sky130_fd_sc_hs_tt_1.89v_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_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00283	0.00273	0.00284	0.00296	0.00296	0.31589
sky130_fd_sc_hs__a2111oi_2	0.00539	0.00522	0.00437	0.00438	0.00438	0.55550
sky130_fd_sc_hs__a2111oi_4	0.01070	0.01047	0.00855	0.00842	0.00859	1.02676

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2111oi_1	0.00000	0.02389	0.10133
sky130_fd_sc_hs__a2111oi_2	0.00000	0.04540	0.20266
sky130_fd_sc_hs__a2111oi_4	0.00000	0.09080	0.40531

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)	0.18120	1.06970	9.10864
	A2->Y (FR)	0.21563	1.12663	9.32149
	B1->Y (FR)	0.19915	1.12507	9.85858
	C1->Y (FR)	0.17064	1.12811	10.32030
	D1->Y (FR)	0.12707	1.09494	10.33570
sky130_fd_sc_hs__a2111oi_2	A1->Y (FR)	0.16947	0.91697	8.98776
	A2->Y (FR)	0.21282	0.96823	9.12484
	B1->Y (FR)	0.18800	0.95819	9.52099
	C1->Y (FR)	0.15698	0.96474	10.13680
	D1->Y (FR)	0.09448	0.91377	10.12750
sky130_fd_sc_hs__a2111oi_4	A1->Y (FR)	0.16237	0.77858	8.82859
	A2->Y (FR)	0.20920	0.83762	9.04904
	B1->Y (FR)	0.18505	0.83387	9.54514
	C1->Y (FR)	0.14977	0.83752	10.16670
	D1->Y (FR)	0.08773	0.79334	10.22170

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111oi_1	A1->Y (RF)	0.02815	0.30435	2.47666
	A2->Y (RF)	0.03137	0.27436	2.15693
	B1->Y (RF)	0.02176	0.23796	1.91544
	C1->Y (RF)	0.02218	0.23064	1.89531
	D1->Y (RF)	0.01903	0.22140	1.87266
sky130_fd_sc_hs__a2111oi_2	A1->Y (RF)	0.02464	0.26776	2.49697
	A2->Y (RF)	0.02979	0.23941	2.12590
	B1->Y (RF)	0.03451	0.33157	3.23653
	C1->Y (RF)	0.03247	0.31756	3.20247
	D1->Y (RF)	0.02376	0.29947	3.17220
sky130_fd_sc_hs__a2111oi_4	A1->Y (RF)	0.02598	0.24157	2.59020
	A2->Y (RF)	0.03040	0.19844	2.00606
	B1->Y (RF)	0.03127	0.27111	2.97969
	C1->Y (RF)	0.02888	0.25571	2.94493
	D1->Y (RF)	0.02081	0.24091	2.98697

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111oi_1	A1	0.00057	0.00032	0.01354
	A1	0.01068	0.01046	0.02372
	A2	0.00105	0.00090	0.01430
	A2	0.01249	0.01234	0.02578
	B1	0.00043	0.00038	0.01519
	B1	0.00906	0.00902	0.02386
	C1	0.00040	0.00057	0.01471
	C1	0.00783	0.00800	0.02217
	D1	0.00026	0.00134	0.02223
	D1	0.00654	0.00763	0.02852
sky130_fd_sc_hs__a2111oi_2	A1	0.00019	-0.00026	0.02464
	A1	0.01931	0.01892	0.04383
	A2	0.00203	0.00159	0.02702
	A2	0.02371	0.02331	0.04878
	B1	0.00112	0.00102	0.01958
	B1	0.01583	0.01577	0.03432
	C1	0.00124	0.00138	0.01919
	C1	0.01322	0.01336	0.03125
	D1	0.00101	0.00264	0.03001
	D1	0.01038	0.01203	0.03946

sky130_fd_sc_hs__a2111oi_4	**A1**	-0.00065	-0.00152	0.04552
	A1	0.03776	0.03695	0.08407
	A2	0.00266	0.00185	0.04933
	A2	0.04618	0.04539	0.09297
	B1	0.00137	0.00128	0.03766
	B1	0.03072	0.03062	0.06703
	C1	0.00149	0.00203	0.03699
	C1	0.02537	0.02589	0.06105
	D1	0.00100	0.00461	0.05705
	D1	0.01969	0.02328	0.07580

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**A1**	0.01424	0.01434	0.02702
	A1	0.00434	0.00442	0.01716
	A2	0.01558	0.01555	0.02719
	A2	0.00431	0.00430	0.01598
	B1	0.01089	0.01138	0.02574
	B1	0.00236	0.00283	0.01723
	C1	0.00855	0.00924	0.02276
	C1	0.00116	0.00182	0.01537
	D1	0.00619	0.00703	0.02022
	D1	-0.00008	0.00073	0.01395

sky130_fd_sc_hs__a2111oi_2	**A1**	0.02684	0.02711	0.05086
	A1	0.00820	0.00846	0.03227
	A2	0.02940	0.02930	0.05166
	A2	0.00811	0.00796	0.03045
	B1	0.01876	0.01926	0.03770
	B1	0.00428	0.00473	0.02318
	C1	0.01388	0.01458	0.03191
	C1	0.00199	0.00269	0.01993
	D1	0.00779	0.00913	0.02584
	D1	-0.00157	-0.00028	0.01642
sky130_fd_sc_hs__a2111oi_4	**A1**	0.05244	0.05268	0.09854
	A1	0.01505	0.01524	0.06111
	A2	0.05766	0.05764	0.10268
	A2	0.01492	0.01477	0.05998
	B1	0.03670	0.03769	0.07520
	B1	0.00779	0.00878	0.04620
	C1	0.02674	0.02843	0.06338
	C1	0.00306	0.00466	0.03963
	D1	0.01544	0.01825	0.05141
	D1	-0.00320	-0.00039	0.03260

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)**	0.00181	0.00183	0.00181
	(A2 * B1 * D1 * !Y)	-0.00221	-0.00232	-0.00231
	(A2 * B1 * C1 * !D1 * !Y)	0.00181	0.00183	0.00181
	(A2 * B1 * C1 * !D1 * !Y)	-0.00221	-0.00232	-0.00231
	(A2 * B1 * !C1 * !D1 * !Y)	0.00181	0.00183	0.00181
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00218	-0.00232	-0.00231
	(A2 * !B1 * C1 * D1 * !Y)	0.00180	0.00182	0.00181
	(A2 * !B1 * C1 * D1 * !Y)	-0.00206	-0.00225	-0.00224
	(A2 * !B1 * C1 * !D1 * !Y)	0.00180	0.00182	0.00181
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00206	-0.00225	-0.00224
	(A2 * !B1 * !C1 * D1 * !Y)	0.00182	0.00182	0.00181
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00201	-0.00220	-0.00221
	(!A2 * B1 * D1 * !Y)	0.00174	0.00175	0.00175
	(!A2 * B1 * D1 * !Y)	-0.00234	-0.00236	-0.00235
	(!A2 * B1 * C1 * !D1 * !Y)	0.00174	0.00175	0.00175
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00235	-0.00236	-0.00235
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00173	0.00174	0.00173
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00235	-0.00236	-0.00235
	(!A2 * !B1 * C1 * D1 * !Y)	0.00174	0.00176	0.00175
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00235	-0.00237	-0.00235
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00174	0.00177	0.00175
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00235	-0.00237	-0.00235
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00174	0.00177	0.00175
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00234	-0.00237	-0.00235
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00059	0.00059	0.00057
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00269	-0.00268	-0.00272

