0.00147	0.00145
	(A1 * !A3 * !B1 * !X)	-0.00184	-0.00185	-0.00185
	(!A1 * A3 * B1 * X)	0.00193	0.00156	0.00152
	(!A1 * A3 * B1 * X)	-0.00139	-0.00179	-0.00179
	(!A1 * A3 * !B1 * !X)	0.00146	0.00147	0.00145
	(!A1 * A3 * !B1 * !X)	-0.00184	-0.00187	-0.00185
	(!A1 * !A3 * !B1 * !X)	0.00138	0.00139	0.00138
	(!A1 * !A3 * !B1 * !X)	-0.00188	-0.00189	-0.00188
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	0.00183	0.00187	0.00177
	(A1 * A3 * B1 * X)	-0.00120	-0.00120	-0.00119
	(A1 * A3 * !B1 * !X)	0.00163	0.00164	0.00162
	(A1 * A3 * !B1 * !X)	-0.00135	-0.00136	-0.00135
	(A1 * !A3 * B1 * X)	0.00171	0.00172	0.00169
	(A1 * !A3 * B1 * X)	-0.00099	-0.00099	-0.00099
	(A1 * !A3 * !B1 * !X)	0.00164	0.00164	0.00162
	(A1 * !A3 * !B1 * !X)	-0.00187	-0.00188	-0.00187
	(!A1 * A3 * B1 * X)	0.00209	0.00172	0.00169
	(!A1 * A3 * B1 * X)	-0.00141	-0.00182	-0.00182
	(!A1 * A3 * !B1 * !X)	0.00164	0.00164	0.00162
	(!A1 * A3 * !B1 * !X)	-0.00186	-0.00189	-0.00188
	(!A1 * !A3 * !B1 * !X)	0.00155	0.00156	0.00155
	(!A1 * !A3 * !B1 * !X)	-0.00190	-0.00191	-0.00190

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	0.00356	0.00363	0.00344
	(A1 * A3 * B1 * X)	-0.00246	-0.00246	-0.00246
	(A1 * A3 * !B1 * !X)	0.00326	0.00330	0.00327
	(A1 * A3 * !B1 * !X)	-0.00267	-0.00269	-0.00268
	(A1 * !A3 * B1 * X)	0.00331	0.00334	0.00329
	(A1 * !A3 * B1 * X)	-0.00204	-0.00206	-0.00206
	(A1 * !A3 * !B1 * !X)	0.00326	0.00331	0.00327
	(A1 * !A3 * !B1 * !X)	-0.00370	-0.00379	-0.00376
	(!A1 * A3 * B1 * X)	0.00406	0.00335	0.00328
	(!A1 * A3 * B1 * X)	-0.00289	-0.00373	-0.00376
	(!A1 * A3 * !B1 * !X)	0.00326	0.00330	0.00327
	(!A1 * A3 * !B1 * !X)	-0.00363	-0.00376	-0.00373
	(!A1 * !A3 * !B1 * !X)	0.00312	0.00315	0.00312
	(!A1 * !A3 * !B1 * !X)	-0.00382	-0.00384	-0.00382

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)**	-0.00152	-0.00152	-0.00152
	(A1 * A3 * B1 * X)	0.00116	0.00117	0.00116
	(A1 * A3 * !B1 * !X)	-0.00144	-0.00145	-0.00145
	(A1 * A3 * !B1 * !X)	0.00132	0.00133	0.00132
	(A1 * !A3 * B1 * X)	-0.00150	-0.00151	-0.00150
	(A1 * !A3 * B1 * X)	0.00099	0.00100	0.00100
	(A1 * !A3 * !B1 * !X)	-0.00144	-0.00145	-0.00145
	(A1 * !A3 * !B1 * !X)	0.00184	0.00185	0.00185
	(!A1 * A3 * B1 * X)	-0.00150	-0.00151	-0.00150
	(!A1 * A3 * B1 * X)	0.00179	0.00180	0.00180
	(!A1 * A3 * !B1 * !X)	-0.00144	-0.00145	-0.00145
	(!A1 * A3 * !B1 * !X)	0.00185	0.00187	0.00185
	(!A1 * !A3 * !B1 * !X)	-0.00129	-0.00138	-0.00138
	(!A1 * !A3 * !B1 * !X)	0.00190	0.00189	0.00188
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	-0.00169	-0.00169	-0.00169
	(A1 * A3 * B1 * X)	0.00120	0.00120	0.00119
	(A1 * A3 * !B1 * !X)	-0.00161	-0.00162	-0.00162
	(A1 * A3 * !B1 * !X)	0.00135	0.00136	0.00135
	(A1 * !A3 * B1 * X)	-0.00167	-0.00168	-0.00166
	(A1 * !A3 * B1 * X)	0.00102	0.00102	0.00103
	(A1 * !A3 * !B1 * !X)	-0.00162	-0.00162	-0.00162
	(A1 * !A3 * !B1 * !X)	0.00188	0.00188	0.00187
	(!A1 * A3 * B1 * X)	-0.00167	-0.00168	-0.00167
	(!A1 * A3 * B1 * X)	0.00183	0.00184	0.00183
	(!A1 * A3 * !B1 * !X)	-0.00161	-0.00162	-0.00162
	(!A1 * A3 * !B1 * !X)	0.00187	0.00189	0.00188
	(!A1 * !A3 * !B1 * !X)	-0.00146	-0.00155	-0.00155
	(!A1 * !A3 * !B1 * !X)	0.00192	0.00192	0.00191

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	-0.00328	-0.00328	-0.00328
	(A1 * A3 * B1 * X)	0.00246	0.00246	0.00246
	(A1 * A3 * !B1 * !X)	-0.00326	-0.00328	-0.00326
	(A1 * A3 * !B1 * !X)	0.00267	0.00269	0.00268
	(A1 * !A3 * B1 * X)	-0.00324	-0.00326	-0.00321
	(A1 * !A3 * B1 * X)	0.00212	0.00214	0.00214
	(A1 * !A3 * !B1 * !X)	-0.00325	-0.00328	-0.00326
	(A1 * !A3 * !B1 * !X)	0.00376	0.00379	0.00376
	(!A1 * A3 * B1 * X)	-0.00325	-0.00326	-0.00324
	(!A1 * A3 * B1 * X)	0.00374	0.00376	0.00376
	(!A1 * A3 * !B1 * !X)	-0.00326	-0.00327	-0.00326
	(!A1 * A3 * !B1 * !X)	0.00373	0.00376	0.00373
	(!A1 * !A3 * !B1 * !X)	-0.00296	-0.00315	-0.00312
	(!A1 * !A3 * !B1 * !X)	0.00386	0.00386	0.00384

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	0.00163	0.00165	0.00164
	(A2 * B1 * X)	-0.00089	-0.00090	-0.00090
	(A2 * !B1 * !X)	0.00143	0.00144	0.00144
	(A2 * !B1 * !X)	-0.00184	-0.00189	-0.00189
	(A1 * !A2 * B1 * X)	0.00164	0.00165	0.00164
	(A1 * !A2 * B1 * X)	-0.00089	-0.00090	-0.00089
	(A1 * !A2 * !B1 * !X)	0.00143	0.00145	0.00144
	(A1 * !A2 * !B1 * !X)	-0.00167	-0.00183	-0.00181
	(!A1 * !A2 * !B1 * !X)	0.00137	0.00138	0.00136
	(!A1 * !A2 * !B1 * !X)	-0.00191	-0.00192	-0.00191

sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	0.00189	0.00192	0.00190
	(A2 * B1 * X)	-0.00089	-0.00091	-0.00090
	(A2 * !B1 * !X)	0.00167	0.00169	0.00167
	(A2 * !B1 * !X)	-0.00186	-0.00191	-0.00191
	(A1 * !A2 * B1 * X)	0.00189	0.00192	0.00190
	(A1 * !A2 * B1 * X)	-0.00089	-0.00090	-0.00089
	(A1 * !A2 * !B1 * !X)	0.00167	0.00169	0.00167
	(A1 * !A2 * !B1 * !X)	-0.00171	-0.00185	-0.00184
	(!A1 * !A2 * !B1 * !X)	0.00160	0.00160	0.00159
	(!A1 * !A2 * !B1 * !X)	-0.00194	-0.00194	-0.00193
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	0.00325	0.00329	0.00326
	(A2 * B1 * X)	-0.00199	-0.00201	-0.00199
	(A2 * !B1 * !X)	0.00295	0.00298	0.00296
	(A2 * !B1 * !X)	-0.00377	-0.00393	-0.00390
	(A1 * !A2 * B1 * X)	0.00325	0.00328	0.00326
	(A1 * !A2 * B1 * X)	-0.00199	-0.00201	-0.00198
	(A1 * !A2 * !B1 * !X)	0.00295	0.00299	0.00296
	(A1 * !A2 * !B1 * !X)	-0.00345	-0.00376	-0.00374
	(!A1 * !A2 * !B1 * !X)	0.00278	0.00280	0.00277
	(!A1 * !A2 * !B1 * !X)	-0.00402	-0.00403	-0.00401

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

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

sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	-0.00157	-0.00159	-0.00163
	(A2 * B1 * X)	0.00096	0.00096	0.00092
	(A2 * !B1 * !X)	-0.00143	-0.00144	-0.00143
	(A2 * !B1 * !X)	0.00188	0.00189	0.00189
	(A1 * !A2 * B1 * X)	-0.00151	-0.00152	-0.00161
	(A1 * !A2 * B1 * X)	0.00099	0.00099	0.00092
	(A1 * !A2 * !B1 * !X)	-0.00142	-0.00145	-0.00143
	(A1 * !A2 * !B1 * !X)	0.00179	0.00183	0.00181
	(!A1 * !A2 * !B1 * !X)	-0.00128	-0.00137	-0.00136
	(!A1 * !A2 * !B1 * !X)	0.00193	0.00192	0.00191
sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	-0.00183	-0.00185	-0.00189
	(A2 * B1 * X)	0.00096	0.00096	0.00092
	(A2 * !B1 * !X)	-0.00166	-0.00167	-0.00166
	(A2 * !B1 * !X)	0.00191	0.00191	0.00191
	(A1 * !A2 * B1 * X)	-0.00177	-0.00178	-0.00188
	(A1 * !A2 * B1 * X)	0.00099	0.00099	0.00091
	(A1 * !A2 * !B1 * !X)	-0.00166	-0.00167	-0.00166
	(A1 * !A2 * !B1 * !X)	0.00183	0.00185	0.00184
	(!A1 * !A2 * !B1 * !X)	-0.00150	-0.00160	-0.00159
	(!A1 * !A2 * !B1 * !X)	0.00195	0.00195	0.00194
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	-0.00308	-0.00310	-0.00323
	(A2 * B1 * X)	0.00215	0.00215	0.00204
	(A2 * !B1 * !X)	-0.00294	-0.00297	-0.00295
	(A2 * !B1 * !X)	0.00388	0.00393	0.00390
	(A1 * !A2 * B1 * X)	-0.00294	-0.00296	-0.00320
	(A1 * !A2 * B1 * X)	0.00222	0.00222	0.00203
	(A1 * !A2 * !B1 * !X)	-0.00294	-0.00296	-0.00294
	(A1 * !A2 * !B1 * !X)	0.00372	0.00376	0.00374
	(!A1 * !A2 * !B1 * !X)	-0.00258	-0.00280	-0.00277
	(!A1 * !A2 * !B1 * !X)	0.00407	0.00405	0.00403

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)	0.00053	0.00053	0.00049
	(!A1 * !A2 * !A3 * !X)	-0.00191	-0.00191	-0.00198
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	0.00068	0.00068	0.00063
	(!A1 * !A2 * !A3 * !X)	-0.00236	-0.00237	-0.00245
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	0.00100	0.00101	0.00092
	(!A1 * !A2 * !A3 * !X)	-0.00445	-0.00448	-0.00463

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)	-0.00047	-0.00048	-0.00047
	(!A1 * !A2 * !A3 * !X)	0.00198	0.00202	0.00199
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	-0.00062	-0.00063	-0.00061
	(!A1 * !A2 * !A3 * !X)	0.00247	0.00250	0.00246
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	-0.00088	-0.00090	-0.00088
	(!A1 * !A2 * !A3 * !X)	0.00463	0.00472	0.00466

SKY130_FD_SC_HS__O32AIx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00267	0.00293	0.00286	0.00282	0.00292	0.40348
sky130_fd_sc_hs__o32ai_2	0.00564	0.00528	0.00572	0.00541	0.00549	0.71759
sky130_fd_sc_hs__o32ai_4	0.01065	0.01069	0.01081	0.01105	0.01072	1.30411

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32ai_1	0.00000	0.04319	0.15376
sky130_fd_sc_hs__o32ai_2	0.00000	0.08638	0.30752
sky130_fd_sc_hs__o32ai_4	0.00000	0.17276	0.61505

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)	0.18467	1.06981	9.93882
	A2->Y (FR)	0.17315	1.09140	10.52080
	A3->Y (FR)	0.14152	1.06444	10.58780
	B1->Y (FR)	0.07107	0.76865	8.12292
	B2->Y (FR)	0.05600	0.77268	8.44228
sky130_fd_sc_hs__o32ai_2	A1->Y (FR)	0.19550	0.93593	9.77076
	A2->Y (FR)	0.18230	0.96626	10.50780
	A3->Y (FR)	0.14284	0.93253	10.58210
	B1->Y (FR)	0.07482	0.70241	8.34308
	B2->Y (FR)	0.05265	0.69789	8.63211
sky130_fd_sc_hs__o32ai_4	A1->Y (FR)	0.19599	0.81752	9.58879
	A2->Y (FR)	0.18239	0.84573	10.34080
	A3->Y (FR)	0.14196	0.82185	10.51000
	B1->Y (FR)	0.06945	0.60027	8.05408
	B2->Y (FR)	0.04894	0.61100	8.46088

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32ai_1	A1->Y (RF)	0.04632	0.33995	3.05006
	A2->Y (RF)	0.04702	0.34290	3.13406
	A3->Y (RF)	0.03949	0.33120	3.10799
	B1->Y (RF)	0.03664	0.37993	3.69289
	B2->Y (RF)	0.03053	0.36613	3.63581
sky130_fd_sc_hs__o32ai_2	A1->Y (RF)	0.04785	0.29117	2.86939
	A2->Y (RF)	0.04901	0.29962	3.03629
	A3->Y (RF)	0.03424	0.27294	3.00047
	B1->Y (RF)	0.03762	0.33422	3.64197
	B2->Y (RF)	0.02987	0.32528	3.67823
sky130_fd_sc_hs__o32ai_4	A1->Y (RF)	0.05160	0.26524	3.01550
	A2->Y (RF)	0.04689	0.24943	2.94744
	A3->Y (RF)	0.03545	0.22872	2.86332
	B1->Y (RF)	0.05145	0.35037	4.13767
	B2->Y (RF)	0.04190	0.35354	4.36751

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	A1	0.00187	0.00169	0.00868
	A1	0.01187	0.01172	0.01844
	A2	0.00200	0.00187	0.00874
	A2	0.01094	0.01082	0.01739
	A3	0.00198	0.00237	0.01405
	A3	0.00965	0.01001	0.02129
	B1	-0.00025	-0.00022	0.00824
	B1	0.00818	0.00819	0.01608
	B2	-0.00027	0.00078	0.01430
	B2	0.00700	0.00792	0.02047
sky130_fd_sc_hs__o32ai_2	A1	0.00333	0.00290	0.01695
	A1	0.02434	0.02392	0.03716
	A2	0.00362	0.00325	0.01618
	A2	0.02171	0.02139	0.03382
	A3	0.00345	0.00452	0.02624
	A3	0.01958	0.02060	0.04160
	B1	-0.00080	-0.00070	0.01521
	B1	0.01632	0.01636	0.03116
	B2	-0.00105	0.00049	0.02571
	B2	0.01395	0.01566	0.03892

sky130_fd_sc_hs__o32ai_4	**A1**	0.00664	0.00589	0.03576
	A1	0.04795	0.04725	0.07642
	A2	0.00680	0.00628	0.03469
	A2	0.04321	0.04275	0.07037
	A3	0.00678	0.00879	0.05377
	A3	0.03847	0.04030	0.08481
	B1	-0.00175	-0.00156	0.02759
	B1	0.02333	0.02354	0.05302
	B2	-0.00188	0.00087	0.04309
	B2	0.01836	0.02110	0.06340

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**A1**	0.01391	0.01384	0.01946
	A1	0.00364	0.00356	0.00919
	A2	0.01175	0.01176	0.01708
	A2	0.00250	0.00248	0.00779
	A3	0.00941	0.00956	0.01469
	A3	0.00137	0.00149	0.00664
	B1	0.01192	0.01209	0.01912
	B1	0.00244	0.00266	0.00996
	B2	0.00984	0.01010	0.01676
	B2	0.00016	0.00053	0.00787

sky130_fd_sc_hs__o32ai_2	**A1**	0.02914	0.02899	0.04033
	A1	0.00768	0.00749	0.01884
	A2	0.02463	0.02454	0.03510
	A2	0.00595	0.00581	0.01620
	A3	0.01961	0.01990	0.03016
	A3	0.00282	0.00309	0.01324
	B1	0.02475	0.02509	0.03813
	B1	0.00578	0.00616	0.02006
	B2	0.01992	0.02046	0.03291
	B2	-0.00028	0.00049	0.01446
sky130_fd_sc_hs__o32ai_4	**A1**	0.05679	0.05655	0.08460
	A1	0.01466	0.01436	0.04210
	A2	0.04812	0.04810	0.07473
	A2	0.01054	0.01049	0.03669
	A3	0.03796	0.03876	0.06428
	A3	0.00498	0.00570	0.03121
	B1	0.04887	0.04937	0.07381
	B1	0.00452	0.00524	0.03449
	B2	0.02993	0.03095	0.05580
	B2	-0.00072	0.00070	0.02675

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)**	0.00174	0.00176	0.00174
	(A2 * A3 * B2 * !Y)	-0.00202	-0.00208	-0.00207
	(A2 * A3 * B1 * !B2 * !Y)	0.00174	0.00176	0.00174
	(A2 * A3 * B1 * !B2 * !Y)	-0.00202	-0.00208	-0.00207
	(A2 * !B1 * !B2 * Y)	0.00174	0.00176	0.00174
	(A2 * !B1 * !B2 * Y)	-0.00202	-0.00208	-0.00207
	(A2 * !A3 * B2 * !Y)	0.00179	0.00176	0.00174
	(A2 * !A3 * B2 * !Y)	-0.00195	-0.00208	-0.00207
	(A2 * !A3 * B1 * !B2 * !Y)	0.00180	0.00176	0.00174
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00195	-0.00208	-0.00207
	(!A2 * A3 * B2 * !Y)	0.00178	0.00175	0.00174
	(!A2 * A3 * B2 * !Y)	-0.00183	-0.00201	-0.00201
	(!A2 * A3 * B1 * !B2 * !Y)	0.00179	0.00175	0.00174
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00183	-0.00201	-0.00201
	(!A2 * A3 * !B1 * !B2 * Y)	0.00174	0.00175	0.00174
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00186	-0.00201	-0.00200
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00164	0.00166	0.00165
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00208	-0.00209	-0.00209

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	0.00361	0.00364	0.00359
	(A2 * A3 * B2 * !Y)	-0.00419	-0.00430	-0.00430
	(A2 * A3 * B1 * !B2 * !Y)	0.00361	0.00364	0.00359
	(A2 * A3 * B1 * !B2 * !Y)	-0.00418	-0.00430	-0.00430
	(A2 * !B1 * !B2 * Y)	0.00359	0.00364	0.00359
	(A2 * !B1 * !B2 * Y)	-0.00420	-0.00431	-0.00431
	(A2 * !A3 * B2 * !Y)	0.00371	0.00364	0.00359
	(A2 * !A3 * B2 * !Y)	-0.00405	-0.00430	-0.00431
	(A2 * !A3 * B1 * !B2 * !Y)	0.00371	0.00364	0.00359
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00405	-0.00430	-0.00431
	(!A2 * A3 * B2 * !Y)	0.00370	0.00364	0.00360
	(!A2 * A3 * B2 * !Y)	-0.00383	-0.00419	-0.00417
	(!A2 * A3 * B1 * !B2 * !Y)	0.00370	0.00364	0.00360
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00383	-0.00419	-0.00417
	(!A2 * A3 * !B1 * !B2 * Y)	0.00359	0.00362	0.00359
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00391	-0.00419	-0.00417
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00335	0.00339	0.00337
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00439	-0.00441	-0.00440

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	0.00679	0.00686	0.00677
	(A2 * A3 * B2 * !Y)	-0.00814	-0.00846	-0.00837
	(A2 * A3 * B1 * !B2 * !Y)	0.00679	0.00686	0.00677
	(A2 * A3 * B1 * !B2 * !Y)	-0.00814	-0.00846	-0.00838
	(A2 * !B1 * !B2 * Y)	0.00677	0.00686	0.00677
	(A2 * !B1 * !B2 * Y)	-0.00817	-0.00846	-0.00838
	(A2 * !A3 * B2 * !Y)	0.00703	0.00685	0.00677
	(A2 * !A3 * B2 * !Y)	-0.00784	-0.00841	-0.00839
	(A2 * !A3 * B1 * !B2 * !Y)	0.00703	0.00685	0.00677
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00784	-0.00841	-0.00839
	(!A2 * A3 * B2 * !Y)	0.00700	0.00686	0.00677
	(!A2 * A3 * B2 * !Y)	-0.00745	-0.00818	-0.00813
	(!A2 * A3 * B1 * !B2 * !Y)	0.00701	0.00686	0.00678
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00744	-0.00818	-0.00813
	(!A2 * A3 * !B1 * !B2 * Y)	0.00680	0.00684	0.00677
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00760	-0.00818	-0.00813
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00640	0.00646	0.00642
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00855	-0.00859	-0.00856

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)**	-0.00173	-0.00174	-0.00174
	(A2 * A3 * B2 * !Y)	0.00206	0.00208	0.00207
	(A2 * A3 * B1 * !B2 * !Y)	-0.00173	-0.00174	-0.00174
	(A2 * A3 * B1 * !B2 * !Y)	0.00206	0.00208	0.00207
	(A2 * !B1 * !B2 * Y)	-0.00173	-0.00174	-0.00174
	(A2 * !B1 * !B2 * Y)	0.00206	0.00208	0.00207
	(A2 * !A3 * B2 * !Y)	-0.00173	-0.00174	-0.00174
	(A2 * !A3 * B2 * !Y)	0.00206	0.00208	0.00207
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00173	-0.00174	-0.00174
	(A2 * !A3 * B1 * !B2 * !Y)	0.00206	0.00208	0.00207
	(!A2 * A3 * B2 * !Y)	-0.00173	-0.00174	-0.00173
	(!A2 * A3 * B2 * !Y)	0.00199	0.00201	0.00201
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00173	-0.00174	-0.00173
	(!A2 * A3 * B1 * !B2 * !Y)	0.00200	0.00201	0.00201
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00173	-0.00174	-0.00174
	(!A2 * A3 * !B1 * !B2 * Y)	0.00199	0.00201	0.00200
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00156	-0.00166	-0.00165
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00209	0.00212	0.00210

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	-0.00359	-0.00358	-0.00358
	(A2 * A3 * B2 * !Y)	0.00431	0.00430	0.00430
	(A2 * A3 * B1 * !B2 * !Y)	-0.00359	-0.00358	-0.00358
	(A2 * A3 * B1 * !B2 * !Y)	0.00431	0.00430	0.00430
	(A2 * !B1 * !B2 * Y)	-0.00359	-0.00358	-0.00358
	(A2 * !B1 * !B2 * Y)	0.00432	0.00431	0.00431
	(A2 * !A3 * B2 * !Y)	-0.00359	-0.00358	-0.00358
	(A2 * !A3 * B2 * !Y)	0.00432	0.00430	0.00431
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00359	-0.00358	-0.00358
	(A2 * !A3 * B1 * !B2 * !Y)	0.00432	0.00430	0.00431
	(!A2 * A3 * B2 * !Y)	-0.00359	-0.00359	-0.00358
	(!A2 * A3 * B2 * !Y)	0.00417	0.00419	0.00417
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00359	-0.00359	-0.00358
	(!A2 * A3 * B1 * !B2 * !Y)	0.00417	0.00419	0.00417
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00358	-0.00359	-0.00358
	(!A2 * A3 * !B1 * !B2 * Y)	0.00418	0.00419	0.00417
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00316	-0.00339	-0.00337
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00444	0.00444	0.00441

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	-0.00676	-0.00679	-0.00675
	(A2 * A3 * B2 * !Y)	0.00839	0.00846	0.00837
	(A2 * A3 * B1 * !B2 * !Y)	-0.00676	-0.00679	-0.00675
	(A2 * A3 * B1 * !B2 * !Y)	0.00839	0.00846	0.00838
	(A2 * !B1 * !B2 * Y)	-0.00676	-0.00679	-0.00675
	(A2 * !B1 * !B2 * Y)	0.00839	0.00846	0.00838
	(A2 * !A3 * B2 * !Y)	-0.00673	-0.00676	-0.00675
	(A2 * !A3 * B2 * !Y)	0.00834	0.00841	0.00839
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00673	-0.00676	-0.00675
	(A2 * !A3 * B1 * !B2 * !Y)	0.00834	0.00841	0.00839
	(!A2 * A3 * B2 * !Y)	-0.00673	-0.00678	-0.00675
	(!A2 * A3 * B2 * !Y)	0.00807	0.00818	0.00813
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00673	-0.00678	-0.00675
	(!A2 * A3 * B1 * !B2 * !Y)	0.00807	0.00818	0.00813
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00672	-0.00678	-0.00675
	(!A2 * A3 * !B1 * !B2 * Y)	0.00807	0.00818	0.00813
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00593	-0.00644	-0.00642
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00858	0.00865	0.00858

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)**	0.00185	0.00186	0.00176
	(A1 * A3 * B2 * !Y)	-0.00143	-0.00143	-0.00143
	(A1 * A3 * B1 * !B2 * !Y)	0.00185	0.00186	0.00176
	(A1 * A3 * B1 * !B2 * !Y)	-0.00143	-0.00143	-0.00143
	(A1 * A3 * !B1 * !B2 * Y)	0.00168	0.00170	0.00168
	(A1 * A3 * !B1 * !B2 * Y)	-0.00156	-0.00157	-0.00156
	(A1 * !A3 * B2 * !Y)	0.00171	0.00173	0.00170
	(A1 * !A3 * B2 * !Y)	-0.00120	-0.00121	-0.00121
	(A1 * !A3 * B1 * !B2 * !Y)	0.00171	0.00173	0.00170
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00119	-0.00121	-0.00121
	(A1 * !A3 * !B1 * !B2 * Y)	0.00169	0.00170	0.00168
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00214	-0.00215	-0.00215
	(!A1 * A3 * B2 * !Y)	0.00211	0.00173	0.00170
	(!A1 * A3 * B2 * !Y)	-0.00174	-0.00214	-0.00215
	(!A1 * A3 * B1 * !B2 * !Y)	0.00211	0.00173	0.00170
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00174	-0.00214	-0.00215
	(!A1 * A3 * !B1 * !B2 * Y)	0.00169	0.00170	0.00168
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00214	-0.00216	-0.00216
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00158	0.00160	0.00158
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00218	-0.00219	-0.00218

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	0.00360	0.00370	0.00347
	(A1 * A3 * B2 * !Y)	-0.00268	-0.00269	-0.00267
	(A1 * A3 * B1 * !B2 * !Y)	0.00360	0.00370	0.00348
	(A1 * A3 * B1 * !B2 * !Y)	-0.00268	-0.00269	-0.00267
	(A1 * A3 * !B1 * !B2 * Y)	0.00329	0.00333	0.00329
	(A1 * A3 * !B1 * !B2 * Y)	-0.00301	-0.00302	-0.00300
	(A1 * !A3 * B2 * !Y)	0.00336	0.00339	0.00334
	(A1 * !A3 * B2 * !Y)	-0.00222	-0.00223	-0.00223
	(A1 * !A3 * B1 * !B2 * !Y)	0.00336	0.00339	0.00334
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00222	-0.00223	-0.00222
	(A1 * !A3 * !B1 * !B2 * Y)	0.00326	0.00332	0.00329
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00404	-0.00413	-0.00411
	(!A1 * A3 * B2 * !Y)	0.00415	0.00337	0.00333
	(!A1 * A3 * B2 * !Y)	-0.00322	-0.00411	-0.00413
	(!A1 * A3 * B1 * !B2 * !Y)	0.00416	0.00337	0.00333
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00322	-0.00411	-0.00413
	(!A1 * A3 * !B1 * !B2 * Y)	0.00327	0.00330	0.00329
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00407	-0.00418	-0.00416
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00314	0.00314	0.00314
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00423	-0.00423	-0.00422

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	0.00738	0.00752	0.00712
	(A1 * A3 * B2 * !Y)	-0.00540	-0.00542	-0.00541
	(A1 * A3 * B1 * !B2 * !Y)	0.00739	0.00752	0.00712
	(A1 * A3 * B1 * !B2 * !Y)	-0.00540	-0.00542	-0.00541
	(A1 * A3 * !B1 * !B2 * Y)	0.00679	0.00685	0.00677
	(A1 * A3 * !B1 * !B2 * Y)	-0.00598	-0.00601	-0.00598
	(A1 * !A3 * B2 * !Y)	0.00688	0.00694	0.00684
	(A1 * !A3 * B2 * !Y)	-0.00454	-0.00457	-0.00455
	(A1 * !A3 * B1 * !B2 * !Y)	0.00688	0.00694	0.00684
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00453	-0.00457	-0.00455
	(A1 * !A3 * !B1 * !B2 * Y)	0.00682	0.00684	0.00677
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00828	-0.00836	-0.00832
	(!A1 * A3 * B2 * !Y)	0.00862	0.00692	0.00682
	(!A1 * A3 * B2 * !Y)	-0.00663	-0.00839	-0.00842
	(!A1 * A3 * B1 * !B2 * !Y)	0.00863	0.00692	0.00682
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00662	-0.00839	-0.00842
	(!A1 * A3 * !B1 * !B2 * Y)	0.00681	0.00679	0.00677
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00835	-0.00848	-0.00844
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00642	0.00647	0.00643
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00857	-0.00859	-0.00857

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)**	-0.00169	-0.00169	-0.00169
	(A1 * A3 * B2 * !Y)	0.00143	0.00143	0.00143
	(A1 * A3 * B1 * !B2 * !Y)	-0.00169	-0.00169	-0.00169
	(A1 * A3 * B1 * !B2 * !Y)	0.00143	0.00143	0.00143
	(A1 * A3 * !B1 * !B2 * Y)	-0.00167	-0.00168	-0.00168
	(A1 * A3 * !B1 * !B2 * Y)	0.00156	0.00157	0.00156
	(A1 * !A3 * B2 * !Y)	-0.00168	-0.00169	-0.00167
	(A1 * !A3 * B2 * !Y)	0.00123	0.00124	0.00124
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00169	-0.00169	-0.00167
	(A1 * !A3 * B1 * !B2 * !Y)	0.00123	0.00124	0.00124
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00167	-0.00168	-0.00168
	(A1 * !A3 * !B1 * !B2 * Y)	0.00215	0.00215	0.00215
	(!A1 * A3 * B2 * !Y)	-0.00168	-0.00169	-0.00168
	(!A1 * A3 * B2 * !Y)	0.00213	0.00214	0.00215
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00168	-0.00169	-0.00168
	(!A1 * A3 * B1 * !B2 * !Y)	0.00213	0.00214	0.00215
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00168	-0.00168	-0.00168
	(!A1 * A3 * !B1 * !B2 * Y)	0.00216	0.00216	0.00216
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00148	-0.00160	-0.00158
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00220	0.00220	0.00219

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	-0.00335	-0.00337	-0.00335
	(A1 * A3 * B2 * !Y)	0.00268	0.00269	0.00267
	(A1 * A3 * B1 * !B2 * !Y)	-0.00335	-0.00337	-0.00335
	(A1 * A3 * B1 * !B2 * !Y)	0.00268	0.00269	0.00267
	(A1 * A3 * !B1 * !B2 * Y)	-0.00328	-0.00329	-0.00328
	(A1 * A3 * !B1 * !B2 * Y)	0.00301	0.00302	0.00300
	(A1 * !A3 * B2 * !Y)	-0.00330	-0.00331	-0.00326
	(A1 * !A3 * B2 * !Y)	0.00227	0.00228	0.00230
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00328	-0.00331	-0.00326
	(A1 * !A3 * B1 * !B2 * !Y)	0.00225	0.00228	0.00230
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00326	-0.00329	-0.00328
	(A1 * !A3 * !B1 * !B2 * Y)	0.00411	0.00413	0.00411
	(!A1 * A3 * B2 * !Y)	-0.00331	-0.00332	-0.00331
	(!A1 * A3 * B2 * !Y)	0.00410	0.00413	0.00413
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00331	-0.00332	-0.00331
	(!A1 * A3 * B1 * !B2 * !Y)	0.00410	0.00413	0.00413
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00327	-0.00329	-0.00328
	(!A1 * A3 * !B1 * !B2 * Y)	0.00415	0.00419	0.00416
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00288	-0.00313	-0.00314
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00427	0.00426	0.00423

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	-0.00684	-0.00686	-0.00685
	(A1 * A3 * B2 * !Y)	0.00540	0.00542	0.00541
	(A1 * A3 * B1 * !B2 * !Y)	-0.00684	-0.00686	-0.00685
	(A1 * A3 * B1 * !B2 * !Y)	0.00540	0.00542	0.00541
	(A1 * A3 * !B1 * !B2 * Y)	-0.00675	-0.00678	-0.00675
	(A1 * A3 * !B1 * !B2 * Y)	0.00598	0.00601	0.00598
	(A1 * !A3 * B2 * !Y)	-0.00676	-0.00678	-0.00670
	(A1 * !A3 * B2 * !Y)	0.00464	0.00466	0.00469
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00676	-0.00678	-0.00670
	(A1 * !A3 * B1 * !B2 * !Y)	0.00464	0.00466	0.00469
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00674	-0.00680	-0.00676
	(A1 * !A3 * !B1 * !B2 * Y)	0.00829	0.00836	0.00832
	(!A1 * A3 * B2 * !Y)	-0.00680	-0.00682	-0.00677
	(!A1 * A3 * B2 * !Y)	0.00840	0.00845	0.00842
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00680	-0.00682	-0.00677
	(!A1 * A3 * B1 * !B2 * !Y)	0.00840	0.00845	0.00842
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00676	-0.00679	-0.00676
	(!A1 * A3 * !B1 * !B2 * Y)	0.00845	0.00851	0.00844
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00592	-0.00644	-0.00643
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00865	0.00865	0.00859

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

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

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	0.00181	0.00183	0.00181
	(A2 * B2 * !Y)	-0.00100	-0.00101	-0.00100
	(A2 * B1 * !B2 * !Y)	0.00181	0.00183	0.00181
	(A2 * B1 * !B2 * !Y)	-0.00100	-0.00101	-0.00100
	(A2 * !B1 * !B2 * Y)	0.00166	0.00168	0.00167
	(A2 * !B1 * !B2 * Y)	-0.00197	-0.00204	-0.00203
	(A1 * !A2 * B2 * !Y)	0.00181	0.00183	0.00181
	(A1 * !A2 * B2 * !Y)	-0.00100	-0.00101	-0.00100
	(A1 * !A2 * B1 * !B2 * !Y)	0.00181	0.00183	0.00181
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00100	-0.00100	-0.00100
	(A1 * !A2 * !B1 * !B2 * Y)	0.00166	0.00169	0.00167
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00179	-0.00196	-0.00194
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00158	0.00159	0.00158
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00206	-0.00207	-0.00206
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	0.00395	0.00404	0.00397
	(A2 * B2 * !Y)	-0.00196	-0.00201	-0.00198
	(A2 * B1 * !B2 * !Y)	0.00395	0.00404	0.00397
	(A2 * B1 * !B2 * !Y)	-0.00196	-0.00201	-0.00198
	(A2 * !B1 * !B2 * Y)	0.00326	0.00331	0.00327
	(A2 * !B1 * !B2 * Y)	-0.00431	-0.00447	-0.00445
	(A1 * !A2 * B2 * !Y)	0.00397	0.00404	0.00397
	(A1 * !A2 * B2 * !Y)	-0.00198	-0.00201	-0.00198
	(A1 * !A2 * B1 * !B2 * !Y)	0.00397	0.00404	0.00397
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00198	-0.00201	-0.00198
	(A1 * !A2 * !B1 * !B2 * Y)	0.00326	0.00327	0.00327
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00393	-0.00423	-0.00421
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00311	0.00314	0.00311
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00453	-0.00454	-0.00452

sky130_fd_sc_hs__o32ai_4	**(A2 * B2 * !Y)**	0.00756	0.00760	0.00754
	(A2 * B2 * !Y)	-0.00395	-0.00395	-0.00391
	(A2 * B1 * !B2 * !Y)	0.00756	0.00766	0.00754
	(A2 * B1 * !B2 * !Y)	-0.00395	-0.00398	-0.00391
	(A2 * !B1 * !B2 * Y)	0.00634	0.00645	0.00638
	(A2 * !B1 * !B2 * Y)	-0.00830	-0.00862	-0.00859
	(A1 * !A2 * B2 * !Y)	0.00750	0.00766	0.00754
	(A1 * !A2 * B2 * !Y)	-0.00389	-0.00397	-0.00390
	(A1 * !A2 * B1 * !B2 * !Y)	0.00751	0.00766	0.00754
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00389	-0.00397	-0.00390
	(A1 * !A2 * !B1 * !B2 * Y)	0.00639	0.00646	0.00638
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00758	-0.00813	-0.00810
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00614	0.00615	0.00613
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00876	-0.00876	-0.00874

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

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

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	-0.00175	-0.00176	-0.00180
	(A2 * B2 * !Y)	0.00106	0.00106	0.00102
	(A2 * B1 * !B2 * !Y)	-0.00174	-0.00176	-0.00180
	(A2 * B1 * !B2 * !Y)	0.00106	0.00106	0.00102
	(A2 * !B1 * !B2 * Y)	-0.00166	-0.00167	-0.00167
	(A2 * !B1 * !B2 * Y)	0.00203	0.00204	0.00203
	(A1 * !A2 * B2 * !Y)	-0.00166	-0.00167	-0.00179
	(A1 * !A2 * B2 * !Y)	0.00110	0.00111	0.00101
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00166	-0.00167	-0.00179
	(A1 * !A2 * B1 * !B2 * !Y)	0.00110	0.00111	0.00101
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00166	-0.00168	-0.00167
	(A1 * !A2 * !B1 * !B2 * Y)	0.00192	0.00196	0.00194
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00147	-0.00159	-0.00158
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00207	0.00209	0.00207
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	-0.00378	-0.00382	-0.00395
	(A2 * B2 * !Y)	0.00214	0.00216	0.00202
	(A2 * B1 * !B2 * !Y)	-0.00378	-0.00382	-0.00395
	(A2 * B1 * !B2 * !Y)	0.00214	0.00216	0.00202
	(A2 * !B1 * !B2 * Y)	-0.00325	-0.00328	-0.00326
	(A2 * !B1 * !B2 * Y)	0.00443	0.00447	0.00445
	(A1 * !A2 * B2 * !Y)	-0.00360	-0.00364	-0.00391
	(A1 * !A2 * B2 * !Y)	0.00222	0.00224	0.00202
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00360	-0.00364	-0.00391
	(A1 * !A2 * B1 * !B2 * !Y)	0.00222	0.00224	0.00202
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00325	-0.00327	-0.00326
	(A1 * !A2 * !B1 * !B2 * Y)	0.00420	0.00423	0.00421
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00288	-0.00311	-0.00311
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00456	0.00454	0.00453

sky130_fd_sc_hs__o32ai_4	**(A2 * B2 * !Y)**	-0.00717	-0.00726	-0.00750
	(A2 * B2 * !Y)	0.00420	0.00424	0.00399
	(A2 * B1 * !B2 * !Y)	-0.00717	-0.00726	-0.00750
	(A2 * B1 * !B2 * !Y)	0.00420	0.00424	0.00399
	(A2 * !B1 * !B2 * Y)	-0.00634	-0.00639	-0.00636
	(A2 * !B1 * !B2 * Y)	0.00859	0.00862	0.00859
	(A1 * !A2 * B2 * !Y)	-0.00681	-0.00689	-0.00742
	(A1 * !A2 * B2 * !Y)	0.00436	0.00440	0.00398
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00681	-0.00683	-0.00742
	(A1 * !A2 * B1 * !B2 * !Y)	0.00436	0.00435	0.00398
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00635	-0.00639	-0.00636
	(A1 * !A2 * !B1 * !B2 * Y)	0.00808	0.00813	0.00810
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00564	-0.00612	-0.00613
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00881	0.00882	0.00876

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**(A3 * B2 * !Y)**	0.00215	0.00189	0.00185
	(A3 * B2 * !Y)	-0.00173	-0.00204	-0.00204
	(A2 * !A3 * B2 * !Y)	0.00215	0.00189	0.00185
	(A2 * !A3 * B2 * !Y)	-0.00174	-0.00204	-0.00204
	(A1 * !A2 * !A3 * B2 * !Y)	0.00215	0.00189	0.00185
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00173	-0.00204	-0.00204
	(!A1 * !A2 * !A3 * B2 * Y)	0.00063	0.00063	0.00062
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00241	-0.00246	-0.00244
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00071	0.00071	0.00065
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00234	-0.00236	-0.00246

sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	0.00403	0.00342	0.00336
	(A3 * B2 * !Y)	-0.00334	-0.00406	-0.00405
	(A2 * !A3 * B2 * !Y)	0.00402	0.00342	0.00336
	(A2 * !A3 * B2 * !Y)	-0.00334	-0.00404	-0.00405
	(A1 * !A2 * !A3 * B2 * !Y)	0.00402	0.00342	0.00336
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00334	-0.00405	-0.00405
	(!A1 * !A2 * !A3 * B2 * Y)	0.00099	0.00100	0.00099
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00476	-0.00489	-0.00485
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00116	0.00116	0.00104
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00465	-0.00469	-0.00488
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	0.00844	0.00717	0.00705
	(A3 * B2 * !Y)	-0.00669	-0.00815	-0.00813
	(A2 * !A3 * B2 * !Y)	0.00843	0.00717	0.00705
	(A2 * !A3 * B2 * !Y)	-0.00669	-0.00815	-0.00813
	(A1 * !A2 * !A3 * B2 * !Y)	0.00843	0.00716	0.00705
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00669	-0.00815	-0.00813
	(!A1 * !A2 * !A3 * B2 * Y)	0.00199	0.00200	0.00198
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00989	-0.01011	-0.01004
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00232	0.00233	0.00208
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00968	-0.00975	-0.01012

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

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

sky130_fd_sc_hs__o32ai_1	**(A3 * B2 * !Y)**	-0.00184	-0.00185	-0.00184
	(A3 * B2 * !Y)	0.00203	0.00205	0.00204
	(A2 * !A3 * B2 * !Y)	-0.00184	-0.00185	-0.00184
	(A2 * !A3 * B2 * !Y)	0.00203	0.00206	0.00204
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00184	-0.00185	-0.00184
	(A1 * !A2 * !A3 * B2 * !Y)	0.00203	0.00205	0.00204
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00062	-0.00062	-0.00062
	(!A1 * !A2 * !A3 * B2 * Y)	0.00245	0.00247	0.00244
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00064	-0.00064	-0.00063
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00248	0.00251	0.00247
sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	-0.00334	-0.00337	-0.00335
	(A3 * B2 * !Y)	0.00401	0.00409	0.00405
	(A2 * !A3 * B2 * !Y)	-0.00334	-0.00335	-0.00335
	(A2 * !A3 * B2 * !Y)	0.00401	0.00404	0.00405
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00334	-0.00336	-0.00335
	(A1 * !A2 * !A3 * B2 * !Y)	0.00402	0.00405	0.00405
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00098	-0.00099	-0.00099
	(!A1 * !A2 * !A3 * B2 * Y)	0.00484	0.00489	0.00485
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00099	-0.00101	-0.00100
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00489	0.00498	0.00491
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	-0.00704	-0.00705	-0.00702
	(A3 * B2 * !Y)	0.00813	0.00817	0.00813
	(A2 * !A3 * B2 * !Y)	-0.00702	-0.00706	-0.00702
	(A2 * !A3 * B2 * !Y)	0.00809	0.00817	0.00813
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00702	-0.00706	-0.00702
	(A1 * !A2 * !A3 * B2 * !Y)	0.00810	0.00818	0.00813
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00197	-0.00198	-0.00198
	(!A1 * !A2 * !A3 * B2 * Y)	0.01002	0.01011	0.01004
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00200	-0.00204	-0.00200
	(!A1 * !A2 * !A3 * !B2 * Y)	0.01014	0.01033	0.01017

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	(A3 * B1 * !Y)	0.00193	0.00195	0.00193
	(A3 * B1 * !Y)	-0.00097	-0.00098	-0.00097
	(A2 * !A3 * B1 * !Y)	0.00193	0.00195	0.00193
	(A2 * !A3 * B1 * !Y)	-0.00097	-0.00098	-0.00097
	(A1 * !A2 * !A3 * B1 * !Y)	0.00193	0.00196	0.00193
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00097	-0.00098	-0.00097
	(!A1 * !A2 * !A3 * B1 * Y)	0.00053	0.00053	0.00053
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00246	-0.00247	-0.00246
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00061	0.00061	0.00055
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00238	-0.00240	-0.00249
sky130_fd_sc_hs__o32ai_2	(A3 * B1 * !Y)	0.00378	0.00384	0.00378
	(A3 * B1 * !Y)	-0.00202	-0.00203	-0.00200
	(A2 * !A3 * B1 * !Y)	0.00378	0.00384	0.00378
	(A2 * !A3 * B1 * !Y)	-0.00202	-0.00203	-0.00199
	(A1 * !A2 * !A3 * B1 * !Y)	0.00377	0.00384	0.00378
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00200	-0.00203	-0.00199
	(!A1 * !A2 * !A3 * B1 * Y)	0.00105	0.00105	0.00104
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00486	-0.00492	-0.00491
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00122	0.00122	0.00109
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00475	-0.00478	-0.00497

sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	0.00742	0.00754	0.00742
	(A3 * B1 * !Y)	-0.00399	-0.00403	-0.00395
	(A2 * !A3 * B1 * !Y)	0.00740	0.00753	0.00741
	(A2 * !A3 * B1 * !Y)	-0.00396	-0.00403	-0.00395
	(A1 * !A2 * !A3 * B1 * !Y)	0.00740	0.00741	0.00741
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00396	-0.00396	-0.00395
	(!A1 * !A2 * !A3 * B1 * Y)	0.00202	0.00202	0.00200
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00966	-0.00976	-0.00972
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00232	0.00235	0.00210
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00939	-0.00950	-0.00988

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**(A3 * B1 * !Y)**	-0.00187	-0.00189	-0.00192
	(A3 * B1 * !Y)	0.00101	0.00102	0.00098
	(A2 * !A3 * B1 * !Y)	-0.00187	-0.00189	-0.00192
	(A2 * !A3 * B1 * !Y)	0.00101	0.00102	0.00098
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00187	-0.00187	-0.00192
	(A1 * !A2 * !A3 * B1 * !Y)	0.00102	0.00101	0.00098
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00053	-0.00053	-0.00053
	(!A1 * !A2 * !A3 * B1 * Y)	0.00247	0.00247	0.00246
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00054	-0.00053	-0.00053
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00251	0.00249	0.00250

sky130_fd_sc_hs__o32ai_2	**(A3 * B1 * !Y)**	-0.00359	-0.00363	-0.00376
	(A3 * B1 * !Y)	0.00215	0.00217	0.00204
	(A2 * !A3 * B1 * !Y)	-0.00359	-0.00363	-0.00376
	(A2 * !A3 * B1 * !Y)	0.00214	0.00217	0.00204
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00360	-0.00362	-0.00376
	(A1 * !A2 * !A3 * B1 * !Y)	0.00216	0.00216	0.00204
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00103	-0.00104	-0.00104
	(!A1 * !A2 * !A3 * B1 * Y)	0.00490	0.00492	0.00491
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00105	-0.00107	-0.00105
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00498	0.00507	0.00500
sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	-0.00708	-0.00712	-0.00738
	(A3 * B1 * !Y)	0.00422	0.00423	0.00402
	(A2 * !A3 * B1 * !Y)	-0.00707	-0.00713	-0.00738
	(A2 * !A3 * B1 * !Y)	0.00421	0.00423	0.00402
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00710	-0.00714	-0.00738
	(A1 * !A2 * !A3 * B1 * !Y)	0.00424	0.00424	0.00402
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00197	-0.00200	-0.00200
	(!A1 * !A2 * !A3 * B1 * Y)	0.00968	0.00976	0.00972
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00201	-0.00202	-0.00202
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00988	0.00991	0.00992

SKY130_FD_SC_HS__O32Ax

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00264	0.00257	0.00256	0.00258	0.00262	1.18662
sky130_fd_sc_hs__o32a_2	0.00277	0.00272	0.00277	0.00297	0.00278	2.29199
sky130_fd_sc_hs__o32a_4	0.00475	0.00508	0.00475	0.00635	0.00502	4.46706

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32a_1	0.00000	0.13106	0.40066
sky130_fd_sc_hs__o32a_2	0.00000	0.16060	0.40809
sky130_fd_sc_hs__o32a_4	0.00000	0.32474	0.81617

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)	0.09566	0.60262	6.13858
	A2->X (RR)	0.09319	0.59482	6.06937
	A3->X (RR)	0.08397	0.57527	6.03948
	B1->X (RR)	0.08595	0.60271	6.26852
	B2->X (RR)	0.07744	0.58014	6.24397
sky130_fd_sc_hs__o32a_2	A1->X (RR)	0.09751	0.51444	6.03411
	A2->X (RR)	0.09585	0.50941	5.97564
	A3->X (RR)	0.08761	0.49326	5.94445
	B1->X (RR)	0.08837	0.52253	6.18155
	B2->X (RR)	0.07997	0.50188	6.13921
sky130_fd_sc_hs__o32a_4	A1->X (RR)	0.11159	0.46921	6.22655
	A2->X (RR)	0.10465	0.45367	6.13702
	A3->X (RR)	0.09215	0.43102	6.10031
	B1->X (RR)	0.10345	0.48382	6.37821
	B2->X (RR)	0.08932	0.45542	6.32507

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32a_1	A1->X (FF)	0.22454	0.67958	4.98538
	A2->X (FF)	0.20988	0.69663	5.17837
	A3->X (FF)	0.17944	0.68504	5.17219
	B1->X (FF)	0.11639	0.54524	4.75865
	B2->X (FF)	0.10168	0.54622	4.80722
sky130_fd_sc_hs__o32a_2	A1->X (FF)	0.27984	0.72598	5.15005
	A2->X (FF)	0.26563	0.74650	5.37164
	A3->X (FF)	0.23624	0.73555	5.36567
	B1->X (FF)	0.15079	0.58502	4.88761
	B2->X (FF)	0.13494	0.59197	4.94608
sky130_fd_sc_hs__o32a_4	A1->X (FF)	0.28480	0.70241	5.27206
	A2->X (FF)	0.26804	0.71128	5.43690
	A3->X (FF)	0.22315	0.69008	5.43030
	B1->X (FF)	0.14150	0.53649	4.95427
	B2->X (FF)	0.12185	0.53521	5.01637

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	A1	0.01636	0.01632	0.03342
	A1	0.00684	0.00680	0.02431
	A2	0.01448	0.01487	0.03158
	A2	0.00604	0.00645	0.02358
	A3	0.01088	0.01148	0.03454
	A3	0.00375	0.00437	0.02787
	B1	0.01457	0.01520	0.04255
	B1	0.00467	0.00595	0.03655
	B2	0.01063	0.01190	0.04928
	B2	0.00369	0.00523	0.04462
sky130_fd_sc_hs__o32a_2	A1	0.01992	0.02009	0.03711
	A1	0.00846	0.00882	0.02738
	A2	0.01649	0.01720	0.03427
	A2	0.00765	0.00839	0.02642
	A3	0.01450	0.01534	0.03786
	A3	0.00656	0.00744	0.02995
	B1	0.01802	0.01884	0.04561
	B1	0.00951	0.01037	0.03798
	B2	0.01582	0.01682	0.05128
	B2	0.00650	0.00814	0.04717

sky130_fd_sc_hs__o32a_4	**A1**	0.03914	0.03999	0.08226
	A1	0.01775	0.01894	0.06448
	A2	0.03516	0.03622	0.07633
	A2	0.01545	0.01693	0.06023
	A3	0.02964	0.03131	0.08433
	A3	0.01256	0.01454	0.07109
	B1	0.03638	0.03818	0.08837
	B1	0.01423	0.01671	0.07384
	B2	0.02159	0.02503	0.09461
	B2	0.01244	0.01590	0.08732

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**A1**	0.00522	0.00488	0.02590
	A1	0.01465	0.01431	0.03435
	A2	0.00526	0.00529	0.02654
	A2	0.01357	0.01364	0.03407
	A3	0.00523	0.00634	0.03546
	A3	0.01258	0.01371	0.04199
	B1	0.00341	0.00425	0.03139
	B1	0.01134	0.01201	0.03603
	B2	0.00341	0.00554	0.04262
	B2	0.01027	0.01233	0.04525

sky130_fd_sc_hs__o32a_2	**A1**	0.01023	0.00867	0.02959
	A1	0.02030	0.01876	0.03910
	A2	0.01019	0.00913	0.03081
	A2	0.01915	0.01811	0.03812
	A3	0.01024	0.00996	0.03986
	A3	0.01827	0.01810	0.04634
	B1	0.00715	0.00759	0.03396
	B1	0.01576	0.01617	0.04007
	B2	0.00725	0.00922	0.04473
	B2	0.01446	0.01626	0.04942
sky130_fd_sc_hs__o32a_4	**A1**	0.01964	0.01691	0.05922
	A1	0.03829	0.03555	0.07739
	A2	0.01956	0.01706	0.06155
	A2	0.03639	0.03400	0.07412
	A3	0.01957	0.01920	0.07938
	A3	0.03377	0.03351	0.08906
	B1	0.01331	0.01400	0.06657
	B1	0.03014	0.03067	0.08142
	B2	0.01329	0.01670	0.08705
	B2	0.02684	0.03007	0.09790

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)**	0.00166	0.00168	0.00166
	(A2 * A3 * B2 * X)	-0.00179	-0.00184	-0.00183
	(A2 * A3 * B1 * !B2 * X)	0.00167	0.00168	0.00166
	(A2 * A3 * B1 * !B2 * X)	-0.00178	-0.00184	-0.00183
	(A2 * !B1 * !B2 * !X)	0.00143	0.00144	0.00143
	(A2 * !B1 * !B2 * !X)	-0.00203	-0.00207	-0.00207
	(A2 * !A3 * B2 * X)	0.00177	0.00168	0.00166
	(A2 * !A3 * B2 * X)	-0.00167	-0.00184	-0.00183
	(A2 * !A3 * B1 * !B2 * X)	0.00177	0.00168	0.00166
	(A2 * !A3 * B1 * !B2 * X)	-0.00167	-0.00184	-0.00183
	(!A2 * A3 * B2 * X)	0.00174	0.00168	0.00166
	(!A2 * A3 * B2 * X)	-0.00158	-0.00178	-0.00178
	(!A2 * A3 * B1 * !B2 * X)	0.00174	0.00168	0.00166
	(!A2 * A3 * B1 * !B2 * X)	-0.00158	-0.00178	-0.00178
	(!A2 * A3 * !B1 * !B2 * !X)	0.00142	0.00144	0.00143
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00188	-0.00202	-0.00201
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00136	0.00136	0.00136
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00209	-0.00209	-0.00208

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	0.00186	0.00188	0.00186
	(A2 * A3 * B2 * X)	-0.00179	-0.00184	-0.00183
	(A2 * A3 * B1 * !B2 * X)	0.00186	0.00188	0.00186
	(A2 * A3 * B1 * !B2 * X)	-0.00179	-0.00184	-0.00183
	(A2 * !B1 * !B2 * !X)	0.00164	0.00166	0.00163
	(A2 * !B1 * !B2 * !X)	-0.00202	-0.00207	-0.00206
	(A2 * !A3 * B2 * X)	0.00197	0.00188	0.00186
	(A2 * !A3 * B2 * X)	-0.00167	-0.00184	-0.00183
	(A2 * !A3 * B1 * !B2 * X)	0.00197	0.00188	0.00186
	(A2 * !A3 * B1 * !B2 * X)	-0.00167	-0.00184	-0.00183
	(!A2 * A3 * B2 * X)	0.00193	0.00188	0.00186
	(!A2 * A3 * B2 * X)	-0.00159	-0.00179	-0.00178
	(!A2 * A3 * B1 * !B2 * X)	0.00193	0.00188	0.00186
	(!A2 * A3 * B1 * !B2 * X)	-0.00159	-0.00179	-0.00178
	(!A2 * A3 * !B1 * !B2 * !X)	0.00163	0.00165	0.00163
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00187	-0.00201	-0.00200
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00155	0.00155	0.00155
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00208	-0.00208	-0.00208

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	0.00287	0.00290	0.00287
	(A2 * A3 * B2 * X)	-0.00358	-0.00370	-0.00370
	(A2 * A3 * B1 * !B2 * X)	0.00288	0.00291	0.00287
	(A2 * A3 * B1 * !B2 * X)	-0.00358	-0.00370	-0.00370
	(A2 * !B1 * !B2 * !X)	0.00288	0.00291	0.00287
	(A2 * !B1 * !B2 * !X)	-0.00359	-0.00370	-0.00370
	(A2 * !A3 * B2 * X)	0.00306	0.00291	0.00287
	(A2 * !A3 * B2 * X)	-0.00336	-0.00373	-0.00370
	(A2 * !A3 * B1 * !B2 * X)	0.00307	0.00291	0.00287
	(A2 * !A3 * B1 * !B2 * X)	-0.00336	-0.00372	-0.00370
	(!A2 * A3 * B2 * X)	0.00305	0.00291	0.00287
	(!A2 * A3 * B2 * X)	-0.00317	-0.00362	-0.00359
	(!A2 * A3 * B1 * !B2 * X)	0.00305	0.00291	0.00287
	(!A2 * A3 * B1 * !B2 * X)	-0.00316	-0.00362	-0.00359
	(!A2 * A3 * !B1 * !B2 * !X)	0.00288	0.00290	0.00287
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00329	-0.00361	-0.00358
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00274	0.00277	0.00275
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00375	-0.00378	-0.00377

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)**	-0.00166	-0.00166	-0.00166
	(A2 * A3 * B2 * X)	0.00183	0.00184	0.00183
	(A2 * A3 * B1 * !B2 * X)	-0.00166	-0.00166	-0.00166
	(A2 * A3 * B1 * !B2 * X)	0.00183	0.00184	0.00183
	(A2 * !B1 * !B2 * !X)	-0.00142	-0.00143	-0.00142
	(A2 * !B1 * !B2 * !X)	0.00207	0.00207	0.00207
	(A2 * !A3 * B2 * X)	-0.00166	-0.00166	-0.00166
	(A2 * !A3 * B2 * X)	0.00184	0.00184	0.00183
	(A2 * !A3 * B1 * !B2 * X)	-0.00166	-0.00166	-0.00166
	(A2 * !A3 * B1 * !B2 * X)	0.00184	0.00184	0.00183
	(!A2 * A3 * B2 * X)	-0.00165	-0.00166	-0.00165
	(!A2 * A3 * B2 * X)	0.00177	0.00178	0.00178
	(!A2 * A3 * B1 * !B2 * X)	-0.00165	-0.00166	-0.00165
	(!A2 * A3 * B1 * !B2 * X)	0.00177	0.00178	0.00178
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00142	-0.00143	-0.00142
	(!A2 * A3 * !B1 * !B2 * !X)	0.00200	0.00202	0.00201
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00127	-0.00136	-0.00136
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00210	0.00211	0.00209

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	-0.00185	-0.00186	-0.00186
	(A2 * A3 * B2 * X)	0.00182	0.00184	0.00183
	(A2 * A3 * B1 * !B2 * X)	-0.00184	-0.00186	-0.00185
	(A2 * A3 * B1 * !B2 * X)	0.00182	0.00184	0.00183
	(A2 * !B1 * !B2 * !X)	-0.00163	-0.00163	-0.00163
	(A2 * !B1 * !B2 * !X)	0.00206	0.00207	0.00206
	(A2 * !A3 * B2 * X)	-0.00185	-0.00186	-0.00185
	(A2 * !A3 * B2 * X)	0.00182	0.00184	0.00183
	(A2 * !A3 * B1 * !B2 * X)	-0.00185	-0.00186	-0.00185
	(A2 * !A3 * B1 * !B2 * X)	0.00182	0.00184	0.00183
	(!A2 * A3 * B2 * X)	-0.00185	-0.00186	-0.00185
	(!A2 * A3 * B2 * X)	0.00177	0.00179	0.00178
	(!A2 * A3 * B1 * !B2 * X)	-0.00185	-0.00186	-0.00185
	(!A2 * A3 * B1 * !B2 * X)	0.00177	0.00179	0.00178
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00162	-0.00163	-0.00163
	(!A2 * A3 * !B1 * !B2 * !X)	0.00199	0.00201	0.00200
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00146	-0.00155	-0.00155
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00209	0.00210	0.00208

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	-0.00287	-0.00286	-0.00286
	(A2 * A3 * B2 * X)	0.00369	0.00370	0.00370
	(A2 * A3 * B1 * !B2 * X)	-0.00286	-0.00286	-0.00286
	(A2 * A3 * B1 * !B2 * X)	0.00370	0.00370	0.00370
	(A2 * !B1 * !B2 * !X)	-0.00286	-0.00286	-0.00286
	(A2 * !B1 * !B2 * !X)	0.00370	0.00370	0.00370
	(A2 * !A3 * B2 * X)	-0.00285	-0.00287	-0.00286
	(A2 * !A3 * B2 * X)	0.00367	0.00373	0.00370
	(A2 * !A3 * B1 * !B2 * X)	-0.00285	-0.00287	-0.00286
	(A2 * !A3 * B1 * !B2 * X)	0.00367	0.00373	0.00370
	(!A2 * A3 * B2 * X)	-0.00285	-0.00287	-0.00285
	(!A2 * A3 * B2 * X)	0.00357	0.00362	0.00359
	(!A2 * A3 * B1 * !B2 * X)	-0.00285	-0.00287	-0.00285
	(!A2 * A3 * B1 * !B2 * X)	0.00357	0.00362	0.00359
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00285	-0.00287	-0.00286
	(!A2 * A3 * !B1 * !B2 * !X)	0.00356	0.00361	0.00358
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00253	-0.00274	-0.00275
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00381	0.00381	0.00378

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)**	0.00166	0.00169	0.00160
	(A1 * A3 * B2 * X)	-0.00117	-0.00117	-0.00117
	(A1 * A3 * B1 * !B2 * X)	0.00167	0.00170	0.00160
	(A1 * A3 * B1 * !B2 * X)	-0.00117	-0.00117	-0.00117
	(A1 * A3 * !B1 * !B2 * !X)	0.00146	0.00147	0.00146
	(A1 * A3 * !B1 * !B2 * !X)	-0.00133	-0.00134	-0.00133
	(A1 * !A3 * B2 * X)	0.00154	0.00155	0.00153
	(A1 * !A3 * B2 * X)	-0.00096	-0.00097	-0.00097
	(A1 * !A3 * B1 * !B2 * X)	0.00154	0.00155	0.00153
	(A1 * !A3 * B1 * !B2 * X)	-0.00096	-0.00097	-0.00097
	(A1 * !A3 * !B1 * !B2 * !X)	0.00147	0.00147	0.00146
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00185	-0.00186	-0.00185
	(!A1 * A3 * B2 * X)	0.00193	0.00155	0.00152
	(!A1 * A3 * B2 * X)	-0.00140	-0.00180	-0.00180
	(!A1 * A3 * B1 * !B2 * X)	0.00193	0.00156	0.00152
	(!A1 * A3 * B1 * !B2 * X)	-0.00140	-0.00180	-0.00180
	(!A1 * A3 * !B1 * !B2 * !X)	0.00146	0.00148	0.00146
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00184	-0.00187	-0.00186
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00137	0.00138	0.00137
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00188	-0.00188	-0.00188

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	0.00188	0.00191	0.00181
	(A1 * A3 * B2 * X)	-0.00118	-0.00118	-0.00117
	(A1 * A3 * B1 * !B2 * X)	0.00188	0.00191	0.00181
	(A1 * A3 * B1 * !B2 * X)	-0.00118	-0.00118	-0.00117
	(A1 * A3 * !B1 * !B2 * !X)	0.00167	0.00168	0.00166
	(A1 * A3 * !B1 * !B2 * !X)	-0.00135	-0.00135	-0.00134
	(A1 * !A3 * B2 * X)	0.00175	0.00177	0.00174
	(A1 * !A3 * B2 * X)	-0.00097	-0.00098	-0.00098
	(A1 * !A3 * B1 * !B2 * X)	0.00175	0.00177	0.00174
	(A1 * !A3 * B1 * !B2 * X)	-0.00097	-0.00098	-0.00098
	(A1 * !A3 * !B1 * !B2 * !X)	0.00167	0.00168	0.00166
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00185	-0.00187	-0.00186
	(!A1 * A3 * B2 * X)	0.00214	0.00177	0.00173
	(!A1 * A3 * B2 * X)	-0.00141	-0.00180	-0.00181
	(!A1 * A3 * B1 * !B2 * X)	0.00214	0.00177	0.00173
	(!A1 * A3 * B1 * !B2 * X)	-0.00141	-0.00180	-0.00181
	(!A1 * A3 * !B1 * !B2 * !X)	0.00167	0.00168	0.00166
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00185	-0.00187	-0.00187
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00157	0.00158	0.00157
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00189	-0.00190	-0.00189

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	0.00320	0.00328	0.00308
	(A1 * A3 * B2 * X)	-0.00260	-0.00260	-0.00260
	(A1 * A3 * B1 * !B2 * X)	0.00321	0.00328	0.00308
	(A1 * A3 * B1 * !B2 * X)	-0.00260	-0.00260	-0.00261
	(A1 * A3 * !B1 * !B2 * !X)	0.00294	0.00297	0.00294
	(A1 * A3 * !B1 * !B2 * !X)	-0.00280	-0.00282	-0.00281
	(A1 * !A3 * B2 * X)	0.00299	0.00300	0.00295
	(A1 * !A3 * B2 * X)	-0.00220	-0.00221	-0.00221
	(A1 * !A3 * B1 * !B2 * X)	0.00298	0.00300	0.00295
	(A1 * !A3 * B1 * !B2 * X)	-0.00218	-0.00221	-0.00221
	(A1 * !A3 * !B1 * !B2 * !X)	0.00295	0.00297	0.00294
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00387	-0.00390	-0.00390
	(!A1 * A3 * B2 * X)	0.00379	0.00301	0.00294
	(!A1 * A3 * B2 * X)	-0.00306	-0.00393	-0.00395
	(!A1 * A3 * B1 * !B2 * X)	0.00379	0.00301	0.00294
	(!A1 * A3 * B1 * !B2 * X)	-0.00305	-0.00393	-0.00395
	(!A1 * A3 * !B1 * !B2 * !X)	0.00294	0.00298	0.00294
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00384	-0.00393	-0.00392
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00278	0.00280	0.00278
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00399	-0.00400	-0.00399

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)**	-0.00153	-0.00153	-0.00153
	(A1 * A3 * B2 * X)	0.00117	0.00117	0.00117
	(A1 * A3 * B1 * !B2 * X)	-0.00153	-0.00153	-0.00153
	(A1 * A3 * B1 * !B2 * X)	0.00117	0.00117	0.00117
	(A1 * A3 * !B1 * !B2 * !X)	-0.00145	-0.00146	-0.00145
	(A1 * A3 * !B1 * !B2 * !X)	0.00133	0.00134	0.00133
	(A1 * !A3 * B2 * X)	-0.00151	-0.00152	-0.00150
	(A1 * !A3 * B2 * X)	0.00099	0.00100	0.00100
	(A1 * !A3 * B1 * !B2 * X)	-0.00151	-0.00152	-0.00150
	(A1 * !A3 * B1 * !B2 * X)	0.00100	0.00100	0.00100
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00145	-0.00146	-0.00145
	(A1 * !A3 * !B1 * !B2 * !X)	0.00185	0.00186	0.00185
	(!A1 * A3 * B2 * X)	-0.00151	-0.00151	-0.00151
	(!A1 * A3 * B2 * X)	0.00179	0.00180	0.00181
	(!A1 * A3 * B1 * !B2 * X)	-0.00151	-0.00151	-0.00150
	(!A1 * A3 * B1 * !B2 * X)	0.00179	0.00180	0.00181
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00145	-0.00146	-0.00145
	(!A1 * A3 * !B1 * !B2 * !X)	0.00186	0.00187	0.00186
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00128	-0.00138	-0.00137
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00190	0.00190	0.00189

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	-0.00174	-0.00174	-0.00174
	(A1 * A3 * B2 * X)	0.00118	0.00118	0.00117
	(A1 * A3 * B1 * !B2 * X)	-0.00174	-0.00174	-0.00174
	(A1 * A3 * B1 * !B2 * X)	0.00118	0.00118	0.00117
	(A1 * A3 * !B1 * !B2 * !X)	-0.00166	-0.00166	-0.00165
	(A1 * A3 * !B1 * !B2 * !X)	0.00135	0.00135	0.00134
	(A1 * !A3 * B2 * X)	-0.00172	-0.00173	-0.00171
	(A1 * !A3 * B2 * X)	0.00100	0.00101	0.00101
	(A1 * !A3 * B1 * !B2 * X)	-0.00172	-0.00173	-0.00171
	(A1 * !A3 * B1 * !B2 * X)	0.00100	0.00101	0.00101
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00166	-0.00167	-0.00166
	(A1 * !A3 * !B1 * !B2 * !X)	0.00187	0.00188	0.00186
	(!A1 * A3 * B2 * X)	-0.00172	-0.00173	-0.00171
	(!A1 * A3 * B2 * X)	0.00180	0.00182	0.00181
	(!A1 * A3 * B1 * !B2 * X)	-0.00172	-0.00173	-0.00171
	(!A1 * A3 * B1 * !B2 * X)	0.00180	0.00182	0.00181
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00166	-0.00166	-0.00165
	(!A1 * A3 * !B1 * !B2 * !X)	0.00187	0.00187	0.00187
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00147	-0.00158	-0.00157
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00191	0.00191	0.00190

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	-0.00292	-0.00293	-0.00293
	(A1 * A3 * B2 * X)	0.00260	0.00260	0.00260
	(A1 * A3 * B1 * !B2 * X)	-0.00292	-0.00292	-0.00293
	(A1 * A3 * B1 * !B2 * X)	0.00260	0.00260	0.00261
	(A1 * A3 * !B1 * !B2 * !X)	-0.00292	-0.00294	-0.00292
	(A1 * A3 * !B1 * !B2 * !X)	0.00280	0.00282	0.00281
	(A1 * !A3 * B2 * X)	-0.00291	-0.00292	-0.00287
	(A1 * !A3 * B2 * X)	0.00225	0.00227	0.00228
	(A1 * !A3 * B1 * !B2 * X)	-0.00291	-0.00292	-0.00287
	(A1 * !A3 * B1 * !B2 * X)	0.00226	0.00227	0.00228
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00294	-0.00293	-0.00293
	(A1 * !A3 * !B1 * !B2 * !X)	0.00392	0.00390	0.00390
	(!A1 * A3 * B2 * X)	-0.00293	-0.00292	-0.00290
	(!A1 * A3 * B2 * X)	0.00396	0.00396	0.00395
	(!A1 * A3 * B1 * !B2 * X)	-0.00289	-0.00292	-0.00290
	(!A1 * A3 * B1 * !B2 * X)	0.00390	0.00396	0.00395
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00292	-0.00293	-0.00292
	(!A1 * A3 * !B1 * !B2 * !X)	0.00391	0.00393	0.00392
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00257	-0.00280	-0.00278
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00403	0.00403	0.00400

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	0.00163	0.00165	0.00164
	(A2 * B2 * X)	-0.00089	-0.00090	-0.00090
	(A2 * B1 * !B2 * X)	0.00163	0.00165	0.00164
	(A2 * B1 * !B2 * X)	-0.00089	-0.00090	-0.00090
	(A2 * !B1 * !B2 * !X)	0.00146	0.00147	0.00146
	(A2 * !B1 * !B2 * !X)	-0.00181	-0.00186	-0.00186
	(A1 * !A2 * B2 * X)	0.00163	0.00165	0.00164
	(A1 * !A2 * B2 * X)	-0.00089	-0.00090	-0.00089
	(A1 * !A2 * B1 * !B2 * X)	0.00164	0.00165	0.00164
	(A1 * !A2 * B1 * !B2 * X)	-0.00089	-0.00090	-0.00089
	(A1 * !A2 * !B1 * !B2 * !X)	0.00146	0.00148	0.00146
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00165	-0.00179	-0.00177
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00138	0.00138	0.00138
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00188	-0.00188	-0.00188
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	0.00188	0.00190	0.00189
	(A2 * B2 * X)	-0.00090	-0.00090	-0.00090
	(A2 * B1 * !B2 * X)	0.00189	0.00191	0.00189
	(A2 * B1 * !B2 * X)	-0.00090	-0.00090	-0.00090
	(A2 * !B1 * !B2 * !X)	0.00166	0.00168	0.00167
	(A2 * !B1 * !B2 * !X)	-0.00186	-0.00191	-0.00190
	(A1 * !A2 * B2 * X)	0.00189	0.00190	0.00189
	(A1 * !A2 * B2 * X)	-0.00089	-0.00090	-0.00089
	(A1 * !A2 * B1 * !B2 * X)	0.00189	0.00191	0.00189
	(A1 * !A2 * B1 * !B2 * X)	-0.00089	-0.00090	-0.00089
	(A1 * !A2 * !B1 * !B2 * !X)	0.00166	0.00168	0.00167
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00170	-0.00181	-0.00181
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00158	0.00159	0.00158
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00193	-0.00193	-0.00193

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	0.00307	0.00310	0.00308
	(A2 * B2 * X)	-0.00180	-0.00182	-0.00180
	(A2 * B1 * !B2 * X)	0.00307	0.00311	0.00308
	(A2 * B1 * !B2 * X)	-0.00180	-0.00181	-0.00180
	(A2 * !B1 * !B2 * !X)	0.00285	0.00286	0.00284
	(A2 * !B1 * !B2 * !X)	-0.00347	-0.00360	-0.00359
	(A1 * !A2 * B2 * X)	0.00307	0.00310	0.00308
	(A1 * !A2 * B2 * X)	-0.00179	-0.00181	-0.00180
	(A1 * !A2 * B1 * !B2 * X)	0.00307	0.00311	0.00308
	(A1 * !A2 * B1 * !B2 * X)	-0.00179	-0.00181	-0.00179
	(A1 * !A2 * !B1 * !B2 * !X)	0.00283	0.00288	0.00284
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00316	-0.00345	-0.00341
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00270	0.00271	0.00269
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00368	-0.00368	-0.00367

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	-0.00158	-0.00159	-0.00163
	(A2 * B2 * X)	0.00095	0.00095	0.00091
	(A2 * B1 * !B2 * X)	-0.00158	-0.00159	-0.00163
	(A2 * B1 * !B2 * X)	0.00095	0.00095	0.00091
	(A2 * !B1 * !B2 * !X)	-0.00145	-0.00146	-0.00146
	(A2 * !B1 * !B2 * !X)	0.00185	0.00186	0.00186
	(A1 * !A2 * B2 * X)	-0.00152	-0.00153	-0.00162
	(A1 * !A2 * B2 * X)	0.00098	0.00098	0.00091
	(A1 * !A2 * B1 * !B2 * X)	-0.00152	-0.00153	-0.00162
	(A1 * !A2 * B1 * !B2 * X)	0.00098	0.00098	0.00091
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00145	-0.00147	-0.00146
	(A1 * !A2 * !B1 * !B2 * !X)	0.00176	0.00179	0.00177
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00129	-0.00138	-0.00138
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00190	0.00190	0.00189
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	-0.00183	-0.00184	-0.00188
	(A2 * B2 * X)	0.00095	0.00095	0.00091
	(A2 * B1 * !B2 * X)	-0.00183	-0.00184	-0.00188
	(A2 * B1 * !B2 * X)	0.00095	0.00095	0.00091
	(A2 * !B1 * !B2 * !X)	-0.00166	-0.00167	-0.00166
	(A2 * !B1 * !B2 * !X)	0.00190	0.00192	0.00190
	(A1 * !A2 * B2 * X)	-0.00177	-0.00178	-0.00187
	(A1 * !A2 * B2 * X)	0.00098	0.00098	0.00091
	(A1 * !A2 * B1 * !B2 * X)	-0.00177	-0.00178	-0.00187
	(A1 * !A2 * B1 * !B2 * X)	0.00098	0.00099	0.00091
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00166	-0.00166	-0.00166
	(A1 * !A2 * !B1 * !B2 * !X)	0.00181	0.00181	0.00181
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00147	-0.00159	-0.00158
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00194	0.00195	0.00193

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	-0.00290	-0.00292	-0.00306
	(A2 * B2 * X)	0.00195	0.00196	0.00184
	(A2 * B1 * !B2 * X)	-0.00290	-0.00292	-0.00306
	(A2 * B1 * !B2 * X)	0.00196	0.00196	0.00184
	(A2 * !B1 * !B2 * !X)	-0.00282	-0.00285	-0.00283
	(A2 * !B1 * !B2 * !X)	0.00358	0.00360	0.00359
	(A1 * !A2 * B2 * X)	-0.00275	-0.00277	-0.00303
	(A1 * !A2 * B2 * X)	0.00203	0.00203	0.00184
	(A1 * !A2 * B1 * !B2 * X)	-0.00275	-0.00277	-0.00303
	(A1 * !A2 * B1 * !B2 * X)	0.00203	0.00203	0.00184
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00282	-0.00287	-0.00283
	(A1 * !A2 * !B1 * !B2 * !X)	0.00340	0.00345	0.00341
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00249	-0.00271	-0.00269
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00371	0.00370	0.00368

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	0.00196	0.00171	0.00167
	(A3 * B2 * X)	-0.00157	-0.00186	-0.00188
	(A2 * !A3 * B2 * X)	0.00196	0.00171	0.00167
	(A2 * !A3 * B2 * X)	-0.00158	-0.00186	-0.00188
	(A1 * !A2 * !A3 * B2 * X)	0.00196	0.00171	0.00167
	(A1 * !A2 * !A3 * B2 * X)	-0.00157	-0.00186	-0.00188
	(!A1 * !A2 * !A3 * B2 * !X)	0.00057	0.00058	0.00057
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00226	-0.00230	-0.00229
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00064	0.00065	0.00060
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00219	-0.00221	-0.00230

sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	0.00233	0.00207	0.00203
	(A3 * B2 * X)	-0.00174	-0.00203	-0.00205
	(A2 * !A3 * B2 * X)	0.00233	0.00207	0.00203
	(A2 * !A3 * B2 * X)	-0.00174	-0.00203	-0.00205
	(A1 * !A2 * !A3 * B2 * X)	0.00233	0.00207	0.00203
	(A1 * !A2 * !A3 * B2 * X)	-0.00174	-0.00203	-0.00205
	(!A1 * !A2 * !A3 * B2 * !X)	0.00069	0.00069	0.00069
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00255	-0.00259	-0.00258
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00078	0.00078	0.00071
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00248	-0.00249	-0.00259
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	0.00424	0.00365	0.00356
	(A3 * B2 * X)	-0.00362	-0.00433	-0.00435
	(A2 * !A3 * B2 * X)	0.00424	0.00364	0.00356
	(A2 * !A3 * B2 * X)	-0.00361	-0.00432	-0.00434
	(A1 * !A2 * !A3 * B2 * X)	0.00424	0.00365	0.00356
	(A1 * !A2 * !A3 * B2 * X)	-0.00360	-0.00431	-0.00434
	(!A1 * !A2 * !A3 * B2 * !X)	0.00100	0.00102	0.00100
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00549	-0.00561	-0.00556
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00115	0.00116	0.00105
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00540	-0.00546	-0.00562

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

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

sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	-0.00166	-0.00167	-0.00166
	(A3 * B2 * X)	0.00189	0.00189	0.00189
	(A2 * !A3 * B2 * X)	-0.00166	-0.00167	-0.00166
	(A2 * !A3 * B2 * X)	0.00189	0.00190	0.00189
	(A1 * !A2 * !A3 * B2 * X)	-0.00166	-0.00167	-0.00166
	(A1 * !A2 * !A3 * B2 * X)	0.00189	0.00190	0.00189
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00057	-0.00057	-0.00057
	(!A1 * !A2 * !A3 * B2 * !X)	0.00230	0.00231	0.00229
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00057	-0.00059	-0.00058
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00230	0.00235	0.00231
sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	-0.00201	-0.00203	-0.00201
	(A3 * B2 * X)	0.00203	0.00207	0.00205
	(A2 * !A3 * B2 * X)	-0.00201	-0.00202	-0.00201
	(A2 * !A3 * B2 * X)	0.00203	0.00204	0.00205
	(A1 * !A2 * !A3 * B2 * X)	-0.00201	-0.00202	-0.00201
	(A1 * !A2 * !A3 * B2 * X)	0.00204	0.00206	0.00205
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00068	-0.00068	-0.00068
	(!A1 * !A2 * !A3 * B2 * !X)	0.00259	0.00260	0.00258
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00069	-0.00070	-0.00069
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00260	0.00264	0.00261
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	-0.00353	-0.00354	-0.00352
	(A3 * B2 * X)	0.00435	0.00438	0.00436
	(A2 * !A3 * B2 * X)	-0.00353	-0.00353	-0.00352
	(A2 * !A3 * B2 * X)	0.00434	0.00435	0.00435
	(A1 * !A2 * !A3 * B2 * X)	-0.00353	-0.00354	-0.00352
	(A1 * !A2 * !A3 * B2 * X)	0.00434	0.00437	0.00435
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00099	-0.00100	-0.00100
	(!A1 * !A2 * !A3 * B2 * !X)	0.00557	0.00561	0.00556
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00101	-0.00102	-0.00101
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00563	0.00567	0.00565

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	(A3 * B1 * X)	0.00170	0.00172	0.00171
	(A3 * B1 * X)	-0.00090	-0.00091	-0.00090
	(A2 * !A3 * B1 * X)	0.00170	0.00172	0.00171
	(A2 * !A3 * B1 * X)	-0.00090	-0.00091	-0.00090
	(A1 * !A2 * !A3 * B1 * X)	0.00170	0.00174	0.00171
	(A1 * !A2 * !A3 * B1 * X)	-0.00090	-0.00092	-0.00090
	(!A1 * !A2 * !A3 * B1 * !X)	0.00048	0.00047	0.00047
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00224	-0.00226	-0.00225
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00055	0.00055	0.00049
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00217	-0.00218	-0.00227
sky130_fd_sc_hs__o32a_2	(A3 * B1 * X)	0.00191	0.00194	0.00192
	(A3 * B1 * X)	-0.00091	-0.00092	-0.00091
	(A2 * !A3 * B1 * X)	0.00192	0.00194	0.00192
	(A2 * !A3 * B1 * X)	-0.00091	-0.00092	-0.00091
	(A1 * !A2 * !A3 * B1 * X)	0.00192	0.00195	0.00192
	(A1 * !A2 * !A3 * B1 * X)	-0.00091	-0.00093	-0.00091
	(!A1 * !A2 * !A3 * B1 * !X)	0.00053	0.00054	0.00053
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00226	-0.00229	-0.00229
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00062	0.00062	0.00056
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00220	-0.00221	-0.00231

sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	0.00329	0.00335	0.00330
	(A3 * B1 * X)	-0.00182	-0.00187	-0.00183
	(A2 * !A3 * B1 * X)	0.00329	0.00335	0.00330
	(A2 * !A3 * B1 * X)	-0.00182	-0.00187	-0.00183
	(A1 * !A2 * !A3 * B1 * X)	0.00329	0.00335	0.00330
	(A1 * !A2 * !A3 * B1 * X)	-0.00182	-0.00187	-0.00183
	(!A1 * !A2 * !A3 * B1 * !X)	0.00097	0.00097	0.00096
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00433	-0.00440	-0.00438
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00111	0.00112	0.00101
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00425	-0.00429	-0.00445

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**(A3 * B1 * X)**	-0.00165	-0.00166	-0.00170
	(A3 * B1 * X)	0.00096	0.00096	0.00092
	(A2 * !A3 * B1 * X)	-0.00165	-0.00166	-0.00170
	(A2 * !A3 * B1 * X)	0.00096	0.00097	0.00092
	(A1 * !A2 * !A3 * B1 * X)	-0.00165	-0.00166	-0.00170
	(A1 * !A2 * !A3 * B1 * X)	0.00096	0.00097	0.00092
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00047	-0.00047	-0.00047
	(!A1 * !A2 * !A3 * B1 * !X)	0.00226	0.00226	0.00225
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00048	-0.00048	-0.00047
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00228	0.00231	0.00228

sky130_fd_sc_hs__o32a_2	**(A3 * B1 * X)**	-0.00186	-0.00187	-0.00191
	(A3 * B1 * X)	0.00096	0.00097	0.00092
	(A2 * !A3 * B1 * X)	-0.00186	-0.00187	-0.00191
	(A2 * !A3 * B1 * X)	0.00096	0.00097	0.00092
	(A1 * !A2 * !A3 * B1 * X)	-0.00186	-0.00187	-0.00191
	(A1 * !A2 * !A3 * B1 * X)	0.00097	0.00097	0.00092
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00053	-0.00053	-0.00053
	(!A1 * !A2 * !A3 * B1 * !X)	0.00228	0.00229	0.00229
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00053	-0.00055	-0.00054
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00231	0.00235	0.00232
sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	-0.00316	-0.00319	-0.00328
	(A3 * B1 * X)	0.00194	0.00196	0.00186
	(A2 * !A3 * B1 * X)	-0.00316	-0.00317	-0.00328
	(A2 * !A3 * B1 * X)	0.00194	0.00194	0.00186
	(A1 * !A2 * !A3 * B1 * X)	-0.00315	-0.00318	-0.00328
	(A1 * !A2 * !A3 * B1 * X)	0.00194	0.00195	0.00186
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00095	-0.00097	-0.00096
	(!A1 * !A2 * !A3 * B1 * !X)	0.00438	0.00440	0.00438
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00098	-0.00097	-0.00097
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00447	0.00447	0.00448

SKY130_FD_SC_HS__O41AIx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00272	0.00279	0.00289	0.00287	0.00291	0.30186
sky130_fd_sc_hs__o41ai_2	0.00537	0.00546	0.00525	0.00536	0.00565	0.52910
sky130_fd_sc_hs__o41ai_4	0.01043	0.01038	0.01053	0.01074	0.00782	0.98479

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41ai_1	0.00000	0.04618	0.15376
sky130_fd_sc_hs__o41ai_2	0.00000	0.09236	0.30752
sky130_fd_sc_hs__o41ai_4	0.00000	0.11264	0.46129

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)	0.23864	1.18863	9.63397
	A2->Y (FR)	0.22567	1.19212	10.08460
	A3->Y (FR)	0.19642	1.18879	10.53760
	A4->Y (FR)	0.14877	1.14308	10.49270
	B1->Y (FR)	0.02959	0.51623	5.53927
sky130_fd_sc_hs__o41ai_2	A1->Y (FR)	0.25591	1.06228	9.56517
	A2->Y (FR)	0.23974	1.05452	9.99570
	A3->Y (FR)	0.20563	1.05508	10.59190
	A4->Y (FR)	0.13669	0.99423	10.53960
	B1->Y (FR)	0.02314	0.44168	5.24146
sky130_fd_sc_hs__o41ai_4	A1->Y (FR)	0.24297	0.91104	9.41937
	A2->Y (FR)	0.22708	0.90880	9.92763
	A3->Y (FR)	0.19325	0.90751	10.51590
	A4->Y (FR)	0.12595	0.85294	10.53280
	B1->Y (FR)	0.03054	0.53542	7.08744

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41ai_1	A1->Y (RF)	0.03747	0.30982	2.48679
	A2->Y (RF)	0.03845	0.30341	2.46873
	A3->Y (RF)	0.03780	0.29532	2.45443
	A4->Y (RF)	0.03102	0.28211	2.42037
	B1->Y (RF)	0.02885	0.34744	2.97543
sky130_fd_sc_hs__o41ai_2	A1->Y (RF)	0.03612	0.26791	2.36743
	A2->Y (RF)	0.03704	0.26111	2.35032
	A3->Y (RF)	0.03683	0.25066	2.31909
	A4->Y (RF)	0.02949	0.23456	2.28974
	B1->Y (RF)	0.02605	0.30979	2.96325
sky130_fd_sc_hs__o41ai_4	A1->Y (RF)	0.04023	0.23154	2.30814
	A2->Y (RF)	0.03929	0.22051	2.25913
	A3->Y (RF)	0.03689	0.20732	2.21389
	A4->Y (RF)	0.02683	0.18463	2.11936
	B1->Y (RF)	0.02927	0.31758	3.50210

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41ai_1	A1	0.00146	0.00123	0.00813
	A1	0.01146	0.01122	0.01814
	A2	0.00151	0.00130	0.00811
	A2	0.01034	0.01011	0.01691
	A3	0.00150	0.00135	0.00836
	A3	0.00928	0.00912	0.01614
	A4	0.00146	0.00184	0.01357
	A4	0.00811	0.00851	0.02025
	B1	-0.00068	0.00098	0.02052
	B1	0.00648	0.00802	0.02669
sky130_fd_sc_hs__o41ai_2	A1	0.00217	0.00165	0.01461
	A1	0.02235	0.02186	0.03481
	A2	0.00225	0.00171	0.01476
	A2	0.02003	0.01952	0.03252
	A3	0.00234	0.00194	0.01501
	A3	0.01760	0.01724	0.03030
	A4	0.00218	0.00327	0.02490
	A4	0.01517	0.01626	0.03790
	B1	-0.00255	0.00115	0.04055
	B1	0.00691	0.01068	0.05046

sky130_fd_sc_hs__o41ai_4	**A1**	0.00363	0.00276	0.02750
	A1	0.04328	0.04248	0.06722
	A2	0.00374	0.00288	0.02781
	A2	0.03856	0.03770	0.06253
	A3	0.00376	0.00309	0.02784
	A3	0.03395	0.03334	0.05806
	A4	0.00345	0.00534	0.04693
	A4	0.02902	0.03056	0.07249
	B1	-0.00398	0.00014	0.04447
	B1	0.02413	0.02753	0.06560

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41ai_1	**A1**	0.01329	0.01317	0.01924
	A1	0.00329	0.00315	0.00926
	A2	0.01121	0.01113	0.01701
	A2	0.00232	0.00222	0.00815
	A3	0.00901	0.00909	0.01480
	A3	0.00111	0.00117	0.00692
	A4	0.00673	0.00695	0.01261
	A4	-0.00010	0.00012	0.00577
	B1	0.00916	0.00948	0.01908
	B1	-0.00035	0.00004	0.01056

sky130_fd_sc_hs__o41ai_2	**A1**	0.02793	0.02750	0.03944
	A1	0.00790	0.00746	0.01945
	A2	0.02312	0.02296	0.03460
	A2	0.00526	0.00509	0.01678
	A3	0.01871	0.01877	0.02994
	A3	0.00321	0.00323	0.01444
	A4	0.01301	0.01361	0.02476
	A4	-0.00029	0.00028	0.01143
	B1	0.01896	0.01975	0.03954
	B1	-0.00068	0.00043	0.02229
sky130_fd_sc_hs__o41ai_4	**A1**	0.05275	0.05201	0.07638
	A1	0.01335	0.01258	0.03715
	A2	0.04354	0.04319	0.06683
	A2	0.00861	0.00821	0.03195
	A3	0.03482	0.03502	0.05770
	A3	0.00417	0.00427	0.02701
	A4	0.02421	0.02559	0.04838
	A4	-0.00193	-0.00065	0.02220
	B1	0.04284	0.04360	0.06139
	B1	0.00036	0.00175	0.02445

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)**	0.00173	0.00175	0.00173
	(A2 * A4 * B1 * !Y)	-0.00205	-0.00211	-0.00210
	(A2 * A3 * !A4 * B1 * !Y)	0.00173	0.00175	0.00173
	(A2 * A3 * !A4 * B1 * !Y)	-0.00205	-0.00211	-0.00210
	(A2 * !B1 * Y)	0.00173	0.00175	0.00173
	(A2 * !B1 * Y)	-0.00205	-0.00212	-0.00210
	(A2 * !A3 * !A4 * B1 * !Y)	0.00173	0.00175	0.00173
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00202	-0.00211	-0.00210
	(!A2 * A3 * A4 * B1 * !Y)	0.00173	0.00174	0.00173
	(!A2 * A3 * A4 * B1 * !Y)	-0.00189	-0.00205	-0.00204
	(!A2 * A3 * !B1 * Y)	0.00172	0.00174	0.00173
	(!A2 * A3 * !B1 * Y)	-0.00189	-0.00204	-0.00203
	(!A2 * A3 * !A4 * B1 * !Y)	0.00173	0.00174	0.00173
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00189	-0.00204	-0.00203
	(!A2 * !A3 * A4 * B1 * !Y)	0.00174	0.00174	0.00173
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00185	-0.00200	-0.00200
	(!A2 * !A3 * A4 * !B1 * Y)	0.00173	0.00174	0.00173
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00186	-0.00200	-0.00200
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00164	0.00164	0.00163
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00212	-0.00213	-0.00212

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00343	0.00347	0.00343
	(A2 * A4 * B1 * !Y)	-0.00403	-0.00420	-0.00417
	(A2 * A3 * !A4 * B1 * !Y)	0.00343	0.00347	0.00343
	(A2 * A3 * !A4 * B1 * !Y)	-0.00402	-0.00420	-0.00417
	(A2 * !B1 * Y)	0.00343	0.00347	0.00343
	(A2 * !B1 * Y)	-0.00403	-0.00421	-0.00417
	(A2 * !A3 * !A4 * B1 * !Y)	0.00344	0.00347	0.00343
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00396	-0.00420	-0.00417
	(!A2 * A3 * A4 * B1 * !Y)	0.00344	0.00347	0.00343
	(!A2 * A3 * A4 * B1 * !Y)	-0.00372	-0.00406	-0.00403
	(!A2 * A3 * !B1 * Y)	0.00344	0.00347	0.00343
	(!A2 * A3 * !B1 * Y)	-0.00372	-0.00406	-0.00403
	(!A2 * A3 * !A4 * B1 * !Y)	0.00344	0.00347	0.00343
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00372	-0.00406	-0.00403
	(!A2 * !A3 * A4 * B1 * !Y)	0.00347	0.00346	0.00343
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00365	-0.00398	-0.00397
	(!A2 * !A3 * A4 * !B1 * Y)	0.00344	0.00346	0.00343
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00368	-0.00398	-0.00396
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00327	0.00328	0.00326
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00426	-0.00426	-0.00425

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00662	0.00670	0.00662
	(A2 * A4 * B1 * !Y)	-0.00805	-0.00828	-0.00832
	(A2 * A3 * !A4 * B1 * !Y)	0.00662	0.00670	0.00662
	(A2 * A3 * !A4 * B1 * !Y)	-0.00803	-0.00827	-0.00832
	(A2 * !B1 * Y)	0.00662	0.00670	0.00661
	(A2 * !B1 * Y)	-0.00806	-0.00828	-0.00832
	(A2 * !A3 * !A4 * B1 * !Y)	0.00663	0.00670	0.00662
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00786	-0.00838	-0.00833
	(!A2 * A3 * A4 * B1 * !Y)	0.00665	0.00669	0.00662
	(!A2 * A3 * A4 * B1 * !Y)	-0.00740	-0.00807	-0.00802
	(!A2 * A3 * !B1 * Y)	0.00664	0.00669	0.00661
	(!A2 * A3 * !B1 * Y)	-0.00741	-0.00807	-0.00802
	(!A2 * A3 * !A4 * B1 * !Y)	0.00665	0.00669	0.00662
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00741	-0.00807	-0.00802
	(!A2 * !A3 * A4 * B1 * !Y)	0.00671	0.00668	0.00662
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00729	-0.00792	-0.00791
	(!A2 * !A3 * A4 * !B1 * Y)	0.00658	0.00667	0.00661
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00727	-0.00792	-0.00789
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00623	0.00629	0.00624
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00847	-0.00851	-0.00848

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)**	-0.00173	-0.00173	-0.00173
	(A2 * A4 * B1 * !Y)	0.00210	0.00211	0.00210
	(A2 * A3 * !A4 * B1 * !Y)	-0.00173	-0.00173	-0.00173
	(A2 * A3 * !A4 * B1 * !Y)	0.00210	0.00211	0.00210
	(A2 * !B1 * Y)	-0.00173	-0.00174	-0.00173
	(A2 * !B1 * Y)	0.00210	0.00212	0.00210
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00173	-0.00173	-0.00173
	(A2 * !A3 * !A4 * B1 * !Y)	0.00210	0.00211	0.00210
	(!A2 * A3 * A4 * B1 * !Y)	-0.00172	-0.00173	-0.00173
	(!A2 * A3 * A4 * B1 * !Y)	0.00203	0.00205	0.00204
	(!A2 * A3 * !B1 * Y)	-0.00172	-0.00173	-0.00173
	(!A2 * A3 * !B1 * Y)	0.00202	0.00204	0.00203
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00172	-0.00173	-0.00173
	(!A2 * A3 * !A4 * B1 * !Y)	0.00203	0.00204	0.00203
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00172	-0.00172	-0.00172
	(!A2 * !A3 * A4 * B1 * !Y)	0.00200	0.00200	0.00200
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00172	-0.00173	-0.00173
	(!A2 * !A3 * A4 * !B1 * Y)	0.00200	0.00200	0.00200
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00153	-0.00164	-0.00163
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00213	0.00214	0.00213

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00342	-0.00344	-0.00342
	(A2 * A4 * B1 * !Y)	0.00416	0.00421	0.00417
	(A2 * A3 * !A4 * B1 * !Y)	-0.00342	-0.00344	-0.00342
	(A2 * A3 * !A4 * B1 * !Y)	0.00416	0.00421	0.00417
	(A2 * !B1 * Y)	-0.00342	-0.00344	-0.00342
	(A2 * !B1 * Y)	0.00416	0.00421	0.00417
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00342	-0.00343	-0.00342
	(A2 * !A3 * !A4 * B1 * !Y)	0.00416	0.00420	0.00417
	(!A2 * A3 * A4 * B1 * !Y)	-0.00341	-0.00344	-0.00342
	(!A2 * A3 * A4 * B1 * !Y)	0.00401	0.00406	0.00403
	(!A2 * A3 * !B1 * Y)	-0.00342	-0.00344	-0.00342
	(!A2 * A3 * !B1 * Y)	0.00402	0.00406	0.00403
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00341	-0.00344	-0.00342
	(!A2 * A3 * !A4 * B1 * !Y)	0.00402	0.00406	0.00403
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00342	-0.00343	-0.00342
	(!A2 * !A3 * A4 * B1 * !Y)	0.00396	0.00398	0.00397
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00342	-0.00343	-0.00342
	(!A2 * !A3 * A4 * !B1 * Y)	0.00395	0.00398	0.00396
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00301	-0.00327	-0.00326
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00427	0.00429	0.00426

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00661	-0.00658	-0.00660
	(A2 * A4 * B1 * !Y)	0.00833	0.00828	0.00832
	(A2 * A3 * !A4 * B1 * !Y)	-0.00661	-0.00658	-0.00660
	(A2 * A3 * !A4 * B1 * !Y)	0.00833	0.00827	0.00832
	(A2 * !B1 * Y)	-0.00661	-0.00658	-0.00660
	(A2 * !B1 * Y)	0.00833	0.00828	0.00832
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00661	-0.00663	-0.00660
	(A2 * !A3 * !A4 * B1 * !Y)	0.00833	0.00839	0.00833
	(!A2 * A3 * A4 * B1 * !Y)	-0.00661	-0.00662	-0.00660
	(!A2 * A3 * A4 * B1 * !Y)	0.00804	0.00807	0.00802
	(!A2 * A3 * !B1 * Y)	-0.00660	-0.00662	-0.00660
	(!A2 * A3 * !B1 * Y)	0.00801	0.00807	0.00802
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00661	-0.00662	-0.00660
	(!A2 * A3 * !A4 * B1 * !Y)	0.00804	0.00807	0.00802
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00661	-0.00661	-0.00659
	(!A2 * !A3 * A4 * B1 * !Y)	0.00793	0.00792	0.00791
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00658	-0.00662	-0.00660
	(!A2 * !A3 * A4 * !B1 * Y)	0.00792	0.00792	0.00789
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00582	-0.00629	-0.00624
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00852	0.00857	0.00850

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)**	0.00168	0.00169	0.00168
	(A1 * A3 * A4 * B1 * !Y)	-0.00144	-0.00144	-0.00143
	(A1 * A3 * !B1 * Y)	0.00168	0.00169	0.00167
	(A1 * A3 * !B1 * Y)	-0.00145	-0.00146	-0.00146
	(A1 * A3 * !A4 * B1 * !Y)	0.00178	0.00179	0.00171
	(A1 * A3 * !A4 * B1 * !Y)	-0.00137	-0.00137	-0.00137
	(A1 * !A3 * A4 * B1 * !Y)	0.00167	0.00168	0.00168
	(A1 * !A3 * A4 * B1 * !Y)	-0.00134	-0.00133	-0.00133
	(A1 * !A3 * A4 * !B1 * Y)	0.00167	0.00170	0.00167
	(A1 * !A3 * A4 * !B1 * Y)	-0.00142	-0.00143	-0.00143
	(A1 * !A3 * !A4 * B1 * !Y)	0.00167	0.00169	0.00167
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00112	-0.00113	-0.00112
	(A1 * !A3 * !A4 * !B1 * Y)	0.00169	0.00169	0.00167
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00203	-0.00205	-0.00204
	(!A1 * A3 * A4 * B1 * !Y)	0.00166	0.00170	0.00167
	(!A1 * A3 * A4 * B1 * !Y)	-0.00197	-0.00205	-0.00204
	(!A1 * A3 * !B1 * Y)	0.00166	0.00170	0.00167
	(!A1 * A3 * !B1 * Y)	-0.00198	-0.00205	-0.00204
	(!A1 * A3 * !A4 * B1 * !Y)	0.00183	0.00170	0.00167
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00180	-0.00205	-0.00204
	(!A1 * !A3 * A4 * B1 * !Y)	0.00176	0.00170	0.00168
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00171	-0.00199	-0.00196
	(!A1 * !A3 * A4 * !B1 * Y)	0.00166	0.00169	0.00167
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00178	-0.00199	-0.00196
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00159	0.00161	0.00159
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00207	-0.00208	-0.00207

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00345	0.00349	0.00344
	(A1 * A3 * A4 * B1 * !Y)	-0.00299	-0.00299	-0.00298
	(A1 * A3 * !B1 * Y)	0.00344	0.00348	0.00344
	(A1 * A3 * !B1 * Y)	-0.00302	-0.00305	-0.00303
	(A1 * A3 * !A4 * B1 * !Y)	0.00352	0.00357	0.00346
	(A1 * A3 * !A4 * B1 * !Y)	-0.00286	-0.00287	-0.00285
	(A1 * !A3 * A4 * B1 * !Y)	0.00344	0.00348	0.00346
	(A1 * !A3 * A4 * B1 * !Y)	-0.00280	-0.00281	-0.00279
	(A1 * !A3 * A4 * !B1 * Y)	0.00343	0.00346	0.00344
	(A1 * !A3 * A4 * !B1 * Y)	-0.00300	-0.00304	-0.00300
	(A1 * !A3 * !A4 * B1 * !Y)	0.00344	0.00347	0.00344
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00234	-0.00236	-0.00234
	(A1 * !A3 * !A4 * !B1 * Y)	0.00343	0.00347	0.00344
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00412	-0.00420	-0.00419
	(!A1 * A3 * A4 * B1 * !Y)	0.00347	0.00345	0.00344
	(!A1 * A3 * A4 * B1 * !Y)	-0.00414	-0.00426	-0.00425
	(!A1 * A3 * !B1 * Y)	0.00346	0.00345	0.00344
	(!A1 * A3 * !B1 * Y)	-0.00416	-0.00424	-0.00424
	(!A1 * A3 * !A4 * B1 * !Y)	0.00361	0.00345	0.00344
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00395	-0.00426	-0.00425
	(!A1 * !A3 * A4 * B1 * !Y)	0.00355	0.00345	0.00344
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00370	-0.00411	-0.00408
	(!A1 * !A3 * A4 * !B1 * Y)	0.00343	0.00344	0.00344
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00379	-0.00411	-0.00408
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00326	0.00326	0.00325
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00432	-0.00432	-0.00431

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00658	0.00664	0.00656
	(A1 * A3 * A4 * B1 * !Y)	-0.00562	-0.00564	-0.00562
	(A1 * A3 * !B1 * Y)	0.00657	0.00663	0.00656
	(A1 * A3 * !B1 * Y)	-0.00571	-0.00574	-0.00572
	(A1 * A3 * !A4 * B1 * !Y)	0.00692	0.00692	0.00663
	(A1 * A3 * !A4 * B1 * !Y)	-0.00539	-0.00541	-0.00539
	(A1 * !A3 * A4 * B1 * !Y)	0.00656	0.00663	0.00658
	(A1 * !A3 * A4 * B1 * !Y)	-0.00534	-0.00537	-0.00533
	(A1 * !A3 * A4 * !B1 * Y)	0.00655	0.00658	0.00656
	(A1 * !A3 * A4 * !B1 * Y)	-0.00573	-0.00577	-0.00571
	(A1 * !A3 * !A4 * B1 * !Y)	0.00655	0.00662	0.00655
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00446	-0.00451	-0.00445
	(A1 * !A3 * !A4 * !B1 * Y)	0.00653	0.00661	0.00655
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00811	-0.00824	-0.00823
	(!A1 * A3 * A4 * B1 * !Y)	0.00662	0.00658	0.00655
	(!A1 * A3 * A4 * B1 * !Y)	-0.00803	-0.00831	-0.00825
	(!A1 * A3 * !B1 * Y)	0.00650	0.00658	0.00655
	(!A1 * A3 * !B1 * Y)	-0.00797	-0.00831	-0.00825
	(!A1 * A3 * !A4 * B1 * !Y)	0.00719	0.00659	0.00655
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00743	-0.00828	-0.00827
	(!A1 * !A3 * A4 * B1 * !Y)	0.00688	0.00659	0.00655
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00701	-0.00798	-0.00794
	(!A1 * !A3 * A4 * !B1 * Y)	0.00653	0.00657	0.00655
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00726	-0.00803	-0.00792
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00618	0.00619	0.00616
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00847	-0.00846	-0.00845

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)**	-0.00167	-0.00167	-0.00167
	(A1 * A3 * A4 * B1 * !Y)	0.00144	0.00144	0.00143
	(A1 * A3 * !B1 * Y)	-0.00167	-0.00167	-0.00167
	(A1 * A3 * !B1 * Y)	0.00145	0.00146	0.00146
	(A1 * A3 * !A4 * B1 * !Y)	-0.00167	-0.00167	-0.00167
	(A1 * A3 * !A4 * B1 * !Y)	0.00137	0.00137	0.00137
	(A1 * !A3 * A4 * B1 * !Y)	-0.00167	-0.00167	-0.00167
	(A1 * !A3 * A4 * B1 * !Y)	0.00134	0.00133	0.00133
	(A1 * !A3 * A4 * !B1 * Y)	-0.00166	-0.00167	-0.00167
	(A1 * !A3 * A4 * !B1 * Y)	0.00142	0.00143	0.00143
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00161	-0.00162	-0.00160
	(A1 * !A3 * !A4 * B1 * !Y)	0.00117	0.00118	0.00118
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00167	-0.00168	-0.00167
	(A1 * !A3 * !A4 * !B1 * Y)	0.00203	0.00205	0.00204
	(!A1 * A3 * A4 * B1 * !Y)	-0.00166	-0.00168	-0.00167
	(!A1 * A3 * A4 * B1 * !Y)	0.00203	0.00205	0.00204
	(!A1 * A3 * !B1 * Y)	-0.00166	-0.00168	-0.00167
	(!A1 * A3 * !B1 * Y)	0.00203	0.00205	0.00204
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00167	-0.00167	-0.00167
	(!A1 * A3 * !A4 * B1 * !Y)	0.00204	0.00205	0.00204
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00167	-0.00168	-0.00167
	(!A1 * !A3 * A4 * B1 * !Y)	0.00197	0.00199	0.00196
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00166	-0.00169	-0.00167
	(!A1 * !A3 * A4 * !B1 * Y)	0.00195	0.00199	0.00196
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00147	-0.00159	-0.00159
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00208	0.00209	0.00208

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00344	-0.00344	-0.00343
	(A1 * A3 * A4 * B1 * !Y)	0.00299	0.00299	0.00298
	(A1 * A3 * !B1 * Y)	-0.00342	-0.00344	-0.00343
	(A1 * A3 * !B1 * Y)	0.00302	0.00305	0.00303
	(A1 * A3 * !A4 * B1 * !Y)	-0.00344	-0.00344	-0.00343
	(A1 * A3 * !A4 * B1 * !Y)	0.00286	0.00287	0.00285
	(A1 * !A3 * A4 * B1 * !Y)	-0.00344	-0.00345	-0.00344
	(A1 * !A3 * A4 * B1 * !Y)	0.00280	0.00281	0.00279
	(A1 * !A3 * A4 * !B1 * Y)	-0.00342	-0.00345	-0.00343
	(A1 * !A3 * A4 * !B1 * Y)	0.00300	0.00304	0.00300
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00329	-0.00331	-0.00327
	(A1 * !A3 * !A4 * B1 * !Y)	0.00245	0.00248	0.00248
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00342	-0.00344	-0.00343
	(A1 * !A3 * !A4 * !B1 * Y)	0.00418	0.00420	0.00419
	(!A1 * A3 * A4 * B1 * !Y)	-0.00342	-0.00345	-0.00343
	(!A1 * A3 * A4 * B1 * !Y)	0.00423	0.00429	0.00425
	(!A1 * A3 * !B1 * Y)	-0.00342	-0.00343	-0.00343
	(!A1 * A3 * !B1 * Y)	0.00423	0.00424	0.00424
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00342	-0.00345	-0.00343
	(!A1 * A3 * !A4 * B1 * !Y)	0.00422	0.00428	0.00425
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00342	-0.00345	-0.00343
	(!A1 * !A3 * A4 * B1 * !Y)	0.00407	0.00411	0.00408
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00342	-0.00344	-0.00343
	(!A1 * !A3 * A4 * !B1 * Y)	0.00406	0.00411	0.00408
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00299	-0.00326	-0.00325
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00433	0.00435	0.00432

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00653	-0.00655	-0.00654
	(A1 * A3 * A4 * B1 * !Y)	0.00562	0.00564	0.00562
	(A1 * A3 * !B1 * Y)	-0.00653	-0.00656	-0.00654
	(A1 * A3 * !B1 * Y)	0.00571	0.00574	0.00572
	(A1 * A3 * !A4 * B1 * !Y)	-0.00653	-0.00655	-0.00654
	(A1 * A3 * !A4 * B1 * !Y)	0.00539	0.00541	0.00539
	(A1 * !A3 * A4 * B1 * !Y)	-0.00656	-0.00658	-0.00655
	(A1 * !A3 * A4 * B1 * !Y)	0.00534	0.00537	0.00533
	(A1 * !A3 * A4 * !B1 * Y)	-0.00655	-0.00658	-0.00654
	(A1 * !A3 * A4 * !B1 * Y)	0.00573	0.00577	0.00571
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00627	-0.00631	-0.00623
	(A1 * !A3 * !A4 * B1 * !Y)	0.00471	0.00477	0.00475
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00652	-0.00654	-0.00653
	(A1 * !A3 * !A4 * !B1 * Y)	0.00821	0.00824	0.00823
	(!A1 * A3 * A4 * B1 * !Y)	-0.00652	-0.00657	-0.00653
	(!A1 * A3 * A4 * B1 * !Y)	0.00821	0.00832	0.00825
	(!A1 * A3 * !B1 * Y)	-0.00650	-0.00657	-0.00654
	(!A1 * A3 * !B1 * Y)	0.00821	0.00832	0.00825
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00654	-0.00655	-0.00653
	(!A1 * A3 * !A4 * B1 * !Y)	0.00826	0.00828	0.00827
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00651	-0.00656	-0.00652
	(!A1 * !A3 * A4 * B1 * !Y)	0.00789	0.00798	0.00794
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00652	-0.00657	-0.00654
	(!A1 * !A3 * A4 * !B1 * Y)	0.00789	0.00803	0.00792
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00573	-0.00619	-0.00616
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00848	0.00852	0.00847

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)**	0.00186	0.00186	0.00178
	(A2 * A4 * B1 * !Y)	-0.00131	-0.00132	-0.00131
	(A2 * A4 * !B1 * Y)	0.00167	0.00169	0.00168
	(A2 * A4 * !B1 * Y)	-0.00149	-0.00150	-0.00149
	(A2 * !A4 * B1 * !Y)	0.00175	0.00177	0.00174
	(A2 * !A4 * B1 * !Y)	-0.00109	-0.00110	-0.00110
	(A2 * !A4 * !B1 * Y)	0.00169	0.00169	0.00168
	(A2 * !A4 * !B1 * Y)	-0.00205	-0.00210	-0.00209
	(A1 * !A2 * A4 * B1 * !Y)	0.00195	0.00179	0.00174
	(A1 * !A2 * A4 * B1 * !Y)	-0.00133	-0.00136	-0.00136
	(A1 * !A2 * A4 * !B1 * Y)	0.00167	0.00170	0.00168
	(A1 * !A2 * A4 * !B1 * Y)	-0.00148	-0.00148	-0.00148
	(A1 * !A2 * !A4 * B1 * !Y)	0.00176	0.00178	0.00174
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00108	-0.00109	-0.00109
	(A1 * !A2 * !A4 * !B1 * Y)	0.00166	0.00170	0.00168
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00183	-0.00202	-0.00199
	(!A1 * !A2 * A4 * B1 * !Y)	0.00217	0.00178	0.00174
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00162	-0.00202	-0.00204
	(!A1 * !A2 * A4 * !B1 * Y)	0.00169	0.00170	0.00168
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00208	-0.00210	-0.00209
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00158	0.00159	0.00158
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00212	-0.00213	-0.00212

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00340	0.00347	0.00332
	(A2 * A4 * B1 * !Y)	-0.00270	-0.00272	-0.00269
	(A2 * A4 * !B1 * Y)	0.00325	0.00329	0.00325
	(A2 * A4 * !B1 * Y)	-0.00302	-0.00303	-0.00301
	(A2 * !A4 * B1 * !Y)	0.00328	0.00331	0.00327
	(A2 * !A4 * B1 * !Y)	-0.00225	-0.00227	-0.00226
	(A2 * !A4 * !B1 * Y)	0.00323	0.00328	0.00325
	(A2 * !A4 * !B1 * Y)	-0.00401	-0.00416	-0.00414
	(A1 * !A2 * A4 * B1 * !Y)	0.00358	0.00333	0.00328
	(A1 * !A2 * A4 * B1 * !Y)	-0.00279	-0.00280	-0.00278
	(A1 * !A2 * A4 * !B1 * Y)	0.00324	0.00327	0.00325
	(A1 * !A2 * A4 * !B1 * Y)	-0.00294	-0.00297	-0.00294
	(A1 * !A2 * !A4 * B1 * !Y)	0.00330	0.00333	0.00327
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00223	-0.00225	-0.00224
	(A1 * !A2 * !A4 * !B1 * Y)	0.00324	0.00325	0.00325
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00367	-0.00394	-0.00393
	(!A1 * !A2 * A4 * B1 * !Y)	0.00415	0.00333	0.00326
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00316	-0.00412	-0.00414
	(!A1 * !A2 * A4 * !B1 * Y)	0.00323	0.00328	0.00325
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00403	-0.00414	-0.00412
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00311	0.00313	0.00311
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00421	-0.00422	-0.00421

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00702	0.00723	0.00684
	(A2 * A4 * B1 * !Y)	-0.00534	-0.00533	-0.00534
	(A2 * A4 * !B1 * Y)	0.00669	0.00676	0.00667
	(A2 * A4 * !B1 * Y)	-0.00587	-0.00591	-0.00587
	(A2 * !A4 * B1 * !Y)	0.00676	0.00678	0.00668
	(A2 * !A4 * B1 * !Y)	-0.00458	-0.00458	-0.00456
	(A2 * !A4 * !B1 * Y)	0.00665	0.00674	0.00666
	(A2 * !A4 * !B1 * Y)	-0.00810	-0.00833	-0.00833
	(A1 * !A2 * A4 * B1 * !Y)	0.00750	0.00685	0.00670
	(A1 * !A2 * A4 * B1 * !Y)	-0.00550	-0.00559	-0.00556
	(A1 * !A2 * A4 * !B1 * Y)	0.00666	0.00671	0.00667
	(A1 * !A2 * A4 * !B1 * Y)	-0.00583	-0.00587	-0.00581
	(A1 * !A2 * !A4 * B1 * !Y)	0.00671	0.00681	0.00669
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00447	-0.00454	-0.00453
	(A1 * !A2 * !A4 * !B1 * Y)	0.00669	0.00675	0.00666
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00734	-0.00784	-0.00783
	(!A1 * !A2 * A4 * B1 * !Y)	0.00856	0.00681	0.00667
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00648	-0.00844	-0.00847
	(!A1 * !A2 * A4 * !B1 * Y)	0.00669	0.00674	0.00666
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00832	-0.00844	-0.00842
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00630	0.00637	0.00633
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00854	-0.00859	-0.00857

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)**	-0.00173	-0.00174	-0.00173
	(A2 * A4 * B1 * !Y)	0.00131	0.00132	0.00131
	(A2 * A4 * !B1 * Y)	-0.00167	-0.00168	-0.00167
	(A2 * A4 * !B1 * Y)	0.00149	0.00150	0.00149
	(A2 * !A4 * B1 * !Y)	-0.00173	-0.00173	-0.00171
	(A2 * !A4 * B1 * !Y)	0.00112	0.00113	0.00113
	(A2 * !A4 * !B1 * Y)	-0.00167	-0.00168	-0.00167
	(A2 * !A4 * !B1 * Y)	0.00208	0.00210	0.00209
	(A1 * !A2 * A4 * B1 * !Y)	-0.00173	-0.00173	-0.00173
	(A1 * !A2 * A4 * B1 * !Y)	0.00137	0.00136	0.00136
	(A1 * !A2 * A4 * !B1 * Y)	-0.00167	-0.00168	-0.00167
	(A1 * !A2 * A4 * !B1 * Y)	0.00148	0.00148	0.00148
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00169	-0.00170	-0.00171
	(A1 * !A2 * !A4 * B1 * !Y)	0.00113	0.00113	0.00111
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00166	-0.00169	-0.00167
	(A1 * !A2 * !A4 * !B1 * Y)	0.00198	0.00202	0.00199
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00172	-0.00173	-0.00172
	(!A1 * !A2 * A4 * B1 * !Y)	0.00202	0.00204	0.00204
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00168	-0.00168	-0.00167
	(!A1 * !A2 * A4 * !B1 * Y)	0.00209	0.00210	0.00209
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00147	-0.00159	-0.00158
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00213	0.00214	0.00213

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00327	-0.00329	-0.00327
	(A2 * A4 * B1 * !Y)	0.00270	0.00272	0.00269
	(A2 * A4 * !B1 * Y)	-0.00325	-0.00326	-0.00324
	(A2 * A4 * !B1 * Y)	0.00302	0.00303	0.00301
	(A2 * !A4 * B1 * !Y)	-0.00322	-0.00324	-0.00320
	(A2 * !A4 * B1 * !Y)	0.00229	0.00232	0.00233
	(A2 * !A4 * !B1 * Y)	-0.00323	-0.00326	-0.00324
	(A2 * !A4 * !B1 * Y)	0.00413	0.00416	0.00414
	(A1 * !A2 * A4 * B1 * !Y)	-0.00327	-0.00328	-0.00327
	(A1 * !A2 * A4 * B1 * !Y)	0.00279	0.00280	0.00278
	(A1 * !A2 * A4 * !B1 * Y)	-0.00324	-0.00326	-0.00324
	(A1 * !A2 * A4 * !B1 * Y)	0.00294	0.00297	0.00294
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00315	-0.00318	-0.00319
	(A1 * !A2 * !A4 * B1 * !Y)	0.00228	0.00231	0.00230
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00323	-0.00325	-0.00324
	(A1 * !A2 * !A4 * !B1 * Y)	0.00391	0.00394	0.00393
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00323	-0.00325	-0.00323
	(!A1 * !A2 * A4 * B1 * !Y)	0.00411	0.00413	0.00414
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00323	-0.00325	-0.00324
	(!A1 * !A2 * A4 * !B1 * Y)	0.00411	0.00414	0.00412
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00285	-0.00310	-0.00311
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00424	0.00425	0.00422

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00668	-0.00667	-0.00668
	(A2 * A4 * B1 * !Y)	0.00534	0.00533	0.00534
	(A2 * A4 * !B1 * Y)	-0.00665	-0.00669	-0.00666
	(A2 * A4 * !B1 * Y)	0.00587	0.00591	0.00587
	(A2 * !A4 * B1 * !Y)	-0.00663	-0.00665	-0.00657
	(A2 * !A4 * B1 * !Y)	0.00463	0.00466	0.00469
	(A2 * !A4 * !B1 * Y)	-0.00665	-0.00665	-0.00665
	(A2 * !A4 * !B1 * Y)	0.00833	0.00833	0.00833
	(A1 * !A2 * A4 * B1 * !Y)	-0.00668	-0.00669	-0.00667
	(A1 * !A2 * A4 * B1 * !Y)	0.00558	0.00559	0.00556
	(A1 * !A2 * A4 * !B1 * Y)	-0.00666	-0.00669	-0.00665
	(A1 * !A2 * A4 * !B1 * Y)	0.00583	0.00587	0.00581
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00643	-0.00650	-0.00655
	(A1 * !A2 * !A4 * B1 * !Y)	0.00459	0.00466	0.00462
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00664	-0.00666	-0.00664
	(A1 * !A2 * !A4 * !B1 * Y)	0.00781	0.00784	0.00783
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00664	-0.00664	-0.00660
	(!A1 * !A2 * A4 * B1 * !Y)	0.00844	0.00845	0.00847
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00665	-0.00667	-0.00665
	(!A1 * !A2 * A4 * !B1 * Y)	0.00842	0.00844	0.00842
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00583	-0.00634	-0.00633
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00863	0.00865	0.00859

Passive power(pJ) for A4 rising (conditional):

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

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	0.00189	0.00191	0.00190
	(A3 * B1 * !Y)	-0.00098	-0.00099	-0.00098
	(A3 * !B1 * Y)	0.00166	0.00169	0.00167
	(A3 * !B1 * Y)	-0.00204	-0.00211	-0.00210
	(A2 * !A3 * B1 * !Y)	0.00189	0.00191	0.00190
	(A2 * !A3 * B1 * !Y)	-0.00097	-0.00098	-0.00097
	(A2 * !A3 * !B1 * Y)	0.00166	0.00169	0.00167
	(A2 * !A3 * !B1 * Y)	-0.00184	-0.00204	-0.00202
	(A1 * !A2 * !A3 * B1 * !Y)	0.00189	0.00191	0.00190
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00097	-0.00098	-0.00097
	(A1 * !A2 * !A3 * !B1 * Y)	0.00168	0.00169	0.00167
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00183	-0.00197	-0.00197
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00157	0.00158	0.00158
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00212	-0.00213	-0.00213
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	0.00366	0.00374	0.00368
	(A3 * B1 * !Y)	-0.00199	-0.00205	-0.00201
	(A3 * !B1 * Y)	0.00331	0.00331	0.00329
	(A3 * !B1 * Y)	-0.00406	-0.00419	-0.00418
	(A2 * !A3 * B1 * !Y)	0.00368	0.00374	0.00368
	(A2 * !A3 * B1 * !Y)	-0.00201	-0.00204	-0.00201
	(A2 * !A3 * !B1 * Y)	0.00328	0.00330	0.00329
	(A2 * !A3 * !B1 * Y)	-0.00367	-0.00401	-0.00400
	(A1 * !A2 * !A3 * B1 * !Y)	0.00368	0.00374	0.00368
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00201	-0.00204	-0.00201
	(A1 * !A2 * !A3 * !B1 * Y)	0.00328	0.00334	0.00329
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00359	-0.00393	-0.00390
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00314	0.00315	0.00314
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00426	-0.00427	-0.00426

sky130_fd_sc_hs__o41ai_4	**(A3 * B1 * !Y)**	0.00759	0.00763	0.00756
	(A3 * B1 * !Y)	-0.00393	-0.00393	-0.00390
	(A3 * !B1 * Y)	0.00671	0.00674	0.00668
	(A3 * !B1 * Y)	-0.00806	-0.00835	-0.00832
	(A2 * !A3 * B1 * !Y)	0.00751	0.00768	0.00756
	(A2 * !A3 * B1 * !Y)	-0.00385	-0.00396	-0.00389
	(A2 * !A3 * !B1 * Y)	0.00665	0.00672	0.00667
	(A2 * !A3 * !B1 * Y)	-0.00719	-0.00788	-0.00786
	(A1 * !A2 * !A3 * B1 * !Y)	0.00754	0.00769	0.00756
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00388	-0.00396	-0.00389
	(A1 * !A2 * !A3 * !B1 * Y)	0.00666	0.00676	0.00667
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00707	-0.00768	-0.00763
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00638	0.00640	0.00637
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00848	-0.00849	-0.00847

Passive power(pJ) for A4 falling (conditional):

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

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	-0.00182	-0.00184	-0.00189
	(A3 * B1 * !Y)	0.00102	0.00104	0.00099
	(A3 * !B1 * Y)	-0.00166	-0.00167	-0.00166
	(A3 * !B1 * Y)	0.00209	0.00211	0.00210
	(A2 * !A3 * B1 * !Y)	-0.00174	-0.00176	-0.00187
	(A2 * !A3 * B1 * !Y)	0.00107	0.00108	0.00099
	(A2 * !A3 * !B1 * Y)	-0.00166	-0.00168	-0.00166
	(A2 * !A3 * !B1 * Y)	0.00202	0.00204	0.00202
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00162	-0.00164	-0.00184
	(A1 * !A2 * !A3 * B1 * !Y)	0.00114	0.00115	0.00101
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00166	-0.00167	-0.00166
	(A1 * !A2 * !A3 * !B1 * Y)	0.00196	0.00197	0.00197
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00147	-0.00158	-0.00158
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00213	0.00215	0.00213
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	-0.00347	-0.00351	-0.00366
	(A3 * B1 * !Y)	0.00218	0.00220	0.00206
	(A3 * !B1 * Y)	-0.00328	-0.00330	-0.00329
	(A3 * !B1 * Y)	0.00416	0.00419	0.00418
	(A2 * !A3 * B1 * !Y)	-0.00330	-0.00334	-0.00362
	(A2 * !A3 * B1 * !Y)	0.00226	0.00228	0.00205
	(A2 * !A3 * !B1 * Y)	-0.00328	-0.00329	-0.00329
	(A2 * !A3 * !B1 * Y)	0.00398	0.00401	0.00400
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00303	-0.00307	-0.00354
	(A1 * !A2 * !A3 * B1 * !Y)	0.00242	0.00244	0.00209
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00328	-0.00330	-0.00329
	(A1 * !A2 * !A3 * !B1 * Y)	0.00389	0.00393	0.00390
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00289	-0.00315	-0.00314
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00428	0.00430	0.00427

sky130_fd_sc_hs__o41ai_4	(A3 * B1 * !Y)	-0.00721	-0.00728	-0.00752
	(A3 * B1 * !Y)	0.00418	0.00422	0.00398
	(A3 * !B1 * Y)	-0.00664	-0.00669	-0.00666
	(A3 * !B1 * Y)	0.00828	0.00835	0.00832
	(A2 * !A3 * B1 * !Y)	-0.00686	-0.00694	-0.00745
	(A2 * !A3 * B1 * !Y)	0.00432	0.00435	0.00396
	(A2 * !A3 * !B1 * Y)	-0.00665	-0.00667	-0.00666
	(A2 * !A3 * !B1 * Y)	0.00787	0.00788	0.00786
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00633	-0.00641	-0.00731
	(A1 * !A2 * !A3 * B1 * !Y)	0.00464	0.00468	0.00404
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00666	-0.00669	-0.00666
	(A1 * !A2 * !A3 * !B1 * Y)	0.00764	0.00768	0.00763
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00587	-0.00634	-0.00637
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00852	0.00854	0.00848

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)	0.00069	0.00069	0.00063
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00246	-0.00248	-0.00258
sky130_fd_sc_hs__o41ai_2	(!A1 * !A2 * !A3 * !A4 * Y)	0.00161	0.00161	0.00150
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00470	-0.00473	-0.00494
sky130_fd_sc_hs__o41ai_4	(!A1 * !A2 * !A3 * !A4 * Y)	0.00233	0.00234	0.00214
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00516	-0.00521	-0.00560

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)	-0.00061	-0.00063	-0.00061
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00258	0.00264	0.00260
sky130_fd_sc_hs__o41ai_2	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00146	-0.00148	-0.00146
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00495	0.00505	0.00497
sky130_fd_sc_hs__o41ai_4	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00206	-0.00210	-0.00206
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00562	0.00573	0.00564

SKY130_FD_SC_HS__O41Ax

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00259	0.00269	0.00269	0.00273	0.00248	1.17468
sky130_fd_sc_hs__o41a_2	0.00275	0.00288	0.00295	0.00282	0.00283	2.40321
sky130_fd_sc_hs__o41a_4	0.00498	0.00537	0.00540	0.00505	0.00465	4.28606

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41a_1	0.00000	0.26398	0.52795
sky130_fd_sc_hs__o41a_2	0.00000	0.19096	0.28836
sky130_fd_sc_hs__o41a_4	0.00000	0.61660	1.07076

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)	0.08870	0.59953	6.10217
	A2->X (RR)	0.08676	0.58472	5.99724
	A3->X (RR)	0.08165	0.56621	5.89961
	A4->X (RR)	0.07136	0.54281	5.86059
	B1->X (RR)	0.07941	0.60140	6.32441
sky130_fd_sc_hs__o41a_2	A1->X (RR)	0.08870	0.50336	6.04338
	A2->X (RR)	0.08732	0.49250	5.95765
	A3->X (RR)	0.08333	0.47787	5.87519
	A4->X (RR)	0.07216	0.45638	5.83210
	B1->X (RR)	0.07993	0.51093	6.32132
sky130_fd_sc_hs__o41a_4	A1->X (RR)	0.09809	0.45027	6.08341
	A2->X (RR)	0.09684	0.43911	5.99502
	A3->X (RR)	0.08721	0.41917	5.89493
	A4->X (RR)	0.07842	0.39631	5.85925
	B1->X (RR)	0.08862	0.47009	6.42447

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41a_1	A1->X (FF)	0.27996	0.71762	4.95868
	A2->X (FF)	0.26586	0.71525	5.11392
	A3->X (FF)	0.23507	0.70937	5.21197
	A4->X (FF)	0.19038	0.68481	5.16844
	B1->X (FF)	0.06744	0.50294	4.65931
sky130_fd_sc_hs__o41a_2	A1->X (FF)	0.33791	0.77069	5.28354
	A2->X (FF)	0.32588	0.77461	5.46243
	A3->X (FF)	0.29727	0.77231	5.59242
	A4->X (FF)	0.24687	0.74482	5.55183
	B1->X (FF)	0.07196	0.48689	4.81626
sky130_fd_sc_hs__o41a_4	A1->X (FF)	0.35050	0.75050	5.18101
	A2->X (FF)	0.33426	0.74489	5.34306
	A3->X (FF)	0.29331	0.72650	5.46079
	A4->X (FF)	0.23578	0.69302	5.40124
	B1->X (FF)	0.07983	0.45871	4.74778

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41a_1	A1	0.01642	0.01673	0.03848
	A1	0.00701	0.00734	0.02953
	A2	0.01424	0.01457	0.03463
	A2	0.00597	0.00632	0.02683
	A3	0.01194	0.01238	0.03164
	A3	0.00479	0.00524	0.02451
	A4	0.00983	0.01046	0.03564
	A4	0.00368	0.00434	0.02957
	B1	0.01240	0.01367	0.05107
	B1	0.00382	0.00562	0.04608
sky130_fd_sc_hs__o41a_2	A1	0.01998	0.02057	0.04215
	A1	0.00989	0.01055	0.03306
	A2	0.01795	0.01852	0.03842
	A2	0.00897	0.00956	0.03043
	A3	0.01571	0.01641	0.03538
	A3	0.00773	0.00846	0.02754
	A4	0.01327	0.01420	0.03895
	A4	0.00645	0.00739	0.03229
	B1	0.01105	0.01316	0.05691
	B1	0.00637	0.00849	0.05322

sky130_fd_sc_hs__o41a_4	**A1**	0.03907	0.03992	0.08077
	A1	0.02038	0.02138	0.06387
	A2	0.03545	0.03642	0.07447
	A2	0.01825	0.01932	0.05908
	A3	0.03010	0.03145	0.06790
	A3	0.01527	0.01670	0.05321
	A4	0.02468	0.02650	0.07390
	A4	0.01257	0.01443	0.06217
	B1	0.02067	0.02478	0.11052
	B1	0.01290	0.01706	0.10453

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41a_1	**A1**	0.00538	0.00519	0.02650
	A1	0.01475	0.01455	0.03530
	A2	0.00541	0.00529	0.02545
	A2	0.01360	0.01346	0.03294
	A3	0.00543	0.00559	0.02455
	A3	0.01246	0.01260	0.03141
	A4	0.00539	0.00644	0.03209
	A4	0.01137	0.01243	0.03778
	B1	0.00326	0.00603	0.05322
	B1	0.00957	0.01219	0.05749

sky130_fd_sc_hs__o41a_2	**A1**	0.00985	0.00810	0.03024
	A1	0.01986	0.01827	0.03890
	A2	0.00979	0.00812	0.02929
	A2	0.01867	0.01721	0.03646
	A3	0.00987	0.00834	0.02844
	A3	0.01768	0.01634	0.03496
	A4	0.00979	0.00928	0.03663
	A4	0.01642	0.01604	0.04146
	B1	0.00600	0.00898	0.05612
	B1	0.01295	0.01592	0.06079
sky130_fd_sc_hs__o41a_4	**A1**	0.01960	0.01626	0.05655
	A1	0.03831	0.03516	0.07303
	A2	0.01900	0.01578	0.05557
	A2	0.03608	0.03284	0.06886
	A3	0.01928	0.01625	0.05352
	A3	0.03384	0.03101	0.06603
	A4	0.01958	0.01838	0.07054
	A4	0.03136	0.03014	0.07830
	B1	0.01216	0.01839	0.11078
	B1	0.02698	0.03224	0.11762

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)**	0.00152	0.00154	0.00152
	(A2 * A4 * B1 * X)	-0.00207	-0.00214	-0.00213
	(A2 * A3 * !A4 * B1 * X)	0.00152	0.00154	0.00152
	(A2 * A3 * !A4 * B1 * X)	-0.00207	-0.00214	-0.00213
	(A2 * !B1 * !X)	0.00152	0.00153	0.00151
	(A2 * !B1 * !X)	-0.00207	-0.00214	-0.00212
	(A2 * !A3 * !A4 * B1 * X)	0.00152	0.00154	0.00152
	(A2 * !A3 * !A4 * B1 * X)	-0.00204	-0.00214	-0.00213
	(!A2 * A3 * A4 * B1 * X)	0.00151	0.00153	0.00152
	(!A2 * A3 * A4 * B1 * X)	-0.00191	-0.00207	-0.00206
	(!A2 * A3 * !B1 * !X)	0.00151	0.00152	0.00151
	(!A2 * A3 * !B1 * !X)	-0.00191	-0.00207	-0.00206
	(!A2 * A3 * !A4 * B1 * X)	0.00151	0.00153	0.00152
	(!A2 * A3 * !A4 * B1 * X)	-0.00191	-0.00207	-0.00206
	(!A2 * !A3 * A4 * B1 * X)	0.00152	0.00153	0.00152
	(!A2 * !A3 * A4 * B1 * X)	-0.00187	-0.00205	-0.00203
	(!A2 * !A3 * A4 * !B1 * !X)	0.00151	0.00152	0.00151
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00188	-0.00202	-0.00202
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00144	0.00144	0.00143
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00215	-0.00215	-0.00214

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00173	0.00175	0.00173
	(A2 * A4 * B1 * X)	-0.00204	-0.00210	-0.00208
	(A2 * A3 * !A4 * B1 * X)	0.00173	0.00175	0.00173
	(A2 * A3 * !A4 * B1 * X)	-0.00203	-0.00210	-0.00208
	(A2 * !B1 * !X)	0.00173	0.00175	0.00173
	(A2 * !B1 * !X)	-0.00204	-0.00210	-0.00208
	(A2 * !A3 * !A4 * B1 * X)	0.00173	0.00175	0.00173
	(A2 * !A3 * !A4 * B1 * X)	-0.00200	-0.00210	-0.00209
	(!A2 * A3 * A4 * B1 * X)	0.00173	0.00174	0.00173
	(!A2 * A3 * A4 * B1 * X)	-0.00187	-0.00203	-0.00202
	(!A2 * A3 * !B1 * !X)	0.00173	0.00174	0.00173
	(!A2 * A3 * !B1 * !X)	-0.00187	-0.00203	-0.00202
	(!A2 * A3 * !A4 * B1 * X)	0.00173	0.00174	0.00173
	(!A2 * A3 * !A4 * B1 * X)	-0.00187	-0.00203	-0.00202
	(!A2 * !A3 * A4 * B1 * X)	0.00174	0.00174	0.00173
	(!A2 * !A3 * A4 * B1 * X)	-0.00184	-0.00199	-0.00199
	(!A2 * !A3 * A4 * !B1 * !X)	0.00173	0.00174	0.00173
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00185	-0.00199	-0.00199
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00164	0.00164	0.00163
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00211	-0.00211	-0.00210

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00281	0.00283	0.00280
	(A2 * A4 * B1 * X)	-0.00403	-0.00418	-0.00416
	(A2 * A3 * !A4 * B1 * X)	0.00281	0.00283	0.00280
	(A2 * A3 * !A4 * B1 * X)	-0.00402	-0.00418	-0.00416
	(A2 * !B1 * !X)	0.00280	0.00282	0.00279
	(A2 * !B1 * !X)	-0.00404	-0.00418	-0.00416
	(A2 * !A3 * !A4 * B1 * X)	0.00282	0.00283	0.00280
	(A2 * !A3 * !A4 * B1 * X)	-0.00392	-0.00417	-0.00415
	(!A2 * A3 * A4 * B1 * X)	0.00282	0.00283	0.00280
	(!A2 * A3 * A4 * B1 * X)	-0.00366	-0.00404	-0.00401
	(!A2 * A3 * !B1 * !X)	0.00280	0.00282	0.00279
	(!A2 * A3 * !B1 * !X)	-0.00368	-0.00404	-0.00401
	(!A2 * A3 * !A4 * B1 * X)	0.00282	0.00283	0.00280
	(!A2 * A3 * !A4 * B1 * X)	-0.00366	-0.00404	-0.00401
	(!A2 * !A3 * A4 * B1 * X)	0.00285	0.00283	0.00280
	(!A2 * !A3 * A4 * B1 * X)	-0.00357	-0.00395	-0.00394
	(!A2 * !A3 * A4 * !B1 * !X)	0.00280	0.00282	0.00279
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00361	-0.00394	-0.00393
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00263	0.00266	0.00264
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00422	-0.00424	-0.00423

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)**	-0.00151	-0.00151	-0.00151
	(A2 * A4 * B1 * X)	0.00213	0.00214	0.00213
	(A2 * A3 * !A4 * B1 * X)	-0.00151	-0.00151	-0.00151
	(A2 * A3 * !A4 * B1 * X)	0.00213	0.00214	0.00213
	(A2 * !B1 * !X)	-0.00151	-0.00151	-0.00151
	(A2 * !B1 * !X)	0.00213	0.00214	0.00212
	(A2 * !A3 * !A4 * B1 * X)	-0.00151	-0.00151	-0.00151
	(A2 * !A3 * !A4 * B1 * X)	0.00213	0.00214	0.00213
	(!A2 * A3 * A4 * B1 * X)	-0.00150	-0.00151	-0.00151
	(!A2 * A3 * A4 * B1 * X)	0.00205	0.00207	0.00206
	(!A2 * A3 * !B1 * !X)	-0.00151	-0.00151	-0.00151
	(!A2 * A3 * !B1 * !X)	0.00205	0.00207	0.00206
	(!A2 * A3 * !A4 * B1 * X)	-0.00150	-0.00151	-0.00151
	(!A2 * A3 * !A4 * B1 * X)	0.00205	0.00207	0.00206
	(!A2 * !A3 * A4 * B1 * X)	-0.00150	-0.00151	-0.00150
	(!A2 * !A3 * A4 * B1 * X)	0.00202	0.00205	0.00203
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00151	-0.00151	-0.00151
	(!A2 * !A3 * A4 * !B1 * !X)	0.00202	0.00202	0.00202
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00135	-0.00144	-0.00143
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00216	0.00218	0.00215

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00173	-0.00173	-0.00172
	(A2 * A4 * B1 * X)	0.00209	0.00210	0.00208
	(A2 * A3 * !A4 * B1 * X)	-0.00173	-0.00173	-0.00172
	(A2 * A3 * !A4 * B1 * X)	0.00209	0.00210	0.00208
	(A2 * !B1 * !X)	-0.00172	-0.00173	-0.00173
	(A2 * !B1 * !X)	0.00207	0.00210	0.00208
	(A2 * !A3 * !A4 * B1 * X)	-0.00172	-0.00173	-0.00172
	(A2 * !A3 * !A4 * B1 * X)	0.00207	0.00210	0.00209
	(!A2 * A3 * A4 * B1 * X)	-0.00172	-0.00173	-0.00172
	(!A2 * A3 * A4 * B1 * X)	0.00201	0.00203	0.00202
	(!A2 * A3 * !B1 * !X)	-0.00172	-0.00173	-0.00173
	(!A2 * A3 * !B1 * !X)	0.00201	0.00203	0.00202
	(!A2 * A3 * !A4 * B1 * X)	-0.00172	-0.00173	-0.00172
	(!A2 * A3 * !A4 * B1 * X)	0.00201	0.00203	0.00202
	(!A2 * !A3 * A4 * B1 * X)	-0.00172	-0.00172	-0.00172
	(!A2 * !A3 * A4 * B1 * X)	0.00198	0.00199	0.00199
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00172	-0.00173	-0.00173
	(!A2 * !A3 * A4 * !B1 * !X)	0.00198	0.00199	0.00199
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00152	-0.00164	-0.00163
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00212	0.00213	0.00211

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	-0.00277	-0.00278	-0.00278
	(A2 * A4 * B1 * X)	0.00414	0.00418	0.00416
	(A2 * A3 * !A4 * B1 * X)	-0.00277	-0.00278	-0.00278
	(A2 * A3 * !A4 * B1 * X)	0.00414	0.00418	0.00416
	(A2 * !B1 * !X)	-0.00277	-0.00279	-0.00278
	(A2 * !B1 * !X)	0.00414	0.00418	0.00416
	(A2 * !A3 * !A4 * B1 * X)	-0.00277	-0.00279	-0.00278
	(A2 * !A3 * !A4 * B1 * X)	0.00413	0.00417	0.00415
	(!A2 * A3 * A4 * B1 * X)	-0.00277	-0.00279	-0.00278
	(!A2 * A3 * A4 * B1 * X)	0.00399	0.00404	0.00401
	(!A2 * A3 * !B1 * !X)	-0.00277	-0.00279	-0.00278
	(!A2 * A3 * !B1 * !X)	0.00399	0.00404	0.00401
	(!A2 * A3 * !A4 * B1 * X)	-0.00277	-0.00279	-0.00278
	(!A2 * A3 * !A4 * B1 * X)	0.00399	0.00404	0.00401
	(!A2 * !A3 * A4 * B1 * X)	-0.00277	-0.00278	-0.00277
	(!A2 * !A3 * A4 * B1 * X)	0.00392	0.00395	0.00394
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00277	-0.00279	-0.00278
	(!A2 * !A3 * A4 * !B1 * !X)	0.00392	0.00394	0.00393
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00244	-0.00264	-0.00264
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00425	0.00427	0.00425

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)**	0.00147	0.00148	0.00146
	(A1 * A3 * A4 * B1 * X)	-0.00146	-0.00147	-0.00147
	(A1 * A3 * !B1 * !X)	0.00146	0.00148	0.00146
	(A1 * A3 * !B1 * !X)	-0.00150	-0.00150	-0.00149
	(A1 * A3 * !A4 * B1 * X)	0.00157	0.00158	0.00149
	(A1 * A3 * !A4 * B1 * X)	-0.00141	-0.00140	-0.00140
	(A1 * !A3 * A4 * B1 * X)	0.00146	0.00147	0.00147
	(A1 * !A3 * A4 * B1 * X)	-0.00137	-0.00137	-0.00136
	(A1 * !A3 * A4 * !B1 * !X)	0.00146	0.00148	0.00146
	(A1 * !A3 * A4 * !B1 * !X)	-0.00146	-0.00146	-0.00145
	(A1 * !A3 * !A4 * B1 * X)	0.00146	0.00148	0.00146
	(A1 * !A3 * !A4 * B1 * X)	-0.00114	-0.00116	-0.00114
	(A1 * !A3 * !A4 * !B1 * !X)	0.00147	0.00148	0.00146
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00205	-0.00207	-0.00206
	(!A1 * A3 * A4 * B1 * X)	0.00147	0.00148	0.00146
	(!A1 * A3 * A4 * B1 * X)	-0.00202	-0.00208	-0.00208
	(!A1 * A3 * !B1 * !X)	0.00147	0.00148	0.00146
	(!A1 * A3 * !B1 * !X)	-0.00203	-0.00208	-0.00207
	(!A1 * A3 * !A4 * B1 * X)	0.00164	0.00148	0.00146
	(!A1 * A3 * !A4 * B1 * X)	-0.00185	-0.00208	-0.00208
	(!A1 * !A3 * A4 * B1 * X)	0.00155	0.00148	0.00146
	(!A1 * !A3 * A4 * B1 * X)	-0.00174	-0.00201	-0.00200
	(!A1 * !A3 * A4 * !B1 * !X)	0.00145	0.00148	0.00146
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00181	-0.00201	-0.00199
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00138	0.00139	0.00138
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00209	-0.00211	-0.00210

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	0.00167	0.00168	0.00166
	(A1 * A3 * A4 * B1 * X)	-0.00144	-0.00144	-0.00143
	(A1 * A3 * !B1 * !X)	0.00166	0.00168	0.00166
	(A1 * A3 * !B1 * !X)	-0.00145	-0.00146	-0.00146
	(A1 * A3 * !A4 * B1 * X)	0.00177	0.00179	0.00170
	(A1 * A3 * !A4 * B1 * X)	-0.00137	-0.00137	-0.00136
	(A1 * !A3 * A4 * B1 * X)	0.00166	0.00168	0.00167
	(A1 * !A3 * A4 * B1 * X)	-0.00135	-0.00135	-0.00134
	(A1 * !A3 * A4 * !B1 * !X)	0.00166	0.00169	0.00166
	(A1 * !A3 * A4 * !B1 * !X)	-0.00143	-0.00145	-0.00144
	(A1 * !A3 * !A4 * B1 * X)	0.00166	0.00168	0.00166
	(A1 * !A3 * !A4 * B1 * X)	-0.00114	-0.00115	-0.00114
	(A1 * !A3 * !A4 * !B1 * !X)	0.00168	0.00168	0.00166
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00206	-0.00207	-0.00207
	(!A1 * A3 * A4 * B1 * X)	0.00165	0.00168	0.00166
	(!A1 * A3 * A4 * B1 * X)	-0.00200	-0.00208	-0.00207
	(!A1 * A3 * !B1 * !X)	0.00165	0.00169	0.00166
	(!A1 * A3 * !B1 * !X)	-0.00200	-0.00208	-0.00207
	(!A1 * A3 * !A4 * B1 * X)	0.00181	0.00169	0.00166
	(!A1 * A3 * !A4 * B1 * X)	-0.00183	-0.00209	-0.00208
	(!A1 * !A3 * A4 * B1 * X)	0.00175	0.00169	0.00166
	(!A1 * !A3 * A4 * B1 * X)	-0.00174	-0.00201	-0.00199
	(!A1 * !A3 * A4 * !B1 * !X)	0.00165	0.00168	0.00166
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00181	-0.00200	-0.00199
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00158	0.00160	0.00159
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00210	-0.00211	-0.00210

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	0.00349	0.00353	0.00351
	(A1 * A3 * A4 * B1 * X)	-0.00285	-0.00286	-0.00285
	(A1 * A3 * !B1 * !X)	0.00348	0.00350	0.00347
	(A1 * A3 * !B1 * !X)	-0.00294	-0.00295	-0.00294
	(A1 * A3 * !A4 * B1 * X)	0.00359	0.00365	0.00354
	(A1 * A3 * !A4 * B1 * X)	-0.00270	-0.00271	-0.00270
	(A1 * !A3 * A4 * B1 * X)	0.00348	0.00353	0.00350
	(A1 * !A3 * A4 * B1 * X)	-0.00264	-0.00267	-0.00264
	(A1 * !A3 * A4 * !B1 * !X)	0.00345	0.00349	0.00347
	(A1 * !A3 * A4 * !B1 * !X)	-0.00285	-0.00287	-0.00285
	(A1 * !A3 * !A4 * B1 * X)	0.00347	0.00350	0.00348
	(A1 * !A3 * !A4 * B1 * X)	-0.00219	-0.00221	-0.00220
	(A1 * !A3 * !A4 * !B1 * !X)	0.00345	0.00350	0.00346
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00402	-0.00409	-0.00408
	(!A1 * A3 * A4 * B1 * X)	0.00351	0.00352	0.00347
	(!A1 * A3 * A4 * B1 * X)	-0.00390	-0.00407	-0.00407
	(!A1 * A3 * !B1 * !X)	0.00348	0.00350	0.00346
	(!A1 * A3 * !B1 * !X)	-0.00394	-0.00407	-0.00408
	(!A1 * A3 * !A4 * B1 * X)	0.00374	0.00352	0.00347
	(!A1 * A3 * !A4 * B1 * X)	-0.00365	-0.00409	-0.00408
	(!A1 * !A3 * A4 * B1 * X)	0.00362	0.00351	0.00347
	(!A1 * !A3 * A4 * B1 * X)	-0.00344	-0.00393	-0.00392
	(!A1 * !A3 * A4 * !B1 * !X)	0.00345	0.00350	0.00346
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00357	-0.00393	-0.00391
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00331	0.00334	0.00331
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00415	-0.00417	-0.00415

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)**	-0.00145	-0.00145	-0.00145
	(A1 * A3 * A4 * B1 * X)	0.00146	0.00147	0.00147
	(A1 * A3 * !B1 * !X)	-0.00146	-0.00146	-0.00146
	(A1 * A3 * !B1 * !X)	0.00150	0.00150	0.00149
	(A1 * A3 * !A4 * B1 * X)	-0.00145	-0.00145	-0.00145
	(A1 * A3 * !A4 * B1 * X)	0.00141	0.00140	0.00140
	(A1 * !A3 * A4 * B1 * X)	-0.00145	-0.00146	-0.00145
	(A1 * !A3 * A4 * B1 * X)	0.00137	0.00137	0.00136
	(A1 * !A3 * A4 * !B1 * !X)	-0.00146	-0.00146	-0.00146
	(A1 * !A3 * A4 * !B1 * !X)	0.00146	0.00146	0.00145
	(A1 * !A3 * !A4 * B1 * X)	-0.00140	-0.00140	-0.00139
	(A1 * !A3 * !A4 * B1 * X)	0.00121	0.00121	0.00121
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00145	-0.00146	-0.00146
	(A1 * !A3 * !A4 * !B1 * !X)	0.00206	0.00207	0.00206
	(!A1 * A3 * A4 * B1 * X)	-0.00145	-0.00146	-0.00145
	(!A1 * A3 * A4 * B1 * X)	0.00207	0.00208	0.00208
	(!A1 * A3 * !B1 * !X)	-0.00145	-0.00146	-0.00146
	(!A1 * A3 * !B1 * !X)	0.00207	0.00208	0.00207
	(!A1 * A3 * !A4 * B1 * X)	-0.00145	-0.00145	-0.00145
	(!A1 * A3 * !A4 * B1 * X)	0.00207	0.00208	0.00208
	(!A1 * !A3 * A4 * B1 * X)	-0.00145	-0.00146	-0.00145
	(!A1 * !A3 * A4 * B1 * X)	0.00200	0.00201	0.00200
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00145	-0.00146	-0.00146
	(!A1 * !A3 * A4 * !B1 * !X)	0.00200	0.00201	0.00199
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00130	-0.00139	-0.00138
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00211	0.00212	0.00211

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	-0.00166	-0.00166	-0.00166
	(A1 * A3 * A4 * B1 * X)	0.00144	0.00144	0.00143
	(A1 * A3 * !B1 * !X)	-0.00165	-0.00166	-0.00166
	(A1 * A3 * !B1 * !X)	0.00145	0.00146	0.00146
	(A1 * A3 * !A4 * B1 * X)	-0.00166	-0.00166	-0.00166
	(A1 * A3 * !A4 * B1 * X)	0.00137	0.00137	0.00136
	(A1 * !A3 * A4 * B1 * X)	-0.00166	-0.00166	-0.00166
	(A1 * !A3 * A4 * B1 * X)	0.00135	0.00135	0.00134
	(A1 * !A3 * A4 * !B1 * !X)	-0.00165	-0.00166	-0.00166
	(A1 * !A3 * A4 * !B1 * !X)	0.00143	0.00145	0.00144
	(A1 * !A3 * !A4 * B1 * X)	-0.00161	-0.00162	-0.00161
	(A1 * !A3 * !A4 * B1 * X)	0.00117	0.00119	0.00119
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00165	-0.00166	-0.00166
	(A1 * !A3 * !A4 * !B1 * !X)	0.00206	0.00207	0.00207
	(!A1 * A3 * A4 * B1 * X)	-0.00165	-0.00166	-0.00166
	(!A1 * A3 * A4 * B1 * X)	0.00206	0.00208	0.00207
	(!A1 * A3 * !B1 * !X)	-0.00165	-0.00166	-0.00166
	(!A1 * A3 * !B1 * !X)	0.00206	0.00208	0.00207
	(!A1 * A3 * !A4 * B1 * X)	-0.00165	-0.00166	-0.00166
	(!A1 * A3 * !A4 * B1 * X)	0.00206	0.00209	0.00208
	(!A1 * !A3 * A4 * B1 * X)	-0.00164	-0.00166	-0.00165
	(!A1 * !A3 * A4 * B1 * X)	0.00198	0.00201	0.00199
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00165	-0.00166	-0.00166
	(!A1 * !A3 * A4 * !B1 * !X)	0.00198	0.00200	0.00199
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00146	-0.00158	-0.00159
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00211	0.00212	0.00211

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	-0.00349	-0.00349	-0.00348
	(A1 * A3 * A4 * B1 * X)	0.00285	0.00286	0.00285
	(A1 * A3 * !B1 * !X)	-0.00346	-0.00347	-0.00346
	(A1 * A3 * !B1 * !X)	0.00294	0.00295	0.00294
	(A1 * A3 * !A4 * B1 * X)	-0.00348	-0.00349	-0.00348
	(A1 * A3 * !A4 * B1 * X)	0.00270	0.00271	0.00270
	(A1 * !A3 * A4 * B1 * X)	-0.00347	-0.00349	-0.00346
	(A1 * !A3 * A4 * B1 * X)	0.00264	0.00267	0.00264
	(A1 * !A3 * A4 * !B1 * !X)	-0.00345	-0.00347	-0.00345
	(A1 * !A3 * A4 * !B1 * !X)	0.00285	0.00287	0.00285
	(A1 * !A3 * !A4 * B1 * X)	-0.00338	-0.00339	-0.00336
	(A1 * !A3 * !A4 * B1 * X)	0.00228	0.00230	0.00231
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00344	-0.00346	-0.00345
	(A1 * !A3 * !A4 * !B1 * !X)	0.00406	0.00409	0.00408
	(!A1 * A3 * A4 * B1 * X)	-0.00345	-0.00346	-0.00346
	(!A1 * A3 * A4 * B1 * X)	0.00405	0.00407	0.00407
	(!A1 * A3 * !B1 * !X)	-0.00345	-0.00345	-0.00345
	(!A1 * A3 * !B1 * !X)	0.00406	0.00407	0.00408
	(!A1 * A3 * !A4 * B1 * X)	-0.00345	-0.00348	-0.00346
	(!A1 * A3 * !A4 * B1 * X)	0.00405	0.00411	0.00408
	(!A1 * !A3 * A4 * B1 * X)	-0.00344	-0.00346	-0.00344
	(!A1 * !A3 * A4 * B1 * X)	0.00389	0.00393	0.00392
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00345	-0.00347	-0.00345
	(!A1 * !A3 * A4 * !B1 * !X)	0.00389	0.00393	0.00391
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00313	-0.00334	-0.00331
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00418	0.00418	0.00417

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)**	0.00158	0.00158	0.00150
	(A2 * A4 * B1 * X)	-0.00131	-0.00131	-0.00131
	(A2 * A4 * !B1 * !X)	0.00145	0.00147	0.00145
	(A2 * A4 * !B1 * !X)	-0.00142	-0.00142	-0.00142
	(A2 * !A4 * B1 * X)	0.00146	0.00148	0.00146
	(A2 * !A4 * B1 * X)	-0.00108	-0.00109	-0.00109
	(A2 * !A4 * !B1 * !X)	0.00146	0.00146	0.00145
	(A2 * !A4 * !B1 * !X)	-0.00198	-0.00203	-0.00202
	(A1 * !A2 * A4 * B1 * X)	0.00167	0.00150	0.00146
	(A1 * !A2 * A4 * B1 * X)	-0.00131	-0.00136	-0.00135
	(A1 * !A2 * A4 * !B1 * !X)	0.00145	0.00147	0.00145
	(A1 * !A2 * A4 * !B1 * !X)	-0.00140	-0.00141	-0.00140
	(A1 * !A2 * !A4 * B1 * X)	0.00147	0.00149	0.00146
	(A1 * !A2 * !A4 * B1 * X)	-0.00107	-0.00108	-0.00108
	(A1 * !A2 * !A4 * !B1 * !X)	0.00144	0.00147	0.00145
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00176	-0.00194	-0.00192
	(!A1 * !A2 * A4 * B1 * X)	0.00187	0.00149	0.00146
	(!A1 * !A2 * A4 * B1 * X)	-0.00162	-0.00201	-0.00203
	(!A1 * !A2 * A4 * !B1 * !X)	0.00146	0.00147	0.00145
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00201	-0.00202	-0.00202
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00137	0.00138	0.00137
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00205	-0.00206	-0.00205

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00187	0.00187	0.00179
	(A2 * A4 * B1 * X)	-0.00133	-0.00133	-0.00133
	(A2 * A4 * !B1 * !X)	0.00168	0.00170	0.00168
	(A2 * A4 * !B1 * !X)	-0.00152	-0.00153	-0.00152
	(A2 * !A4 * B1 * X)	0.00176	0.00178	0.00176
	(A2 * !A4 * B1 * X)	-0.00110	-0.00111	-0.00111
	(A2 * !A4 * !B1 * !X)	0.00169	0.00170	0.00168
	(A2 * !A4 * !B1 * !X)	-0.00206	-0.00212	-0.00211
	(A1 * !A2 * A4 * B1 * X)	0.00194	0.00180	0.00176
	(A1 * !A2 * A4 * B1 * X)	-0.00134	-0.00138	-0.00136
	(A1 * !A2 * A4 * !B1 * !X)	0.00168	0.00171	0.00168
	(A1 * !A2 * A4 * !B1 * !X)	-0.00150	-0.00149	-0.00149
	(A1 * !A2 * !A4 * B1 * X)	0.00177	0.00179	0.00176
	(A1 * !A2 * !A4 * B1 * X)	-0.00109	-0.00110	-0.00110
	(A1 * !A2 * !A4 * !B1 * !X)	0.00167	0.00171	0.00168
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00185	-0.00201	-0.00201
	(!A1 * !A2 * A4 * B1 * X)	0.00219	0.00179	0.00176
	(!A1 * !A2 * A4 * B1 * X)	-0.00162	-0.00204	-0.00205
	(!A1 * !A2 * A4 * !B1 * !X)	0.00170	0.00170	0.00168
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00209	-0.00210	-0.00211
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00158	0.00160	0.00159
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00214	-0.00215	-0.00214

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00367	0.00363	0.00351
	(A2 * A4 * B1 * X)	-0.00265	-0.00268	-0.00266
	(A2 * A4 * !B1 * !X)	0.00342	0.00343	0.00341
	(A2 * A4 * !B1 * !X)	-0.00293	-0.00295	-0.00293
	(A2 * !A4 * B1 * X)	0.00347	0.00348	0.00345
	(A2 * !A4 * B1 * X)	-0.00215	-0.00216	-0.00216
	(A2 * !A4 * !B1 * !X)	0.00339	0.00345	0.00341
	(A2 * !A4 * !B1 * !X)	-0.00389	-0.00407	-0.00405
	(A1 * !A2 * A4 * B1 * X)	0.00382	0.00354	0.00347
	(A1 * !A2 * A4 * B1 * X)	-0.00263	-0.00273	-0.00271
	(A1 * !A2 * A4 * !B1 * !X)	0.00340	0.00343	0.00341
	(A1 * !A2 * A4 * !B1 * !X)	-0.00285	-0.00287	-0.00285
	(A1 * !A2 * !A4 * B1 * X)	0.00347	0.00350	0.00346
	(A1 * !A2 * !A4 * B1 * X)	-0.00212	-0.00215	-0.00215
	(A1 * !A2 * !A4 * !B1 * !X)	0.00340	0.00344	0.00341
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00356	-0.00384	-0.00383
	(!A1 * !A2 * A4 * B1 * X)	0.00422	0.00350	0.00344
	(!A1 * !A2 * A4 * B1 * X)	-0.00320	-0.00406	-0.00407
	(!A1 * !A2 * A4 * !B1 * !X)	0.00339	0.00345	0.00341
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00400	-0.00408	-0.00408
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00325	0.00328	0.00326
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00412	-0.00415	-0.00414

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)**	-0.00144	-0.00144	-0.00144
	(A2 * A4 * B1 * X)	0.00131	0.00131	0.00131
	(A2 * A4 * !B1 * !X)	-0.00144	-0.00145	-0.00145
	(A2 * A4 * !B1 * !X)	0.00142	0.00142	0.00142
	(A2 * !A4 * B1 * X)	-0.00143	-0.00144	-0.00142
	(A2 * !A4 * B1 * X)	0.00112	0.00113	0.00113
	(A2 * !A4 * !B1 * !X)	-0.00145	-0.00146	-0.00145
	(A2 * !A4 * !B1 * !X)	0.00202	0.00203	0.00202
	(A1 * !A2 * A4 * B1 * X)	-0.00144	-0.00144	-0.00144
	(A1 * !A2 * A4 * B1 * X)	0.00136	0.00136	0.00135
	(A1 * !A2 * A4 * !B1 * !X)	-0.00144	-0.00145	-0.00145
	(A1 * !A2 * A4 * !B1 * !X)	0.00140	0.00141	0.00140
	(A1 * !A2 * !A4 * B1 * X)	-0.00139	-0.00140	-0.00143
	(A1 * !A2 * !A4 * B1 * X)	0.00113	0.00114	0.00111
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00144	-0.00146	-0.00145
	(A1 * !A2 * !A4 * !B1 * !X)	0.00192	0.00194	0.00192
	(!A1 * !A2 * A4 * B1 * X)	-0.00143	-0.00144	-0.00143
	(!A1 * !A2 * A4 * B1 * X)	0.00202	0.00203	0.00204
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00144	-0.00145	-0.00145
	(!A1 * !A2 * A4 * !B1 * !X)	0.00201	0.00202	0.00202
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00129	-0.00138	-0.00137
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00206	0.00207	0.00206

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00174	-0.00175	-0.00175
	(A2 * A4 * B1 * X)	0.00133	0.00133	0.00133
	(A2 * A4 * !B1 * !X)	-0.00167	-0.00168	-0.00168
	(A2 * A4 * !B1 * !X)	0.00152	0.00153	0.00152
	(A2 * !A4 * B1 * X)	-0.00174	-0.00175	-0.00173
	(A2 * !A4 * B1 * X)	0.00114	0.00114	0.00114
	(A2 * !A4 * !B1 * !X)	-0.00167	-0.00168	-0.00168
	(A2 * !A4 * !B1 * !X)	0.00210	0.00212	0.00211
	(A1 * !A2 * A4 * B1 * X)	-0.00175	-0.00175	-0.00175
	(A1 * !A2 * A4 * B1 * X)	0.00137	0.00138	0.00136
	(A1 * !A2 * A4 * !B1 * !X)	-0.00168	-0.00168	-0.00168
	(A1 * !A2 * A4 * !B1 * !X)	0.00150	0.00149	0.00149
	(A1 * !A2 * !A4 * B1 * X)	-0.00171	-0.00172	-0.00173
	(A1 * !A2 * !A4 * B1 * X)	0.00113	0.00114	0.00113
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00167	-0.00168	-0.00168
	(A1 * !A2 * !A4 * !B1 * !X)	0.00202	0.00201	0.00201
	(!A1 * !A2 * A4 * B1 * X)	-0.00174	-0.00175	-0.00173
	(!A1 * !A2 * A4 * B1 * X)	0.00204	0.00206	0.00205
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00168	-0.00167	-0.00168
	(!A1 * !A2 * A4 * !B1 * !X)	0.00211	0.00210	0.00211
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00147	-0.00160	-0.00159
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00215	0.00216	0.00215

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	-0.00343	-0.00346	-0.00345
	(A2 * A4 * B1 * X)	0.00265	0.00268	0.00266
	(A2 * A4 * !B1 * !X)	-0.00340	-0.00342	-0.00340
	(A2 * A4 * !B1 * !X)	0.00293	0.00295	0.00293
	(A2 * !A4 * B1 * X)	-0.00340	-0.00342	-0.00339
	(A2 * !A4 * B1 * X)	0.00222	0.00224	0.00225
	(A2 * !A4 * !B1 * !X)	-0.00339	-0.00342	-0.00340
	(A2 * !A4 * !B1 * !X)	0.00403	0.00407	0.00405
	(A1 * !A2 * A4 * B1 * X)	-0.00344	-0.00345	-0.00343
	(A1 * !A2 * A4 * B1 * X)	0.00271	0.00273	0.00271
	(A1 * !A2 * A4 * !B1 * !X)	-0.00340	-0.00341	-0.00340
	(A1 * !A2 * A4 * !B1 * !X)	0.00285	0.00287	0.00285
	(A1 * !A2 * !A4 * B1 * X)	-0.00329	-0.00332	-0.00338
	(A1 * !A2 * !A4 * B1 * X)	0.00225	0.00227	0.00221
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00339	-0.00341	-0.00340
	(A1 * !A2 * !A4 * !B1 * !X)	0.00381	0.00384	0.00383
	(!A1 * !A2 * A4 * B1 * X)	-0.00341	-0.00341	-0.00339
	(!A1 * !A2 * A4 * B1 * X)	0.00406	0.00408	0.00408
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00339	-0.00340	-0.00340
	(!A1 * !A2 * A4 * !B1 * !X)	0.00406	0.00408	0.00408
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00306	-0.00328	-0.00326
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00416	0.00416	0.00415

Passive power(pJ) for A4 rising (conditional):

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

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	0.00166	0.00168	0.00166
	(A3 * B1 * X)	-0.00097	-0.00098	-0.00097
	(A3 * !B1 * !X)	0.00147	0.00148	0.00147
	(A3 * !B1 * !X)	-0.00200	-0.00206	-0.00205
	(A2 * !A3 * B1 * X)	0.00166	0.00168	0.00166
	(A2 * !A3 * B1 * X)	-0.00097	-0.00098	-0.00097
	(A2 * !A3 * !B1 * !X)	0.00147	0.00149	0.00147
	(A2 * !A3 * !B1 * !X)	-0.00182	-0.00199	-0.00197
	(A1 * !A2 * !A3 * B1 * X)	0.00166	0.00168	0.00166
	(A1 * !A2 * !A3 * B1 * X)	-0.00097	-0.00098	-0.00097
	(A1 * !A2 * !A3 * !B1 * !X)	0.00147	0.00149	0.00147
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00179	-0.00192	-0.00192
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00140	0.00140	0.00139
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00209	-0.00209	-0.00208
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	0.00185	0.00187	0.00185
	(A3 * B1 * X)	-0.00098	-0.00099	-0.00098
	(A3 * !B1 * !X)	0.00167	0.00170	0.00168
	(A3 * !B1 * !X)	-0.00199	-0.00205	-0.00205
	(A2 * !A3 * B1 * X)	0.00185	0.00187	0.00185
	(A2 * !A3 * B1 * X)	-0.00098	-0.00099	-0.00098
	(A2 * !A3 * !B1 * !X)	0.00167	0.00170	0.00168
	(A2 * !A3 * !B1 * !X)	-0.00182	-0.00198	-0.00196
	(A1 * !A2 * !A3 * B1 * X)	0.00185	0.00187	0.00185
	(A1 * !A2 * !A3 * B1 * X)	-0.00098	-0.00099	-0.00098
	(A1 * !A2 * !A3 * !B1 * !X)	0.00167	0.00170	0.00168
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00178	-0.00192	-0.00192
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00159	0.00160	0.00158
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00208	-0.00208	-0.00207