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	0.00360	0.00365	0.00361
	(A2 * B1 * D1 * !Y)	-0.00442	-0.00465	-0.00462
	(A2 * B1 * C1 * !D1 * !Y)	0.00360	0.00365	0.00361
	(A2 * B1 * C1 * !D1 * !Y)	-0.00441	-0.00465	-0.00461
	(A2 * B1 * !C1 * !D1 * !Y)	0.00361	0.00365	0.00361
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00433	-0.00465	-0.00461
	(A2 * !B1 * C1 * D1 * !Y)	0.00361	0.00365	0.00361
	(A2 * !B1 * C1 * D1 * !Y)	-0.00411	-0.00450	-0.00447
	(A2 * !B1 * C1 * !D1 * !Y)	0.00362	0.00365	0.00361
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00411	-0.00451	-0.00447
	(A2 * !B1 * !C1 * D1 * !Y)	0.00365	0.00365	0.00361
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00402	-0.00443	-0.00440
	(!A2 * B1 * D1 * !Y)	0.00345	0.00348	0.00346
	(!A2 * B1 * D1 * !Y)	-0.00468	-0.00471	-0.00470
	(!A2 * B1 * C1 * !D1 * !Y)	0.00345	0.00350	0.00347
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00468	-0.00472	-0.00470
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00346	0.00349	0.00347
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00470	-0.00472	-0.00470
	(!A2 * !B1 * C1 * D1 * !Y)	0.00345	0.00350	0.00347
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00468	-0.00472	-0.00470
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00345	0.00349	0.00347
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00469	-0.00471	-0.00470
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00345	0.00349	0.00347
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00468	-0.00471	-0.00469
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00120	0.00121	0.00115
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00533	-0.00535	-0.00544

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	0.00723	0.00733	0.00725
	(A2 * B1 * D1 * !Y)	-0.00887	-0.00931	-0.00924
	(A2 * B1 * C1 * !D1 * !Y)	0.00723	0.00733	0.00725
	(A2 * B1 * C1 * !D1 * !Y)	-0.00886	-0.00931	-0.00923
	(A2 * B1 * !C1 * !D1 * !Y)	0.00725	0.00733	0.00725
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00872	-0.00930	-0.00924
	(A2 * !B1 * C1 * D1 * !Y)	0.00726	0.00732	0.00725
	(A2 * !B1 * C1 * D1 * !Y)	-0.00828	-0.00904	-0.00896
	(A2 * !B1 * C1 * !D1 * !Y)	0.00727	0.00732	0.00725
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00827	-0.00906	-0.00897
	(A2 * !B1 * !C1 * D1 * !Y)	0.00735	0.00732	0.00726
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00809	-0.00889	-0.00881
	(!A2 * B1 * D1 * !Y)	0.00693	0.00698	0.00696
	(!A2 * B1 * D1 * !Y)	-0.00939	-0.00944	-0.00942
	(!A2 * B1 * C1 * !D1 * !Y)	0.00694	0.00702	0.00697
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00940	-0.00947	-0.00942
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00692	0.00697	0.00695
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00940	-0.00944	-0.00942
	(!A2 * !B1 * C1 * D1 * !Y)	0.00693	0.00698	0.00694
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00942	-0.00946	-0.00942
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00692	0.00698	0.00694
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00942	-0.00946	-0.00942
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00692	0.00695	0.00694
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00942	-0.00944	-0.00942
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00230	0.00231	0.00222
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.01077	-0.01082	-0.01099

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)**	-0.00180	-0.00181	-0.00181
	(A2 * B1 * D1 * !Y)	0.00230	0.00233	0.00231
	(A2 * B1 * C1 * !D1 * !Y)	-0.00180	-0.00181	-0.00181
	(A2 * B1 * C1 * !D1 * !Y)	0.00230	0.00232	0.00231
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00180	-0.00181	-0.00181
	(A2 * B1 * !C1 * !D1 * !Y)	0.00230	0.00232	0.00231
	(A2 * !B1 * C1 * D1 * !Y)	-0.00180	-0.00181	-0.00181
	(A2 * !B1 * C1 * D1 * !Y)	0.00223	0.00225	0.00224
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00180	-0.00181	-0.00181
	(A2 * !B1 * C1 * !D1 * !Y)	0.00223	0.00225	0.00224
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00180	-0.00180	-0.00180
	(A2 * !B1 * !C1 * D1 * !Y)	0.00220	0.00220	0.00221
	(!A2 * B1 * D1 * !Y)	-0.00169	-0.00174	-0.00175
	(!A2 * B1 * D1 * !Y)	0.00235	0.00236	0.00236
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00169	-0.00174	-0.00175
	(!A2 * B1 * C1 * !D1 * !Y)	0.00235	0.00236	0.00236
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00169	-0.00174	-0.00173
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00237	0.00239	0.00236
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00169	-0.00175	-0.00175
	(!A2 * !B1 * C1 * D1 * !Y)	0.00235	0.00238	0.00236
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00169	-0.00175	-0.00175
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00237	0.00238	0.00236
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00169	-0.00175	-0.00175
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00237	0.00238	0.00236
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00056	-0.00056	-0.00056
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00272	0.00275	0.00273

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	-0.00359	-0.00362	-0.00360
	(A2 * B1 * D1 * !Y)	0.00459	0.00465	0.00462
	(A2 * B1 * C1 * !D1 * !Y)	-0.00359	-0.00362	-0.00360
	(A2 * B1 * C1 * !D1 * !Y)	0.00458	0.00465	0.00461
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00360	-0.00362	-0.00360
	(A2 * B1 * !C1 * !D1 * !Y)	0.00460	0.00466	0.00461
	(A2 * !B1 * C1 * D1 * !Y)	-0.00360	-0.00362	-0.00360
	(A2 * !B1 * C1 * D1 * !Y)	0.00445	0.00450	0.00447
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00360	-0.00362	-0.00360
	(A2 * !B1 * C1 * !D1 * !Y)	0.00445	0.00451	0.00447
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00361	-0.00362	-0.00360
	(A2 * !B1 * !C1 * D1 * !Y)	0.00440	0.00443	0.00440
	(!A2 * B1 * D1 * !Y)	-0.00333	-0.00348	-0.00346
	(!A2 * B1 * D1 * !Y)	0.00468	0.00475	0.00471
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00335	-0.00350	-0.00347
	(!A2 * B1 * C1 * !D1 * !Y)	0.00471	0.00473	0.00471
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00333	-0.00349	-0.00347
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00470	0.00474	0.00471
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00335	-0.00350	-0.00347
	(!A2 * !B1 * C1 * D1 * !Y)	0.00471	0.00473	0.00471
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00333	-0.00348	-0.00347
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00470	0.00471	0.00471
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00333	-0.00347	-0.00347
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00470	0.00471	0.00471
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00112	-0.00114	-0.00112
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00543	0.00554	0.00545

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	-0.00723	-0.00728	-0.00724
	(A2 * B1 * D1 * !Y)	0.00925	0.00932	0.00924
	(A2 * B1 * C1 * !D1 * !Y)	-0.00723	-0.00728	-0.00724
	(A2 * B1 * C1 * !D1 * !Y)	0.00925	0.00932	0.00923
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00725	-0.00728	-0.00724
	(A2 * B1 * !C1 * !D1 * !Y)	0.00925	0.00934	0.00924
	(A2 * !B1 * C1 * D1 * !Y)	-0.00725	-0.00727	-0.00724
	(A2 * !B1 * C1 * D1 * !Y)	0.00899	0.00904	0.00896
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00725	-0.00728	-0.00724
	(A2 * !B1 * C1 * !D1 * !Y)	0.00898	0.00906	0.00897
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00725	-0.00728	-0.00724
	(A2 * !B1 * !C1 * D1 * !Y)	0.00883	0.00889	0.00881
	(!A2 * B1 * D1 * !Y)	-0.00669	-0.00698	-0.00696
	(!A2 * B1 * D1 * !Y)	0.00939	0.00948	0.00944
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00673	-0.00702	-0.00697
	(!A2 * B1 * C1 * !D1 * !Y)	0.00946	0.00949	0.00944
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00670	-0.00697	-0.00695
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00942	0.00947	0.00945
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00670	-0.00698	-0.00694
	(!A2 * !B1 * C1 * D1 * !Y)	0.00942	0.00950	0.00944
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00670	-0.00698	-0.00694
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00942	0.00948	0.00945
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00669	-0.00695	-0.00694
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00942	0.00950	0.00945
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00216	-0.00220	-0.00216
	(!A2 * !B1 * !C1 * !D1 * Y)	0.01097	0.01118	0.01101