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	0.00314	0.00317	0.00314
	(A3 * B1 * X)	-0.00198	-0.00200	-0.00198
	(A3 * !B1 * !X)	0.00281	0.00283	0.00280
	(A3 * !B1 * !X)	-0.00400	-0.00409	-0.00410
	(A2 * !A3 * B1 * X)	0.00314	0.00317	0.00314
	(A2 * !A3 * B1 * X)	-0.00197	-0.00199	-0.00197
	(A2 * !A3 * !B1 * !X)	0.00279	0.00284	0.00280
	(A2 * !A3 * !B1 * !X)	-0.00360	-0.00395	-0.00391
	(A1 * !A2 * !A3 * B1 * X)	0.00315	0.00317	0.00314
	(A1 * !A2 * !A3 * B1 * X)	-0.00197	-0.00199	-0.00197
	(A1 * !A2 * !A3 * !B1 * !X)	0.00279	0.00283	0.00280
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00352	-0.00380	-0.00379
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00264	0.00264	0.00262
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00419	-0.00420	-0.00418

Passive power(pJ) for A4 falling (conditional):

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

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	-0.00160	-0.00161	-0.00165
	(A3 * B1 * X)	0.00103	0.00104	0.00100
	(A3 * !B1 * !X)	-0.00147	-0.00148	-0.00147
	(A3 * !B1 * !X)	0.00205	0.00206	0.00205
	(A2 * !A3 * B1 * X)	-0.00151	-0.00152	-0.00163
	(A2 * !A3 * B1 * X)	0.00108	0.00108	0.00100
	(A2 * !A3 * !B1 * !X)	-0.00147	-0.00149	-0.00147
	(A2 * !A3 * !B1 * !X)	0.00197	0.00199	0.00197
	(A1 * !A2 * !A3 * B1 * X)	-0.00140	-0.00141	-0.00161
	(A1 * !A2 * !A3 * B1 * X)	0.00115	0.00115	0.00101
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00146	-0.00147	-0.00147
	(A1 * !A2 * !A3 * !B1 * !X)	0.00191	0.00192	0.00192
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00130	-0.00140	-0.00139
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00209	0.00211	0.00209
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	-0.00178	-0.00179	-0.00184
	(A3 * B1 * X)	0.00105	0.00105	0.00100
	(A3 * !B1 * !X)	-0.00167	-0.00168	-0.00167
	(A3 * !B1 * !X)	0.00204	0.00205	0.00205
	(A2 * !A3 * B1 * X)	-0.00170	-0.00171	-0.00182
	(A2 * !A3 * B1 * X)	0.00109	0.00109	0.00100
	(A2 * !A3 * !B1 * !X)	-0.00166	-0.00168	-0.00167
	(A2 * !A3 * !B1 * !X)	0.00195	0.00198	0.00196
	(A1 * !A2 * !A3 * B1 * X)	-0.00159	-0.00160	-0.00180
	(A1 * !A2 * !A3 * B1 * X)	0.00115	0.00115	0.00102
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00167	-0.00168	-0.00167
	(A1 * !A2 * !A3 * !B1 * !X)	0.00191	0.00192	0.00192
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00147	-0.00160	-0.00158
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00208	0.00210	0.00208

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	-0.00299	-0.00301	-0.00311
	(A3 * B1 * X)	0.00212	0.00213	0.00203
	(A3 * !B1 * !X)	-0.00280	-0.00278	-0.00279
	(A3 * !B1 * !X)	0.00411	0.00409	0.00410
	(A2 * !A3 * B1 * X)	-0.00278	-0.00280	-0.00307
	(A2 * !A3 * B1 * X)	0.00223	0.00224	0.00203
	(A2 * !A3 * !B1 * !X)	-0.00278	-0.00283	-0.00279
	(A2 * !A3 * !B1 * !X)	0.00388	0.00395	0.00391
	(A1 * !A2 * !A3 * B1 * X)	-0.00255	-0.00257	-0.00302
	(A1 * !A2 * !A3 * B1 * X)	0.00236	0.00236	0.00206
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00278	-0.00280	-0.00279
	(A1 * !A2 * !A3 * !B1 * !X)	0.00377	0.00380	0.00379
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00244	-0.00264	-0.00262
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00420	0.00423	0.00419

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)**	0.00056	0.00056	0.00051
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00201	-0.00201	-0.00211
sky130_fd_sc_hs__o41a_2	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.00062	0.00062	0.00057
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00230	-0.00231	-0.00241
sky130_fd_sc_hs__o41a_4	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.00104	0.00104	0.00094
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00382	-0.00382	-0.00400

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)	-0.00049	-0.00050	-0.00049
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00212	0.00215	0.00212
sky130_fd_sc_hs__o41a_2	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00054	-0.00056	-0.00054
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00242	0.00246	0.00243
sky130_fd_sc_hs__o41a_4	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00090	-0.00092	-0.00090
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00402	0.00409	0.00403

SKY130_FD_SC_HS__OR2Bx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00253	0.00237	1.21365
sky130_fd_sc_hs__or2b_2	0.00263	0.00229	2.00522
sky130_fd_sc_hs__or2b_4	0.00500	0.00284	4.39088

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2b_1	0.00000	0.31962	0.52899
sky130_fd_sc_hs__or2b_2	0.00000	0.34740	0.61783
sky130_fd_sc_hs__or2b_4	0.00000	0.35035	0.54501

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)	0.05867	0.53219	6.05037
	B_N->X (FR)	0.10459	0.71062	8.13178
sky130_fd_sc_hs__or2b_2	A->X (RR)	0.05816	0.44762	5.64920
	B_N->X (FR)	0.11425	0.64037	7.93155
sky130_fd_sc_hs__or2b_4	A->X (RR)	0.05376	0.35883	5.85426
	B_N->X (FR)	0.11894	0.58553	8.18372

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2b_1	A->X (FF)	0.10605	0.51217	4.70153
	B_N->X (RF)	0.11146	0.34391	2.34076
sky130_fd_sc_hs__or2b_2	A->X (FF)	0.13926	0.52841	4.46152
	B_N->X (RF)	0.15052	0.34483	1.88735
sky130_fd_sc_hs__or2b_4	A->X (FF)	0.13756	0.49618	4.82332
	B_N->X (RF)	0.14400	0.32988	2.18410

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.00829	0.00897	0.03019
	A	0.00421	0.00491	0.02655
	B_N	0.00742	0.01028	0.05751
	B_N	0.01091	0.01377	0.06112
sky130_fd_sc_hs__or2b_2	A	0.01158	0.01295	0.03365
	A	0.00725	0.00864	0.02978
	B_N	0.01067	0.01375	0.05762
	B_N	0.01412	0.01721	0.06163
sky130_fd_sc_hs__or2b_4	A	0.02213	0.02522	0.08171
	A	0.01409	0.01719	0.07398
	B_N	0.02022	0.02400	0.07635
	B_N	0.02408	0.02794	0.08059

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.00476	0.00555	0.02619
	A	0.00883	0.00953	0.02974
	B_N	0.01080	0.01287	0.06013
	B_N	0.00732	0.00934	0.05642
sky130_fd_sc_hs__or2b_2	A	0.00777	0.00819	0.03232
	A	0.01210	0.01251	0.03536
	B_N	0.01469	0.01597	0.05707
	B_N	0.01123	0.01250	0.05347
sky130_fd_sc_hs__or2b_4	A	0.01588	0.01720	0.07007
	A	0.02395	0.02505	0.07779
	B_N	0.02467	0.02698	0.07932
	B_N	0.02081	0.02309	0.07495

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	0.00177	0.00151	0.00148
	(!B_N * X)	-0.00172	-0.00201	-0.00202
sky130_fd_sc_hs__or2b_2	(!B_N * X)	0.00190	0.00163	0.00160
	(!B_N * X)	-0.00181	-0.00212	-0.00212
sky130_fd_sc_hs__or2b_4	(!B_N * X)	0.00370	0.00316	0.00308
	(!B_N * X)	-0.00327	-0.00388	-0.00391

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	-0.00146	-0.00147	-0.00146
	(!B_N * X)	0.00202	0.00203	0.00203
sky130_fd_sc_hs__or2b_2	(!B_N * X)	-0.00158	-0.00159	-0.00158
	(!B_N * X)	0.00211	0.00214	0.00213
sky130_fd_sc_hs__or2b_4	(!B_N * X)	-0.00305	-0.00308	-0.00305
	(!B_N * X)	0.00389	0.00395	0.00392

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00467	0.00655	0.05167
	(A * X)	0.00067	0.00253	0.04766
sky130_fd_sc_hs__or2b_2	(A * X)	0.00496	0.00672	0.05075
	(A * X)	0.00096	0.00270	0.04674
sky130_fd_sc_hs__or2b_4	(A * X)	0.00634	0.00790	0.05582
	(A * X)	0.00163	0.00318	0.05112

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00129	0.00403	0.04934
	(A * X)	0.00528	0.00804	0.05334
sky130_fd_sc_hs__or2b_2	(A * X)	0.00130	0.00395	0.04826
	(A * X)	0.00529	0.00796	0.05226
sky130_fd_sc_hs__or2b_4	(A * X)	0.00349	0.00588	0.05386
	(A * X)	0.00817	0.01059	0.05856

SKY130_FD_SC_HS__OR2x

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00230	0.00220	1.19984
sky130_fd_sc_hs__or2_2	0.00284	0.00249	2.02485
sky130_fd_sc_hs__or2_4	0.00453	0.00394	4.34420

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2_1	0.00000	0.17430	0.45106
sky130_fd_sc_hs__or2_2	0.00000	0.12347	0.21147
sky130_fd_sc_hs__or2_4	0.00000	0.24043	0.42295

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)	0.05628	0.52224	5.94044
	B->X (RR)	0.05212	0.50709	5.94849
sky130_fd_sc_hs__or2_2	A->X (RR)	0.05921	0.44949	5.68437
	B->X (RR)	0.05411	0.43387	5.64759
sky130_fd_sc_hs__or2_4	A->X (RR)	0.07719	0.43685	6.35574
	B->X (RR)	0.06498	0.40499	6.28383

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2_1	A->X (FF)	0.11382	0.52498	4.71727
	B->X (FF)	0.09857	0.52027	4.84708
sky130_fd_sc_hs__or2_2	A->X (FF)	0.13760	0.52667	4.43863
	B->X (FF)	0.11941	0.52697	4.56926
sky130_fd_sc_hs__or2_4	A->X (FF)	0.12723	0.48442	4.52252
	B->X (FF)	0.10881	0.47865	4.62753

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.00887	0.00964	0.03147
	A	0.00417	0.00494	0.02724
	B	0.00745	0.00884	0.04033
	B	0.00357	0.00497	0.03693
sky130_fd_sc_hs__or2_2	A	0.01278	0.01383	0.03382
	A	0.00712	0.00818	0.02857
	B	0.01080	0.01244	0.03845
	B	0.00632	0.00797	0.03441
sky130_fd_sc_hs__or2_4	A	0.02324	0.02478	0.06486
	A	0.01396	0.01563	0.05664
	B	0.01855	0.02115	0.07591
	B	0.01178	0.01440	0.07053

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.00352	0.00436	0.02610
	A	0.00823	0.00904	0.02999
	B	0.00333	0.00548	0.04089
	B	0.00721	0.00929	0.04449
sky130_fd_sc_hs__or2_2	A	0.00617	0.00655	0.02862
	A	0.01183	0.01222	0.03342
	B	0.00610	0.00776	0.04318
	B	0.01059	0.01223	0.04669
sky130_fd_sc_hs__or2_4	A	0.01359	0.01452	0.05249
	A	0.02291	0.02381	0.05970
	B	0.01356	0.01691	0.07774
	B	0.02029	0.02364	0.08372

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	0.00174	0.00151	0.00146
	(B * X)	-0.00125	-0.00152	-0.00153
sky130_fd_sc_hs__or2_2	(B * X)	0.00210	0.00183	0.00179
	(B * X)	-0.00149	-0.00181	-0.00182
sky130_fd_sc_hs__or2_4	(B * X)	0.00280	0.00223	0.00216
	(B * X)	-0.00305	-0.00369	-0.00373

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	-0.00144	-0.00145	-0.00144
	(B * X)	0.00154	0.00155	0.00155
sky130_fd_sc_hs__or2_2	(B * X)	-0.00178	-0.00179	-0.00178
	(B * X)	0.00182	0.00183	0.00182
sky130_fd_sc_hs__or2_4	(B * X)	-0.00213	-0.00214	-0.00213
	(B * X)	0.00371	0.00375	0.00374

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	0.00156	0.00158	0.00157
	(A * X)	-0.00072	-0.00073	-0.00072
sky130_fd_sc_hs__or2_2	(A * X)	0.00168	0.00170	0.00168
	(A * X)	-0.00089	-0.00090	-0.00089
sky130_fd_sc_hs__or2_4	(A * X)	0.00197	0.00198	0.00197
	(A * X)	-0.00180	-0.00181	-0.00180

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	-0.00152	-0.00153	-0.00156
	(A * X)	0.00076	0.00077	0.00074
sky130_fd_sc_hs__or2_2	(A * X)	-0.00163	-0.00164	-0.00168
	(A * X)	0.00094	0.00094	0.00091
sky130_fd_sc_hs__or2_4	(A * X)	-0.00184	-0.00185	-0.00195
	(A * X)	0.00192	0.00192	0.00183

SKY130_FD_SC_HS__OR3Bx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00248	0.00270	0.00229	1.20315
sky130_fd_sc_hs__or3b_2	0.00264	0.00256	0.00228	2.02467
sky130_fd_sc_hs__or3b_4	0.00466	0.00426	0.00266	4.37748

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or3b_1	0.00000	0.28540	0.53322
sky130_fd_sc_hs__or3b_2	0.00000	0.30375	0.62805
sky130_fd_sc_hs__or3b_4	0.00000	0.25817	0.52644

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)	0.06453	0.55592	6.03467
	B->X (RR)	0.06302	0.54386	5.94063
	C_N->X (FR)	0.10784	0.71368	8.09988
sky130_fd_sc_hs__or3b_2	A->X (RR)	0.06311	0.46949	5.71698
	B->X (RR)	0.06135	0.45833	5.63136
	C_N->X (FR)	0.11531	0.64275	7.96308
sky130_fd_sc_hs__or3b_4	A->X (RR)	0.08271	0.45796	6.38144
	B->X (RR)	0.07812	0.43962	6.27326
	C_N->X (FR)	0.13245	0.59840	8.23912

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3b_1	A->X (FF)	0.17223	0.58965	4.82350
	B->X (FF)	0.16127	0.60403	5.05389
	C_N->X (RF)	0.15455	0.40397	2.38607
sky130_fd_sc_hs__or3b_2	A->X (FF)	0.22048	0.61830	4.69120
	B->X (FF)	0.20461	0.63367	4.91634
	C_N->X (RF)	0.20010	0.42404	2.07889
sky130_fd_sc_hs__or3b_4	A->X (FF)	0.19340	0.55304	4.67364
	B->X (FF)	0.17795	0.56301	4.88704
	C_N->X (RF)	0.17288	0.36800	2.27665

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.01028	0.01074	0.03001
	A	0.00510	0.00555	0.02529
	B	0.00882	0.00961	0.02895
	B	0.00427	0.00508	0.02487
	C_N	0.00767	0.01061	0.05758
	C_N	0.01064	0.01359	0.06069
sky130_fd_sc_hs__or3b_2	A	0.01361	0.01428	0.03291
	A	0.00826	0.00896	0.02788
	B	0.01184	0.01324	0.03148
	B	0.00743	0.00884	0.02755
	C_N	0.01068	0.01386	0.05688
	C_N	0.01386	0.01706	0.06052
sky130_fd_sc_hs__or3b_4	A	0.02539	0.02639	0.06353
	A	0.01602	0.01705	0.05520
	B	0.02135	0.02327	0.06037
	B	0.01416	0.01621	0.05461
	C_N	0.01852	0.02235	0.07259
	C_N	0.02215	0.02608	0.07644

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.00569	0.00574	0.02483
	A	0.01091	0.01095	0.02949
	B	0.00549	0.00593	0.02683
	B	0.01004	0.01047	0.03126
	C_N	0.01173	0.01360	0.06004
	C_N	0.00875	0.01064	0.05688
sky130_fd_sc_hs__or3b_2	A	0.00893	0.00813	0.02790
	A	0.01431	0.01351	0.03265
	B	0.00874	0.00845	0.03106
	B	0.01317	0.01287	0.03386
	C_N	0.01563	0.01651	0.05715
	C_N	0.01245	0.01323	0.05366
sky130_fd_sc_hs__or3b_4	A	0.01708	0.01626	0.05104
	A	0.02654	0.02568	0.05832
	B	0.01702	0.01781	0.05410
	B	0.02420	0.02418	0.06101
	C_N	0.02538	0.02642	0.07677
	C_N	0.02175	0.02280	0.07285

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)	0.00156	0.00143	0.00141
	(B * C_N * X)	-0.00169	-0.00186	-0.00186
	(B * !C_N * X)	0.00141	0.00143	0.00141
	(B * !C_N * X)	-0.00182	-0.00186	-0.00185
	(!B * !C_N * X)	0.00149	0.00142	0.00141
	(!B * !C_N * X)	-0.00163	-0.00181	-0.00181
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	0.00179	0.00167	0.00165
	(B * C_N * X)	-0.00169	-0.00187	-0.00187
	(B * !C_N * X)	0.00158	0.00160	0.00158
	(B * !C_N * X)	-0.00190	-0.00193	-0.00193
	(!B * !C_N * X)	0.00166	0.00160	0.00158
	(!B * !C_N * X)	-0.00169	-0.00189	-0.00188
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	0.00265	0.00242	0.00239
	(B * C_N * X)	-0.00336	-0.00369	-0.00368
	(B * !C_N * X)	0.00215	0.00216	0.00214
	(B * !C_N * X)	-0.00384	-0.00394	-0.00392
	(!B * !C_N * X)	0.00229	0.00217	0.00214
	(!B * !C_N * X)	-0.00348	-0.00385	-0.00385

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)	-0.00140	-0.00140	-0.00140
	(B * C_N * X)	0.00185	0.00187	0.00186
	(B * !C_N * X)	-0.00140	-0.00141	-0.00141
	(B * !C_N * X)	0.00185	0.00186	0.00185
	(!B * !C_N * X)	-0.00140	-0.00141	-0.00140
	(!B * !C_N * X)	0.00180	0.00181	0.00181
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	-0.00163	-0.00164	-0.00164
	(B * C_N * X)	0.00187	0.00188	0.00187
	(B * !C_N * X)	-0.00158	-0.00158	-0.00158
	(B * !C_N * X)	0.00192	0.00193	0.00193
	(!B * !C_N * X)	-0.00157	-0.00158	-0.00157
	(!B * !C_N * X)	0.00187	0.00189	0.00188
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	-0.00238	-0.00239	-0.00239
	(B * C_N * X)	0.00367	0.00369	0.00368
	(B * !C_N * X)	-0.00214	-0.00215	-0.00214
	(B * !C_N * X)	0.00391	0.00394	0.00392
	(!B * !C_N * X)	-0.00212	-0.00213	-0.00212
	(!B * !C_N * X)	0.00382	0.00385	0.00385

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)	0.00170	0.00171	0.00169
	(A * C_N * X)	-0.00103	-0.00104	-0.00104
	(A * !C_N * X)	0.00164	0.00165	0.00156
	(A * !C_N * X)	-0.00142	-0.00143	-0.00143
	(!A * !C_N * X)	0.00188	0.00153	0.00149
	(!A * !C_N * X)	-0.00164	-0.00205	-0.00205
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	0.00174	0.00176	0.00173
	(A * C_N * X)	-0.00096	-0.00097	-0.00097
	(A * !C_N * X)	0.00158	0.00161	0.00152
	(A * !C_N * X)	-0.00147	-0.00147	-0.00146
	(!A * !C_N * X)	0.00185	0.00148	0.00145
	(!A * !C_N * X)	-0.00168	-0.00207	-0.00207
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	0.00218	0.00220	0.00216
	(A * C_N * X)	-0.00203	-0.00204	-0.00204
	(A * !C_N * X)	0.00211	0.00214	0.00196
	(A * !C_N * X)	-0.00284	-0.00285	-0.00283
	(!A * !C_N * X)	0.00254	0.00182	0.00177
	(!A * !C_N * X)	-0.00332	-0.00408	-0.00407

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)	-0.00166	-0.00166	-0.00166
	(A * C_N * X)	0.00108	0.00108	0.00108
	(A * !C_N * X)	-0.00149	-0.00149	-0.00149
	(A * !C_N * X)	0.00142	0.00143	0.00143
	(!A * !C_N * X)	-0.00148	-0.00149	-0.00148
	(!A * !C_N * X)	0.00205	0.00207	0.00207
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	-0.00170	-0.00171	-0.00170
	(A * C_N * X)	0.00100	0.00100	0.00101
	(A * !C_N * X)	-0.00145	-0.00145	-0.00144
	(A * !C_N * X)	0.00147	0.00147	0.00146
	(!A * !C_N * X)	-0.00143	-0.00143	-0.00143
	(!A * !C_N * X)	0.00207	0.00207	0.00208
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	-0.00212	-0.00213	-0.00211
	(A * C_N * X)	0.00209	0.00210	0.00210
	(A * !C_N * X)	-0.00180	-0.00181	-0.00180
	(A * !C_N * X)	0.00284	0.00285	0.00283
	(!A * !C_N * X)	-0.00175	-0.00175	-0.00174
	(!A * !C_N * X)	0.00407	0.00410	0.00410

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00454	0.00649	0.05136
	(B * X)	0.00066	0.00258	0.04746
	(A * !B * X)	0.00461	0.00656	0.05141
	(A * !B * X)	0.00069	0.00261	0.04748
sky130_fd_sc_hs__or3b_2	(B * X)	0.00509	0.00687	0.05088
	(B * X)	0.00107	0.00283	0.04684
	(A * !B * X)	0.00517	0.00694	0.05093
	(A * !B * X)	0.00109	0.00285	0.04685
sky130_fd_sc_hs__or3b_4	(B * X)	0.00644	0.00823	0.05580
	(B * X)	0.00162	0.00339	0.05097
	(A * !B * X)	0.00660	0.00839	0.05591
	(A * !B * X)	0.00168	0.00343	0.05099

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00107	0.00384	0.04895
	(B * X)	0.00494	0.00773	0.05284
	(A * !B * X)	0.00106	0.00384	0.04895
	(A * !B * X)	0.00495	0.00774	0.05284
sky130_fd_sc_hs__or3b_2	(B * X)	0.00115	0.00380	0.04810
	(B * X)	0.00516	0.00784	0.05212
	(A * !B * X)	0.00115	0.00380	0.04809
	(A * !B * X)	0.00517	0.00784	0.05213
sky130_fd_sc_hs__or3b_4	(B * X)	0.00150	0.00404	0.05171
	(B * X)	0.00632	0.00887	0.05653
	(A * !B * X)	0.00150	0.00404	0.05171
	(A * !B * X)	0.00634	0.00889	0.05654

SKY130_FD_SC_HS__OR3x

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00257	0.00254	0.00249	1.22800
sky130_fd_sc_hs__or3_2	0.00261	0.00264	0.00271	2.34666
sky130_fd_sc_hs__or3_4	0.00487	0.00433	0.00423	4.35921

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__or3_1	0.00000	0.06146	0.20404
sky130_fd_sc_hs__or3_2	0.00000	0.07982	0.21147
sky130_fd_sc_hs__or3_4	0.00000	0.15475	0.42295

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)	0.06436	0.55421	6.04439
	B->X (RR)	0.06267	0.54100	5.95061
	C->X (RR)	0.05748	0.52106	5.93170
sky130_fd_sc_hs__or3_2	A->X (RR)	0.06199	0.46170	5.98938
	B->X (RR)	0.06006	0.44927	5.89690
	C->X (RR)	0.05595	0.43457	5.87439
sky130_fd_sc_hs__or3_4	A->X (RR)	0.08313	0.45792	6.35524
	B->X (RR)	0.07842	0.43968	6.24512
	C->X (RR)	0.06975	0.41606	6.21557

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3_1	A->X (FF)	0.17567	0.59759	4.89104
	B->X (FF)	0.16125	0.60905	5.11335
	C->X (FF)	0.13238	0.59457	5.08494
sky130_fd_sc_hs__or3_2	A->X (FF)	0.21371	0.62118	5.04360
	B->X (FF)	0.19795	0.63785	5.27460
	C->X (FF)	0.17162	0.62892	5.26918
sky130_fd_sc_hs__or3_4	A->X (FF)	0.19325	0.55413	4.65788
	B->X (FF)	0.17740	0.56351	4.87107
	C->X (FF)	0.14607	0.54443	4.83257

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.01202	0.01239	0.03254
	A	0.00535	0.00573	0.02634
	B	0.01010	0.01094	0.03114
	B	0.00451	0.00535	0.02602
	C	0.00821	0.00935	0.03582
	C	0.00350	0.00474	0.03160
sky130_fd_sc_hs__or3_2	A	0.01497	0.01571	0.03850
	A	0.00826	0.00900	0.03274
	B	0.01293	0.01438	0.03675
	B	0.00724	0.00870	0.03203
	C	0.01117	0.01268	0.04105
	C	0.00632	0.00786	0.03622
sky130_fd_sc_hs__or3_4	A	0.02798	0.02912	0.06611
	A	0.01605	0.01726	0.05526
	B	0.02341	0.02535	0.06235
	B	0.01415	0.01620	0.05463
	C	0.01920	0.02151	0.06948
	C	0.01171	0.01420	0.06359

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.00429	0.00433	0.02379
	A	0.01101	0.01105	0.02973
	B	0.00433	0.00483	0.02576
	B	0.00995	0.01044	0.03137
	C	0.00423	0.00576	0.03478
	C	0.00895	0.01047	0.03939
sky130_fd_sc_hs__or3_2	A	0.00793	0.00738	0.02791
	A	0.01469	0.01413	0.03464
	B	0.00792	0.00788	0.03308
	B	0.01363	0.01360	0.03598
	C	0.00779	0.00878	0.04175
	C	0.01265	0.01362	0.04409
sky130_fd_sc_hs__or3_4	A	0.01455	0.01379	0.04828
	A	0.02660	0.02582	0.05836
	B	0.01505	0.01563	0.05329
	B	0.02438	0.02416	0.06133
	C	0.01471	0.01659	0.06972
	C	0.02221	0.02406	0.07569

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	0.00153	0.00154	0.00152
	(B * C * X)	-0.00179	-0.00185	-0.00184
	(B * !C * X)	0.00163	0.00154	0.00152
	(B * !C * X)	-0.00168	-0.00184	-0.00184
	(!B * C * X)	0.00159	0.00154	0.00152
	(!B * C * X)	-0.00160	-0.00179	-0.00179
sky130_fd_sc_hs__or3_2	(B * C * X)	0.00160	0.00162	0.00160
	(B * C * X)	-0.00181	-0.00187	-0.00186
	(B * !C * X)	0.00172	0.00162	0.00160
	(B * !C * X)	-0.00171	-0.00186	-0.00186
	(!B * C * X)	0.00168	0.00162	0.00160
	(!B * C * X)	-0.00162	-0.00181	-0.00181
sky130_fd_sc_hs__or3_4	(B * C * X)	0.00254	0.00255	0.00252
	(B * C * X)	-0.00358	-0.00370	-0.00367
	(B * !C * X)	0.00272	0.00255	0.00252
	(B * !C * X)	-0.00339	-0.00368	-0.00368
	(!B * C * X)	0.00267	0.00255	0.00252
	(!B * C * X)	-0.00321	-0.00361	-0.00358

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	-0.00152	-0.00153	-0.00152
	(B * C * X)	0.00184	0.00185	0.00184
	(B * !C * X)	-0.00152	-0.00153	-0.00152
	(B * !C * X)	0.00185	0.00185	0.00184
	(!B * C * X)	-0.00151	-0.00152	-0.00152
	(!B * C * X)	0.00178	0.00179	0.00179
sky130_fd_sc_hs__or3_2	(B * C * X)	-0.00160	-0.00161	-0.00160
	(B * C * X)	0.00185	0.00187	0.00186
	(B * !C * X)	-0.00160	-0.00161	-0.00160
	(B * !C * X)	0.00186	0.00187	0.00186
	(!B * C * X)	-0.00159	-0.00160	-0.00159
	(!B * C * X)	0.00180	0.00181	0.00181
sky130_fd_sc_hs__or3_4	(B * C * X)	-0.00251	-0.00253	-0.00252
	(B * C * X)	0.00366	0.00370	0.00367
	(B * !C * X)	-0.00251	-0.00252	-0.00252
	(B * !C * X)	0.00366	0.00368	0.00368
	(!B * C * X)	-0.00250	-0.00252	-0.00250
	(!B * C * X)	0.00356	0.00361	0.00358

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	0.00157	0.00158	0.00149
	(A * C * X)	-0.00120	-0.00120	-0.00119
	(A * !C * X)	0.00143	0.00144	0.00142
	(A * !C * X)	-0.00097	-0.00098	-0.00098
	(!A * C * X)	0.00181	0.00144	0.00141
	(!A * C * X)	-0.00142	-0.00180	-0.00181
sky130_fd_sc_hs__or3_2	(A * C * X)	0.00159	0.00161	0.00152
	(A * C * X)	-0.00131	-0.00131	-0.00131
	(A * !C * X)	0.00148	0.00148	0.00145
	(A * !C * X)	-0.00110	-0.00110	-0.00110
	(!A * C * X)	0.00185	0.00149	0.00145
	(!A * C * X)	-0.00154	-0.00193	-0.00193
sky130_fd_sc_hs__or3_4	(A * C * X)	0.00212	0.00213	0.00196
	(A * C * X)	-0.00248	-0.00248	-0.00246
	(A * !C * X)	0.00183	0.00184	0.00180
	(A * !C * X)	-0.00205	-0.00206	-0.00206
	(!A * C * X)	0.00256	0.00183	0.00178
	(!A * C * X)	-0.00296	-0.00375	-0.00376

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	-0.00142	-0.00142	-0.00141
	(A * C * X)	0.00120	0.00120	0.00119
	(A * !C * X)	-0.00140	-0.00140	-0.00139
	(A * !C * X)	0.00101	0.00101	0.00101
	(!A * C * X)	-0.00140	-0.00140	-0.00139
	(!A * C * X)	0.00180	0.00182	0.00182
sky130_fd_sc_hs__or3_2	(A * C * X)	-0.00145	-0.00145	-0.00144
	(A * C * X)	0.00131	0.00131	0.00131
	(A * !C * X)	-0.00143	-0.00144	-0.00143
	(A * !C * X)	0.00112	0.00113	0.00113
	(!A * C * X)	-0.00143	-0.00144	-0.00143
	(!A * C * X)	0.00192	0.00194	0.00194
sky130_fd_sc_hs__or3_4	(A * C * X)	-0.00180	-0.00181	-0.00180
	(A * C * X)	0.00248	0.00248	0.00246
	(A * !C * X)	-0.00177	-0.00178	-0.00174
	(A * !C * X)	0.00210	0.00211	0.00212
	(!A * C * X)	-0.00175	-0.00176	-0.00174
	(!A * C * X)	0.00373	0.00379	0.00377

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	0.00156	0.00158	0.00157
	(B * X)	-0.00091	-0.00092	-0.00091
	(A * !B * X)	0.00156	0.00158	0.00157
	(A * !B * X)	-0.00091	-0.00092	-0.00091
sky130_fd_sc_hs__or3_2	(B * X)	0.00176	0.00178	0.00176
	(B * X)	-0.00092	-0.00093	-0.00093
	(A * !B * X)	0.00176	0.00178	0.00176
	(A * !B * X)	-0.00092	-0.00093	-0.00092
sky130_fd_sc_hs__or3_4	(B * X)	0.00223	0.00225	0.00223
	(B * X)	-0.00184	-0.00185	-0.00183
	(A * !B * X)	0.00223	0.00225	0.00223
	(A * !B * X)	-0.00183	-0.00184	-0.00182

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	-0.00152	-0.00153	-0.00156
	(B * X)	0.00096	0.00096	0.00092
	(A * !B * X)	-0.00145	-0.00145	-0.00155
	(A * !B * X)	0.00100	0.00100	0.00093
sky130_fd_sc_hs__or3_2	(B * X)	-0.00171	-0.00172	-0.00176
	(B * X)	0.00097	0.00098	0.00094
	(A * !B * X)	-0.00164	-0.00165	-0.00174
	(A * !B * X)	0.00101	0.00102	0.00094
sky130_fd_sc_hs__or3_4	(B * X)	-0.00211	-0.00212	-0.00222
	(B * X)	0.00195	0.00196	0.00187
	(A * !B * X)	-0.00196	-0.00197	-0.00219
	(A * !B * X)	0.00202	0.00203	0.00185

SKY130_FD_SC_HS__OR4BBx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00252	0.00249	0.00234	0.00237	1.20265
sky130_fd_sc_hs__or4bb_2	0.00251	0.00265	0.00231	0.00228	1.99534
sky130_fd_sc_hs__or4bb_4	0.00397	0.00405	0.00256	0.00253	3.77445

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__or4bb_1	0.00000	0.48759	0.98108
sky130_fd_sc_hs__or4bb_2	0.00000	0.50086	1.08191
sky130_fd_sc_hs__or4bb_4	0.00000	0.30955	0.73049

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)	0.06556	0.57081	6.05497
	B->X (RR)	0.06568	0.56156	5.97031
	C_N->X (FR)	0.12455	0.74074	8.16884
	D_N->X (FR)	0.11187	0.71979	8.12929
sky130_fd_sc_hs__or4bb_2	A->X (RR)	0.06401	0.48182	5.72959
	B->X (RR)	0.06508	0.47437	5.64951
	C_N->X (FR)	0.11452	0.63602	7.85842
	D_N->X (FR)	0.11479	0.63953	7.89919
sky130_fd_sc_hs__or4bb_4	A->X (RR)	0.08964	0.49179	6.23711
	B->X (RR)	0.09185	0.48432	6.15438
	C_N->X (FR)	0.15960	0.64393	8.19667
	D_N->X (FR)	0.15820	0.64806	8.21113

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4bb_1	A->X (FF)	0.24770	0.68101	4.95513
	B->X (FF)	0.23006	0.67699	5.18597
	C_N->X (RF)	0.23135	0.51062	2.49383
	D_N->X (RF)	0.18012	0.45309	2.43421
sky130_fd_sc_hs__or4bb_2	A->X (FF)	0.30041	0.70798	4.82855
	B->X (FF)	0.28961	0.71265	4.98097
	C_N->X (RF)	0.28455	0.52606	2.10830
	D_N->X (RF)	0.24454	0.48651	2.10660
sky130_fd_sc_hs__or4bb_4	A->X (FF)	0.33130	0.71122	4.58403
	B->X (FF)	0.31718	0.70343	4.74671
	C_N->X (RF)	0.31486	0.52953	2.04116
	D_N->X (RF)	0.25062	0.46974	2.00343

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.01121	0.01129	0.02898
	A	0.00617	0.00626	0.02440
	B	0.00951	0.01024	0.02779
	B	0.00524	0.00599	0.02399
	C_N	0.00868	0.01147	0.05698
	C_N	0.01207	0.01485	0.06046
	D_N	0.00751	0.01043	0.05630
	D_N	0.01051	0.01342	0.05942
sky130_fd_sc_hs__or4bb_2	A	0.01401	0.01503	0.04122
	A	0.00893	0.00998	0.03645
	B	0.01256	0.01381	0.03764
	B	0.00811	0.00938	0.03365
	C_N	0.01116	0.01456	0.06126
	C_N	0.01442	0.01782	0.06517
	D_N	0.01074	0.01339	0.05720
	D_N	0.01373	0.01639	0.06078
sky130_fd_sc_hs__or4bb_4	A	0.02860	0.02984	0.06907
	A	0.01956	0.02084	0.06158
	B	0.02413	0.02553	0.06179
	B	0.01710	0.01850	0.05636
	C_N	0.02333	0.02671	0.07199
	C_N	0.02640	0.02982	0.07538
	D_N	0.02040	0.02372	0.07098
	D_N	0.02351	0.02688	0.07437

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.00727	0.00692	0.02430
	A	0.01235	0.01200	0.02873
	B	0.00703	0.00691	0.02552
	B	0.01130	0.01118	0.02978
	C_N	0.01393	0.01538	0.05966
	C_N	0.01056	0.01195	0.05616
	D_N	0.01221	0.01404	0.05936
	D_N	0.00921	0.01092	0.05620
sky130_fd_sc_hs__or4bb_2	A	0.01113	0.00995	0.03271
	A	0.01625	0.01506	0.03736
	B	0.01082	0.00970	0.03097
	B	0.01529	0.01417	0.03470
	C_N	0.01748	0.01831	0.06297
	C_N	0.01421	0.01477	0.05946
	D_N	0.01664	0.01709	0.05809
	D_N	0.01363	0.01391	0.05485
sky130_fd_sc_hs__or4bb_4	A	0.02394	0.02121	0.05464
	A	0.03312	0.03043	0.06358
	B	0.02413	0.02147	0.05538
	B	0.03120	0.02853	0.05988
	C_N	0.03198	0.03074	0.07344
	C_N	0.02891	0.02768	0.07034
	D_N	0.03072	0.02952	0.07477
	D_N	0.02761	0.02627	0.07135

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)**	0.00151	0.00147	0.00146
	(B * C_N * D_N * X)	-0.00176	-0.00186	-0.00185
	(B * !D_N * X)	0.00149	0.00147	0.00145
	(B * !D_N * X)	-0.00178	-0.00187	-0.00186
	(B * !C_N * D_N * X)	0.00145	0.00147	0.00145
	(B * !C_N * D_N * X)	-0.00181	-0.00187	-0.00186
	(!B * C_N * !D_N * X)	0.00157	0.00150	0.00147
	(!B * C_N * !D_N * X)	-0.00163	-0.00179	-0.00178
	(!B * !C_N * D_N * X)	0.00145	0.00146	0.00145
	(!B * !C_N * D_N * X)	-0.00168	-0.00181	-0.00181
	(!B * !C_N * !D_N * X)	0.00144	0.00146	0.00145
	(!B * !C_N * !D_N * X)	-0.00168	-0.00181	-0.00180
sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	0.00162	0.00157	0.00155
	(B * C_N * D_N * X)	-0.00176	-0.00185	-0.00184
	(B * !D_N * X)	0.00159	0.00157	0.00155
	(B * !D_N * X)	-0.00178	-0.00185	-0.00184
	(B * !C_N * D_N * X)	0.00139	0.00140	0.00139
	(B * !C_N * D_N * X)	-0.00197	-0.00201	-0.00200
	(!B * C_N * !D_N * X)	0.00167	0.00160	0.00157
	(!B * C_N * !D_N * X)	-0.00162	-0.00178	-0.00177
	(!B * !C_N * D_N * X)	0.00139	0.00140	0.00139
	(!B * !C_N * D_N * X)	-0.00183	-0.00196	-0.00195
	(!B * !C_N * !D_N * X)	0.00138	0.00139	0.00138
	(!B * !C_N * !D_N * X)	-0.00183	-0.00196	-0.00195

sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	0.00201	0.00192	0.00189
	(B * C_N * D_N * X)	-0.00356	-0.00381	-0.00380
	(B * !D_N * X)	0.00197	0.00191	0.00189
	(B * !D_N * X)	-0.00362	-0.00381	-0.00379
	(B * !C_N * D_N * X)	0.00190	0.00191	0.00189
	(B * !C_N * D_N * X)	-0.00368	-0.00382	-0.00379
	(!B * C_N * !D_N * X)	0.00216	0.00200	0.00194
	(!B * C_N * !D_N * X)	-0.00332	-0.00362	-0.00362
	(!B * !C_N * D_N * X)	0.00191	0.00191	0.00189
	(!B * !C_N * D_N * X)	-0.00342	-0.00369	-0.00368
	(!B * !C_N * !D_N * X)	0.00189	0.00191	0.00189
	(!B * !C_N * !D_N * X)	-0.00341	-0.00368	-0.00367

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)**	-0.00143	-0.00144	-0.00144
	(B * C_N * D_N * X)	0.00186	0.00188	0.00186
	(B * !D_N * X)	-0.00144	-0.00145	-0.00144
	(B * !D_N * X)	0.00185	0.00187	0.00186
	(B * !C_N * D_N * X)	-0.00144	-0.00145	-0.00144
	(B * !C_N * D_N * X)	0.00185	0.00187	0.00186
	(!B * C_N * !D_N * X)	-0.00149	-0.00150	-0.00147
	(!B * C_N * !D_N * X)	0.00177	0.00180	0.00178
	(!B * !C_N * D_N * X)	-0.00144	-0.00145	-0.00144
	(!B * !C_N * D_N * X)	0.00180	0.00181	0.00181
	(!B * !C_N * !D_N * X)	-0.00144	-0.00145	-0.00145
	(!B * !C_N * !D_N * X)	0.00179	0.00181	0.00180

sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	-0.00153	-0.00153	-0.00153
	(B * C_N * D_N * X)	0.00185	0.00186	0.00185
	(B * !D_N * X)	-0.00153	-0.00154	-0.00153
	(B * !D_N * X)	0.00183	0.00186	0.00184
	(B * !C_N * D_N * X)	-0.00137	-0.00138	-0.00137
	(B * !C_N * D_N * X)	0.00199	0.00202	0.00200
	(!B * C_N * !D_N * X)	-0.00158	-0.00159	-0.00157
	(!B * C_N * !D_N * X)	0.00176	0.00179	0.00177
	(!B * !C_N * D_N * X)	-0.00137	-0.00138	-0.00137
	(!B * !C_N * D_N * X)	0.00195	0.00196	0.00195
	(!B * !C_N * !D_N * X)	-0.00138	-0.00138	-0.00138
	(!B * !C_N * !D_N * X)	0.00194	0.00196	0.00195
sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	-0.00188	-0.00188	-0.00188
	(B * C_N * D_N * X)	0.00378	0.00381	0.00380
	(B * !D_N * X)	-0.00188	-0.00190	-0.00188
	(B * !D_N * X)	0.00378	0.00383	0.00379
	(B * !C_N * D_N * X)	-0.00188	-0.00189	-0.00188
	(B * !C_N * D_N * X)	0.00378	0.00383	0.00379
	(!B * C_N * !D_N * X)	-0.00199	-0.00200	-0.00194
	(!B * C_N * !D_N * X)	0.00360	0.00362	0.00362
	(!B * !C_N * D_N * X)	-0.00188	-0.00189	-0.00188
	(!B * !C_N * D_N * X)	0.00366	0.00369	0.00368
	(!B * !C_N * !D_N * X)	-0.00188	-0.00189	-0.00188
	(!B * !C_N * !D_N * X)	0.00365	0.00368	0.00367

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)**	0.00156	0.00158	0.00156
	(A * C_N * D_N * X)	-0.00108	-0.00110	-0.00109
	(A * C_N * !D_N * X)	0.00179	0.00185	0.00184
	(A * C_N * !D_N * X)	-0.00130	-0.00131	-0.00130
	(A * !C_N * D_N * X)	0.00137	0.00139	0.00130
	(A * !C_N * D_N * X)	-0.00163	-0.00163	-0.00163
	(A * !C_N * !D_N * X)	0.00127	0.00128	0.00126
	(A * !C_N * !D_N * X)	-0.00167	-0.00169	-0.00168
	(!A * C_N * !D_N * X)	0.00185	0.00161	0.00157
	(!A * C_N * !D_N * X)	-0.00163	-0.00187	-0.00186
	(!A * !C_N * D_N * X)	0.00149	0.00128	0.00126
	(!A * !C_N * D_N * X)	-0.00200	-0.00222	-0.00221
	(!A * !C_N * !D_N * X)	0.00126	0.00127	0.00125
	(!A * !C_N * !D_N * X)	-0.00221	-0.00222	-0.00221
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	0.00191	0.00194	0.00190
	(A * C_N * D_N * X)	-0.00098	-0.00100	-0.00098
	(A * C_N * !D_N * X)	0.00215	0.00220	0.00219
	(A * C_N * !D_N * X)	-0.00118	-0.00119	-0.00118
	(A * !C_N * D_N * X)	0.00180	0.00181	0.00174
	(A * !C_N * D_N * X)	-0.00140	-0.00142	-0.00141
	(A * !C_N * !D_N * X)	0.00171	0.00171	0.00170
	(A * !C_N * !D_N * X)	-0.00145	-0.00147	-0.00146
	(!A * C_N * !D_N * X)	0.00219	0.00194	0.00191
	(!A * C_N * !D_N * X)	-0.00151	-0.00175	-0.00175
	(!A * !C_N * D_N * X)	0.00192	0.00171	0.00170
	(!A * !C_N * D_N * X)	-0.00176	-0.00200	-0.00200
	(!A * !C_N * !D_N * X)	0.00170	0.00171	0.00169
	(!A * !C_N * !D_N * X)	-0.00198	-0.00201	-0.00200

sky130_fd_sc_hs__or4bb_4	**(A * C_N * D_N * X)**	0.00195	0.00196	0.00194
	(A * C_N * D_N * X)	-0.00211	-0.00212	-0.00210
	(A * C_N * !D_N * X)	0.00233	0.00246	0.00245
	(A * C_N * !D_N * X)	-0.00257	-0.00258	-0.00256
	(A * !C_N * D_N * X)	0.00208	0.00205	0.00191
	(A * !C_N * D_N * X)	-0.00270	-0.00270	-0.00269
	(A * !C_N * !D_N * X)	0.00186	0.00187	0.00185
	(A * !C_N * !D_N * X)	-0.00280	-0.00281	-0.00279
	(!A * C_N * !D_N * X)	0.00241	0.00200	0.00194
	(!A * C_N * !D_N * X)	-0.00325	-0.00369	-0.00367
	(!A * !C_N * D_N * X)	0.00220	0.00184	0.00183
	(!A * !C_N * D_N * X)	-0.00351	-0.00386	-0.00386
	(!A * !C_N * !D_N * X)	0.00186	0.00184	0.00183
	(!A * !C_N * !D_N * X)	-0.00383	-0.00383	-0.00385

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)**	-0.00150	-0.00151	-0.00150
	(A * C_N * D_N * X)	0.00116	0.00116	0.00116
	(A * C_N * !D_N * X)	-0.00173	-0.00174	-0.00173
	(A * C_N * !D_N * X)	0.00130	0.00131	0.00130
	(A * !C_N * D_N * X)	-0.00125	-0.00125	-0.00125
	(A * !C_N * D_N * X)	0.00163	0.00163	0.00163
	(A * !C_N * !D_N * X)	-0.00125	-0.00125	-0.00125
	(A * !C_N * !D_N * X)	0.00167	0.00169	0.00168
	(!A * C_N * !D_N * X)	-0.00161	-0.00161	-0.00157
	(!A * C_N * !D_N * X)	0.00187	0.00187	0.00186
	(!A * !C_N * D_N * X)	-0.00124	-0.00125	-0.00124
	(!A * !C_N * D_N * X)	0.00221	0.00222	0.00222
	(!A * !C_N * !D_N * X)	-0.00125	-0.00125	-0.00125
	(!A * !C_N * !D_N * X)	0.00221	0.00222	0.00221
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	-0.00185	-0.00184	-0.00185
	(A * C_N * D_N * X)	0.00104	0.00103	0.00105
	(A * C_N * !D_N * X)	-0.00206	-0.00208	-0.00207
	(A * C_N * !D_N * X)	0.00118	0.00119	0.00118
	(A * !C_N * D_N * X)	-0.00168	-0.00170	-0.00169
	(A * !C_N * D_N * X)	0.00140	0.00142	0.00141
	(A * !C_N * !D_N * X)	-0.00168	-0.00170	-0.00169
	(A * !C_N * !D_N * X)	0.00145	0.00147	0.00146
	(!A * C_N * !D_N * X)	-0.00195	-0.00194	-0.00191
	(!A * C_N * !D_N * X)	0.00174	0.00175	0.00175
	(!A * !C_N * D_N * X)	-0.00168	-0.00169	-0.00168
	(!A * !C_N * D_N * X)	0.00199	0.00201	0.00201
	(!A * !C_N * !D_N * X)	-0.00169	-0.00170	-0.00169
	(!A * !C_N * !D_N * X)	0.00200	0.00201	0.00200

sky130_fd_sc_hs__or4bb_4	(A * C_N * D_N * X)	-0.00180	-0.00181	-0.00181
	(A * C_N * D_N * X)	0.00226	0.00227	0.00226
	(A * C_N * !D_N * X)	-0.00227	-0.00228	-0.00227
	(A * C_N * !D_N * X)	0.00257	0.00258	0.00256
	(A * !C_N * D_N * X)	-0.00185	-0.00185	-0.00185
	(A * !C_N * D_N * X)	0.00270	0.00270	0.00269
	(A * !C_N * !D_N * X)	-0.00185	-0.00185	-0.00184
	(A * !C_N * !D_N * X)	0.00280	0.00281	0.00279
	(!A * C_N * !D_N * X)	-0.00204	-0.00200	-0.00194
	(!A * C_N * !D_N * X)	0.00367	0.00369	0.00367
	(!A * !C_N * D_N * X)	-0.00183	-0.00183	-0.00182
	(!A * !C_N * D_N * X)	0.00386	0.00388	0.00386
	(!A * !C_N * !D_N * X)	-0.00182	-0.00182	-0.00183
	(!A * !C_N * !D_N * X)	0.00383	0.00383	0.00385

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * X)	0.00523	0.00694	0.05090
	(B * X)	0.00110	0.00280	0.04677
	(A * !B * X) + (!A * !B * !D_N * X)	0.00530	0.00700	0.05093
	(A * !B * X) + (!A * !B * !D_N * X)	0.00110	0.00280	0.04674
sky130_fd_sc_hs__or4bb_2	(B * X)	0.00477	0.00666	0.05154
	(B * X)	0.00078	0.00266	0.04755
	(A * !B * X) + (!A * !B * !D_N * X)	0.00484	0.00672	0.05154
	(A * !B * X) + (!A * !B * !D_N * X)	0.00078	0.00265	0.04749
sky130_fd_sc_hs__or4bb_4	(B * X)	0.00579	0.00754	0.05444
	(B * X)	0.00155	0.00328	0.05020
	(A * !B * X) + (!A * !B * !D_N * X)	0.00595	0.00769	0.05452
	(A * !B * X) + (!A * !B * !D_N * X)	0.00158	0.00330	0.05017

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * X)	0.00128	0.00389	0.04806
	(B * X)	0.00539	0.00801	0.05218
	(A * !B * X) + (!A * !B * !D_N * X)	0.00129	0.00390	0.04807
	(A * !B * X) + (!A * !B * !D_N * X)	0.00541	0.00802	0.05220
sky130_fd_sc_hs__or4bb_2	(B * X)	0.00113	0.00388	0.04898
	(B * X)	0.00510	0.00787	0.05296
	(A * !B * X) + (!A * !B * !D_N * X)	0.00114	0.00389	0.04895
	(A * !B * X) + (!A * !B * !D_N * X)	0.00512	0.00787	0.05294
sky130_fd_sc_hs__or4bb_4	(B * X)	0.00211	0.00458	0.05140
	(B * X)	0.00634	0.00881	0.05564
	(A * !B * X) + (!A * !B * !D_N * X)	0.00213	0.00460	0.05141
	(A * !B * X) + (!A * !B * !D_N * X)	0.00637	0.00884	0.05566

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)	0.00456	0.00640	0.05047
	(B * C_N * X)	0.00083	0.00266	0.04674
	(A * !B * C_N * X)	0.00466	0.00650	0.05054
	(A * !B * C_N * X)	0.00089	0.00272	0.04678
	(!C_N * X)	0.00468	0.00650	0.05059
	(!C_N * X)	0.00096	0.00277	0.04687
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00464	0.00644	0.05050
	(B * C_N * X)	0.00094	0.00273	0.04680
	(A * !B * C_N * X)	0.00474	0.00654	0.05057
	(A * !B * C_N * X)	0.00099	0.00278	0.04683
	(!C_N * X)	0.00477	0.00657	0.05065
	(!C_N * X)	0.00107	0.00286	0.04695
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00660	0.00825	0.05514
	(B * C_N * X)	0.00236	0.00400	0.05091
	(A * !B * C_N * X)	0.00685	0.00849	0.05533
	(A * !B * C_N * X)	0.00251	0.00415	0.05102
	(!C_N * X)	0.00700	0.00865	0.05557
	(!C_N * X)	0.00279	0.00443	0.05136

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)	0.00127	0.00396	0.04826
	(B * C_N * X)	0.00498	0.00768	0.05198
	(A * !B * C_N * X)	0.00127	0.00396	0.04826
	(A * !B * C_N * X)	0.00498	0.00768	0.05198
	(!C_N * X)	0.00110	0.00380	0.04811
	(!C_N * X)	0.00482	0.00751	0.05182
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00154	0.00421	0.04855
	(B * C_N * X)	0.00522	0.00791	0.05225
	(A * !B * C_N * X)	0.00154	0.00421	0.04856
	(A * !B * C_N * X)	0.00523	0.00791	0.05225
	(!C_N * X)	0.00136	0.00403	0.04838
	(!C_N * X)	0.00505	0.00773	0.05207
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00254	0.00496	0.05187
	(B * C_N * X)	0.00674	0.00919	0.05607
	(A * !B * C_N * X)	0.00254	0.00495	0.05187
	(A * !B * C_N * X)	0.00674	0.00918	0.05608
	(!C_N * X)	0.00206	0.00448	0.05138
	(!C_N * X)	0.00626	0.00870	0.05559

SKY130_FD_SC_HS__OR4Bx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00257	0.00245	0.00254	0.00239	1.17404
sky130_fd_sc_hs__or4b_2	0.00266	0.00256	0.00257	0.00228	2.04031
sky130_fd_sc_hs__or4b_4	0.00393	0.00445	0.00447	0.00250	4.47033

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4b_1	0.00000	0.26365	0.53745
sky130_fd_sc_hs__or4b_2	0.00000	0.27692	0.63827
sky130_fd_sc_hs__or4b_4	0.00000	0.20613	0.53387

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)	0.06885	0.58507	6.12247
	B->X (RR)	0.06882	0.57641	6.04062
	C->X (RR)	0.06619	0.56047	5.95091
	D_N->X (FR)	0.11227	0.72613	8.14860
sky130_fd_sc_hs__or4b_2	A->X (RR)	0.06476	0.48523	5.78403
	B->X (RR)	0.06512	0.47778	5.70961
	C->X (RR)	0.06294	0.46493	5.63322
	D_N->X (FR)	0.11990	0.65229	8.02867
sky130_fd_sc_hs__or4b_4	A->X (RR)	0.09124	0.49078	6.46171
	B->X (RR)	0.09114	0.47811	6.37423
	C->X (RR)	0.08370	0.45377	6.25995
	D_N->X (FR)	0.14004	0.61203	8.31784

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4b_1	A->X (FF)	0.25889	0.69586	4.92946
	B->X (FF)	0.24083	0.69225	5.16016
	C->X (FF)	0.21539	0.69122	5.24264
	D_N->X (RF)	0.18597	0.46599	2.41352
sky130_fd_sc_hs__or4b_2	A->X (FF)	0.31590	0.72873	4.83879
	B->X (FF)	0.29858	0.72810	5.07421
	C->X (FF)	0.26758	0.72538	5.17835
	D_N->X (RF)	0.24994	0.50177	2.18564
sky130_fd_sc_hs__or4b_4	A->X (FF)	0.31804	0.71277	5.02874
	B->X (FF)	0.30476	0.70789	5.17068
	C->X (FF)	0.26193	0.68673	5.26689
	D_N->X (RF)	0.23374	0.45969	2.43532

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.01282	0.01287	0.02945
	A	0.00634	0.00640	0.02340
	B	0.01089	0.01158	0.02808
	B	0.00556	0.00626	0.02319
	C	0.00921	0.01002	0.02578
	C	0.00457	0.00539	0.02160
	D_N	0.00806	0.01103	0.05719
	D_N	0.01083	0.01380	0.06008
sky130_fd_sc_hs__or4b_2	A	0.01595	0.01636	0.03362
	A	0.00938	0.00981	0.02726
	B	0.01405	0.01521	0.03204
	B	0.00858	0.00980	0.02691
	C	0.01225	0.01359	0.02956
	C	0.00751	0.00886	0.02525
	D_N	0.01130	0.01444	0.05735
	D_N	0.01423	0.01740	0.06067
sky130_fd_sc_hs__or4b_4	A	0.03010	0.03118	0.06967
	A	0.01882	0.01994	0.05925
	B	0.02673	0.02806	0.06409
	B	0.01691	0.01829	0.05531
	C	0.02214	0.02400	0.05901
	C	0.01401	0.01605	0.05236
	D_N	0.01981	0.02354	0.07081
	D_N	0.02252	0.02629	0.07352

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.00618	0.00569	0.02214
	A	0.01273	0.01227	0.02867
	B	0.00625	0.00596	0.02409
	B	0.01162	0.01135	0.02944
	C	0.00606	0.00615	0.02367
	C	0.01071	0.01081	0.02831
	D_N	0.01209	0.01394	0.06016
	D_N	0.00931	0.01109	0.05716
sky130_fd_sc_hs__or4b_2	A	0.00986	0.00795	0.02673
	A	0.01649	0.01472	0.03197
	B	0.00990	0.00824	0.02849
	B	0.01538	0.01385	0.03243
	C	0.00963	0.00839	0.02767
	C	0.01440	0.01325	0.03109
	D_N	0.01680	0.01685	0.05764
	D_N	0.01386	0.01386	0.05455
sky130_fd_sc_hs__or4b_4	A	0.02189	0.01891	0.05287
	A	0.03336	0.03052	0.06326
	B	0.02176	0.01882	0.05469
	B	0.03172	0.02875	0.06012
	C	0.02109	0.01853	0.05260
	C	0.02922	0.02672	0.05806
	D_N	0.02969	0.02854	0.07555
	D_N	0.02698	0.02580	0.07280

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)**	0.00151	0.00153	0.00151
	(B * C * D_N * X)	-0.00178	-0.00184	-0.00183
	(B * !D_N * X)	0.00151	0.00153	0.00151
	(B * !D_N * X)	-0.00179	-0.00185	-0.00183
	(B * !C * D_N * X)	0.00154	0.00153	0.00151
	(B * !C * D_N * X)	-0.00174	-0.00184	-0.00183
	(!B * C * D_N * X)	0.00152	0.00152	0.00151
	(!B * C * D_N * X)	-0.00163	-0.00179	-0.00178
	(!B * C * !D_N * X)	0.00150	0.00152	0.00151
	(!B * C * !D_N * X)	-0.00164	-0.00178	-0.00177
	(!B * !C * !D_N * X)	0.00153	0.00152	0.00151
	(!B * !C * !D_N * X)	-0.00161	-0.00177	-0.00175
sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	0.00166	0.00167	0.00165
	(B * C * D_N * X)	-0.00180	-0.00186	-0.00186
	(B * !D_N * X)	0.00160	0.00162	0.00160
	(B * !D_N * X)	-0.00187	-0.00192	-0.00191
	(B * !C * D_N * X)	0.00168	0.00167	0.00165
	(B * !C * D_N * X)	-0.00176	-0.00186	-0.00186
	(!B * C * D_N * X)	0.00166	0.00167	0.00165
	(!B * C * D_N * X)	-0.00165	-0.00181	-0.00180
	(!B * C * !D_N * X)	0.00159	0.00161	0.00159
	(!B * C * !D_N * X)	-0.00171	-0.00186	-0.00185
	(!B * !C * !D_N * X)	0.00161	0.00161	0.00160
	(!B * !C * !D_N * X)	-0.00169	-0.00185	-0.00183

sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	0.00166	0.00166	0.00164
	(B * C * D_N * X)	-0.00364	-0.00378	-0.00375
	(B * !D_N * X)	0.00164	0.00165	0.00163
	(B * !D_N * X)	-0.00366	-0.00378	-0.00376
	(B * !C * D_N * X)	0.00170	0.00166	0.00164
	(B * !C * D_N * X)	-0.00354	-0.00377	-0.00375
	(!B * C * D_N * X)	0.00168	0.00166	0.00164
	(!B * C * D_N * X)	-0.00333	-0.00365	-0.00363
	(!B * C * !D_N * X)	0.00164	0.00165	0.00163
	(!B * C * !D_N * X)	-0.00335	-0.00366	-0.00363
	(!B * !C * !D_N * X)	0.00169	0.00166	0.00164
	(!B * !C * !D_N * X)	-0.00328	-0.00360	-0.00359

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)**	-0.00150	-0.00151	-0.00150
	(B * C * D_N * X)	0.00184	0.00185	0.00183
	(B * !D_N * X)	-0.00150	-0.00151	-0.00151
	(B * !D_N * X)	0.00183	0.00185	0.00183
	(B * !C * D_N * X)	-0.00150	-0.00151	-0.00150
	(B * !C * D_N * X)	0.00184	0.00185	0.00184
	(!B * C * D_N * X)	-0.00150	-0.00151	-0.00150
	(!B * C * D_N * X)	0.00177	0.00179	0.00178
	(!B * C * !D_N * X)	-0.00150	-0.00151	-0.00150
	(!B * C * !D_N * X)	0.00176	0.00178	0.00177
	(!B * !C * !D_N * X)	-0.00150	-0.00151	-0.00150
	(!B * !C * !D_N * X)	0.00175	0.00177	0.00175

sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	-0.00164	-0.00165	-0.00164
	(B * C * D_N * X)	0.00185	0.00186	0.00186
	(B * !D_N * X)	-0.00159	-0.00160	-0.00159
	(B * !D_N * X)	0.00190	0.00192	0.00191
	(B * !C * D_N * X)	-0.00164	-0.00165	-0.00164
	(B * !C * D_N * X)	0.00186	0.00186	0.00186
	(!B * C * D_N * X)	-0.00164	-0.00165	-0.00164
	(!B * C * D_N * X)	0.00179	0.00181	0.00180
	(!B * C * !D_N * X)	-0.00159	-0.00160	-0.00159
	(!B * C * !D_N * X)	0.00184	0.00186	0.00185
	(!B * !C * !D_N * X)	-0.00159	-0.00160	-0.00159
	(!B * !C * !D_N * X)	0.00182	0.00185	0.00183
sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	-0.00163	-0.00164	-0.00163
	(B * C * D_N * X)	0.00374	0.00378	0.00375
	(B * !D_N * X)	-0.00163	-0.00163	-0.00163
	(B * !D_N * X)	0.00374	0.00378	0.00376
	(B * !C * D_N * X)	-0.00163	-0.00164	-0.00163
	(B * !C * D_N * X)	0.00375	0.00377	0.00375
	(!B * C * D_N * X)	-0.00163	-0.00164	-0.00164
	(!B * C * D_N * X)	0.00361	0.00365	0.00363
	(!B * C * !D_N * X)	-0.00163	-0.00164	-0.00163
	(!B * C * !D_N * X)	0.00361	0.00366	0.00363
	(!B * !C * !D_N * X)	-0.00162	-0.00163	-0.00162
	(!B * !C * !D_N * X)	0.00357	0.00360	0.00359

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)**	0.00146	0.00146	0.00137
	(A * C * D_N * X)	-0.00119	-0.00120	-0.00119
	(A * C * !D_N * X)	0.00135	0.00136	0.00133
	(A * C * !D_N * X)	-0.00123	-0.00123	-0.00123
	(A * !C * D_N * X)	0.00132	0.00134	0.00132
	(A * !C * D_N * X)	-0.00096	-0.00097	-0.00096
	(A * !C * !D_N * X)	0.00134	0.00137	0.00133
	(A * !C * !D_N * X)	-0.00117	-0.00117	-0.00117
	(!A * C * D_N * X)	0.00156	0.00134	0.00132
	(!A * C * D_N * X)	-0.00154	-0.00179	-0.00179
	(!A * C * !D_N * X)	0.00131	0.00133	0.00131
	(!A * C * !D_N * X)	-0.00174	-0.00179	-0.00178
	(!A * !C * !D_N * X)	0.00145	0.00134	0.00132
	(!A * !C * !D_N * X)	-0.00148	-0.00174	-0.00173
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	0.00161	0.00163	0.00154
	(A * C * D_N * X)	-0.00120	-0.00121	-0.00120
	(A * C * !D_N * X)	0.00145	0.00146	0.00144
	(A * C * !D_N * X)	-0.00130	-0.00130	-0.00130
	(A * !C * D_N * X)	0.00149	0.00150	0.00149
	(A * !C * D_N * X)	-0.00098	-0.00099	-0.00098
	(A * !C * !D_N * X)	0.00144	0.00146	0.00144
	(A * !C * !D_N * X)	-0.00124	-0.00125	-0.00124
	(!A * C * D_N * X)	0.00171	0.00150	0.00148
	(!A * C * D_N * X)	-0.00157	-0.00181	-0.00181
	(!A * C * !D_N * X)	0.00144	0.00145	0.00144
	(!A * C * !D_N * X)	-0.00183	-0.00185	-0.00185
	(!A * !C * !D_N * X)	0.00157	0.00146	0.00144
	(!A * !C * !D_N * X)	-0.00157	-0.00180	-0.00180

sky130_fd_sc_hs__or4b_4	**(A * C * D_N * X)**	0.00230	0.00235	0.00218
	(A * C * D_N * X)	-0.00252	-0.00254	-0.00253
	(A * C * !D_N * X)	0.00205	0.00206	0.00204
	(A * C * !D_N * X)	-0.00269	-0.00271	-0.00270
	(A * !C * D_N * X)	0.00206	0.00208	0.00206
	(A * !C * D_N * X)	-0.00211	-0.00213	-0.00211
	(A * !C * !D_N * X)	0.00204	0.00207	0.00204
	(A * !C * !D_N * X)	-0.00255	-0.00256	-0.00254
	(!A * C * D_N * X)	0.00250	0.00207	0.00204
	(!A * C * D_N * X)	-0.00327	-0.00379	-0.00377
	(!A * C * !D_N * X)	0.00205	0.00205	0.00203
	(!A * C * !D_N * X)	-0.00369	-0.00377	-0.00378
	(!A * !C * !D_N * X)	0.00228	0.00206	0.00203
	(!A * !C * !D_N * X)	-0.00319	-0.00368	-0.00367

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)**	-0.00132	-0.00133	-0.00132
	(A * C * D_N * X)	0.00119	0.00120	0.00119
	(A * C * !D_N * X)	-0.00132	-0.00133	-0.00132
	(A * C * !D_N * X)	0.00123	0.00123	0.00123
	(A * !C * D_N * X)	-0.00127	-0.00128	-0.00126
	(A * !C * D_N * X)	0.00103	0.00103	0.00103
	(A * !C * !D_N * X)	-0.00132	-0.00132	-0.00132
	(A * !C * !D_N * X)	0.00117	0.00117	0.00117
	(!A * C * D_N * X)	-0.00130	-0.00131	-0.00131
	(!A * C * D_N * X)	0.00178	0.00179	0.00179
	(!A * C * !D_N * X)	-0.00131	-0.00132	-0.00131
	(!A * C * !D_N * X)	0.00178	0.00179	0.00178
	(!A * !C * !D_N * X)	-0.00131	-0.00131	-0.00130
	(!A * !C * !D_N * X)	0.00173	0.00174	0.00173
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	-0.00148	-0.00149	-0.00148
	(A * C * D_N * X)	0.00120	0.00121	0.00120
	(A * C * !D_N * X)	-0.00143	-0.00144	-0.00143
	(A * C * !D_N * X)	0.00130	0.00130	0.00130
	(A * !C * D_N * X)	-0.00144	-0.00145	-0.00143
	(A * !C * D_N * X)	0.00103	0.00104	0.00104
	(A * !C * !D_N * X)	-0.00143	-0.00144	-0.00143
	(A * !C * !D_N * X)	0.00124	0.00125	0.00124
	(!A * C * D_N * X)	-0.00147	-0.00147	-0.00147
	(!A * C * D_N * X)	0.00180	0.00181	0.00181
	(!A * C * !D_N * X)	-0.00143	-0.00144	-0.00143
	(!A * C * !D_N * X)	0.00184	0.00185	0.00185
	(!A * !C * !D_N * X)	-0.00143	-0.00143	-0.00143
	(!A * !C * !D_N * X)	0.00179	0.00180	0.00180

sky130_fd_sc_hs__or4b_4	(A * C * D_N * X)	-0.00207	-0.00208	-0.00207
	(A * C * D_N * X)	0.00252	0.00254	0.00253
	(A * C * !D_N * X)	-0.00203	-0.00204	-0.00203
	(A * C * !D_N * X)	0.00269	0.00271	0.00270
	(A * !C * D_N * X)	-0.00198	-0.00199	-0.00196
	(A * !C * D_N * X)	0.00219	0.00220	0.00220
	(A * !C * !D_N * X)	-0.00203	-0.00203	-0.00203
	(A * !C * !D_N * X)	0.00255	0.00256	0.00254
	(!A * C * D_N * X)	-0.00204	-0.00205	-0.00204
	(!A * C * D_N * X)	0.00376	0.00379	0.00377
	(!A * C * !D_N * X)	-0.00203	-0.00202	-0.00202
	(!A * C * !D_N * X)	0.00377	0.00377	0.00378
	(!A * !C * !D_N * X)	-0.00202	-0.00202	-0.00201
	(!A * !C * !D_N * X)	0.00366	0.00368	0.00367

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)	0.00158	0.00159	0.00157
	(B * D_N * X)	-0.00095	-0.00096	-0.00096
	(B * !D_N * X)	0.00157	0.00158	0.00150
	(B * !D_N * X)	-0.00127	-0.00127	-0.00127
	(A * !B * D_N * X)	0.00159	0.00160	0.00158
	(A * !B * D_N * X)	-0.00094	-0.00095	-0.00095
	(A * !B * !D_N * X)	0.00167	0.00151	0.00146
	(A * !B * !D_N * X)	-0.00127	-0.00132	-0.00132
	(!A * !B * !D_N * X)	0.00183	0.00148	0.00144
	(!A * !B * !D_N * X)	-0.00150	-0.00189	-0.00191

sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	0.00174	0.00176	0.00174
	(B * D_N * X)	-0.00098	-0.00099	-0.00099
	(B * !D_N * X)	0.00154	0.00157	0.00147
	(B * !D_N * X)	-0.00150	-0.00151	-0.00151
	(A * !B * D_N * X)	0.00175	0.00177	0.00174
	(A * !B * D_N * X)	-0.00097	-0.00098	-0.00098
	(A * !B * !D_N * X)	0.00162	0.00151	0.00143
	(A * !B * !D_N * X)	-0.00149	-0.00155	-0.00154
	(!A * !B * !D_N * X)	0.00184	0.00147	0.00143
	(!A * !B * !D_N * X)	-0.00172	-0.00209	-0.00212
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	0.00255	0.00257	0.00254
	(B * D_N * X)	-0.00202	-0.00205	-0.00204
	(B * !D_N * X)	0.00233	0.00228	0.00213
	(B * !D_N * X)	-0.00298	-0.00300	-0.00299
	(A * !B * D_N * X)	0.00257	0.00259	0.00255
	(A * !B * D_N * X)	-0.00201	-0.00203	-0.00202
	(A * !B * !D_N * X)	0.00245	0.00216	0.00208
	(A * !B * !D_N * X)	-0.00291	-0.00301	-0.00301
	(!A * !B * !D_N * X)	0.00283	0.00214	0.00206
	(!A * !B * !D_N * X)	-0.00336	-0.00413	-0.00418

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)**	-0.00155	-0.00156	-0.00155
	(B * D_N * X)	0.00099	0.00099	0.00099
	(B * !D_N * X)	-0.00144	-0.00144	-0.00144
	(B * !D_N * X)	0.00127	0.00127	0.00127
	(A * !B * D_N * X)	-0.00150	-0.00151	-0.00155
	(A * !B * D_N * X)	0.00100	0.00100	0.00098
	(A * !B * !D_N * X)	-0.00144	-0.00144	-0.00144
	(A * !B * !D_N * X)	0.00132	0.00132	0.00132
	(!A * !B * !D_N * X)	-0.00142	-0.00143	-0.00142
	(!A * !B * !D_N * X)	0.00191	0.00192	0.00192
sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	-0.00171	-0.00172	-0.00171
	(B * D_N * X)	0.00102	0.00102	0.00102
	(B * !D_N * X)	-0.00142	-0.00142	-0.00142
	(B * !D_N * X)	0.00150	0.00151	0.00151
	(A * !B * D_N * X)	-0.00167	-0.00168	-0.00171
	(A * !B * D_N * X)	0.00102	0.00102	0.00101
	(A * !B * !D_N * X)	-0.00142	-0.00143	-0.00142
	(A * !B * !D_N * X)	0.00154	0.00155	0.00154
	(!A * !B * !D_N * X)	-0.00141	-0.00141	-0.00140
	(!A * !B * !D_N * X)	0.00212	0.00212	0.00213
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	-0.00249	-0.00251	-0.00251
	(B * D_N * X)	0.00209	0.00210	0.00210
	(B * !D_N * X)	-0.00206	-0.00207	-0.00206
	(B * !D_N * X)	0.00298	0.00300	0.00299
	(A * !B * D_N * X)	-0.00236	-0.00238	-0.00249
	(A * !B * D_N * X)	0.00212	0.00213	0.00207
	(A * !B * !D_N * X)	-0.00206	-0.00206	-0.00206
	(A * !B * !D_N * X)	0.00302	0.00301	0.00301
	(!A * !B * !D_N * X)	-0.00204	-0.00204	-0.00202
	(!A * !B * !D_N * X)	0.00418	0.00420	0.00421

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00470	0.00655	0.05147
	(C * X)	0.00070	0.00253	0.04746
	(B * !C * X)	0.00478	0.00663	0.05150
	(B * !C * X)	0.00073	0.00256	0.04748
	(A * !B * !C * X)	0.00488	0.00673	0.05157
	(A * !B * !C * X)	0.00079	0.00262	0.04752
sky130_fd_sc_hs__or4b_2	(C * X)	0.00528	0.00700	0.05094
	(C * X)	0.00119	0.00289	0.04683
	(B * !C * X)	0.00536	0.00708	0.05099
	(B * !C * X)	0.00122	0.00292	0.04685
	(A * !B * !C * X)	0.00545	0.00717	0.05106
	(A * !B * !C * X)	0.00127	0.00297	0.04688
sky130_fd_sc_hs__or4b_4	(C * X)	0.00626	0.00800	0.05573
	(C * X)	0.00178	0.00350	0.05126
	(B * !C * X)	0.00647	0.00821	0.05589
	(B * !C * X)	0.00187	0.00358	0.05130
	(A * !B * !C * X)	0.00667	0.00841	0.05603
	(A * !B * !C * X)	0.00197	0.00368	0.05137

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00107	0.00383	0.04892
	(C * X)	0.00506	0.00782	0.05291
	(B * !C * X)	0.00107	0.00383	0.04891
	(B * !C * X)	0.00506	0.00782	0.05291
	(A * !B * !C * X)	0.00107	0.00383	0.04891
	(A * !B * !C * X)	0.00506	0.00783	0.05291
sky130_fd_sc_hs__or4b_2	(C * X)	0.00130	0.00391	0.04816
	(C * X)	0.00538	0.00802	0.05225
	(B * !C * X)	0.00130	0.00391	0.04816
	(B * !C * X)	0.00539	0.00803	0.05225
	(A * !B * !C * X)	0.00130	0.00391	0.04816
	(A * !B * !C * X)	0.00539	0.00803	0.05226
sky130_fd_sc_hs__or4b_4	(C * X)	0.00199	0.00445	0.05225
	(C * X)	0.00646	0.00894	0.05674
	(B * !C * X)	0.00199	0.00445	0.05226
	(B * !C * X)	0.00647	0.00895	0.05675
	(A * !B * !C * X)	0.00199	0.00445	0.05226
	(A * !B * !C * X)	0.00648	0.00896	0.05676

SKY130_FD_SC_HS__OR4x

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00255	0.00243	0.00248	0.00241	1.15252
sky130_fd_sc_hs__or4_2	0.00266	0.00262	0.00273	0.00271	2.35239
sky130_fd_sc_hs__or4_4	0.00388	0.00448	0.00453	0.00427	4.46039

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4_1	0.00000	0.03972	0.20404
sky130_fd_sc_hs__or4_2	0.00000	0.05298	0.21147
sky130_fd_sc_hs__or4_4	0.00000	0.10272	0.42294

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)	0.06629	0.57777	6.02707
	B->X (RR)	0.06690	0.56957	5.94815
	C->X (RR)	0.06432	0.55277	5.85505
	D->X (RR)	0.05825	0.53111	5.82148
sky130_fd_sc_hs__or4_2	A->X (RR)	0.06285	0.47346	5.99534
	B->X (RR)	0.06303	0.46488	5.91378
	C->X (RR)	0.06127	0.45252	5.83515
	D->X (RR)	0.05686	0.43756	5.81148
sky130_fd_sc_hs__or4_4	A->X (RR)	0.08327	0.47218	6.42141
	B->X (RR)	0.08642	0.46709	6.36110
	C->X (RR)	0.07926	0.44047	6.22857
	D->X (RR)	0.07205	0.41927	6.20774

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4_1	A->X (FF)	0.24945	0.67886	4.82302
	B->X (FF)	0.23230	0.67481	5.04274
	C->X (FF)	0.20266	0.67022	5.13300
	D->X (FF)	0.15530	0.64267	5.08092
sky130_fd_sc_hs__or4_2	A->X (FF)	0.30378	0.72510	5.17459
	B->X (FF)	0.28646	0.72441	5.41691
	C->X (FF)	0.26080	0.72757	5.52694
	D->X (FF)	0.21625	0.70364	5.48785
sky130_fd_sc_hs__or4_4	A->X (FF)	0.30445	0.69401	4.99750
	B->X (FF)	0.29317	0.68895	5.07193
	C->X (FF)	0.25136	0.66947	5.23453
	D->X (FF)	0.19361	0.63356	5.16085

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.01420	0.01425	0.03099
	A	0.00643	0.00648	0.02367
	B	0.01227	0.01292	0.02949
	B	0.00558	0.00625	0.02327
	C	0.01025	0.01107	0.02688
	C	0.00448	0.00530	0.02116
	D	0.00834	0.00942	0.03029
	D	0.00343	0.00453	0.02547
sky130_fd_sc_hs__or4_2	A	0.01721	0.01765	0.03854
	A	0.00908	0.00955	0.03136
	B	0.01518	0.01637	0.03674
	B	0.00809	0.00931	0.03063
	C	0.01335	0.01467	0.03398
	C	0.00718	0.00851	0.02795
	D	0.01146	0.01285	0.03762
	D	0.00614	0.00756	0.03252
sky130_fd_sc_hs__or4_4	A	0.03289	0.03403	0.07298
	A	0.01922	0.02046	0.06029
	B	0.02952	0.03019	0.06424
	B	0.01722	0.01799	0.05299
	C	0.02467	0.02649	0.06159
	C	0.01444	0.01637	0.05289
	D	0.02026	0.02278	0.06903
	D	0.01198	0.01470	0.06235

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.00423	0.00380	0.02113
	A	0.01210	0.01166	0.02818
	B	0.00427	0.00407	0.02285
	B	0.01100	0.01079	0.02910
	C	0.00428	0.00444	0.02284
	C	0.01008	0.01023	0.02792
	D	0.00414	0.00536	0.03067
	D	0.00905	0.01027	0.03482
sky130_fd_sc_hs__or4_2	A	0.00858	0.00695	0.02556
	A	0.01680	0.01526	0.03377
	B	0.00853	0.00721	0.02911
	B	0.01566	0.01440	0.03429
	C	0.00853	0.00749	0.02911
	C	0.01473	0.01377	0.03275
	D	0.00842	0.00811	0.03652
	D	0.01373	0.01379	0.04009
sky130_fd_sc_hs__or4_4	A	0.01764	0.01439	0.04838
	A	0.03155	0.02890	0.06228
	B	0.01736	0.01416	0.04362
	B	0.02982	0.02725	0.05555
	C	0.01734	0.01526	0.04826
	C	0.02762	0.02552	0.05713
	D	0.01692	0.01676	0.06380
	D	0.02521	0.02502	0.06990

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__or4_1	**(B * D * X)**	0.00149	0.00150	0.00148
	(B * D * X)	-0.00181	-0.00186	-0.00185
	(B * C * !D * X)	0.00149	0.00150	0.00148
	(B * C * !D * X)	-0.00181	-0.00186	-0.00185
	(B * !C * !D * X)	0.00149	0.00150	0.00148
	(B * !C * !D * X)	-0.00177	-0.00186	-0.00185
	(!B * C * D * X)	0.00148	0.00149	0.00148
	(!B * C * D * X)	-0.00166	-0.00180	-0.00179
	(!B * C * !D * X)	0.00148	0.00149	0.00148
	(!B * C * !D * X)	-0.00166	-0.00180	-0.00179
	(!B * !C * D * X)	0.00150	0.00150	0.00149
	(!B * !C * D * X)	-0.00162	-0.00175	-0.00177
sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00163	0.00165	0.00163
	(B * D * X)	-0.00183	-0.00189	-0.00188
	(B * C * !D * X)	0.00163	0.00165	0.00163
	(B * C * !D * X)	-0.00183	-0.00189	-0.00188
	(B * !C * !D * X)	0.00163	0.00164	0.00163
	(B * !C * !D * X)	-0.00179	-0.00188	-0.00188
	(!B * C * D * X)	0.00162	0.00164	0.00163
	(!B * C * D * X)	-0.00169	-0.00183	-0.00182
	(!B * C * !D * X)	0.00162	0.00164	0.00163
	(!B * C * !D * X)	-0.00169	-0.00183	-0.00182
	(!B * !C * D * X)	0.00164	0.00164	0.00163
	(!B * !C * D * X)	-0.00165	-0.00181	-0.00179

sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00165	0.00166	0.00164
	(B * D * X)	-0.00362	-0.00372	-0.00371
	(B * C * !D * X)	0.00165	0.00166	0.00164
	(B * C * !D * X)	-0.00361	-0.00371	-0.00371
	(B * !C * !D * X)	0.00167	0.00167	0.00165
	(B * !C * !D * X)	-0.00351	-0.00373	-0.00371
	(!B * C * D * X)	0.00166	0.00166	0.00164
	(!B * C * D * X)	-0.00330	-0.00361	-0.00359
	(!B * C * !D * X)	0.00166	0.00167	0.00165
	(!B * C * !D * X)	-0.00330	-0.00362	-0.00359
	(!B * !C * D * X)	0.00170	0.00167	0.00165
	(!B * !C * D * X)	-0.00321	-0.00355	-0.00353

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00148	-0.00149	-0.00148
	(B * D * X)	0.00185	0.00186	0.00185
	(B * C * !D * X)	-0.00148	-0.00149	-0.00148
	(B * C * !D * X)	0.00185	0.00186	0.00185
	(B * !C * !D * X)	-0.00148	-0.00149	-0.00148
	(B * !C * !D * X)	0.00184	0.00186	0.00185
	(!B * C * D * X)	-0.00148	-0.00149	-0.00148
	(!B * C * D * X)	0.00178	0.00180	0.00179
	(!B * C * !D * X)	-0.00148	-0.00149	-0.00148
	(!B * C * !D * X)	0.00178	0.00180	0.00179
	(!B * !C * D * X)	-0.00147	-0.00147	-0.00148
	(!B * !C * D * X)	0.00176	0.00175	0.00177

sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00163	-0.00163	-0.00162
	(B * D * X)	0.00188	0.00189	0.00188
	(B * C * !D * X)	-0.00163	-0.00163	-0.00162
	(B * C * !D * X)	0.00188	0.00189	0.00188
	(B * !C * !D * X)	-0.00163	-0.00163	-0.00162
	(B * !C * !D * X)	0.00188	0.00189	0.00188
	(!B * C * D * X)	-0.00162	-0.00163	-0.00162
	(!B * C * D * X)	0.00181	0.00183	0.00182
	(!B * C * !D * X)	-0.00162	-0.00163	-0.00162
	(!B * C * !D * X)	0.00181	0.00183	0.00182
	(!B * !C * D * X)	-0.00162	-0.00163	-0.00162
	(!B * !C * D * X)	0.00179	0.00181	0.00179
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00163	-0.00164	-0.00164
	(B * D * X)	0.00369	0.00372	0.00371
	(B * C * !D * X)	-0.00163	-0.00164	-0.00164
	(B * C * !D * X)	0.00369	0.00371	0.00371
	(B * !C * !D * X)	-0.00164	-0.00165	-0.00164
	(B * !C * !D * X)	0.00369	0.00374	0.00371
	(!B * C * D * X)	-0.00164	-0.00165	-0.00164
	(!B * C * D * X)	0.00357	0.00361	0.00359
	(!B * C * !D * X)	-0.00164	-0.00165	-0.00164
	(!B * C * !D * X)	0.00357	0.00362	0.00359
	(!B * !C * D * X)	-0.00163	-0.00164	-0.00163
	(!B * !C * D * X)	0.00352	0.00355	0.00353

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)**	0.00133	0.00135	0.00133
	(A * C * D * X)	-0.00129	-0.00130	-0.00129
	(A * C * !D * X)	0.00143	0.00145	0.00136
	(A * C * !D * X)	-0.00124	-0.00124	-0.00124
	(A * !C * D * X)	0.00132	0.00136	0.00133
	(A * !C * D * X)	-0.00121	-0.00121	-0.00120
	(A * !C * !D * X)	0.00131	0.00133	0.00132
	(A * !C * !D * X)	-0.00100	-0.00102	-0.00101
	(!A * C * D * X)	0.00132	0.00133	0.00131
	(!A * C * D * X)	-0.00178	-0.00182	-0.00182
	(!A * C * !D * X)	0.00152	0.00133	0.00131
	(!A * C * !D * X)	-0.00159	-0.00182	-0.00183
	(!A * !C * D * X)	0.00144	0.00133	0.00131
	(!A * !C * D * X)	-0.00150	-0.00177	-0.00176
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	0.00148	0.00148	0.00146
	(A * C * D * X)	-0.00136	-0.00136	-0.00136
	(A * C * !D * X)	0.00158	0.00158	0.00149
	(A * C * !D * X)	-0.00132	-0.00132	-0.00131
	(A * !C * D * X)	0.00146	0.00151	0.00146
	(A * !C * D * X)	-0.00129	-0.00129	-0.00128
	(A * !C * !D * X)	0.00145	0.00147	0.00145
	(A * !C * !D * X)	-0.00109	-0.00110	-0.00109
	(!A * C * D * X)	0.00146	0.00147	0.00145
	(!A * C * D * X)	-0.00188	-0.00192	-0.00191
	(!A * C * !D * X)	0.00167	0.00147	0.00145
	(!A * C * !D * X)	-0.00168	-0.00192	-0.00192
	(!A * !C * D * X)	0.00160	0.00148	0.00146
	(!A * !C * D * X)	-0.00160	-0.00186	-0.00185

sky130_fd_sc_hs__or4_4	**(A * C * D * X)**	0.00213	0.00214	0.00212
	(A * C * D * X)	-0.00265	-0.00268	-0.00266
	(A * C * !D * X)	0.00230	0.00234	0.00218
	(A * C * !D * X)	-0.00253	-0.00255	-0.00254
	(A * !C * D * X)	0.00211	0.00213	0.00211
	(A * !C * D * X)	-0.00249	-0.00250	-0.00249
	(A * !C * !D * X)	0.00208	0.00211	0.00209
	(A * !C * !D * X)	-0.00209	-0.00213	-0.00211
	(!A * C * D * X)	0.00211	0.00211	0.00208
	(!A * C * D * X)	-0.00363	-0.00375	-0.00375
	(!A * C * !D * X)	0.00246	0.00211	0.00209
	(!A * C * !D * X)	-0.00328	-0.00378	-0.00375
	(!A * !C * D * X)	0.00233	0.00212	0.00209
	(!A * !C * D * X)	-0.00312	-0.00364	-0.00362

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)**	-0.00132	-0.00132	-0.00132
	(A * C * D * X)	0.00129	0.00130	0.00129
	(A * C * !D * X)	-0.00132	-0.00132	-0.00132
	(A * C * !D * X)	0.00124	0.00124	0.00124
	(A * !C * D * X)	-0.00132	-0.00132	-0.00132
	(A * !C * D * X)	0.00121	0.00121	0.00120
	(A * !C * !D * X)	-0.00126	-0.00126	-0.00125
	(A * !C * !D * X)	0.00107	0.00107	0.00107
	(!A * C * D * X)	-0.00131	-0.00131	-0.00131
	(!A * C * D * X)	0.00181	0.00182	0.00182
	(!A * C * !D * X)	-0.00131	-0.00131	-0.00131
	(!A * C * !D * X)	0.00182	0.00182	0.00183
	(!A * !C * D * X)	-0.00131	-0.00131	-0.00130
	(!A * !C * D * X)	0.00176	0.00177	0.00176
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	-0.00145	-0.00145	-0.00145
	(A * C * D * X)	0.00136	0.00136	0.00136
	(A * C * !D * X)	-0.00145	-0.00146	-0.00145
	(A * C * !D * X)	0.00132	0.00132	0.00131
	(A * !C * D * X)	-0.00145	-0.00145	-0.00145
	(A * !C * D * X)	0.00129	0.00129	0.00128
	(A * !C * !D * X)	-0.00140	-0.00140	-0.00139
	(A * !C * !D * X)	0.00115	0.00115	0.00115
	(!A * C * D * X)	-0.00145	-0.00145	-0.00145
	(!A * C * D * X)	0.00190	0.00192	0.00191
	(!A * C * !D * X)	-0.00145	-0.00145	-0.00145
	(!A * C * !D * X)	0.00191	0.00192	0.00192
	(!A * !C * D * X)	-0.00145	-0.00145	-0.00144
	(!A * !C * D * X)	0.00186	0.00186	0.00185

sky130_fd_sc_hs__or4_4	(A * C * D * X)	-0.00210	-0.00212	-0.00211
	(A * C * D * X)	0.00265	0.00268	0.00266
	(A * C * !D * X)	-0.00210	-0.00211	-0.00210
	(A * C * !D * X)	0.00253	0.00255	0.00254
	(A * !C * D * X)	-0.00209	-0.00210	-0.00209
	(A * !C * D * X)	0.00249	0.00250	0.00249
	(A * !C * !D * X)	-0.00202	-0.00203	-0.00200
	(A * !C * !D * X)	0.00217	0.00219	0.00219
	(!A * C * D * X)	-0.00209	-0.00209	-0.00208
	(!A * C * D * X)	0.00375	0.00375	0.00375
	(!A * C * !D * X)	-0.00209	-0.00210	-0.00209
	(!A * C * !D * X)	0.00376	0.00378	0.00375
	(!A * !C * D * X)	-0.00208	-0.00208	-0.00207
	(!A * !C * D * X)	0.00362	0.00364	0.00362

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(B * D * X)	0.00148	0.00148	0.00140
	(B * D * X)	-0.00119	-0.00120	-0.00119
	(B * !D * X)	0.00135	0.00136	0.00134
	(B * !D * X)	-0.00099	-0.00100	-0.00100
	(A * !B * D * X)	0.00156	0.00140	0.00136
	(A * !B * D * X)	-0.00116	-0.00123	-0.00123
	(A * !B * !D * X)	0.00136	0.00137	0.00135
	(A * !B * !D * X)	-0.00098	-0.00099	-0.00099
	(!A * !B * D * X)	0.00175	0.00138	0.00134
	(!A * !B * D * X)	-0.00142	-0.00180	-0.00182

sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00168	0.00169	0.00161
	(B * D * X)	-0.00118	-0.00118	-0.00119
	(B * !D * X)	0.00156	0.00158	0.00155
	(B * !D * X)	-0.00100	-0.00101	-0.00101
	(A * !B * D * X)	0.00178	0.00162	0.00156
	(A * !B * D * X)	-0.00117	-0.00124	-0.00124
	(A * !B * !D * X)	0.00157	0.00159	0.00156
	(A * !B * !D * X)	-0.00099	-0.00100	-0.00101
	(!A * !B * D * X)	0.00196	0.00160	0.00155
	(!A * !B * D * X)	-0.00141	-0.00182	-0.00185
sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00241	0.00236	0.00222
	(B * D * X)	-0.00253	-0.00253	-0.00252
	(B * !D * X)	0.00215	0.00217	0.00214
	(B * !D * X)	-0.00208	-0.00209	-0.00208
	(A * !B * D * X)	0.00254	0.00224	0.00216
	(A * !B * D * X)	-0.00246	-0.00254	-0.00255
	(A * !B * !D * X)	0.00218	0.00219	0.00215
	(A * !B * !D * X)	-0.00206	-0.00207	-0.00206
	(!A * !B * D * X)	0.00294	0.00221	0.00213
	(!A * !B * D * X)	-0.00297	-0.00371	-0.00377

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

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

sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00134	-0.00135	-0.00134
	(B * D * X)	0.00119	0.00120	0.00119
	(B * !D * X)	-0.00133	-0.00134	-0.00132
	(B * !D * X)	0.00102	0.00103	0.00103
	(A * !B * D * X)	-0.00134	-0.00134	-0.00134
	(A * !B * D * X)	0.00123	0.00123	0.00123
	(A * !B * !D * X)	-0.00129	-0.00130	-0.00132
	(A * !B * !D * X)	0.00103	0.00104	0.00101
	(!A * !B * D * X)	-0.00133	-0.00133	-0.00132
	(!A * !B * D * X)	0.00181	0.00183	0.00183
sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00154	-0.00154	-0.00155
	(B * D * X)	0.00118	0.00118	0.00119
	(B * !D * X)	-0.00154	-0.00155	-0.00153
	(B * !D * X)	0.00103	0.00104	0.00104
	(A * !B * D * X)	-0.00155	-0.00155	-0.00154
	(A * !B * D * X)	0.00124	0.00124	0.00124
	(A * !B * !D * X)	-0.00151	-0.00152	-0.00153
	(A * !B * !D * X)	0.00104	0.00104	0.00103
	(!A * !B * D * X)	-0.00154	-0.00154	-0.00153
	(!A * !B * D * X)	0.00184	0.00185	0.00185
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00215	-0.00216	-0.00215
	(B * D * X)	0.00253	0.00253	0.00252
	(B * !D * X)	-0.00211	-0.00212	-0.00210
	(B * !D * X)	0.00214	0.00214	0.00214
	(A * !B * D * X)	-0.00213	-0.00213	-0.00214
	(A * !B * D * X)	0.00253	0.00254	0.00255
	(A * !B * !D * X)	-0.00200	-0.00202	-0.00209
	(A * !B * !D * X)	0.00216	0.00217	0.00211
	(!A * !B * D * X)	-0.00211	-0.00211	-0.00209
	(!A * !B * D * X)	0.00377	0.00378	0.00378

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	0.00149	0.00150	0.00149
	(C * X)	-0.00094	-0.00095	-0.00094
	(B * !C * X)	0.00149	0.00150	0.00149
	(B * !C * X)	-0.00094	-0.00095	-0.00094
	(A * !B * !C * X)	0.00149	0.00151	0.00149
	(A * !B * !C * X)	-0.00094	-0.00095	-0.00094
sky130_fd_sc_hs__or4_2	(C * X)	0.00176	0.00178	0.00177
	(C * X)	-0.00094	-0.00094	-0.00093
	(B * !C * X)	0.00176	0.00178	0.00177
	(B * !C * X)	-0.00093	-0.00094	-0.00093
	(A * !B * !C * X)	0.00176	0.00178	0.00177
	(A * !B * !C * X)	-0.00093	-0.00094	-0.00093
sky130_fd_sc_hs__or4_4	(C * X)	0.00242	0.00244	0.00243
	(C * X)	-0.00183	-0.00184	-0.00183
	(B * !C * X)	0.00242	0.00244	0.00243
	(B * !C * X)	-0.00182	-0.00183	-0.00182
	(A * !B * !C * X)	0.00242	0.00244	0.00243
	(A * !B * !C * X)	-0.00182	-0.00183	-0.00182

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	-0.00144	-0.00145	-0.00149
	(C * X)	0.00099	0.00099	0.00095
	(B * !C * X)	-0.00137	-0.00138	-0.00147
	(B * !C * X)	0.00103	0.00103	0.00096
	(A * !B * !C * X)	-0.00126	-0.00128	-0.00145
	(A * !B * !C * X)	0.00109	0.00110	0.00097
sky130_fd_sc_hs__or4_2	(C * X)	-0.00172	-0.00173	-0.00176
	(C * X)	0.00098	0.00099	0.00095
	(B * !C * X)	-0.00165	-0.00166	-0.00175
	(B * !C * X)	0.00102	0.00102	0.00095
	(A * !B * !C * X)	-0.00155	-0.00156	-0.00172
	(A * !B * !C * X)	0.00108	0.00108	0.00096
sky130_fd_sc_hs__or4_4	(C * X)	-0.00230	-0.00231	-0.00241
	(C * X)	0.00194	0.00195	0.00187
	(B * !C * X)	-0.00210	-0.00211	-0.00238
	(B * !C * X)	0.00205	0.00205	0.00187
	(A * !B * !C * X)	-0.00190	-0.00192	-0.00232
	(A * !B * !C * X)	0.00217	0.00217	0.00190

SKY130_FD_SC_HS__SDFBBNx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00197	0.00178	0.00416	0.00182	0.00556	0.00299	1.18469	1.18668
sky130_fd_sc_hs__sdfbbn_2	0.00198	0.00179	0.00420	0.00169	0.00548	0.00296	2.38663	2.38827

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfbbn_1	0.00000	1.50600	2.70931
sky130_fd_sc_hs__sdfbbn_2	0.00000	1.44449	2.79960

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)	0.35348	0.99931	8.54538
	SET_B->Q (FR)	0.17197	0.84954	8.53714
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FR)	0.40216	0.94205	8.61561
	SET_B->Q (FR)	0.20468	0.79439	8.64090

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)	0.35857	0.76518	4.71239
	RESET_B->Q (FF)	0.22606	0.66067	4.64687
	SET_B->Q (RF)	0.13588	0.39220	2.24950
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FF)	0.38566	0.75582	4.77954
	RESET_B->Q (FF)	0.25604	0.65585	4.73749
	SET_B->Q (RF)	0.16527	0.40054	2.42186

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)	0.32568	0.98318	8.56812
	RESET_B->Q_N (FR)	0.19400	0.88359	8.51086
	SET_B->Q_N (RR)	0.10379	0.61953	6.35916
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FR)	0.32356	0.88486	8.49386
	RESET_B->Q_N (FR)	0.19542	0.78661	8.45877
	SET_B->Q_N (RR)	0.10508	0.53527	6.35108

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)	0.29809	0.77482	4.84512
	SET_B->Q_N (FF)	0.12177	0.62950	5.04894
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FF)	0.31749	0.76745	4.82011
	SET_B->Q_N (FF)	0.13028	0.61314	5.06055

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)	-0.02872	0.02159	1.99081
	setup	CLK_N (F)	0.14206	0.07364	-1.97698
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.03238	0.01482	1.97352
	setup	CLK_N (F)	0.14241	0.07776	-1.96206

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)	-0.19036	-0.22825	-0.57098
	setup	CLK_N (F)	0.21557	0.24933	0.58451
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.20539	-0.24742	-0.62840
	setup	CLK_N (F)	0.23434	0.26877	0.64079

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)	-0.02872	0.02159	1.99081
	setup	CLK_N (F)	0.14206	0.07364	-1.97698
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.03238	0.01482	1.97352
	setup	CLK_N (F)	0.14241	0.07776	-1.96206

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)	-0.19036	-0.22825	-0.57098
	setup	CLK_N (F)	0.21557	0.24933	0.58451
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.20539	-0.24742	-0.62840
	setup	CLK_N (F)	0.23434	0.26877	0.64079

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)	-0.04917	0.01000	1.93294
	setup	CLK_N (F)	0.16387	0.08871	-1.90197
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.05324	0.00513	1.92244
	setup	CLK_N (F)	0.16475	0.09184	-1.89247

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)	-0.23613	-0.26486	-0.67549
	setup	CLK_N (F)	0.27595	0.30124	0.71855
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.25887	-0.28854	-0.73265
	setup	CLK_N (F)	0.29457	0.32123	0.77663

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)	-0.04917	0.01000	1.93294
	hold	CLK_N (F)	-0.05074	0.00500	1.91200
	setup	CLK_N (F)	0.16096	0.08394	-1.91955
	setup	CLK_N (F)	0.16387	0.08871	-1.90197
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.05324	0.00513	1.92244
	hold	CLK_N (F)	-0.05465	0.00090	1.90144
	setup	CLK_N (F)	0.16253	0.08647	-1.90891
	setup	CLK_N (F)	0.16475	0.09184	-1.89247

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)	-0.24560	-0.27837	-0.70767
	hold	CLK_N (F)	-0.23613	-0.26486	-0.67549
	setup	CLK_N (F)	0.27595	0.30124	0.71855
	setup	CLK_N (F)	0.26807	0.29392	0.69065
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.26728	-0.29844	-0.76206
	hold	CLK_N (F)	-0.25887	-0.28854	-0.73265
	setup	CLK_N (F)	0.29457	0.32123	0.77663
	setup	CLK_N (F)	0.28802	0.31267	0.74628

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)	-0.04067	0.00500	1.85146
	setup	CLK_N (F)	0.26921	0.19570	-1.83274
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.04494	-0.00119	1.84322
	setup	CLK_N (F)	0.28995	0.21598	-1.80862

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)	-0.08482	-0.07518	0.01912
	setup	CLK_N (F)	0.21617	0.23899	0.54909
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.08799	-0.07963	0.01072
	setup	CLK_N (F)	0.23491	0.26018	0.60440

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)	-0.24061	-0.17421	1.84595
	hold	CLK_N (F)	-0.04067	0.00500	1.85146
	setup	CLK_N (F)	0.26921	0.19570	-1.83274
	setup	CLK_N (F)	0.15082	0.09007	-1.84180
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.26092	-0.19497	1.82278
	hold	CLK_N (F)	-0.04494	-0.00119	1.84322
	setup	CLK_N (F)	0.28995	0.21598	-1.80862
	setup	CLK_N (F)	0.15432	0.09307	-1.82851

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)	-0.08482	-0.07518	0.01912
	hold	CLK_N (F)	-0.19319	-0.21793	-0.53862
	setup	CLK_N (F)	0.19444	0.16687	-0.01137
	setup	CLK_N (F)	0.21617	0.23899	0.54909
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.08799	-0.07963	0.01072
	hold	CLK_N (F)	-0.21182	-0.23742	-0.59208
	setup	CLK_N (F)	0.20116	0.17281	0.00134
	setup	CLK_N (F)	0.23491	0.26018	0.60440

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)	0.10096	0.01361	-2.17118
	removal	CLK_N (F)	0.01418	0.08732	2.21325
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.10110	0.01500	-2.17359
	removal	CLK_N (F)	0.01928	0.09029	2.22254

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)	0.10096	0.01356	-2.17413
	recovery	CLK_N (F)	0.09998	0.01361	-2.17119
	recovery	CLK_N (F)	0.09996	0.01360	-2.17118
	removal	CLK_N (F)	0.01418	0.08732	2.21325
	removal	CLK_N (F)	0.01418	0.08732	2.21325
	removal	CLK_N (F)	0.01418	0.08732	2.21325
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.10103	0.01096	-2.17359
	recovery	CLK_N (F)	0.10103	0.01500	-2.17366
	recovery	CLK_N (F)	0.10110	0.01093	-2.17359
	removal	CLK_N (F)	0.01928	0.09029	2.22254
	removal	CLK_N (F)	0.01928	0.09029	2.22254
	removal	CLK_N (F)	0.01928	0.09029	2.22254

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 ()	0.19003	0.64453	16.50020
	min_pulse_width	RESET_B ()	0.16827	0.64453	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	RESET_B ()	0.19486	0.64453	16.50020
	min_pulse_width	RESET_B ()	0.17069	0.64453	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)	-0.02464	-0.12432	-1.95280
	removal	CLK_N (F)	0.03897	0.13687	2.33621
	hold	RESET_B (R)	-0.05044	-0.08798	-0.37863
	setup	RESET_B (R)	0.10280	0.13032	0.61487
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.02107	-0.11976	-1.71389
	removal	CLK_N (F)	0.03640	0.13260	2.31407
	hold	RESET_B (R)	-0.06781	-0.11109	-0.48161
	setup	RESET_B (R)	0.10568	0.14755	0.76701

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)	-0.02474	-0.12432	-1.95280
	recovery	CLK_N (F)	-0.02470	-0.12432	-1.95280
	recovery	CLK_N (F)	-0.02464	-0.12432	-1.95280
	removal	CLK_N (F)	0.03897	0.13687	2.33515
	removal	CLK_N (F)	0.03897	0.13687	2.33515
	removal	CLK_N (F)	0.03897	0.13687	2.33621
	hold	RESET_B (R)	-0.05044	-0.08798	-0.37863
	hold	RESET_B (R)	-0.05044	-0.08933	-0.38250
	setup	RESET_B (R)	0.10280	0.13032	0.61142
	setup	RESET_B (R)	0.08036	0.11578	0.61487
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.02416	-0.11976	-1.71448
	recovery	CLK_N (F)	-0.02107	-0.11976	-1.71450
	recovery	CLK_N (F)	-0.02109	-0.11976	-1.71389
	removal	CLK_N (F)	0.03640	0.13260	2.31300
	removal	CLK_N (F)	0.03640	0.13260	2.31300
	removal	CLK_N (F)	0.03640	0.13260	2.31407
	hold	RESET_B (R)	-0.06781	-0.11603	-0.48190
	hold	RESET_B (R)	-0.06840	-0.11109	-0.48161
	setup	RESET_B (R)	0.10568	0.14755	0.76686
	setup	RESET_B (R)	0.08133	0.13661	0.76701

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 ()	0.13926	0.64453	16.50020
	min_pulse_width	SET_B ()	0.12234	0.64453	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	SET_B ()	0.15618	0.64453	16.50020
	min_pulse_width	SET_B ()	0.13926	0.64453	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 ()	0.17552	0.64453	16.50020
	min_pulse_width	CLK_N ()	0.13201	0.64453	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.18036	0.64453	16.50020
	min_pulse_width	CLK_N ()	0.13926	0.64453	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 ()	0.15860	0.64453	16.50020
	min_pulse_width	CLK_N ()	0.18761	0.64453	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.17552	0.64453	16.50020
	min_pulse_width	CLK_N ()	0.19003	0.64453	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	0.01488	0.01606	0.03996
	CLK_N	0.01729	0.01850	0.04237
	SET_B	0.01559	0.01755	0.06095
	SET_B	0.02012	0.02207	0.06545
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01825	0.01921	0.04314
	CLK_N	0.02056	0.02147	0.04545
	SET_B	0.01880	0.02072	0.06409
	SET_B	0.02320	0.02512	0.06847

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.01573	0.01706	0.04030
	CLK_N	0.01783	0.01918	0.04217
	RESET_B	0.01910	0.01990	0.03481
	RESET_B	0.02041	0.02121	0.03588
	SET_B	0.02009	0.02052	0.06008
	SET_B	0.01556	0.01597	0.05553
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01864	0.02017	0.04386
	CLK_N	0.02078	0.02235	0.04552
	RESET_B	0.02247	0.02351	0.03899
	RESET_B	0.02381	0.02485	0.03971
	SET_B	0.02335	0.02393	0.06313
	SET_B	0.01892	0.01952	0.05866

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.01575	0.01709	0.04037
	CLK_N	0.01785	0.01920	0.04247
	RESET_B	0.01912	0.01992	0.03464
	RESET_B	0.02043	0.02123	0.03594
	SET_B	0.02011	0.02052	0.06044
	SET_B	0.01558	0.01599	0.05587
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01866	0.02023	0.04430
	CLK_N	0.02080	0.02237	0.04587
	RESET_B	0.02249	0.02355	0.03895
	RESET_B	0.02383	0.02488	0.03996
	SET_B	0.02337	0.02401	0.06361
	SET_B	0.01895	0.01955	0.05910

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.01485	0.01604	0.04006
	CLK_N	0.01727	0.01848	0.04212
	SET_B	0.01555	0.01751	0.06048
	SET_B	0.02007	0.02201	0.06491
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01822	0.01919	0.04379
	CLK_N	0.02053	0.02149	0.04517
	SET_B	0.01876	0.02066	0.06409
	SET_B	0.02315	0.02506	0.06795

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)**	0.00132	0.00132	0.00132
	(CLK_N * SCD * SCE)	-0.00063	-0.00062	-0.00062
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01278	0.01330	0.03687
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00990	0.01042	0.03400
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00884	0.00931	0.03088
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00548	0.00595	0.02752
	(CLK_N * !SCD * SCE)	0.00054	0.00054	0.00053
	(CLK_N * !SCD * SCE)	-0.00156	-0.00158	-0.00160
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00743	0.00792	0.02940
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00410	0.00459	0.02607
	(!CLK_N * SCD * SCE)	0.00132	0.00133	0.00133
	(!CLK_N * SCD * SCE)	-0.00061	-0.00061	-0.00061
	(!CLK_N * !SCE)	0.00495	0.00551	0.02854
	(!CLK_N * !SCE)	0.00164	0.00218	0.02522
	(!CLK_N * !SCD * SCE)	0.00054	0.00054	0.00053
	(!CLK_N * !SCD * SCE)	-0.00156	-0.00159	-0.00161

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	0.00134	0.00137	0.00135
	(CLK_N * SCD * SCE)	-0.00062	-0.00064	-0.00062
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01292	0.01327	0.03671
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00995	0.01030	0.03375
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00901	0.00948	0.03075
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00559	0.00607	0.02734
	(CLK_N * !SCD * SCE)	0.00057	0.00057	0.00056
	(CLK_N * !SCD * SCE)	-0.00156	-0.00158	-0.00161
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00750	0.00784	0.02917
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00411	0.00446	0.02579
	(!CLK_N * SCD * SCE)	0.00135	0.00136	0.00135
	(!CLK_N * SCD * SCE)	-0.00062	-0.00063	-0.00062
	(!CLK_N * !SCE)	0.00488	0.00544	0.02823
	(!CLK_N * !SCE)	0.00152	0.00205	0.02485
	(!CLK_N * !SCD * SCE)	0.00056	0.00057	0.00055
	(!CLK_N * !SCD * SCE)	-0.00157	-0.00159	-0.00161

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)**	-0.00125	-0.00126	-0.00129
	(CLK_N * SCD * SCE)	0.00068	0.00068	0.00066
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01219	0.01300	0.03726
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01508	0.01587	0.04013
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00376	0.00453	0.02668
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00713	0.00789	0.03004
	(CLK_N * !SCD * SCE)	-0.00047	-0.00048	-0.00048
	(CLK_N * !SCD * SCE)	0.00163	0.00165	0.00164
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00496	0.00577	0.02806
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00829	0.00909	0.03138
	(!CLK_N * SCD * SCE)	-0.00124	-0.00125	-0.00128
	(!CLK_N * SCD * SCE)	0.00069	0.00069	0.00067
	(!CLK_N * !SCE)	0.00235	0.00334	0.02650
	(!CLK_N * !SCE)	0.00568	0.00666	0.02982
	(!CLK_N * !SCD * SCE)	-0.00048	-0.00049	-0.00048
	(!CLK_N * !SCD * SCE)	0.00163	0.00164	0.00163

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	-0.00128	-0.00130	-0.00133
	(CLK_N * SCD * SCE)	0.00068	0.00068	0.00066
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01315	0.01393	0.03793
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01612	0.01689	0.04090
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00409	0.00481	0.02671
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00751	0.00822	0.03013
	(CLK_N * !SCD * SCE)	-0.00051	-0.00052	-0.00051
	(CLK_N * !SCD * SCE)	0.00163	0.00164	0.00164
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00539	0.00616	0.02818
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00877	0.00955	0.03156
	(!CLK_N * SCD * SCE)	-0.00128	-0.00130	-0.00133
	(!CLK_N * SCD * SCE)	0.00068	0.00068	0.00066
	(!CLK_N * !SCE)	0.00262	0.00357	0.02649
	(!CLK_N * !SCE)	0.00601	0.00695	0.02988
	(!CLK_N * !SCD * SCE)	-0.00051	-0.00052	-0.00052
	(!CLK_N * !SCD * SCE)	0.00162	0.00163	0.00163

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)**	0.01080	0.01098	0.02704
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00634	0.00652	0.02260
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01471	0.01492	0.03236
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01074	0.01094	0.02840
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00938	0.00956	0.02554
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00496	0.00514	0.02113
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.01167	0.01182	0.02755
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00702	0.00717	0.02293
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01559	0.01575	0.03284
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01143	0.01159	0.02869
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01025	0.01040	0.02605
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00564	0.00579	0.02146
	(!CLK_N * D * SCE)	0.00692	0.00716	0.02401
	(!CLK_N * D * SCE)	0.00250	0.00273	0.01959
	(!CLK_N * !D * SCE)	0.00779	0.00799	0.02448
	(!CLK_N * !D * SCE)	0.00318	0.00337	0.01988
	!SCE	0.00122	0.00104	0.00101
	!SCE	-0.00114	-0.00135	-0.00136

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.01091	0.01108	0.02694
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00648	0.00665	0.02252
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01480	0.01498	0.03221
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01081	0.01099	0.02824
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00940	0.00957	0.02534
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00500	0.00517	0.02096
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.01177	0.01192	0.02745
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00715	0.00729	0.02285
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01566	0.01581	0.03271
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01149	0.01164	0.02855
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01026	0.01039	0.02586
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00567	0.00581	0.02129
	(!CLK_N * D * SCE)	0.00680	0.00703	0.02370
	(!CLK_N * D * SCE)	0.00240	0.00262	0.01931
	(!CLK_N * !D * SCE)	0.00766	0.00784	0.02417
	(!CLK_N * !D * SCE)	0.00306	0.00325	0.01960
	!SCE	0.00121	0.00103	0.00100
	!SCE	-0.00115	-0.00136	-0.00138

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)**	0.00536	0.00549	0.02159
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00982	0.00996	0.02603
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01382	0.01396	0.03172
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01781	0.01793	0.03567
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00656	0.00670	0.02294
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01098	0.01114	0.02735
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00491	0.00506	0.02134
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00955	0.00971	0.02597
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01338	0.01360	0.03174
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01754	0.01776	0.03588
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00611	0.00627	0.02270
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01072	0.01089	0.02729
	(!CLK_N * D * SCE)	0.00398	0.00416	0.02099
	(!CLK_N * D * SCE)	0.00840	0.00859	0.02540
	(!CLK_N * !D * SCE)	0.00353	0.00374	0.02079
	(!CLK_N * !D * SCE)	0.00813	0.00836	0.02538
	!SCE	-0.00096	-0.00098	-0.00098
	!SCE	0.00139	0.00139	0.00139

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.00570	0.00582	0.02171
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.01013	0.01027	0.02612
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01476	0.01492	0.03247
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01874	0.01890	0.03643
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00700	0.00713	0.02316
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01139	0.01154	0.02754
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00525	0.00539	0.02146
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00986	0.01002	0.02606
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01435	0.01451	0.03244
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01852	0.01867	0.03659
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00655	0.00670	0.02291
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01112	0.01128	0.02748
	(!CLK_N * D * SCE)	0.00426	0.00443	0.02107
	(!CLK_N * D * SCE)	0.00865	0.00884	0.02546
	(!CLK_N * !D * SCE)	0.00380	0.00401	0.02087
	(!CLK_N * !D * SCE)	0.00838	0.00860	0.02543
	!SCE	-0.00095	-0.00098	-0.00098
	!SCE	0.00140	0.00140	0.00140

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbn_1	**(CLK_N * D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (CLK_N * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !RESET_B * SCD * !SET_B * Q * !Q_N)**	0.00544	0.00647	0.03657
	(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)	-0.00055	0.00046	0.03056
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01964	0.02074	0.05157
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01490	0.01596	0.04675
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01119	0.01231	0.04304
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00693	0.00801	0.03871
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01241	0.01352	0.04427
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00811	0.00918	0.03993
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01381	0.01537	0.06311
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00629	0.00783	0.05561
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01774	0.01930	0.06871
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01070	0.01226	0.06169
	(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)	0.00539	0.00656	0.03656
	(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)	-0.00019	0.00095	0.03097
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01239	0.01394	0.06160
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00491	0.00644	0.05414
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00557	0.00660	0.03670
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00043	0.00058	0.03068
	(!CLK_N * D * !SCD)	0.01005	0.01106	0.04192
	(!CLK_N * D * !SCD)	0.00576	0.00672	0.03757
	(!CLK_N * !D * SCD)	0.01005	0.01175	0.06028
	(!CLK_N * !D * SCD)	0.00256	0.00423	0.05282

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)**	0.00552	0.00656	0.03671
	(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)	-0.00054	0.00047	0.03062
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.02063	0.02177	0.05263
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01587	0.01698	0.04780
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01157	0.01272	0.04347
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00727	0.00837	0.03911
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01289	0.01402	0.04481
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00854	0.00964	0.04042
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01402	0.01557	0.06316
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00642	0.00794	0.05556
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01793	0.01946	0.06875
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01077	0.01231	0.06161
	(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)	0.00546	0.00663	0.03668
	(CLK_N * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (CLK_N * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	-0.00021	0.00095	0.03101
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01251	0.01406	0.06156
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00494	0.00645	0.05399
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00564	0.00668	0.03683
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00043	0.00058	0.03074
	(!CLK_N * D * !SCD)	0.01038	0.01141	0.04231
	(!CLK_N * D * !SCD)	0.00604	0.00702	0.03790
	(!CLK_N * !D * SCD)	0.01004	0.01169	0.06013
	(!CLK_N * !D * SCD)	0.00246	0.00409	0.05258

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)	-0.00061	0.00120	0.03134
	(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)	0.00537	0.00721	0.03734
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01206	0.01366	0.04385
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01683	0.01845	0.04847
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00813	0.00971	0.03992
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01241	0.01404	0.04406
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00671	0.00831	0.03850
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01103	0.01265	0.04265
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00378	0.00562	0.05277
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01129	0.01311	0.06029
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01221	0.01402	0.06268
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01922	0.02104	0.06970
	(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)	-0.00027	0.00136	0.03143
	(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)	0.00531	0.00698	0.03704
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00499	0.00683	0.05415
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01245	0.01432	0.06163
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00071	0.00098	0.03124
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00526	0.00698	0.03724
	(!CLK_N * D * !SCD)	0.00416	0.00566	0.03622
	(!CLK_N * D * !SCD)	0.00848	0.01002	0.04039
	(!CLK_N * !D * SCD)	0.00226	0.00419	0.05249
	(!CLK_N * !D * SCD)	0.00972	0.01168	0.05998

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)**	-0.00069	0.00112	0.03132
	(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)	0.00536	0.00720	0.03736
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01210	0.01370	0.04388
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01688	0.01849	0.04852
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00820	0.00978	0.04000
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01252	0.01416	0.04419
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00668	0.00828	0.03847
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01104	0.01266	0.04270
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00406	0.00586	0.05282
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01166	0.01349	0.06044
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01311	0.01491	0.06337
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.02025	0.02207	0.07053
	(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)	-0.00035	0.00130	0.03142
	(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)	0.00533	0.00700	0.03708
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00536	0.00717	0.05429
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01292	0.01475	0.06187
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00081	0.00087	0.03120
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00524	0.00697	0.03724
	(!CLK_N * D * !SCD)	0.00400	0.00551	0.03606
	(!CLK_N * D * !SCD)	0.00835	0.00990	0.04028
	(!CLK_N * !D * SCD)	0.00247	0.00438	0.05249
	(!CLK_N * !D * SCD)	0.01003	0.01197	0.06008

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)	0.01311	0.01358	0.04268
	(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)	0.01018	0.01064	0.03974
	(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)	0.00774	0.00843	0.03672
	(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)	0.00436	0.00503	0.03334
	(!SET_B * Q * !Q_N)	0.00773	0.00850	0.03718
	(!SET_B * Q * !Q_N)	0.00428	0.00503	0.03373

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)**	0.01283	0.01334	0.04235
	(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)	0.00995	0.01046	0.03948
	(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)	0.00742	0.00816	0.03638
	(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)	0.00413	0.00486	0.03310
	(!SET_B * Q * !Q_N)	0.00758	0.00834	0.03703
	(!SET_B * Q * !Q_N)	0.00423	0.00498	0.03367

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)**	0.01137	0.01275	0.04222
	(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)	0.01432	0.01569	0.04516
	(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)	0.00372	0.00491	0.03341
	(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)	0.00709	0.00831	0.03680
	(!SET_B * Q * !Q_N)	0.00245	0.00374	0.03245
	(!SET_B * Q * !Q_N)	0.00592	0.00721	0.03593

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)**	0.01204	0.01337	0.04280
	(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)	0.01491	0.01625	0.04567
	(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)	0.00391	0.00510	0.03356
	(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)	0.00720	0.00838	0.03685
	(!SET_B * Q * !Q_N)	0.00247	0.00376	0.03244
	(!SET_B * Q * !Q_N)	0.00585	0.00713	0.03581

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)**	0.00351	0.00351	0.00349
	(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)	-0.00437	-0.00436	-0.00435
	(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)	0.01199	0.01246	0.05080
	(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)	0.00354	0.00396	0.04234

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)**	0.00361	0.00363	0.00359
	(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)	-0.00423	-0.00424	-0.00421
	(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)	0.01261	0.01306	0.05118
	(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)	0.00426	0.00464	0.04279

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)**	-0.00338	-0.00348	-0.00347
	(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)	0.00440	0.00442	0.00439
	(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)	0.00176	0.00344	0.04365
	(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)	0.01018	0.01193	0.05211

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)**	-0.00352	-0.00357	-0.00357
	(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)	0.00429	0.00426	0.00425
	(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)	0.00159	0.00328	0.04339
	(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)	0.00999	0.01167	0.05178

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)	0.02153	0.02305	0.07057
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01745	0.01896	0.06649
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01324	0.01459	0.06046
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00871	0.01004	0.05593
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02163	0.02313	0.07047
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01755	0.01904	0.06640
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01332	0.01468	0.06054
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00880	0.01013	0.05601
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02300	0.02428	0.07119
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01805	0.01930	0.06624
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01304	0.01432	0.06056
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00851	0.00978	0.05603
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01438	0.01567	0.06278
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00987	0.01116	0.05828
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01620	0.01772	0.06518
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01167	0.01317	0.06065
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01629	0.01778	0.06527
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01176	0.01324	0.06073
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02153	0.02304	0.07058
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01745	0.01895	0.06649
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01324	0.01459	0.06046
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00871	0.01004	0.05593
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.02306	0.02434	0.07136
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01809	0.01934	0.06640
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02300	0.02428	0.07156
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01804	0.01929	0.06659
	(!D * !SCE * SET_B * !Q * Q_N)	0.01312	0.01441	0.06065
	(!D * !SCE * SET_B * !Q * Q_N)	0.00860	0.00986	0.05611
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01446	0.01576	0.06288
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00996	0.01125	0.05838
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01304	0.01432	0.06056
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00851	0.00978	0.05603
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01438	0.01568	0.06280
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00988	0.01118	0.05831
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01620	0.01769	0.06518
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01167	0.01316	0.06065

sky130_fd_sc_hs__sdfbbn_2	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02179	0.02332	0.07076
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01774	0.01926	0.06672
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01315	0.01453	0.06035
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00868	0.01004	0.05589
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02189	0.02340	0.07087
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01784	0.01933	0.06682
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01323	0.01460	0.06043
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00876	0.01012	0.05596
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02350	0.02478	0.07202
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01863	0.01991	0.06716
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01301	0.01431	0.06051
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00854	0.00983	0.05604
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01427	0.01558	0.06265
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00982	0.01114	0.05821
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01635	0.01786	0.06528
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01188	0.01339	0.06081
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01642	0.01792	0.06535
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01196	0.01345	0.06088
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02180	0.02330	0.07080
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01775	0.01925	0.06674
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01315	0.01453	0.06035
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00868	0.01004	0.05589
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.02355	0.02483	0.07180
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01866	0.01994	0.06692
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02349	0.02479	0.07203
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01862	0.01990	0.06716
	(!D * !SCE * SET_B * !Q * Q_N)	0.01309	0.01439	0.06059
	(!D * !SCE * SET_B * !Q * Q_N)	0.00862	0.00990	0.05611
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01434	0.01566	0.06300
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00990	0.01121	0.05856
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01301	0.01431	0.06051
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00854	0.00983	0.05604
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01427	0.01561	0.06294
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00982	0.01115	0.05850
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01635	0.01785	0.06528
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01188	0.01337	0.06081

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)**	0.01010	0.01221	0.05858
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01463	0.01672	0.06311
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01001	0.01213	0.05849
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01454	0.01664	0.06303
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01063	0.01268	0.05896
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01516	0.01723	0.06350
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01402	0.01612	0.06364
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01854	0.02064	0.06816
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01412	0.01617	0.06206
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01866	0.02071	0.06660
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01404	0.01609	0.06198
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01857	0.02063	0.06651
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01010	0.01218	0.05858
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01463	0.01672	0.06312
	(!D * !SCE * SET_B * !Q * Q_N)	0.01054	0.01259	0.05887
	(!D * !SCE * SET_B * !Q * Q_N)	0.01508	0.01714	0.06341
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01393	0.01600	0.06358
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01845	0.02053	0.06809
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01063	0.01268	0.05896
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01517	0.01723	0.06350
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01401	0.01609	0.06367
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01853	0.02062	0.06818
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01413	0.01618	0.06207
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01866	0.02072	0.06660

sky130_fd_sc_hs__sdfbbn_2	**(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)**	0.01010	0.01218	0.05856
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01456	0.01664	0.06303
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01002	0.01210	0.05848
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01448	0.01656	0.06295
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01058	0.01261	0.05890
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01504	0.01710	0.06337
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01403	0.01607	0.06366
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01847	0.02052	0.06811
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01432	0.01632	0.06216
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01878	0.02079	0.06664
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01424	0.01624	0.06211
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01870	0.02072	0.06658
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01010	0.01216	0.05856
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01456	0.01664	0.06303
	(!D * !SCE * SET_B * !Q * Q_N)	0.01050	0.01253	0.05882
	(!D * !SCE * SET_B * !Q * Q_N)	0.01496	0.01702	0.06328
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01395	0.01599	0.06360
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01839	0.02043	0.06805
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01059	0.01261	0.05890
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01504	0.01710	0.06336
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01402	0.01607	0.06368
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01846	0.02052	0.06813
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01432	0.01632	0.06217
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01878	0.02080	0.06664

SKY130_FD_SC_HS__SDFBBP

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00196	0.00180	0.00406	0.00170	0.00632	0.00294	1.15697	1.09518

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfbbp_1	0.00000	1.50600	2.70931

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)	0.34708	0.82654	6.18683
	SET_B->Q (FR)	0.15903	0.83745	8.49598

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbp_1	CLK->Q (RF)	0.27318	0.50419	2.21260
	RESET_B->Q (FF)	0.21965	0.64517	4.55721
	SET_B->Q (RF)	0.13878	0.38044	2.14555

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)	0.24106	0.73806	6.17844
	RESET_B->Q_N (FR)	0.18815	0.88614	8.53384
	SET_B->Q_N (RR)	0.10691	0.62419	6.34906

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)	0.29105	0.58247	2.25041
	SET_B->Q_N (FF)	0.10943	0.59034	4.76983

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)	-0.08106	-0.14698	-0.70900
	setup	CLK (R)	0.11462	0.16517	0.74159

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)	-0.16706	-0.27918	-2.95198
	setup	CLK (R)	0.21938	0.32057	3.03011

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)	-0.08106	-0.14698	-0.70900
	setup	CLK (R)	0.11462	0.16517	0.74159

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)	-0.16706	-0.27918	-2.95198
	setup	CLK (R)	0.21938	0.32057	3.03011

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)	-0.09921	-0.16152	-0.74673
	setup	CLK (R)	0.13656	0.18258	0.77561

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)	-0.22244	-0.33211	-3.06659
	setup	CLK (R)	0.28435	0.37823	3.15060

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)	-0.09921	-0.16152	-0.74673
	hold	CLK (R)	-0.10226	-0.16737	-0.75004
	setup	CLK (R)	0.13287	0.17746	0.77272
	setup	CLK (R)	0.13656	0.18258	0.77561

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)	-0.23339	-0.33756	-3.06870
	hold	CLK (R)	-0.22244	-0.33211	-3.06659
	setup	CLK (R)	0.28435	0.37823	3.15060
	setup	CLK (R)	0.27763	0.37176	3.14103

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)	-0.09267	-0.16537	-0.34681
	setup	CLK (R)	0.27920	0.27358	0.83466

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)	-0.13760	-0.24850	-2.65057
	setup	CLK (R)	0.22489	0.31014	2.97054

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)	-0.22515	-0.23109	-0.34681
	hold	CLK (R)	-0.09267	-0.16537	-0.80907
	setup	CLK (R)	0.27920	0.27358	0.45857
	setup	CLK (R)	0.12905	0.18258	0.83466

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)	-0.13760	-0.24850	-2.65057
	hold	CLK (R)	-0.17101	-0.26750	-2.88090
	setup	CLK (R)	0.17397	0.26953	2.66919
	setup	CLK (R)	0.22489	0.31014	2.97054

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)	0.07379	0.08156	0.25762
	removal	CLK (R)	-0.03525	-0.04719	-0.13170

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)	0.07379	0.08154	0.25762
	recovery	CLK (R)	0.07361	0.08143	0.25385
	recovery	CLK (R)	0.07357	0.08156	0.25419
	removal	CLK (R)	-0.03525	-0.04719	-0.13170
	removal	CLK (R)	-0.03525	-0.04719	-0.13170
	removal	CLK (R)	-0.03525	-0.04719	-0.13170

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 ()	0.16585	0.64453	16.50020
	min_pulse_width	RESET_B ()	0.17311	0.64453	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)	0.00523	0.00400	1.77080
	removal	CLK (R)	0.06325	0.08555	0.05325
	hold	RESET_B (R)	-0.05654	-0.09500	-0.43665
	setup	RESET_B (R)	0.09184	0.13000	0.64952

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)	0.00523	0.00400	1.77080
	recovery	CLK (R)	0.00523	0.00400	1.77058
	recovery	CLK (R)	0.00513	0.00400	1.77051
	removal	CLK (R)	0.06325	0.08555	0.05325
	removal	CLK (R)	0.06325	0.08555	0.05325
	removal	CLK (R)	0.06325	0.08555	0.04925
	hold	RESET_B (R)	-0.05717	-0.09656	-0.44014
	hold	RESET_B (R)	-0.05654	-0.09500	-0.43665
	setup	RESET_B (R)	0.09055	0.12539	0.64952
	setup	RESET_B (R)	0.09184	0.13000	0.64753

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 ()	0.10783	0.64453	16.50020
	min_pulse_width	SET_B ()	0.11992	0.64453	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 ()	0.09574	0.64453	16.50020
	min_pulse_width	CLK ()	0.11992	0.64453	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 ()	0.15860	0.64453	16.50020
	min_pulse_width	CLK ()	0.21662	0.64453	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	0.01736	0.01831	0.04202
	CLK	0.01506	0.01600	0.03967
	SET_B	0.01527	0.01742	0.06226
	SET_B	0.02009	0.02226	0.06677

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01707	0.01798	0.04184
	CLK	0.01456	0.01547	0.03931
	RESET_B	0.01752	0.01831	0.03267
	RESET_B	0.01872	0.01950	0.03385
	SET_B	0.01902	0.01934	0.05994
	SET_B	0.01417	0.01449	0.05506

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01709	0.01802	0.04234
	CLK	0.01458	0.01549	0.03989
	RESET_B	0.01755	0.01832	0.03289
	RESET_B	0.01874	0.01951	0.03408
	SET_B	0.01905	0.01935	0.06029
	SET_B	0.01420	0.01451	0.05546

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01733	0.01835	0.04149
	CLK	0.01503	0.01601	0.03924
	SET_B	0.01521	0.01737	0.06227
	SET_B	0.02004	0.02218	0.06631

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	0.00134	0.00135	0.00134
	(CLK * SCD * SCE)	-0.00061	-0.00061	-0.00061
	(CLK * !SCE)	0.00481	0.00545	0.02866
	(CLK * !SCE)	0.00147	0.00209	0.02532
	(CLK * !SCD * SCE)	0.00055	0.00055	0.00053
	(CLK * !SCD * SCE)	-0.00157	-0.00158	-0.00160
	(!CLK * SCD * SCE)	0.00132	0.00133	0.00133
	(!CLK * SCD * SCE)	-0.00062	-0.00061	-0.00062
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01272	0.01325	0.03687
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00959	0.01012	0.03374
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00844	0.00891	0.03046
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00481	0.00527	0.02682
	(!CLK * !SCD * SCE)	0.00055	0.00055	0.00054
	(!CLK * !SCD * SCE)	-0.00156	-0.00157	-0.00160
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00719	0.00766	0.02914
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00357	0.00405	0.02552

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	-0.00124	-0.00127	-0.00129
	(CLK * SCD * SCE)	0.00068	0.00069	0.00066
	(CLK * !SCE)	0.00119	0.00233	0.02552
	(CLK * !SCE)	0.00455	0.00568	0.02886
	(CLK * !SCD * SCE)	-0.00049	-0.00049	-0.00049
	(CLK * !SCD * SCE)	0.00163	0.00163	0.00163
	(!CLK * SCD * SCE)	-0.00126	-0.00128	-0.00130
	(!CLK * SCD * SCE)	0.00068	0.00068	0.00065
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00990	0.01076	0.03513
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01303	0.01389	0.03826
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00361	0.00439	0.02644
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00726	0.00803	0.03007
	(!CLK * !SCD * SCE)	-0.00048	-0.00049	-0.00048
	(!CLK * !SCD * SCE)	0.00163	0.00164	0.00163
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00462	0.00545	0.02763
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00824	0.00907	0.03124

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCE)**	0.00680	0.00707	0.02396
	(CLK * D * SCE)	0.00236	0.00262	0.01953
	(CLK * !D * SCE)	0.00767	0.00788	0.02440
	(CLK * !D * SCE)	0.00304	0.00324	0.01979
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01042	0.01061	0.02657
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00570	0.00588	0.02186
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01467	0.01486	0.03227
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01045	0.01064	0.02806
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00917	0.00935	0.02523
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00446	0.00464	0.02054
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01129	0.01145	0.02708
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00638	0.00653	0.02219
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01555	0.01572	0.03292
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01114	0.01131	0.02852
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01004	0.01018	0.02575
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00514	0.00528	0.02087
	!SCE	0.00124	0.00105	0.00102
	!SCE	-0.00113	-0.00135	-0.00136

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCE)**	0.00281	0.00300	0.01986
	(CLK * D * SCE)	0.00725	0.00745	0.02429
	(CLK * !D * SCE)	0.00238	0.00260	0.01968
	(CLK * !D * SCE)	0.00699	0.00723	0.02429
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00519	0.00531	0.02130
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00991	0.01005	0.02601
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01148	0.01163	0.02953
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01570	0.01585	0.03373
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00620	0.00633	0.02247
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01090	0.01104	0.02716
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00475	0.00490	0.02107
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00966	0.00981	0.02597
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01110	0.01131	0.02958
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01550	0.01571	0.03397
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00576	0.00592	0.02225
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01064	0.01081	0.02712
	!SCE	-0.00096	-0.00098	-0.00098
	!SCE	0.00141	0.00141	0.00141

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)**	0.00540	0.00647	0.03616
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00049	0.00056	0.03025
	(CLK * D * !SCD)	0.00876	0.00968	0.04030
	(CLK * D * !SCD)	0.00460	0.00549	0.03608
	(CLK * !D * SCD)	0.00977	0.01149	0.05973
	(CLK * !D * SCD)	0.00237	0.00405	0.05234
	(!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)	0.00561	0.00667	0.03636
	(!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)	-0.00028	0.00075	0.03046
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01747	0.01854	0.04910
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01309	0.01413	0.04465
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01118	0.01228	0.04266
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00731	0.00836	0.03872
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01221	0.01330	0.04371
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00831	0.00936	0.03976
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01360	0.01524	0.06247
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00592	0.00753	0.05479
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01786	0.01949	0.06848
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01068	0.01231	0.06131
	(!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)	0.00557	0.00677	0.03637
	(!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	0.00128	0.03088
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01235	0.01396	0.06112
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00468	0.00628	0.05347

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)	-0.00049	0.00129	0.03108
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00538	0.00720	0.03699
	(CLK * D * !SCD)	0.00424	0.00579	0.03601
	(CLK * D * !SCD)	0.00842	0.01001	0.04005
	(CLK * !D * SCD)	0.00131	0.00331	0.05141
	(CLK * !D * SCD)	0.00868	0.01069	0.05880
	(!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)	-0.00071	0.00106	0.03086
	(!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)	0.00516	0.00696	0.03676
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01188	0.01354	0.04331
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01628	0.01796	0.04758
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00762	0.00928	0.03904
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01151	0.01320	0.04278
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00636	0.00802	0.03778
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01027	0.01197	0.04156
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00351	0.00533	0.05209
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01118	0.01304	0.05977
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00977	0.01161	0.06012
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01693	0.01878	0.06730
	(!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)	-0.00040	0.00122	0.03091
	(!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)	0.00510	0.00674	0.03643
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00451	0.00636	0.05329
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01217	0.01405	0.06093

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)	0.00657	0.00731	0.03571
	(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)	0.00375	0.00448	0.03289
	(!SET_B * Q * !Q_N)	0.00710	0.00795	0.03668
	(!SET_B * Q * !Q_N)	0.00422	0.00505	0.03380
	(!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)	0.01234	0.01280	0.04198
	(!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)	0.01001	0.01047	0.03965

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)	0.00352	0.00474	0.03315
	(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)	0.00635	0.00757	0.03597
	(!SET_B * Q * !Q_N)	0.00170	0.00302	0.03166
	(!SET_B * Q * !Q_N)	0.00461	0.00593	0.03456
	(!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)	0.00937	0.01053	0.04007
	(!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)	0.01170	0.01287	0.04239

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)	0.00366	0.00369	0.00365
	(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)	-0.00519	-0.00521	-0.00518
	(!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)	0.00968	0.01031	0.04973
	(!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)	0.00023	0.00080	0.04026

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)	-0.00355	-0.00365	-0.00363
	(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)	0.00524	0.00524	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)	0.00233	0.00421	0.04507
	(!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)	0.01177	0.01373	0.05455

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)**	0.01522	0.01654	0.06207
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01039	0.01171	0.05725
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01546	0.01678	0.06231
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01063	0.01195	0.05749
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01521	0.01649	0.06238
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01039	0.01167	0.05757
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01940	0.02074	0.06654
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01430	0.01562	0.06143
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01838	0.01957	0.06584
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01383	0.01501	0.06129
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01863	0.01981	0.06611
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01407	0.01525	0.06155
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01522	0.01655	0.06207
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01039	0.01171	0.05725
	(!D * !SCE * SET_B * !Q * Q_N)	0.01545	0.01672	0.06263
	(!D * !SCE * SET_B * !Q * Q_N)	0.01063	0.01191	0.05781
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01964	0.02098	0.06678
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01454	0.01586	0.06167
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01522	0.01649	0.06239
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01039	0.01167	0.05757
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01941	0.02073	0.06652
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01431	0.01562	0.06142
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01839	0.01957	0.06607
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01383	0.01501	0.06152

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)	0.01624	0.01816	0.06527
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02127	0.02320	0.07032
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00815	0.01022	0.05646
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01296	0.01505	0.06128
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01601	0.01793	0.06504
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02104	0.02298	0.07009
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00791	0.00998	0.05621
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01272	0.01481	0.06104
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01794	0.02016	0.06726
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02258	0.02481	0.07191
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00848	0.01050	0.05663
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01329	0.01533	0.06146
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01155	0.01379	0.06052
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01664	0.01891	0.06563
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01036	0.01235	0.05937
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01490	0.01692	0.06393
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01012	0.01211	0.05913
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01466	0.01668	0.06367
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01624	0.01816	0.06526
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02127	0.02321	0.07030
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00815	0.01022	0.05646
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01296	0.01505	0.06128
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01767	0.01990	0.06700
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.02228	0.02452	0.07161
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01794	0.02012	0.06695
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02257	0.02477	0.07159
	(!D * !SCE * SET_B * !Q * Q_N)	0.00824	0.01026	0.05638
	(!D * !SCE * SET_B * !Q * Q_N)	0.01305	0.01509	0.06120
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01130	0.01356	0.06029
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01640	0.01868	0.06539
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00848	0.01050	0.05663
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01329	0.01533	0.06146
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01156	0.01380	0.06053
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01666	0.01892	0.06564
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01036	0.01236	0.05937
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01490	0.01690	0.06393

SKY130_FD_SC_HS__SDFRBPx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00188	0.00193	0.00424	0.00573	0.00308	1.20279	1.22010
sky130_fd_sc_hs__sdfrbp_2	0.00190	0.00196	0.00435	0.00586	0.00302	2.40401	2.40210

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrbp_1	0.00000	0.88397	1.59958
sky130_fd_sc_hs__sdfrbp_2	0.00000	0.88993	1.43815

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)	0.21383	0.68547	6.10736
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RR)	0.24916	0.62913	6.43342

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrbp_1	CLK->Q (RF)	0.19839	0.43194	2.18009
	RESET_B->Q (FF)	0.27931	0.74908	5.09382
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RF)	0.22678	0.42912	2.33605
	RESET_B->Q (FF)	0.31080	0.75113	5.27010

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)	0.16545	0.64984	6.05782
	RESET_B->Q_N (FR)	0.24618	0.96325	8.96616
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RR)	0.16733	0.55927	6.01886
	RESET_B->Q_N (FR)	0.25138	0.87834	8.95073

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)	0.16012	0.46426	2.46819
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RF)	0.16889	0.44287	2.35660

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)	-0.08645	-0.17878	-1.02215
	setup	CLK (R)	0.15013	0.21672	1.04508
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.08784	-0.18633	-1.05356
	setup	CLK (R)	0.15216	0.22042	1.07890

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)	-0.10531	-0.23348	-2.91369
	setup	CLK (R)	0.20257	0.31968	2.98254
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.11780	-0.24585	-2.94529
	setup	CLK (R)	0.21040	0.33119	3.02704

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)	-0.08839	-0.17878	-1.02215
	hold	CLK (R)	-0.08645	-0.18078	-1.02419
	setup	CLK (R)	0.14885	0.21672	1.04508
	setup	CLK (R)	0.15013	0.21672	1.04126
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.08897	-0.18633	-1.05736
	hold	CLK (R)	-0.08784	-0.18633	-1.05356
	setup	CLK (R)	0.15120	0.22042	1.07767
	setup	CLK (R)	0.15216	0.22042	1.07890

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)	-0.10531	-0.23348	-2.91369
	hold	CLK (R)	-0.10532	-0.23355	-2.91413
	setup	CLK (R)	0.20230	0.31968	2.98242
	setup	CLK (R)	0.20257	0.31958	2.98254
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.11780	-0.24585	-2.94604
	hold	CLK (R)	-0.11870	-0.24985	-2.94529
	setup	CLK (R)	0.21040	0.33119	3.02704
	setup	CLK (R)	0.21040	0.33119	3.02360

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)	-0.10647	-0.19132	-1.02076
	setup	CLK (R)	0.17322	0.23188	1.04240
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.10666	-0.19535	-1.04671
	setup	CLK (R)	0.17249	0.23469	1.07352

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)	-0.13766	-0.26554	-3.06664
	setup	CLK (R)	0.25722	0.36781	3.12588
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.14737	-0.27733	-3.09663
	setup	CLK (R)	0.26345	0.37443	3.16035

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)	-0.10647	-0.19132	-1.02529
	hold	CLK (R)	-0.10904	-0.20007	-1.02076
	setup	CLK (R)	0.16927	0.22588	1.04240
	setup	CLK (R)	0.17322	0.23188	1.04221
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.10666	-0.19535	-1.04671
	hold	CLK (R)	-0.11097	-0.20275	-1.05192
	setup	CLK (R)	0.16811	0.22887	1.06908
	setup	CLK (R)	0.17249	0.23469	1.07352

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)	-0.14830	-0.27466	-3.07124
	hold	CLK (R)	-0.13766	-0.26554	-3.06664
	setup	CLK (R)	0.25722	0.36781	3.12588
	setup	CLK (R)	0.24777	0.35881	3.12250
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.16122	-0.28791	-3.10080
	hold	CLK (R)	-0.14737	-0.27733	-3.09663
	setup	CLK (R)	0.26345	0.37443	3.15958
	setup	CLK (R)	0.25876	0.36819	3.16035

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)	-0.08899	-0.18550	-0.40449
	setup	CLK (R)	0.25743	0.27712	1.05193
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.09163	-0.18845	-0.42912
	setup	CLK (R)	0.26543	0.28289	1.08391

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)	-0.12034	-0.23230	-2.80598
	setup	CLK (R)	0.21280	0.32212	2.96719
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.12734	-0.24304	-2.81165
	setup	CLK (R)	0.21900	0.32885	2.99976

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)	-0.15131	-0.18922	-0.40449
	hold	CLK (R)	-0.08899	-0.18550	-1.03026
	setup	CLK (R)	0.25743	0.27712	0.46136
	setup	CLK (R)	0.15299	0.22112	1.05193
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.16077	-0.20006	-0.42912
	hold	CLK (R)	-0.09163	-0.18845	-1.06185
	setup	CLK (R)	0.26543	0.28289	0.47740
	setup	CLK (R)	0.14888	0.22431	1.08391

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)	-0.14936	-0.29023	-2.80598
	hold	CLK (R)	-0.12034	-0.23230	-2.90958
	setup	CLK (R)	0.21280	0.32212	2.82169
	setup	CLK (R)	0.21272	0.31934	2.96719
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.15043	-0.28905	-2.81165
	hold	CLK (R)	-0.12734	-0.24304	-2.93594
	setup	CLK (R)	0.21160	0.32006	2.82997
	setup	CLK (R)	0.21900	0.32885	2.99976

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)	0.18905	0.23291	1.24747
	removal	CLK (R)	-0.14305	-0.19089	-1.17784
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.18984	0.23269	1.26964
	removal	CLK (R)	-0.14901	-0.19650	-1.20142

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)	0.18624	0.22479	1.24747
	recovery	CLK (R)	0.17927	0.21472	1.20628
	recovery	CLK (R)	0.17704	0.20694	1.18586
	recovery	CLK (R)	0.18905	0.23291	1.24361
	removal	CLK (R)	-0.15068	-0.20773	-1.24010
	removal	CLK (R)	-0.14622	-0.19875	-1.19940
	removal	CLK (R)	-0.14305	-0.19089	-1.17784
	removal	CLK (R)	-0.15894	-0.21325	-1.24255
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.18527	0.22719	1.26869
	recovery	CLK (R)	0.17925	0.21791	1.23171
	recovery	CLK (R)	0.17753	0.21025	1.21084
	recovery	CLK (R)	0.18984	0.23269	1.26964
	removal	CLK (R)	-0.15841	-0.21223	-1.26209
	removal	CLK (R)	-0.15213	-0.20437	-1.22298
	removal	CLK (R)	-0.14901	-0.19650	-1.20142
	removal	CLK (R)	-0.16338	-0.21896	-1.25993

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 ()	0.14168	0.64453	16.50020
	min_pulse_width	RESET_B ()	0.12476	0.64453	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	RESET_B ()	0.14410	0.64453	16.50020
	min_pulse_width	RESET_B ()	0.13684	0.64453	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 ()	0.12234	0.64453	16.50020
	min_pulse_width	CLK ()	0.07640	0.64453	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.14893	0.64453	16.50020
	min_pulse_width	CLK ()	0.09091	0.64453	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 ()	0.16585	0.64453	16.50020
	min_pulse_width	CLK ()	0.19245	0.64453	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.16102	0.64453	16.50020
	min_pulse_width	CLK ()	0.19486	0.64453	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	0.01576	0.01661	0.04060
	CLK	0.01330	0.01403	0.03807
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01911	0.01991	0.04435
	CLK	0.01658	0.01736	0.04176

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.01594	0.01691	0.04047
	CLK	0.01351	0.01447	0.03805
	RESET_B	0.01359	0.01469	0.04099
	RESET_B	0.01934	0.02041	0.04645
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01877	0.02011	0.04369
	CLK	0.01649	0.01779	0.04136
	RESET_B	0.01631	0.01777	0.04508
	RESET_B	0.02228	0.02374	0.04993

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.01595	0.01693	0.04085
	CLK	0.01352	0.01449	0.03844
	RESET_B	0.01362	0.01472	0.04230
	RESET_B	0.01938	0.02047	0.04693
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01878	0.02013	0.04470
	CLK	0.01650	0.01780	0.04233
	RESET_B	0.01656	0.01798	0.04537
	RESET_B	0.02231	0.02376	0.05035

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.01574	0.01652	0.03985
	CLK	0.01328	0.01400	0.03734
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01909	0.01991	0.04340
	CLK	0.01657	0.01733	0.04083

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * RESET_B * SCD * SCE)	0.00130	0.00132	0.00130
	(CLK * RESET_B * SCD * SCE)	-0.00060	-0.00061	-0.00060
	(CLK * RESET_B * SCD * !SCE)	0.00557	0.00610	0.02800
	(CLK * RESET_B * SCD * !SCE)	0.00188	0.00240	0.02430
	(CLK * RESET_B * !SCD * !SCE)	0.00557	0.00611	0.02799
	(CLK * RESET_B * !SCD * !SCE)	0.00188	0.00240	0.02429
	(CLK * !SCD * SCE)	0.00067	0.00067	0.00065
	(CLK * !SCD * SCE)	-0.00139	-0.00141	-0.00143
	(CLK * !RESET_B * SCD * SCE)	0.00065	0.00065	0.00064
	(CLK * !RESET_B * SCD * SCE)	-0.00140	-0.00142	-0.00144
	(CLK * !RESET_B * SCD * !SCE)	0.00045	0.00045	0.00039
	(CLK * !RESET_B * SCD * !SCE)	-0.00160	-0.00161	-0.00168
	(CLK * !RESET_B * !SCD * !SCE)	0.00045	0.00045	0.00040
	(CLK * !RESET_B * !SCD * !SCE)	-0.00164	-0.00165	-0.00170
	(!CLK * RESET_B * SCD * SCE)	0.00130	0.00131	0.00130
	(!CLK * RESET_B * SCD * SCE)	-0.00060	-0.00060	-0.00060
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.01277	0.01347	0.03705
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00888	0.00957	0.03315
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01277	0.01347	0.03705
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00889	0.00957	0.03315
	(!CLK * !SCD * SCE)	0.00067	0.00068	0.00066
	(!CLK * !SCD * SCE)	-0.00138	-0.00141	-0.00143
	(!CLK * !RESET_B * SCD * SCE)	0.00065	0.00066	0.00064
	(!CLK * !RESET_B * SCD * SCE)	-0.00140	-0.00143	-0.00144
	(!CLK * !RESET_B * SCD * !SCE)	0.00045	0.00045	0.00039
	(!CLK * !RESET_B * SCD * !SCE)	-0.00159	-0.00161	-0.00168
	(!CLK * !RESET_B * !SCD * !SCE)	0.00044	0.00045	0.00040
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00163	-0.00165	-0.00170

	(CLK * RESET_B * SCD * SCE)	0.00133	0.00133	0.00133
	(CLK * RESET_B * SCD * SCE)	-0.00060	-0.00060	-0.00060
	(CLK * RESET_B * SCD * !SCE)	0.00591	0.00640	0.02818
	(CLK * RESET_B * SCD * !SCE)	0.00214	0.00263	0.02441
	(CLK * RESET_B * !SCD * !SCE)	0.00591	0.00640	0.02817
	(CLK * RESET_B * !SCD * !SCE)	0.00215	0.00263	0.02441
	(CLK * !SCD * SCE)	0.00068	0.00068	0.00067
	(CLK * !SCD * SCE)	-0.00140	-0.00143	-0.00145
	(CLK * !RESET_B * SCD * SCE)	0.00066	0.00066	0.00065
	(CLK * !RESET_B * SCD * SCE)	-0.00142	-0.00144	-0.00145
	(CLK * !RESET_B * SCD * !SCE)	0.00043	0.00044	0.00038
	(CLK * !RESET_B * SCD * !SCE)	-0.00163	-0.00165	-0.00172
	(CLK * !RESET_B * !SCD * !SCE)	0.00043	0.00043	0.00039
	(CLK * !RESET_B * !SCD * !SCE)	-0.00167	-0.00169	-0.00174
	(!CLK * RESET_B * SCD * SCE)	0.00133	0.00134	0.00133
	(!CLK * RESET_B * SCD * SCE)	-0.00060	-0.00061	-0.00060
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.01314	0.01383	0.03732
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00918	0.00986	0.03334
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01314	0.01383	0.03731
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00918	0.00987	0.03334
	(!CLK * !SCD * SCE)	0.00068	0.00069	0.00067
	(!CLK * !SCD * SCE)	-0.00140	-0.00143	-0.00144
	(!CLK * !RESET_B * SCD * SCE)	0.00066	0.00066	0.00065
	(!CLK * !RESET_B * SCD * SCE)	-0.00142	-0.00144	-0.00145
	(!CLK * !RESET_B * SCD * !SCE)	0.00043	0.00044	0.00038
	(!CLK * !RESET_B * SCD * !SCE)	-0.00163	-0.00165	-0.00172
	(!CLK * !RESET_B * !SCD * !SCE)	0.00043	0.00043	0.00039
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00167	-0.00169	-0.00174

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * RESET_B * SCD * SCE)	-0.00123	-0.00125	-0.00128
	(CLK * RESET_B * SCD * SCE)	0.00065	0.00065	0.00063
	(CLK * RESET_B * SCD * !SCE)	0.00069	0.00168	0.02386
	(CLK * RESET_B * SCD * !SCE)	0.00437	0.00539	0.02756
	(CLK * RESET_B * !SCD * !SCE)	0.00068	0.00168	0.02386
	(CLK * RESET_B * !SCD * !SCE)	0.00439	0.00539	0.02756
	(CLK * !SCD * SCE)	-0.00063	-0.00064	-0.00063
	(CLK * !SCD * SCE)	0.00143	0.00144	0.00143
	(CLK * !RESET_B * SCD * SCE)	-0.00062	-0.00062	-0.00062
	(CLK * !RESET_B * SCD * SCE)	0.00143	0.00144	0.00144
	(CLK * !RESET_B * SCD * !SCE)	-0.00038	-0.00038	-0.00037
	(CLK * !RESET_B * SCD * !SCE)	0.00170	0.00173	0.00170
	(CLK * !RESET_B * !SCD * !SCE)	-0.00038	-0.00038	-0.00037
	(CLK * !RESET_B * !SCD * !SCE)	0.00170	0.00172	0.00170
	(!CLK * RESET_B * SCD * SCE)	-0.00123	-0.00124	-0.00128
	(!CLK * RESET_B * SCD * SCE)	0.00066	0.00065	0.00063
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.00792	0.00904	0.03481
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.01182	0.01293	0.03871
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00793	0.00904	0.03482
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01182	0.01293	0.03871
	(!CLK * !SCD * SCE)	-0.00063	-0.00064	-0.00063
	(!CLK * !SCD * SCE)	0.00144	0.00145	0.00144
	(!CLK * !RESET_B * SCD * SCE)	-0.00062	-0.00063	-0.00062
	(!CLK * !RESET_B * SCD * SCE)	0.00143	0.00144	0.00144
	(!CLK * !RESET_B * SCD * !SCE)	-0.00038	-0.00038	-0.00037
	(!CLK * !RESET_B * SCD * !SCE)	0.00170	0.00171	0.00170
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00038	-0.00038	-0.00037
	(!CLK * !RESET_B * !SCD * !SCE)	0.00170	0.00171	0.00170

	(CLK * RESET_B * SCD * SCE)	-0.00126	-0.00128	-0.00131
	(CLK * RESET_B * SCD * SCE)	0.00065	0.00066	0.00063
	(CLK * RESET_B * SCD * !SCE)	0.00080	0.00176	0.02386
	(CLK * RESET_B * SCD * !SCE)	0.00457	0.00554	0.02763
	(CLK * RESET_B * !SCD * !SCE)	0.00081	0.00176	0.02386
	(CLK * RESET_B * !SCD * !SCE)	0.00457	0.00553	0.02763
	(CLK * !SCD * SCE)	-0.00064	-0.00065	-0.00064
	(CLK * !SCD * SCE)	0.00144	0.00146	0.00145
	(CLK * !RESET_B * SCD * SCE)	-0.00063	-0.00063	-0.00063
	(CLK * !RESET_B * SCD * SCE)	0.00145	0.00146	0.00145
	(CLK * !RESET_B * SCD * !SCE)	-0.00036	-0.00036	-0.00035
	(CLK * !RESET_B * SCD * !SCE)	0.00174	0.00176	0.00175
	(CLK * !RESET_B * !SCD * !SCE)	-0.00036	-0.00036	-0.00036
	(CLK * !RESET_B * !SCD * !SCE)	0.00174	0.00176	0.00175
	(!CLK * RESET_B * SCD * SCE)	-0.00126	-0.00128	-0.00131
	(!CLK * RESET_B * SCD * SCE)	0.00065	0.00065	0.00063
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.00808	0.00915	0.03489
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.01206	0.01312	0.03887
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00809	0.00915	0.03490
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01207	0.01312	0.03887
	(!CLK * !SCD * SCE)	-0.00064	-0.00065	-0.00064
	(!CLK * !SCD * SCE)	0.00145	0.00146	0.00145
	(!CLK * !RESET_B * SCD * SCE)	-0.00063	-0.00064	-0.00063
	(!CLK * !RESET_B * SCD * SCE)	0.00145	0.00146	0.00145
	(!CLK * !RESET_B * SCD * !SCE)	-0.00035	-0.00036	-0.00035
	(!CLK * !RESET_B * SCD * !SCE)	0.00173	0.00176	0.00175
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00036	-0.00036	-0.00036
	(!CLK * !RESET_B * !SCD * !SCE)	0.00173	0.00176	0.00175

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.00728	0.00748	0.02371
	(CLK * D * RESET_B * SCE)	0.00252	0.00271	0.01894
	(CLK * D * RESET_B * !SCE)	0.00130	0.00111	0.00109
	(CLK * D * RESET_B * !SCE)	-0.00115	-0.00134	-0.00136
	(CLK * D * !RESET_B * SCE)	0.00059	0.00059	0.00057
	(CLK * D * !RESET_B * SCE)	-0.00149	-0.00149	-0.00147
	(CLK * D * !RESET_B * !SCE)	0.00042	0.00043	0.00042
	(CLK * D * !RESET_B * !SCE)	-0.00160	-0.00162	-0.00161
	(CLK * !D * RESET_B * SCE)	0.00816	0.00831	0.02416
	(CLK * !D * RESET_B * SCE)	0.00321	0.00334	0.01921
	(CLK * !D * !RESET_B * SCE)	0.00059	0.00059	0.00057
	(CLK * !D * !RESET_B * SCE)	-0.00149	-0.00148	-0.00147
	(!D * RESET_B * !SCE)	0.00086	0.00087	0.00087
	(!D * RESET_B * !SCE)	-0.00155	-0.00158	-0.00158
	(!D * !RESET_B * !SCE)	0.00050	0.00051	0.00050
	(!D * !RESET_B * !SCE)	-0.00167	-0.00169	-0.00169
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.01447	0.01477	0.03273
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00952	0.00980	0.02777
	(!CLK * D * RESET_B * !SCE)	0.00130	0.00111	0.00109
	(!CLK * D * RESET_B * !SCE)	-0.00115	-0.00134	-0.00136
	(!CLK * D * !RESET_B * SCE)	0.00059	0.00059	0.00057
	(!CLK * D * !RESET_B * SCE)	-0.00149	-0.00149	-0.00147
	(!CLK * D * !RESET_B * !SCE)	0.00042	0.00043	0.00042
	(!CLK * D * !RESET_B * !SCE)	-0.00160	-0.00162	-0.00161
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01535	0.01561	0.03313
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01021	0.01045	0.02799
	(!CLK * !D * !RESET_B * SCE)	0.00059	0.00059	0.00057
	(!CLK * !D * !RESET_B * SCE)	-0.00149	-0.00148	-0.00147

	(CLK * D * RESET_B * SCE)	0.00752	0.00770	0.02388
	(CLK * D * RESET_B * SCE)	0.00269	0.00286	0.01904
	(CLK * D * RESET_B * !SCE)	0.00133	0.00114	0.00112
	(CLK * D * RESET_B * !SCE)	-0.00115	-0.00134	-0.00136
	(CLK * D * !RESET_B * SCE)	0.00061	0.00061	0.00059
	(CLK * D * !RESET_B * SCE)	-0.00149	-0.00149	-0.00148
	(CLK * D * !RESET_B * !SCE)	0.00044	0.00044	0.00044
	(CLK * D * !RESET_B * !SCE)	-0.00161	-0.00163	-0.00162
	(CLK * !D * RESET_B * SCE)	0.00839	0.00853	0.02433
	(CLK * !D * RESET_B * SCE)	0.00338	0.00350	0.01930
	(CLK * !D * !RESET_B * SCE)	0.00061	0.00061	0.00059
	(CLK * !D * !RESET_B * SCE)	-0.00149	-0.00149	-0.00148
	(!D * RESET_B * !SCE)	0.00089	0.00090	0.00089
	(!D * RESET_B * !SCE)	-0.00158	-0.00159	-0.00159
	(!D * !RESET_B * !SCE)	0.00051	0.00052	0.00051
	(!D * !RESET_B * !SCE)	-0.00169	-0.00171	-0.00171
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.01474	0.01504	0.03296
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00971	0.00999	0.02792
	(!CLK * D * RESET_B * !SCE)	0.00133	0.00114	0.00112
	(!CLK * D * RESET_B * !SCE)	-0.00115	-0.00134	-0.00136
	(!CLK * D * !RESET_B * SCE)	0.00061	0.00062	0.00059
	(!CLK * D * !RESET_B * SCE)	-0.00149	-0.00149	-0.00148
	(!CLK * D * !RESET_B * !SCE)	0.00044	0.00044	0.00044
	(!CLK * D * !RESET_B * !SCE)	-0.00161	-0.00163	-0.00162
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01563	0.01589	0.03338
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01041	0.01065	0.02815
	(!CLK * !D * !RESET_B * SCE)	0.00061	0.00061	0.00059
	(!CLK * !D * !RESET_B * SCE)	-0.00149	-0.00149	-0.00148

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.00220	0.00235	0.01861
	(CLK * D * RESET_B * SCE)	0.00697	0.00713	0.02337
	(CLK * D * RESET_B * !SCE)	-0.00104	-0.00106	-0.00107
	(CLK * D * RESET_B * !SCE)	0.00138	0.00139	0.00139
	(CLK * D * !RESET_B * SCE)	-0.00052	-0.00053	-0.00053
	(CLK * D * !RESET_B * SCE)	0.00151	0.00153	0.00150
	(CLK * D * !RESET_B * !SCE)	-0.00041	-0.00041	-0.00041
	(CLK * D * !RESET_B * !SCE)	0.00162	0.00163	0.00162
	(CLK * !D * RESET_B * SCE)	0.00167	0.00188	0.01838
	(CLK * !D * RESET_B * SCE)	0.00663	0.00684	0.02331
	(CLK * !D * !RESET_B * SCE)	-0.00052	-0.00053	-0.00053
	(CLK * !D * !RESET_B * SCE)	0.00151	0.00153	0.00150
	(!D * RESET_B * !SCE)	-0.00080	-0.00087	-0.00087
	(!D * RESET_B * !SCE)	0.00162	0.00160	0.00158
	(!D * !RESET_B * !SCE)	-0.00050	-0.00051	-0.00050
	(!D * !RESET_B * !SCE)	0.00171	0.00172	0.00172
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.00958	0.01003	0.02883
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.01455	0.01500	0.03379
	(!CLK * D * RESET_B * !SCE)	-0.00104	-0.00107	-0.00107
	(!CLK * D * RESET_B * !SCE)	0.00138	0.00140	0.00139
	(!CLK * D * !RESET_B * SCE)	-0.00052	-0.00053	-0.00053
	(!CLK * D * !RESET_B * SCE)	0.00151	0.00153	0.00150
	(!CLK * D * !RESET_B * !SCE)	-0.00041	-0.00041	-0.00041
	(!CLK * D * !RESET_B * !SCE)	0.00162	0.00163	0.00162
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00916	0.00949	0.02883
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01431	0.01464	0.03397
	(!CLK * !D * !RESET_B * SCE)	-0.00052	-0.00053	-0.00053
	(!CLK * !D * !RESET_B * SCE)	0.00151	0.00153	0.00150

	(CLK * D * RESET_B * SCE)	0.00227	0.00242	0.01865
	(CLK * D * RESET_B * SCE)	0.00712	0.00728	0.02348
	(CLK * D * RESET_B * !SCE)	-0.00107	-0.00109	-0.00110
	(CLK * D * RESET_B * !SCE)	0.00139	0.00140	0.00140
	(CLK * D * !RESET_B * SCE)	-0.00055	-0.00056	-0.00056
	(CLK * D * !RESET_B * SCE)	0.00151	0.00153	0.00150
	(CLK * D * !RESET_B * !SCE)	-0.00042	-0.00042	-0.00042
	(CLK * D * !RESET_B * !SCE)	0.00163	0.00165	0.00164
	(CLK * !D * RESET_B * SCE)	0.00182	0.00201	0.01846
	(CLK * !D * RESET_B * SCE)	0.00684	0.00705	0.02348
	(CLK * !D * !RESET_B * SCE)	-0.00055	-0.00056	-0.00056
	(CLK * !D * !RESET_B * SCE)	0.00151	0.00153	0.00150
	(!D * RESET_B * !SCE)	-0.00082	-0.00088	-0.00089
	(!D * RESET_B * !SCE)	0.00163	0.00161	0.00160
	(!D * !RESET_B * !SCE)	-0.00051	-0.00052	-0.00051
	(!D * !RESET_B * !SCE)	0.00173	0.00174	0.00173
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.00967	0.00998	0.02890
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.01471	0.01503	0.03392
	(!CLK * D * RESET_B * !SCE)	-0.00107	-0.00109	-0.00110
	(!CLK * D * RESET_B * !SCE)	0.00139	0.00140	0.00140
	(!CLK * D * !RESET_B * SCE)	-0.00055	-0.00056	-0.00056
	(!CLK * D * !RESET_B * SCE)	0.00151	0.00153	0.00150
	(!CLK * D * !RESET_B * !SCE)	-0.00042	-0.00042	-0.00042
	(!CLK * D * !RESET_B * !SCE)	0.00163	0.00165	0.00164
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00932	0.00965	0.02899
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01454	0.01488	0.03420
	(!CLK * !D * !RESET_B * SCE)	-0.00055	-0.00056	-0.00056
	(!CLK * !D * !RESET_B * SCE)	0.00151	0.00153	0.00150

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)**	0.00650	0.00722	0.03715
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00006	0.00074	0.03071
	(CLK * D * RESET_B * !SCD)	0.00919	0.00995	0.04061
	(CLK * D * RESET_B * !SCD)	0.00487	0.00559	0.03626
	(CLK * !D * RESET_B * SCD)	0.01188	0.01321	0.06029
	(CLK * !D * RESET_B * SCD)	0.00355	0.00484	0.05197
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00650	0.00722	0.03715
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00007	0.00074	0.03071
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01640	0.01726	0.04833
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01231	0.01313	0.04416
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00640	0.00732	0.03732
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00030	0.00119	0.03119
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01906	0.02050	0.06982
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01053	0.01194	0.06129

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00605	0.00682	0.03688
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00060	0.00015	0.03022
	(CLK * D * RESET_B * !SCD)	0.00888	0.00969	0.04049
	(CLK * D * RESET_B * !SCD)	0.00440	0.00518	0.03595
	(CLK * !D * RESET_B * SCD)	0.01170	0.01305	0.06028
	(CLK * !D * RESET_B * SCD)	0.00312	0.00443	0.05170
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00605	0.00682	0.03688
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00059	0.00015	0.03022
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01619	0.01705	0.04813
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01194	0.01274	0.04379
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00601	0.00703	0.03710
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00031	0.00068	0.03076
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01892	0.02040	0.06984
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01013	0.01158	0.06108

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)**	-0.00039	0.00121	0.03124
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00605	0.00767	0.03768
	(CLK * D * RESET_B * !SCD)	0.00521	0.00655	0.03713
	(CLK * D * RESET_B * !SCD)	0.00954	0.01091	0.04132
	(CLK * !D * RESET_B * SCD)	0.00115	0.00285	0.04977
	(CLK * !D * RESET_B * SCD)	0.00948	0.01118	0.05810
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00038	0.00122	0.03124
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00605	0.00768	0.03768
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01238	0.01382	0.04434
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01652	0.01797	0.04833
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00037	0.00116	0.03109
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00573	0.00728	0.03718
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00839	0.01021	0.05928
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01692	0.01874	0.06782

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00034	0.00127	0.03141
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00630	0.00794	0.03807
	(CLK * D * RESET_B * !SCD)	0.00558	0.00695	0.03755
	(CLK * D * RESET_B * !SCD)	0.01009	0.01149	0.04191
	(CLK * !D * RESET_B * SCD)	0.00125	0.00295	0.04998
	(CLK * !D * RESET_B * SCD)	0.00983	0.01156	0.05855
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00034	0.00129	0.03141
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00630	0.00796	0.03807
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01279	0.01425	0.04479
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01710	0.01855	0.04893
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00037	0.00118	0.03118
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00595	0.00750	0.03750
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00852	0.01036	0.05966
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01729	0.01917	0.06846