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)**	0.00192	0.00193	0.00191
	(A1 * B1 * D1 * !Y)	-0.00223	-0.00234	-0.00232
	(A1 * B1 * C1 * !D1 * !Y)	0.00192	0.00193	0.00191
	(A1 * B1 * C1 * !D1 * !Y)	-0.00223	-0.00234	-0.00232
	(A1 * B1 * !C1 * !D1 * !Y)	0.00192	0.00193	0.00191
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00220	-0.00234	-0.00232
	(A1 * !B1 * C1 * D1 * !Y)	0.00191	0.00192	0.00191
	(A1 * !B1 * C1 * D1 * !Y)	-0.00209	-0.00226	-0.00226
	(A1 * !B1 * C1 * !D1 * !Y)	0.00192	0.00192	0.00191
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00209	-0.00226	-0.00226
	(A1 * !B1 * !C1 * D1 * !Y)	0.00193	0.00192	0.00191
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00203	-0.00224	-0.00222
	(!A1 * B1 * !Y)	0.00184	0.00185	0.00184
	(!A1 * B1 * !Y)	-0.00236	-0.00238	-0.00237
	(!A1 * !B1 * C1 * !Y)	0.00184	0.00185	0.00184
	(!A1 * !B1 * C1 * !Y)	-0.00236	-0.00238	-0.00237
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00184	0.00185	0.00184
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00236	-0.00237	-0.00237
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00184	0.00185	0.00184
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00237	-0.00238	-0.00237

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00363	0.00367	0.00363
	(A1 * B1 * D1 * !Y)	-0.00441	-0.00464	-0.00460
	(A1 * B1 * C1 * !D1 * !Y)	0.00363	0.00367	0.00363
	(A1 * B1 * C1 * !D1 * !Y)	-0.00441	-0.00464	-0.00460
	(A1 * B1 * !C1 * !D1 * !Y)	0.00364	0.00367	0.00363
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00434	-0.00463	-0.00460
	(A1 * !B1 * C1 * D1 * !Y)	0.00364	0.00367	0.00363
	(A1 * !B1 * C1 * D1 * !Y)	-0.00411	-0.00450	-0.00446
	(A1 * !B1 * C1 * !D1 * !Y)	0.00364	0.00367	0.00363
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00411	-0.00450	-0.00446
	(A1 * !B1 * !C1 * D1 * !Y)	0.00368	0.00367	0.00364
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00404	-0.00442	-0.00440
	(!A1 * B1 * !Y)	0.00347	0.00353	0.00349
	(!A1 * B1 * !Y)	-0.00466	-0.00471	-0.00468
	(!A1 * !B1 * C1 * !Y)	0.00347	0.00352	0.00349
	(!A1 * !B1 * C1 * !Y)	-0.00466	-0.00470	-0.00468
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00347	0.00349	0.00348
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00466	-0.00468	-0.00468
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00347	0.00352	0.00349
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00466	-0.00471	-0.00468

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00729	0.00738	0.00730
	(A1 * B1 * D1 * !Y)	-0.00887	-0.00930	-0.00922
	(A1 * B1 * C1 * !D1 * !Y)	0.00729	0.00738	0.00730
	(A1 * B1 * C1 * !D1 * !Y)	-0.00886	-0.00930	-0.00922
	(A1 * B1 * !C1 * !D1 * !Y)	0.00731	0.00738	0.00730
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00873	-0.00929	-0.00922
	(A1 * !B1 * C1 * D1 * !Y)	0.00732	0.00737	0.00730
	(A1 * !B1 * C1 * D1 * !Y)	-0.00830	-0.00900	-0.00896
	(A1 * !B1 * C1 * !D1 * !Y)	0.00733	0.00737	0.00730
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00829	-0.00899	-0.00896
	(A1 * !B1 * !C1 * D1 * !Y)	0.00740	0.00736	0.00730
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00812	-0.00875	-0.00881
	(!A1 * B1 * !Y)	0.00697	0.00700	0.00697
	(!A1 * B1 * !Y)	-0.00940	-0.00939	-0.00941
	(!A1 * !B1 * C1 * !Y)	0.00695	0.00705	0.00700
	(!A1 * !B1 * C1 * !Y)	-0.00936	-0.00945	-0.00941
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00695	0.00702	0.00700
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00935	-0.00942	-0.00940
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00701	0.00710	0.00704
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00938	-0.00944	-0.00940

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)**	-0.00191	-0.00192	-0.00191
	(A1 * B1 * D1 * !Y)	0.00231	0.00234	0.00232
	(A1 * B1 * C1 * !D1 * !Y)	-0.00191	-0.00192	-0.00191
	(A1 * B1 * C1 * !D1 * !Y)	0.00231	0.00234	0.00232
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00190	-0.00192	-0.00191
	(A1 * B1 * !C1 * !D1 * !Y)	0.00231	0.00234	0.00232
	(A1 * !B1 * C1 * D1 * !Y)	-0.00190	-0.00191	-0.00191
	(A1 * !B1 * C1 * D1 * !Y)	0.00224	0.00226	0.00226
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00190	-0.00191	-0.00191
	(A1 * !B1 * C1 * !D1 * !Y)	0.00225	0.00226	0.00226
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00190	-0.00192	-0.00190
	(A1 * !B1 * !C1 * D1 * !Y)	0.00221	0.00224	0.00222
	(!A1 * B1 * !Y)	-0.00179	-0.00185	-0.00184
	(!A1 * B1 * !Y)	0.00236	0.00239	0.00238
	(!A1 * !B1 * C1 * !Y)	-0.00180	-0.00185	-0.00184
	(!A1 * !B1 * C1 * !Y)	0.00238	0.00241	0.00238
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00180	-0.00185	-0.00184
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00238	0.00241	0.00238
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00174	-0.00184	-0.00184
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00246	0.00240	0.00238

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00361	-0.00364	-0.00363
	(A1 * B1 * D1 * !Y)	0.00457	0.00464	0.00460
	(A1 * B1 * C1 * !D1 * !Y)	-0.00361	-0.00364	-0.00363
	(A1 * B1 * C1 * !D1 * !Y)	0.00457	0.00464	0.00460
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00362	-0.00364	-0.00362
	(A1 * B1 * !C1 * !D1 * !Y)	0.00458	0.00464	0.00460
	(A1 * !B1 * C1 * D1 * !Y)	-0.00362	-0.00364	-0.00362
	(A1 * !B1 * C1 * D1 * !Y)	0.00445	0.00450	0.00446
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00362	-0.00364	-0.00362
	(A1 * !B1 * C1 * !D1 * !Y)	0.00445	0.00450	0.00446
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00363	-0.00364	-0.00363
	(A1 * !B1 * !C1 * D1 * !Y)	0.00440	0.00442	0.00440
	(!A1 * B1 * !Y)	-0.00337	-0.00350	-0.00349
	(!A1 * B1 * !Y)	0.00467	0.00472	0.00469
	(!A1 * !B1 * C1 * !Y)	-0.00337	-0.00352	-0.00349
	(!A1 * !B1 * C1 * !Y)	0.00467	0.00476	0.00469
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00337	-0.00349	-0.00348
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00467	0.00476	0.00469
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00323	-0.00352	-0.00349
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00484	0.00473	0.00469

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00729	-0.00732	-0.00728
	(A1 * B1 * D1 * !Y)	0.00923	0.00931	0.00922
	(A1 * B1 * C1 * !D1 * !Y)	-0.00729	-0.00732	-0.00728
	(A1 * B1 * C1 * !D1 * !Y)	0.00923	0.00931	0.00922
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00729	-0.00732	-0.00728
	(A1 * B1 * !C1 * !D1 * !Y)	0.00923	0.00930	0.00922
	(A1 * !B1 * C1 * D1 * !Y)	-0.00729	-0.00730	-0.00728
	(A1 * !B1 * C1 * D1 * !Y)	0.00897	0.00900	0.00896
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00729	-0.00730	-0.00728
	(A1 * !B1 * C1 * !D1 * !Y)	0.00897	0.00899	0.00896
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00729	-0.00726	-0.00728
	(A1 * !B1 * !C1 * D1 * !Y)	0.00882	0.00875	0.00881
	(!A1 * B1 * !Y)	-0.00676	-0.00697	-0.00697
	(!A1 * B1 * !Y)	0.00940	0.00939	0.00943
	(!A1 * !B1 * C1 * !Y)	-0.00676	-0.00701	-0.00700
	(!A1 * !B1 * C1 * !Y)	0.00939	0.00947	0.00943
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00676	-0.00701	-0.00700
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00940	0.00948	0.00943
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00645	-0.00705	-0.00704
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00979	0.00951	0.00943

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)**	0.00190	0.00191	0.00189
	(A1 * A2 * C1 * D1 * !Y)	-0.00164	-0.00166	-0.00164
	(A1 * A2 * C1 * !D1 * !Y)	0.00207	0.00202	0.00191
	(A1 * A2 * C1 * !D1 * !Y)	-0.00158	-0.00160	-0.00159
	(A1 * A2 * !C1 * D1 * !Y)	0.00189	0.00193	0.00189
	(A1 * A2 * !C1 * D1 * !Y)	-0.00151	-0.00152	-0.00150
	(A1 * A2 * !C1 * !D1 * !Y)	0.00187	0.00189	0.00187
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00121	-0.00122	-0.00121
	(A1 * !A2 * C1 * D1 * !Y)	0.00188	0.00189	0.00187
	(A1 * !A2 * C1 * D1 * !Y)	-0.00223	-0.00229	-0.00228
	(A1 * !A2 * C1 * !D1 * !Y)	0.00210	0.00189	0.00187
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00201	-0.00228	-0.00228
	(A1 * !A2 * !C1 * D1 * !Y)	0.00201	0.00189	0.00187
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00191	-0.00219	-0.00220
	(!A1 * C1 * D1 * !Y)	0.00186	0.00189	0.00187
	(!A1 * C1 * D1 * !Y)	-0.00220	-0.00230	-0.00228
	(!A1 * C1 * !D1 * !Y)	0.00206	0.00189	0.00187
	(!A1 * C1 * !D1 * !Y)	-0.00200	-0.00228	-0.00228
	(!A1 * !C1 * D1 * !Y)	0.00201	0.00189	0.00187
	(!A1 * !C1 * D1 * !Y)	-0.00193	-0.00218	-0.00220

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	0.00213	0.00216	0.00213
	(A1 * A2 * C1 * D1 * !Y)	-0.00323	-0.00324	-0.00324
	(A1 * A2 * C1 * !D1 * !Y)	0.00238	0.00231	0.00216
	(A1 * A2 * C1 * !D1 * !Y)	-0.00315	-0.00313	-0.00313
	(A1 * A2 * !C1 * D1 * !Y)	0.00215	0.00218	0.00216
	(A1 * A2 * !C1 * D1 * !Y)	-0.00301	-0.00305	-0.00303
	(A1 * A2 * !C1 * !D1 * !Y)	0.00212	0.00214	0.00212
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00241	-0.00244	-0.00241
	(A1 * !A2 * C1 * D1 * !Y)	0.00213	0.00214	0.00211
	(A1 * !A2 * C1 * D1 * !Y)	-0.00441	-0.00458	-0.00456
	(A1 * !A2 * C1 * !D1 * !Y)	0.00243	0.00214	0.00212
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00409	-0.00457	-0.00456
	(A1 * !A2 * !C1 * D1 * !Y)	0.00232	0.00213	0.00212
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00389	-0.00440	-0.00439
	(!A1 * C1 * D1 * !Y)	0.00213	0.00214	0.00211
	(!A1 * C1 * D1 * !Y)	-0.00441	-0.00458	-0.00456
	(!A1 * C1 * !D1 * !Y)	0.00241	0.00213	0.00212
	(!A1 * C1 * !D1 * !Y)	-0.00411	-0.00457	-0.00456
	(!A1 * !C1 * D1 * !Y)	0.00231	0.00216	0.00212
	(!A1 * !C1 * D1 * !Y)	-0.00391	-0.00440	-0.00440

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	0.00412	0.00413	0.00408
	(A1 * A2 * C1 * D1 * !Y)	-0.00662	-0.00666	-0.00660
	(A1 * A2 * C1 * !D1 * !Y)	0.00471	0.00453	0.00419
	(A1 * A2 * C1 * !D1 * !Y)	-0.00641	-0.00644	-0.00638
	(A1 * A2 * !C1 * D1 * !Y)	0.00415	0.00431	0.00417
	(A1 * A2 * !C1 * D1 * !Y)	-0.00613	-0.00616	-0.00611
	(A1 * A2 * !C1 * !D1 * !Y)	0.00408	0.00412	0.00408
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00501	-0.00505	-0.00501
	(A1 * !A2 * C1 * D1 * !Y)	0.00414	0.00408	0.00407
	(A1 * !A2 * C1 * D1 * !Y)	-0.00907	-0.00938	-0.00935
	(A1 * !A2 * C1 * !D1 * !Y)	0.00491	0.00409	0.00407
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00828	-0.00937	-0.00937
	(A1 * !A2 * !C1 * D1 * !Y)	0.00454	0.00410	0.00408
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00786	-0.00902	-0.00897
	(!A1 * C1 * D1 * !Y)	0.00409	0.00409	0.00407
	(!A1 * C1 * D1 * !Y)	-0.00898	-0.00938	-0.00935
	(!A1 * C1 * !D1 * !Y)	0.00480	0.00409	0.00407
	(!A1 * C1 * !D1 * !Y)	-0.00824	-0.00938	-0.00936
	(!A1 * !C1 * D1 * !Y)	0.00452	0.00415	0.00408
	(!A1 * !C1 * D1 * !Y)	-0.00792	-0.00903	-0.00898

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)**	-0.00189	-0.00189	-0.00188
	(A1 * A2 * C1 * D1 * !Y)	0.00164	0.00166	0.00164
	(A1 * A2 * C1 * !D1 * !Y)	-0.00187	-0.00189	-0.00188
	(A1 * A2 * C1 * !D1 * !Y)	0.00158	0.00160	0.00159
	(A1 * A2 * !C1 * D1 * !Y)	-0.00188	-0.00189	-0.00188
	(A1 * A2 * !C1 * D1 * !Y)	0.00151	0.00152	0.00150
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00177	-0.00179	-0.00179
	(A1 * A2 * !C1 * !D1 * !Y)	0.00129	0.00131	0.00128
	(A1 * !A2 * C1 * D1 * !Y)	-0.00186	-0.00187	-0.00186
	(A1 * !A2 * C1 * D1 * !Y)	0.00227	0.00229	0.00228
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00186	-0.00187	-0.00186
	(A1 * !A2 * C1 * !D1 * !Y)	0.00227	0.00228	0.00228
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00185	-0.00186	-0.00186
	(A1 * !A2 * !C1 * D1 * !Y)	0.00218	0.00219	0.00220
	(!A1 * C1 * D1 * !Y)	-0.00186	-0.00187	-0.00186
	(!A1 * C1 * D1 * !Y)	0.00227	0.00230	0.00228
	(!A1 * C1 * !D1 * !Y)	-0.00186	-0.00187	-0.00186
	(!A1 * C1 * !D1 * !Y)	0.00227	0.00228	0.00228
	(!A1 * !C1 * D1 * !Y)	-0.00186	-0.00185	-0.00186
	(!A1 * !C1 * D1 * !Y)	0.00219	0.00218	0.00220