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)**	0.01062	0.01079	0.03585
	(CLK * D * SCD * SCE * !Q * Q_N)	-0.00045	-0.00033	0.02476
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.01021	0.01039	0.03600
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00046	-0.00032	0.02530
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00360	0.00364	0.00361
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00461	-0.00464	-0.00462
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00970	0.00996	0.03578
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00046	-0.00024	0.02561
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.01151	0.01161	0.03626
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00025	0.00033	0.02499
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00356	0.00358	0.00358
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00463	-0.00464	-0.00463
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00360	0.00365	0.00361
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00461	-0.00465	-0.00462
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00357	0.00361	0.00358
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00463	-0.00466	-0.00464
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01854	0.01841	0.04941
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00728	0.00712	0.03814
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01814	0.01800	0.04968
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00728	0.00709	0.03880
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00360	0.00366	0.00361
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00460	-0.00464	-0.00461
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01762	0.01757	0.04947
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00728	0.00719	0.03912
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01943	0.01925	0.04982
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00799	0.00779	0.03836
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00357	0.00361	0.00358
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00462	-0.00465	-0.00463
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00360	0.00366	0.00361
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00460	-0.00464	-0.00461
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00358	0.00363	0.00359
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00463	-0.00466	-0.00463

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.01071	0.01088	0.03582
	(CLK * D * SCD * SCE * !Q * Q_N)	-0.00040	-0.00028	0.02469
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.01042	0.01060	0.03604
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00029	-0.00016	0.02532
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00347	0.00352	0.00348
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00471	-0.00475	-0.00472
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00991	0.01015	0.03582
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00028	-0.00007	0.02562
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.01159	0.01169	0.03623
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00030	0.00037	0.02491
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00344	0.00347	0.00345
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00473	-0.00475	-0.00474
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00347	0.00353	0.00349
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00471	-0.00475	-0.00472
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00345	0.00349	0.00346
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00473	-0.00477	-0.00474
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01861	0.01849	0.04942
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00736	0.00718	0.03812
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01834	0.01822	0.04973
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00745	0.00728	0.03884
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00347	0.00352	0.00348
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00472	-0.00476	-0.00472
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01783	0.01777	0.04958
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00746	0.00735	0.03919
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01950	0.01934	0.04981
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00807	0.00784	0.03831
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00344	0.00348	0.00345
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00473	-0.00476	-0.00474
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00347	0.00352	0.00348
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00472	-0.00476	-0.00472
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00344	0.00349	0.00346
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00474	-0.00478	-0.00475

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)**	0.00065	0.00164	0.02821
	(CLK * D * SCD * SCE * !Q * Q_N)	0.01173	0.01276	0.03929
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00039	0.00058	0.02711
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.01029	0.01131	0.03779
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00350	-0.00362	-0.00360
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00467	0.00467	0.00464
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00072	0.00032	0.02704
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00944	0.01054	0.03722
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00013	0.00119	0.02797
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.01138	0.01249	0.03924
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00343	-0.00358	-0.00358
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00471	0.00468	0.00464
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00350	-0.00362	-0.00360
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00467	0.00467	0.00464
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00345	-0.00361	-0.00358
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00472	0.00468	0.00465
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00802	0.00868	0.04405
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01935	0.02000	0.05533
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00699	0.00773	0.04276
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01791	0.01864	0.05365
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00351	-0.00363	-0.00361
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00466	0.00466	0.00463
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00666	0.00737	0.04270
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01706	0.01776	0.05308
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00751	0.00823	0.04399
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01901	0.01969	0.05546
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00345	-0.00361	-0.00358
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00469	0.00467	0.00464
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00351	-0.00363	-0.00361
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00466	0.00466	0.00463
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00347	-0.00361	-0.00359
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00470	0.00468	0.00464

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.00083	0.00176	0.02833
	(CLK * D * SCD * SCE * !Q * Q_N)	0.01195	0.01290	0.03944
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00026	0.00066	0.02718
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.01049	0.01140	0.03789
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00337	-0.00347	-0.00347
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00478	0.00476	0.00474
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00059	0.00042	0.02711
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00963	0.01062	0.03731
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00037	0.00140	0.02813
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.01170	0.01268	0.03944
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00330	-0.00345	-0.00345
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00481	0.00477	0.00475
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00337	-0.00347	-0.00347
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00478	0.00476	0.00474
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00332	-0.00348	-0.00346
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00482	0.00479	0.00475
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00824	0.00889	0.04419
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01960	0.02021	0.05550
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00717	0.00777	0.04287
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01813	0.01870	0.05379
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00337	-0.00347	-0.00347
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00478	0.00477	0.00475
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00683	0.00747	0.04280
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01727	0.01785	0.05322
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00780	0.00847	0.04417
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01934	0.02000	0.05567
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00330	-0.00345	-0.00345
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00481	0.00478	0.00476
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00337	-0.00346	-0.00347
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00478	0.00476	0.00475
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00332	-0.00345	-0.00345
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00482	0.00478	0.00476

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)**	0.01490	0.01606	0.06104
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.01000	0.01114	0.05614
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01490	0.01606	0.06104
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00999	0.01114	0.05614
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01490	0.01606	0.06105
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01000	0.01114	0.05614
	(D * !SCD * SCE * !Q * Q_N)	0.01528	0.01641	0.06136
	(D * !SCD * SCE * !Q * Q_N)	0.01038	0.01150	0.05648
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01528	0.01642	0.06124
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01038	0.01152	0.05634
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01527	0.01642	0.06123
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01037	0.01151	0.05633
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01527	0.01642	0.06123
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01037	0.01151	0.05633
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01490	0.01607	0.06105
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01000	0.01114	0.05614
	(!D * !SCE * !Q * Q_N)	0.01527	0.01641	0.06124
	(!D * !SCE * !Q * Q_N)	0.01037	0.01150	0.05634
	(!D * !SCD * SCE * !Q * Q_N)	0.01528	0.01642	0.06124
	(!D * !SCD * SCE * !Q * Q_N)	0.01038	0.01151	0.05634
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01528	0.01643	0.06124
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01038	0.01152	0.05634

sky130_fd_sc_hs__sdfrbp_2	**(D * RESET_B * SCD * SCE * Q * !Q_N)**	0.01499	0.01605	0.06137
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.01019	0.01123	0.05656
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01499	0.01605	0.06118
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01018	0.01123	0.05637
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01499	0.01605	0.06119
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01019	0.01123	0.05638
	(D * !SCD * SCE * !Q * Q_N)	0.01528	0.01634	0.06147
	(D * !SCD * SCE * !Q * Q_N)	0.01050	0.01153	0.05667
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01528	0.01635	0.06147
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01050	0.01154	0.05666
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01528	0.01635	0.06165
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01050	0.01154	0.05684
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01528	0.01635	0.06165
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01050	0.01154	0.05684
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01499	0.01605	0.06137
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01019	0.01123	0.05656
	(!D * !SCE * !Q * Q_N)	0.01528	0.01634	0.06147
	(!D * !SCE * !Q * Q_N)	0.01050	0.01153	0.05666
	(!D * !SCD * SCE * !Q * Q_N)	0.01528	0.01635	0.06147
	(!D * !SCD * SCE * !Q * Q_N)	0.01050	0.01153	0.05667
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01528	0.01636	0.06147
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01050	0.01154	0.05666

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)	0.00788	0.00995	0.05525
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.01277	0.01486	0.06013
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01455	0.01657	0.06312
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01924	0.02128	0.06782
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00788	0.00995	0.05525
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01277	0.01486	0.06013
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01451	0.01653	0.06306
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01920	0.02125	0.06777
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01586	0.01809	0.06388
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.02097	0.02321	0.06898
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00788	0.00993	0.05525
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01277	0.01484	0.06014
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01452	0.01654	0.06306
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01920	0.02125	0.06778
	(D * !SCD * SCE * !Q * Q_N)	0.00732	0.00938	0.05478
	(D * !SCD * SCE * !Q * Q_N)	0.01220	0.01429	0.05967
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00733	0.00938	0.05477
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01220	0.01429	0.05967
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00732	0.00941	0.05476
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01220	0.01432	0.05966
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00732	0.00941	0.05476
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01220	0.01432	0.05966
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00788	0.00995	0.05525
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01277	0.01486	0.06014
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01459	0.01661	0.06315
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01925	0.02130	0.06784
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01582	0.01802	0.06384
	(!D * RESET_B * !SCE * Q * !Q_N)	0.02090	0.02313	0.06894
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01584	0.01807	0.06386
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.02093	0.02319	0.06895
	(!D * !SCE * !Q * Q_N)	0.00732	0.00938	0.05478
	(!D * !SCE * !Q * Q_N)	0.01220	0.01429	0.05967
	(!D * !SCD * SCE * !Q * Q_N)	0.00733	0.00938	0.05478
	(!D * !SCD * SCE * !Q * Q_N)	0.01220	0.01429	0.05968
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00733	0.00938	0.05477
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01220	0.01429	0.05967

sky130_fd_sc_hs__sdfrbp_2	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00782	0.00993	0.05568
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.01263	0.01474	0.06049
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01457	0.01663	0.06370
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01917	0.02124	0.06831
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00781	0.00992	0.05568
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01263	0.01474	0.06049
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01453	0.01660	0.06366
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01914	0.02121	0.06827
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01577	0.01803	0.06440
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.02081	0.02305	0.06944
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00782	0.00993	0.05569
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01263	0.01475	0.06050
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01453	0.01660	0.06366
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01914	0.02122	0.06827
	(D * !SCD * SCE * !Q * Q_N)	0.00734	0.00945	0.05531
	(D * !SCD * SCE * !Q * Q_N)	0.01215	0.01427	0.06012
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00735	0.00945	0.05529
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01216	0.01427	0.06010
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00734	0.00948	0.05529
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01215	0.01430	0.06010
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00734	0.00948	0.05529
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01215	0.01430	0.06010
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00782	0.00993	0.05569
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01263	0.01475	0.06050
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01460	0.01667	0.06373
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01919	0.02126	0.06833
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01573	0.01799	0.06437
	(!D * RESET_B * !SCE * Q * !Q_N)	0.02074	0.02299	0.06936
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01574	0.01800	0.06438
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.02077	0.02303	0.06941
	(!D * !SCE * !Q * Q_N)	0.00734	0.00945	0.05531
	(!D * !SCE * !Q * Q_N)	0.01215	0.01427	0.06012
	(!D * !SCD * SCE * !Q * Q_N)	0.00734	0.00945	0.05531
	(!D * !SCD * SCE * !Q * Q_N)	0.01215	0.01427	0.06012
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00735	0.00945	0.05529
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01216	0.01427	0.06010

SKY130_FD_SC_HS__SDFRTN

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00198	0.00193	0.00418	0.00571	0.00289	1.19092

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrtn_1	0.00000	0.85339	1.52270

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)	0.23345	0.88733	8.47454

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)	0.19709	0.61431	4.62907
	RESET_B->Q (FF)	0.26766	0.73414	5.03987

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)	-0.01789	0.01591	1.75738
	setup	CLK_N (F)	0.11389	0.06360	-1.69271

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)	-0.11283	-0.14679	-0.37357
	setup	CLK_N (F)	0.26056	0.26543	0.41862

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)	-0.01789	0.01591	1.75738
	hold	CLK_N (F)	-0.01831	0.01572	1.75734
	setup	CLK_N (F)	0.11389	0.06347	-1.69271
	setup	CLK_N (F)	0.11323	0.06360	-1.69282

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)	-0.11283	-0.14679	-0.37409
	hold	CLK_N (F)	-0.11413	-0.14873	-0.37357
	setup	CLK_N (F)	0.25873	0.26520	0.41862
	setup	CLK_N (F)	0.26056	0.26543	0.41706

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)	-0.03922	0.00793	1.72869
	setup	CLK_N (F)	0.13715	0.07560	-1.65052

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)	-0.14301	-0.16937	-0.50393
	setup	CLK_N (F)	0.30991	0.30479	0.57928

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)	-0.03922	0.00793	1.72869
	hold	CLK_N (F)	-0.04375	-0.00148	1.70095
	setup	CLK_N (F)	0.12964	0.06923	-1.67200
	setup	CLK_N (F)	0.13715	0.07560	-1.65052

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)	-0.15627	-0.18439	-0.53702
	hold	CLK_N (F)	-0.14301	-0.16937	-0.50393
	setup	CLK_N (F)	0.30991	0.30479	0.57928
	setup	CLK_N (F)	0.30706	0.30177	0.54717

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)	-0.02253	0.01083	1.96590
	setup	CLK_N (F)	0.31212	0.21631	-1.64948

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)	-0.08257	-0.08679	-0.06813
	setup	CLK_N (F)	0.27800	0.27406	0.46643

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)	-0.16001	-0.09697	1.96590
	hold	CLK_N (F)	-0.02253	0.01083	1.70905
	setup	CLK_N (F)	0.31212	0.21631	-1.93960
	setup	CLK_N (F)	0.11496	0.06900	-1.64948

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)	-0.08257	-0.08679	-0.06813
	hold	CLK_N (F)	-0.12881	-0.15406	-0.42631
	setup	CLK_N (F)	0.17718	0.15899	0.09344
	setup	CLK_N (F)	0.27800	0.27406	0.46643

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)	0.15103	0.07286	-1.52817
	removal	CLK_N (F)	-0.10566	-0.02422	1.60550

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)	0.14986	0.06571	-1.53739
	recovery	CLK_N (F)	0.14513	0.05571	-1.58847
	recovery	CLK_N (F)	0.13813	0.04740	-1.59971
	recovery	CLK_N (F)	0.15103	0.07286	-1.52817
	removal	CLK_N (F)	-0.11377	-0.04042	1.54178
	removal	CLK_N (F)	-0.10830	-0.03132	1.59335
	removal	CLK_N (F)	-0.10566	-0.02422	1.60550
	removal	CLK_N (F)	-0.11971	-0.04688	1.53136

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 ()	0.11750	0.64453	16.50020
	min_pulse_width	RESET_B ()	0.14168	0.64453	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 ()	0.13201	0.64453	16.50020
	min_pulse_width	CLK_N ()	0.18278	0.64453	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 ()	0.13442	0.64453	16.50020
	min_pulse_width	CLK_N ()	0.12476	0.64453	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	0.02488	0.02742	0.07539
	CLK_N	0.02984	0.03240	0.08043

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtn_1	CLK_N	0.02300	0.02518	0.07348
	CLK_N	0.02735	0.02952	0.07728
	RESET_B	0.02441	0.02615	0.07950
	RESET_B	0.03577	0.03750	0.08936

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)**	0.00134	0.00136	0.00134
	(CLK_N * RESET_B * SCD * SCE)	-0.00070	-0.00071	-0.00070
	(CLK_N * RESET_B * SCD * !SCE)	0.01348	0.01402	0.03709
	(CLK_N * RESET_B * SCD * !SCE)	0.00968	0.01020	0.03329
	(CLK_N * RESET_B * !SCD * !SCE)	0.01349	0.01402	0.03709
	(CLK_N * RESET_B * !SCD * !SCE)	0.00969	0.01020	0.03328
	(CLK_N * !SCD * SCE)	0.00075	0.00076	0.00074
	(CLK_N * !SCD * SCE)	-0.00144	-0.00147	-0.00149
	(CLK_N * !RESET_B * SCD * SCE)	0.00073	0.00074	0.00072
	(CLK_N * !RESET_B * SCD * SCE)	-0.00146	-0.00149	-0.00149
	(CLK_N * !RESET_B * SCD * !SCE)	0.00039	0.00038	0.00034
	(CLK_N * !RESET_B * SCD * !SCE)	-0.00182	-0.00182	-0.00189
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00038	0.00038	0.00034
	(CLK_N * !RESET_B * !SCD * !SCE)	-0.00186	-0.00186	-0.00190
	(!CLK_N * RESET_B * SCD * SCE)	0.00134	0.00136	0.00134
	(!CLK_N * RESET_B * SCD * SCE)	-0.00070	-0.00071	-0.00070
	(!CLK_N * RESET_B * SCD * !SCE)	0.00584	0.00633	0.02778
	(!CLK_N * RESET_B * SCD * !SCE)	0.00200	0.00248	0.02393
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00584	0.00633	0.02778
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00200	0.00248	0.02393
	(!CLK_N * !SCD * SCE)	0.00075	0.00075	0.00074
	(!CLK_N * !SCD * SCE)	-0.00145	-0.00147	-0.00149
	(!CLK_N * !RESET_B * SCD * SCE)	0.00073	0.00073	0.00072
	(!CLK_N * !RESET_B * SCD * SCE)	-0.00146	-0.00149	-0.00149
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00039	0.00038	0.00034
	(!CLK_N * !RESET_B * SCD * !SCE)	-0.00182	-0.00182	-0.00189
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00038	0.00038	0.00034
	(!CLK_N * !RESET_B * !SCD * !SCE)	-0.00186	-0.00186	-0.00190

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)**	-0.00127	-0.00129	-0.00132
	(CLK_N * RESET_B * SCD * SCE)	0.00076	0.00075	0.00073
	(CLK_N * RESET_B * SCD * !SCE)	0.00929	0.01031	0.03574
	(CLK_N * RESET_B * SCD * !SCE)	0.01310	0.01411	0.03955
	(CLK_N * RESET_B * !SCD * !SCE)	0.00929	0.01030	0.03574
	(CLK_N * RESET_B * !SCD * !SCE)	0.01310	0.01411	0.03955
	(CLK_N * !SCD * SCE)	-0.00071	-0.00072	-0.00071
	(CLK_N * !SCD * SCE)	0.00149	0.00151	0.00150
	(CLK_N * !RESET_B * SCD * SCE)	-0.00070	-0.00071	-0.00071
	(CLK_N * !RESET_B * SCD * SCE)	0.00149	0.00150	0.00150
	(CLK_N * !RESET_B * SCD * !SCE)	-0.00031	-0.00032	-0.00031
	(CLK_N * !RESET_B * SCD * !SCE)	0.00189	0.00193	0.00191
	(CLK_N * !RESET_B * !SCD * !SCE)	-0.00031	-0.00032	-0.00031
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00190	0.00193	0.00191
	(!CLK_N * RESET_B * SCD * SCE)	-0.00128	-0.00130	-0.00132
	(!CLK_N * RESET_B * SCD * SCE)	0.00075	0.00076	0.00073
	(!CLK_N * RESET_B * SCD * !SCE)	0.00126	0.00221	0.02404
	(!CLK_N * RESET_B * SCD * !SCE)	0.00510	0.00605	0.02788
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00126	0.00221	0.02404
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00510	0.00605	0.02788
	(!CLK_N * !SCD * SCE)	-0.00071	-0.00072	-0.00072
	(!CLK_N * !SCD * SCE)	0.00149	0.00150	0.00149
	(!CLK_N * !RESET_B * SCD * SCE)	-0.00070	-0.00071	-0.00071
	(!CLK_N * !RESET_B * SCD * SCE)	0.00149	0.00150	0.00149
	(!CLK_N * !RESET_B * SCD * !SCE)	-0.00032	-0.00032	-0.00031
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00191	0.00193	0.00191
	(!CLK_N * !RESET_B * !SCD * !SCE)	-0.00032	-0.00032	-0.00031
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00191	0.00193	0.00191

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)**	0.01516	0.01546	0.03309
	(CLK_N * D * RESET_B * SCE)	0.01040	0.01069	0.02833
	(CLK_N * D * RESET_B * !SCE)	0.00122	0.00105	0.00102
	(CLK_N * D * RESET_B * !SCE)	-0.00123	-0.00143	-0.00145
	(CLK_N * D * !RESET_B * SCE)	0.00067	0.00067	0.00065
	(CLK_N * D * !RESET_B * SCE)	-0.00142	-0.00143	-0.00141
	(CLK_N * D * !RESET_B * !SCE)	0.00043	0.00043	0.00043
	(CLK_N * D * !RESET_B * !SCE)	-0.00162	-0.00164	-0.00163
	(CLK_N * !D * RESET_B * SCE)	0.01602	0.01630	0.03354
	(CLK_N * !D * RESET_B * SCE)	0.01108	0.01134	0.02859
	(CLK_N * !D * !RESET_B * SCE)	0.00067	0.00067	0.00065
	(CLK_N * !D * !RESET_B * SCE)	-0.00142	-0.00142	-0.00141
	(!D * RESET_B * !SCE)	0.00090	0.00090	0.00089
	(!D * RESET_B * !SCE)	-0.00157	-0.00158	-0.00158
	(!D * !RESET_B * !SCE)	0.00049	0.00050	0.00050
	(!D * !RESET_B * !SCE)	-0.00170	-0.00171	-0.00171
	(!CLK_N * D * RESET_B * SCE)	0.00752	0.00772	0.02378
	(!CLK_N * D * RESET_B * SCE)	0.00273	0.00293	0.01899
	(!CLK_N * D * RESET_B * !SCE)	0.00123	0.00105	0.00102
	(!CLK_N * D * RESET_B * !SCE)	-0.00125	-0.00143	-0.00145
	(!CLK_N * D * !RESET_B * SCE)	0.00067	0.00067	0.00065
	(!CLK_N * D * !RESET_B * SCE)	-0.00142	-0.00142	-0.00141
	(!CLK_N * D * !RESET_B * !SCE)	0.00043	0.00043	0.00043
	(!CLK_N * D * !RESET_B * !SCE)	-0.00162	-0.00164	-0.00163
	(!CLK_N * !D * RESET_B * SCE)	0.00838	0.00854	0.02423
	(!CLK_N * !D * RESET_B * SCE)	0.00340	0.00355	0.01925
	(!CLK_N * !D * !RESET_B * SCE)	0.00067	0.00067	0.00065
	(!CLK_N * !D * !RESET_B * SCE)	-0.00142	-0.00142	-0.00141

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)**	0.01071	0.01110	0.02969
	(CLK_N * D * RESET_B * SCE)	0.01548	0.01587	0.03444
	(CLK_N * D * RESET_B * !SCE)	-0.00097	-0.00100	-0.00100
	(CLK_N * D * RESET_B * !SCE)	0.00148	0.00149	0.00149
	(CLK_N * D * !RESET_B * SCE)	-0.00062	-0.00062	-0.00062
	(CLK_N * D * !RESET_B * SCE)	0.00145	0.00146	0.00143
	(CLK_N * D * !RESET_B * !SCE)	-0.00041	-0.00041	-0.00041
	(CLK_N * D * !RESET_B * !SCE)	0.00164	0.00165	0.00164
	(CLK_N * !D * RESET_B * SCE)	0.01034	0.01071	0.02974
	(CLK_N * !D * RESET_B * SCE)	0.01529	0.01566	0.03467
	(CLK_N * !D * !RESET_B * SCE)	-0.00062	-0.00062	-0.00062
	(CLK_N * !D * !RESET_B * SCE)	0.00145	0.00146	0.00143
	(!D * RESET_B * !SCE)	-0.00081	-0.00087	-0.00089
	(!D * RESET_B * !SCE)	0.00164	0.00160	0.00160
	(!D * !RESET_B * !SCE)	-0.00049	-0.00050	-0.00050
	(!D * !RESET_B * !SCE)	0.00173	0.00175	0.00174
	(!CLK_N * D * RESET_B * SCE)	0.00259	0.00277	0.01889
	(!CLK_N * D * RESET_B * SCE)	0.00738	0.00757	0.02367
	(!CLK_N * D * RESET_B * !SCE)	-0.00097	-0.00100	-0.00100
	(!CLK_N * D * RESET_B * !SCE)	0.00147	0.00149	0.00148
	(!CLK_N * D * !RESET_B * SCE)	-0.00062	-0.00062	-0.00062
	(!CLK_N * D * !RESET_B * SCE)	0.00145	0.00146	0.00143
	(!CLK_N * D * !RESET_B * !SCE)	-0.00041	-0.00041	-0.00041
	(!CLK_N * D * !RESET_B * !SCE)	0.00164	0.00165	0.00164
	(!CLK_N * !D * RESET_B * SCE)	0.00215	0.00237	0.01870
	(!CLK_N * !D * RESET_B * SCE)	0.00712	0.00736	0.02367
	(!CLK_N * !D * !RESET_B * SCE)	-0.00062	-0.00062	-0.00062
	(!CLK_N * !D * !RESET_B * SCE)	0.00145	0.00146	0.00143

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)	0.00597	0.00676	0.03646
	(CLK_N * D * RESET_B * SCD)	-0.00052	0.00023	0.02996
	(CLK_N * D * RESET_B * !SCD)	0.01711	0.01803	0.04882
	(CLK_N * D * RESET_B * !SCD)	0.01271	0.01360	0.04437
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00589	0.00690	0.03665
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	-0.00027	0.00070	0.03048
	(CLK_N * !D * RESET_B * SCD)	0.01927	0.02070	0.06896
	(CLK_N * !D * RESET_B * SCD)	0.01092	0.01233	0.06061
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00597	0.00676	0.03646
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	-0.00052	0.00023	0.02996
	(!CLK_N * D * RESET_B * !SCD)	0.00912	0.00997	0.04034
	(!CLK_N * D * RESET_B * !SCD)	0.00476	0.00559	0.03595
	(!CLK_N * !D * RESET_B * SCD)	0.01164	0.01295	0.05912
	(!CLK_N * !D * RESET_B * SCD)	0.00325	0.00454	0.05074

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)	-0.00034	0.00129	0.03103
	(CLK_N * D * RESET_B * SCD)	0.00614	0.00780	0.03753
	(CLK_N * D * RESET_B * !SCD)	0.01324	0.01472	0.04486
	(CLK_N * D * RESET_B * !SCD)	0.01768	0.01914	0.04912
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	-0.00036	0.00121	0.03085
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00582	0.00736	0.03701
	(CLK_N * !D * RESET_B * SCD)	0.00969	0.01144	0.05939
	(CLK_N * !D * RESET_B * SCD)	0.01804	0.01980	0.06773
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	-0.00035	0.00127	0.03103
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00613	0.00780	0.03753
	(!CLK_N * D * RESET_B * !SCD)	0.00562	0.00700	0.03722
	(!CLK_N * D * RESET_B * !SCD)	0.01002	0.01142	0.04145
	(!CLK_N * !D * RESET_B * SCD)	0.00167	0.00332	0.04919
	(!CLK_N * !D * RESET_B * SCD)	0.01005	0.01171	0.05757

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.01967	0.01949	0.04996
	(CLK_N * D * SCD * SCE * !Q)	0.00861	0.00836	0.03887
	(CLK_N * D * SCD * !SCE * !Q)	0.01940	0.01918	0.05029
	(CLK_N * D * SCD * !SCE * !Q)	0.00874	0.00850	0.03959
	(CLK_N * D * !SCD * SCE * !Q)	0.00409	0.00413	0.00410
	(CLK_N * D * !SCD * SCE * !Q)	-0.00416	-0.00418	-0.00416
	(CLK_N * D * !SCD * !SCE * !Q)	0.01889	0.01874	0.05009
	(CLK_N * D * !SCD * !SCE * !Q)	0.00875	0.00857	0.03991
	(CLK_N * !D * SCD * SCE * !Q)	0.02054	0.02032	0.05035
	(CLK_N * !D * SCD * SCE * !Q)	0.00929	0.00901	0.03908
	(CLK_N * !D * SCD * !SCE * !Q)	0.00405	0.00411	0.00406
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00418	-0.00421	-0.00418
	(CLK_N * !D * !SCD * SCE * !Q)	0.00409	0.00413	0.00410
	(CLK_N * !D * !SCD * SCE * !Q)	-0.00416	-0.00418	-0.00416
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00406	0.00409	0.00407
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00418	-0.00420	-0.00419
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.01128	0.01142	0.03617
	(!CLK_N * D * SCD * SCE * !Q)	0.00014	0.00023	0.02502
	(!CLK_N * D * SCD * !SCE * !Q)	0.01098	0.01114	0.03638
	(!CLK_N * D * SCD * !SCE * !Q)	0.00028	0.00038	0.02567
	(!CLK_N * D * !SCD * SCE * !Q)	0.00398	0.00401	0.00399
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00426	-0.00428	-0.00427
	(!CLK_N * D * !SCD * !SCE * !Q)	0.01049	0.01071	0.03617
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00027	0.00047	0.02596
	(!CLK_N * !D * SCD * SCE * !Q)	0.01214	0.01223	0.03654
	(!CLK_N * !D * SCD * SCE * !Q)	0.00082	0.00086	0.02524
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00395	0.00400	0.00396
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00428	-0.00431	-0.00429
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00398	0.00402	0.00399
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00426	-0.00429	-0.00427
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00396	0.00401	0.00397
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00429	-0.00432	-0.00429

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.00877	0.00923	0.04420
	(CLK_N * D * SCD * SCE * !Q)	0.01989	0.02034	0.05529
	(CLK_N * D * SCD * !SCE * !Q)	0.00767	0.00808	0.04289
	(CLK_N * D * SCD * !SCE * !Q)	0.01838	0.01882	0.05356
	(CLK_N * D * !SCD * SCE * !Q)	-0.00399	-0.00410	-0.00410
	(CLK_N * D * !SCD * SCE * !Q)	0.00420	0.00420	0.00418
	(CLK_N * D * !SCD * !SCE * !Q)	0.00735	0.00795	0.04280
	(CLK_N * D * !SCD * !SCE * !Q)	0.01754	0.01815	0.05300
	(CLK_N * !D * SCD * SCE * !Q)	0.00834	0.00885	0.04419
	(CLK_N * !D * SCD * SCE * !Q)	0.01964	0.02017	0.05547
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00392	-0.00408	-0.00406
	(CLK_N * !D * SCD * !SCE * !Q)	0.00423	0.00422	0.00419
	(CLK_N * !D * !SCD * SCE * !Q)	-0.00399	-0.00409	-0.00410
	(CLK_N * !D * !SCD * SCE * !Q)	0.00420	0.00419	0.00418
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00394	-0.00408	-0.00407
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00425	0.00422	0.00420
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.00056	0.00153	0.02792
	(!CLK_N * D * SCD * SCE * !Q)	0.01168	0.01271	0.03902
	(!CLK_N * D * SCD * !SCE * !Q)	-0.00053	0.00042	0.02676
	(!CLK_N * D * SCD * !SCE * !Q)	0.01018	0.01118	0.03749
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00388	-0.00400	-0.00399
	(!CLK_N * D * !SCD * SCE * !Q)	0.00431	0.00432	0.00429
	(!CLK_N * D * !SCD * !SCE * !Q)	-0.00086	0.00008	0.02670
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00932	0.01035	0.03689
	(!CLK_N * !D * SCD * SCE * !Q)	0.00013	0.00109	0.02772
	(!CLK_N * !D * SCD * SCE * !Q)	0.01143	0.01246	0.03905
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00381	-0.00398	-0.00396
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00435	0.00433	0.00430
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00388	-0.00399	-0.00399
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00431	0.00431	0.00429
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00383	-0.00398	-0.00397
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00436	0.00434	0.00430

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)**	0.01376	0.01506	0.06061
	(D * RESET_B * SCD * SCE * Q)	0.00909	0.01037	0.05594
	(D * RESET_B * SCD * SCE * !Q)	0.02190	0.02327	0.06932
	(D * RESET_B * SCD * SCE * !Q)	0.01726	0.01862	0.06469
	(D * RESET_B * SCD * !SCE * Q)	0.01376	0.01506	0.06061
	(D * RESET_B * SCD * !SCE * Q)	0.00908	0.01037	0.05594
	(D * RESET_B * SCD * !SCE * !Q)	0.02188	0.02326	0.06923
	(D * RESET_B * SCD * !SCE * !Q)	0.01724	0.01861	0.06460
	(D * RESET_B * !SCD * SCE * Q)	0.02108	0.02219	0.06857
	(D * RESET_B * !SCD * SCE * Q)	0.01638	0.01750	0.06388
	(D * RESET_B * !SCD * !SCE * Q)	0.01376	0.01506	0.06061
	(D * RESET_B * !SCD * !SCE * Q)	0.00909	0.01037	0.05594
	(D * RESET_B * !SCD * !SCE * !Q)	0.02188	0.02326	0.06923
	(D * RESET_B * !SCD * !SCE * !Q)	0.01724	0.01861	0.06460
	(D * !SCD * SCE * !Q)	0.01355	0.01485	0.06044
	(D * !SCD * SCE * !Q)	0.00887	0.01016	0.05576
	(D * !RESET_B * SCD * SCE * !Q)	0.01355	0.01486	0.06041
	(D * !RESET_B * SCD * SCE * !Q)	0.00888	0.01018	0.05574
	(D * !RESET_B * SCD * !SCE * !Q)	0.01355	0.01485	0.06040
	(D * !RESET_B * SCD * !SCE * !Q)	0.00887	0.01017	0.05573
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01355	0.01485	0.06040
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00887	0.01017	0.05573
	(!D * RESET_B * SCD * SCE * Q)	0.01376	0.01506	0.06062
	(!D * RESET_B * SCD * SCE * Q)	0.00909	0.01037	0.05594
	(!D * RESET_B * SCD * SCE * !Q)	0.02194	0.02332	0.06937
	(!D * RESET_B * SCD * SCE * !Q)	0.01728	0.01865	0.06472
	(!D * RESET_B * !SCE * Q)	0.02105	0.02216	0.06855
	(!D * RESET_B * !SCE * Q)	0.01634	0.01745	0.06383
	(!D * RESET_B * !SCD * SCE * Q)	0.02106	0.02219	0.06856
	(!D * RESET_B * !SCD * SCE * Q)	0.01636	0.01747	0.06386
	(!D * !SCE * !Q)	0.01354	0.01484	0.06043
	(!D * !SCE * !Q)	0.00887	0.01016	0.05576
	(!D * !SCD * SCE * !Q)	0.01355	0.01485	0.06042
	(!D * !SCD * SCE * !Q)	0.00887	0.01017	0.05575
	(!D * !RESET_B * SCD * SCE * !Q)	0.01355	0.01486	0.06041
	(!D * !RESET_B * SCD * SCE * !Q)	0.00888	0.01018	0.05574

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)	0.01001	0.01190	0.05801
	(D * RESET_B * SCD * SCE * Q)	0.01467	0.01659	0.06269
	(D * RESET_B * SCD * !SCE * Q)	0.01001	0.01190	0.05801
	(D * RESET_B * SCD * !SCE * Q)	0.01466	0.01659	0.06268
	(D * RESET_B * !SCD * !SCE * Q)	0.01001	0.01191	0.05801
	(D * RESET_B * !SCD * !SCE * Q)	0.01467	0.01659	0.06269
	(D * !SCD * SCE * !Q)	0.00998	0.01188	0.05798
	(D * !SCD * SCE * !Q)	0.01464	0.01657	0.06265
	(D * !RESET_B * SCD * SCE * !Q)	0.00999	0.01189	0.05795
	(D * !RESET_B * SCD * SCE * !Q)	0.01465	0.01658	0.06263
	(D * !RESET_B * SCD * !SCE * !Q)	0.00998	0.01189	0.05795
	(D * !RESET_B * SCD * !SCE * !Q)	0.01464	0.01658	0.06263
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00998	0.01189	0.05795
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01464	0.01658	0.06263
	(!D * RESET_B * SCD * SCE * Q)	0.01001	0.01191	0.05801
	(!D * RESET_B * SCD * SCE * Q)	0.01467	0.01659	0.06269
	(!D * !SCE * !Q)	0.00998	0.01188	0.05797
	(!D * !SCE * !Q)	0.01464	0.01657	0.06265
	(!D * !SCD * SCE * !Q)	0.00998	0.01188	0.05798
	(!D * !SCD * SCE * !Q)	0.01464	0.01657	0.06265
	(!D * !RESET_B * SCD * SCE * !Q)	0.00999	0.01189	0.05795
	(!D * !RESET_B * SCD * SCE * !Q)	0.01465	0.01657	0.06263

SKY130_FD_SC_HS__SDFRTPx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00190	0.00197	0.00418	0.00568	0.00309	1.19851
sky130_fd_sc_hs__sdfrtp_2	0.00184	0.00198	0.00427	0.00575	0.00309	2.39915
sky130_fd_sc_hs__sdfrtp_4	0.00185	0.00196	0.00430	0.00568	0.00309	4.44913

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfrtp_1	0.00000	0.85339	1.52270
sky130_fd_sc_hs__sdfrtp_2	0.00000	0.82737	1.41772
sky130_fd_sc_hs__sdfrtp_4	0.00000	1.16366	1.98584

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)	0.18365	0.65301	5.99595
sky130_fd_sc_hs__sdfrtp_2	CLK->Q (RR)	0.19593	0.56930	6.06809
sky130_fd_sc_hs__sdfrtp_4	CLK->Q (RR)	0.22709	0.53217	6.08565

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrtp_1	CLK->Q (RF)	0.18866	0.42074	2.14749
	RESET_B->Q (FF)	0.26671	0.73343	5.05462
sky130_fd_sc_hs__sdfrtp_2	CLK->Q (RF)	0.19528	0.39479	2.18336
	RESET_B->Q (FF)	0.27534	0.71112	5.10191
sky130_fd_sc_hs__sdfrtp_4	CLK->Q (RF)	0.20403	0.37217	2.07199
	RESET_B->Q (FF)	0.28206	0.68700	4.98773

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)	-0.09551	-0.19528	-1.07588
	setup	CLK (R)	0.17768	0.23955	1.13163
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.09409	-0.18832	-1.05436
	setup	CLK (R)	0.17486	0.23434	1.07607
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.09237	-0.18873	-1.05718
	setup	CLK (R)	0.15990	0.22638	1.07290

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)	-0.09811	-0.23455	-2.85435
	setup	CLK (R)	0.21466	0.33399	3.02922
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.09920	-0.22681	-2.87053
	setup	CLK (R)	0.19993	0.32307	2.99686
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.10694	-0.23467	-2.91145
	setup	CLK (R)	0.19826	0.32217	2.98927

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)	-0.09551	-0.19528	-1.07595
	hold	CLK (R)	-0.09571	-0.19542	-1.07588
	setup	CLK (R)	0.17749	0.23935	1.13163
	setup	CLK (R)	0.17768	0.23955	1.13159
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.09470	-0.18832	-1.05436
	hold	CLK (R)	-0.09409	-0.18832	-1.05725
	setup	CLK (R)	0.17423	0.23402	1.07607
	setup	CLK (R)	0.17486	0.23434	1.07597
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.09353	-0.18873	-1.05741
	hold	CLK (R)	-0.09237	-0.18899	-1.05718
	setup	CLK (R)	0.15871	0.22597	1.07290
	setup	CLK (R)	0.15990	0.22638	1.07266

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)	-0.09811	-0.23461	-2.85537
	hold	CLK (R)	-0.09924	-0.23455	-2.85435
	setup	CLK (R)	0.21434	0.33399	3.02922
	setup	CLK (R)	0.21466	0.33275	3.02806
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.09920	-0.22681	-2.87065
	hold	CLK (R)	-0.10116	-0.22681	-2.87053
	setup	CLK (R)	0.19988	0.32039	2.99686
	setup	CLK (R)	0.19993	0.32307	2.99363
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.10694	-0.23469	-2.91259
	hold	CLK (R)	-0.10719	-0.23467	-2.91145
	setup	CLK (R)	0.19784	0.31938	2.98927
	setup	CLK (R)	0.19826	0.32217	2.98868

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)	-0.11476	-0.20452	-1.06852
	setup	CLK (R)	0.19853	0.25452	1.09852
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.11048	-0.19942	-1.04723
	setup	CLK (R)	0.19501	0.24855	1.07206
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.11027	-0.19894	-1.04493
	setup	CLK (R)	0.18280	0.24293	1.06226

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)	-0.12730	-0.25865	-3.01450
	setup	CLK (R)	0.26528	0.37923	3.16125
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.13420	-0.25706	-3.02097
	setup	CLK (R)	0.26118	0.36959	3.14030
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.13969	-0.26571	-3.06540
	setup	CLK (R)	0.25827	0.37013	3.14165

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)	-0.11476	-0.20452	-1.06852
	hold	CLK (R)	-0.12182	-0.21400	-1.07530
	setup	CLK (R)	0.19440	0.24784	1.09574
	setup	CLK (R)	0.19853	0.25452	1.09852
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.11048	-0.19942	-1.04723
	hold	CLK (R)	-0.11677	-0.20746	-1.05191
	setup	CLK (R)	0.19143	0.24408	1.06692
	setup	CLK (R)	0.19501	0.24855	1.07206
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.11027	-0.19894	-1.04493
	hold	CLK (R)	-0.11623	-0.20773	-1.04672
	setup	CLK (R)	0.17950	0.23713	1.06187
	setup	CLK (R)	0.18280	0.24293	1.06226

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)	-0.13962	-0.26714	-3.02571
	hold	CLK (R)	-0.12730	-0.25865	-3.01450
	setup	CLK (R)	0.26528	0.37923	3.15853
	setup	CLK (R)	0.25675	0.37061	3.16125
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.14343	-0.26969	-3.02097
	hold	CLK (R)	-0.13420	-0.25706	-3.02407
	setup	CLK (R)	0.26118	0.36959	3.13817
	setup	CLK (R)	0.25445	0.36489	3.14030
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.15174	-0.27873	-3.06540
	hold	CLK (R)	-0.13969	-0.26571	-3.06603
	setup	CLK (R)	0.25827	0.37013	3.14165
	setup	CLK (R)	0.24926	0.36356	3.13639

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)	-0.09903	-0.18047	-0.38215
	setup	CLK (R)	0.26629	0.28720	1.11148
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.09566	-0.17546	-0.36580
	setup	CLK (R)	0.25804	0.27459	1.09478
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.09907	-0.18412	-0.37239
	setup	CLK (R)	0.25606	0.27247	1.08876

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)	-0.10960	-0.22868	-2.81399
	setup	CLK (R)	0.23704	0.33594	3.00397
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.10876	-0.22281	-2.78907
	setup	CLK (R)	0.23198	0.33000	2.96294
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.11683	-0.23209	-2.78980
	setup	CLK (R)	0.21995	0.31977	2.96006

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)	-0.14046	-0.18047	-0.38215
	hold	CLK (R)	-0.09903	-0.19765	-1.08418
	setup	CLK (R)	0.26629	0.28720	0.46574
	setup	CLK (R)	0.17651	0.24447	1.11148
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.14273	-0.17546	-0.36580
	hold	CLK (R)	-0.09566	-0.19387	-1.07376
	setup	CLK (R)	0.25804	0.27459	0.45138
	setup	CLK (R)	0.17650	0.24055	1.09478
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.15129	-0.18412	-0.37239
	hold	CLK (R)	-0.09907	-0.19464	-1.06789
	setup	CLK (R)	0.25606	0.27247	0.45107
	setup	CLK (R)	0.16294	0.23069	1.08876

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)	-0.15683	-0.29428	-2.81399
	hold	CLK (R)	-0.10960	-0.22868	-2.85573
	setup	CLK (R)	0.23704	0.33594	2.82648
	setup	CLK (R)	0.22392	0.33275	3.00397
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.15035	-0.28585	-2.78907
	hold	CLK (R)	-0.10876	-0.22281	-2.82911
	setup	CLK (R)	0.23198	0.33000	2.80284
	setup	CLK (R)	0.21189	0.32039	2.96294
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.15224	-0.28743	-2.78980
	hold	CLK (R)	-0.11683	-0.23209	-2.87546
	setup	CLK (R)	0.21995	0.31977	2.80335
	setup	CLK (R)	0.20928	0.31962	2.96006

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)	0.21509	0.25245	1.30326
	removal	CLK (R)	-0.14960	-0.19986	-1.20606
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.21336	0.24920	1.28070
	removal	CLK (R)	-0.14736	-0.19414	-1.19368
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.19757	0.24047	1.27314
	removal	CLK (R)	-0.14699	-0.19535	-1.19269

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)	0.21022	0.24584	1.30117
	recovery	CLK (R)	0.20716	0.23698	1.26382
	recovery	CLK (R)	0.20302	0.22800	1.24310
	recovery	CLK (R)	0.21509	0.25245	1.30326
	removal	CLK (R)	-0.15762	-0.21562	-1.26730
	removal	CLK (R)	-0.15245	-0.20773	-1.22655
	removal	CLK (R)	-0.14960	-0.19986	-1.20606
	removal	CLK (R)	-0.16367	-0.22359	-1.26813
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.20828	0.24201	1.28070
	recovery	CLK (R)	0.20280	0.23220	1.24090
	recovery	CLK (R)	0.20028	0.22378	1.22173
	recovery	CLK (R)	0.21336	0.24920	1.27875
	removal	CLK (R)	-0.15798	-0.21227	-1.25383
	removal	CLK (R)	-0.15317	-0.20320	-1.21615
	removal	CLK (R)	-0.14736	-0.19414	-1.19368
	removal	CLK (R)	-0.16400	-0.22016	-1.25474
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.19440	0.23468	1.27206
	recovery	CLK (R)	0.19262	0.22517	1.23205
	recovery	CLK (R)	0.18730	0.21720	1.21578
	recovery	CLK (R)	0.19757	0.24047	1.27314
	removal	CLK (R)	-0.15757	-0.21227	-1.25595
	removal	CLK (R)	-0.15279	-0.20320	-1.21426
	removal	CLK (R)	-0.14699	-0.19535	-1.19269
	removal	CLK (R)	-0.16179	-0.21791	-1.25216

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 ()	0.13926	0.64453	16.50020
	min_pulse_width	RESET_B ()	0.11267	0.64453	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	RESET_B ()	0.14168	0.64453	16.50020
	min_pulse_width	RESET_B ()	0.11509	0.64453	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	RESET_B ()	0.13926	0.64453	16.50020
	min_pulse_width	RESET_B ()	0.11750	0.64453	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 ()	0.09091	0.64453	16.50020
	min_pulse_width	CLK ()	0.07157	0.64453	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.10300	0.64453	16.50020
	min_pulse_width	CLK ()	0.07157	0.64453	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.11992	0.64453	16.50020
	min_pulse_width	CLK ()	0.07640	0.64453	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 ()	0.18036	0.64453	16.50020
	min_pulse_width	CLK ()	0.19003	0.64453	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.18761	0.64453	16.50020
	min_pulse_width	CLK ()	0.19486	0.64453	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.17311	0.64453	16.50020
	min_pulse_width	CLK ()	0.19245	0.64453	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	0.02792	0.02940	0.07704
	CLK	0.02300	0.02447	0.07258
sky130_fd_sc_hs__sdfrtp_2	CLK	0.03166	0.03347	0.08129
	CLK	0.02659	0.02841	0.07715
sky130_fd_sc_hs__sdfrtp_4	CLK	0.03844	0.04035	0.08819
	CLK	0.03348	0.03539	0.08501

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtp_1	CLK	0.02896	0.03066	0.07745
	CLK	0.02413	0.02579	0.07236
	RESET_B	0.02423	0.02607	0.07899
	RESET_B	0.03567	0.03749	0.08956
sky130_fd_sc_hs__sdfrtp_2	CLK	0.03202	0.03411	0.08125
	CLK	0.02728	0.02935	0.07590
	RESET_B	0.02775	0.03001	0.08409
	RESET_B	0.03901	0.04130	0.09377
sky130_fd_sc_hs__sdfrtp_4	CLK	0.03991	0.04263	0.09041
	CLK	0.03507	0.03773	0.08445
	RESET_B	0.03464	0.03754	0.09273
	RESET_B	0.04709	0.04993	0.10232

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)**	0.00133	0.00134	0.00134
	(CLK * RESET_B * SCD * SCE)	-0.00063	-0.00064	-0.00064
	(CLK * RESET_B * SCD * !SCE)	0.00649	0.00695	0.02857
	(CLK * RESET_B * SCD * !SCE)	0.00270	0.00314	0.02477
	(CLK * RESET_B * !SCD * !SCE)	0.00649	0.00695	0.02857
	(CLK * RESET_B * !SCD * !SCE)	0.00271	0.00315	0.02477
	(CLK * !SCD * SCE)	0.00068	0.00069	0.00067
	(CLK * !SCD * SCE)	-0.00145	-0.00147	-0.00149
	(CLK * !RESET_B * SCD * SCE)	0.00066	0.00066	0.00065
	(CLK * !RESET_B * SCD * SCE)	-0.00146	-0.00148	-0.00149
	(CLK * !RESET_B * SCD * !SCE)	0.00046	0.00047	0.00041
	(CLK * !RESET_B * SCD * !SCE)	-0.00165	-0.00166	-0.00174
	(CLK * !RESET_B * !SCD * !SCE)	0.00046	0.00046	0.00042
	(CLK * !RESET_B * !SCD * !SCE)	-0.00169	-0.00170	-0.00175
	(!CLK * RESET_B * SCD * SCE)	0.00133	0.00135	0.00134
	(!CLK * RESET_B * SCD * SCE)	-0.00063	-0.00065	-0.00064
	(!CLK * RESET_B * SCD * !SCE)	0.01376	0.01441	0.03778
	(!CLK * RESET_B * SCD * !SCE)	0.00976	0.01040	0.03378
	(!CLK * RESET_B * !SCD * !SCE)	0.01376	0.01441	0.03778
	(!CLK * RESET_B * !SCD * !SCE)	0.00976	0.01040	0.03378
	(!CLK * !SCD * SCE)	0.00069	0.00070	0.00068
	(!CLK * !SCD * SCE)	-0.00144	-0.00147	-0.00148
	(!CLK * !RESET_B * SCD * SCE)	0.00066	0.00067	0.00065
	(!CLK * !RESET_B * SCD * SCE)	-0.00146	-0.00149	-0.00149
	(!CLK * !RESET_B * SCD * !SCE)	0.00046	0.00047	0.00041
	(!CLK * !RESET_B * SCD * !SCE)	-0.00165	-0.00166	-0.00174
	(!CLK * !RESET_B * !SCD * !SCE)	0.00046	0.00046	0.00042
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00169	-0.00170	-0.00175

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	0.00127	0.00127	0.00127
	(CLK * RESET_B * SCD * SCE)	-0.00060	-0.00060	-0.00060
	(CLK * RESET_B * SCD * !SCE)	0.00553	0.00608	0.02807
	(CLK * RESET_B * SCD * !SCE)	0.00191	0.00244	0.02443
	(CLK * RESET_B * !SCD * !SCE)	0.00554	0.00608	0.02806
	(CLK * RESET_B * !SCD * !SCE)	0.00191	0.00244	0.02442
	(CLK * !SCD * SCE)	0.00066	0.00067	0.00065
	(CLK * !SCD * SCE)	-0.00136	-0.00138	-0.00141
	(CLK * !RESET_B * SCD * SCE)	0.00064	0.00064	0.00063
	(CLK * !RESET_B * SCD * SCE)	-0.00138	-0.00140	-0.00141
	(CLK * !RESET_B * SCD * !SCE)	0.00045	0.00045	0.00040
	(CLK * !RESET_B * SCD * !SCE)	-0.00156	-0.00158	-0.00165
	(CLK * !RESET_B * !SCD * !SCE)	0.00044	0.00045	0.00040
	(CLK * !RESET_B * !SCD * !SCE)	-0.00160	-0.00162	-0.00166
	(!CLK * RESET_B * SCD * SCE)	0.00127	0.00128	0.00127
	(!CLK * RESET_B * SCD * SCE)	-0.00060	-0.00061	-0.00060
	(!CLK * RESET_B * SCD * !SCE)	0.01306	0.01374	0.03735
	(!CLK * RESET_B * SCD * !SCE)	0.00924	0.00992	0.03353
	(!CLK * RESET_B * !SCD * !SCE)	0.01306	0.01374	0.03735
	(!CLK * RESET_B * !SCD * !SCE)	0.00925	0.00992	0.03353
	(!CLK * !SCD * SCE)	0.00066	0.00067	0.00065
	(!CLK * !SCD * SCE)	-0.00136	-0.00139	-0.00140
	(!CLK * !RESET_B * SCD * SCE)	0.00064	0.00065	0.00063
	(!CLK * !RESET_B * SCD * SCE)	-0.00138	-0.00140	-0.00141
	(!CLK * !RESET_B * SCD * !SCE)	0.00045	0.00045	0.00040
	(!CLK * !RESET_B * SCD * !SCE)	-0.00156	-0.00157	-0.00165
	(!CLK * !RESET_B * !SCD * !SCE)	0.00044	0.00045	0.00040
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00160	-0.00162	-0.00166

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	0.00128	0.00129	0.00128
	(CLK * RESET_B * SCD * SCE)	-0.00060	-0.00061	-0.00060
	(CLK * RESET_B * SCD * !SCE)	0.00561	0.00614	0.02811
	(CLK * RESET_B * SCD * !SCE)	0.00194	0.00246	0.02444
	(CLK * RESET_B * !SCD * !SCE)	0.00561	0.00615	0.02811
	(CLK * RESET_B * !SCD * !SCE)	0.00194	0.00247	0.02443
	(CLK * !SCD * SCE)	0.00066	0.00066	0.00064
	(CLK * !SCD * SCE)	-0.00137	-0.00139	-0.00142
	(CLK * !RESET_B * SCD * SCE)	0.00064	0.00064	0.00063
	(CLK * !RESET_B * SCD * SCE)	-0.00138	-0.00140	-0.00142
	(CLK * !RESET_B * SCD * !SCE)	0.00045	0.00046	0.00040
	(CLK * !RESET_B * SCD * !SCE)	-0.00155	-0.00157	-0.00164
	(CLK * !RESET_B * !SCD * !SCE)	0.00045	0.00045	0.00041
	(CLK * !RESET_B * !SCD * !SCE)	-0.00159	-0.00161	-0.00166
	(!CLK * RESET_B * SCD * SCE)	0.00128	0.00128	0.00128
	(!CLK * RESET_B * SCD * SCE)	-0.00060	-0.00060	-0.00059
	(!CLK * RESET_B * SCD * !SCE)	0.01318	0.01389	0.03765
	(!CLK * RESET_B * SCD * !SCE)	0.00931	0.01001	0.03377
	(!CLK * RESET_B * !SCD * !SCE)	0.01318	0.01389	0.03765
	(!CLK * RESET_B * !SCD * !SCE)	0.00931	0.01001	0.03377
	(!CLK * !SCD * SCE)	0.00066	0.00067	0.00065
	(!CLK * !SCD * SCE)	-0.00136	-0.00139	-0.00141
	(!CLK * !RESET_B * SCD * SCE)	0.00064	0.00064	0.00063
	(!CLK * !RESET_B * SCD * SCE)	-0.00138	-0.00141	-0.00142
	(!CLK * !RESET_B * SCD * !SCE)	0.00045	0.00046	0.00040
	(!CLK * !RESET_B * SCD * !SCE)	-0.00155	-0.00157	-0.00164
	(!CLK * !RESET_B * !SCD * !SCE)	0.00045	0.00045	0.00041
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00159	-0.00161	-0.00166

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)**	-0.00127	-0.00129	-0.00131
	(CLK * RESET_B * SCD * SCE)	0.00069	0.00070	0.00067
	(CLK * RESET_B * SCD * !SCE)	0.00077	0.00170	0.02370
	(CLK * RESET_B * SCD * !SCE)	0.00455	0.00549	0.02750
	(CLK * RESET_B * !SCD * !SCE)	0.00077	0.00170	0.02371
	(CLK * RESET_B * !SCD * !SCE)	0.00455	0.00549	0.02750
	(CLK * !SCD * SCE)	-0.00065	-0.00066	-0.00065
	(CLK * !SCD * SCE)	0.00149	0.00150	0.00149
	(CLK * !RESET_B * SCD * SCE)	-0.00064	-0.00064	-0.00064
	(CLK * !RESET_B * SCD * SCE)	0.00149	0.00150	0.00149
	(CLK * !RESET_B * SCD * !SCE)	-0.00038	-0.00039	-0.00038
	(CLK * !RESET_B * SCD * !SCE)	0.00175	0.00178	0.00176
	(CLK * !RESET_B * !SCD * !SCE)	-0.00039	-0.00039	-0.00039
	(CLK * !RESET_B * !SCD * !SCE)	0.00175	0.00178	0.00176
	(!CLK * RESET_B * SCD * SCE)	-0.00127	-0.00128	-0.00131
	(!CLK * RESET_B * SCD * SCE)	0.00070	0.00069	0.00067
	(!CLK * RESET_B * SCD * !SCE)	0.00817	0.00922	0.03519
	(!CLK * RESET_B * SCD * !SCE)	0.01218	0.01322	0.03919
	(!CLK * RESET_B * !SCD * !SCE)	0.00817	0.00922	0.03519
	(!CLK * RESET_B * !SCD * !SCE)	0.01218	0.01322	0.03919
	(!CLK * !SCD * SCE)	-0.00065	-0.00065	-0.00065
	(!CLK * !SCD * SCE)	0.00150	0.00150	0.00149
	(!CLK * !RESET_B * SCD * SCE)	-0.00064	-0.00064	-0.00064
	(!CLK * !RESET_B * SCD * SCE)	0.00150	0.00150	0.00149
	(!CLK * !RESET_B * SCD * !SCE)	-0.00039	-0.00039	-0.00038
	(!CLK * !RESET_B * SCD * !SCE)	0.00175	0.00177	0.00176
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00039	-0.00040	-0.00039
	(!CLK * !RESET_B * !SCD * !SCE)	0.00175	0.00178	0.00176

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	-0.00120	-0.00122	-0.00125
	(CLK * RESET_B * SCD * SCE)	0.00065	0.00066	0.00063
	(CLK * RESET_B * SCD * !SCE)	0.00082	0.00183	0.02409
	(CLK * RESET_B * SCD * !SCE)	0.00444	0.00547	0.02773
	(CLK * RESET_B * !SCD * !SCE)	0.00081	0.00183	0.02410
	(CLK * RESET_B * !SCD * !SCE)	0.00445	0.00547	0.02773
	(CLK * !SCD * SCE)	-0.00063	-0.00063	-0.00063
	(CLK * !SCD * SCE)	0.00140	0.00142	0.00141
	(CLK * !RESET_B * SCD * SCE)	-0.00061	-0.00062	-0.00061
	(CLK * !RESET_B * SCD * SCE)	0.00141	0.00142	0.00141
	(CLK * !RESET_B * SCD * !SCE)	-0.00038	-0.00038	-0.00037
	(CLK * !RESET_B * SCD * !SCE)	0.00167	0.00169	0.00167
	(CLK * !RESET_B * !SCD * !SCE)	-0.00038	-0.00038	-0.00037
	(CLK * !RESET_B * !SCD * !SCE)	0.00167	0.00169	0.00168
	(!CLK * RESET_B * SCD * SCE)	-0.00120	-0.00122	-0.00125
	(!CLK * RESET_B * SCD * SCE)	0.00065	0.00065	0.00063
	(!CLK * RESET_B * SCD * !SCE)	0.00881	0.00990	0.03600
	(!CLK * RESET_B * SCD * !SCE)	0.01263	0.01373	0.03983
	(!CLK * RESET_B * !SCD * !SCE)	0.00881	0.00990	0.03600
	(!CLK * RESET_B * !SCD * !SCE)	0.01263	0.01373	0.03983
	(!CLK * !SCD * SCE)	-0.00062	-0.00063	-0.00063
	(!CLK * !SCD * SCE)	0.00140	0.00142	0.00141
	(!CLK * !RESET_B * SCD * SCE)	-0.00061	-0.00062	-0.00061
	(!CLK * !RESET_B * SCD * SCE)	0.00141	0.00142	0.00141
	(!CLK * !RESET_B * SCD * !SCE)	-0.00038	-0.00038	-0.00037
	(!CLK * !RESET_B * SCD * !SCE)	0.00167	0.00169	0.00167
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00038	-0.00038	-0.00037
	(!CLK * !RESET_B * !SCD * !SCE)	0.00167	0.00169	0.00168

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	-0.00120	-0.00122	-0.00125
	(CLK * RESET_B * SCD * SCE)	0.00065	0.00066	0.00063
	(CLK * RESET_B * SCD * !SCE)	0.00076	0.00176	0.02402
	(CLK * RESET_B * SCD * !SCE)	0.00442	0.00544	0.02769
	(CLK * RESET_B * !SCD * !SCE)	0.00077	0.00176	0.02402
	(CLK * RESET_B * !SCD * !SCE)	0.00443	0.00544	0.02769
	(CLK * !SCD * SCE)	-0.00062	-0.00062	-0.00062
	(CLK * !SCD * SCE)	0.00142	0.00143	0.00142
	(CLK * !RESET_B * SCD * SCE)	-0.00060	-0.00061	-0.00060
	(CLK * !RESET_B * SCD * SCE)	0.00142	0.00143	0.00143
	(CLK * !RESET_B * SCD * !SCE)	-0.00039	-0.00039	-0.00038
	(CLK * !RESET_B * SCD * !SCE)	0.00166	0.00168	0.00167
	(CLK * !RESET_B * !SCD * !SCE)	-0.00039	-0.00039	-0.00038
	(CLK * !RESET_B * !SCD * !SCE)	0.00167	0.00168	0.00167
	(!CLK * RESET_B * SCD * SCE)	-0.00120	-0.00121	-0.00125
	(!CLK * RESET_B * SCD * SCE)	0.00066	0.00066	0.00064
	(!CLK * RESET_B * SCD * !SCE)	0.00844	0.00954	0.03555
	(!CLK * RESET_B * SCD * !SCE)	0.01231	0.01342	0.03943
	(!CLK * RESET_B * !SCD * !SCE)	0.00844	0.00954	0.03555
	(!CLK * RESET_B * !SCD * !SCE)	0.01231	0.01342	0.03943
	(!CLK * !SCD * SCE)	-0.00061	-0.00062	-0.00061
	(!CLK * !SCD * SCE)	0.00142	0.00144	0.00143
	(!CLK * !RESET_B * SCD * SCE)	-0.00060	-0.00061	-0.00060
	(!CLK * !RESET_B * SCD * SCE)	0.00142	0.00143	0.00143
	(!CLK * !RESET_B * SCD * !SCE)	-0.00039	-0.00039	-0.00038
	(!CLK * !RESET_B * SCD * !SCE)	0.00166	0.00167	0.00167
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00039	-0.00039	-0.00038
	(!CLK * !RESET_B * !SCD * !SCE)	0.00167	0.00168	0.00167

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)**	0.00806	0.00824	0.02429
	(CLK * D * RESET_B * SCE)	0.00322	0.00337	0.01945
	(CLK * D * RESET_B * !SCE)	0.00133	0.00115	0.00112
	(CLK * D * RESET_B * !SCE)	-0.00117	-0.00136	-0.00138
	(CLK * D * !RESET_B * SCE)	0.00063	0.00063	0.00061
	(CLK * D * !RESET_B * SCE)	-0.00150	-0.00150	-0.00148
	(CLK * D * !RESET_B * !SCE)	0.00044	0.00044	0.00044
	(CLK * D * !RESET_B * !SCE)	-0.00163	-0.00165	-0.00164
	(CLK * !D * RESET_B * SCE)	0.00893	0.00907	0.02475
	(CLK * !D * RESET_B * SCE)	0.00391	0.00402	0.01972
	(CLK * !D * !RESET_B * SCE)	0.00063	0.00063	0.00061
	(CLK * !D * !RESET_B * SCE)	-0.00150	-0.00150	-0.00148
	(!D * RESET_B * !SCE)	0.00090	0.00091	0.00090
	(!D * RESET_B * !SCE)	-0.00160	-0.00161	-0.00161
	(!D * !RESET_B * !SCE)	0.00052	0.00052	0.00052
	(!D * !RESET_B * !SCE)	-0.00171	-0.00173	-0.00173
	(!CLK * D * RESET_B * SCE)	0.01531	0.01560	0.03344
	(!CLK * D * RESET_B * SCE)	0.01027	0.01054	0.02839
	(!CLK * D * RESET_B * !SCE)	0.00133	0.00115	0.00113
	(!CLK * D * RESET_B * !SCE)	-0.00117	-0.00136	-0.00138
	(!CLK * D * !RESET_B * SCE)	0.00063	0.00063	0.00061
	(!CLK * D * !RESET_B * SCE)	-0.00150	-0.00150	-0.00148
	(!CLK * D * !RESET_B * !SCE)	0.00044	0.00044	0.00044
	(!CLK * D * !RESET_B * !SCE)	-0.00163	-0.00165	-0.00164
	(!CLK * !D * RESET_B * SCE)	0.01619	0.01645	0.03386
	(!CLK * !D * RESET_B * SCE)	0.01097	0.01120	0.02864
	(!CLK * !D * !RESET_B * SCE)	0.00063	0.00063	0.00061
	(!CLK * !D * !RESET_B * SCE)	-0.00150	-0.00149	-0.00148

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.00731	0.00749	0.02370
	(CLK * D * RESET_B * SCE)	0.00254	0.00271	0.01892
	(CLK * D * RESET_B * !SCE)	0.00134	0.00116	0.00114
	(CLK * D * RESET_B * !SCE)	-0.00115	-0.00134	-0.00136
	(CLK * D * !RESET_B * SCE)	0.00059	0.00059	0.00057
	(CLK * D * !RESET_B * SCE)	-0.00153	-0.00153	-0.00152
	(CLK * D * !RESET_B * !SCE)	0.00043	0.00043	0.00043
	(CLK * D * !RESET_B * !SCE)	-0.00164	-0.00166	-0.00165
	(CLK * !D * RESET_B * SCE)	0.00819	0.00832	0.02415
	(CLK * !D * RESET_B * SCE)	0.00323	0.00335	0.01919
	(CLK * !D * !RESET_B * SCE)	0.00059	0.00059	0.00057
	(CLK * !D * !RESET_B * SCE)	-0.00153	-0.00153	-0.00152
	(!D * RESET_B * !SCE)	0.00089	0.00089	0.00089
	(!D * RESET_B * !SCE)	-0.00160	-0.00161	-0.00161
	(!D * !RESET_B * !SCE)	0.00050	0.00051	0.00050
	(!D * !RESET_B * !SCE)	-0.00172	-0.00173	-0.00173
	(!CLK * D * RESET_B * SCE)	0.01483	0.01511	0.03299
	(!CLK * D * RESET_B * SCE)	0.00987	0.01014	0.02801
	(!CLK * D * RESET_B * !SCE)	0.00134	0.00116	0.00114
	(!CLK * D * RESET_B * !SCE)	-0.00115	-0.00134	-0.00136
	(!CLK * D * !RESET_B * SCE)	0.00059	0.00059	0.00057
	(!CLK * D * !RESET_B * SCE)	-0.00153	-0.00153	-0.00152
	(!CLK * D * !RESET_B * !SCE)	0.00043	0.00043	0.00043
	(!CLK * D * !RESET_B * !SCE)	-0.00164	-0.00166	-0.00165
	(!CLK * !D * RESET_B * SCE)	0.01571	0.01594	0.03340
	(!CLK * !D * RESET_B * SCE)	0.01057	0.01078	0.02825
	(!CLK * !D * !RESET_B * SCE)	0.00059	0.00059	0.00057
	(!CLK * !D * !RESET_B * SCE)	-0.00153	-0.00153	-0.00152

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.00734	0.00753	0.02375
	(CLK * D * RESET_B * SCE)	0.00256	0.00273	0.01896
	(CLK * D * RESET_B * !SCE)	0.00132	0.00113	0.00111
	(CLK * D * RESET_B * !SCE)	-0.00115	-0.00134	-0.00136
	(CLK * D * !RESET_B * SCE)	0.00059	0.00059	0.00057
	(CLK * D * !RESET_B * SCE)	-0.00150	-0.00150	-0.00148
	(CLK * D * !RESET_B * !SCE)	0.00043	0.00043	0.00043
	(CLK * D * !RESET_B * !SCE)	-0.00161	-0.00163	-0.00162
	(CLK * !D * RESET_B * SCE)	0.00822	0.00836	0.02420
	(CLK * !D * RESET_B * SCE)	0.00325	0.00337	0.01923
	(CLK * !D * !RESET_B * SCE)	0.00059	0.00059	0.00057
	(CLK * !D * !RESET_B * SCE)	-0.00150	-0.00150	-0.00148
	(!D * RESET_B * !SCE)	0.00089	0.00089	0.00089
	(!D * RESET_B * !SCE)	-0.00157	-0.00158	-0.00158
	(!D * !RESET_B * !SCE)	0.00050	0.00051	0.00051
	(!D * !RESET_B * !SCE)	-0.00168	-0.00170	-0.00170
	(!CLK * D * RESET_B * SCE)	0.01489	0.01521	0.03324
	(!CLK * D * RESET_B * SCE)	0.00991	0.01021	0.02824
	(!CLK * D * RESET_B * !SCE)	0.00132	0.00114	0.00112
	(!CLK * D * RESET_B * !SCE)	-0.00114	-0.00134	-0.00135
	(!CLK * D * !RESET_B * SCE)	0.00059	0.00059	0.00057
	(!CLK * D * !RESET_B * SCE)	-0.00150	-0.00150	-0.00148
	(!CLK * D * !RESET_B * !SCE)	0.00043	0.00043	0.00043
	(!CLK * D * !RESET_B * !SCE)	-0.00161	-0.00163	-0.00162
	(!CLK * !D * RESET_B * SCE)	0.01577	0.01615	0.03363
	(!CLK * !D * RESET_B * SCE)	0.01061	0.01095	0.02845
	(!CLK * !D * !RESET_B * SCE)	0.00059	0.00059	0.00057
	(!CLK * !D * !RESET_B * SCE)	-0.00150	-0.00150	-0.00148

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)	0.00227	0.00242	0.01856
	(CLK * D * RESET_B * SCE)	0.00713	0.00728	0.02339
	(CLK * D * RESET_B * !SCE)	-0.00107	-0.00110	-0.00110
	(CLK * D * RESET_B * !SCE)	0.00141	0.00142	0.00141
	(CLK * D * !RESET_B * SCE)	-0.00057	-0.00058	-0.00057
	(CLK * D * !RESET_B * SCE)	0.00152	0.00155	0.00151
	(CLK * D * !RESET_B * !SCE)	-0.00043	-0.00043	-0.00043
	(CLK * D * !RESET_B * !SCE)	0.00165	0.00167	0.00165
	(CLK * !D * RESET_B * SCE)	0.00181	0.00199	0.01836
	(CLK * !D * RESET_B * SCE)	0.00684	0.00704	0.02338
	(CLK * !D * !RESET_B * SCE)	-0.00057	-0.00057	-0.00058
	(CLK * !D * !RESET_B * SCE)	0.00152	0.00153	0.00151
	(!D * RESET_B * !SCE)	-0.00083	-0.00089	-0.00090
	(!D * RESET_B * !SCE)	0.00165	0.00162	0.00161
	(!D * !RESET_B * !SCE)	-0.00052	-0.00052	-0.00052
	(!D * !RESET_B * !SCE)	0.00174	0.00176	0.00175
	(!CLK * D * RESET_B * SCE)	0.00980	0.01010	0.02900
	(!CLK * D * RESET_B * SCE)	0.01485	0.01515	0.03404
	(!CLK * D * RESET_B * !SCE)	-0.00107	-0.00110	-0.00110
	(!CLK * D * RESET_B * !SCE)	0.00141	0.00142	0.00142
	(!CLK * D * !RESET_B * SCE)	-0.00057	-0.00057	-0.00057
	(!CLK * D * !RESET_B * SCE)	0.00152	0.00153	0.00151
	(!CLK * D * !RESET_B * !SCE)	-0.00043	-0.00043	-0.00043
	(!CLK * D * !RESET_B * !SCE)	0.00165	0.00167	0.00165
	(!CLK * !D * RESET_B * SCE)	0.00943	0.00991	0.02907
	(!CLK * !D * RESET_B * SCE)	0.01466	0.01515	0.03429
	(!CLK * !D * !RESET_B * SCE)	-0.00057	-0.00057	-0.00057
	(!CLK * !D * !RESET_B * SCE)	0.00152	0.00153	0.00151

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.00225	0.00239	0.01864
	(CLK * D * RESET_B * SCE)	0.00704	0.00718	0.02341
	(CLK * D * RESET_B * !SCE)	-0.00109	-0.00111	-0.00112
	(CLK * D * RESET_B * !SCE)	0.00138	0.00139	0.00139
	(CLK * D * !RESET_B * SCE)	-0.00053	-0.00054	-0.00054
	(CLK * D * !RESET_B * SCE)	0.00155	0.00157	0.00154
	(CLK * D * !RESET_B * !SCE)	-0.00041	-0.00041	-0.00041
	(CLK * D * !RESET_B * !SCE)	0.00166	0.00167	0.00166
	(CLK * !D * RESET_B * SCE)	0.00179	0.00197	0.01845
	(CLK * !D * RESET_B * SCE)	0.00675	0.00694	0.02339
	(CLK * !D * !RESET_B * SCE)	-0.00053	-0.00054	-0.00054
	(CLK * !D * !RESET_B * SCE)	0.00155	0.00158	0.00154
	(!D * RESET_B * !SCE)	-0.00081	-0.00088	-0.00089
	(!D * RESET_B * !SCE)	0.00166	0.00162	0.00162
	(!D * !RESET_B * !SCE)	-0.00050	-0.00051	-0.00050
	(!D * !RESET_B * !SCE)	0.00175	0.00177	0.00176
	(!CLK * D * RESET_B * SCE)	0.01037	0.01064	0.02953
	(!CLK * D * RESET_B * SCE)	0.01535	0.01561	0.03449
	(!CLK * D * RESET_B * !SCE)	-0.00109	-0.00112	-0.00112
	(!CLK * D * RESET_B * !SCE)	0.00138	0.00140	0.00139
	(!CLK * D * !RESET_B * SCE)	-0.00053	-0.00054	-0.00054
	(!CLK * D * !RESET_B * SCE)	0.00155	0.00157	0.00154
	(!CLK * D * !RESET_B * !SCE)	-0.00041	-0.00041	-0.00041
	(!CLK * D * !RESET_B * !SCE)	0.00166	0.00167	0.00166
	(!CLK * !D * RESET_B * SCE)	0.01002	0.01033	0.02961
	(!CLK * !D * RESET_B * SCE)	0.01518	0.01548	0.03473
	(!CLK * !D * !RESET_B * SCE)	-0.00053	-0.00054	-0.00054
	(!CLK * !D * !RESET_B * SCE)	0.00155	0.00157	0.00154

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.00228	0.00243	0.01868
	(CLK * D * RESET_B * SCE)	0.00708	0.00723	0.02346
	(CLK * D * RESET_B * !SCE)	-0.00106	-0.00108	-0.00109
	(CLK * D * RESET_B * !SCE)	0.00139	0.00139	0.00139
	(CLK * D * !RESET_B * SCE)	-0.00052	-0.00053	-0.00053
	(CLK * D * !RESET_B * SCE)	0.00152	0.00154	0.00151
	(CLK * D * !RESET_B * !SCE)	-0.00041	-0.00041	-0.00041
	(CLK * D * !RESET_B * !SCE)	0.00163	0.00164	0.00163
	(CLK * !D * RESET_B * SCE)	0.00175	0.00194	0.01844
	(CLK * !D * RESET_B * SCE)	0.00673	0.00693	0.02339
	(CLK * !D * !RESET_B * SCE)	-0.00052	-0.00053	-0.00053
	(CLK * !D * !RESET_B * SCE)	0.00152	0.00154	0.00151
	(!D * RESET_B * !SCE)	-0.00081	-0.00087	-0.00088
	(!D * RESET_B * !SCE)	0.00163	0.00159	0.00159
	(!D * !RESET_B * !SCE)	-0.00050	-0.00051	-0.00051
	(!D * !RESET_B * !SCE)	0.00172	0.00174	0.00173
	(!CLK * D * RESET_B * SCE)	0.01010	0.01054	0.02942
	(!CLK * D * RESET_B * SCE)	0.01511	0.01554	0.03440
	(!CLK * D * RESET_B * !SCE)	-0.00105	-0.00108	-0.00108
	(!CLK * D * RESET_B * !SCE)	0.00139	0.00141	0.00140
	(!CLK * D * !RESET_B * SCE)	-0.00052	-0.00053	-0.00053
	(!CLK * D * !RESET_B * SCE)	0.00152	0.00154	0.00151
	(!CLK * D * !RESET_B * !SCE)	-0.00041	-0.00041	-0.00041
	(!CLK * D * !RESET_B * !SCE)	0.00163	0.00164	0.00163
	(!CLK * !D * RESET_B * SCE)	0.00968	0.01001	0.02945
	(!CLK * !D * RESET_B * SCE)	0.01486	0.01518	0.03460
	(!CLK * !D * !RESET_B * SCE)	-0.00052	-0.00053	-0.00053
	(!CLK * !D * !RESET_B * SCE)	0.00152	0.00154	0.00151

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)	0.00591	0.00669	0.03679
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00050	0.00027	0.03035
	(CLK * D * RESET_B * !SCD)	0.00876	0.00963	0.04035
	(CLK * D * RESET_B * !SCD)	0.00449	0.00532	0.03605
	(CLK * !D * RESET_B * SCD)	0.01208	0.01346	0.06054
	(CLK * !D * RESET_B * SCD)	0.00374	0.00509	0.05221
	(!CLK * D * RESET_B * SCD)	0.00592	0.00672	0.03679
	(!CLK * D * RESET_B * SCD)	-0.00050	0.00026	0.03036
	(!CLK * D * RESET_B * !SCD)	0.01616	0.01709	0.04813
	(!CLK * D * RESET_B * !SCD)	0.01212	0.01299	0.04401
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00590	0.00691	0.03705
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00018	0.00080	0.03093
	(!CLK * !D * RESET_B * SCD)	0.01933	0.02084	0.07021
	(!CLK * !D * RESET_B * SCD)	0.01079	0.01228	0.06168

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00593	0.00676	0.03708
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00056	0.00024	0.03057
	(CLK * D * RESET_B * !SCD)	0.00867	0.00956	0.04059
	(CLK * D * RESET_B * !SCD)	0.00427	0.00512	0.03615
	(CLK * !D * RESET_B * SCD)	0.01130	0.01275	0.06056
	(CLK * !D * RESET_B * SCD)	0.00294	0.00436	0.05222
	(!CLK * D * RESET_B * SCD)	0.00593	0.00676	0.03708
	(!CLK * D * RESET_B * SCD)	-0.00056	0.00024	0.03057
	(!CLK * D * RESET_B * !SCD)	0.01667	0.01765	0.04907
	(!CLK * D * RESET_B * !SCD)	0.01247	0.01340	0.04480
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00585	0.00690	0.03726
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00031	0.00069	0.03107
	(!CLK * !D * RESET_B * SCD)	0.01880	0.02037	0.07026
	(!CLK * !D * RESET_B * SCD)	0.01026	0.01180	0.06172

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00594	0.00678	0.03711
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00056	0.00024	0.03058
	(CLK * D * RESET_B * !SCD)	0.00870	0.00959	0.04066
	(CLK * D * RESET_B * !SCD)	0.00432	0.00518	0.03625
	(CLK * !D * RESET_B * SCD)	0.01136	0.01281	0.06064
	(CLK * !D * RESET_B * SCD)	0.00295	0.00437	0.05223
	(!CLK * D * RESET_B * SCD)	0.00595	0.00678	0.03711
	(!CLK * D * RESET_B * SCD)	-0.00056	0.00025	0.03059
	(!CLK * D * RESET_B * !SCD)	0.01639	0.01734	0.04871
	(!CLK * D * RESET_B * !SCD)	0.01223	0.01316	0.04449
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00584	0.00690	0.03726
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00033	0.00069	0.03106
	(!CLK * !D * RESET_B * SCD)	0.01890	0.02049	0.07062
	(!CLK * !D * RESET_B * SCD)	0.01030	0.01185	0.06201

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)**	-0.00031	0.00134	0.03148
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00612	0.00776	0.03791
	(CLK * D * RESET_B * !SCD)	0.00616	0.00754	0.03812
	(CLK * D * RESET_B * !SCD)	0.01047	0.01187	0.04226
	(CLK * !D * RESET_B * SCD)	0.00124	0.00294	0.04981
	(CLK * !D * RESET_B * SCD)	0.00956	0.01130	0.05813
	(!CLK * D * RESET_B * SCD)	-0.00031	0.00135	0.03148
	(!CLK * D * RESET_B * SCD)	0.00613	0.00779	0.03791
	(!CLK * D * RESET_B * !SCD)	0.01340	0.01488	0.04541
	(!CLK * D * RESET_B * !SCD)	0.01751	0.01895	0.04933
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00038	0.00119	0.03121
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00573	0.00728	0.03729
	(!CLK * !D * RESET_B * SCD)	0.00862	0.01048	0.05971
	(!CLK * !D * RESET_B * SCD)	0.01716	0.01903	0.06825

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00043	0.00124	0.03164
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00606	0.00775	0.03814
	(CLK * D * RESET_B * !SCD)	0.00514	0.00656	0.03745
	(CLK * D * RESET_B * !SCD)	0.00957	0.01100	0.04172
	(CLK * !D * RESET_B * SCD)	0.00123	0.00301	0.05064
	(CLK * !D * RESET_B * SCD)	0.00956	0.01136	0.05898
	(!CLK * D * RESET_B * SCD)	-0.00043	0.00126	0.03163
	(!CLK * D * RESET_B * SCD)	0.00606	0.00775	0.03814
	(!CLK * D * RESET_B * !SCD)	0.01265	0.01415	0.04496
	(!CLK * D * RESET_B * !SCD)	0.01689	0.01841	0.04904
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00043	0.00117	0.03144
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00574	0.00734	0.03760
	(!CLK * !D * RESET_B * SCD)	0.00921	0.01111	0.06082
	(!CLK * !D * RESET_B * SCD)	0.01775	0.01967	0.06937

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00046	0.00121	0.03161
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00604	0.00773	0.03813
	(CLK * D * RESET_B * !SCD)	0.00517	0.00659	0.03748
	(CLK * D * RESET_B * !SCD)	0.00957	0.01100	0.04173
	(CLK * !D * RESET_B * SCD)	0.00116	0.00294	0.05059
	(CLK * !D * RESET_B * SCD)	0.00955	0.01134	0.05898
	(!CLK * D * RESET_B * SCD)	-0.00046	0.00123	0.03161
	(!CLK * D * RESET_B * SCD)	0.00604	0.00774	0.03813
	(!CLK * D * RESET_B * !SCD)	0.01271	0.01422	0.04505
	(!CLK * D * RESET_B * !SCD)	0.01691	0.01844	0.04908
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00043	0.00116	0.03144
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00573	0.00734	0.03761
	(!CLK * !D * RESET_B * SCD)	0.00883	0.01073	0.06076
	(!CLK * !D * RESET_B * SCD)	0.01744	0.01934	0.06938

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)**	0.01129	0.01141	0.03617
	(CLK * D * SCD * SCE * !Q)	0.00026	0.00034	0.02513
	(CLK * D * SCD * !SCE * !Q)	0.01102	0.01115	0.03641
	(CLK * D * SCD * !SCE * !Q)	0.00040	0.00049	0.02577
	(CLK * D * !SCD * SCE * !Q)	0.00351	0.00355	0.00352
	(CLK * D * !SCD * SCE * !Q)	-0.00460	-0.00463	-0.00460
	(CLK * D * !SCD * !SCE * !Q)	0.01051	0.01071	0.03619
	(CLK * D * !SCD * !SCE * !Q)	0.00040	0.00057	0.02607
	(CLK * !D * SCD * SCE * !Q)	0.01217	0.01225	0.03659
	(CLK * !D * SCD * SCE * !Q)	0.00095	0.00099	0.02536
	(CLK * !D * SCD * !SCE * !Q)	0.00348	0.00350	0.00349
	(CLK * !D * SCD * !SCE * !Q)	-0.00462	-0.00463	-0.00462
	(CLK * !D * !SCD * SCE * !Q)	0.00351	0.00356	0.00352
	(CLK * !D * !SCD * SCE * !Q)	-0.00460	-0.00463	-0.00460
	(CLK * !D * !SCD * !SCE * !Q)	0.00348	0.00351	0.00349
	(CLK * !D * !SCD * !SCE * !Q)	-0.00462	-0.00465	-0.00463
	(!CLK * D * SCD * SCE * !Q)	0.01927	0.01909	0.04980
	(!CLK * D * SCD * SCE * !Q)	0.00805	0.00785	0.03858
	(!CLK * D * SCD * !SCE * !Q)	0.01901	0.01886	0.05014
	(!CLK * D * SCD * !SCE * !Q)	0.00820	0.00801	0.03932
	(!CLK * D * !SCD * SCE * !Q)	0.00352	0.00358	0.00354
	(!CLK * D * !SCD * SCE * !Q)	-0.00458	-0.00462	-0.00458
	(!CLK * D * !SCD * !SCE * !Q)	0.01850	0.01836	0.04995
	(!CLK * D * !SCD * !SCE * !Q)	0.00821	0.00805	0.03963
	(!CLK * !D * SCD * SCE * !Q)	0.02016	0.01995	0.05013
	(!CLK * !D * SCD * SCE * !Q)	0.00876	0.00850	0.03873
	(!CLK * !D * SCD * !SCE * !Q)	0.00349	0.00353	0.00350
	(!CLK * !D * SCD * !SCE * !Q)	-0.00460	-0.00462	-0.00460
	(!CLK * !D * !SCD * SCE * !Q)	0.00352	0.00358	0.00354
	(!CLK * !D * !SCD * SCE * !Q)	-0.00458	-0.00462	-0.00458
	(!CLK * !D * !SCD * !SCE * !Q)	0.00350	0.00355	0.00351
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00460	-0.00464	-0.00461