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	-0.00211	-0.00212	-0.00212
	(A1 * A2 * C1 * D1 * !Y)	0.00323	0.00324	0.00324
	(A1 * A2 * C1 * !D1 * !Y)	-0.00212	-0.00212	-0.00212
	(A1 * A2 * C1 * !D1 * !Y)	0.00315	0.00313	0.00313
	(A1 * A2 * !C1 * D1 * !Y)	-0.00213	-0.00215	-0.00214
	(A1 * A2 * !C1 * D1 * !Y)	0.00301	0.00305	0.00303
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00193	-0.00193	-0.00193
	(A1 * A2 * !C1 * !D1 * !Y)	0.00262	0.00261	0.00260
	(A1 * !A2 * C1 * D1 * !Y)	-0.00210	-0.00212	-0.00211
	(A1 * !A2 * C1 * D1 * !Y)	0.00452	0.00458	0.00456
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00210	-0.00211	-0.00211
	(A1 * !A2 * C1 * !D1 * !Y)	0.00453	0.00457	0.00456
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00211	-0.00212	-0.00211
	(A1 * !A2 * !C1 * D1 * !Y)	0.00437	0.00440	0.00439
	(!A1 * C1 * D1 * !Y)	-0.00211	-0.00212	-0.00211
	(!A1 * C1 * D1 * !Y)	0.00456	0.00458	0.00456
	(!A1 * C1 * !D1 * !Y)	-0.00211	-0.00211	-0.00211
	(!A1 * C1 * !D1 * !Y)	0.00456	0.00457	0.00456
	(!A1 * !C1 * D1 * !Y)	-0.00211	-0.00212	-0.00211
	(!A1 * !C1 * D1 * !Y)	0.00437	0.00440	0.00440

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	-0.00407	-0.00409	-0.00407
	(A1 * A2 * C1 * D1 * !Y)	0.00662	0.00666	0.00660
	(A1 * A2 * C1 * !D1 * !Y)	-0.00407	-0.00409	-0.00407
	(A1 * A2 * C1 * !D1 * !Y)	0.00641	0.00644	0.00638
	(A1 * A2 * !C1 * D1 * !Y)	-0.00412	-0.00414	-0.00412
	(A1 * A2 * !C1 * D1 * !Y)	0.00613	0.00616	0.00611
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00370	-0.00374	-0.00370
	(A1 * A2 * !C1 * !D1 * !Y)	0.00529	0.00536	0.00534
	(A1 * !A2 * C1 * D1 * !Y)	-0.00404	-0.00407	-0.00406
	(A1 * !A2 * C1 * D1 * !Y)	0.00928	0.00938	0.00935
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00405	-0.00407	-0.00406
	(A1 * !A2 * C1 * !D1 * !Y)	0.00933	0.00938	0.00937
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00406	-0.00409	-0.00406
	(A1 * !A2 * !C1 * D1 * !Y)	0.00892	0.00902	0.00897
	(!A1 * C1 * D1 * !Y)	-0.00406	-0.00407	-0.00406
	(!A1 * C1 * D1 * !Y)	0.00932	0.00938	0.00935
	(!A1 * C1 * !D1 * !Y)	-0.00405	-0.00407	-0.00406
	(!A1 * C1 * !D1 * !Y)	0.00931	0.00938	0.00936
	(!A1 * !C1 * D1 * !Y)	-0.00406	-0.00409	-0.00406
	(!A1 * !C1 * D1 * !Y)	0.00894	0.00903	0.00898

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)**	0.00213	0.00213	0.00203
	(A1 * B1 * D1 * !Y)	-0.00140	-0.00140	-0.00140
	(A1 * B1 * !D1 * !Y)	0.00198	0.00199	0.00196
	(A1 * B1 * !D1 * !Y)	-0.00115	-0.00115	-0.00115
	(A1 * A2 * !B1 * D1 * !Y)	0.00227	0.00204	0.00198
	(A1 * A2 * !B1 * D1 * !Y)	-0.00140	-0.00152	-0.00151
	(A1 * A2 * !B1 * !D1 * !Y)	0.00200	0.00201	0.00197
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00114	-0.00114	-0.00114
	(A1 * !A2 * !B1 * D1 * !Y)	0.00245	0.00200	0.00196
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00175	-0.00221	-0.00222
	(!A1 * B1 * D1 * !Y)	0.00215	0.00215	0.00205
	(!A1 * B1 * D1 * !Y)	-0.00141	-0.00142	-0.00141
	(!A1 * B1 * !D1 * !Y)	0.00198	0.00200	0.00197
	(!A1 * B1 * !D1 * !Y)	-0.00114	-0.00115	-0.00115
	(!A1 * !B1 * D1 * !Y)	0.00244	0.00200	0.00196
	(!A1 * !B1 * D1 * !Y)	-0.00175	-0.00221	-0.00222

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00227	0.00234	0.00216
	(A1 * B1 * D1 * !Y)	-0.00295	-0.00297	-0.00296
	(A1 * B1 * !D1 * !Y)	0.00204	0.00205	0.00203
	(A1 * B1 * !D1 * !Y)	-0.00249	-0.00250	-0.00249
	(A1 * A2 * !B1 * D1 * !Y)	0.00258	0.00215	0.00206
	(A1 * A2 * !B1 * D1 * !Y)	-0.00307	-0.00321	-0.00318
	(A1 * A2 * !B1 * !D1 * !Y)	0.00207	0.00207	0.00203
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00248	-0.00248	-0.00247
	(A1 * !A2 * !B1 * D1 * !Y)	0.00308	0.00207	0.00201
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00362	-0.00468	-0.00470
	(!A1 * B1 * D1 * !Y)	0.00233	0.00241	0.00221
	(!A1 * B1 * D1 * !Y)	-0.00300	-0.00300	-0.00299
	(!A1 * B1 * !D1 * !Y)	0.00205	0.00207	0.00203
	(!A1 * B1 * !D1 * !Y)	-0.00249	-0.00250	-0.00250
	(!A1 * !B1 * D1 * !Y)	0.00308	0.00207	0.00201
	(!A1 * !B1 * D1 * !Y)	-0.00363	-0.00468	-0.00470

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00455	0.00460	0.00422
	(A1 * B1 * D1 * !Y)	-0.00585	-0.00589	-0.00583
	(A1 * B1 * !D1 * !Y)	0.00400	0.00403	0.00394
	(A1 * B1 * !D1 * !Y)	-0.00485	-0.00489	-0.00488
	(A1 * A2 * !B1 * D1 * !Y)	0.00526	0.00422	0.00399
	(A1 * A2 * !B1 * D1 * !Y)	-0.00580	-0.00624	-0.00618
	(A1 * A2 * !B1 * !D1 * !Y)	0.00409	0.00410	0.00397
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00480	-0.00481	-0.00484
	(A1 * !A2 * !B1 * D1 * !Y)	0.00619	0.00405	0.00390
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00695	-0.00917	-0.00924
	(!A1 * B1 * D1 * !Y)	0.00468	0.00473	0.00430
	(!A1 * B1 * D1 * !Y)	-0.00590	-0.00594	-0.00588
	(!A1 * B1 * !D1 * !Y)	0.00406	0.00408	0.00396
	(!A1 * B1 * !D1 * !Y)	-0.00485	-0.00486	-0.00488
	(!A1 * !B1 * D1 * !Y)	0.00618	0.00406	0.00390
	(!A1 * !B1 * D1 * !Y)	-0.00696	-0.00916	-0.00924

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)**	-0.00196	-0.00197	-0.00196
	(A1 * B1 * D1 * !Y)	0.00140	0.00140	0.00140
	(A1 * B1 * !D1 * !Y)	-0.00194	-0.00196	-0.00194
	(A1 * B1 * !D1 * !Y)	0.00117	0.00118	0.00118
	(A1 * A2 * !B1 * D1 * !Y)	-0.00197	-0.00197	-0.00197
	(A1 * A2 * !B1 * D1 * !Y)	0.00151	0.00152	0.00151
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00185	-0.00187	-0.00194
	(A1 * A2 * !B1 * !D1 * !Y)	0.00122	0.00123	0.00117
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00194	-0.00195	-0.00194
	(A1 * !A2 * !B1 * D1 * !Y)	0.00221	0.00222	0.00222
	(!A1 * B1 * D1 * !Y)	-0.00197	-0.00197	-0.00196
	(!A1 * B1 * D1 * !Y)	0.00141	0.00142	0.00141
	(!A1 * B1 * !D1 * !Y)	-0.00194	-0.00196	-0.00194
	(!A1 * B1 * !D1 * !Y)	0.00117	0.00118	0.00118
	(!A1 * !B1 * D1 * !Y)	-0.00194	-0.00195	-0.00194
	(!A1 * !B1 * D1 * !Y)	0.00221	0.00222	0.00222

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00204	-0.00205	-0.00205
	(A1 * B1 * D1 * !Y)	0.00295	0.00297	0.00296
	(A1 * B1 * !D1 * !Y)	-0.00199	-0.00199	-0.00196
	(A1 * B1 * !D1 * !Y)	0.00253	0.00254	0.00256
	(A1 * A2 * !B1 * D1 * !Y)	-0.00204	-0.00205	-0.00204
	(A1 * A2 * !B1 * D1 * !Y)	0.00319	0.00321	0.00318
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00183	-0.00186	-0.00195
	(A1 * A2 * !B1 * !D1 * !Y)	0.00257	0.00260	0.00254
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00200	-0.00202	-0.00199
	(A1 * !A2 * !B1 * D1 * !Y)	0.00466	0.00472	0.00470
	(!A1 * B1 * D1 * !Y)	-0.00205	-0.00205	-0.00205
	(!A1 * B1 * D1 * !Y)	0.00300	0.00300	0.00299
	(!A1 * B1 * !D1 * !Y)	-0.00198	-0.00199	-0.00196
	(!A1 * B1 * !D1 * !Y)	0.00252	0.00255	0.00257
	(!A1 * !B1 * D1 * !Y)	-0.00200	-0.00202	-0.00199
	(!A1 * !B1 * D1 * !Y)	0.00466	0.00472	0.00470

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00398	-0.00400	-0.00397
	(A1 * B1 * D1 * !Y)	0.00585	0.00589	0.00583
	(A1 * B1 * !D1 * !Y)	-0.00387	-0.00388	-0.00382
	(A1 * B1 * !D1 * !Y)	0.00500	0.00501	0.00502
	(A1 * A2 * !B1 * D1 * !Y)	-0.00396	-0.00398	-0.00395
	(A1 * A2 * !B1 * D1 * !Y)	0.00620	0.00624	0.00618
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00365	-0.00370	-0.00381
	(A1 * A2 * !B1 * !D1 * !Y)	0.00498	0.00504	0.00495
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00387	-0.00390	-0.00384
	(A1 * !A2 * !B1 * D1 * !Y)	0.00917	0.00927	0.00924
	(!A1 * B1 * D1 * !Y)	-0.00398	-0.00400	-0.00398
	(!A1 * B1 * D1 * !Y)	0.00590	0.00594	0.00588
	(!A1 * B1 * !D1 * !Y)	-0.00385	-0.00388	-0.00382
	(!A1 * B1 * !D1 * !Y)	0.00496	0.00503	0.00503
	(!A1 * !B1 * D1 * !Y)	-0.00388	-0.00390	-0.00384
	(!A1 * !B1 * D1 * !Y)	0.00920	0.00927	0.00924

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	0.00218	0.00220	0.00218
	(A1 * C1 * !Y)	-0.00106	-0.00107	-0.00106
	(A1 * B1 * !C1 * !Y)	0.00218	0.00220	0.00218
	(A1 * B1 * !C1 * !Y)	-0.00106	-0.00106	-0.00105
	(A1 * A2 * !B1 * !C1 * !Y)	0.00219	0.00220	0.00218
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00106	-0.00106	-0.00105
	(!A1 * C1 * !Y)	0.00218	0.00220	0.00218
	(!A1 * C1 * !Y)	-0.00106	-0.00107	-0.00106
	(!A1 * B1 * !C1 * !Y)	0.00219	0.00220	0.00218
	(!A1 * B1 * !C1 * !Y)	-0.00106	-0.00106	-0.00105

sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	0.00247	0.00249	0.00247
	(A1 * C1 * !Y)	-0.00215	-0.00217	-0.00215
	(A1 * B1 * !C1 * !Y)	0.00248	0.00249	0.00247
	(A1 * B1 * !C1 * !Y)	-0.00216	-0.00216	-0.00214
	(A1 * A2 * !B1 * !C1 * !Y)	0.00248	0.00249	0.00247
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00216	-0.00216	-0.00214
	(!A1 * C1 * !Y)	0.00247	0.00249	0.00247
	(!A1 * C1 * !Y)	-0.00216	-0.00217	-0.00215
	(!A1 * B1 * !C1 * !Y)	0.00248	0.00249	0.00247
	(!A1 * B1 * !C1 * !Y)	-0.00216	-0.00216	-0.00215
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	0.00493	0.00494	0.00490
	(A1 * C1 * !Y)	-0.00427	-0.00426	-0.00422
	(A1 * B1 * !C1 * !Y)	0.00493	0.00494	0.00490
	(A1 * B1 * !C1 * !Y)	-0.00426	-0.00425	-0.00421
	(A1 * A2 * !B1 * !C1 * !Y)	0.00486	0.00494	0.00490
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00417	-0.00425	-0.00421
	(!A1 * C1 * !Y)	0.00493	0.00494	0.00490
	(!A1 * C1 * !Y)	-0.00427	-0.00426	-0.00422
	(!A1 * B1 * !C1 * !Y)	0.00492	0.00494	0.00490
	(!A1 * B1 * !C1 * !Y)	-0.00426	-0.00425	-0.00421

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

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

sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	-0.00212	-0.00213	-0.00217
	(A1 * C1 * !Y)	0.00111	0.00111	0.00107
	(A1 * B1 * !C1 * !Y)	-0.00203	-0.00205	-0.00216
	(A1 * B1 * !C1 * !Y)	0.00114	0.00115	0.00107
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00184	-0.00186	-0.00211
	(A1 * A2 * !B1 * !C1 * !Y)	0.00128	0.00128	0.00110
	(!A1 * C1 * !Y)	-0.00213	-0.00213	-0.00217
	(!A1 * C1 * !Y)	0.00111	0.00111	0.00107
	(!A1 * B1 * !C1 * !Y)	-0.00204	-0.00205	-0.00216
	(!A1 * B1 * !C1 * !Y)	0.00115	0.00115	0.00107
sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	-0.00229	-0.00231	-0.00246
	(A1 * C1 * !Y)	0.00233	0.00233	0.00219
	(A1 * B1 * !C1 * !Y)	-0.00210	-0.00213	-0.00242
	(A1 * B1 * !C1 * !Y)	0.00237	0.00240	0.00218
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00173	-0.00176	-0.00232
	(A1 * A2 * !B1 * !C1 * !Y)	0.00262	0.00264	0.00225
	(!A1 * C1 * !Y)	-0.00228	-0.00231	-0.00246
	(!A1 * C1 * !Y)	0.00231	0.00233	0.00219
	(!A1 * B1 * !C1 * !Y)	-0.00210	-0.00213	-0.00242
	(!A1 * B1 * !C1 * !Y)	0.00238	0.00240	0.00218
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	-0.00459	-0.00462	-0.00487
	(A1 * C1 * !Y)	0.00452	0.00452	0.00430
	(A1 * B1 * !C1 * !Y)	-0.00419	-0.00425	-0.00479
	(A1 * B1 * !C1 * !Y)	0.00467	0.00471	0.00430
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00349	-0.00355	-0.00460
	(A1 * A2 * !B1 * !C1 * !Y)	0.00510	0.00513	0.00442
	(!A1 * C1 * !Y)	-0.00455	-0.00462	-0.00488
	(!A1 * C1 * !Y)	0.00447	0.00452	0.00430
	(!A1 * B1 * !C1 * !Y)	-0.00419	-0.00425	-0.00479
	(!A1 * B1 * !C1 * !Y)	0.00468	0.00471	0.00431

SKY130_FD_SC_HS__A2111Ox

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00259	0.00272	0.00260	0.00265	0.00261	1.28582
sky130_fd_sc_hs__a2111o_2	0.00289	0.00300	0.00283	0.00292	0.00304	2.42208
sky130_fd_sc_hs__a2111o_4	0.00489	0.00482	0.00501	0.00502	0.00495	4.67044