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.01052	0.01070	0.03572
	(CLK * D * SCD * SCE * !Q)	-0.00047	-0.00034	0.02474
	(CLK * D * SCD * !SCE * !Q)	0.01009	0.01029	0.03587
	(CLK * D * SCD * !SCE * !Q)	-0.00050	-0.00034	0.02526
	(CLK * D * !SCD * SCE * !Q)	0.00351	0.00356	0.00353
	(CLK * D * !SCD * SCE * !Q)	-0.00462	-0.00466	-0.00463
	(CLK * D * !SCD * !SCE * !Q)	0.00958	0.00985	0.03565
	(CLK * D * !SCD * !SCE * !Q)	-0.00049	-0.00024	0.02557
	(CLK * !D * SCD * SCE * !Q)	0.01140	0.01153	0.03611
	(CLK * !D * SCD * SCE * !Q)	0.00022	0.00030	0.02495
	(CLK * !D * SCD * !SCE * !Q)	0.00348	0.00350	0.00349
	(CLK * !D * SCD * !SCE * !Q)	-0.00464	-0.00466	-0.00465
	(CLK * !D * !SCD * SCE * !Q)	0.00352	0.00357	0.00353
	(CLK * !D * !SCD * SCE * !Q)	-0.00462	-0.00466	-0.00463
	(CLK * !D * !SCD * !SCE * !Q)	0.00349	0.00353	0.00350
	(CLK * !D * !SCD * !SCE * !Q)	-0.00465	-0.00468	-0.00466
	(!CLK * D * SCD * SCE * !Q)	0.01881	0.01866	0.04950
	(!CLK * D * SCD * SCE * !Q)	0.00768	0.00749	0.03834
	(!CLK * D * SCD * !SCE * !Q)	0.01840	0.01826	0.04970
	(!CLK * D * SCD * !SCE * !Q)	0.00764	0.00745	0.03892
	(!CLK * D * !SCD * SCE * !Q)	0.00350	0.00356	0.00352
	(!CLK * D * !SCD * SCE * !Q)	-0.00463	-0.00467	-0.00464
	(!CLK * D * !SCD * !SCE * !Q)	0.01790	0.01782	0.04954
	(!CLK * D * !SCD * !SCE * !Q)	0.00765	0.00753	0.03928
	(!CLK * !D * SCD * SCE * !Q)	0.01970	0.01950	0.04988
	(!CLK * !D * SCD * SCE * !Q)	0.00839	0.00814	0.03852
	(!CLK * !D * SCD * !SCE * !Q)	0.00348	0.00352	0.00349
	(!CLK * !D * SCD * !SCE * !Q)	-0.00465	-0.00468	-0.00466
	(!CLK * !D * !SCD * SCE * !Q)	0.00350	0.00356	0.00352
	(!CLK * !D * !SCD * SCE * !Q)	-0.00463	-0.00467	-0.00464
	(!CLK * !D * !SCD * !SCE * !Q)	0.00348	0.00353	0.00349
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00465	-0.00469	-0.00466

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.01054	0.01072	0.03576
	(CLK * D * SCD * SCE * !Q)	-0.00037	-0.00027	0.02479
	(CLK * D * SCD * !SCE * !Q)	0.01013	0.01032	0.03588
	(CLK * D * SCD * !SCE * !Q)	-0.00042	-0.00028	0.02531
	(CLK * D * !SCD * SCE * !Q)	0.00346	0.00351	0.00348
	(CLK * D * !SCD * SCE * !Q)	-0.00459	-0.00463	-0.00460
	(CLK * D * !SCD * !SCE * !Q)	0.00962	0.00989	0.03567
	(CLK * D * !SCD * !SCE * !Q)	-0.00042	-0.00020	0.02562
	(CLK * !D * SCD * SCE * !Q)	0.01143	0.01155	0.03618
	(CLK * !D * SCD * SCE * !Q)	0.00031	0.00037	0.02502
	(CLK * !D * SCD * !SCE * !Q)	0.00342	0.00345	0.00344
	(CLK * !D * SCD * !SCE * !Q)	-0.00461	-0.00464	-0.00462
	(CLK * !D * !SCD * SCE * !Q)	0.00346	0.00351	0.00348
	(CLK * !D * !SCD * SCE * !Q)	-0.00459	-0.00463	-0.00460
	(CLK * !D * !SCD * !SCE * !Q)	0.00344	0.00346	0.00345
	(CLK * !D * !SCD * !SCE * !Q)	-0.00462	-0.00463	-0.00463
	(!CLK * D * SCD * SCE * !Q)	0.01878	0.01865	0.04966
	(!CLK * D * SCD * SCE * !Q)	0.00767	0.00751	0.03850
	(!CLK * D * SCD * !SCE * !Q)	0.01839	0.01826	0.04993
	(!CLK * D * SCD * !SCE * !Q)	0.00765	0.00747	0.03918
	(!CLK * D * !SCD * SCE * !Q)	0.00345	0.00351	0.00346
	(!CLK * D * !SCD * SCE * !Q)	-0.00461	-0.00465	-0.00462
	(!CLK * D * !SCD * !SCE * !Q)	0.01787	0.01777	0.04967
	(!CLK * D * !SCD * !SCE * !Q)	0.00765	0.00756	0.03943
	(!CLK * !D * SCD * SCE * !Q)	0.01967	0.01951	0.05003
	(!CLK * !D * SCD * SCE * !Q)	0.00837	0.00818	0.03870
	(!CLK * !D * SCD * !SCE * !Q)	0.00342	0.00346	0.00343
	(!CLK * !D * SCD * !SCE * !Q)	-0.00463	-0.00466	-0.00464
	(!CLK * !D * !SCD * SCE * !Q)	0.00345	0.00350	0.00346
	(!CLK * !D * !SCD * SCE * !Q)	-0.00461	-0.00465	-0.00462
	(!CLK * !D * !SCD * !SCE * !Q)	0.00342	0.00348	0.00344
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00463	-0.00467	-0.00464

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)**	0.00084	0.00180	0.02824
	(CLK * D * SCD * SCE * !Q)	0.01187	0.01287	0.03927
	(CLK * D * SCD * !SCE * !Q)	-0.00027	0.00067	0.02706
	(CLK * D * SCD * !SCE * !Q)	0.01035	0.01132	0.03769
	(CLK * D * !SCD * SCE * !Q)	-0.00341	-0.00353	-0.00351
	(CLK * D * !SCD * SCE * !Q)	0.00466	0.00465	0.00462
	(CLK * D * !SCD * !SCE * !Q)	-0.00060	0.00041	0.02699
	(CLK * D * !SCD * !SCE * !Q)	0.00950	0.01056	0.03711
	(CLK * !D * SCD * SCE * !Q)	0.00039	0.00141	0.02804
	(CLK * !D * SCD * SCE * !Q)	0.01159	0.01266	0.03926
	(CLK * !D * SCD * !SCE * !Q)	-0.00334	-0.00350	-0.00349
	(CLK * !D * SCD * !SCE * !Q)	0.00470	0.00466	0.00463
	(CLK * !D * !SCD * SCE * !Q)	-0.00341	-0.00353	-0.00351
	(CLK * !D * !SCD * SCE * !Q)	0.00466	0.00465	0.00462
	(CLK * !D * !SCD * !SCE * !Q)	-0.00336	-0.00351	-0.00349
	(CLK * !D * !SCD * !SCE * !Q)	0.00471	0.00467	0.00464
	(!CLK * D * SCD * SCE * !Q)	0.00835	0.00891	0.04420
	(!CLK * D * SCD * SCE * !Q)	0.01963	0.02017	0.05541
	(!CLK * D * SCD * !SCE * !Q)	0.00724	0.00782	0.04287
	(!CLK * D * SCD * !SCE * !Q)	0.01811	0.01869	0.05368
	(!CLK * D * !SCD * SCE * !Q)	-0.00343	-0.00355	-0.00353
	(!CLK * D * !SCD * SCE * !Q)	0.00463	0.00464	0.00461
	(!CLK * D * !SCD * !SCE * !Q)	0.00690	0.00747	0.04280
	(!CLK * D * !SCD * !SCE * !Q)	0.01726	0.01779	0.05309
	(!CLK * !D * SCD * SCE * !Q)	0.00789	0.00851	0.04417
	(!CLK * !D * SCD * SCE * !Q)	0.01935	0.01996	0.05559
	(!CLK * !D * SCD * !SCE * !Q)	-0.00336	-0.00352	-0.00350
	(!CLK * !D * SCD * !SCE * !Q)	0.00467	0.00465	0.00461
	(!CLK * !D * !SCD * SCE * !Q)	-0.00343	-0.00355	-0.00353
	(!CLK * !D * !SCD * SCE * !Q)	0.00463	0.00464	0.00461
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00338	-0.00353	-0.00351
	(!CLK * !D * !SCD * !SCE * !Q)	0.00468	0.00465	0.00462

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.00072	0.00172	0.02829
	(CLK * D * SCD * SCE * !Q)	0.01172	0.01276	0.03928
	(CLK * D * SCD * !SCE * !Q)	-0.00029	0.00068	0.02721
	(CLK * D * SCD * !SCE * !Q)	0.01030	0.01133	0.03780
	(CLK * D * !SCD * SCE * !Q)	-0.00341	-0.00354	-0.00352
	(CLK * D * !SCD * SCE * !Q)	0.00469	0.00468	0.00465
	(CLK * D * !SCD * !SCE * !Q)	-0.00062	0.00042	0.02714
	(CLK * D * !SCD * !SCE * !Q)	0.00945	0.01054	0.03723
	(CLK * !D * SCD * SCE * !Q)	0.00027	0.00134	0.02809
	(CLK * !D * SCD * SCE * !Q)	0.01144	0.01254	0.03928
	(CLK * !D * SCD * !SCE * !Q)	-0.00334	-0.00350	-0.00349
	(CLK * !D * SCD * !SCE * !Q)	0.00472	0.00469	0.00466
	(CLK * !D * !SCD * SCE * !Q)	-0.00341	-0.00354	-0.00352
	(CLK * !D * !SCD * SCE * !Q)	0.00469	0.00468	0.00465
	(CLK * !D * !SCD * !SCE * !Q)	-0.00337	-0.00352	-0.00350
	(CLK * !D * !SCD * !SCE * !Q)	0.00474	0.00470	0.00467
	(!CLK * D * SCD * SCE * !Q)	0.00887	0.00946	0.04472
	(!CLK * D * SCD * SCE * !Q)	0.02010	0.02068	0.05591
	(!CLK * D * SCD * !SCE * !Q)	0.00785	0.00841	0.04346
	(!CLK * D * SCD * !SCE * !Q)	0.01868	0.01920	0.05425
	(!CLK * D * !SCD * SCE * !Q)	-0.00341	-0.00351	-0.00351
	(!CLK * D * !SCD * SCE * !Q)	0.00469	0.00467	0.00466
	(!CLK * D * !SCD * !SCE * !Q)	0.00752	0.00817	0.04341
	(!CLK * D * !SCD * !SCE * !Q)	0.01783	0.01844	0.05369
	(!CLK * !D * SCD * SCE * !Q)	0.00841	0.00906	0.04470
	(!CLK * !D * SCD * SCE * !Q)	0.01982	0.02046	0.05608
	(!CLK * !D * SCD * !SCE * !Q)	-0.00334	-0.00351	-0.00349
	(!CLK * !D * SCD * !SCE * !Q)	0.00472	0.00470	0.00467
	(!CLK * !D * !SCD * SCE * !Q)	-0.00341	-0.00353	-0.00351
	(!CLK * !D * !SCD * SCE * !Q)	0.00469	0.00469	0.00466
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00336	-0.00352	-0.00349
	(!CLK * !D * !SCD * !SCE * !Q)	0.00474	0.00471	0.00467

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.00075	0.00175	0.02830
	(CLK * D * SCD * SCE * !Q)	0.01171	0.01276	0.03925
	(CLK * D * SCD * !SCE * !Q)	-0.00027	0.00070	0.02721
	(CLK * D * SCD * !SCE * !Q)	0.01029	0.01131	0.03776
	(CLK * D * !SCD * SCE * !Q)	-0.00336	-0.00348	-0.00346
	(CLK * D * !SCD * SCE * !Q)	0.00466	0.00466	0.00463
	(CLK * D * !SCD * !SCE * !Q)	-0.00060	0.00045	0.02713
	(CLK * D * !SCD * !SCE * !Q)	0.00943	0.01053	0.03719
	(CLK * !D * SCD * SCE * !Q)	0.00022	0.00129	0.02805
	(CLK * !D * SCD * SCE * !Q)	0.01136	0.01247	0.03920
	(CLK * !D * SCD * !SCE * !Q)	-0.00329	-0.00345	-0.00344
	(CLK * !D * SCD * !SCE * !Q)	0.00470	0.00467	0.00464
	(CLK * !D * !SCD * SCE * !Q)	-0.00336	-0.00348	-0.00346
	(CLK * !D * !SCD * SCE * !Q)	0.00466	0.00466	0.00463
	(CLK * !D * !SCD * !SCE * !Q)	-0.00331	-0.00346	-0.00345
	(CLK * !D * !SCD * !SCE * !Q)	0.00471	0.00467	0.00464
	(!CLK * D * SCD * SCE * !Q)	0.00856	0.00917	0.04463
	(!CLK * D * SCD * SCE * !Q)	0.01977	0.02034	0.05579
	(!CLK * D * SCD * !SCE * !Q)	0.00755	0.00818	0.04338
	(!CLK * D * SCD * !SCE * !Q)	0.01835	0.01893	0.05411
	(!CLK * D * !SCD * SCE * !Q)	-0.00335	-0.00347	-0.00345
	(!CLK * D * !SCD * SCE * !Q)	0.00467	0.00467	0.00464
	(!CLK * D * !SCD * !SCE * !Q)	0.00721	0.00780	0.04332
	(!CLK * D * !SCD * !SCE * !Q)	0.01749	0.01807	0.05358
	(!CLK * !D * SCD * SCE * !Q)	0.00804	0.00870	0.04459
	(!CLK * !D * SCD * SCE * !Q)	0.01943	0.02005	0.05594
	(!CLK * !D * SCD * !SCE * !Q)	-0.00328	-0.00344	-0.00343
	(!CLK * !D * SCD * !SCE * !Q)	0.00471	0.00468	0.00465
	(!CLK * !D * !SCD * SCE * !Q)	-0.00335	-0.00347	-0.00345
	(!CLK * !D * !SCD * SCE * !Q)	0.00467	0.00467	0.00464
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00331	-0.00345	-0.00344
	(!CLK * !D * !SCD * !SCE * !Q)	0.00472	0.00469	0.00466

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)	0.01511	0.01625	0.06122
	(D * RESET_B * SCD * SCE * Q)	0.01022	0.01137	0.05633
	(D * RESET_B * SCD * !SCE * Q)	0.01511	0.01625	0.06122
	(D * RESET_B * SCD * !SCE * Q)	0.01022	0.01137	0.05633
	(D * RESET_B * !SCD * !SCE * Q)	0.01511	0.01625	0.06122
	(D * RESET_B * !SCD * !SCE * Q)	0.01022	0.01137	0.05633
	(D * !SCD * SCE * !Q)	0.01548	0.01660	0.06140
	(D * !SCD * SCE * !Q)	0.01059	0.01171	0.05652
	(D * !RESET_B * SCD * SCE * !Q)	0.01548	0.01661	0.06140
	(D * !RESET_B * SCD * SCE * !Q)	0.01059	0.01172	0.05651
	(D * !RESET_B * SCD * !SCE * !Q)	0.01547	0.01661	0.06140
	(D * !RESET_B * SCD * !SCE * !Q)	0.01059	0.01172	0.05651
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01547	0.01661	0.06140
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01059	0.01172	0.05651
	(!D * RESET_B * SCD * SCE * Q)	0.01511	0.01625	0.06122
	(!D * RESET_B * SCD * SCE * Q)	0.01022	0.01137	0.05633
	(!D * !SCE * !Q)	0.01547	0.01660	0.06140
	(!D * !SCE * !Q)	0.01059	0.01171	0.05652
	(!D * !SCD * SCE * !Q)	0.01548	0.01661	0.06140
	(!D * !SCD * SCE * !Q)	0.01059	0.01171	0.05652
	(!D * !RESET_B * SCD * SCE * !Q)	0.01548	0.01662	0.06140
	(!D * !RESET_B * SCD * SCE * !Q)	0.01059	0.01172	0.05651

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.01508	0.01621	0.06121
	(D * RESET_B * SCD * SCE * Q)	0.01016	0.01130	0.05628
	(D * RESET_B * SCD * !SCE * Q)	0.01508	0.01621	0.06120
	(D * RESET_B * SCD * !SCE * Q)	0.01015	0.01130	0.05628
	(D * RESET_B * !SCD * !SCE * Q)	0.01508	0.01621	0.06121
	(D * RESET_B * !SCD * !SCE * Q)	0.01016	0.01130	0.05628
	(D * !SCD * SCE * !Q)	0.01553	0.01665	0.06159
	(D * !SCD * SCE * !Q)	0.01061	0.01172	0.05669
	(D * !RESET_B * SCD * SCE * !Q)	0.01553	0.01666	0.06146
	(D * !RESET_B * SCD * SCE * !Q)	0.01061	0.01173	0.05654
	(D * !RESET_B * SCD * !SCE * !Q)	0.01553	0.01666	0.06146
	(D * !RESET_B * SCD * !SCE * !Q)	0.01061	0.01173	0.05654
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01553	0.01666	0.06146
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01061	0.01173	0.05654
	(!D * RESET_B * SCD * SCE * Q)	0.01508	0.01622	0.06121
	(!D * RESET_B * SCD * SCE * Q)	0.01016	0.01130	0.05628
	(!D * !SCE * !Q)	0.01553	0.01665	0.06146
	(!D * !SCE * !Q)	0.01060	0.01172	0.05654
	(!D * !SCD * SCE * !Q)	0.01553	0.01665	0.06146
	(!D * !SCD * SCE * !Q)	0.01061	0.01172	0.05654
	(!D * !RESET_B * SCD * SCE * !Q)	0.01553	0.01666	0.06146
	(!D * !RESET_B * SCD * SCE * !Q)	0.01061	0.01173	0.05654

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.01488	0.01603	0.06103
	(D * RESET_B * SCD * SCE * Q)	0.00996	0.01111	0.05611
	(D * RESET_B * SCD * !SCE * Q)	0.01487	0.01603	0.06103
	(D * RESET_B * SCD * !SCE * Q)	0.00996	0.01111	0.05611
	(D * RESET_B * !SCD * !SCE * Q)	0.01488	0.01603	0.06103
	(D * RESET_B * !SCD * !SCE * Q)	0.00996	0.01111	0.05611
	(D * !SCD * SCE * !Q)	0.01528	0.01641	0.06137
	(D * !SCD * SCE * !Q)	0.01036	0.01149	0.05647
	(D * !RESET_B * SCD * SCE * !Q)	0.01528	0.01643	0.06124
	(D * !RESET_B * SCD * SCE * !Q)	0.01036	0.01150	0.05633
	(D * !RESET_B * SCD * !SCE * !Q)	0.01528	0.01642	0.06124
	(D * !RESET_B * SCD * !SCE * !Q)	0.01036	0.01150	0.05633
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01528	0.01642	0.06124
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01036	0.01150	0.05633
	(!D * RESET_B * SCD * SCE * Q)	0.01488	0.01603	0.06103
	(!D * RESET_B * SCD * SCE * Q)	0.00996	0.01111	0.05611
	(!D * !SCE * !Q)	0.01528	0.01641	0.06125
	(!D * !SCE * !Q)	0.01036	0.01149	0.05633
	(!D * !SCD * SCE * !Q)	0.01528	0.01642	0.06125
	(!D * !SCD * SCE * !Q)	0.01036	0.01149	0.05633
	(!D * !RESET_B * SCD * SCE * !Q)	0.01528	0.01643	0.06124
	(!D * !RESET_B * SCD * SCE * !Q)	0.01037	0.01150	0.05633

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)**	0.00787	0.00994	0.05519
	(D * RESET_B * SCD * SCE * Q)	0.01276	0.01484	0.06007
	(D * RESET_B * SCD * SCE * !Q)	0.01459	0.01662	0.06307
	(D * RESET_B * SCD * SCE * !Q)	0.01927	0.02128	0.06776
	(D * RESET_B * SCD * !SCE * Q)	0.00787	0.00994	0.05518
	(D * RESET_B * SCD * !SCE * Q)	0.01276	0.01484	0.06007
	(D * RESET_B * SCD * !SCE * !Q)	0.01455	0.01658	0.06302
	(D * RESET_B * SCD * !SCE * !Q)	0.01924	0.02127	0.06772
	(D * RESET_B * !SCD * SCE * Q)	0.01595	0.01818	0.06392
	(D * RESET_B * !SCD * SCE * Q)	0.02107	0.02329	0.06903
	(D * RESET_B * !SCD * !SCE * Q)	0.00787	0.00995	0.05519
	(D * RESET_B * !SCD * !SCE * Q)	0.01276	0.01484	0.06007
	(D * RESET_B * !SCD * !SCE * !Q)	0.01455	0.01658	0.06303
	(D * RESET_B * !SCD * !SCE * !Q)	0.01924	0.02128	0.06772
	(D * !SCD * SCE * !Q)	0.00732	0.00939	0.05474
	(D * !SCD * SCE * !Q)	0.01222	0.01429	0.05962
	(D * !RESET_B * SCD * SCE * !Q)	0.00733	0.00940	0.05472
	(D * !RESET_B * SCD * SCE * !Q)	0.01222	0.01429	0.05960
	(D * !RESET_B * SCD * !SCE * !Q)	0.00732	0.00942	0.05471
	(D * !RESET_B * SCD * !SCE * !Q)	0.01222	0.01432	0.05960
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00732	0.00942	0.05471
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01222	0.01432	0.05960
	(!D * RESET_B * SCD * SCE * Q)	0.00787	0.00994	0.05519
	(!D * RESET_B * SCD * SCE * Q)	0.01276	0.01484	0.06007
	(!D * RESET_B * SCD * SCE * !Q)	0.01462	0.01665	0.06311
	(!D * RESET_B * SCD * SCE * !Q)	0.01929	0.02132	0.06778
	(!D * RESET_B * !SCE * Q)	0.01591	0.01812	0.06388
	(!D * RESET_B * !SCE * Q)	0.02101	0.02321	0.06897
	(!D * RESET_B * !SCD * SCE * Q)	0.01591	0.01814	0.06389
	(!D * RESET_B * !SCD * SCE * Q)	0.02103	0.02325	0.06900
	(!D * !SCE * !Q)	0.00732	0.00939	0.05473
	(!D * !SCE * !Q)	0.01222	0.01428	0.05962
	(!D * !SCD * SCE * !Q)	0.00733	0.00939	0.05474
	(!D * !SCD * SCE * !Q)	0.01222	0.01429	0.05962
	(!D * !RESET_B * SCD * SCE * !Q)	0.00733	0.00939	0.05472
	(!D * !RESET_B * SCD * SCE * !Q)	0.01222	0.01429	0.05960

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.00788	0.00996	0.05526
	(D * RESET_B * SCD * SCE * Q)	0.01281	0.01489	0.06017
	(D * RESET_B * SCD * SCE * !Q)	0.01494	0.01696	0.06345
	(D * RESET_B * SCD * SCE * !Q)	0.01967	0.02170	0.06819
	(D * RESET_B * SCD * !SCE * Q)	0.00788	0.00996	0.05526
	(D * RESET_B * SCD * !SCE * Q)	0.01281	0.01489	0.06017
	(D * RESET_B * SCD * !SCE * !Q)	0.01490	0.01693	0.06342
	(D * RESET_B * SCD * !SCE * !Q)	0.01964	0.02166	0.06815
	(D * RESET_B * !SCD * SCE * Q)	0.01664	0.01885	0.06465
	(D * RESET_B * !SCD * SCE * Q)	0.02177	0.02400	0.06979
	(D * RESET_B * !SCD * !SCE * Q)	0.00788	0.00996	0.05526
	(D * RESET_B * !SCD * !SCE * Q)	0.01281	0.01489	0.06017
	(D * RESET_B * !SCD * !SCE * !Q)	0.01490	0.01693	0.06342
	(D * RESET_B * !SCD * !SCE * !Q)	0.01964	0.02167	0.06815
	(D * !SCD * SCE * !Q)	0.00735	0.00942	0.05480
	(D * !SCD * SCE * !Q)	0.01228	0.01435	0.05972
	(D * !RESET_B * SCD * SCE * !Q)	0.00736	0.00942	0.05479
	(D * !RESET_B * SCD * SCE * !Q)	0.01228	0.01435	0.05971
	(D * !RESET_B * SCD * !SCE * !Q)	0.00735	0.00944	0.05478
	(D * !RESET_B * SCD * !SCE * !Q)	0.01228	0.01438	0.05970
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00735	0.00944	0.05478
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01228	0.01438	0.05970
	(!D * RESET_B * SCD * SCE * Q)	0.00788	0.00996	0.05526
	(!D * RESET_B * SCD * SCE * Q)	0.01281	0.01489	0.06017
	(!D * RESET_B * SCD * SCE * !Q)	0.01497	0.01700	0.06350
	(!D * RESET_B * SCD * SCE * !Q)	0.01969	0.02172	0.06821
	(!D * RESET_B * !SCE * Q)	0.01658	0.01879	0.06461
	(!D * RESET_B * !SCE * Q)	0.02170	0.02391	0.06973
	(!D * RESET_B * !SCD * SCE * Q)	0.01661	0.01884	0.06463
	(!D * RESET_B * !SCD * SCE * Q)	0.02174	0.02397	0.06976
	(!D * !SCE * !Q)	0.00735	0.00941	0.05480
	(!D * !SCE * !Q)	0.01228	0.01434	0.05972
	(!D * !SCD * SCE * !Q)	0.00735	0.00941	0.05480
	(!D * !SCD * SCE * !Q)	0.01228	0.01435	0.05972
	(!D * !RESET_B * SCD * SCE * !Q)	0.00736	0.00942	0.05479
	(!D * !RESET_B * SCD * SCE * !Q)	0.01228	0.01435	0.05971

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.00784	0.00993	0.05521
	(D * RESET_B * SCD * SCE * Q)	0.01277	0.01486	0.06012
	(D * RESET_B * SCD * SCE * !Q)	0.01479	0.01683	0.06335
	(D * RESET_B * SCD * SCE * !Q)	0.01951	0.02154	0.06808
	(D * RESET_B * SCD * !SCE * Q)	0.00784	0.00990	0.05521
	(D * RESET_B * SCD * !SCE * Q)	0.01277	0.01483	0.06012
	(D * RESET_B * SCD * !SCE * !Q)	0.01476	0.01680	0.06334
	(D * RESET_B * SCD * !SCE * !Q)	0.01948	0.02151	0.06804
	(D * RESET_B * !SCD * SCE * Q)	0.01626	0.01849	0.06427
	(D * RESET_B * !SCD * SCE * Q)	0.02140	0.02361	0.06942
	(D * RESET_B * !SCD * !SCE * Q)	0.00785	0.00991	0.05521
	(D * RESET_B * !SCD * !SCE * Q)	0.01277	0.01483	0.06012
	(D * RESET_B * !SCD * !SCE * !Q)	0.01476	0.01680	0.06334
	(D * RESET_B * !SCD * !SCE * !Q)	0.01948	0.02151	0.06806
	(D * !SCD * SCE * !Q)	0.00726	0.00933	0.05472
	(D * !SCD * SCE * !Q)	0.01219	0.01426	0.05963
	(D * !RESET_B * SCD * SCE * !Q)	0.00727	0.00934	0.05470
	(D * !RESET_B * SCD * SCE * !Q)	0.01219	0.01427	0.05961
	(D * !RESET_B * SCD * !SCE * !Q)	0.00726	0.00936	0.05469
	(D * !RESET_B * SCD * !SCE * !Q)	0.01218	0.01429	0.05961
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00726	0.00936	0.05469
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01218	0.01429	0.05961
	(!D * RESET_B * SCD * SCE * Q)	0.00785	0.00991	0.05521
	(!D * RESET_B * SCD * SCE * Q)	0.01277	0.01483	0.06012
	(!D * RESET_B * SCD * SCE * !Q)	0.01483	0.01687	0.06341
	(!D * RESET_B * SCD * SCE * !Q)	0.01953	0.02158	0.06811
	(!D * RESET_B * !SCE * Q)	0.01620	0.01842	0.06422
	(!D * RESET_B * !SCE * Q)	0.02132	0.02355	0.06935
	(!D * RESET_B * !SCD * SCE * Q)	0.01623	0.01846	0.06424
	(!D * RESET_B * !SCD * SCE * Q)	0.02137	0.02359	0.06938
	(!D * !SCE * !Q)	0.00726	0.00933	0.05471
	(!D * !SCE * !Q)	0.01218	0.01426	0.05963
	(!D * !SCD * SCE * !Q)	0.00726	0.00933	0.05472
	(!D * !SCD * SCE * !Q)	0.01219	0.01426	0.05963
	(!D * !RESET_B * SCD * SCE * !Q)	0.00727	0.00936	0.05470
	(!D * !RESET_B * SCD * SCE * !Q)	0.01219	0.01429	0.05961

SKY130_FD_SC_HS__SDFSBPx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00191	0.00210	0.00404	0.00345	0.00299	1.16894	1.09628
sky130_fd_sc_hs__sdfsbp_2	0.00197	0.00204	0.00423	0.00346	0.00302	2.38043	2.36006

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfsbp_1	0.00000	0.85778	1.26810
sky130_fd_sc_hs__sdfsbp_2	0.00000	0.87511	1.79872

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)	0.25772	0.72868	6.14768
	SET_B->Q (FR)	0.24140	0.97803	9.11075
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RR)	0.28577	0.65971	6.19920
	SET_B->Q (FR)	0.32845	0.96671	9.31034

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfsbp_1	CLK->Q (RF)	0.21968	0.44888	2.12087
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RF)	0.24358	0.45345	2.30206

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)	0.18786	0.69161	6.09420
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RR)	0.18493	0.58510	6.05804

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)	0.20307	0.49792	2.06385
	SET_B->Q_N (FF)	0.18505	0.74831	5.07167
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RF)	0.20530	0.47393	2.40449
	SET_B->Q_N (FF)	0.22892	0.79651	5.57653

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)	-0.07696	-0.16327	-0.86883
	setup	CLK (R)	0.11868	0.18444	0.87557
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.09761	-0.18322	-0.91687
	setup	CLK (R)	0.14501	0.21362	0.97792

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)	-0.09628	-0.22423	-2.89237
	setup	CLK (R)	0.22133	0.34115	3.10919
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.12752	-0.24395	-2.74237
	setup	CLK (R)	0.26353	0.37414	3.16644

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)	-0.07696	-0.16327	-0.86883
	setup	CLK (R)	0.11868	0.18444	0.87557
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.09761	-0.18322	-0.91687
	setup	CLK (R)	0.14501	0.21362	0.97792

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)	-0.09628	-0.22423	-2.89237
	setup	CLK (R)	0.22133	0.34115	3.10919
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.12752	-0.24395	-2.74237
	setup	CLK (R)	0.26353	0.37414	3.16644

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)	-0.09418	-0.16975	-0.87771
	setup	CLK (R)	0.13996	0.19822	0.88065
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.11414	-0.18869	-0.90299
	setup	CLK (R)	0.16428	0.22274	0.94816

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)	-0.12051	-0.24849	-3.03320
	setup	CLK (R)	0.27355	0.38113	3.20890
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.15332	-0.27578	-2.90555
	setup	CLK (R)	0.31890	0.41889	3.27207

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)	-0.09418	-0.16975	-0.87771
	hold	CLK (R)	-0.09768	-0.17680	-0.88041
	setup	CLK (R)	0.13639	0.19422	0.88065
	setup	CLK (R)	0.13996	0.19822	0.88038
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.11414	-0.18869	-0.90299
	hold	CLK (R)	-0.11809	-0.19542	-0.90572
	setup	CLK (R)	0.16142	0.21725	0.94267
	setup	CLK (R)	0.16428	0.22274	0.94816

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)	-0.13181	-0.26010	-3.03425
	hold	CLK (R)	-0.12051	-0.24849	-3.03320
	setup	CLK (R)	0.27355	0.38113	3.20538
	setup	CLK (R)	0.26632	0.37522	3.20890
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.16605	-0.28679	-2.90555
	hold	CLK (R)	-0.15332	-0.27578	-2.90637
	setup	CLK (R)	0.31890	0.41889	3.26515
	setup	CLK (R)	0.31217	0.41497	3.27207

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)	-0.08419	-0.16413	-0.33653
	setup	CLK (R)	0.27133	0.28121	0.91270
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.10534	-0.18620	-0.23517
	setup	CLK (R)	0.31642	0.32286	1.01164

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)	-0.11185	-0.22689	-2.78460
	setup	CLK (R)	0.23906	0.34215	3.09071
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.13817	-0.24405	-2.74253
	setup	CLK (R)	0.27838	0.37685	3.13088

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)	-0.12997	-0.16413	-0.33653
	hold	CLK (R)	-0.08419	-0.17480	-0.90609
	setup	CLK (R)	0.27133	0.28121	0.45928
	setup	CLK (R)	0.12611	0.19800	0.91270
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.15986	-0.18620	-0.23517
	hold	CLK (R)	-0.10534	-0.19518	-0.96320
	setup	CLK (R)	0.31642	0.32286	0.48304
	setup	CLK (R)	0.15496	0.22602	1.01164

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)	-0.13512	-0.26869	-2.78460
	hold	CLK (R)	-0.11185	-0.22689	-2.89818
	setup	CLK (R)	0.17547	0.28579	2.78036
	setup	CLK (R)	0.23906	0.34215	3.09071
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.15618	-0.28086	-2.74253
	hold	CLK (R)	-0.13817	-0.24405	-2.74635
	setup	CLK (R)	0.20347	0.30587	2.75217
	setup	CLK (R)	0.27838	0.37685	3.13088

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)	-0.08173	-0.12220	-0.37095
	removal	CLK (R)	0.10687	0.14115	0.43129
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.11908	-0.17509	-0.52079
	removal	CLK (R)	0.13535	0.19034	0.86420

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)	-0.08488	-0.12223	-0.37096
	recovery	CLK (R)	-0.08486	-0.12224	-0.37095
	recovery	CLK (R)	-0.08173	-0.12220	-0.37105
	removal	CLK (R)	0.10457	0.14115	0.43129
	removal	CLK (R)	0.10457	0.14115	0.43129
	removal	CLK (R)	0.10687	0.14115	0.43129
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.11908	-0.17509	-0.52113
	recovery	CLK (R)	-0.11949	-0.17519	-0.52079
	recovery	CLK (R)	-0.11949	-0.17519	-0.52079
	removal	CLK (R)	0.13467	0.19034	0.86420
	removal	CLK (R)	0.13135	0.18871	0.86299
	removal	CLK (R)	0.13535	0.18871	0.85899

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 ()	0.19486	0.64453	16.50020
	min_pulse_width	SET_B ()	0.18761	0.64453	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	SET_B ()	0.22387	0.64453	16.50020
	min_pulse_width	SET_B ()	0.25530	0.64453	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 ()	0.15618	0.64453	16.50020
	min_pulse_width	CLK ()	0.08849	0.64453	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.16585	0.64453	16.50020
	min_pulse_width	CLK ()	0.09816	0.64453	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 ()	0.15618	0.64453	16.50020
	min_pulse_width	CLK ()	0.23355	0.64453	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.19728	0.64453	16.50020
	min_pulse_width	CLK ()	0.28673	0.64453	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	0.01637	0.01694	0.04081
	CLK	0.01404	0.01460	0.03854
	SET_B	0.01546	0.01587	0.02822
	SET_B	0.01219	0.01282	0.02791
sky130_fd_sc_hs__sdfsbp_2	CLK	0.02294	0.02354	0.04843
	CLK	0.02052	0.02114	0.04594
	SET_B	0.02184	0.02212	0.03572
	SET_B	0.01665	0.01652	0.03187

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01680	0.01766	0.04038
	CLK	0.01434	0.01517	0.03791
sky130_fd_sc_hs__sdfsbp_2	CLK	0.02249	0.02373	0.04733
	CLK	0.02007	0.02131	0.04489

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01683	0.01771	0.04117
	CLK	0.01437	0.01520	0.03877
sky130_fd_sc_hs__sdfsbp_2	CLK	0.02254	0.02378	0.04790
	CLK	0.02011	0.02135	0.04553

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01634	0.01689	0.04014
	CLK	0.01401	0.01457	0.03784
	SET_B	0.01543	0.01582	0.02752
	SET_B	0.01218	0.01279	0.02762
sky130_fd_sc_hs__sdfsbp_2	CLK	0.02290	0.02362	0.04767
	CLK	0.02049	0.02111	0.04522
	SET_B	0.01381	0.01371	0.02953
	SET_B	0.01664	0.01652	0.03139

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	0.00131	0.00132	0.00132
	(CLK * SCD * SCE)	-0.00062	-0.00063	-0.00063
	(CLK * !SCE)	0.00444	0.00517	0.02856
	(CLK * !SCE)	0.00105	0.00178	0.02516
	(CLK * !SCD * SCE)	0.00068	0.00069	0.00067
	(CLK * !SCD * SCE)	-0.00141	-0.00143	-0.00145
	(!CLK * SCD * SCE)	0.00131	0.00132	0.00131
	(!CLK * SCD * SCE)	-0.00063	-0.00063	-0.00063
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01192	0.01233	0.03428
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00815	0.00857	0.03052
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00956	0.00997	0.03109
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00568	0.00609	0.02722
	(!CLK * !SCD * SCE)	0.00068	0.00069	0.00067
	(!CLK * !SCD * SCE)	-0.00141	-0.00144	-0.00145

sky130_fd_sc_hs__sdfsbp_2	**(CLK * SCD * SCE)**	0.00139	0.00142	0.00140
	(CLK * SCD * SCE)	-0.00060	-0.00061	-0.00060
	(CLK * !SCE)	0.00464	0.00535	0.02887
	(CLK * !SCE)	0.00120	0.00189	0.02541
	(CLK * !SCD * SCE)	0.00072	0.00073	0.00071
	(CLK * !SCD * SCE)	-0.00143	-0.00145	-0.00147
	(!CLK * SCD * SCE)	0.00139	0.00141	0.00139
	(!CLK * SCD * SCE)	-0.00061	-0.00062	-0.00060
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01341	0.01397	0.03526
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00977	0.01030	0.03160
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.01113	0.01152	0.03210
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00733	0.00772	0.02831
	(!CLK * !SCD * SCE)	0.00072	0.00073	0.00071
	(!CLK * !SCD * SCE)	-0.00143	-0.00146	-0.00147

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	-0.00125	-0.00126	-0.00129
	(CLK * SCD * SCE)	0.00068	0.00068	0.00066
	(CLK * !SCE)	0.00084	0.00197	0.02539
	(CLK * !SCE)	0.00422	0.00537	0.02877
	(CLK * !SCD * SCE)	-0.00065	-0.00065	-0.00065
	(CLK * !SCD * SCE)	0.00145	0.00146	0.00146
	(!CLK * SCD * SCE)	-0.00124	-0.00126	-0.00129
	(!CLK * SCD * SCE)	0.00067	0.00068	0.00066
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00798	0.00885	0.03179
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01175	0.01261	0.03555
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00465	0.00541	0.02710
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00852	0.00930	0.03098
	(!CLK * !SCD * SCE)	-0.00065	-0.00066	-0.00065
	(!CLK * !SCD * SCE)	0.00146	0.00146	0.00146

	(CLK * SCD * SCE)	-0.00133	-0.00134	-0.00138
	(CLK * SCD * SCE)	0.00065	0.00065	0.00063
	(CLK * !SCE)	0.00099	0.00210	0.02564
	(CLK * !SCE)	0.00445	0.00555	0.02909
	(CLK * !SCD * SCE)	-0.00069	-0.00069	-0.00069
	(CLK * !SCD * SCE)	0.00147	0.00148	0.00147
	(!CLK * SCD * SCE)	-0.00133	-0.00135	-0.00138
	(!CLK * SCD * SCE)	0.00065	0.00066	0.00063
sky130_fd_sc_hs__sdfsbp_2	**(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)**	0.01029	0.01123	0.03383
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01395	0.01488	0.03750
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00671	0.00739	0.02878
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.01052	0.01120	0.03258
	(!CLK * !SCD * SCE)	-0.00069	-0.00070	-0.00069
	(!CLK * !SCD * SCE)	0.00147	0.00148	0.00147

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00639	0.00667	0.02394
	(CLK * D * SCE)	0.00163	0.00191	0.01919
	(CLK * !D * SCE)	0.00727	0.00748	0.02437
	(CLK * !D * SCE)	0.00232	0.00253	0.01944
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01369	0.01389	0.03039
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00856	0.00875	0.02526
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01134	0.01153	0.02750
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00609	0.00628	0.02225
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01458	0.01474	0.03093
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00925	0.00941	0.02562
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01222	0.01237	0.02801
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00678	0.00694	0.02258
	!SCE	0.00164	0.00146	0.00143
	!SCE	-0.00115	-0.00134	-0.00136

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.00643	0.00673	0.02397
	(CLK * D * SCE)	0.00174	0.00203	0.01927
	(CLK * !D * SCE)	0.00731	0.00755	0.02440
	(CLK * !D * SCE)	0.00243	0.00266	0.01952
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01506	0.01530	0.03149
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01017	0.01039	0.02660
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01277	0.01299	0.02858
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00774	0.00795	0.02355
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01594	0.01613	0.03203
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01086	0.01105	0.02695
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01365	0.01383	0.02912
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00843	0.00860	0.02390
	!SCE	0.00155	0.00137	0.00134
	!SCE	-0.00116	-0.00135	-0.00137

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00205	0.00231	0.01945
	(CLK * D * SCE)	0.00681	0.00709	0.02419
	(CLK * !D * SCE)	0.00159	0.00192	0.01928
	(CLK * !D * SCE)	0.00653	0.00687	0.02420
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00935	0.00952	0.02653
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01449	0.01466	0.03164
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00597	0.00610	0.02203
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01123	0.01137	0.02726
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00894	0.00914	0.02636
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01425	0.01445	0.03166
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00552	0.00568	0.02178
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01096	0.01113	0.02721
	!SCE	-0.00138	-0.00141	-0.00141
	!SCE	0.00138	0.00140	0.00139

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.00227	0.00255	0.01963
	(CLK * D * SCE)	0.00697	0.00726	0.02431
	(CLK * !D * SCE)	0.00181	0.00214	0.01945
	(CLK * !D * SCE)	0.00669	0.00702	0.02432
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01170	0.01189	0.02850
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01660	0.01680	0.03338
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00808	0.00821	0.02374
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01312	0.01326	0.02876
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01127	0.01150	0.02832
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01636	0.01658	0.03339
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00762	0.00778	0.02347
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01285	0.01301	0.02868
	!SCE	-0.00129	-0.00132	-0.00132
	!SCE	0.00140	0.00141	0.00141

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)**	0.00560	0.00644	0.03626
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00054	0.00028	0.03012
	(CLK * D * !SCD)	0.00850	0.00931	0.04005
	(CLK * D * !SCD)	0.00414	0.00492	0.03563
	(CLK * !D * SCD)	0.00984	0.01136	0.05873
	(CLK * !D * SCD)	0.00214	0.00364	0.05106
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00560	0.00644	0.03626
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00054	0.00028	0.03012
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01541	0.01643	0.04698
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01142	0.01241	0.04295
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01204	0.01306	0.04354
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00818	0.00916	0.03962
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01731	0.01868	0.06545
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00923	0.01060	0.05740
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01495	0.01632	0.06236
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00676	0.00812	0.05421
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00550	0.00649	0.03619
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	-0.00025	0.00074	0.03044

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00584	0.00670	0.03683
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00051	0.00031	0.03046
	(CLK * D * !SCD)	0.00888	0.00972	0.04077
	(CLK * D * !SCD)	0.00431	0.00512	0.03615
	(CLK * !D * SCD)	0.01020	0.01171	0.05997
	(CLK * !D * SCD)	0.00227	0.00380	0.05208
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00584	0.00669	0.03682
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00051	0.00031	0.03046
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01794	0.01894	0.04983
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01358	0.01457	0.04541
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01431	0.01536	0.04612
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01011	0.01111	0.04186
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01896	0.02035	0.06768
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01082	0.01223	0.05958
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01666	0.01804	0.06457
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00840	0.00978	0.05633
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00566	0.00666	0.03666
	(!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	0.00069	0.03071

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)**	-0.00035	0.00134	0.03116
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00578	0.00748	0.03730
	(CLK * D * !SCD)	0.00421	0.00563	0.03604
	(CLK * D * !SCD)	0.00861	0.01004	0.04027
	(CLK * !D * SCD)	0.00121	0.00308	0.05021
	(CLK * !D * SCD)	0.00889	0.01079	0.05790
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00034	0.00135	0.03116
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00578	0.00749	0.03730
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01164	0.01317	0.04297
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01567	0.01718	0.04683
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00929	0.01082	0.04063
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01320	0.01472	0.04436
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00836	0.01006	0.05634
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01642	0.01812	0.06442
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00503	0.00668	0.05197
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01320	0.01484	0.06015
	(!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	0.00163	0.03134
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00582	0.00737	0.03709

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00054	0.00115	0.03133
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00580	0.00751	0.03769
	(CLK * D * !SCD)	0.00411	0.00554	0.03623
	(CLK * D * !SCD)	0.00872	0.01016	0.04067
	(CLK * !D * SCD)	0.00138	0.00323	0.05122
	(CLK * !D * SCD)	0.00926	0.01115	0.05913
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00054	0.00116	0.03133
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00581	0.00751	0.03769
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01283	0.01438	0.04444
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01723	0.01876	0.04867
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01054	0.01208	0.04216
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01481	0.01635	0.04626
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01066	0.01235	0.05911
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01877	0.02045	0.06722
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00710	0.00872	0.05441
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01534	0.01699	0.06267
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	-0.00004	0.00171	0.03158
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00593	0.00769	0.03755

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)	0.00280	0.00282	0.00281
	(CLK * Q * !Q_N)	-0.00242	-0.00243	-0.00243
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00298	0.00299	0.00298
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00225	-0.00225	-0.00225
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00555	0.00591	0.01984
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00013	0.00044	0.01442
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	0.00285	0.00287	0.00286
	(CLK * Q * !Q_N)	-0.00251	-0.00252	-0.00251
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00297	0.00299	0.00298
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00239	-0.00240	-0.00239
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00585	0.00618	0.02005
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00027	0.00058	0.01445

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)	-0.00275	-0.00281	-0.00279
	(CLK * Q * !Q_N)	0.00249	0.00247	0.00245
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00293	-0.00298	-0.00297
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00232	0.00229	0.00227
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	-0.00005	0.00077	0.01464
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00535	0.00623	0.02008
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	-0.00278	-0.00286	-0.00284
	(CLK * Q * !Q_N)	0.00256	0.00256	0.00254
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00290	-0.00298	-0.00296
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00244	0.00244	0.00242
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	-0.00028	0.00030	0.01432
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00529	0.00589	0.01991

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)	0.01527	0.01634	0.06129
	(D * SCD * SCE * Q * !Q_N)	0.01049	0.01155	0.05651
	(D * !SCE * Q * !Q_N)	0.01527	0.01634	0.06129
	(D * !SCE * Q * !Q_N)	0.01049	0.01155	0.05651
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01513	0.01617	0.06112
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01034	0.01138	0.05634
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02801	0.02942	0.07512
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02273	0.02413	0.06987
	(!D * SCD * SCE * Q * !Q_N)	0.01527	0.01634	0.06129
	(!D * SCD * SCE * Q * !Q_N)	0.01049	0.01156	0.05651
	(!D * !SCE * SET_B * !Q * Q_N)	0.01513	0.01617	0.06111
	(!D * !SCE * SET_B * !Q * Q_N)	0.01034	0.01138	0.05633
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02800	0.02941	0.07518
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02273	0.02412	0.06993
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01513	0.01617	0.06129
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01035	0.01138	0.05651
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02806	0.02943	0.07517
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02279	0.02414	0.06991

sky130_fd_sc_hs__sdfsbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.01991	0.02103	0.06624
	(D * SCD * SCE * Q * !Q_N)	0.01507	0.01618	0.06140
	(D * !SCE * Q * !Q_N)	0.01990	0.02103	0.06623
	(D * !SCE * Q * !Q_N)	0.01507	0.01618	0.06140
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01959	0.02067	0.06600
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01475	0.01583	0.06117
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.04669	0.04843	0.09637
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.04153	0.04326	0.09122
	(!D * SCD * SCE * Q * !Q_N)	0.01991	0.02103	0.06624
	(!D * SCD * SCE * Q * !Q_N)	0.01507	0.01619	0.06141
	(!D * !SCE * SET_B * !Q * Q_N)	0.01958	0.02067	0.06600
	(!D * !SCE * SET_B * !Q * Q_N)	0.01475	0.01582	0.06116
	(!D * !SCE * !SET_B * Q * !Q_N)	0.04668	0.04843	0.09636
	(!D * !SCE * !SET_B * Q * !Q_N)	0.04150	0.04324	0.09119
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01959	0.02068	0.06590
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01475	0.01583	0.06107
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.04680	0.04845	0.09630
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.04162	0.04326	0.09113

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfsbp_1	**(D * SCD * SCE * SET_B * !Q * Q_N)**	0.01568	0.01771	0.06422
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.02009	0.02210	0.06864
	(D * SCD * SCE * Q * !Q_N)	0.00851	0.01058	0.05623
	(D * SCD * SCE * Q * !Q_N)	0.01329	0.01537	0.06100
	(D * !SCE * SET_B * !Q * Q_N)	0.01564	0.01767	0.06419
	(D * !SCE * SET_B * !Q * Q_N)	0.02006	0.02208	0.06861
	(D * !SCE * Q * !Q_N)	0.00851	0.01058	0.05623
	(D * !SCE * Q * !Q_N)	0.01329	0.01537	0.06100
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01738	0.01961	0.06606
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.02256	0.02479	0.07124
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00864	0.01072	0.05644
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01342	0.01551	0.06122
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01399	0.01623	0.06241
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01924	0.02152	0.06768
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.01571	0.01774	0.06426
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.02011	0.02213	0.06865
	(!D * SCD * SCE * Q * !Q_N)	0.00851	0.01058	0.05623
	(!D * SCD * SCE * Q * !Q_N)	0.01329	0.01537	0.06101
	(!D * !SCE * SET_B * Q * !Q_N)	0.01736	0.01959	0.06603
	(!D * !SCE * SET_B * Q * !Q_N)	0.02252	0.02473	0.07119
	(!D * !SCE * SET_B * !Q * Q_N)	0.00864	0.01072	0.05643
	(!D * !SCE * SET_B * !Q * Q_N)	0.01342	0.01551	0.06122
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01402	0.01623	0.06265
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01930	0.02152	0.06791
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01738	0.01961	0.06605
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.02255	0.02477	0.07122
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00864	0.01072	0.05643
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01342	0.01552	0.06122
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01403	0.01624	0.06265
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01930	0.02152	0.06793

	(D * SCD * SCE * SET_B * !Q * Q_N)	0.01893	0.02088	0.06775
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.02355	0.02551	0.07238
	(D * SCD * SCE * Q * !Q_N)	0.01029	0.01227	0.05812
	(D * SCD * SCE * Q * !Q_N)	0.01511	0.01710	0.06296
	(D * !SCE * SET_B * !Q * Q_N)	0.01890	0.02085	0.06771
	(D * !SCE * SET_B * !Q * Q_N)	0.02352	0.02549	0.07235
	(D * !SCE * Q * !Q_N)	0.01029	0.01227	0.05812
	(D * !SCE * Q * !Q_N)	0.01511	0.01710	0.06296
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.02201	0.02416	0.07088
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.02705	0.02920	0.07595
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01058	0.01256	0.05857
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01540	0.01739	0.06340
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01830	0.02044	0.06715
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02346	0.02563	0.07235
sky130_fd_sc_hs__sdfsbp_2	**(!D * SCD * SCE * SET_B * !Q * Q_N)**	0.01897	0.02092	0.06778
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.02357	0.02553	0.07239
	(!D * SCD * SCE * Q * !Q_N)	0.01029	0.01227	0.05812
	(!D * SCD * SCE * Q * !Q_N)	0.01511	0.01710	0.06296
	(!D * !SCE * SET_B * Q * !Q_N)	0.02198	0.02413	0.07084
	(!D * !SCE * SET_B * Q * !Q_N)	0.02700	0.02915	0.07589
	(!D * !SCE * SET_B * !Q * Q_N)	0.01058	0.01256	0.05856
	(!D * !SCE * SET_B * !Q * Q_N)	0.01540	0.01739	0.06340
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01829	0.02045	0.06714
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02346	0.02564	0.07232
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.02201	0.02413	0.07088
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.02705	0.02917	0.07594
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01058	0.01256	0.05857
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01540	0.01739	0.06340
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01829	0.02044	0.06717
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02344	0.02563	0.07233

SKY130_FD_SC_HS__SDFSTPx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00189	0.00211	0.00402	0.00336	0.00298	1.16195
sky130_fd_sc_hs__sdfstp_2	0.00189	0.00206	0.00402	0.00346	0.00297	2.34313
sky130_fd_sc_hs__sdfstp_4	0.00190	0.00211	0.00408	0.00347	0.00297	4.47825

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfstp_1	0.00000	0.80405	1.19122
sky130_fd_sc_hs__sdfstp_2	0.00000	0.76765	1.78386
sky130_fd_sc_hs__sdfstp_4	0.00000	1.28832	1.93484

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)	0.21257	0.68452	6.02850
	SET_B->Q (FR)	0.20724	0.93241	8.92785
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RR)	0.19716	0.57086	5.96829
	SET_B->Q (FR)	0.23656	0.86961	8.98878
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RR)	0.22831	0.53526	6.08767
	SET_B->Q (FR)	0.27723	0.84838	9.15232

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfstp_1	CLK->Q (RF)	0.20817	0.43702	2.10242
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RF)	0.21986	0.42281	2.19240
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RF)	0.22550	0.40585	2.27328

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)	-0.07827	-0.16369	-0.86639
	setup	CLK (R)	0.12091	0.18569	0.87032
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.09757	-0.18296	-0.92651
	setup	CLK (R)	0.14788	0.21263	0.96730
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.09993	-0.18478	-0.93281
	setup	CLK (R)	0.14159	0.21228	0.97136

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)	-0.08115	-0.20870	-2.87624
	setup	CLK (R)	0.21425	0.33169	3.08531
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.09617	-0.21890	-2.88231
	setup	CLK (R)	0.24433	0.36069	3.15723
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.10278	-0.22955	-2.88914
	setup	CLK (R)	0.24512	0.36177	3.16854

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)	-0.07827	-0.16369	-0.86639
	setup	CLK (R)	0.12091	0.18569	0.87032
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.09757	-0.18296	-0.92651
	setup	CLK (R)	0.14788	0.21263	0.96730
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.09993	-0.18478	-0.93281
	setup	CLK (R)	0.14159	0.21228	0.97136

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)	-0.08115	-0.20870	-2.87624
	setup	CLK (R)	0.21425	0.33169	3.08531
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.09617	-0.21890	-2.88231
	setup	CLK (R)	0.24433	0.36069	3.15723
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.10278	-0.22955	-2.88914
	setup	CLK (R)	0.24512	0.36177	3.16854

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)	-0.09509	-0.17309	-0.87428
	setup	CLK (R)	0.14131	0.19992	0.87792
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.11674	-0.19033	-0.92080
	setup	CLK (R)	0.16795	0.22347	0.95471
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.11658	-0.19063	-0.92896
	setup	CLK (R)	0.16388	0.22193	0.95451

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)	-0.10632	-0.23400	-3.01891
	setup	CLK (R)	0.26613	0.37478	3.19111
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.11967	-0.24515	-3.02756
	setup	CLK (R)	0.29662	0.40299	3.25055
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.12871	-0.25548	-3.02725
	setup	CLK (R)	0.29925	0.40431	3.26006

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)	-0.09509	-0.17309	-0.87428
	hold	CLK (R)	-0.09826	-0.17866	-0.87658
	setup	CLK (R)	0.13997	0.19473	0.87296
	setup	CLK (R)	0.14131	0.19992	0.87792
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.11674	-0.19033	-0.92080
	hold	CLK (R)	-0.12017	-0.19666	-0.92627
	setup	CLK (R)	0.16502	0.21912	0.95130
	setup	CLK (R)	0.16795	0.22347	0.95471
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.11658	-0.19063	-0.92896
	hold	CLK (R)	-0.11745	-0.19668	-0.93231
	setup	CLK (R)	0.16135	0.21562	0.95142
	setup	CLK (R)	0.16388	0.22193	0.95451

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)	-0.11467	-0.24315	-3.02227
	hold	CLK (R)	-0.10632	-0.23400	-3.01891
	setup	CLK (R)	0.26613	0.37478	3.18546
	setup	CLK (R)	0.25581	0.37003	3.19111
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.12800	-0.25643	-3.03101
	hold	CLK (R)	-0.11967	-0.24515	-3.02756
	setup	CLK (R)	0.29662	0.40299	3.24591
	setup	CLK (R)	0.29048	0.39833	3.25055
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.13787	-0.26568	-3.03032
	hold	CLK (R)	-0.12871	-0.25548	-3.02725
	setup	CLK (R)	0.29925	0.40431	3.25484
	setup	CLK (R)	0.29111	0.40036	3.26006

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)	-0.08906	-0.15125	-0.32991
	setup	CLK (R)	0.26366	0.27611	0.90641
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.10543	-0.16056	-0.33003
	setup	CLK (R)	0.29337	0.30453	0.99721
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.10710	-0.17029	-0.32388
	setup	CLK (R)	0.29387	0.30453	0.99823

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)	-0.09874	-0.21048	-2.78350
	setup	CLK (R)	0.22985	0.33676	3.07137
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.10748	-0.22256	-2.78964
	setup	CLK (R)	0.26245	0.36364	3.13408
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.11916	-0.23189	-2.79256
	setup	CLK (R)	0.26362	0.36623	3.14908

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)	-0.11257	-0.15125	-0.32991
	hold	CLK (R)	-0.08906	-0.17577	-0.90427
	setup	CLK (R)	0.26366	0.27611	0.44834
	setup	CLK (R)	0.12852	0.19971	0.90641
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.12430	-0.16056	-0.33003
	hold	CLK (R)	-0.10543	-0.19528	-0.96281
	setup	CLK (R)	0.29337	0.30453	0.47307
	setup	CLK (R)	0.15265	0.22442	0.99721
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.13509	-0.17029	-0.32388
	hold	CLK (R)	-0.10710	-0.19687	-0.96882
	setup	CLK (R)	0.29387	0.30453	0.47793
	setup	CLK (R)	0.14903	0.22242	0.99823

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)	-0.13604	-0.26654	-2.78350
	hold	CLK (R)	-0.09874	-0.21048	-2.88401
	setup	CLK (R)	0.17753	0.28828	2.78023
	setup	CLK (R)	0.22985	0.33676	3.07137
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.15364	-0.28129	-2.78964
	hold	CLK (R)	-0.10748	-0.22256	-2.90171
	setup	CLK (R)	0.20454	0.31025	2.79771
	setup	CLK (R)	0.26245	0.36364	3.13408
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.15384	-0.28278	-2.79256
	hold	CLK (R)	-0.11916	-0.23189	-2.89646
	setup	CLK (R)	0.19995	0.30819	2.79792
	setup	CLK (R)	0.26362	0.36623	3.14908

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)	-0.08913	-0.13287	-0.39909
	removal	CLK (R)	0.10818	0.14757	0.50814
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.12687	-0.16895	-0.42671
	removal	CLK (R)	0.16446	0.36785	4.51002
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.12118	-0.16895	-0.45020
	removal	CLK (R)	0.14088	0.28872	3.17266

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)	-0.08913	-0.13287	-0.40015
	recovery	CLK (R)	-0.08913	-0.13287	-0.40015
	recovery	CLK (R)	-0.08931	-0.13287	-0.39909
	removal	CLK (R)	0.10632	0.14543	0.50734
	removal	CLK (R)	0.10632	0.14543	0.50734
	removal	CLK (R)	0.10818	0.14757	0.50814
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.12687	-0.16895	-0.42778
	recovery	CLK (R)	-0.12687	-0.16895	-0.42778
	recovery	CLK (R)	-0.12687	-0.16895	-0.42671
	removal	CLK (R)	0.16446	0.36785	4.51002
	removal	CLK (R)	0.16446	0.36785	4.51002
	removal	CLK (R)	0.16446	0.36785	4.47355
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.12118	-0.16895	-0.45020
	recovery	CLK (R)	-0.12118	-0.16895	-0.45020
	recovery	CLK (R)	-0.12118	-0.16895	-0.45020
	removal	CLK (R)	0.14088	0.28872	3.10886
	removal	CLK (R)	0.14088	0.28872	3.17266
	removal	CLK (R)	0.14088	0.28872	3.12209

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 ()	0.17552	0.64453	16.50020
	min_pulse_width	SET_B ()	0.15377	0.64453	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	SET_B ()	0.18761	0.64453	16.50020
	min_pulse_width	SET_B ()	0.17552	0.64453	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	SET_B ()	0.19245	0.64453	16.50020
	min_pulse_width	SET_B ()	0.19486	0.64453	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 ()	0.11509	0.64453	16.50020
	min_pulse_width	CLK ()	0.07882	0.64453	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.09574	0.64453	16.50020
	min_pulse_width	CLK ()	0.08849	0.64453	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.11267	0.64453	16.50020
	min_pulse_width	CLK ()	0.08849	0.64453	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 ()	0.15618	0.64453	16.50020
	min_pulse_width	CLK ()	0.22629	0.64453	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.19728	0.64453	16.50020
	min_pulse_width	CLK ()	0.27223	0.64453	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.19245	0.64453	16.50020
	min_pulse_width	CLK ()	0.26739	0.64453	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	0.02857	0.02969	0.07709
	CLK	0.02405	0.02518	0.07305
	SET_B	0.02710	0.02747	0.05119
	SET_B	0.03206	0.03243	0.05628
sky130_fd_sc_hs__sdfstp_2	CLK	0.03527	0.03665	0.08443
	CLK	0.03079	0.03222	0.08092
	SET_B	0.03564	0.03598	0.05917
	SET_B	0.04071	0.04106	0.06454
sky130_fd_sc_hs__sdfstp_4	CLK	0.04216	0.04402	0.09198
	CLK	0.03775	0.03975	0.08937
	SET_B	0.04243	0.04350	0.06681
	SET_B	0.04759	0.04863	0.07265

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfstp_1	CLK	0.03056	0.03189	0.07740
	CLK	0.02568	0.02693	0.07244
sky130_fd_sc_hs__sdfstp_2	CLK	0.03751	0.03922	0.08504
	CLK	0.03271	0.03430	0.07961
sky130_fd_sc_hs__sdfstp_4	CLK	0.04499	0.04746	0.09322
	CLK	0.04006	0.04242	0.08773

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	0.00130	0.00131	0.00130
	(CLK * SCD * SCE)	-0.00062	-0.00063	-0.00062
	(CLK * !SCE)	0.00449	0.00523	0.02864
	(CLK * !SCE)	0.00113	0.00186	0.02526
	(CLK * !SCD * SCE)	0.00068	0.00068	0.00067
	(CLK * !SCD * SCE)	-0.00140	-0.00142	-0.00144
	(!CLK * SCD * SCE)	0.00130	0.00131	0.00130
	(!CLK * SCD * SCE)	-0.00062	-0.00063	-0.00062
	(!CLK * !SCE * SET_B)	0.01157	0.01200	0.03399
	(!CLK * !SCE * SET_B)	0.00790	0.00832	0.03032
	(!CLK * !SCE * !SET_B * Q)	0.00935	0.00977	0.03092
	(!CLK * !SCE * !SET_B * Q)	0.00559	0.00600	0.02716
	(!CLK * !SCD * SCE)	0.00068	0.00069	0.00067
	(!CLK * !SCD * SCE)	-0.00140	-0.00143	-0.00144
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	0.00129	0.00131	0.00130
	(CLK * SCD * SCE)	-0.00062	-0.00063	-0.00063
	(CLK * !SCE)	0.00444	0.00518	0.02858
	(CLK * !SCE)	0.00108	0.00181	0.02521
	(CLK * !SCD * SCE)	0.00068	0.00068	0.00067
	(CLK * !SCD * SCE)	-0.00140	-0.00142	-0.00145
	(!CLK * SCD * SCE)	0.00130	0.00131	0.00130
	(!CLK * SCD * SCE)	-0.00063	-0.00063	-0.00063
	(!CLK * !SCE * SET_B)	0.01325	0.01368	0.03510
	(!CLK * !SCE * SET_B)	0.00944	0.00986	0.03129
	(!CLK * !SCE * !SET_B * Q)	0.01089	0.01129	0.03186
	(!CLK * !SCE * !SET_B * Q)	0.00698	0.00738	0.02796
	(!CLK * !SCD * SCE)	0.00068	0.00069	0.00067
	(!CLK * !SCD * SCE)	-0.00140	-0.00143	-0.00145

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	0.00129	0.00131	0.00130
	(CLK * SCD * SCE)	-0.00062	-0.00063	-0.00062
	(CLK * !SCE)	0.00460	0.00532	0.02864
	(CLK * !SCE)	0.00124	0.00195	0.02527
	(CLK * !SCD * SCE)	0.00068	0.00069	0.00067
	(CLK * !SCD * SCE)	-0.00139	-0.00141	-0.00143
	(!CLK * SCD * SCE)	0.00129	0.00131	0.00130
	(!CLK * SCD * SCE)	-0.00062	-0.00063	-0.00062
	(!CLK * !SCE * SET_B)	0.01314	0.01357	0.03498
	(!CLK * !SCE * SET_B)	0.00943	0.00985	0.03126
	(!CLK * !SCE * !SET_B * Q)	0.01082	0.01122	0.03178
	(!CLK * !SCE * !SET_B * Q)	0.00702	0.00740	0.02797
	(!CLK * !SCD * SCE)	0.00069	0.00069	0.00068
	(!CLK * !SCD * SCE)	-0.00139	-0.00142	-0.00143

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	-0.00124	-0.00125	-0.00128
	(CLK * SCD * SCE)	0.00068	0.00067	0.00065
	(CLK * !SCE)	0.00072	0.00186	0.02530
	(CLK * !SCE)	0.00408	0.00524	0.02867
	(CLK * !SCD * SCE)	-0.00064	-0.00065	-0.00064
	(CLK * !SCD * SCE)	0.00144	0.00145	0.00145
	(!CLK * SCD * SCE)	-0.00123	-0.00125	-0.00128
	(!CLK * SCD * SCE)	0.00067	0.00067	0.00065
	(!CLK * !SCE * SET_B)	0.00791	0.00880	0.03176
	(!CLK * !SCE * SET_B)	0.01159	0.01247	0.03542
	(!CLK * !SCE * !SET_B * Q)	0.00476	0.00553	0.02724
	(!CLK * !SCE * !SET_B * Q)	0.00853	0.00930	0.03101
	(!CLK * !SCD * SCE)	-0.00064	-0.00065	-0.00065
	(!CLK * !SCD * SCE)	0.00145	0.00145	0.00145
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	-0.00124	-0.00125	-0.00128
	(CLK * SCD * SCE)	0.00068	0.00067	0.00065
	(CLK * !SCE)	0.00078	0.00192	0.02535
	(CLK * !SCE)	0.00413	0.00529	0.02872
	(CLK * !SCD * SCE)	-0.00064	-0.00065	-0.00065
	(CLK * !SCD * SCE)	0.00144	0.00145	0.00145
	(!CLK * SCD * SCE)	-0.00123	-0.00126	-0.00128
	(!CLK * SCD * SCE)	0.00067	0.00068	0.00065
	(!CLK * !SCE * SET_B)	0.00930	0.01010	0.03277
	(!CLK * !SCE * SET_B)	0.01312	0.01391	0.03659
	(!CLK * !SCE * !SET_B * Q)	0.00594	0.00667	0.02799
	(!CLK * !SCE * !SET_B * Q)	0.00986	0.01058	0.03190
	(!CLK * !SCD * SCE)	-0.00064	-0.00065	-0.00065
	(!CLK * !SCD * SCE)	0.00145	0.00145	0.00145

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	-0.00123	-0.00125	-0.00128
	(CLK * SCD * SCE)	0.00068	0.00068	0.00065
	(CLK * !SCE)	0.00091	0.00203	0.02539
	(CLK * !SCE)	0.00427	0.00540	0.02875
	(CLK * !SCD * SCE)	-0.00064	-0.00065	-0.00065
	(CLK * !SCD * SCE)	0.00144	0.00145	0.00144
	(!CLK * SCD * SCE)	-0.00122	-0.00125	-0.00127
	(!CLK * SCD * SCE)	0.00067	0.00068	0.00066
	(!CLK * !SCE * SET_B)	0.00941	0.01041	0.03288
	(!CLK * !SCE * SET_B)	0.01314	0.01412	0.03660
	(!CLK * !SCE * !SET_B * Q)	0.00610	0.00682	0.02812
	(!CLK * !SCE * !SET_B * Q)	0.00991	0.01063	0.03194
	(!CLK * !SCD * SCE)	-0.00064	-0.00065	-0.00064
	(!CLK * !SCD * SCE)	0.00144	0.00145	0.00144

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00643	0.00671	0.02398
	(CLK * D * SCE)	0.00166	0.00194	0.01923
	(CLK * !D * SCE)	0.00731	0.00753	0.02441
	(CLK * !D * SCE)	0.00236	0.00257	0.01947
	(!CLK * D * SCE * SET_B)	0.01334	0.01355	0.03006
	(!CLK * D * SCE * SET_B)	0.00829	0.00848	0.02500
	(!CLK * D * SCE * !SET_B * Q)	0.01113	0.01134	0.02730
	(!CLK * D * SCE * !SET_B * Q)	0.00598	0.00616	0.02214
	(!CLK * !D * SCE * SET_B)	0.01423	0.01440	0.03061
	(!CLK * !D * SCE * SET_B)	0.00898	0.00913	0.02536
	(!CLK * !D * SCE * !SET_B * Q)	0.01201	0.01217	0.02781
	(!CLK * !D * SCE * !SET_B * Q)	0.00667	0.00682	0.02247
	!SCE	0.00163	0.00145	0.00142
	!SCE	-0.00117	-0.00136	-0.00138
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00633	0.00663	0.02389
	(CLK * D * SCE)	0.00162	0.00190	0.01918
	(CLK * !D * SCE)	0.00721	0.00744	0.02433
	(CLK * !D * SCE)	0.00231	0.00252	0.01943
	(!CLK * D * SCE * SET_B)	0.01500	0.01521	0.03147
	(!CLK * D * SCE * SET_B)	0.00984	0.01004	0.02631
	(!CLK * D * SCE * !SET_B * Q)	0.01264	0.01284	0.02849
	(!CLK * D * SCE * !SET_B * Q)	0.00738	0.00757	0.02324
	(!CLK * !D * SCE * SET_B)	0.01588	0.01605	0.03201
	(!CLK * !D * SCE * SET_B)	0.01053	0.01069	0.02666
	(!CLK * !D * SCE * !SET_B * Q)	0.01352	0.01367	0.02902
	(!CLK * !D * SCE * !SET_B * Q)	0.00807	0.00823	0.02358
	!SCE	0.00159	0.00141	0.00138
	!SCE	-0.00116	-0.00136	-0.00138

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.00654	0.00682	0.02404
	(CLK * D * SCE)	0.00178	0.00205	0.01929
	(CLK * !D * SCE)	0.00742	0.00763	0.02448
	(CLK * !D * SCE)	0.00247	0.00268	0.01953
	(!CLK * D * SCE * SET_B)	0.01492	0.01513	0.03137
	(!CLK * D * SCE * SET_B)	0.00981	0.01001	0.02627
	(!CLK * D * SCE * !SET_B * Q)	0.01260	0.01279	0.02844
	(!CLK * D * SCE * !SET_B * Q)	0.00740	0.00758	0.02323
	(!CLK * !D * SCE * SET_B)	0.01580	0.01597	0.03191
	(!CLK * !D * SCE * SET_B)	0.01050	0.01066	0.02662
	(!CLK * !D * SCE * !SET_B * Q)	0.01348	0.01363	0.02897
	(!CLK * !D * SCE * !SET_B * Q)	0.00809	0.00823	0.02358
	!SCE	0.00163	0.00145	0.00142
	!SCE	-0.00117	-0.00136	-0.00138

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00195	0.00221	0.01936
	(CLK * D * SCE)	0.00671	0.00699	0.02410
	(CLK * !D * SCE)	0.00149	0.00182	0.01919
	(CLK * !D * SCE)	0.00643	0.00678	0.02411
	(!CLK * D * SCE * SET_B)	0.00928	0.00948	0.02648
	(!CLK * D * SCE * SET_B)	0.01435	0.01455	0.03153
	(!CLK * D * SCE * !SET_B * Q)	0.00609	0.00622	0.02215
	(!CLK * D * SCE * !SET_B * Q)	0.01126	0.01140	0.02729
	(!CLK * !D * SCE * SET_B)	0.00886	0.00908	0.02631
	(!CLK * !D * SCE * SET_B)	0.01411	0.01433	0.03154
	(!CLK * !D * SCE * !SET_B * Q)	0.00564	0.00580	0.02190
	(!CLK * !D * SCE * !SET_B * Q)	0.01099	0.01115	0.02724
	!SCE	-0.00137	-0.00140	-0.00140
	!SCE	0.00140	0.00141	0.00141
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00207	0.00234	0.01948
	(CLK * D * SCE)	0.00679	0.00707	0.02418
	(CLK * !D * SCE)	0.00162	0.00195	0.01931
	(CLK * !D * SCE)	0.00651	0.00686	0.02419
	(!CLK * D * SCE * SET_B)	0.01071	0.01090	0.02760
	(!CLK * D * SCE * SET_B)	0.01587	0.01606	0.03275
	(!CLK * D * SCE * !SET_B * Q)	0.00734	0.00746	0.02309
	(!CLK * D * SCE * !SET_B * Q)	0.01261	0.01273	0.02835
	(!CLK * !D * SCE * SET_B)	0.01028	0.01050	0.02744
	(!CLK * !D * SCE * SET_B)	0.01563	0.01584	0.03277
	(!CLK * !D * SCE * !SET_B * Q)	0.00689	0.00703	0.02283
	(!CLK * !D * SCE * !SET_B * Q)	0.01234	0.01249	0.02827
	!SCE	-0.00134	-0.00136	-0.00137
	!SCE	0.00140	0.00140	0.00140

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.00213	0.00239	0.01948
	(CLK * D * SCE)	0.00689	0.00716	0.02422
	(CLK * !D * SCE)	0.00167	0.00199	0.01931
	(CLK * !D * SCE)	0.00661	0.00694	0.02424
	(!CLK * D * SCE * SET_B)	0.01076	0.01095	0.02765
	(!CLK * D * SCE * SET_B)	0.01588	0.01606	0.03275
	(!CLK * D * SCE * !SET_B * Q)	0.00743	0.00754	0.02317
	(!CLK * D * SCE * !SET_B * Q)	0.01265	0.01277	0.02837
	(!CLK * !D * SCE * SET_B)	0.01034	0.01054	0.02750
	(!CLK * !D * SCE * SET_B)	0.01563	0.01583	0.03278
	(!CLK * !D * SCE * !SET_B * Q)	0.00698	0.00712	0.02291
	(!CLK * !D * SCE * !SET_B * Q)	0.01238	0.01253	0.02830
	!SCE	-0.00137	-0.00140	-0.00140
	!SCE	0.00140	0.00142	0.00141

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

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

	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00561	0.00646	0.03626
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00051	0.00031	0.03014
	(CLK * D * !SCD)	0.00841	0.00922	0.03995
	(CLK * D * !SCD)	0.00406	0.00484	0.03555
	(CLK * !D * SCD)	0.00991	0.01142	0.05880
	(CLK * !D * SCD)	0.00222	0.00373	0.05115
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00561	0.00645	0.03627
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00051	0.00031	0.03014
sky130_fd_sc_hs__sdfstp_1	**(!CLK * D * !SCD * SET_B)**	0.01537	0.01640	0.04695
	(!CLK * D * !SCD * SET_B)	0.01132	0.01232	0.04285
	(!CLK * D * !SCD * !SET_B * Q)	0.01219	0.01320	0.04368
	(!CLK * D * !SCD * !SET_B * Q)	0.00824	0.00923	0.03968
	(!CLK * !D * SCD * SET_B)	0.01697	0.01835	0.06515
	(!CLK * !D * SCD * SET_B)	0.00899	0.01036	0.05720
	(!CLK * !D * SCD * !SET_B * Q)	0.01476	0.01613	0.06217
	(!CLK * !D * SCD * !SET_B * Q)	0.00668	0.00805	0.05414
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00553	0.00652	0.03621
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00021	0.00078	0.03048

sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00562	0.00645	0.03624
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00051	0.00030	0.03011
	(CLK * D * !SCD)	0.00851	0.00934	0.04000
	(CLK * D * !SCD)	0.00415	0.00494	0.03559
	(CLK * !D * SCD)	0.00985	0.01137	0.05872
	(CLK * !D * SCD)	0.00218	0.00367	0.05106
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00562	0.00645	0.03624
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00050	0.00030	0.03011
	(!CLK * D * !SCD * SET_B)	0.01676	0.01780	0.04833
	(!CLK * D * !SCD * SET_B)	0.01285	0.01384	0.04435
	(!CLK * D * !SCD * !SET_B * Q)	0.01339	0.01445	0.04484
	(!CLK * D * !SCD * !SET_B * Q)	0.00958	0.01059	0.04098
	(!CLK * !D * SCD * SET_B)	0.01866	0.02001	0.06654
	(!CLK * !D * SCD * SET_B)	0.01054	0.01192	0.05844
	(!CLK * !D * SCD * !SET_B * Q)	0.01630	0.01765	0.06336
	(!CLK * !D * SCD * !SET_B * Q)	0.00808	0.00942	0.05519
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00554	0.00653	0.03620
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00019	0.00078	0.03045

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00567	0.00650	0.03632
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00051	0.00029	0.03012
	(CLK * D * !SCD)	0.00863	0.00947	0.04017
	(CLK * D * !SCD)	0.00422	0.00502	0.03570
	(CLK * !D * SCD)	0.01007	0.01155	0.05890
	(CLK * !D * SCD)	0.00233	0.00381	0.05119
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00567	0.00650	0.03632
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00051	0.00029	0.03012
	(!CLK * D * !SCD * SET_B)	0.01689	0.01790	0.04844
	(!CLK * D * !SCD * SET_B)	0.01283	0.01381	0.04433
	(!CLK * D * !SCD * !SET_B * Q)	0.01355	0.01459	0.04502
	(!CLK * D * !SCD * !SET_B * Q)	0.00960	0.01059	0.04101
	(!CLK * !D * SCD * SET_B)	0.01860	0.01997	0.06649
	(!CLK * !D * SCD * SET_B)	0.01052	0.01187	0.05842
	(!CLK * !D * SCD * !SET_B * Q)	0.01628	0.01763	0.06336
	(!CLK * !D * SCD * !SET_B * Q)	0.00810	0.00942	0.05519
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00558	0.00656	0.03626
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00020	0.00077	0.03046

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)**	-0.00032	0.00136	0.03116
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00581	0.00748	0.03729
	(CLK * D * !SCD)	0.00429	0.00570	0.03610
	(CLK * D * !SCD)	0.00868	0.01010	0.04032
	(CLK * !D * SCD)	0.00111	0.00298	0.05011
	(CLK * !D * SCD)	0.00876	0.01066	0.05778
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00032	0.00136	0.03116
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00581	0.00749	0.03728
	(!CLK * D * !SCD * SET_B)	0.01132	0.01284	0.04264
	(!CLK * D * !SCD * SET_B)	0.01541	0.01693	0.04654
	(!CLK * D * !SCD * !SET_B * Q)	0.00911	0.01063	0.04043
	(!CLK * D * !SCD * !SET_B * Q)	0.01310	0.01461	0.04425
	(!CLK * !D * SCD * SET_B)	0.00831	0.01002	0.05622
	(!CLK * !D * SCD * SET_B)	0.01627	0.01798	0.06417
	(!CLK * !D * SCD * !SET_B * Q)	0.00515	0.00679	0.05209
	(!CLK * !D * SCD * !SET_B * Q)	0.01322	0.01484	0.06016
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00011	0.00164	0.03134
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00582	0.00736	0.03706

sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00033	0.00135	0.03116
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00581	0.00748	0.03730
	(CLK * D * !SCD)	0.00423	0.00563	0.03604
	(CLK * D * !SCD)	0.00861	0.01005	0.04026
	(CLK * !D * SCD)	0.00116	0.00303	0.05015
	(CLK * !D * SCD)	0.00881	0.01071	0.05782
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00033	0.00136	0.03116
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00581	0.00749	0.03730
	(!CLK * D * !SCD * SET_B)	0.01301	0.01452	0.04425
	(!CLK * D * !SCD * SET_B)	0.01693	0.01848	0.04804
	(!CLK * D * !SCD * !SET_B * Q)	0.01065	0.01216	0.04190
	(!CLK * D * !SCD * !SET_B * Q)	0.01448	0.01603	0.04559
	(!CLK * !D * SCD * SET_B)	0.00966	0.01134	0.05726
	(!CLK * !D * SCD * SET_B)	0.01777	0.01945	0.06538
	(!CLK * !D * SCD * !SET_B * Q)	0.00633	0.00795	0.05284
	(!CLK * !D * SCD * !SET_B * Q)	0.01454	0.01618	0.06106
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00009	0.00161	0.03131
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00582	0.00737	0.03706

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00038	0.00130	0.03114
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00582	0.00749	0.03733
	(CLK * D * !SCD)	0.00435	0.00576	0.03613
	(CLK * D * !SCD)	0.00877	0.01019	0.04041
	(CLK * !D * SCD)	0.00125	0.00309	0.05015
	(CLK * !D * SCD)	0.00896	0.01084	0.05789
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00037	0.00131	0.03113
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00583	0.00750	0.03733
	(!CLK * D * !SCD * SET_B)	0.01285	0.01437	0.04410
	(!CLK * D * !SCD * SET_B)	0.01692	0.01847	0.04804
	(!CLK * D * !SCD * !SET_B * Q)	0.01054	0.01205	0.04180
	(!CLK * D * !SCD * !SET_B * Q)	0.01451	0.01606	0.04564
	(!CLK * !D * SCD * SET_B)	0.00974	0.01141	0.05735
	(!CLK * !D * SCD * SET_B)	0.01781	0.01949	0.06543
	(!CLK * !D * SCD * !SET_B * Q)	0.00644	0.00806	0.05295
	(!CLK * !D * SCD * !SET_B * Q)	0.01462	0.01625	0.06114
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00006	0.00157	0.03129
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00584	0.00739	0.03709

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	0.00260	0.00262	0.00260
	(CLK * Q)	-0.00245	-0.00246	-0.00245
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00282	0.00284	0.00282
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00222	-0.00223	-0.00222
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00533	0.00569	0.01968
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00010	0.00043	0.01445
sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	0.00287	0.00289	0.00288
	(CLK * Q)	-0.00238	-0.00240	-0.00239
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00313	0.00318	0.00315
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00212	-0.00214	-0.00213
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00559	0.00596	0.01995
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00015	0.00047	0.01450

sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	0.00267	0.00269	0.00268
	(CLK * Q)	-0.00249	-0.00250	-0.00250
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00293	0.00297	0.00294
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00223	-0.00225	-0.00224
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00545	0.00580	0.01971
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00010	0.00042	0.01435

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	-0.00254	-0.00260	-0.00258
	(CLK * Q)	0.00251	0.00251	0.00247
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00277	-0.00282	-0.00281
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00229	0.00227	0.00225
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00009	0.00065	0.01465
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00511	0.00591	0.01988

sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	-0.00283	-0.00289	-0.00287
	(CLK * Q)	0.00245	0.00244	0.00241
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00309	-0.00315	-0.00313
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00219	0.00218	0.00215
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00016	0.00069	0.01460
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00526	0.00617	0.02006
sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	-0.00259	-0.00267	-0.00265
	(CLK * Q)	0.00254	0.00255	0.00253
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00284	-0.00293	-0.00291
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00229	0.00229	0.00227
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00007	0.00076	0.01459
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00527	0.00612	0.01995

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)**	0.01537	0.01647	0.06137
	(D * SCD * SCE * Q)	0.01066	0.01174	0.05667
	(D * !SCE * Q)	0.01536	0.01647	0.06137
	(D * !SCE * Q)	0.01066	0.01174	0.05667
	(D * !SCD * SCE * SET_B * !Q)	0.01510	0.01616	0.06124
	(D * !SCD * SCE * SET_B * !Q)	0.01039	0.01145	0.05654
	(D * !SCD * SCE * !SET_B * Q)	0.02805	0.02945	0.07513
	(D * !SCD * SCE * !SET_B * Q)	0.02295	0.02436	0.07003
	(!D * SCD * SCE * Q)	0.01537	0.01647	0.06138
	(!D * SCD * SCE * Q)	0.01066	0.01175	0.05667
	(!D * !SCE * SET_B * !Q)	0.01510	0.01615	0.06124
	(!D * !SCE * SET_B * !Q)	0.01039	0.01144	0.05653
	(!D * !SCE * !SET_B * Q)	0.02804	0.02946	0.07521
	(!D * !SCE * !SET_B * Q)	0.02294	0.02434	0.07011
	(!D * !SCD * SCE * SET_B * !Q)	0.01510	0.01616	0.06124
	(!D * !SCD * SCE * SET_B * !Q)	0.01039	0.01145	0.05654
	(!D * !SCD * SCE * !SET_B * Q)	0.02810	0.02946	0.07512
	(!D * !SCD * SCE * !SET_B * Q)	0.02299	0.02436	0.07002