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2111o_1	0.00000	0.07007	0.26733
sky130_fd_sc_hs__a2111o_2	0.00000	0.05827	0.23659
sky130_fd_sc_hs__a2111o_4	0.00000	0.17452	0.55162

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)	0.07499	0.55941	5.95861
	A2->X (RR)	0.07871	0.55346	5.89941
	B1->X (RR)	0.06159	0.51937	5.70123
	C1->X (RR)	0.05982	0.50672	5.60923
	D1->X (RR)	0.05399	0.48937	5.57481
sky130_fd_sc_hs__a2111o_2	A1->X (RR)	0.07715	0.48357	5.83382
	A2->X (RR)	0.08088	0.47291	5.77043
	B1->X (RR)	0.06130	0.44015	5.58127
	C1->X (RR)	0.05869	0.42623	5.48604
	D1->X (RR)	0.05430	0.41134	5.44822
sky130_fd_sc_hs__a2111o_4	A1->X (RR)	0.08377	0.43153	6.00844
	A2->X (RR)	0.08884	0.42146	5.92767
	B1->X (RR)	0.06051	0.36998	5.64667
	C1->X (RR)	0.05867	0.35825	5.54365
	D1->X (RR)	0.05272	0.33982	5.50449

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111o_1	A1->X (FF)	0.24192	0.65030	5.11858
	A2->X (FF)	0.26132	0.68171	5.17010
	B1->X (FF)	0.24059	0.67545	5.36148
	C1->X (FF)	0.21464	0.68358	5.45401
	D1->X (FF)	0.17437	0.66750	5.45592
sky130_fd_sc_hs__a2111o_2	A1->X (FF)	0.28570	0.68217	5.14802
	A2->X (FF)	0.30190	0.71178	5.20957
	B1->X (FF)	0.28147	0.70246	5.41137
	C1->X (FF)	0.25312	0.70936	5.53428
	D1->X (FF)	0.21424	0.69752	5.53029
sky130_fd_sc_hs__a2111o_4	A1->X (FF)	0.30821	0.66721	5.27152
	A2->X (FF)	0.34771	0.72091	5.36287
	B1->X (FF)	0.32831	0.71529	5.60835
	C1->X (FF)	0.29798	0.72537	5.77228
	D1->X (FF)	0.23435	0.69696	5.71942

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111o_1	A1	0.01688	0.01796	0.05700
	A1	0.00775	0.00884	0.04845
	A2	0.01786	0.01862	0.05431
	A2	0.00775	0.00850	0.04477
	B1	0.01363	0.01520	0.05512
	B1	0.00591	0.00750	0.04760
	C1	0.01156	0.01335	0.05007
	C1	0.00490	0.00670	0.04371
	D1	0.00937	0.01156	0.05704
	D1	0.00377	0.00596	0.05175
sky130_fd_sc_hs__a2111o_2	A1	0.02155	0.02265	0.06197
	A1	0.01135	0.01247	0.05196
	A2	0.02288	0.02373	0.05972
	A2	0.01139	0.01228	0.04857
	B1	0.01777	0.01948	0.05972
	B1	0.00915	0.01088	0.05179
	C1	0.01525	0.01710	0.05409
	C1	0.00777	0.00968	0.04731
	D1	0.01308	0.01530	0.05973
	D1	0.00664	0.00891	0.05381

sky130_fd_sc_hs__a2111o_4	**A1**	0.04059	0.04255	0.11651
	A1	0.02275	0.02483	0.10090
	A2	0.04301	0.04442	0.11178
	A2	0.02271	0.02422	0.09373
	B1	0.03419	0.03760	0.11533
	B1	0.01857	0.02210	0.10077
	C1	0.02971	0.03317	0.10175
	C1	0.01645	0.01995	0.08977
	D1	0.02392	0.02846	0.11160
	D1	0.01305	0.01768	0.10201

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**A1**	0.00526	0.00491	0.04229
	A1	0.01453	0.01418	0.05045
	A2	0.00610	0.00563	0.04119
	A2	0.01631	0.01586	0.05056
	B1	0.00511	0.00550	0.04390
	B1	0.01288	0.01327	0.05054
	C1	0.00511	0.00598	0.04015
	C1	0.01179	0.01265	0.04681
	D1	0.00515	0.00733	0.05120
	D1	0.01077	0.01294	0.05672

sky130_fd_sc_hs__a2111o_2	**A1**	0.01094	0.00866	0.04429
	A1	0.02134	0.01912	0.05453
	A2	0.01170	0.00929	0.04391
	A2	0.02331	0.02099	0.05550
	B1	0.01029	0.00913	0.04564
	B1	0.01898	0.01781	0.05432
	C1	0.01021	0.00969	0.04647
	C1	0.02047	0.01896	0.04937
	D1	0.01010	0.01080	0.05352
	D1	0.01652	0.01726	0.05920
sky130_fd_sc_hs__a2111o_4	**A1**	0.02233	0.01692	0.08776
	A1	0.04051	0.03520	0.10188
	A2	0.02523	0.01874	0.08938
	A2	0.04569	0.03935	0.10345
	B1	0.02074	0.01673	0.08929
	B1	0.03649	0.03301	0.10333
	C1	0.02087	0.01799	0.08219
	C1	0.04078	0.03551	0.09017
	D1	0.02070	0.02110	0.10408
	D1	0.03158	0.03195	0.10874

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)**	0.00186	0.00188	0.00186
	(A2 * B1 * D1 * X)	-0.00200	-0.00207	-0.00207
	(A2 * B1 * C1 * !D1 * X)	0.00186	0.00188	0.00186
	(A2 * B1 * C1 * !D1 * X)	-0.00200	-0.00207	-0.00207
	(A2 * B1 * !C1 * !D1 * X)	0.00186	0.00188	0.00186
	(A2 * B1 * !C1 * !D1 * X)	-0.00197	-0.00209	-0.00207
	(A2 * !B1 * C1 * D1 * X)	0.00187	0.00187	0.00186
	(A2 * !B1 * C1 * D1 * X)	-0.00188	-0.00204	-0.00202
	(A2 * !B1 * C1 * !D1 * X)	0.00187	0.00188	0.00186
	(A2 * !B1 * C1 * !D1 * X)	-0.00188	-0.00204	-0.00202
	(A2 * !B1 * !C1 * D1 * X)	0.00189	0.00188	0.00186
	(A2 * !B1 * !C1 * D1 * X)	-0.00182	-0.00201	-0.00199
	(!A2 * B1 * D1 * X)	0.00179	0.00181	0.00179
	(!A2 * B1 * D1 * X)	-0.00210	-0.00211	-0.00211
	(!A2 * B1 * C1 * !D1 * X)	0.00179	0.00181	0.00180
	(!A2 * B1 * C1 * !D1 * X)	-0.00210	-0.00211	-0.00211
	(!A2 * B1 * !C1 * !D1 * X)	0.00178	0.00180	0.00179
	(!A2 * B1 * !C1 * !D1 * X)	-0.00210	-0.00212	-0.00211
	(!A2 * !B1 * C1 * D1 * X)	0.00179	0.00182	0.00180
	(!A2 * !B1 * C1 * D1 * X)	-0.00210	-0.00211	-0.00211
	(!A2 * !B1 * C1 * !D1 * X)	0.00178	0.00181	0.00179
	(!A2 * !B1 * C1 * !D1 * X)	-0.00210	-0.00211	-0.00211
	(!A2 * !B1 * !C1 * D1 * X)	0.00178	0.00181	0.00179
	(!A2 * !B1 * !C1 * D1 * X)	-0.00210	-0.00212	-0.00211
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00075	0.00075	0.00074
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00244	-0.00245	-0.00247