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * Q)**	0.01771	0.01869	0.06318
	(D * SCD * SCE * Q)	0.01305	0.01402	0.05852
	(D * !SCE * Q)	0.01771	0.01869	0.06318
	(D * !SCE * Q)	0.01305	0.01402	0.05852
	(D * !SCD * SCE * SET_B * !Q)	0.01791	0.01885	0.06312
	(D * !SCD * SCE * SET_B * !Q)	0.01322	0.01415	0.05844
	(D * !SCD * SCE * !SET_B * Q)	0.04222	0.04370	0.09015
	(D * !SCD * SCE * !SET_B * Q)	0.03708	0.03855	0.08503
	(!D * SCD * SCE * Q)	0.01771	0.01869	0.06318
	(!D * SCD * SCE * Q)	0.01305	0.01402	0.05852
	(!D * !SCE * SET_B * !Q)	0.01790	0.01885	0.06311
	(!D * !SCE * SET_B * !Q)	0.01322	0.01415	0.05844
	(!D * !SCE * !SET_B * Q)	0.04220	0.04369	0.09013
	(!D * !SCE * !SET_B * Q)	0.03704	0.03852	0.08499
	(!D * !SCD * SCE * SET_B * !Q)	0.01791	0.01885	0.06312
	(!D * !SCD * SCE * SET_B * !Q)	0.01322	0.01415	0.05845
	(!D * !SCD * SCE * !SET_B * Q)	0.04230	0.04372	0.09005
	(!D * !SCD * SCE * !SET_B * Q)	0.03714	0.03854	0.08489

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * Q)**	0.01749	0.01850	0.06295
	(D * SCD * SCE * Q)	0.01282	0.01382	0.05829
	(D * !SCE * Q)	0.01749	0.01850	0.06295
	(D * !SCE * Q)	0.01282	0.01382	0.05829
	(D * !SCD * SCE * SET_B * !Q)	0.01775	0.01872	0.06306
	(D * !SCD * SCE * SET_B * !Q)	0.01306	0.01402	0.05837
	(D * !SCD * SCE * !SET_B * Q)	0.04203	0.04361	0.09049
	(D * !SCD * SCE * !SET_B * Q)	0.03695	0.03852	0.08542
	(!D * SCD * SCE * Q)	0.01749	0.01850	0.06295
	(!D * SCD * SCE * Q)	0.01282	0.01382	0.05829
	(!D * !SCE * SET_B * !Q)	0.01775	0.01871	0.06305
	(!D * !SCE * SET_B * !Q)	0.01306	0.01402	0.05837
	(!D * !SCE * !SET_B * Q)	0.04201	0.04360	0.09048
	(!D * !SCE * !SET_B * Q)	0.03692	0.03850	0.08540
	(!D * !SCD * SCE * SET_B * !Q)	0.01775	0.01872	0.06305
	(!D * !SCD * SCE * SET_B * !Q)	0.01307	0.01403	0.05837
	(!D * !SCD * SCE * !SET_B * Q)	0.04212	0.04363	0.09044
	(!D * !SCD * SCE * !SET_B * Q)	0.03704	0.03853	0.08536

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)**	0.01535	0.01738	0.06387
	(D * SCD * SCE * SET_B * !Q)	0.01978	0.02181	0.06829
	(D * SCD * SCE * Q)	0.00846	0.01053	0.05613
	(D * SCD * SCE * Q)	0.01317	0.01525	0.06083
	(D * !SCE * SET_B * !Q)	0.01532	0.01734	0.06383
	(D * !SCE * SET_B * !Q)	0.01975	0.02178	0.06826
	(D * !SCE * Q)	0.00846	0.01053	0.05613
	(D * !SCE * Q)	0.01317	0.01524	0.06083
	(D * !SCD * SCE * SET_B * Q)	0.01748	0.01969	0.06606
	(D * !SCD * SCE * SET_B * Q)	0.02251	0.02472	0.07110
	(D * !SCD * SCE * SET_B * !Q)	0.00872	0.01080	0.05646
	(D * !SCD * SCE * SET_B * !Q)	0.01342	0.01552	0.06116
	(D * !SCD * SCE * !SET_B * Q)	0.01426	0.01648	0.06285
	(D * !SCD * SCE * !SET_B * Q)	0.01935	0.02160	0.06796
	(!D * SCD * SCE * SET_B * !Q)	0.01539	0.01741	0.06390
	(!D * SCD * SCE * SET_B * !Q)	0.01980	0.02183	0.06831
	(!D * SCD * SCE * Q)	0.00846	0.01053	0.05613
	(!D * SCD * SCE * Q)	0.01317	0.01525	0.06083
	(!D * !SCE * SET_B * Q)	0.01746	0.01967	0.06604
	(!D * !SCE * SET_B * Q)	0.02247	0.02467	0.07105
	(!D * !SCE * SET_B * !Q)	0.00871	0.01080	0.05646
	(!D * !SCE * SET_B * !Q)	0.01342	0.01551	0.06116
	(!D * !SCE * !SET_B * Q)	0.01427	0.01648	0.06284
	(!D * !SCE * !SET_B * Q)	0.01939	0.02160	0.06795
	(!D * !SCD * SCE * SET_B * Q)	0.01748	0.01969	0.06607
	(!D * !SCD * SCE * SET_B * Q)	0.02250	0.02471	0.07109
	(!D * !SCD * SCE * SET_B * !Q)	0.00872	0.01080	0.05646
	(!D * !SCD * SCE * SET_B * !Q)	0.01343	0.01552	0.06116
	(!D * !SCD * SCE * !SET_B * Q)	0.01428	0.01649	0.06285
	(!D * !SCD * SCE * !SET_B * Q)	0.01939	0.02161	0.06796

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * SET_B * !Q)**	0.01815	0.02011	0.06610
	(D * SCD * SCE * SET_B * !Q)	0.02238	0.02434	0.07033
	(D * SCD * SCE * Q)	0.00983	0.01190	0.05685
	(D * SCD * SCE * Q)	0.01449	0.01657	0.06151
	(D * !SCE * SET_B * !Q)	0.01812	0.02008	0.06607
	(D * !SCE * SET_B * !Q)	0.02236	0.02431	0.07031
	(D * !SCE * Q)	0.00982	0.01190	0.05684
	(D * !SCE * Q)	0.01449	0.01657	0.06151
	(D * !SCD * SCE * SET_B * Q)	0.02064	0.02289	0.06871
	(D * !SCD * SCE * SET_B * Q)	0.02571	0.02795	0.07378
	(D * !SCD * SCE * SET_B * !Q)	0.00961	0.01162	0.05682
	(D * !SCD * SCE * SET_B * !Q)	0.01429	0.01628	0.06150
	(D * !SCD * SCE * !SET_B * Q)	0.01718	0.01931	0.06512
	(D * !SCD * SCE * !SET_B * Q)	0.02235	0.02449	0.07030
	(!D * SCD * SCE * SET_B * !Q)	0.01818	0.02014	0.06613
	(!D * SCD * SCE * SET_B * !Q)	0.02241	0.02436	0.07036
	(!D * SCD * SCE * Q)	0.00983	0.01190	0.05685
	(!D * SCD * SCE * Q)	0.01449	0.01657	0.06151
	(!D * !SCE * SET_B * Q)	0.02062	0.02286	0.06868
	(!D * !SCE * SET_B * Q)	0.02567	0.02789	0.07373
	(!D * !SCE * SET_B * !Q)	0.00961	0.01161	0.05682
	(!D * !SCE * SET_B * !Q)	0.01429	0.01628	0.06150
	(!D * !SCE * !SET_B * Q)	0.01718	0.01943	0.06510
	(!D * !SCE * !SET_B * Q)	0.02235	0.02460	0.07027
	(!D * !SCD * SCE * SET_B * Q)	0.02064	0.02289	0.06872
	(!D * !SCD * SCE * SET_B * Q)	0.02570	0.02794	0.07377
	(!D * !SCD * SCE * SET_B * !Q)	0.00961	0.01162	0.05682
	(!D * !SCD * SCE * SET_B * !Q)	0.01430	0.01628	0.06150
	(!D * !SCD * SCE * !SET_B * Q)	0.01718	0.01944	0.06511
	(!D * !SCD * SCE * !SET_B * Q)	0.02233	0.02460	0.07028

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * SET_B * !Q)**	0.01768	0.01965	0.06567
	(D * SCD * SCE * SET_B * !Q)	0.02201	0.02398	0.07001
	(D * SCD * SCE * Q)	0.00963	0.01171	0.05670
	(D * SCD * SCE * Q)	0.01430	0.01639	0.06138
	(D * !SCE * SET_B * !Q)	0.01765	0.01962	0.06564
	(D * !SCE * SET_B * !Q)	0.02199	0.02395	0.06998
	(D * !SCE * Q)	0.00962	0.01171	0.05670
	(D * !SCE * Q)	0.01430	0.01639	0.06138
	(D * !SCD * SCE * SET_B * Q)	0.02024	0.02251	0.06836
	(D * !SCD * SCE * SET_B * Q)	0.02525	0.02750	0.07337
	(D * !SCD * SCE * SET_B * !Q)	0.00934	0.01136	0.05660
	(D * !SCD * SCE * SET_B * !Q)	0.01403	0.01604	0.06128
	(D * !SCD * SCE * !SET_B * Q)	0.01681	0.01907	0.06492
	(D * !SCD * SCE * !SET_B * Q)	0.02191	0.02418	0.07002
	(!D * SCD * SCE * SET_B * !Q)	0.01771	0.01969	0.06571
	(!D * SCD * SCE * SET_B * !Q)	0.02204	0.02400	0.07003
	(!D * SCD * SCE * Q)	0.00963	0.01172	0.05671
	(!D * SCD * SCE * Q)	0.01430	0.01640	0.06138
	(!D * !SCE * SET_B * Q)	0.02022	0.02248	0.06834
	(!D * !SCE * SET_B * Q)	0.02521	0.02746	0.07331
	(!D * !SCE * SET_B * !Q)	0.00934	0.01136	0.05660
	(!D * !SCE * SET_B * !Q)	0.01403	0.01604	0.06128
	(!D * !SCE * !SET_B * Q)	0.01681	0.01906	0.06490
	(!D * !SCE * !SET_B * Q)	0.02190	0.02416	0.07000
	(!D * !SCD * SCE * SET_B * Q)	0.02024	0.02250	0.06836
	(!D * !SCD * SCE * SET_B * Q)	0.02524	0.02749	0.07336
	(!D * !SCD * SCE * SET_B * !Q)	0.00935	0.01136	0.05660
	(!D * !SCD * SCE * SET_B * !Q)	0.01403	0.01604	0.06128
	(!D * !SCD * SCE * !SET_B * Q)	0.01681	0.01908	0.06491
	(!D * !SCD * SCE * !SET_B * Q)	0.02189	0.02415	0.07000

SKY130_FD_SC_HS__SDFXBPx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00190	0.00192	0.00408	0.00297	1.21475	1.16456
sky130_fd_sc_hs__sdfxbp_2	0.00188	0.00189	0.00414	0.00297	2.35370	2.35541

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfxbp_1	0.00000	1.17051	1.70309
sky130_fd_sc_hs__sdfxbp_2	0.00000	1.13291	1.66834

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)	0.19560	0.66676	6.06387
sky130_fd_sc_hs__sdfxbp_2	CLK->Q (RR)	0.18949	0.56233	5.95752

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxbp_1	CLK->Q (RF)	0.20862	0.45568	2.23638
sky130_fd_sc_hs__sdfxbp_2	CLK->Q (RF)	0.22252	0.43984	2.17557

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)	0.24764	0.72204	6.09011
sky130_fd_sc_hs__sdfxbp_2	CLK->Q_N (RR)	0.28721	0.65337	6.09750

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)	0.22787	0.45458	2.13579
sky130_fd_sc_hs__sdfxbp_2	CLK->Q_N (RF)	0.24331	0.43907	2.27607

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)	-0.05859	-0.13046	-0.73367
	setup	CLK (R)	0.12061	0.16909	0.79245
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.05743	-0.13050	-0.74397
	setup	CLK (R)	0.12054	0.17109	0.80201

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)	-0.08625	-0.21265	-2.82621
	setup	CLK (R)	0.18069	0.29935	3.01173
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.08521	-0.21358	-2.84611
	setup	CLK (R)	0.18532	0.30319	3.02841

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)	-0.05859	-0.13046	-0.73367
	setup	CLK (R)	0.12061	0.16909	0.79245
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.05743	-0.13050	-0.74397
	setup	CLK (R)	0.12054	0.17109	0.80201

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)	-0.08625	-0.21265	-2.82621
	setup	CLK (R)	0.18069	0.29935	3.01173
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.08521	-0.21358	-2.84611
	setup	CLK (R)	0.18532	0.30319	3.02841

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)	-0.07337	-0.14087	-0.75416
	setup	CLK (R)	0.14772	0.18797	0.81229
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.07406	-0.14166	-0.75280
	setup	CLK (R)	0.14220	0.18912	0.80148

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)	-0.11823	-0.24643	-3.04715
	setup	CLK (R)	0.23682	0.34500	3.16133
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.11705	-0.24707	-3.08721
	setup	CLK (R)	0.23990	0.34718	3.19031

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)	-0.07337	-0.14087	-0.75416
	hold	CLK (R)	-0.07999	-0.14757	-0.75553
	setup	CLK (R)	0.14417	0.18378	0.80993
	setup	CLK (R)	0.14772	0.18797	0.81229
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.07406	-0.14166	-0.75280
	hold	CLK (R)	-0.07983	-0.14798	-0.75499
	setup	CLK (R)	0.14220	0.18304	0.80148
	setup	CLK (R)	0.14212	0.18912	0.80123

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)	-0.12737	-0.25813	-3.04730
	hold	CLK (R)	-0.11823	-0.24643	-3.04715
	setup	CLK (R)	0.23682	0.34500	3.16133
	setup	CLK (R)	0.23006	0.34359	3.16039
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.12730	-0.25813	-3.08963
	hold	CLK (R)	-0.11705	-0.24707	-3.08721
	setup	CLK (R)	0.23990	0.34718	3.18841
	setup	CLK (R)	0.23140	0.34560	3.19031

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)	-0.06868	-0.14343	-0.37116
	setup	CLK (R)	0.23119	0.24672	0.87855
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.06529	-0.14344	-0.38620
	setup	CLK (R)	0.23493	0.25135	0.86546

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)	-0.10347	-0.21389	-2.69444
	setup	CLK (R)	0.19545	0.30000	2.94753
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.10410	-0.21565	-2.70750
	setup	CLK (R)	0.19929	0.30562	2.97943

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)	-0.12328	-0.16258	-0.37116
	hold	CLK (R)	-0.06868	-0.14343	-0.80077
	setup	CLK (R)	0.23119	0.24672	0.42788
	setup	CLK (R)	0.13482	0.18660	0.87855
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.12245	-0.16295	-0.38620
	hold	CLK (R)	-0.06529	-0.14344	-0.80193
	setup	CLK (R)	0.23493	0.25135	0.44513
	setup	CLK (R)	0.13394	0.18530	0.86546

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)	-0.11352	-0.24167	-2.69444
	hold	CLK (R)	-0.10347	-0.21389	-2.76167
	setup	CLK (R)	0.17928	0.27375	2.71517
	setup	CLK (R)	0.19545	0.30000	2.94753
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.11867	-0.24466	-2.70750
	hold	CLK (R)	-0.10410	-0.21565	-2.80636
	setup	CLK (R)	0.17951	0.27846	2.71942
	setup	CLK (R)	0.19929	0.30562	2.97943

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 ()	0.09091	0.64453	16.50020
	min_pulse_width	CLK ()	0.07157	0.64453	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.09091	0.64453	16.50020
	min_pulse_width	CLK ()	0.07399	0.64453	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 ()	0.16102	0.64453	16.50020
	min_pulse_width	CLK ()	0.19486	0.64453	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.16344	0.64453	16.50020
	min_pulse_width	CLK ()	0.19728	0.64453	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	0.01566	0.01665	0.04117
	CLK	0.01330	0.01424	0.03882
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01893	0.02029	0.04523
	CLK	0.01659	0.01790	0.04280

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.01612	0.01722	0.04088
	CLK	0.01375	0.01480	0.03852
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01935	0.02068	0.04467
	CLK	0.01700	0.01830	0.04231

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.01614	0.01717	0.04171
	CLK	0.01377	0.01482	0.03940
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01939	0.02072	0.04560
	CLK	0.01704	0.01831	0.04328

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.01565	0.01662	0.04050
	CLK	0.01328	0.01422	0.03817
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01892	0.02024	0.04416
	CLK	0.01657	0.01787	0.04180

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	0.00140	0.00142	0.00140
	(CLK * SCD * SCE)	-0.00062	-0.00063	-0.00061
	(CLK * !SCE)	0.00458	0.00530	0.02885
	(CLK * !SCE)	0.00106	0.00177	0.02532
	(CLK * !SCD * SCE)	0.00079	0.00080	0.00078
	(CLK * !SCD * SCE)	-0.00137	-0.00140	-0.00142
	(!CLK * SCD * SCE)	0.00139	0.00141	0.00140
	(!CLK * SCD * SCE)	-0.00062	-0.00063	-0.00062
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01067	0.01145	0.03633
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00715	0.00792	0.03282
	(!CLK * !SCD * SCE)	0.00079	0.00080	0.00078
	(!CLK * !SCD * SCE)	-0.00137	-0.00140	-0.00142
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	0.00141	0.00144	0.00142
	(CLK * SCD * SCE)	-0.00060	-0.00061	-0.00060
	(CLK * !SCE)	0.00448	0.00520	0.02874
	(CLK * !SCE)	0.00100	0.00172	0.02524
	(CLK * !SCD * SCE)	0.00082	0.00083	0.00081
	(CLK * !SCD * SCE)	-0.00136	-0.00137	-0.00139
	(!CLK * SCD * SCE)	0.00141	0.00142	0.00141
	(!CLK * SCD * SCE)	-0.00061	-0.00061	-0.00061
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01073	0.01137	0.03669
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00724	0.00788	0.03320
	(!CLK * !SCD * SCE)	0.00083	0.00083	0.00081
	(!CLK * !SCD * SCE)	-0.00135	-0.00137	-0.00139

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	-0.00133	-0.00134	-0.00137
	(CLK * SCD * SCE)	0.00068	0.00067	0.00065
	(CLK * !SCE)	0.00096	0.00208	0.02567
	(CLK * !SCE)	0.00449	0.00562	0.02919
	(CLK * !SCD * SCE)	-0.00075	-0.00076	-0.00075
	(CLK * !SCD * SCE)	0.00143	0.00144	0.00143
	(!CLK * SCD * SCE)	-0.00133	-0.00135	-0.00138
	(!CLK * SCD * SCE)	0.00067	0.00067	0.00065
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00797	0.00913	0.03511
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01149	0.01266	0.03864
	(!CLK * !SCD * SCE)	-0.00074	-0.00076	-0.00075
	(!CLK * !SCD * SCE)	0.00143	0.00144	0.00143
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	-0.00134	-0.00136	-0.00139
	(CLK * SCD * SCE)	0.00066	0.00066	0.00064
	(CLK * !SCE)	0.00108	0.00218	0.02578
	(CLK * !SCE)	0.00458	0.00568	0.02927
	(CLK * !SCD * SCE)	-0.00078	-0.00079	-0.00078
	(CLK * !SCD * SCE)	0.00140	0.00141	0.00140
	(!CLK * SCD * SCE)	-0.00135	-0.00136	-0.00139
	(!CLK * SCD * SCE)	0.00066	0.00066	0.00063
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00799	0.00915	0.03510
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01148	0.01264	0.03859
	(!CLK * !SCD * SCE)	-0.00077	-0.00079	-0.00078
	(!CLK * !SCD * SCE)	0.00140	0.00142	0.00141

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.00642	0.00670	0.02390
	(CLK * D * SCE)	0.00187	0.00215	0.01936
	(CLK * !D * SCE)	0.00730	0.00753	0.02434
	(CLK * !D * SCE)	0.00256	0.00278	0.01960
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01249	0.01283	0.03135
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00795	0.00828	0.02680
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01337	0.01367	0.03204
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00864	0.00892	0.02730
	!SCE	0.00135	0.00117	0.00115
	!SCE	-0.00116	-0.00136	-0.00137
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.00629	0.00659	0.02383
	(CLK * D * SCE)	0.00181	0.00210	0.01935
	(CLK * !D * SCE)	0.00717	0.00742	0.02427
	(CLK * !D * SCE)	0.00249	0.00273	0.01959
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01252	0.01288	0.03142
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00804	0.00838	0.02694
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01340	0.01372	0.03210
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00873	0.00904	0.02743
	!SCE	0.00131	0.00113	0.00111
	!SCE	-0.00118	-0.00137	-0.00139

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.00230	0.00257	0.01963
	(CLK * D * SCE)	0.00686	0.00713	0.02416
	(CLK * !D * SCE)	0.00184	0.00216	0.01945
	(CLK * !D * SCE)	0.00658	0.00690	0.02418
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00940	0.00991	0.02897
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01395	0.01448	0.03350
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00906	0.00963	0.02882
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01379	0.01437	0.03354
	!SCE	-0.00109	-0.00112	-0.00112
	!SCE	0.00141	0.00142	0.00141
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.00241	0.00269	0.01978
	(CLK * D * SCE)	0.00689	0.00719	0.02426
	(CLK * !D * SCE)	0.00195	0.00228	0.01961
	(CLK * !D * SCE)	0.00661	0.00696	0.02427
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00941	0.00986	0.02898
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01389	0.01436	0.03345
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00904	0.00950	0.02884
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01370	0.01417	0.03350
	!SCE	-0.00105	-0.00108	-0.00108
	!SCE	0.00142	0.00143	0.00143

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)**	0.00590	0.00677	0.03691
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00047	0.00038	0.03052
	(CLK * D * !SCD)	0.00873	0.00962	0.04068
	(CLK * D * !SCD)	0.00418	0.00504	0.03608
	(CLK * !D * SCD)	0.01035	0.01188	0.06017
	(CLK * !D * SCD)	0.00236	0.00390	0.05219
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00589	0.00676	0.03690
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00048	0.00038	0.03051
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01564	0.01667	0.04786
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01111	0.01210	0.04325
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01643	0.01802	0.06804
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00844	0.01001	0.06005
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00568	0.00670	0.03671
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00030	0.00069	0.03073

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00613	0.00699	0.03707
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00038	0.00044	0.03054
	(CLK * D * !SCD)	0.00905	0.00992	0.04095
	(CLK * D * !SCD)	0.00434	0.00517	0.03617
	(CLK * !D * SCD)	0.01051	0.01203	0.06026
	(CLK * !D * SCD)	0.00242	0.00391	0.05219
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00612	0.00699	0.03707
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00038	0.00044	0.03054
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01585	0.01683	0.04796
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01114	0.01209	0.04318
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01675	0.01831	0.06827
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00866	0.01020	0.06018
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00589	0.00688	0.03685
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00022	0.00073	0.03074

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)**	-0.00054	0.00112	0.03129
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00584	0.00752	0.03768
	(CLK * D * !SCD)	0.00417	0.00558	0.03624
	(CLK * D * !SCD)	0.00875	0.01017	0.04066
	(CLK * !D * SCD)	0.00130	0.00312	0.05108
	(CLK * !D * SCD)	0.00928	0.01112	0.05908
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00054	0.00112	0.03128
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00584	0.00751	0.03768
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01022	0.01172	0.04205
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01480	0.01629	0.04647
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00831	0.01016	0.05954
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01629	0.01817	0.06754
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00002	0.00164	0.03159
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00600	0.00766	0.03759

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00059	0.00104	0.03118
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00594	0.00758	0.03771
	(CLK * D * !SCD)	0.00405	0.00543	0.03607
	(CLK * D * !SCD)	0.00880	0.01020	0.04067
	(CLK * !D * SCD)	0.00139	0.00318	0.05111
	(CLK * !D * SCD)	0.00947	0.01128	0.05921
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00059	0.00105	0.03118
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00594	0.00757	0.03771
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01025	0.01173	0.04208
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01500	0.01647	0.04666
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00830	0.01013	0.05940
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01638	0.01822	0.06749
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00000	0.00158	0.03148
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00612	0.00772	0.03762

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)	0.01443	0.01570	0.06161
	(D * SCD * SCE * Q * !Q_N)	0.00970	0.01099	0.05689
	(D * !SCE * Q * !Q_N)	0.01440	0.01570	0.06159
	(D * !SCE * Q * !Q_N)	0.00968	0.01098	0.05686
	(D * !SCD * SCE * !Q * Q_N)	0.01420	0.01549	0.06144
	(D * !SCD * SCE * !Q * Q_N)	0.00948	0.01075	0.05671
	(!D * SCD * SCE * Q * !Q_N)	0.01443	0.01570	0.06161
	(!D * SCD * SCE * Q * !Q_N)	0.00970	0.01099	0.05689
	(!D * !SCE * !Q * Q_N)	0.01420	0.01548	0.06140
	(!D * !SCE * !Q * Q_N)	0.00948	0.01076	0.05668
	(!D * !SCD * SCE * !Q * Q_N)	0.01421	0.01550	0.06142
	(!D * !SCD * SCE * !Q * Q_N)	0.00948	0.01075	0.05670
sky130_fd_sc_hs__sdfxbp_2	(D * SCD * SCE * Q * !Q_N)	0.01473	0.01603	0.06203
	(D * SCD * SCE * Q * !Q_N)	0.01000	0.01129	0.05731
	(D * !SCE * Q * !Q_N)	0.01471	0.01603	0.06201
	(D * !SCE * Q * !Q_N)	0.00999	0.01129	0.05729
	(D * !SCD * SCE * !Q * Q_N)	0.01453	0.01583	0.06169
	(D * !SCD * SCE * !Q * Q_N)	0.00981	0.01109	0.05697
	(!D * SCD * SCE * Q * !Q_N)	0.01473	0.01604	0.06203
	(!D * SCD * SCE * Q * !Q_N)	0.01000	0.01129	0.05731
	(!D * !SCE * !Q * Q_N)	0.01453	0.01583	0.06180
	(!D * !SCE * !Q * Q_N)	0.00980	0.01109	0.05709
	(!D * !SCD * SCE * !Q * Q_N)	0.01453	0.01583	0.06169
	(!D * !SCD * SCE * !Q * Q_N)	0.00981	0.01109	0.05697

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)**	0.00813	0.01007	0.05620
	(D * SCD * SCE * Q * !Q_N)	0.01285	0.01481	0.06092
	(D * SCD * SCE * !Q * Q_N)	0.01389	0.01577	0.06285
	(D * SCD * SCE * !Q * Q_N)	0.01860	0.02049	0.06756
	(D * !SCE * Q * !Q_N)	0.00813	0.01007	0.05618
	(D * !SCE * Q * !Q_N)	0.01284	0.01481	0.06090
	(D * !SCE * !Q * Q_N)	0.01384	0.01573	0.06318
	(D * !SCE * !Q * Q_N)	0.01856	0.02046	0.06790
	(D * !SCD * SCE * Q * !Q_N)	0.01644	0.01844	0.06570
	(D * !SCD * SCE * Q * !Q_N)	0.02118	0.02317	0.07044
	(D * !SCD * SCE * !Q * Q_N)	0.00819	0.01014	0.05638
	(D * !SCD * SCE * !Q * Q_N)	0.01290	0.01488	0.06110
	(!D * SCD * SCE * Q * !Q_N)	0.00813	0.01007	0.05620
	(!D * SCD * SCE * Q * !Q_N)	0.01285	0.01481	0.06092
	(!D * SCD * SCE * !Q * Q_N)	0.01392	0.01584	0.06288
	(!D * SCD * SCE * !Q * Q_N)	0.01861	0.02055	0.06758
	(!D * !SCE * Q * !Q_N)	0.01638	0.01838	0.06544
	(!D * !SCE * Q * !Q_N)	0.02109	0.02311	0.07016
	(!D * !SCE * !Q * Q_N)	0.00818	0.01016	0.05633
	(!D * !SCE * !Q * Q_N)	0.01289	0.01490	0.06105
	(!D * !SCD * SCE * Q * !Q_N)	0.01645	0.01844	0.06568
	(!D * !SCD * SCE * Q * !Q_N)	0.02117	0.02317	0.07041
	(!D * !SCD * SCE * !Q * Q_N)	0.00819	0.01014	0.05638
	(!D * !SCD * SCE * !Q * Q_N)	0.01290	0.01487	0.06109

sky130_fd_sc_hs__sdfxbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.00823	0.01021	0.05641
	(D * SCD * SCE * Q * !Q_N)	0.01296	0.01494	0.06113
	(D * SCD * SCE * !Q * Q_N)	0.01413	0.01607	0.06330
	(D * SCD * SCE * !Q * Q_N)	0.01886	0.02079	0.06802
	(D * !SCE * Q * !Q_N)	0.00823	0.01021	0.05639
	(D * !SCE * Q * !Q_N)	0.01296	0.01494	0.06111
	(D * !SCE * !Q * Q_N)	0.01409	0.01600	0.06348
	(D * !SCE * !Q * Q_N)	0.01882	0.02073	0.06821
	(D * !SCD * SCE * Q * !Q_N)	0.01643	0.01847	0.06579
	(D * !SCD * SCE * Q * !Q_N)	0.02118	0.02321	0.07053
	(D * !SCD * SCE * !Q * Q_N)	0.00828	0.01028	0.05657
	(D * !SCD * SCE * !Q * Q_N)	0.01300	0.01501	0.06128
	(!D * SCD * SCE * Q * !Q_N)	0.00823	0.01021	0.05641
	(!D * SCD * SCE * Q * !Q_N)	0.01296	0.01494	0.06113
	(!D * SCD * SCE * !Q * Q_N)	0.01416	0.01607	0.06334
	(!D * SCD * SCE * !Q * Q_N)	0.01887	0.02078	0.06805
	(!D * !SCE * Q * !Q_N)	0.01636	0.01841	0.06551
	(!D * !SCE * Q * !Q_N)	0.02109	0.02314	0.07022
	(!D * !SCE * !Q * Q_N)	0.00827	0.01027	0.05652
	(!D * !SCE * !Q * Q_N)	0.01299	0.01500	0.06124
	(!D * !SCD * SCE * Q * !Q_N)	0.01643	0.01847	0.06577
	(!D * !SCD * SCE * Q * !Q_N)	0.02117	0.02321	0.07050
	(!D * !SCD * SCE * !Q * Q_N)	0.00828	0.01025	0.05657
	(!D * !SCD * SCE * !Q * Q_N)	0.01301	0.01498	0.06128

SKY130_FD_SC_HS__SDFXTPx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00192	0.00202	0.00423	0.00295	1.20108
sky130_fd_sc_hs__sdfxtp_2	0.00195	0.00198	0.00409	0.00298	2.30974
sky130_fd_sc_hs__sdfxtp_4	0.00193	0.00196	0.00422	0.00295	4.38163

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfxtp_1	0.00000	1.02494	1.74397
sky130_fd_sc_hs__sdfxtp_2	0.00000	0.94518	1.50436
sky130_fd_sc_hs__sdfxtp_4	0.00000	1.37483	2.20993

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)**	0.18009	0.65238	6.04257
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RR)**	0.18336	0.55621	5.91419
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RR)**	0.21867	0.52248	6.03840

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxtp_1	**CLK->Q (RF)**	0.19864	0.43682	2.17749
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RF)**	0.20578	0.41208	2.13125
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RF)**	0.20746	0.38232	2.16479

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)	-0.05882	-0.13384	-0.74093
	setup	CLK (R)	0.12256	0.17109	0.79722
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.06009	-0.13342	-0.74841
	setup	CLK (R)	0.12825	0.17728	0.80675
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.05631	-0.13046	-0.73674
	setup	CLK (R)	0.11734	0.16709	0.79056

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)	-0.08617	-0.21556	-2.84037
	setup	CLK (R)	0.18480	0.30798	3.02330
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.08965	-0.21798	-2.85352
	setup	CLK (R)	0.19644	0.31612	3.04588
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.09149	-0.21662	-2.83587
	setup	CLK (R)	0.18809	0.30500	3.01935

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)	-0.05882	-0.13384	-0.74093
	setup	CLK (R)	0.12256	0.17109	0.79722
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.06009	-0.13342	-0.74841
	setup	CLK (R)	0.12825	0.17728	0.80675
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.05631	-0.13046	-0.73674
	setup	CLK (R)	0.11734	0.16709	0.79056

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)	-0.08617	-0.21556	-2.84037
	setup	CLK (R)	0.18480	0.30798	3.02330
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.08965	-0.21798	-2.85352
	setup	CLK (R)	0.19644	0.31612	3.04588
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.09149	-0.21662	-2.83587
	setup	CLK (R)	0.18809	0.30500	3.01935

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)	-0.07710	-0.14343	-0.76242
	setup	CLK (R)	0.14851	0.18996	0.81936
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.07869	-0.14543	-0.76706
	setup	CLK (R)	0.15530	0.19445	0.82919
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.07689	-0.14087	-0.75156
	setup	CLK (R)	0.14158	0.18591	0.81484

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)	-0.12141	-0.25072	-3.05608
	setup	CLK (R)	0.24516	0.35500	3.17171
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.12388	-0.25389	-3.06838
	setup	CLK (R)	0.25384	0.35908	3.18954
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.12657	-0.25233	-3.10208
	setup	CLK (R)	0.24240	0.35000	3.16411

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)	-0.07710	-0.14343	-0.76242
	hold	CLK (R)	-0.08052	-0.14807	-0.76585
	setup	CLK (R)	0.14440	0.18526	0.81702
	setup	CLK (R)	0.14851	0.18996	0.81936
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.07869	-0.14543	-0.76706
	hold	CLK (R)	-0.08030	-0.15175	-0.76848
	setup	CLK (R)	0.15277	0.19007	0.82542
	setup	CLK (R)	0.15530	0.19445	0.82919
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.07689	-0.14087	-0.75156
	hold	CLK (R)	-0.08076	-0.14757	-0.75359
	setup	CLK (R)	0.13961	0.18355	0.81327
	setup	CLK (R)	0.14158	0.18591	0.81484

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)	-0.12950	-0.26217	-3.05977
	hold	CLK (R)	-0.12141	-0.25072	-3.05608
	setup	CLK (R)	0.24516	0.35500	3.16846
	setup	CLK (R)	0.23581	0.34641	3.17171
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.13312	-0.26615	-3.07429
	hold	CLK (R)	-0.12388	-0.25389	-3.06838
	setup	CLK (R)	0.25384	0.35908	3.18755
	setup	CLK (R)	0.24611	0.35489	3.18954
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.13784	-0.26235	-3.10208
	hold	CLK (R)	-0.12657	-0.25233	-3.11309
	setup	CLK (R)	0.24240	0.35000	3.16411
	setup	CLK (R)	0.23548	0.34444	3.16173

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)	-0.06783	-0.14543	-0.38068
	setup	CLK (R)	0.23898	0.25512	0.88494
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.06956	-0.14757	-0.37494
	setup	CLK (R)	0.24776	0.26165	0.89206
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.06532	-0.14343	-0.38603
	setup	CLK (R)	0.23828	0.25445	0.88604

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)	-0.10546	-0.21556	-2.70804
	setup	CLK (R)	0.20254	0.31000	2.95630
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.10681	-0.22121	-2.70262
	setup	CLK (R)	0.21320	0.31403	2.97872
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.11119	-0.21649	-2.70284
	setup	CLK (R)	0.20366	0.30600	2.94990

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)	-0.12651	-0.16678	-0.38068
	hold	CLK (R)	-0.06783	-0.14543	-0.81246
	setup	CLK (R)	0.23898	0.25512	0.44211
	setup	CLK (R)	0.13620	0.18879	0.88494
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.13019	-0.16983	-0.37494
	hold	CLK (R)	-0.06956	-0.14757	-0.81347
	setup	CLK (R)	0.24776	0.26165	0.43788
	setup	CLK (R)	0.14247	0.19371	0.89206
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.13123	-0.16883	-0.38603
	hold	CLK (R)	-0.06532	-0.14343	-0.80114
	setup	CLK (R)	0.23828	0.25445	0.44105
	setup	CLK (R)	0.13052	0.18494	0.88604

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)	-0.11689	-0.24808	-2.70804
	hold	CLK (R)	-0.10546	-0.21556	-2.76314
	setup	CLK (R)	0.18459	0.28225	2.72260
	setup	CLK (R)	0.20254	0.31000	2.95630
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.11749	-0.24562	-2.70262
	hold	CLK (R)	-0.10681	-0.22121	-2.77775
	setup	CLK (R)	0.18732	0.28000	2.71363
	setup	CLK (R)	0.21320	0.31403	2.97872
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.11900	-0.24408	-2.70284
	hold	CLK (R)	-0.11119	-0.21649	-2.75348
	setup	CLK (R)	0.17866	0.27775	2.71028
	setup	CLK (R)	0.20366	0.30600	2.94990

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 ()	0.08366	0.64453	16.50020
	min_pulse_width	CLK ()	0.06915	0.64453	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.08849	0.64453	16.50020
	min_pulse_width	CLK ()	0.07157	0.64453	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.11509	0.64453	16.50020
	min_pulse_width	CLK ()	0.07399	0.64453	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 ()	0.16102	0.64453	16.50020
	min_pulse_width	CLK ()	0.19486	0.64453	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.17069	0.64453	16.50020
	min_pulse_width	CLK ()	0.20212	0.64453	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.15618	0.64453	16.50020
	min_pulse_width	CLK ()	0.19728	0.64453	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	0.02423	0.02593	0.07464
	CLK	0.01955	0.02126	0.07044
sky130_fd_sc_hs__sdfxtp_2	CLK	0.02786	0.02984	0.07836
	CLK	0.02316	0.02513	0.07466
sky130_fd_sc_hs__sdfxtp_4	CLK	0.03506	0.03721	0.08601
	CLK	0.03036	0.03262	0.08315

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	CLK	0.02548	0.02740	0.07536
	CLK	0.02080	0.02266	0.07043
sky130_fd_sc_hs__sdfxtp_2	CLK	0.02893	0.03108	0.07901
	CLK	0.02423	0.02638	0.07391
sky130_fd_sc_hs__sdfxtp_4	CLK	0.03633	0.03912	0.08776
	CLK	0.03163	0.03434	0.08248

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	0.00143	0.00145	0.00144
	(CLK * SCD * SCE)	-0.00061	-0.00062	-0.00061
	(CLK * !SCE)	0.00459	0.00531	0.02880
	(CLK * !SCE)	0.00098	0.00168	0.02519
	(CLK * !SCD * SCE)	0.00082	0.00083	0.00081
	(CLK * !SCD * SCE)	-0.00137	-0.00140	-0.00142
	(!CLK * SCD * SCE)	0.00143	0.00145	0.00143
	(!CLK * SCD * SCE)	-0.00061	-0.00063	-0.00061
	(!CLK * !SCE)	0.01090	0.01154	0.03686
	(!CLK * !SCE)	0.00729	0.00792	0.03325
	(!CLK * !SCD * SCE)	0.00083	0.00083	0.00082
	(!CLK * !SCD * SCE)	-0.00137	-0.00139	-0.00142
sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	0.00147	0.00150	0.00148
	(CLK * SCD * SCE)	-0.00061	-0.00062	-0.00061
	(CLK * !SCE)	0.00496	0.00564	0.02902
	(CLK * !SCE)	0.00128	0.00194	0.02534
	(CLK * !SCD * SCE)	0.00086	0.00086	0.00084
	(CLK * !SCD * SCE)	-0.00140	-0.00142	-0.00144
	(!CLK * SCD * SCE)	0.00147	0.00150	0.00148
	(!CLK * SCD * SCE)	-0.00061	-0.00063	-0.00062
	(!CLK * !SCE)	0.01177	0.01238	0.03752
	(!CLK * !SCE)	0.00810	0.00870	0.03383
	(!CLK * !SCD * SCE)	0.00086	0.00086	0.00085
	(!CLK * !SCD * SCE)	-0.00140	-0.00141	-0.00143

sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	0.00146	0.00148	0.00146
	(CLK * SCD * SCE)	-0.00060	-0.00062	-0.00061
	(CLK * !SCE)	0.00460	0.00532	0.02884
	(CLK * !SCE)	0.00100	0.00171	0.02523
	(CLK * !SCD * SCE)	0.00085	0.00086	0.00084
	(CLK * !SCD * SCE)	-0.00136	-0.00139	-0.00141
	(!CLK * SCD * SCE)	0.00146	0.00148	0.00146
	(!CLK * SCD * SCE)	-0.00060	-0.00062	-0.00060
	(!CLK * !SCE)	0.01094	0.01157	0.03653
	(!CLK * !SCE)	0.00734	0.00796	0.03293
	(!CLK * !SCD * SCE)	0.00086	0.00087	0.00085
	(!CLK * !SCD * SCE)	-0.00135	-0.00138	-0.00140

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	-0.00137	-0.00139	-0.00142
	(CLK * SCD * SCE)	0.00067	0.00066	0.00064
	(CLK * !SCE)	0.00105	0.00217	0.02571
	(CLK * !SCE)	0.00467	0.00579	0.02932
	(CLK * !SCD * SCE)	-0.00078	-0.00080	-0.00079
	(CLK * !SCD * SCE)	0.00142	0.00144	0.00143
	(!CLK * SCD * SCE)	-0.00137	-0.00139	-0.00142
	(!CLK * SCD * SCE)	0.00067	0.00066	0.00064
	(!CLK * !SCE)	0.00779	0.00895	0.03493
	(!CLK * !SCE)	0.01140	0.01257	0.03854
	(!CLK * !SCD * SCE)	-0.00078	-0.00079	-0.00078
	(!CLK * !SCD * SCE)	0.00143	0.00144	0.00143

sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	-0.00141	-0.00143	-0.00146
	(CLK * SCD * SCE)	0.00067	0.00067	0.00064
	(CLK * !SCE)	0.00112	0.00221	0.02566
	(CLK * !SCE)	0.00480	0.00588	0.02933
	(CLK * !SCD * SCE)	-0.00081	-0.00083	-0.00082
	(CLK * !SCD * SCE)	0.00144	0.00145	0.00144
	(!CLK * SCD * SCE)	-0.00142	-0.00143	-0.00146
	(!CLK * SCD * SCE)	0.00067	0.00066	0.00064
	(!CLK * !SCE)	0.00799	0.00909	0.03492
	(!CLK * !SCE)	0.01166	0.01278	0.03860
	(!CLK * !SCD * SCE)	-0.00081	-0.00082	-0.00081
	(!CLK * !SCD * SCE)	0.00144	0.00146	0.00145
sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	-0.00139	-0.00141	-0.00144
	(CLK * SCD * SCE)	0.00067	0.00066	0.00064
	(CLK * !SCE)	0.00101	0.00213	0.02569
	(CLK * !SCE)	0.00462	0.00574	0.02929
	(CLK * !SCD * SCE)	-0.00081	-0.00082	-0.00081
	(CLK * !SCD * SCE)	0.00141	0.00143	0.00142
	(!CLK * SCD * SCE)	-0.00139	-0.00141	-0.00144
	(!CLK * SCD * SCE)	0.00067	0.00066	0.00064
	(!CLK * !SCE)	0.00817	0.00931	0.03522
	(!CLK * !SCE)	0.01177	0.01292	0.03883
	(!CLK * !SCD * SCE)	-0.00080	-0.00081	-0.00081
	(!CLK * !SCD * SCE)	0.00142	0.00144	0.00143

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

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

sky130_fd_sc_hs__sdfxtp_1	**(CLK * D * SCE)**	0.00654	0.00681	0.02396
	(CLK * D * SCE)	0.00184	0.00209	0.01925
	(CLK * !D * SCE)	0.00742	0.00762	0.02439
	(CLK * !D * SCE)	0.00253	0.00273	0.01950
	(!CLK * D * SCE)	0.01283	0.01317	0.03164
	(!CLK * D * SCE)	0.00813	0.00845	0.02694
	(!CLK * !D * SCE)	0.01372	0.01403	0.03231
	(!CLK * !D * SCE)	0.00883	0.00913	0.02742
	!SCE	0.00137	0.00119	0.00117
	!SCE	-0.00124	-0.00143	-0.00145
sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCE)**	0.00671	0.00697	0.02408
	(CLK * D * SCE)	0.00205	0.00230	0.01941
	(CLK * !D * SCE)	0.00759	0.00779	0.02451
	(CLK * !D * SCE)	0.00274	0.00293	0.01966
	(!CLK * D * SCE)	0.01352	0.01384	0.03222
	(!CLK * D * SCE)	0.00886	0.00916	0.02756
	(!CLK * !D * SCE)	0.01440	0.01471	0.03289
	(!CLK * !D * SCE)	0.00955	0.00984	0.02804
	!SCE	0.00139	0.00121	0.00118
	!SCE	-0.00117	-0.00136	-0.00138
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCE)**	0.00649	0.00677	0.02396
	(CLK * D * SCE)	0.00188	0.00215	0.01935
	(CLK * !D * SCE)	0.00737	0.00759	0.02439
	(CLK * !D * SCE)	0.00257	0.00279	0.01960
	(!CLK * D * SCE)	0.01282	0.01315	0.03163
	(!CLK * D * SCE)	0.00821	0.00852	0.02702
	(!CLK * !D * SCE)	0.01370	0.01397	0.03230
	(!CLK * !D * SCE)	0.00891	0.00916	0.02750
	!SCE	0.00135	0.00116	0.00114
	!SCE	-0.00121	-0.00140	-0.00141

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	(CLK * D * SCE)	0.00232	0.00256	0.01957
	(CLK * D * SCE)	0.00702	0.00727	0.02426
	(CLK * !D * SCE)	0.00187	0.00215	0.01939
	(CLK * !D * SCE)	0.00674	0.00705	0.02427
	(!CLK * D * SCE)	0.00919	0.00960	0.02867
	(!CLK * D * SCE)	0.01391	0.01431	0.03336
	(!CLK * !D * SCE)	0.00879	0.00921	0.02854
	(!CLK * !D * SCE)	0.01368	0.01410	0.03342
	!SCE	-0.00112	-0.00115	-0.00115
	!SCE	0.00147	0.00149	0.00148
sky130_fd_sc_hs__sdfxtp_2	(CLK * D * SCE)	0.00248	0.00273	0.01970
	(CLK * D * SCE)	0.00715	0.00741	0.02434
	(CLK * !D * SCE)	0.00202	0.00232	0.01950
	(CLK * !D * SCE)	0.00687	0.00718	0.02434
	(!CLK * D * SCE)	0.00943	0.00976	0.02881
	(!CLK * D * SCE)	0.01411	0.01442	0.03347
	(!CLK * !D * SCE)	0.00908	0.00944	0.02894
	(!CLK * !D * SCE)	0.01393	0.01430	0.03378
	!SCE	-0.00113	-0.00116	-0.00116
	!SCE	0.00140	0.00142	0.00141

sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCE)**	0.00230	0.00256	0.01961
	(CLK * D * SCE)	0.00692	0.00718	0.02421
	(CLK * !D * SCE)	0.00184	0.00215	0.01943
	(CLK * !D * SCE)	0.00664	0.00696	0.02422
	(!CLK * D * SCE)	0.00954	0.01000	0.02902
	(!CLK * D * SCE)	0.01416	0.01462	0.03362
	(!CLK * !D * SCE)	0.00920	0.00960	0.02917
	(!CLK * !D * SCE)	0.01400	0.01440	0.03395
	!SCE	-0.00109	-0.00112	-0.00112
	!SCE	0.00144	0.00145	0.00145

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)**	0.00622	0.00714	0.03713
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00049	0.00040	0.03039
	(CLK * D * !SCD)	0.00915	0.00996	0.04099
	(CLK * D * !SCD)	0.00432	0.00512	0.03610
	(CLK * !D * SCD)	0.01070	0.01220	0.06035
	(CLK * !D * SCD)	0.00231	0.00378	0.05198
	(!CLK * D * SCD)	0.00622	0.00715	0.03713
	(!CLK * D * SCD)	-0.00048	0.00038	0.03039
	(!CLK * D * !SCD)	0.01576	0.01672	0.04784
	(!CLK * D * !SCD)	0.01095	0.01189	0.04295
	(!CLK * !D * SCD)	0.01700	0.01853	0.06848
	(!CLK * !D * SCD)	0.00861	0.01014	0.06010
	(!CLK * !D * !SCD)	0.00600	0.00698	0.03694
	(!CLK * !D * !SCD)	-0.00031	0.00062	0.03060

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00599	0.00684	0.03696
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00048	0.00036	0.03047
	(CLK * D * !SCD)	0.00903	0.00992	0.04093
	(CLK * D * !SCD)	0.00447	0.00532	0.03633
	(CLK * !D * SCD)	0.01075	0.01226	0.06041
	(CLK * !D * SCD)	0.00259	0.00408	0.05225
	(!CLK * D * SCD)	0.00598	0.00683	0.03696
	(!CLK * D * SCD)	-0.00048	0.00036	0.03047
	(!CLK * D * !SCD)	0.01577	0.01680	0.04794
	(!CLK * D * !SCD)	0.01124	0.01222	0.04332
	(!CLK * !D * SCD)	0.01756	0.01913	0.06900
	(!CLK * !D * SCD)	0.00940	0.01095	0.06085
	(!CLK * !D * !SCD)	0.00581	0.00681	0.03680
	(!CLK * !D * !SCD)	-0.00026	0.00071	0.03073
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00622	0.00705	0.03708
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00047	0.00032	0.03037
	(CLK * D * !SCD)	0.00909	0.00990	0.04090
	(CLK * D * !SCD)	0.00425	0.00504	0.03600
	(CLK * !D * SCD)	0.01071	0.01217	0.06035
	(CLK * !D * SCD)	0.00237	0.00382	0.05202
	(!CLK * D * SCD)	0.00622	0.00706	0.03708
	(!CLK * D * SCD)	-0.00047	0.00032	0.03037
	(!CLK * D * !SCD)	0.01612	0.01707	0.04819
	(!CLK * D * !SCD)	0.01129	0.01220	0.04329
	(!CLK * !D * SCD)	0.01704	0.01856	0.06842
	(!CLK * !D * SCD)	0.00870	0.01019	0.06009
	(!CLK * !D * !SCD)	0.00599	0.00696	0.03689
	(!CLK * !D * !SCD)	-0.00031	0.00062	0.03056

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)	-0.00057	0.00104	0.03116
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00616	0.00778	0.03790
	(CLK * D * !SCD)	0.00419	0.00555	0.03616
	(CLK * D * !SCD)	0.00905	0.01040	0.04086
	(CLK * !D * SCD)	0.00136	0.00312	0.05097
	(CLK * !D * SCD)	0.00974	0.01151	0.05937
	(!CLK * D * SCD)	-0.00056	0.00105	0.03116
	(!CLK * D * SCD)	0.00616	0.00778	0.03789
	(!CLK * D * !SCD)	0.01046	0.01191	0.04224
	(!CLK * D * !SCD)	0.01532	0.01675	0.04694
	(!CLK * !D * SCD)	0.00809	0.00990	0.05917
	(!CLK * !D * SCD)	0.01648	0.01830	0.06757
	(!CLK * !D * !SCD)	0.00001	0.00155	0.03145
	(!CLK * !D * !SCD)	0.00634	0.00791	0.03780

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00055	0.00109	0.03124
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00593	0.00760	0.03773
	(CLK * D * !SCD)	0.00451	0.00591	0.03650
	(CLK * D * !SCD)	0.00910	0.01050	0.04094
	(CLK * !D * SCD)	0.00143	0.00322	0.05102
	(CLK * !D * SCD)	0.00959	0.01138	0.05918
	(!CLK * D * SCD)	-0.00055	0.00110	0.03124
	(!CLK * D * SCD)	0.00593	0.00758	0.03773
	(!CLK * D * !SCD)	0.01129	0.01277	0.04307
	(!CLK * D * !SCD)	0.01589	0.01738	0.04751
	(!CLK * !D * SCD)	0.00829	0.01011	0.05927
	(!CLK * !D * SCD)	0.01644	0.01829	0.06744
	(!CLK * !D * !SCD)	-0.00001	0.00160	0.03149
	(!CLK * !D * !SCD)	0.00606	0.00771	0.03759
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00054	0.00107	0.03116
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00617	0.00780	0.03788
	(CLK * D * !SCD)	0.00422	0.00558	0.03618
	(CLK * D * !SCD)	0.00910	0.01046	0.04089
	(CLK * !D * SCD)	0.00135	0.00311	0.05097
	(CLK * !D * SCD)	0.00968	0.01146	0.05932
	(!CLK * D * SCD)	-0.00054	0.00107	0.03117
	(!CLK * D * SCD)	0.00618	0.00780	0.03788
	(!CLK * D * !SCD)	0.01052	0.01196	0.04225
	(!CLK * D * !SCD)	0.01539	0.01686	0.04697
	(!CLK * !D * SCD)	0.00851	0.01030	0.05947
	(!CLK * !D * SCD)	0.01684	0.01862	0.06782
	(!CLK * !D * !SCD)	0.00005	0.00161	0.03147
	(!CLK * !D * !SCD)	0.00636	0.00793	0.03780

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)	0.01427	0.01559	0.06140
	(D * SCD * SCE * Q)	0.00960	0.01089	0.05672
	(D * !SCE * Q)	0.01425	0.01558	0.06136
	(D * !SCE * Q)	0.00957	0.01088	0.05668
	(D * !SCD * SCE * !Q)	0.01419	0.01550	0.06139
	(D * !SCD * SCE * !Q)	0.00951	0.01080	0.05671
	(!D * SCD * SCE * Q)	0.01427	0.01559	0.06140
	(!D * SCD * SCE * Q)	0.00960	0.01089	0.05672
	(!D * !SCE * !Q)	0.01419	0.01550	0.06134
	(!D * !SCE * !Q)	0.00951	0.01080	0.05667
	(!D * !SCD * SCE * !Q)	0.01420	0.01550	0.06135
	(!D * !SCD * SCE * !Q)	0.00952	0.01081	0.05668
sky130_fd_sc_hs__sdfxtp_2	(D * SCD * SCE * Q)	0.01452	0.01582	0.06145
	(D * SCD * SCE * Q)	0.00980	0.01109	0.05674
	(D * !SCE * Q)	0.01450	0.01581	0.06142
	(D * !SCE * Q)	0.00977	0.01108	0.05670
	(D * !SCD * SCE * !Q)	0.01458	0.01588	0.06140
	(D * !SCD * SCE * !Q)	0.00986	0.01115	0.05668
	(!D * SCD * SCE * Q)	0.01452	0.01582	0.06146
	(!D * SCD * SCE * Q)	0.00980	0.01109	0.05674
	(!D * !SCE * !Q)	0.01458	0.01588	0.06150
	(!D * !SCE * !Q)	0.00986	0.01115	0.05678
	(!D * !SCD * SCE * !Q)	0.01459	0.01589	0.06139
	(!D * !SCD * SCE * !Q)	0.00987	0.01116	0.05667

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.01444	0.01574	0.06152
	(D * SCD * SCE * Q)	0.00975	0.01102	0.05684
	(D * !SCE * Q)	0.01442	0.01573	0.06151
	(D * !SCE * Q)	0.00973	0.01101	0.05682
	(D * !SCD * SCE * !Q)	0.01430	0.01559	0.06147
	(D * !SCD * SCE * !Q)	0.00961	0.01087	0.05677
	(!D * SCD * SCE * Q)	0.01444	0.01574	0.06153
	(!D * SCD * SCE * Q)	0.00975	0.01103	0.05685
	(!D * !SCE * !Q)	0.01430	0.01556	0.06136
	(!D * !SCE * !Q)	0.00960	0.01089	0.05667
	(!D * !SCD * SCE * !Q)	0.01430	0.01559	0.06144
	(!D * !SCD * SCE * !Q)	0.00961	0.01088	0.05675

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)**	0.00828	0.01022	0.05630
	(D * SCD * SCE * Q)	0.01294	0.01491	0.06097
	(D * SCD * SCE * !Q)	0.01412	0.01603	0.06302
	(D * SCD * SCE * !Q)	0.01878	0.02072	0.06770
	(D * !SCE * Q)	0.00828	0.01022	0.05628
	(D * !SCE * Q)	0.01294	0.01491	0.06095
	(D * !SCE * !Q)	0.01408	0.01595	0.06342
	(D * !SCE * !Q)	0.01874	0.02064	0.06810
	(D * !SCD * SCE * Q)	0.01626	0.01825	0.06544
	(D * !SCD * SCE * Q)	0.02095	0.02294	0.07014
	(D * !SCD * SCE * !Q)	0.00819	0.01013	0.05633
	(D * !SCD * SCE * !Q)	0.01286	0.01482	0.06099
	(!D * SCD * SCE * Q)	0.00828	0.01022	0.05630
	(!D * SCD * SCE * Q)	0.01294	0.01491	0.06098
	(!D * SCD * SCE * !Q)	0.01415	0.01607	0.06307
	(!D * SCD * SCE * !Q)	0.01880	0.02074	0.06773
	(!D * !SCE * Q)	0.01618	0.01819	0.06518
	(!D * !SCE * Q)	0.02085	0.02286	0.06986
	(!D * !SCE * !Q)	0.00818	0.01015	0.05627
	(!D * !SCE * !Q)	0.01284	0.01484	0.06094
	(!D * !SCD * SCE * Q)	0.01626	0.01825	0.06542
	(!D * !SCD * SCE * Q)	0.02094	0.02295	0.07011
	(!D * !SCD * SCE * !Q)	0.00818	0.01013	0.05633
	(!D * !SCD * SCE * !Q)	0.01285	0.01482	0.06101

sky130_fd_sc_hs__sdfxtp_2	**(D * SCD * SCE * Q)**	0.00861	0.01055	0.05650
	(D * SCD * SCE * Q)	0.01334	0.01529	0.06122
	(D * SCD * SCE * !Q)	0.01491	0.01677	0.06370
	(D * SCD * SCE * !Q)	0.01964	0.02150	0.06841
	(D * !SCE * Q)	0.00861	0.01055	0.05648
	(D * !SCE * Q)	0.01334	0.01529	0.06121
	(D * !SCE * !Q)	0.01488	0.01675	0.06407
	(D * !SCE * !Q)	0.01961	0.02146	0.06878
	(D * !SCD * SCE * Q)	0.01668	0.01869	0.06575
	(D * !SCD * SCE * Q)	0.02143	0.02344	0.07049
	(D * !SCD * SCE * !Q)	0.00839	0.01033	0.05640
	(D * !SCD * SCE * !Q)	0.01312	0.01507	0.06112
	(!D * SCD * SCE * Q)	0.00861	0.01056	0.05650
	(!D * SCD * SCE * Q)	0.01334	0.01529	0.06123
	(!D * SCD * SCE * !Q)	0.01495	0.01681	0.06373
	(!D * SCD * SCE * !Q)	0.01966	0.02150	0.06843
	(!D * !SCE * Q)	0.01661	0.01862	0.06547
	(!D * !SCE * Q)	0.02134	0.02335	0.07019
	(!D * !SCE * !Q)	0.00838	0.01033	0.05635
	(!D * !SCE * !Q)	0.01311	0.01506	0.06107
	(!D * !SCD * SCE * Q)	0.01667	0.01868	0.06573
	(!D * !SCD * SCE * Q)	0.02141	0.02340	0.07046
	(!D * !SCD * SCE * !Q)	0.00839	0.01033	0.05640
	(!D * !SCD * SCE * !Q)	0.01312	0.01506	0.06112

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.00823	0.01017	0.05624
	(D * SCD * SCE * Q)	0.01291	0.01487	0.06093
	(D * SCD * SCE * !Q)	0.01416	0.01602	0.06302
	(D * SCD * SCE * !Q)	0.01884	0.02071	0.06771
	(D * !SCE * Q)	0.00823	0.01017	0.05622
	(D * !SCE * Q)	0.01291	0.01487	0.06090
	(D * !SCE * !Q)	0.01412	0.01599	0.06337
	(D * !SCE * !Q)	0.01880	0.02069	0.06805
	(D * !SCD * SCE * Q)	0.01667	0.01868	0.06587
	(D * !SCD * SCE * Q)	0.02137	0.02338	0.07058
	(D * !SCD * SCE * !Q)	0.00819	0.01014	0.05632
	(D * !SCD * SCE * !Q)	0.01287	0.01484	0.06100
	(!D * SCD * SCE * Q)	0.00823	0.01017	0.05624
	(!D * SCD * SCE * Q)	0.01291	0.01488	0.06093
	(!D * SCD * SCE * !Q)	0.01419	0.01606	0.06305
	(!D * SCD * SCE * !Q)	0.01886	0.02074	0.06773
	(!D * !SCE * Q)	0.01660	0.01862	0.06560
	(!D * !SCE * Q)	0.02128	0.02332	0.07030
	(!D * !SCE * !Q)	0.00819	0.01013	0.05627
	(!D * !SCE * !Q)	0.01287	0.01484	0.06095
	(!D * !SCD * SCE * Q)	0.01667	0.01867	0.06584
	(!D * !SCD * SCE * Q)	0.02136	0.02337	0.07055
	(!D * !SCD * SCE * !Q)	0.00819	0.01014	0.05632
	(!D * !SCD * SCE * !Q)	0.01287	0.01484	0.06100

SKY130_FD_SC_HS__SDLCLKPx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00238	0.00218	0.00469	1.17034
sky130_fd_sc_hs__sdlclkp_2	0.00237	0.00217	0.00498	2.27052
sky130_fd_sc_hs__sdlclkp_4	0.00225	0.00206	0.00508	4.45069

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdlclkp_1	0.00000	1.14494	1.81567
sky130_fd_sc_hs__sdlclkp_2	0.00000	1.03255	1.58231
sky130_fd_sc_hs__sdlclkp_4	0.00000	1.06019	1.73607

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)**	0.06610	0.52882	6.17185
sky130_fd_sc_hs__sdlclkp_2	**CLK->GCLK (RR)**	0.06870	0.44302	5.98751
sky130_fd_sc_hs__sdlclkp_4	**CLK->GCLK (RR)**	0.08978	0.43104	6.28326

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdlclkp_1	**CLK->GCLK (FF)**	0.08108	0.48823	4.59969
sky130_fd_sc_hs__sdlclkp_2	**CLK->GCLK (FF)**	0.09094	0.49343	4.68937
sky130_fd_sc_hs__sdlclkp_4	**CLK->GCLK (FF)**	0.11777	0.53524	4.94485

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)	-0.04236	-0.10266	-0.62437
	setup	CLK (R)	0.13501	0.21615	0.75261
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.04156	-0.10052	-0.61770
	setup	CLK (R)	0.13028	0.19504	0.75853
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.03942	-0.10266	-0.62624
	setup	CLK (R)	0.12832	0.17767	0.80668

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)	-0.11662	-0.23715	-2.97180
	setup	CLK (R)	0.14816	0.28426	3.18514
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.11530	-0.23500	-2.96873
	setup	CLK (R)	0.14295	0.27650	3.16930
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.12036	-0.23977	-2.97701
	setup	CLK (R)	0.14988	0.28164	3.19077

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)	-0.04236	-0.10266	-0.62437
	setup	CLK (R)	0.13501	0.21615	0.75261
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.04156	-0.10052	-0.61770
	setup	CLK (R)	0.13028	0.19504	0.75853
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.03942	-0.10266	-0.62624
	setup	CLK (R)	0.12832	0.17767	0.80668

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)	-0.11662	-0.23715	-2.97180
	setup	CLK (R)	0.14816	0.28426	3.18514
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.11530	-0.23500	-2.96873
	setup	CLK (R)	0.14295	0.27650	3.16930
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.12036	-0.23977	-2.97701
	setup	CLK (R)	0.14988	0.28164	3.19077

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)	-0.04387	-0.11121	-0.65244
	setup	CLK (R)	0.13909	0.22324	0.81051
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.04282	-0.11121	-0.64657
	setup	CLK (R)	0.13508	0.20675	0.81863
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.04173	-0.11335	-0.65724
	setup	CLK (R)	0.13208	0.18734	0.86944

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)	-0.12857	-0.23977	-2.95642
	setup	CLK (R)	0.16076	0.28426	3.03349
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.12846	-0.23739	-2.95119
	setup	CLK (R)	0.15286	0.27397	3.02061
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.13434	-0.24238	-2.95362
	setup	CLK (R)	0.15712	0.27902	3.03604

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)	-0.04387	-0.11121	-0.65244
	setup	CLK (R)	0.13909	0.22324	0.81051
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.04282	-0.11121	-0.64657
	setup	CLK (R)	0.13508	0.20675	0.81863
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.04173	-0.11335	-0.65724
	setup	CLK (R)	0.13208	0.18734	0.86944

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)	-0.12857	-0.23977	-2.95642
	setup	CLK (R)	0.16076	0.28426	3.03349
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.12846	-0.23739	-2.95119
	setup	CLK (R)	0.15286	0.27397	3.02061
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.13434	-0.24238	-2.95362
	setup	CLK (R)	0.15712	0.27902	3.03604

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 ()	0.04739	0.64453	16.50020
sky130_fd_sc_hs__sdlclkp_2	min_pulse_width	CLK ()	0.05223	0.64453	16.50020
sky130_fd_sc_hs__sdlclkp_4	min_pulse_width	CLK ()	0.07399	0.64453	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 ()	0.19003	0.64453	16.50020
	min_pulse_width	CLK ()	0.15860	0.64453	16.50020
sky130_fd_sc_hs__sdlclkp_2	min_pulse_width	CLK ()	0.18278	0.64453	16.50020
	min_pulse_width	CLK ()	0.15618	0.64453	16.50020
sky130_fd_sc_hs__sdlclkp_4	min_pulse_width	CLK ()	0.18278	0.64453	16.50020
	min_pulse_width	CLK ()	0.16102	0.64453	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	0.01799	0.02130	0.11428
	CLK	0.01055	0.01387	0.10721
sky130_fd_sc_hs__sdlclkp_2	CLK	0.02156	0.02476	0.11527
	CLK	0.01367	0.01688	0.10833
sky130_fd_sc_hs__sdlclkp_4	CLK	0.02825	0.03144	0.11802
	CLK	0.02017	0.02345	0.11125

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	CLK	0.02123	0.02654	0.11595
	CLK	0.02818	0.03349	0.12281
sky130_fd_sc_hs__sdlclkp_2	CLK	0.02381	0.02923	0.11746
	CLK	0.03119	0.03646	0.12400
sky130_fd_sc_hs__sdlclkp_4	CLK	0.02048	0.02525	0.11459
	CLK	0.02852	0.03329	0.12191

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	0.00157	0.00159	0.00157
	(CLK * SCE)	-0.00078	-0.00078	-0.00078
	(CLK * !SCE)	0.00497	0.00636	0.04294
	(CLK * !SCE)	0.00110	0.00249	0.03907
	(!CLK * SCE * !GCLK)	0.00153	0.00154	0.00153
	(!CLK * SCE * !GCLK)	-0.00082	-0.00083	-0.00082
	(!CLK * !SCE * !GCLK)	0.01261	0.01355	0.05018
	(!CLK * !SCE * !GCLK)	0.00918	0.01009	0.04673
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	0.00156	0.00158	0.00157
	(CLK * SCE)	-0.00078	-0.00078	-0.00078
	(CLK * !SCE)	0.00492	0.00632	0.04290
	(CLK * !SCE)	0.00107	0.00247	0.03905
	(!CLK * SCE * !GCLK)	0.00152	0.00154	0.00152
	(!CLK * SCE * !GCLK)	-0.00082	-0.00083	-0.00082
	(!CLK * !SCE * !GCLK)	0.01243	0.01336	0.05011
	(!CLK * !SCE * !GCLK)	0.00904	0.00996	0.04672
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	0.00150	0.00152	0.00151
	(CLK * SCE)	-0.00074	-0.00075	-0.00074
	(CLK * !SCE)	0.00478	0.00616	0.04265
	(CLK * !SCE)	0.00110	0.00249	0.03897
	(!CLK * SCE * !GCLK)	0.00147	0.00149	0.00148
	(!CLK * SCE * !GCLK)	-0.00077	-0.00078	-0.00077
	(!CLK * !SCE * !GCLK)	0.01249	0.01345	0.05002
	(!CLK * !SCE * !GCLK)	0.00924	0.01019	0.04678

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	-0.00150	-0.00152	-0.00155
	(CLK * SCE)	0.00083	0.00084	0.00081
	(CLK * !SCE)	0.00080	0.00280	0.03933
	(CLK * !SCE)	0.00467	0.00667	0.04321
	(!CLK * SCE * !GCLK)	-0.00148	-0.00148	-0.00151
	(!CLK * SCE * !GCLK)	0.00087	0.00087	0.00084
	(!CLK * !SCE * !GCLK)	0.01112	0.01326	0.05125
	(!CLK * !SCE * !GCLK)	0.01457	0.01673	0.05470
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	-0.00150	-0.00151	-0.00154
	(CLK * SCE)	0.00083	0.00084	0.00081
	(CLK * !SCE)	0.00083	0.00283	0.03937
	(CLK * !SCE)	0.00469	0.00669	0.04323
	(!CLK * SCE * !GCLK)	-0.00147	-0.00148	-0.00151
	(!CLK * SCE * !GCLK)	0.00087	0.00087	0.00084
	(!CLK * !SCE * !GCLK)	0.01117	0.01305	0.05137
	(!CLK * !SCE * !GCLK)	0.01458	0.01646	0.05477
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	-0.00144	-0.00145	-0.00148
	(CLK * SCE)	0.00081	0.00081	0.00078
	(CLK * !SCE)	0.00112	0.00311	0.03954
	(CLK * !SCE)	0.00479	0.00679	0.04323
	(!CLK * SCE * !GCLK)	-0.00142	-0.00143	-0.00146
	(!CLK * SCE * !GCLK)	0.00083	0.00083	0.00080
	(!CLK * !SCE * !GCLK)	0.01150	0.01361	0.05157
	(!CLK * !SCE * !GCLK)	0.01476	0.01689	0.05484

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	0.00161	0.00137	0.00133
	(CLK * GATE)	-0.00137	-0.00164	-0.00165
	(CLK * !GATE)	0.00640	0.00731	0.03417
	(CLK * !GATE)	0.00179	0.00267	0.02957
	(!CLK * GATE * !GCLK)	0.00160	0.00136	0.00132
	(!CLK * GATE * !GCLK)	-0.00137	-0.00164	-0.00166
	(!CLK * !GATE * !GCLK)	0.01404	0.01474	0.04233
	(!CLK * !GATE * !GCLK)	0.00985	0.01053	0.03817
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	0.00160	0.00136	0.00132
	(CLK * GATE)	-0.00136	-0.00164	-0.00165
	(CLK * !GATE)	0.00635	0.00726	0.03412
	(CLK * !GATE)	0.00176	0.00265	0.02955
	(!CLK * GATE * !GCLK)	0.00159	0.00135	0.00131
	(!CLK * GATE * !GCLK)	-0.00137	-0.00164	-0.00165
	(!CLK * !GATE * !GCLK)	0.01385	0.01455	0.04222
	(!CLK * !GATE * !GCLK)	0.00972	0.01040	0.03811
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	0.00154	0.00130	0.00126
	(CLK * GATE)	-0.00133	-0.00160	-0.00162
	(CLK * !GATE)	0.00623	0.00713	0.03395
	(CLK * !GATE)	0.00181	0.00270	0.02955
	(!CLK * GATE * !GCLK)	0.00154	0.00129	0.00125
	(!CLK * GATE * !GCLK)	-0.00134	-0.00161	-0.00162
	(!CLK * !GATE * !GCLK)	0.01392	0.01462	0.04222
	(!CLK * !GATE * !GCLK)	0.00992	0.01061	0.03824

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	-0.00128	-0.00130	-0.00129
	(CLK * GATE)	0.00167	0.00170	0.00169
	(CLK * !GATE)	0.00088	0.00168	0.02816
	(CLK * !GATE)	0.00548	0.00629	0.03278
	(!CLK * GATE * !GCLK)	-0.00129	-0.00130	-0.00129
	(!CLK * GATE * !GCLK)	0.00167	0.00169	0.00168
	(!CLK * !GATE * !GCLK)	0.01111	0.01181	0.03887
	(!CLK * !GATE * !GCLK)	0.01530	0.01601	0.04307
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	-0.00128	-0.00129	-0.00127
	(CLK * GATE)	0.00168	0.00170	0.00169
	(CLK * !GATE)	0.00092	0.00172	0.02821
	(CLK * !GATE)	0.00549	0.00631	0.03279
	(!CLK * GATE * !GCLK)	-0.00128	-0.00129	-0.00128
	(!CLK * GATE * !GCLK)	0.00167	0.00169	0.00168
	(!CLK * !GATE * !GCLK)	0.01117	0.01187	0.03898
	(!CLK * !GATE * !GCLK)	0.01530	0.01602	0.04312
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	-0.00122	-0.00122	-0.00121
	(CLK * GATE)	0.00165	0.00167	0.00166
	(CLK * !GATE)	0.00121	0.00200	0.02842
	(CLK * !GATE)	0.00562	0.00642	0.03284
	(!CLK * GATE * !GCLK)	-0.00122	-0.00123	-0.00122
	(!CLK * GATE * !GCLK)	0.00164	0.00165	0.00165
	(!CLK * !GATE * !GCLK)	0.01153	0.01223	0.03954
	(!CLK * !GATE * !GCLK)	0.01554	0.01623	0.04355

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(!GATE * !SCE * !GCLK)	0.01116	0.01308	0.06520
	(!GATE * !SCE * !GCLK)	0.00407	0.00596	0.05809
sky130_fd_sc_hs__sdlclkp_2	(!GATE * !SCE * !GCLK)	0.01129	0.01324	0.06547
	(!GATE * !SCE * !GCLK)	0.00382	0.00572	0.05796
sky130_fd_sc_hs__sdlclkp_4	(!GATE * !SCE * !GCLK)	0.01147	0.01338	0.06557
	(!GATE * !SCE * !GCLK)	0.00383	0.00569	0.05789

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(GATE * SCE * !GCLK)	0.01239	0.01524	0.07362
	(GATE * SCE * !GCLK)	0.02003	0.02290	0.08129
	(GATE * !SCE * !GCLK)	0.01238	0.01520	0.07345
	(GATE * !SCE * !GCLK)	0.02001	0.02286	0.08112
	(!GATE * SCE * !GCLK)	0.01242	0.01527	0.07360
	(!GATE * SCE * !GCLK)	0.02004	0.02292	0.08126
	(!GATE * !SCE * !GCLK)	0.00496	0.00773	0.05994
	(!GATE * !SCE * !GCLK)	0.01203	0.01483	0.06705
sky130_fd_sc_hs__sdlclkp_2	(GATE * SCE * !GCLK)	0.01201	0.01482	0.07352
	(GATE * SCE * !GCLK)	0.02010	0.02296	0.08164
	(GATE * !SCE * !GCLK)	0.01199	0.01479	0.07335
	(GATE * !SCE * !GCLK)	0.02008	0.02292	0.08147
	(!GATE * SCE * !GCLK)	0.01204	0.01486	0.07350
	(!GATE * SCE * !GCLK)	0.02012	0.02296	0.08159
	(!GATE * !SCE * !GCLK)	0.00470	0.00743	0.05978
	(!GATE * !SCE * !GCLK)	0.01217	0.01496	0.06730
sky130_fd_sc_hs__sdlclkp_4	(GATE * SCE * !GCLK)	0.01246	0.01523	0.07383
	(GATE * SCE * !GCLK)	0.02070	0.02353	0.08209
	(GATE * !SCE * !GCLK)	0.01244	0.01521	0.07367
	(GATE * !SCE * !GCLK)	0.02068	0.02346	0.08194
	(!GATE * SCE * !GCLK)	0.01249	0.01526	0.07383
	(!GATE * SCE * !GCLK)	0.02071	0.02354	0.08207
	(!GATE * !SCE * !GCLK)	0.00494	0.00765	0.05996
	(!GATE * !SCE * !GCLK)	0.01259	0.01537	0.06762

SKY130_FD_SC_HS__SEDFXBPx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00200	0.00384	0.00178	0.00386	0.00282	1.20533	1.19184
sky130_fd_sc_hs__sedfxbp_2	0.00209	0.00388	0.00180	0.00394	0.00282	2.05084	2.09919

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sedfxbp_1	0.00000	1.21064	2.20900
sky130_fd_sc_hs__sedfxbp_2	0.00000	1.23369	2.17357

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)	0.18071	0.66280	6.06837
sky130_fd_sc_hs__sedfxbp_2	CLK->Q (RR)	0.18538	0.58355	5.90792

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxbp_1	CLK->Q (RF)	0.16438	0.45340	2.35347
sky130_fd_sc_hs__sedfxbp_2	CLK->Q (RF)	0.18561	0.43570	1.91954

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)	0.24858	0.71366	6.09162
sky130_fd_sc_hs__sedfxbp_2	CLK->Q_N (RR)	0.29568	0.66265	5.96056

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)	0.25236	0.50620	2.26910
sky130_fd_sc_hs__sedfxbp_2	CLK->Q_N (RF)	0.27658	0.48389	2.00245

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)	-0.14733	-0.23781	-1.11556
	setup	CLK (R)	0.17800	0.25827	1.13589
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.14587	-0.23819	-1.13299
	setup	CLK (R)	0.17824	0.25827	1.15647

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)	-0.27963	-0.42463	-3.39846
	setup	CLK (R)	0.35159	0.47749	3.45879
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.27857	-0.42472	-3.41620
	setup	CLK (R)	0.34823	0.47351	3.47883

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)	-0.14733	-0.23781	-1.11556
	setup	CLK (R)	0.17800	0.25827	1.13589
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.14587	-0.23819	-1.13299
	setup	CLK (R)	0.17824	0.25827	1.15647

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)	-0.27963	-0.42463	-3.39846
	setup	CLK (R)	0.35159	0.47749	3.45879
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.27857	-0.42472	-3.41620
	setup	CLK (R)	0.34823	0.47351	3.47883

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)	-0.03812	-0.05109	-0.03916
	setup	CLK (R)	0.38413	0.41075	1.01441
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.03558	-0.05332	-0.05487
	setup	CLK (R)	0.38366	0.40829	1.03270

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)	-0.20422	-0.33406	-2.83445
	setup	CLK (R)	0.32190	0.44267	3.39985
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.20752	-0.33431	-2.85090
	setup	CLK (R)	0.32097	0.44262	3.41669

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)	-0.03812	-0.05109	-0.03916
	hold	CLK (R)	-0.14660	-0.17062	-0.39736
	setup	CLK (R)	0.17757	0.23825	1.01441
	setup	CLK (R)	0.38413	0.41075	0.65398
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.03558	-0.05332	-0.05487
	hold	CLK (R)	-0.14364	-0.17412	-0.41136
	setup	CLK (R)	0.17698	0.24004	1.03270
	setup	CLK (R)	0.38366	0.40829	0.67327

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)	-0.30163	-0.42884	-3.39395
	hold	CLK (R)	-0.20422	-0.33406	-2.83445
	setup	CLK (R)	0.32190	0.44267	3.39985
	setup	CLK (R)	0.22288	0.34180	2.83818
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.29829	-0.42813	-3.41165
	hold	CLK (R)	-0.20752	-0.33431	-2.85090
	setup	CLK (R)	0.32097	0.44262	3.41669
	setup	CLK (R)	0.22225	0.34258	2.85804

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)	-0.08914	-0.15601	-0.77883
	setup	CLK (R)	0.10772	0.16895	0.79487
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.08766	-0.15937	-0.80004
	setup	CLK (R)	0.10696	0.17109	0.81549

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)	-0.20113	-0.31592	-3.09187
	setup	CLK (R)	0.25699	0.36522	3.17576
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.19959	-0.32002	-3.11493
	setup	CLK (R)	0.25325	0.36565	3.19516

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)	-0.08914	-0.15601	-0.77883
	setup	CLK (R)	0.10772	0.16895	0.79487
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.08766	-0.15937	-0.80004
	setup	CLK (R)	0.10696	0.17109	0.81549

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)	-0.20113	-0.31592	-3.09187
	setup	CLK (R)	0.25699	0.36522	3.17576
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.19959	-0.32002	-3.11493
	setup	CLK (R)	0.25325	0.36565	3.19516

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)	0.00168	0.01497	0.32439
	setup	CLK (R)	0.27195	0.28445	0.73114
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	0.00445	0.01497	0.30384
	setup	CLK (R)	0.27030	0.28625	0.75155

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)	-0.14263	-0.27963	-2.82000
	setup	CLK (R)	0.22414	0.34144	3.20966
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.14771	-0.28325	-2.85013
	setup	CLK (R)	0.22304	0.34180	3.23550

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)	-0.21523	-0.23555	-0.38366
	hold	CLK (R)	0.00168	0.01497	0.32439
	hold	CLK (R)	-0.07411	-0.15072	-0.70013
	hold	CLK (R)	-0.10196	-0.12844	-0.27059
	setup	CLK (R)	0.27195	0.28436	0.50651
	setup	CLK (R)	0.09339	0.16454	0.73114
	setup	CLK (R)	0.09575	0.16454	0.73114
	setup	CLK (R)	0.27192	0.28445	0.50642
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.21806	-0.23760	-0.41600
	hold	CLK (R)	0.00445	0.01497	0.30384
	hold	CLK (R)	-0.07414	-0.15133	-0.71705
	hold	CLK (R)	-0.10414	-0.13269	-0.29686
	setup	CLK (R)	0.27030	0.28613	0.53703
	setup	CLK (R)	0.09528	0.16481	0.74755
	setup	CLK (R)	0.09543	0.16481	0.75155
	setup	CLK (R)	0.27023	0.28625	0.53688

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)	-0.14869	-0.28650	-2.83806
	hold	CLK (R)	-0.15987	-0.28688	-3.13796
	hold	CLK (R)	-0.15645	-0.28598	-3.15013
	hold	CLK (R)	-0.14263	-0.27963	-2.82000
	setup	CLK (R)	0.17465	0.30033	2.85418
	setup	CLK (R)	0.18197	0.30055	3.14097
	setup	CLK (R)	0.22414	0.34144	3.20966
	setup	CLK (R)	0.15735	0.28719	2.82370
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.15032	-0.29061	-2.87083
	hold	CLK (R)	-0.16080	-0.29008	-3.16095
	hold	CLK (R)	-0.15405	-0.28727	-3.17442
	hold	CLK (R)	-0.14771	-0.28325	-2.85013
	setup	CLK (R)	0.17989	0.30609	2.88566
	setup	CLK (R)	0.18146	0.30580	3.16560
	setup	CLK (R)	0.22304	0.34180	3.23550
	setup	CLK (R)	0.16047	0.29312	2.85608

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 ()	0.08366	0.64453	16.50020
	min_pulse_width	CLK ()	0.08366	0.64453	16.50020
	min_pulse_width	CLK ()	0.13442	0.64453	16.50020
	min_pulse_width	CLK ()	0.08366	0.64453	16.50020
	min_pulse_width	CLK ()	0.13442	0.64453	16.50020
	min_pulse_width	CLK ()	0.08366	0.64453	16.50020
	min_pulse_width	CLK ()	0.13201	0.64453	16.50020
	min_pulse_width	CLK ()	0.13201	0.64453	16.50020
	min_pulse_width	CLK ()	0.08366	0.64453	16.50020
	min_pulse_width	CLK ()	0.13442	0.64453	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.09574	0.64453	16.50020
	min_pulse_width	CLK ()	0.09574	0.64453	16.50020
	min_pulse_width	CLK ()	0.17794	0.64453	16.50020
	min_pulse_width	CLK ()	0.09574	0.64453	16.50020
	min_pulse_width	CLK ()	0.17794	0.64453	16.50020
	min_pulse_width	CLK ()	0.09574	0.64453	16.50020
	min_pulse_width	CLK ()	0.17552	0.64453	16.50020
	min_pulse_width	CLK ()	0.17552	0.64453	16.50020
	min_pulse_width	CLK ()	0.09574	0.64453	16.50020
	min_pulse_width	CLK ()	0.17794	0.64453	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 ()	0.13442	0.64453	16.50020
	min_pulse_width	CLK ()	0.14410	0.64453	16.50020
	min_pulse_width	CLK ()	0.21179	0.64453	16.50020
	min_pulse_width	CLK ()	0.13442	0.64453	16.50020
	min_pulse_width	CLK ()	0.21179	0.64453	16.50020
	min_pulse_width	CLK ()	0.13442	0.64453	16.50020
	min_pulse_width	CLK ()	0.22387	0.64453	16.50020
	min_pulse_width	CLK ()	0.21179	0.64453	16.50020
	min_pulse_width	CLK ()	0.13442	0.64453	16.50020
	min_pulse_width	CLK ()	0.21179	0.64453	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.13684	0.64453	16.50020
	min_pulse_width	CLK ()	0.14651	0.64453	16.50020
	min_pulse_width	CLK ()	0.20937	0.64453	16.50020
	min_pulse_width	CLK ()	0.13684	0.64453	16.50020
	min_pulse_width	CLK ()	0.20937	0.64453	16.50020
	min_pulse_width	CLK ()	0.13684	0.64453	16.50020
	min_pulse_width	CLK ()	0.21904	0.64453	16.50020
	min_pulse_width	CLK ()	0.20937	0.64453	16.50020
	min_pulse_width	CLK ()	0.13684	0.64453	16.50020
	min_pulse_width	CLK ()	0.20937	0.64453	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	0.01935	0.02025	0.04388
	CLK	0.01652	0.01736	0.04102
sky130_fd_sc_hs__sedfxbp_2	CLK	0.02232	0.02337	0.04710
	CLK	0.01951	0.02039	0.04455

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.01766	0.01827	0.04183
	CLK	0.01594	0.01652	0.04011
sky130_fd_sc_hs__sedfxbp_2	CLK	0.02101	0.02150	0.04507
	CLK	0.01926	0.01976	0.04345

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.01768	0.01830	0.04244
	CLK	0.01596	0.01655	0.04068
sky130_fd_sc_hs__sedfxbp_2	CLK	0.02103	0.02170	0.04576
	CLK	0.01929	0.01982	0.04430

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.01931	0.02022	0.04347
	CLK	0.01647	0.01732	0.04063
sky130_fd_sc_hs__sedfxbp_2	CLK	0.02228	0.02321	0.04636
	CLK	0.01947	0.02034	0.04365

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.00533	0.00595	0.02911
	(DE * SCE)	0.00198	0.00258	0.02575
	(CLK * DE * !SCE)	0.01095	0.01141	0.03259
	(CLK * DE * !SCE)	0.00653	0.00699	0.02818
	(CLK * !DE * !SCE)	0.00125	0.00125	0.00125
	(CLK * !DE * !SCE)	-0.00087	-0.00087	-0.00086
	(!DE * SCE)	0.00125	0.00126	0.00125
	(!DE * SCE)	-0.00086	-0.00087	-0.00086
	(!CLK * DE * !SCE * Q * !Q_N)	0.01902	0.01954	0.04256
	(!CLK * DE * !SCE * Q * !Q_N)	0.01460	0.01512	0.03814
	(!CLK * DE * !SCE * !Q * Q_N)	0.01854	0.01902	0.04178
	(!CLK * DE * !SCE * !Q * Q_N)	0.01407	0.01457	0.03732
	(!CLK * !DE * !SCE)	0.00124	0.00125	0.00124
	(!CLK * !DE * !SCE)	-0.00087	-0.00087	-0.00086
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.00541	0.00603	0.02922
	(DE * SCE)	0.00193	0.00252	0.02574
	(CLK * DE * !SCE)	0.01115	0.01160	0.03275
	(CLK * DE * !SCE)	0.00657	0.00701	0.02818
	(CLK * !DE * !SCE)	0.00130	0.00131	0.00130
	(CLK * !DE * !SCE)	-0.00090	-0.00091	-0.00090
	(!DE * SCE)	0.00130	0.00131	0.00131
	(!DE * SCE)	-0.00090	-0.00091	-0.00090
	(!CLK * DE * !SCE * Q * !Q_N)	0.01912	0.01964	0.04265
	(!CLK * DE * !SCE * Q * !Q_N)	0.01454	0.01506	0.03807
	(!CLK * DE * !SCE * !Q * Q_N)	0.01861	0.01908	0.04185
	(!CLK * DE * !SCE * !Q * Q_N)	0.01398	0.01446	0.03722
	(!CLK * !DE * !SCE)	0.00129	0.00130	0.00130
	(!CLK * !DE * !SCE)	-0.00090	-0.00091	-0.00090

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.00195	0.00303	0.02623
	(DE * SCE)	0.00535	0.00644	0.02964
	(CLK * DE * !SCE)	0.00354	0.00431	0.02627
	(CLK * DE * !SCE)	0.00800	0.00878	0.03073
	(CLK * !DE * !SCE)	-0.00037	-0.00037	-0.00037
	(CLK * !DE * !SCE)	0.00189	0.00190	0.00189
	(!DE * SCE)	-0.00036	-0.00036	-0.00036
	(!DE * SCE)	0.00190	0.00190	0.00189
	(!CLK * DE * !SCE * Q * !Q_N)	0.01202	0.01303	0.03918
	(!CLK * DE * !SCE * Q * !Q_N)	0.01644	0.01744	0.04360
	(!CLK * DE * !SCE * !Q * Q_N)	0.01298	0.01407	0.04015
	(!CLK * DE * !SCE * !Q * Q_N)	0.01744	0.01852	0.04461
	(!CLK * !DE * !SCE)	-0.00037	-0.00037	-0.00037
	(!CLK * !DE * !SCE)	0.00189	0.00190	0.00189
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.00170	0.00286	0.02602
	(DE * SCE)	0.00523	0.00641	0.02955
	(CLK * DE * !SCE)	0.00338	0.00415	0.02609
	(CLK * DE * !SCE)	0.00802	0.00877	0.03072
	(CLK * !DE * !SCE)	-0.00038	-0.00038	-0.00038
	(CLK * !DE * !SCE)	0.00197	0.00198	0.00197
	(!DE * SCE)	-0.00037	-0.00038	-0.00037
	(!DE * SCE)	0.00197	0.00199	0.00198
	(!CLK * DE * !SCE * Q * !Q_N)	0.01180	0.01281	0.03895
	(!CLK * DE * !SCE * Q * !Q_N)	0.01637	0.01739	0.04353
	(!CLK * DE * !SCE * !Q * Q_N)	0.01280	0.01387	0.03991
	(!CLK * DE * !SCE * !Q * Q_N)	0.01742	0.01849	0.04454
	(!CLK * !DE * !SCE)	-0.00038	-0.00038	-0.00038
	(!CLK * !DE * !SCE)	0.00197	0.00198	0.00197

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.01001	0.01130	0.05727
	SCE	0.00264	0.00390	0.04989
	(CLK * !SCE)	0.01542	0.01660	0.06140
	(CLK * !SCE)	0.00699	0.00814	0.05296
	(!CLK * D * !SCE * Q * !Q_N)	0.00621	0.00697	0.03651
	(!CLK * D * !SCE * Q * !Q_N)	0.00011	0.00085	0.03040
	(!CLK * D * !SCE * !Q * Q_N)	0.02342	0.02468	0.07103
	(!CLK * D * !SCE * !Q * Q_N)	0.01499	0.01623	0.06261
	(!CLK * !D * !SCE * Q * !Q_N)	0.01926	0.02016	0.05012
	(!CLK * !D * !SCE * Q * !Q_N)	0.01553	0.01641	0.04637
	(!CLK * !D * !SCE * !Q * Q_N)	0.00607	0.00704	0.03656
	(!CLK * !D * !SCE * !Q * Q_N)	0.00003	0.00096	0.03050
sky130_fd_sc_hs__sedfxbp_2	SCE	0.01003	0.01134	0.05735
	SCE	0.00253	0.00381	0.04984
	(CLK * !SCE)	0.01558	0.01676	0.06157
	(CLK * !SCE)	0.00699	0.00815	0.05297
	(!CLK * D * !SCE * Q * !Q_N)	0.00618	0.00697	0.03651
	(!CLK * D * !SCE * Q * !Q_N)	-0.00002	0.00074	0.03031
	(!CLK * D * !SCE * !Q * Q_N)	0.02341	0.02469	0.07106
	(!CLK * D * !SCE * !Q * Q_N)	0.01482	0.01608	0.06245
	(!CLK * !D * !SCE * Q * !Q_N)	0.01906	0.01997	0.04996
	(!CLK * !D * !SCE * Q * !Q_N)	0.01531	0.01621	0.04618
	(!CLK * !D * !SCE * !Q * Q_N)	0.00608	0.00705	0.03659
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00007	0.00088	0.03044

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.00281	0.00457	0.05062
	SCE	0.01019	0.01195	0.05799
	(CLK * !SCE)	0.00435	0.00597	0.05106
	(CLK * !SCE)	0.01279	0.01443	0.05948
	(!CLK * D * !SCE * Q * !Q_N)	-0.00007	0.00140	0.03080
	(!CLK * D * !SCE * Q * !Q_N)	0.00601	0.00753	0.03691
	(!CLK * D * !SCE * !Q * Q_N)	0.01360	0.01534	0.06327
	(!CLK * D * !SCE * !Q * Q_N)	0.02204	0.02379	0.07170
	(!CLK * !D * !SCE * Q * !Q_N)	0.01905	0.02049	0.04976
	(!CLK * !D * !SCE * Q * !Q_N)	0.02276	0.02423	0.05353
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00023	0.00118	0.03071
	(!CLK * !D * !SCE * !Q * Q_N)	0.00580	0.00726	0.03679
sky130_fd_sc_hs__sedfxbp_2	SCE	0.00255	0.00432	0.05041
	SCE	0.01006	0.01184	0.05791
	(CLK * !SCE)	0.00419	0.00581	0.05089
	(CLK * !SCE)	0.01278	0.01440	0.05947
	(!CLK * D * !SCE * Q * !Q_N)	-0.00011	0.00137	0.03078
	(!CLK * D * !SCE * Q * !Q_N)	0.00606	0.00759	0.03698
	(!CLK * D * !SCE * !Q * Q_N)	0.01339	0.01514	0.06306
	(!CLK * D * !SCE * !Q * Q_N)	0.02199	0.02374	0.07165
	(!CLK * !D * !SCE * Q * !Q_N)	0.01906	0.02049	0.04975
	(!CLK * !D * !SCE * Q * !Q_N)	0.02279	0.02425	0.05353
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00031	0.00113	0.03066
	(!CLK * !D * !SCE * !Q * Q_N)	0.00582	0.00730	0.03683

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.00606	0.00638	0.02337
	(CLK * SCE)	0.00250	0.00280	0.01980
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01402	0.01440	0.03295
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01046	0.01082	0.02938
	!SCE	0.00122	0.00104	0.00101
	!SCE	-0.00118	-0.00137	-0.00139
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.00619	0.00652	0.02348
	(CLK * SCE)	0.00256	0.00286	0.01983
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01399	0.01438	0.03292
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01035	0.01072	0.02928
	!SCE	0.00121	0.00103	0.00100
	!SCE	-0.00123	-0.00142	-0.00144

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.00310	0.00344	0.02049
	(CLK * SCE)	0.00666	0.00702	0.02404
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01169	0.01210	0.03155
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01526	0.01567	0.03511
	!SCE	-0.00095	-0.00098	-0.00098
	!SCE	0.00142	0.00144	0.00143
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.00306	0.00341	0.02043
	(CLK * SCE)	0.00671	0.00706	0.02406
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01165	0.01203	0.03147
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01530	0.01568	0.03511
	!SCE	-0.00094	-0.00097	-0.00097
	!SCE	0.00147	0.00149	0.00149

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxbp_1	**(CLK * D)**	0.00901	0.01069	0.06045
	(CLK * D)	0.00261	0.00425	0.05404
	(CLK * !D)	0.00941	0.01107	0.06046
	(CLK * !D)	0.00300	0.00465	0.05405
	(!CLK * D * SCD * Q * !Q_N)	0.00532	0.00637	0.03598
	(!CLK * D * SCD * Q * !Q_N)	-0.00001	0.00101	0.03063
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00512	0.00618	0.03578
	(!CLK * D * DE * SCD * !Q * Q_N)	-0.00021	0.00081	0.03044
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01801	0.01881	0.05685
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01363	0.01440	0.05243
	(!CLK * D * !SCD * Q * !Q_N)	0.01801	0.01882	0.05689
	(!CLK * D * !SCD * Q * !Q_N)	0.01363	0.01442	0.05247
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01698	0.01867	0.07004
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01058	0.01223	0.06362
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00585	0.00692	0.03652
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00041	0.00144	0.03106
	(!CLK * !D * SCD * !Q * Q_N)	0.01698	0.01868	0.06968
	(!CLK * !D * SCD * !Q * Q_N)	0.01057	0.01224	0.06326
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01745	0.01909	0.07007
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01104	0.01268	0.06365
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00605	0.00712	0.03672
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00061	0.00164	0.03126
	(!CLK * !D * !SCD * !Q * Q_N)	0.00586	0.00692	0.03652
	(!CLK * !D * !SCD * !Q * Q_N)	0.00041	0.00145	0.03106
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00532	0.00638	0.03598
	(!CLK * !D * !DE * SCD * Q * !Q_N)	-0.00001	0.00100	0.03063
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01803	0.01880	0.05689
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01365	0.01441	0.05247

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.00915	0.01085	0.06052
	(CLK * D)	0.00256	0.00424	0.05392
	(CLK * !D)	0.00951	0.01117	0.06049
	(CLK * !D)	0.00292	0.00455	0.05390
	(!CLK * D * SCD * Q * !Q_N)	0.00542	0.00644	0.03598
	(!CLK * D * SCD * Q * !Q_N)	-0.00007	0.00093	0.03049
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00524	0.00627	0.03580
	(!CLK * D * DE * SCD * !Q * Q_N)	-0.00025	0.00075	0.03031
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01816	0.01893	0.05684
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01366	0.01441	0.05231
	(!CLK * D * !SCD * Q * !Q_N)	0.01810	0.01886	0.05681
	(!CLK * D * !SCD * Q * !Q_N)	0.01361	0.01433	0.05227
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01695	0.01861	0.06999
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01036	0.01201	0.06338
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00603	0.00707	0.03660
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00043	0.00144	0.03098
	(!CLK * !D * SCD * !Q * Q_N)	0.01695	0.01862	0.06961
	(!CLK * !D * SCD * !Q * Q_N)	0.01036	0.01203	0.06301
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01746	0.01910	0.07005
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01087	0.01248	0.06345
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00621	0.00725	0.03678
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00062	0.00162	0.03117
	(!CLK * !D * !SCD * !Q * Q_N)	0.00603	0.00706	0.03660
	(!CLK * !D * !SCD * !Q * Q_N)	0.00043	0.00145	0.03099
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00542	0.00645	0.03597
	(!CLK * !D * !DE * SCD * Q * !Q_N)	-0.00007	0.00092	0.03048
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01813	0.01885	0.05681
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01364	0.01432	0.05227

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxbp_1	**(CLK * D)**	0.00123	0.00384	0.05367
	(CLK * D)	0.00763	0.01025	0.06008
	(CLK * !D)	0.00123	0.00385	0.05331
	(CLK * !D)	0.00764	0.01026	0.05973
	(!CLK * D * SCD * Q * !Q_N)	0.00002	0.00163	0.03131
	(!CLK * D * SCD * Q * !Q_N)	0.00536	0.00699	0.03666
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00022	0.00183	0.03151
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00556	0.00719	0.03686
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01363	0.01639	0.05993
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01802	0.02080	0.06417
	(!CLK * D * !SCD * Q * !Q_N)	0.01369	0.01637	0.05991
	(!CLK * D * !SCD * Q * !Q_N)	0.01807	0.02078	0.06415
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01033	0.01293	0.06566
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01671	0.01934	0.07208
	(!CLK * D * !DE * !SCD * !Q * Q_N)	-0.00034	0.00133	0.03079
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00509	0.00682	0.03622
	(!CLK * !D * SCD * !Q * Q_N)	0.01038	0.01298	0.06540
	(!CLK * !D * SCD * !Q * Q_N)	0.01676	0.01939	0.07181
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00998	0.01257	0.06497
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01637	0.01898	0.07139
	(!CLK * !D * DE * !SCD * Q * !Q_N)	-0.00055	0.00113	0.03059
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00492	0.00663	0.03603
	(!CLK * !D * !SCD * !Q * Q_N)	-0.00033	0.00133	0.03079
	(!CLK * !D * !SCD * !Q * Q_N)	0.00510	0.00682	0.03623
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00002	0.00163	0.03131
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00536	0.00698	0.03666
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01367	0.01643	0.05992
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01805	0.02084	0.06416

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.00128	0.00385	0.05361
	(CLK * D)	0.00788	0.01046	0.06021
	(CLK * !D)	0.00093	0.00347	0.05285
	(CLK * !D)	0.00752	0.01008	0.05945
	(!CLK * D * SCD * Q * !Q_N)	0.00013	0.00171	0.03130
	(!CLK * D * SCD * Q * !Q_N)	0.00561	0.00722	0.03680
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00031	0.00189	0.03148
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00580	0.00740	0.03698
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01372	0.01647	0.05992
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01823	0.02098	0.06429
	(!CLK * D * !SCD * Q * !Q_N)	0.01384	0.01670	0.06001
	(!CLK * D * !SCD * Q * !Q_N)	0.01835	0.02122	0.06437
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01032	0.01290	0.06537
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01692	0.01949	0.07197
	(!CLK * D * !DE * !SCD * !Q * Q_N)	-0.00031	0.00130	0.03071
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00528	0.00693	0.03633
	(!CLK * !D * SCD * !Q * Q_N)	0.01036	0.01295	0.06530
	(!CLK * !D * SCD * !Q * Q_N)	0.01696	0.01954	0.07190
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00995	0.01250	0.06483
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01652	0.01909	0.07143
	(!CLK * !D * DE * !SCD * Q * !Q_N)	-0.00048	0.00112	0.03053
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00511	0.00676	0.03615
	(!CLK * !D * !SCD * !Q * Q_N)	-0.00030	0.00130	0.03071
	(!CLK * !D * !SCD * !Q * Q_N)	0.00529	0.00693	0.03633
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00013	0.00170	0.03129
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00561	0.00722	0.03680
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01383	0.01669	0.06003
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01834	0.02122	0.06439

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)	0.01548	0.01682	0.06215
	(SCD * SCE * Q * !Q_N)	0.01093	0.01226	0.05760
	(D * !SCE * Q * !Q_N)	0.01546	0.01680	0.06229
	(D * !SCE * Q * !Q_N)	0.01092	0.01224	0.05774
	(D * !DE * !SCE * !Q * Q_N)	0.01556	0.01682	0.06251
	(D * !DE * !SCE * !Q * Q_N)	0.01101	0.01227	0.05797
	(!SCD * SCE * !Q * Q_N)	0.01558	0.01684	0.06253
	(!SCD * SCE * !Q * Q_N)	0.01103	0.01229	0.05799
	(!D * !SCE * !Q * Q_N)	0.01556	0.01682	0.06252
	(!D * !SCE * !Q * Q_N)	0.01102	0.01227	0.05797
	(!D * !DE * !SCE * Q * !Q_N)	0.01546	0.01680	0.06228
	(!D * !DE * !SCE * Q * !Q_N)	0.01091	0.01224	0.05774
sky130_fd_sc_hs__sedfxbp_2	(SCD * SCE * Q * !Q_N)	0.01540	0.01679	0.06261
	(SCD * SCE * Q * !Q_N)	0.01086	0.01224	0.05807
	(D * !SCE * Q * !Q_N)	0.01538	0.01676	0.06243
	(D * !SCE * Q * !Q_N)	0.01084	0.01221	0.05789
	(D * !DE * !SCE * !Q * Q_N)	0.01560	0.01690	0.06292
	(D * !DE * !SCE * !Q * Q_N)	0.01106	0.01236	0.05838
	(!SCD * SCE * !Q * Q_N)	0.01563	0.01693	0.06295
	(!SCD * SCE * !Q * Q_N)	0.01109	0.01239	0.05841
	(!D * !SCE * !Q * Q_N)	0.01561	0.01690	0.06292
	(!D * !SCE * !Q * Q_N)	0.01107	0.01236	0.05838
	(!D * !DE * !SCE * Q * !Q_N)	0.01538	0.01676	0.06243
	(!D * !DE * !SCE * Q * !Q_N)	0.01083	0.01221	0.05789

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)	0.00845	0.01037	0.05638
	(SCD * SCE * Q * !Q_N)	0.01298	0.01493	0.06093
	(SCD * SCE * !Q * Q_N)	0.01635	0.01816	0.06522
	(SCD * SCE * !Q * Q_N)	0.02088	0.02271	0.06977
	(D * DE * !SCE * !Q * Q_N)	0.01631	0.01811	0.06513
	(D * DE * !SCE * !Q * Q_N)	0.02084	0.02266	0.06966
	(D * !SCE * Q * !Q_N)	0.00845	0.01037	0.05639
	(D * !SCE * Q * !Q_N)	0.01298	0.01493	0.06093
	(D * !DE * !SCE * !Q * Q_N)	0.00849	0.01037	0.05625
	(D * !DE * !SCE * !Q * Q_N)	0.01302	0.01493	0.06080
	(!SCD * SCE * Q * !Q_N)	0.01822	0.02027	0.06719
	(!SCD * SCE * Q * !Q_N)	0.02277	0.02484	0.07176
	(!SCD * SCE * !Q * Q_N)	0.00849	0.01039	0.05625
	(!SCD * SCE * !Q * Q_N)	0.01303	0.01491	0.06080
	(!D * DE * !SCE * Q * !Q_N)	0.01842	0.02045	0.06739
	(!D * DE * !SCE * Q * !Q_N)	0.02295	0.02499	0.07194
	(!D * !SCE * !Q * Q_N)	0.00849	0.01037	0.05626
	(!D * !SCE * !Q * Q_N)	0.01303	0.01493	0.06079
	(!D * !DE * !SCE * Q * !Q_N)	0.00845	0.01037	0.05639
	(!D * !DE * !SCE * Q * !Q_N)	0.01298	0.01493	0.06093

sky130_fd_sc_hs__sedfxbp_2	**(SCD * SCE * Q * !Q_N)**	0.00858	0.01054	0.05683
	(SCD * SCE * Q * !Q_N)	0.01311	0.01510	0.06137
	(SCD * SCE * !Q * Q_N)	0.01620	0.01806	0.06535
	(SCD * SCE * !Q * Q_N)	0.02073	0.02260	0.06989
	(D * DE * !SCE * !Q * Q_N)	0.01618	0.01803	0.06530
	(D * DE * !SCE * !Q * Q_N)	0.02070	0.02257	0.06984
	(D * !SCE * Q * !Q_N)	0.00859	0.01056	0.05685
	(D * !SCE * Q * !Q_N)	0.01312	0.01511	0.06139
	(D * !DE * !SCE * !Q * Q_N)	0.00850	0.01042	0.05658
	(D * !DE * !SCE * !Q * Q_N)	0.01303	0.01497	0.06111
	(!SCD * SCE * Q * !Q_N)	0.01827	0.02035	0.06754
	(!SCD * SCE * Q * !Q_N)	0.02281	0.02491	0.07207
	(!SCD * SCE * !Q * Q_N)	0.00850	0.01042	0.05657
	(!SCD * SCE * !Q * Q_N)	0.01302	0.01497	0.06110
	(!D * DE * !SCE * Q * !Q_N)	0.01846	0.02053	0.06774
	(!D * DE * !SCE * Q * !Q_N)	0.02298	0.02506	0.07229
	(!D * !SCE * !Q * Q_N)	0.00850	0.01043	0.05658
	(!D * !SCE * !Q * Q_N)	0.01303	0.01498	0.06111
	(!D * !DE * !SCE * Q * !Q_N)	0.00859	0.01056	0.05685
	(!D * !DE * !SCE * Q * !Q_N)	0.01312	0.01511	0.06138

SKY130_FD_SC_HS__SEDFXTPx

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage 1.80, 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	0.00201	0.00390	0.00182	0.00382	0.00280	1.20508
sky130_fd_sc_hs__sedfxtp_2	0.00211	0.00393	0.00184	0.00387	0.00282	2.37003
sky130_fd_sc_hs__sedfxtp_4	0.00211	0.00391	0.00184	0.00384	0.00292	4.47064

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sedfxtp_1	0.00000	1.22186	2.31656
sky130_fd_sc_hs__sedfxtp_2	0.00000	1.26402	2.39344
sky130_fd_sc_hs__sedfxtp_4	0.00000	1.34833	2.54720

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)**	0.17626	0.65548	6.05870
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RR)**	0.18098	0.57008	6.06286
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RR)**	0.20439	0.52863	6.06004

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxtp_1	**CLK->Q (RF)**	0.15429	0.42742	2.24336
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RF)**	0.17660	0.43394	2.30382
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RF)**	0.23527	0.48631	2.44979

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)	-0.14653	-0.23926	-1.11665
	setup	CLK (R)	0.17739	0.25827	1.13900
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.14870	-0.24059	-1.11911
	setup	CLK (R)	0.17758	0.25827	1.14001
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.14692	-0.23819	-1.12287
	setup	CLK (R)	0.17706	0.25827	1.14500

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)	-0.28141	-0.42444	-3.40390
	setup	CLK (R)	0.35261	0.47548	3.46213
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.27968	-0.42440	-3.40078
	setup	CLK (R)	0.34927	0.47327	3.46616
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.28240	-0.42648	-3.40745
	setup	CLK (R)	0.34367	0.46943	3.48046

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)	-0.03449	-0.05099	-0.03762
	setup	CLK (R)	0.38289	0.41038	1.01919
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.03444	-0.05099	-0.04053
	setup	CLK (R)	0.38401	0.40870	1.02117
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.03444	-0.05099	-0.04453
	setup	CLK (R)	0.37664	0.40676	1.02486

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)	-0.20461	-0.33311	-2.84144
	setup	CLK (R)	0.32239	0.44633	3.40408
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.20894	-0.33789	-2.84280
	setup	CLK (R)	0.32129	0.44551	3.40303
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.20920	-0.33757	-2.84469
	setup	CLK (R)	0.32019	0.44629	3.41037

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)	-0.03449	-0.05099	-0.03762
	hold	CLK (R)	-0.14463	-0.17766	-0.40041
	setup	CLK (R)	0.17829	0.23770	1.01919
	setup	CLK (R)	0.38289	0.41038	0.65126
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.03444	-0.05099	-0.04053
	hold	CLK (R)	-0.14332	-0.17063	-0.39340
	setup	CLK (R)	0.17815	0.24004	1.02117
	setup	CLK (R)	0.38401	0.40870	0.66593
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.03444	-0.05099	-0.04453
	hold	CLK (R)	-0.14437	-0.17062	-0.39869
	setup	CLK (R)	0.17475	0.24004	1.02486
	setup	CLK (R)	0.37664	0.40676	0.68882

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)	-0.29937	-0.43219	-3.39995
	hold	CLK (R)	-0.20461	-0.33311	-2.84144
	setup	CLK (R)	0.32239	0.44633	3.40408
	setup	CLK (R)	0.22261	0.34467	2.84846
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.29884	-0.42905	-3.39578
	hold	CLK (R)	-0.20894	-0.33789	-2.84280
	setup	CLK (R)	0.32129	0.44551	3.40303
	setup	CLK (R)	0.22452	0.34600	2.85031
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.30107	-0.43195	-3.40297
	hold	CLK (R)	-0.20920	-0.33757	-2.84469
	setup	CLK (R)	0.32019	0.44629	3.41037
	setup	CLK (R)	0.22459	0.34364	2.84820

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)	-0.08951	-0.15756	-0.78519
	setup	CLK (R)	0.10818	0.17109	0.80244
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.08717	-0.15775	-0.78429
	setup	CLK (R)	0.10662	0.17109	0.80280
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.08980	-0.16091	-0.79231
	setup	CLK (R)	0.10673	0.17109	0.81056

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)	-0.20403	-0.31890	-3.10768
	setup	CLK (R)	0.25619	0.36795	3.17996
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.19923	-0.31746	-3.10005
	setup	CLK (R)	0.25365	0.36448	3.18584
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.20180	-0.32181	-3.11135
	setup	CLK (R)	0.25238	0.36215	3.20822

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)	0.00483	0.01711	0.32332
	setup	CLK (R)	0.27566	0.28824	0.73301
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	0.00483	0.01711	0.32732
	setup	CLK (R)	0.27032	0.28518	0.73301
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	0.00483	0.01711	0.31932
	setup	CLK (R)	0.26812	0.28244	0.74089

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)	-0.14579	-0.28355	-2.83944
	setup	CLK (R)	0.22308	0.34178	3.21814
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.14316	-0.28275	-2.83971
	setup	CLK (R)	0.22396	0.33808	3.22113
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.14502	-0.28528	-2.84015
	setup	CLK (R)	0.21776	0.33747	3.23932

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)	-0.21769	-0.23772	-0.39796
	hold	CLK (R)	0.00483	0.01711	0.32332
	hold	CLK (R)	-0.07309	-0.15001	-0.70201
	hold	CLK (R)	-0.10389	-0.13410	-0.28476
	setup	CLK (R)	0.27560	0.28813	0.51787
	setup	CLK (R)	0.09541	0.16454	0.73301
	setup	CLK (R)	0.09543	0.16454	0.73301
	setup	CLK (R)	0.27566	0.28824	0.51398
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.21474	-0.23641	-0.39262
	hold	CLK (R)	0.00483	0.01711	0.32732
	hold	CLK (R)	-0.07677	-0.15175	-0.70068
	hold	CLK (R)	-0.10198	-0.12986	-0.27560
	setup	CLK (R)	0.27032	0.28510	0.52873
	setup	CLK (R)	0.09335	0.16454	0.73301
	setup	CLK (R)	0.09342	0.16454	0.73301
	setup	CLK (R)	0.27019	0.28518	0.52761
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.21904	-0.24020	-0.39964
	hold	CLK (R)	0.00483	0.01711	0.31932
	hold	CLK (R)	-0.07610	-0.15427	-0.70988
	hold	CLK (R)	-0.10198	-0.12986	-0.28466
	setup	CLK (R)	0.26812	0.28235	0.55229
	setup	CLK (R)	0.09535	0.16454	0.74041
	setup	CLK (R)	0.09540	0.16458	0.74089
	setup	CLK (R)	0.26796	0.28244	0.55225

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)	-0.14927	-0.29072	-2.85655
	hold	CLK (R)	-0.16352	-0.29087	-3.14421
	hold	CLK (R)	-0.15366	-0.28946	-3.15985
	hold	CLK (R)	-0.14579	-0.28355	-2.83944
	setup	CLK (R)	0.17799	0.30371	2.87523
	setup	CLK (R)	0.18013	0.30485	3.15148
	setup	CLK (R)	0.22308	0.34178	3.21814
	setup	CLK (R)	0.16130	0.29094	2.84390
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.14981	-0.29049	-2.85732
	hold	CLK (R)	-0.15728	-0.28836	-3.14072
	hold	CLK (R)	-0.15071	-0.28719	-3.15580
	hold	CLK (R)	-0.14316	-0.28275	-2.83971
	setup	CLK (R)	0.17756	0.30371	2.87315
	setup	CLK (R)	0.17867	0.30151	3.14453
	setup	CLK (R)	0.22396	0.33808	3.22113
	setup	CLK (R)	0.16264	0.29198	2.84303
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.15118	-0.29067	-2.85841
	hold	CLK (R)	-0.16123	-0.29061	-3.14585
	hold	CLK (R)	-0.15615	-0.28920	-3.16357
	hold	CLK (R)	-0.14502	-0.28528	-2.84015
	setup	CLK (R)	0.17692	0.30371	2.87618
	setup	CLK (R)	0.18014	0.30498	3.15220
	setup	CLK (R)	0.21776	0.33747	3.23932
	setup	CLK (R)	0.15922	0.29124	2.84622

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 ()**	0.08124	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.08124	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.12476	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.08124	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.12717	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.08124	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.12476	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.12476	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.08124	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.12717	0.64453	16.50020
sky130_fd_sc_hs__sedfxtp_2	**min_pulse_width**	**CLK ()**	0.09091	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.09091	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.16585	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.09333	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.16585	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.09333	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.16585	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.16585	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.09333	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.16585	0.64453	16.50020
sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK ()**	0.11267	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.11267	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.24080	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.11509	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.24080	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.11509	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.23838	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.23838	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.11509	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.24080	0.64453	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 ()	0.13442	0.64453	16.50020
	min_pulse_width	CLK ()	0.14410	0.64453	16.50020
	min_pulse_width	CLK ()	0.20937	0.64453	16.50020
	min_pulse_width	CLK ()	0.13442	0.64453	16.50020
	min_pulse_width	CLK ()	0.20937	0.64453	16.50020
	min_pulse_width	CLK ()	0.13442	0.64453	16.50020
	min_pulse_width	CLK ()	0.22146	0.64453	16.50020
	min_pulse_width	CLK ()	0.21179	0.64453	16.50020
	min_pulse_width	CLK ()	0.13442	0.64453	16.50020
	min_pulse_width	CLK ()	0.20937	0.64453	16.50020
sky130_fd_sc_hs__sedfxtp_2	min_pulse_width	CLK ()	0.13442	0.64453	16.50020
	min_pulse_width	CLK ()	0.14410	0.64453	16.50020
	min_pulse_width	CLK ()	0.20937	0.64453	16.50020
	min_pulse_width	CLK ()	0.13442	0.64453	16.50020
	min_pulse_width	CLK ()	0.20937	0.64453	16.50020
	min_pulse_width	CLK ()	0.13442	0.64453	16.50020
	min_pulse_width	CLK ()	0.21904	0.64453	16.50020
	min_pulse_width	CLK ()	0.20937	0.64453	16.50020
	min_pulse_width	CLK ()	0.13442	0.64453	16.50020
	min_pulse_width	CLK ()	0.20937	0.64453	16.50020

sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK ()**	0.13201	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.14168	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.19970	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.13201	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.19970	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.13201	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.20937	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.19970	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.13201	0.64453	16.50020
	min_pulse_width	**CLK ()**	0.19970	0.64453	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	0.03356	0.03531	0.08235
	CLK	0.02804	0.02982	0.07734
sky130_fd_sc_hs__sedfxtp_2	CLK	0.03693	0.03892	0.08605
	CLK	0.03136	0.03338	0.08151
sky130_fd_sc_hs__sedfxtp_4	CLK	0.04351	0.04567	0.09334
	CLK	0.03782	0.04012	0.08966

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	CLK	0.03042	0.03189	0.07954
	CLK	0.02689	0.02838	0.07580
sky130_fd_sc_hs__sedfxtp_2	CLK	0.03442	0.03570	0.08348
	CLK	0.03090	0.03202	0.07949
sky130_fd_sc_hs__sedfxtp_4	CLK	0.04314	0.04196	0.08951
	CLK	0.03947	0.03799	0.08531

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.00526	0.00589	0.02910
	(DE * SCE)	0.00190	0.00251	0.02573
	(CLK * DE * !SCE)	0.01094	0.01140	0.03260
	(CLK * DE * !SCE)	0.00649	0.00695	0.02816
	(CLK * !DE * !SCE)	0.00125	0.00126	0.00125
	(CLK * !DE * !SCE)	-0.00088	-0.00088	-0.00087
	(!DE * SCE)	0.00126	0.00127	0.00126
	(!DE * SCE)	-0.00087	-0.00088	-0.00087
	(!CLK * DE * !SCE * Q)	0.01904	0.01956	0.04260
	(!CLK * DE * !SCE * Q)	0.01459	0.01512	0.03815
	(!CLK * DE * !SCE * !Q)	0.01853	0.01902	0.04180
	(!CLK * DE * !SCE * !Q)	0.01403	0.01453	0.03731
	(!CLK * !DE * !SCE)	0.00125	0.00126	0.00125
	(!CLK * !DE * !SCE)	-0.00088	-0.00088	-0.00087
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.00543	0.00604	0.02921
	(DE * SCE)	0.00192	0.00250	0.02569
	(CLK * DE * !SCE)	0.01111	0.01155	0.03272
	(CLK * DE * !SCE)	0.00649	0.00693	0.02810
	(CLK * !DE * !SCE)	0.00130	0.00131	0.00130
	(CLK * !DE * !SCE)	-0.00092	-0.00093	-0.00092
	(!DE * SCE)	0.00131	0.00132	0.00131
	(!DE * SCE)	-0.00091	-0.00092	-0.00092
	(!CLK * DE * !SCE * Q)	0.01917	0.01968	0.04270
	(!CLK * DE * !SCE * Q)	0.01455	0.01506	0.03808
	(!CLK * DE * !SCE * !Q)	0.01872	0.01919	0.04196
	(!CLK * DE * !SCE * !Q)	0.01406	0.01454	0.03729
	(!CLK * !DE * !SCE)	0.00130	0.00131	0.00130
	(!CLK * !DE * !SCE)	-0.00092	-0.00093	-0.00092

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.00545	0.00606	0.02925
	(DE * SCE)	0.00192	0.00251	0.02572
	(CLK * DE * !SCE)	0.01119	0.01163	0.03274
	(CLK * DE * !SCE)	0.00657	0.00701	0.02812
	(CLK * !DE * !SCE)	0.00131	0.00132	0.00131
	(CLK * !DE * !SCE)	-0.00092	-0.00093	-0.00092
	(!DE * SCE)	0.00131	0.00133	0.00132
	(!DE * SCE)	-0.00091	-0.00093	-0.00092
	(!CLK * DE * !SCE * Q)	0.01905	0.01957	0.04258
	(!CLK * DE * !SCE * Q)	0.01443	0.01495	0.03796
	(!CLK * DE * !SCE * !Q)	0.01855	0.01907	0.04180
	(!CLK * DE * !SCE * !Q)	0.01388	0.01440	0.03714
	(!CLK * !DE * !SCE)	0.00130	0.00131	0.00131
	(!CLK * !DE * !SCE)	-0.00092	-0.00093	-0.00092

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

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

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.00183	0.00294	0.02617
	(DE * SCE)	0.00525	0.00635	0.02958
	(CLK * DE * !SCE)	0.00344	0.00423	0.02620
	(CLK * DE * !SCE)	0.00795	0.00873	0.03069
	(CLK * !DE * !SCE)	-0.00038	-0.00038	-0.00037
	(CLK * !DE * !SCE)	0.00190	0.00191	0.00190
	(!DE * SCE)	-0.00037	-0.00037	-0.00037
	(!DE * SCE)	0.00191	0.00191	0.00190
	(!CLK * DE * !SCE * Q)	0.01182	0.01284	0.03899
	(!CLK * DE * !SCE * Q)	0.01626	0.01728	0.04344
	(!CLK * DE * !SCE * !Q)	0.01279	0.01389	0.03995
	(!CLK * DE * !SCE * !Q)	0.01728	0.01838	0.04445
	(!CLK * !DE * !SCE)	-0.00038	-0.00038	-0.00037
	(!CLK * !DE * !SCE)	0.00190	0.00191	0.00190
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.00178	0.00293	0.02607
	(DE * SCE)	0.00535	0.00651	0.02964
	(CLK * DE * !SCE)	0.00336	0.00413	0.02607
	(CLK * DE * !SCE)	0.00804	0.00880	0.03074
	(CLK * !DE * !SCE)	-0.00037	-0.00038	-0.00037
	(CLK * !DE * !SCE)	0.00200	0.00201	0.00200
	(!DE * SCE)	-0.00037	-0.00037	-0.00037
	(!DE * SCE)	0.00200	0.00201	0.00201
	(!CLK * DE * !SCE * Q)	0.01174	0.01275	0.03889
	(!CLK * DE * !SCE * Q)	0.01635	0.01736	0.04351
	(!CLK * DE * !SCE * !Q)	0.01269	0.01355	0.03979
	(!CLK * DE * !SCE * !Q)	0.01734	0.01821	0.04446
	(!CLK * !DE * !SCE)	-0.00037	-0.00038	-0.00037
	(!CLK * !DE * !SCE)	0.00200	0.00201	0.00200

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.00171	0.00287	0.02602
	(DE * SCE)	0.00529	0.00646	0.02960
	(CLK * DE * !SCE)	0.00356	0.00432	0.02622
	(CLK * DE * !SCE)	0.00824	0.00899	0.03089
	(CLK * !DE * !SCE)	-0.00037	-0.00038	-0.00037
	(CLK * !DE * !SCE)	0.00200	0.00202	0.00201
	(!DE * SCE)	-0.00037	-0.00037	-0.00037
	(!DE * SCE)	0.00201	0.00202	0.00201
	(!CLK * DE * !SCE * Q)	0.01184	0.01285	0.03897
	(!CLK * DE * !SCE * Q)	0.01646	0.01747	0.04359
	(!CLK * DE * !SCE * !Q)	0.01285	0.01372	0.03994
	(!CLK * DE * !SCE * !Q)	0.01751	0.01837	0.04461
	(!CLK * !DE * !SCE)	-0.00037	-0.00038	-0.00037
	(!CLK * !DE * !SCE)	0.00200	0.00201	0.00200

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.01000	0.01131	0.05732
	SCE	0.00255	0.00381	0.04984
	(CLK * !SCE)	0.01547	0.01666	0.06149
	(CLK * !SCE)	0.00693	0.00808	0.05292
	(!CLK * D * !SCE * Q)	0.00626	0.00704	0.03658
	(!CLK * D * !SCE * Q)	0.00004	0.00080	0.03037
	(!CLK * D * !SCE * !Q)	0.02346	0.02472	0.07112
	(!CLK * D * !SCE * !Q)	0.01493	0.01616	0.06257
	(!CLK * !D * !SCE * Q)	0.01909	0.01999	0.05000
	(!CLK * !D * !SCE * Q)	0.01528	0.01616	0.04616
	(!CLK * !D * !SCE * !Q)	0.00612	0.00709	0.03663
	(!CLK * !D * !SCE * !Q)	-0.00003	0.00092	0.03047

sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.01014	0.01145	0.05743
	SCE	0.00254	0.00380	0.04981
	(CLK * !SCE)	0.01567	0.01685	0.06166
	(CLK * !SCE)	0.00698	0.00812	0.05294
	(!CLK * D * !SCE * Q)	0.00630	0.00707	0.03661
	(!CLK * D * !SCE * Q)	-0.00001	0.00075	0.03032
	(!CLK * D * !SCE * !Q)	0.02361	0.02487	0.07125
	(!CLK * D * !SCE * !Q)	0.01492	0.01617	0.06253
	(!CLK * !D * !SCE * Q)	0.01911	0.02000	0.05000
	(!CLK * !D * !SCE * Q)	0.01527	0.01615	0.04614
	(!CLK * !D * !SCE * !Q)	0.00616	0.00712	0.03667
	(!CLK * !D * !SCE * !Q)	-0.00008	0.00086	0.03042
sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.01012	0.01144	0.05743
	SCE	0.00255	0.00382	0.04984
	(CLK * !SCE)	0.01570	0.01689	0.06166
	(CLK * !SCE)	0.00704	0.00819	0.05298
	(!CLK * D * !SCE * Q)	0.00628	0.00706	0.03660
	(!CLK * D * !SCE * Q)	0.00000	0.00076	0.03034
	(!CLK * D * !SCE * !Q)	0.02341	0.02469	0.07106
	(!CLK * D * !SCE * !Q)	0.01476	0.01600	0.06240
	(!CLK * !D * !SCE * Q)	0.01919	0.02010	0.05010
	(!CLK * !D * !SCE * Q)	0.01538	0.01627	0.04626
	(!CLK * !D * !SCE * !Q)	0.00614	0.00712	0.03666
	(!CLK * !D * !SCE * !Q)	-0.00007	0.00088	0.03045

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

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

sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.00271	0.00445	0.05052
	SCE	0.01018	0.01193	0.05799
	(CLK * !SCE)	0.00427	0.00588	0.05096
	(CLK * !SCE)	0.01282	0.01442	0.05950
	(!CLK * D * !SCE * Q)	-0.00009	0.00135	0.03077
	(!CLK * D * !SCE * Q)	0.00610	0.00759	0.03698
	(!CLK * D * !SCE * !Q)	0.01342	0.01515	0.06307
	(!CLK * D * !SCE * !Q)	0.02198	0.02371	0.07162
	(!CLK * !D * !SCE * Q)	0.01903	0.02045	0.04977
	(!CLK * !D * !SCE * Q)	0.02282	0.02427	0.05362
	(!CLK * !D * !SCE * !Q)	-0.00026	0.00133	0.03069
	(!CLK * !D * !SCE * !Q)	0.00588	0.00751	0.03687
sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.00270	0.00443	0.05048
	SCE	0.01033	0.01207	0.05810
	(CLK * !SCE)	0.00424	0.00582	0.05090
	(CLK * !SCE)	0.01295	0.01454	0.05960
	(!CLK * D * !SCE * Q)	-0.00012	0.00132	0.03074
	(!CLK * D * !SCE * Q)	0.00616	0.00765	0.03704
	(!CLK * D * !SCE * !Q)	0.01334	0.01506	0.06297
	(!CLK * D * !SCE * !Q)	0.02206	0.02377	0.07167
	(!CLK * !D * !SCE * Q)	0.01904	0.02045	0.04976
	(!CLK * !D * !SCE * Q)	0.02285	0.02431	0.05364
	(!CLK * !D * !SCE * !Q)	-0.00028	0.00131	0.03066
	(!CLK * !D * !SCE * !Q)	0.00594	0.00757	0.03693

sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.00264	0.00438	0.05044
	SCE	0.01023	0.01198	0.05803
	(CLK * !SCE)	0.00445	0.00604	0.05107
	(CLK * !SCE)	0.01312	0.01470	0.05974
	(!CLK * D * !SCE * Q)	-0.00011	0.00135	0.03075
	(!CLK * D * !SCE * Q)	0.00614	0.00759	0.03702
	(!CLK * D * !SCE * !Q)	0.01351	0.01523	0.06313
	(!CLK * D * !SCE * !Q)	0.02219	0.02391	0.07180
	(!CLK * !D * !SCE * Q)	0.01892	0.02034	0.04965
	(!CLK * !D * !SCE * Q)	0.02271	0.02416	0.05351
	(!CLK * !D * !SCE * !Q)	-0.00028	0.00132	0.03067
	(!CLK * !D * !SCE * !Q)	0.00591	0.00757	0.03690

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.00607	0.00640	0.02337
	(CLK * SCE)	0.00242	0.00273	0.01971
	(!CLK * SCE)	0.01402	0.01441	0.03296
	(!CLK * SCE)	0.01037	0.01074	0.02930
	!SCE	0.00120	0.00102	0.00099
	!SCE	-0.00126	-0.00145	-0.00147
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.00620	0.00653	0.02350
	(CLK * SCE)	0.00251	0.00281	0.01980
	(!CLK * SCE)	0.01411	0.01449	0.03304
	(!CLK * SCE)	0.01041	0.01077	0.02935
	!SCE	0.00122	0.00105	0.00102
	!SCE	-0.00127	-0.00146	-0.00148
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.00621	0.00653	0.02345
	(CLK * SCE)	0.00253	0.00283	0.01977
	(!CLK * SCE)	0.01388	0.01426	0.03282
	(!CLK * SCE)	0.01020	0.01056	0.02914
	!SCE	0.00122	0.00104	0.00101
	!SCE	-0.00127	-0.00146	-0.00148

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.00312	0.00348	0.02051
	(CLK * SCE)	0.00678	0.00714	0.02416
	(!CLK * SCE)	0.01163	0.01205	0.03150
	(!CLK * SCE)	0.01529	0.01571	0.03515
	!SCE	-0.00093	-0.00095	-0.00096
	!SCE	0.00151	0.00151	0.00152
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.00303	0.00337	0.02041
	(CLK * SCE)	0.00672	0.00708	0.02410
	(!CLK * SCE)	0.01152	0.01189	0.03135
	(!CLK * SCE)	0.01523	0.01560	0.03504
	!SCE	-0.00096	-0.00098	-0.00098
	!SCE	0.00152	0.00154	0.00153
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.00335	0.00369	0.02067
	(CLK * SCE)	0.00704	0.00738	0.02434
	(!CLK * SCE)	0.01176	0.01218	0.03162
	(!CLK * SCE)	0.01545	0.01587	0.03529
	!SCE	-0.00095	-0.00097	-0.00097
	!SCE	0.00152	0.00153	0.00153

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(CLK * D)**	0.00887	0.01056	0.06031
	(CLK * D)	0.00248	0.00414	0.05392
	(CLK * !D)	0.00923	0.01091	0.06028
	(CLK * !D)	0.00284	0.00450	0.05389
	(!CLK * D * SCD * Q)	0.00518	0.00624	0.03580
	(!CLK * D * SCD * Q)	-0.00013	0.00091	0.03050
	(!CLK * D * DE * SCD * !Q)	0.00502	0.00609	0.03564
	(!CLK * D * DE * SCD * !Q)	-0.00028	0.00075	0.03034
	(!CLK * D * DE * !SCD * !Q)	0.01798	0.01881	0.05684
	(!CLK * D * DE * !SCD * !Q)	0.01368	0.01447	0.05248
	(!CLK * D * !SCD * Q)	0.01791	0.01871	0.05670
	(!CLK * D * !SCD * Q)	0.01360	0.01438	0.05235
	(!CLK * D * !DE * SCD * !Q)	0.01683	0.01853	0.06990
	(!CLK * D * !DE * SCD * !Q)	0.01044	0.01211	0.06350
	(!CLK * D * !DE * !SCD * !Q)	0.00584	0.00691	0.03648
	(!CLK * D * !DE * !SCD * !Q)	0.00043	0.00148	0.03106
	(!CLK * !D * SCD * !Q)	0.01683	0.01853	0.06953
	(!CLK * !D * SCD * !Q)	0.01043	0.01213	0.06313
	(!CLK * !D * DE * SCD * Q)	0.01730	0.01898	0.06992
	(!CLK * !D * DE * SCD * Q)	0.01091	0.01256	0.06352
	(!CLK * !D * DE * !SCD * Q)	0.00600	0.00707	0.03663
	(!CLK * !D * DE * !SCD * Q)	0.00059	0.00164	0.03122
	(!CLK * !D * !SCD * !Q)	0.00584	0.00691	0.03648
	(!CLK * !D * !SCD * !Q)	0.00044	0.00148	0.03106
	(!CLK * !D * !DE * SCD * Q)	0.00517	0.00624	0.03580
	(!CLK * !D * !DE * SCD * Q)	-0.00013	0.00091	0.03050
	(!CLK * !D * !DE * !SCD * Q)	0.01792	0.01871	0.05672
	(!CLK * !D * !DE * !SCD * Q)	0.01362	0.01438	0.05238

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.00903	0.01074	0.06044
	(CLK * D)	0.00254	0.00423	0.05396
	(CLK * !D)	0.00931	0.01097	0.06033
	(CLK * !D)	0.00282	0.00447	0.05384
	(!CLK * D * SCD * Q)	0.00525	0.00629	0.03584
	(!CLK * D * SCD * Q)	-0.00014	0.00088	0.03046
	(!CLK * D * DE * SCD * !Q)	0.00510	0.00615	0.03570
	(!CLK * D * DE * SCD * !Q)	-0.00028	0.00074	0.03031
	(!CLK * D * DE * !SCD * !Q)	0.01793	0.01873	0.05675
	(!CLK * D * DE * !SCD * !Q)	0.01355	0.01433	0.05235
	(!CLK * D * !SCD * Q)	0.01790	0.01869	0.05666
	(!CLK * D * !SCD * Q)	0.01351	0.01428	0.05223
	(!CLK * D * !DE * SCD * !Q)	0.01693	0.01862	0.06999
	(!CLK * D * !DE * SCD * !Q)	0.01045	0.01211	0.06350
	(!CLK * D * !DE * !SCD * !Q)	0.00590	0.00696	0.03651
	(!CLK * D * !DE * !SCD * !Q)	0.00041	0.00145	0.03101
	(!CLK * !D * SCD * !Q)	0.01693	0.01862	0.06962
	(!CLK * !D * SCD * !Q)	0.01045	0.01213	0.06313
	(!CLK * !D * DE * SCD * Q)	0.01734	0.01900	0.06995
	(!CLK * !D * DE * SCD * Q)	0.01086	0.01250	0.06346
	(!CLK * !D * DE * !SCD * Q)	0.00605	0.00711	0.03666
	(!CLK * !D * DE * !SCD * Q)	0.00056	0.00159	0.03116
	(!CLK * !D * !SCD * !Q)	0.00591	0.00697	0.03652
	(!CLK * !D * !SCD * !Q)	0.00042	0.00145	0.03101
	(!CLK * !D * !DE * SCD * Q)	0.00524	0.00629	0.03584
	(!CLK * !D * !DE * SCD * Q)	-0.00014	0.00088	0.03045
	(!CLK * !D * !DE * !SCD * Q)	0.01791	0.01868	0.05668
	(!CLK * !D * !DE * !SCD * Q)	0.01352	0.01427	0.05225

sky130_fd_sc_hs__sedfxtp_4	**(CLK * D)**	0.00905	0.01071	0.06040
	(CLK * D)	0.00261	0.00424	0.05396
	(CLK * !D)	0.00905	0.01074	0.05999
	(CLK * !D)	0.00261	0.00427	0.05355
	(!CLK * D * SCD * Q)	0.00521	0.00627	0.03584
	(!CLK * D * SCD * Q)	-0.00014	0.00089	0.03049
	(!CLK * D * DE * SCD * !Q)	0.00506	0.00611	0.03569
	(!CLK * D * DE * SCD * !Q)	-0.00028	0.00076	0.03035
	(!CLK * D * DE * !SCD * !Q)	0.01816	0.01897	0.05701
	(!CLK * D * DE * !SCD * !Q)	0.01381	0.01460	0.05263
	(!CLK * D * !SCD * Q)	0.01808	0.01890	0.05688
	(!CLK * D * !SCD * Q)	0.01373	0.01451	0.05249
	(!CLK * D * !DE * SCD * !Q)	0.01672	0.01841	0.06980
	(!CLK * D * !DE * SCD * !Q)	0.01029	0.01195	0.06335
	(!CLK * D * !DE * !SCD * !Q)	0.00587	0.00694	0.03652
	(!CLK * D * !DE * !SCD * !Q)	0.00042	0.00146	0.03106
	(!CLK * !D * SCD * !Q)	0.01672	0.01842	0.06942
	(!CLK * !D * SCD * !Q)	0.01028	0.01197	0.06298
	(!CLK * !D * DE * SCD * Q)	0.01718	0.01884	0.06980
	(!CLK * !D * DE * SCD * Q)	0.01074	0.01238	0.06335
	(!CLK * !D * DE * !SCD * Q)	0.00602	0.00709	0.03667
	(!CLK * !D * DE * !SCD * Q)	0.00057	0.00161	0.03121
	(!CLK * !D * !SCD * !Q)	0.00588	0.00694	0.03652
	(!CLK * !D * !SCD * !Q)	0.00043	0.00147	0.03106
	(!CLK * !D * !DE * SCD * Q)	0.00521	0.00627	0.03584
	(!CLK * !D * !DE * SCD * Q)	-0.00014	0.00089	0.03049
	(!CLK * !D * !DE * !SCD * Q)	0.01810	0.01888	0.05690
	(!CLK * !D * !DE * !SCD * Q)	0.01375	0.01450	0.05251

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * D)	0.00134	0.00393	0.05374
	(CLK * D)	0.00772	0.01035	0.06014
	(CLK * !D)	0.00135	0.00394	0.05338
	(CLK * !D)	0.00772	0.01035	0.05978
	(!CLK * D * SCD * Q)	0.00025	0.00185	0.03146
	(!CLK * D * SCD * Q)	0.00554	0.00718	0.03677
	(!CLK * D * DE * SCD * !Q)	0.00041	0.00201	0.03162
	(!CLK * D * DE * SCD * !Q)	0.00570	0.00734	0.03694
	(!CLK * D * DE * !SCD * !Q)	0.01388	0.01665	0.06013
	(!CLK * D * DE * !SCD * !Q)	0.01820	0.02098	0.06431
	(!CLK * D * !SCD * Q)	0.01401	0.01690	0.06022
	(!CLK * D * !SCD * Q)	0.01833	0.02122	0.06439
	(!CLK * D * !DE * SCD * !Q)	0.01033	0.01295	0.06545
	(!CLK * D * !DE * SCD * !Q)	0.01672	0.01934	0.07185
	(!CLK * D * !DE * !SCD * !Q)	-0.00024	0.00139	0.03083
	(!CLK * D * !DE * !SCD * !Q)	0.00515	0.00683	0.03625
	(!CLK * !D * SCD * !Q)	0.01039	0.01299	0.06538
	(!CLK * !D * SCD * !Q)	0.01675	0.01939	0.07178
	(!CLK * !D * DE * SCD * Q)	0.00999	0.01258	0.06496
	(!CLK * !D * DE * SCD * Q)	0.01635	0.01897	0.07136
	(!CLK * !D * DE * !SCD * Q)	-0.00040	0.00124	0.03067
	(!CLK * !D * DE * !SCD * Q)	0.00499	0.00668	0.03609
	(!CLK * !D * !SCD * !Q)	-0.00024	0.00140	0.03083
	(!CLK * !D * !SCD * !Q)	0.00515	0.00684	0.03625
	(!CLK * !D * !DE * SCD * Q)	0.00025	0.00185	0.03146
	(!CLK * !D * !DE * SCD * Q)	0.00554	0.00717	0.03677
	(!CLK * !D * !DE * !SCD * Q)	0.01400	0.01670	0.06024
	(!CLK * !D * !DE * !SCD * Q)	0.01832	0.02103	0.06441

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.00128	0.00387	0.05366
	(CLK * D)	0.00775	0.01037	0.06015
	(CLK * !D)	0.00128	0.00387	0.05330
	(CLK * !D)	0.00775	0.01038	0.05979
	(!CLK * D * SCD * Q)	0.00021	0.00180	0.03140
	(!CLK * D * SCD * Q)	0.00559	0.00722	0.03680
	(!CLK * D * DE * SCD * !Q)	0.00037	0.00196	0.03156
	(!CLK * D * DE * SCD * !Q)	0.00574	0.00737	0.03696
	(!CLK * D * DE * !SCD * !Q)	0.01384	0.01661	0.06008
	(!CLK * D * DE * !SCD * !Q)	0.01824	0.02102	0.06433
	(!CLK * D * !SCD * Q)	0.01393	0.01681	0.06012
	(!CLK * D * !SCD * Q)	0.01833	0.02121	0.06437
	(!CLK * D * !DE * SCD * !Q)	0.01020	0.01282	0.06532
	(!CLK * D * !DE * SCD * !Q)	0.01669	0.01930	0.07182
	(!CLK * D * !DE * !SCD * !Q)	-0.00027	0.00136	0.03077
	(!CLK * D * !DE * !SCD * !Q)	0.00521	0.00687	0.03628
	(!CLK * !D * SCD * !Q)	0.01027	0.01286	0.06524
	(!CLK * !D * SCD * !Q)	0.01672	0.01935	0.07173
	(!CLK * !D * DE * SCD * Q)	0.00993	0.01251	0.06487
	(!CLK * !D * DE * SCD * Q)	0.01639	0.01899	0.07135
	(!CLK * !D * DE * !SCD * Q)	-0.00042	0.00121	0.03063
	(!CLK * !D * DE * !SCD * Q)	0.00506	0.00672	0.03614
	(!CLK * !D * !SCD * !Q)	-0.00027	0.00136	0.03078
	(!CLK * !D * !SCD * !Q)	0.00521	0.00687	0.03629
	(!CLK * !D * !DE * SCD * Q)	0.00021	0.00180	0.03140
	(!CLK * !D * !DE * SCD * Q)	0.00559	0.00721	0.03680
	(!CLK * !D * !DE * !SCD * Q)	0.01393	0.01680	0.06014
	(!CLK * !D * !DE * !SCD * Q)	0.01833	0.02121	0.06439

	(CLK * D)	0.00161	0.00417	0.05390
	(CLK * D)	0.00803	0.01062	0.06034
	(CLK * !D)	0.00161	0.00417	0.05354
	(CLK * !D)	0.00803	0.01063	0.05999
	(!CLK * D * SCD * Q)	0.00024	0.00184	0.03146
	(!CLK * D * SCD * Q)	0.00557	0.00721	0.03682
	(!CLK * D * DE * SCD * !Q)	0.00039	0.00199	0.03162
	(!CLK * D * DE * SCD * !Q)	0.00573	0.00736	0.03697
	(!CLK * D * DE * !SCD * !Q)	0.01367	0.01645	0.05996
	(!CLK * D * DE * !SCD * !Q)	0.01804	0.02082	0.06418
	(!CLK * D * !SCD * Q)	0.01380	0.01670	0.06004
	(!CLK * D * !SCD * Q)	0.01817	0.02106	0.06426
	(!CLK * D * !DE * SCD * !Q)	0.01049	0.01310	0.06560
	(!CLK * D * !DE * SCD * !Q)	0.01693	0.01953	0.07205
sky130_fd_sc_hs__sedfxtp_4	**(!CLK * D * !DE * !SCD * !Q)**	-0.00025	0.00138	0.03083
	(!CLK * D * !DE * !SCD * !Q)	0.00519	0.00687	0.03629
	(!CLK * !D * SCD * !Q)	0.01056	0.01315	0.06550
	(!CLK * !D * SCD * !Q)	0.01696	0.01958	0.07195
	(!CLK * !D * DE * SCD * Q)	0.01017	0.01274	0.06509
	(!CLK * !D * DE * SCD * Q)	0.01658	0.01918	0.07153
	(!CLK * !D * DE * !SCD * Q)	-0.00040	0.00123	0.03068
	(!CLK * !D * DE * !SCD * Q)	0.00504	0.00672	0.03614
	(!CLK * !D * !SCD * !Q)	-0.00025	0.00138	0.03083
	(!CLK * !D * !SCD * !Q)	0.00519	0.00687	0.03630
	(!CLK * !D * !DE * SCD * Q)	0.00024	0.00183	0.03146
	(!CLK * !D * !DE * SCD * Q)	0.00557	0.00721	0.03682
	(!CLK * !D * !DE * !SCD * Q)	0.01379	0.01669	0.06005
	(!CLK * !D * !DE * !SCD * Q)	0.01816	0.02107	0.06427

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(SCD * SCE * Q)	0.01509	0.01645	0.06204
	(SCD * SCE * Q)	0.01059	0.01194	0.05755
	(D * !SCE * Q)	0.01507	0.01643	0.06203
	(D * !SCE * Q)	0.01057	0.01192	0.05755
	(D * !DE * !SCE * !Q)	0.01545	0.01672	0.06254
	(D * !DE * !SCE * !Q)	0.01095	0.01221	0.05804
	(!SCD * SCE * !Q)	0.01548	0.01675	0.06256
	(!SCD * SCE * !Q)	0.01097	0.01224	0.05806
	(!D * !SCE * !Q)	0.01545	0.01672	0.06254
	(!D * !SCE * !Q)	0.01095	0.01221	0.05804
	(!D * !DE * !SCE * Q)	0.01507	0.01643	0.06203
	(!D * !DE * !SCE * Q)	0.01057	0.01192	0.05754
sky130_fd_sc_hs__sedfxtp_2	(SCD * SCE * Q)	0.01527	0.01668	0.06207
	(SCD * SCE * Q)	0.01074	0.01214	0.05754
	(D * !SCE * Q)	0.01525	0.01666	0.06206
	(D * !SCE * Q)	0.01073	0.01212	0.05753
	(D * !DE * !SCE * !Q)	0.01563	0.01693	0.06270
	(D * !DE * !SCE * !Q)	0.01110	0.01241	0.05818
	(!SCD * SCE * !Q)	0.01565	0.01695	0.06272
	(!SCD * SCE * !Q)	0.01112	0.01243	0.05819
	(!D * !SCE * !Q)	0.01563	0.01694	0.06270
	(!D * !SCE * !Q)	0.01110	0.01241	0.05818
	(!D * !DE * !SCE * Q)	0.01525	0.01666	0.06220
	(!D * !DE * !SCE * Q)	0.01073	0.01212	0.05767

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.01527	0.01657	0.06205
	(SCD * SCE * Q)	0.01060	0.01188	0.05738
	(D * !SCE * Q)	0.01525	0.01653	0.06203
	(D * !SCE * Q)	0.01058	0.01184	0.05736
	(D * !DE * !SCE * !Q)	0.01549	0.01671	0.06253
	(D * !DE * !SCE * !Q)	0.01082	0.01203	0.05786
	(!SCD * SCE * !Q)	0.01552	0.01674	0.06256
	(!SCD * SCE * !Q)	0.01085	0.01206	0.05788
	(!D * !SCE * !Q)	0.01549	0.01672	0.06253
	(!D * !SCE * !Q)	0.01082	0.01203	0.05786
	(!D * !DE * !SCE * Q)	0.01525	0.01653	0.06201
	(!D * !DE * !SCE * Q)	0.01058	0.01184	0.05734

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

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

sky130_fd_sc_hs__sedfxtp_1	**(SCD * SCE * Q)**	0.00852	0.01049	0.05661
	(SCD * SCE * Q)	0.01301	0.01500	0.06111
	(SCD * SCE * !Q)	0.01616	0.01801	0.06515
	(SCD * SCE * !Q)	0.02065	0.02251	0.06965
	(D * DE * !SCE * !Q)	0.01613	0.01798	0.06512
	(D * DE * !SCE * !Q)	0.02062	0.02248	0.06961
	(D * !SCE * Q)	0.00853	0.01050	0.05663
	(D * !SCE * Q)	0.01302	0.01501	0.06112
	(D * !DE * !SCE * !Q)	0.00831	0.01022	0.05622
	(D * !DE * !SCE * !Q)	0.01280	0.01472	0.06071
	(!SCD * SCE * Q)	0.01816	0.02024	0.06727
	(!SCD * SCE * Q)	0.02266	0.02476	0.07178
	(!SCD * SCE * !Q)	0.00831	0.01022	0.05622
	(!SCD * SCE * !Q)	0.01279	0.01472	0.06070
	(!D * DE * !SCE * Q)	0.01835	0.02042	0.06748
	(!D * DE * !SCE * Q)	0.02284	0.02491	0.07198
	(!D * !SCE * !Q)	0.00831	0.01023	0.05623
	(!D * !SCE * !Q)	0.01280	0.01472	0.06071
	(!D * !DE * !SCE * Q)	0.00853	0.01049	0.05662
	(!D * !DE * !SCE * Q)	0.01302	0.01501	0.06112

sky130_fd_sc_hs__sedfxtp_2	**(SCD * SCE * Q)**	0.00861	0.01054	0.05666
	(SCD * SCE * Q)	0.01312	0.01507	0.06118
	(SCD * SCE * !Q)	0.01618	0.01800	0.06513
	(SCD * SCE * !Q)	0.02068	0.02253	0.06966
	(D * DE * !SCE * !Q)	0.01615	0.01797	0.06508
	(D * DE * !SCE * !Q)	0.02065	0.02249	0.06959
	(D * !SCE * Q)	0.00861	0.01055	0.05666
	(D * !SCE * Q)	0.01312	0.01507	0.06119
	(D * !DE * !SCE * !Q)	0.00839	0.01027	0.05626
	(D * !DE * !SCE * !Q)	0.01289	0.01481	0.06077
	(!SCD * SCE * Q)	0.01824	0.02028	0.06728
	(!SCD * SCE * Q)	0.02276	0.02483	0.07182
	(!SCD * SCE * !Q)	0.00839	0.01028	0.05626
	(!SCD * SCE * !Q)	0.01290	0.01482	0.06077
	(!D * DE * !SCE * Q)	0.01842	0.02045	0.06749
	(!D * DE * !SCE * Q)	0.02293	0.02498	0.07202
	(!D * !SCE * !Q)	0.00839	0.01028	0.05626
	(!D * !SCE * !Q)	0.01290	0.01481	0.06077
	(!D * !DE * !SCE * Q)	0.00861	0.01055	0.05666
	(!D * !DE * !SCE * Q)	0.01312	0.01509	0.06119

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.00835	0.01029	0.05640
	(SCD * SCE * Q)	0.01301	0.01497	0.06107
	(SCD * SCE * !Q)	0.01588	0.01772	0.06486
	(SCD * SCE * !Q)	0.02054	0.02237	0.06953
	(D * DE * !SCE * !Q)	0.01586	0.01768	0.06479
	(D * DE * !SCE * !Q)	0.02051	0.02235	0.06946
	(D * !SCE * Q)	0.00836	0.01030	0.05642
	(D * !SCE * Q)	0.01302	0.01498	0.06109
	(D * !DE * !SCE * !Q)	0.00827	0.01017	0.05615
	(D * !DE * !SCE * !Q)	0.01293	0.01484	0.06080
	(!SCD * SCE * Q)	0.01787	0.01995	0.06696
	(!SCD * SCE * Q)	0.02254	0.02464	0.07163
	(!SCD * SCE * !Q)	0.00827	0.01017	0.05614
	(!SCD * SCE * !Q)	0.01293	0.01483	0.06080
	(!D * DE * !SCE * Q)	0.01805	0.02012	0.06716
	(!D * DE * !SCE * Q)	0.02271	0.02480	0.07183
	(!D * !SCE * !Q)	0.00828	0.01017	0.05615
	(!D * !SCE * !Q)	0.01294	0.01484	0.06081
	(!D * !DE * !SCE * Q)	0.00836	0.01030	0.05641
	(!D * !DE * !SCE * Q)	0.01302	0.01498	0.06108

SKY130_FD_SC_HS__XNOR2x

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00505	0.00522	0.60221
sky130_fd_sc_hs__xnor2_2	0.00840	0.00831	1.11302
sky130_fd_sc_hs__xnor2_4	0.01500	0.01516	1.89844

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xnor2_1	0.00000	0.29714	0.89470
sky130_fd_sc_hs__xnor2_2	0.00000	0.24291	0.40809
sky130_fd_sc_hs__xnor2_4	0.00000	0.65839	1.80426

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	0.06953	0.38695	2.91545
	A->Y (FR)	!B	0.08715	0.91600	10.43560
	B->Y (RR)	A	0.06320	0.38140	2.96628
	B->Y (FR)	!A	0.07409	0.91895	10.69440
sky130_fd_sc_hs__xnor2_2	A->Y (RR)	B	0.07556	0.34244	2.80249
	A->Y (FR)	!B	0.08540	0.77747	10.16430
	B->Y (RR)	A	0.07245	0.34520	2.79521
	B->Y (FR)	!A	0.06940	0.77903	10.41760
sky130_fd_sc_hs__xnor2_4	A->Y (RR)	B	0.08983	0.47358	5.85864
	A->Y (FR)	!B	0.08827	0.70342	10.30710
	B->Y (RR)	A	0.08526	0.47066	5.84041
	B->Y (FR)	!A	0.06982	0.71563	10.71960

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	0.08713	0.47822	3.91309
	A->Y (RF)	!B	0.03663	0.37773	4.19604
	B->Y (FF)	A	0.08367	0.47623	4.09710
	B->Y (RF)	!A	0.02847	0.36277	4.12996
sky130_fd_sc_hs__xnor2_2	A->Y (FF)	B	0.10336	0.50514	4.26790
	A->Y (RF)	!B	0.03472	0.31131	3.98791
	B->Y (FF)	A	0.09470	0.46216	3.96979
	B->Y (RF)	!A	0.02992	0.30471	4.02825
sky130_fd_sc_hs__xnor2_4	A->Y (FF)	B	0.09584	0.45965	4.31385
	A->Y (RF)	!B	0.03674	0.26219	3.80606
	B->Y (FF)	A	0.08924	0.42106	4.00996
	B->Y (RF)	!A	0.03059	0.25340	3.86426

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	0.01062	0.01236	0.05798
	A	B	0.00176	0.00347	0.04938
	A	!B	-0.00094	-0.00098	0.00506
	A	!B	0.00794	0.00789	0.01396
	B	A	0.00978	0.01174	0.05935
	B	A	0.00271	0.00469	0.05258
	B	!A	0.00013	0.00078	0.01143
	B	!A	0.00729	0.00796	0.01868
sky130_fd_sc_hs__xnor2_2	A	B	0.01682	0.01808	0.06011
	A	B	0.00391	0.00511	0.04733
	A	!B	-0.00014	-0.00025	0.01134
	A	!B	0.01549	0.01543	0.02717
	B	A	0.01608	0.01731	0.05309
	B	A	0.00573	0.00697	0.04295
	B	!A	0.00063	0.00168	0.02083
	B	!A	0.01352	0.01464	0.03392
sky130_fd_sc_hs__xnor2_4	A	B	0.02699	0.02969	0.11594
	A	B	0.00374	0.00634	0.09271
	A	!B	-0.00112	-0.00127	0.02171
	A	!B	0.02869	0.02855	0.05173
	B	A	0.02603	0.02846	0.10543
	B	A	0.00784	0.01019	0.08728
	B	!A	0.00001	0.00214	0.03664
	B	!A	0.02479	0.02684	0.06162

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	0.00259	0.00527	0.05165
	A	B	0.01147	0.01412	0.06048
	A	!B	0.01006	0.01012	0.01497
	A	!B	0.00104	0.00106	0.00581
	B	A	0.00429	0.00610	0.05366
	B	A	0.01122	0.01296	0.06037
	B	!A	0.00680	0.00699	0.01174
	B	!A	-0.00025	-0.00012	0.00449
sky130_fd_sc_hs__xnor2_2	A	B	0.00539	0.00817	0.05197
	A	B	0.01841	0.02109	0.06428
	A	!B	0.01916	0.01913	0.02927
	A	!B	0.00337	0.00329	0.01279
	B	A	0.00878	0.00956	0.05340
	B	A	0.01879	0.01953	0.06306
	B	!A	0.01341	0.01375	0.02370
	B	!A	0.00056	0.00087	0.01012
sky130_fd_sc_hs__xnor2_4	A	B	0.00882	0.01369	0.10286
	A	B	0.03216	0.03698	0.12502
	A	!B	0.03546	0.03553	0.05678
	A	!B	0.00535	0.00530	0.02551
	B	A	0.01298	0.01533	0.10218
	B	A	0.03062	0.03294	0.11965
	B	!A	0.02500	0.02595	0.04546
	B	!A	0.00057	0.00150	0.02102

SKY130_FD_SC_HS__XNOR3x

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00265	0.00689	0.00426	1.17313
sky130_fd_sc_hs__xnor3_2	0.00270	0.00692	0.00431	2.31648
sky130_fd_sc_hs__xnor3_4	0.00268	0.00691	0.00422	4.52140

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xnor3_1	0.00000	1.67341	1.89353
sky130_fd_sc_hs__xnor3_2	0.00000	1.71557	1.97043
sky130_fd_sc_hs__xnor3_4	0.00000	1.79990	2.12422

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)	0.24545	0.93264	8.58265
	B->X (-R)	0.17371	0.81841	8.45829
	C->X (-R)	0.12816	0.77049	8.29120
sky130_fd_sc_hs__xnor3_2	A->X (-R)	0.26085	0.85729	8.55342
	B->X (-R)	0.18390	0.73581	8.41981
	C->X (-R)	0.13553	0.68761	8.24529
sky130_fd_sc_hs__xnor3_4	A->X (-R)	0.29736	0.83714	8.55970
	B->X (-R)	0.22594	0.72261	8.44903
	C->X (-R)	0.17194	0.67043	8.27515

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xnor3_1	A->X (-F)	0.19287	0.76526	5.24471
	B->X (-F)	0.18196	0.72881	5.45361
	C->X (-F)	0.11030	0.60051	5.11258
sky130_fd_sc_hs__xnor3_2	A->X (-F)	0.21435	0.76116	5.19705
	B->X (-F)	0.19787	0.71397	5.37333
	C->X (-F)	0.12689	0.60098	5.06134
sky130_fd_sc_hs__xnor3_4	A->X (-F)	0.26094	0.79555	5.37327
	B->X (-F)	0.24698	0.75437	5.56848
	C->X (-F)	0.18258	0.64950	5.27515

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.02549	0.02688	0.07304
	A	0.02521	0.02754	0.07482
	B	0.02287	0.02677	0.12587
	B	0.02348	0.02881	0.12721
	C	0.01177	0.01372	0.06728
	C	0.01244	0.01622	0.07047
sky130_fd_sc_hs__xnor3_2	A	0.02841	0.02978	0.07440
	A	0.02787	0.03024	0.07657
	B	0.02571	0.02964	0.12688
	B	0.02623	0.03156	0.13252
	C	0.01479	0.01692	0.07013
	C	0.00783	0.01000	0.06404
sky130_fd_sc_hs__xnor3_4	A	0.03593	0.03690	0.08265
	A	0.03033	0.03135	0.07739
	B	0.03303	0.03650	0.13328
	B	0.02114	0.02466	0.12202
	C	0.02202	0.02384	0.07988
	C	0.01519	0.01714	0.07406

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.02088	0.02223	0.06864
	A	0.02648	0.02790	0.07423
	B	0.02123	0.02451	0.12200
	B	0.02481	0.02941	0.12655
	C	0.01305	0.01556	0.06862
	C	0.01089	0.01388	0.07031
sky130_fd_sc_hs__xnor3_2	A	0.02520	0.02541	0.07074
	A	0.03090	0.03110	0.07519
	B	0.01688	0.02017	0.11712
	B	0.02888	0.03217	0.12789
	C	0.00795	0.00998	0.06860
	C	0.01491	0.01693	0.07379
sky130_fd_sc_hs__xnor3_4	A	0.03702	0.03295	0.07783
	A	0.04266	0.03858	0.08343
	B	0.02832	0.02743	0.12279
	B	0.04017	0.03929	0.13430
	C	0.02074	0.01759	0.07427
	C	0.02758	0.02440	0.08095

SKY130_FD_SC_HS__XOR2x

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00514	0.00534	0.54209
sky130_fd_sc_hs__xor2_2	0.00789	0.00783	1.00876
sky130_fd_sc_hs__xor2_4	0.01600	0.01560	1.78780

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xor2_1	0.00000	0.11232	0.21015
sky130_fd_sc_hs__xor2_2	0.00000	0.15302	0.21626
sky130_fd_sc_hs__xor2_4	0.00000	0.30326	0.43252

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	0.08363	0.68861	5.78145
	A->X (FR)	B	0.10365	0.94867	10.36170
	B->X (RR)	!A	0.10144	0.71377	6.17520
	B->X (FR)	A	0.07895	0.89625	10.03970
sky130_fd_sc_hs__xor2_2	A->X (RR)	!B	0.07192	0.57481	5.95885
	A->X (FR)	B	0.09098	0.80591	10.29710
	B->X (RR)	!A	0.08441	0.55853	5.89583
	B->X (FR)	A	0.07183	0.78669	10.28820
sky130_fd_sc_hs__xor2_4	A->X (RR)	!B	0.06799	0.47142	5.97754
	A->X (FR)	B	0.09147	0.69362	9.97561
	B->X (RR)	!A	0.07440	0.44044	5.65064
	B->X (FR)	A	0.07377	0.68529	10.14750

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	0.11208	0.44880	3.18291
	A->X (RF)	B	0.03374	0.35135	3.74563
	B->X (FF)	!A	0.10154	0.44677	3.20210
	B->X (RF)	A	0.02643	0.37966	4.16869
sky130_fd_sc_hs__xor2_2	A->X (FF)	!B	0.14719	0.55920	4.57074
	A->X (RF)	B	0.03125	0.30090	3.77592
	B->X (FF)	!A	0.12941	0.55856	4.61234
	B->X (RF)	A	0.02770	0.37428	4.82855
sky130_fd_sc_hs__xor2_4	A->X (FF)	!B	0.14931	0.52132	4.56109
	A->X (RF)	B	0.03267	0.25363	3.62205
	B->X (FF)	!A	0.12662	0.51749	4.54120
	B->X (RF)	A	0.02907	0.30422	4.44713

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	0.00035	0.00030	0.00674
	A	B	0.00949	0.00948	0.01591
	A	!B	0.01251	0.01347	0.04071
	A	!B	0.00326	0.00421	0.03158
	B	A	0.00038	0.00032	0.00674
	B	A	0.00739	0.00733	0.01375
	B	!A	0.01116	0.01139	0.04673
	B	!A	0.00403	0.00424	0.03971
sky130_fd_sc_hs__xor2_2	A	B	0.00148	0.00144	0.01341
	A	B	0.01645	0.01645	0.02845
	A	!B	0.01677	0.01780	0.04834
	A	!B	0.00397	0.00502	0.03558
	B	A	0.00031	0.00030	0.01198
	B	A	0.01222	0.01225	0.02402
	B	!A	0.01651	0.01615	0.05501
	B	!A	0.00675	0.00637	0.04529
sky130_fd_sc_hs__xor2_4	A	B	0.00205	0.00192	0.02471
	A	B	0.03364	0.03353	0.05628
	A	!B	0.03370	0.03527	0.09456
	A	!B	0.00861	0.01012	0.07009
	B	A	0.00085	0.00103	0.02341
	B	A	0.02591	0.02613	0.04855
	B	!A	0.02961	0.02968	0.10487
	B	!A	0.01106	0.01112	0.08665

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	0.00919	0.00899	0.01409
	A	B	0.00010	-0.00017	0.00484
	A	!B	0.00221	0.00299	0.02900
	A	!B	0.01135	0.01217	0.03823
	B	A	0.00781	0.00794	0.01398
	B	A	0.00071	0.00084	0.00671
	B	!A	0.00346	0.00527	0.04032
	B	!A	0.01088	0.01264	0.04772
sky130_fd_sc_hs__xor2_2	A	B	0.01579	0.01548	0.02564
	A	B	0.00082	0.00051	0.01041
	A	!B	0.00208	0.00287	0.03136
	A	!B	0.01466	0.01552	0.04401
	B	A	0.01332	0.01354	0.02416
	B	A	0.00138	0.00159	0.01172
	B	!A	0.00388	0.00560	0.04344
	B	!A	0.01428	0.01602	0.05386
sky130_fd_sc_hs__xor2_4	A	B	0.03243	0.03182	0.05195
	A	B	0.00094	0.00019	0.02045
	A	!B	0.00442	0.00579	0.06274
	A	!B	0.02914	0.03054	0.08693
	B	A	0.02716	0.02763	0.04883
	B	A	0.00193	0.00234	0.02349
	B	!A	0.00858	0.01241	0.08252
	B	!A	0.02832	0.03212	0.10211

SKY130_FD_SC_HS__XOR3x

sky130_fd_sc_hs_tt_1.80v_25C.ccs
Cell Library: Process , Voltage
1.80, 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	0.00264	0.00708	0.00426	1.19164
sky130_fd_sc_hs__xor3_2	0.00265	0.00720	0.00425	2.30023
sky130_fd_sc_hs__xor3_4	0.00264	0.00730	0.00421	4.49307

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xor3_1	0.00000	1.67341	1.89359
sky130_fd_sc_hs__xor3_2	0.00000	1.71557	1.97048
sky130_fd_sc_hs__xor3_4	0.00000	1.79990	2.12427

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)	0.23972	0.92119	8.52351
	B->X (-R)	0.16652	0.80224	8.35867
	C->X (-R)	0.12659	0.76965	8.25037
sky130_fd_sc_hs__xor3_2	A->X (-R)	0.24967	0.83984	8.42710
	B->X (-R)	0.17876	0.72574	8.26713
	C->X (-R)	0.13574	0.69264	8.16414
sky130_fd_sc_hs__xor3_4	A->X (-R)	0.28358	0.82031	8.55241
	B->X (-R)	0.21670	0.70960	8.41596
	C->X (-R)	0.16438	0.67088	8.29504

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xor3_1	A->X (-F)	0.19062	0.75542	5.13189
	B->X (-F)	0.18029	0.71492	5.32654
	C->X (-F)	0.10633	0.58439	5.01783
sky130_fd_sc_hs__xor3_2	A->X (-F)	0.20949	0.75343	5.16211
	B->X (-F)	0.19875	0.71253	5.35278
	C->X (-F)	0.12733	0.60927	5.08828
sky130_fd_sc_hs__xor3_4	A->X (-F)	0.26162	0.80068	5.38670
	B->X (-F)	0.25159	0.75796	5.56971
	C->X (-F)	0.17866	0.66174	5.30967

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.02673	0.02797	0.07387
	A	0.02512	0.02736	0.07436
	B	0.02516	0.02856	0.12857
	B	0.02240	0.02769	0.12691
	C	0.01192	0.01390	0.06951
	C	0.01236	0.01611	0.07136
sky130_fd_sc_hs__xor3_2	A	0.03002	0.03138	0.07679
	A	0.02453	0.02589	0.07181
	B	0.02819	0.03170	0.13082
	B	0.02550	0.03080	0.12943
	C	0.01504	0.01702	0.07361
	C	0.00816	0.01016	0.06763
sky130_fd_sc_hs__xor3_4	A	0.03721	0.03831	0.08368
	A	0.03164	0.03278	0.07846
	B	0.03530	0.03841	0.13695
	B	0.02283	0.02599	0.12508
	C	0.02223	0.02374	0.07951
	C	0.01542	0.01700	0.07349

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.02092	0.02211	0.06776
	A	0.02657	0.02783	0.07340
	B	0.02366	0.02721	0.12490
	B	0.02388	0.02869	0.12673
	C	0.01403	0.01650	0.07093
	C	0.01075	0.01385	0.07118
sky130_fd_sc_hs__xor3_2	A	0.02556	0.02546	0.07165
	A	0.03105	0.03117	0.07588
	B	0.01534	0.01894	0.11744
	B	0.02776	0.03136	0.12874
	C	0.00762	0.01006	0.06854
	C	0.01448	0.01695	0.07413
sky130_fd_sc_hs__xor3_4	A	0.03828	0.03359	0.08280
	A	0.04385	0.03935	0.08390
	B	0.02729	0.02670	0.12730
	B	0.03973	0.03914	0.13579
	C	0.02080	0.01752	0.07364
	C	0.02760	0.02440	0.08042