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	0.00190	0.00192	0.00190
	(A2 * B1 * D1 * X)	-0.00225	-0.00235	-0.00234
	(A2 * B1 * C1 * !D1 * X)	0.00190	0.00192	0.00190
	(A2 * B1 * C1 * !D1 * X)	-0.00225	-0.00235	-0.00234
	(A2 * B1 * !C1 * !D1 * X)	0.00190	0.00192	0.00190
	(A2 * B1 * !C1 * !D1 * X)	-0.00222	-0.00235	-0.00234
	(A2 * !B1 * C1 * D1 * X)	0.00189	0.00191	0.00190
	(A2 * !B1 * C1 * D1 * X)	-0.00211	-0.00229	-0.00228
	(A2 * !B1 * C1 * !D1 * X)	0.00190	0.00191	0.00190
	(A2 * !B1 * C1 * !D1 * X)	-0.00211	-0.00229	-0.00228
	(A2 * !B1 * !C1 * D1 * X)	0.00191	0.00191	0.00190
	(A2 * !B1 * !C1 * D1 * X)	-0.00206	-0.00225	-0.00224
	(!A2 * B1 * D1 * X)	0.00184	0.00186	0.00184
	(!A2 * B1 * D1 * X)	-0.00238	-0.00240	-0.00239
	(!A2 * B1 * C1 * !D1 * X)	0.00184	0.00186	0.00184
	(!A2 * B1 * C1 * !D1 * X)	-0.00239	-0.00240	-0.00239
	(!A2 * B1 * !C1 * !D1 * X)	0.00183	0.00185	0.00184
	(!A2 * B1 * !C1 * !D1 * X)	-0.00238	-0.00240	-0.00239
	(!A2 * !B1 * C1 * D1 * X)	0.00184	0.00186	0.00184
	(!A2 * !B1 * C1 * D1 * X)	-0.00238	-0.00239	-0.00239
	(!A2 * !B1 * C1 * !D1 * X)	0.00184	0.00186	0.00184
	(!A2 * !B1 * C1 * !D1 * X)	-0.00238	-0.00240	-0.00239
	(!A2 * !B1 * !C1 * D1 * X)	0.00184	0.00185	0.00184
	(!A2 * !B1 * !C1 * D1 * X)	-0.00238	-0.00239	-0.00239
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00063	0.00064	0.00062
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00275	-0.00277	-0.00279

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	0.00317	0.00321	0.00318
	(A2 * B1 * D1 * X)	-0.00404	-0.00425	-0.00422
	(A2 * B1 * C1 * !D1 * X)	0.00317	0.00321	0.00318
	(A2 * B1 * C1 * !D1 * X)	-0.00404	-0.00425	-0.00422
	(A2 * B1 * !C1 * !D1 * X)	0.00318	0.00321	0.00318
	(A2 * B1 * !C1 * !D1 * X)	-0.00395	-0.00424	-0.00422
	(A2 * !B1 * C1 * D1 * X)	0.00317	0.00320	0.00318
	(A2 * !B1 * C1 * D1 * X)	-0.00376	-0.00412	-0.00409
	(A2 * !B1 * C1 * !D1 * X)	0.00317	0.00320	0.00318
	(A2 * !B1 * C1 * !D1 * X)	-0.00375	-0.00412	-0.00409
	(A2 * !B1 * !C1 * D1 * X)	0.00323	0.00321	0.00318
	(A2 * !B1 * !C1 * D1 * X)	-0.00367	-0.00405	-0.00404
	(!A2 * B1 * D1 * X)	0.00306	0.00308	0.00306
	(!A2 * B1 * D1 * X)	-0.00429	-0.00432	-0.00430
	(!A2 * B1 * C1 * !D1 * X)	0.00306	0.00308	0.00306
	(!A2 * B1 * C1 * !D1 * X)	-0.00429	-0.00432	-0.00430
	(!A2 * B1 * !C1 * !D1 * X)	0.00306	0.00308	0.00306
	(!A2 * B1 * !C1 * !D1 * X)	-0.00429	-0.00432	-0.00430
	(!A2 * !B1 * C1 * D1 * X)	0.00305	0.00309	0.00307
	(!A2 * !B1 * C1 * D1 * X)	-0.00428	-0.00432	-0.00430
	(!A2 * !B1 * C1 * !D1 * X)	0.00305	0.00308	0.00307
	(!A2 * !B1 * C1 * !D1 * X)	-0.00428	-0.00432	-0.00430
	(!A2 * !B1 * !C1 * D1 * X)	0.00305	0.00308	0.00307
	(!A2 * !B1 * !C1 * D1 * X)	-0.00428	-0.00431	-0.00429
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00108	0.00109	0.00104
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00487	-0.00489	-0.00497

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)**	-0.00185	-0.00185	-0.00186
	(A2 * B1 * D1 * X)	0.00206	0.00207	0.00207
	(A2 * B1 * C1 * !D1 * X)	-0.00185	-0.00185	-0.00186
	(A2 * B1 * C1 * !D1 * X)	0.00206	0.00207	0.00207
	(A2 * B1 * !C1 * !D1 * X)	-0.00185	-0.00187	-0.00185
	(A2 * B1 * !C1 * !D1 * X)	0.00206	0.00209	0.00207
	(A2 * !B1 * C1 * D1 * X)	-0.00185	-0.00187	-0.00185
	(A2 * !B1 * C1 * D1 * X)	0.00201	0.00204	0.00202
	(A2 * !B1 * C1 * !D1 * X)	-0.00185	-0.00187	-0.00185
	(A2 * !B1 * C1 * !D1 * X)	0.00201	0.00204	0.00202
	(A2 * !B1 * !C1 * D1 * X)	-0.00185	-0.00186	-0.00185
	(A2 * !B1 * !C1 * D1 * X)	0.00198	0.00201	0.00199
	(!A2 * B1 * D1 * X)	-0.00176	-0.00179	-0.00179
	(!A2 * B1 * D1 * X)	0.00211	0.00211	0.00212
	(!A2 * B1 * C1 * !D1 * X)	-0.00176	-0.00179	-0.00180
	(!A2 * B1 * C1 * !D1 * X)	0.00211	0.00211	0.00212
	(!A2 * B1 * !C1 * !D1 * X)	-0.00176	-0.00180	-0.00179
	(!A2 * B1 * !C1 * !D1 * X)	0.00211	0.00212	0.00212
	(!A2 * !B1 * C1 * D1 * X)	-0.00176	-0.00179	-0.00180
	(!A2 * !B1 * C1 * D1 * X)	0.00211	0.00211	0.00212
	(!A2 * !B1 * C1 * !D1 * X)	-0.00176	-0.00180	-0.00179
	(!A2 * !B1 * C1 * !D1 * X)	0.00211	0.00211	0.00212
	(!A2 * !B1 * !C1 * D1 * X)	-0.00175	-0.00180	-0.00179
	(!A2 * !B1 * !C1 * D1 * X)	0.00211	0.00212	0.00212
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00073	-0.00074	-0.00073
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00247	0.00251	0.00248

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	-0.00190	-0.00190	-0.00190
	(A2 * B1 * D1 * X)	0.00234	0.00235	0.00234
	(A2 * B1 * C1 * !D1 * X)	-0.00190	-0.00190	-0.00190
	(A2 * B1 * C1 * !D1 * X)	0.00234	0.00235	0.00234
	(A2 * B1 * !C1 * !D1 * X)	-0.00190	-0.00191	-0.00190
	(A2 * B1 * !C1 * !D1 * X)	0.00233	0.00235	0.00234
	(A2 * !B1 * C1 * D1 * X)	-0.00189	-0.00191	-0.00190
	(A2 * !B1 * C1 * D1 * X)	0.00227	0.00229	0.00228
	(A2 * !B1 * C1 * !D1 * X)	-0.00190	-0.00191	-0.00190
	(A2 * !B1 * C1 * !D1 * X)	0.00227	0.00229	0.00228
	(A2 * !B1 * !C1 * D1 * X)	-0.00189	-0.00190	-0.00190
	(A2 * !B1 * !C1 * D1 * X)	0.00224	0.00225	0.00224
	(!A2 * B1 * D1 * X)	-0.00178	-0.00183	-0.00184
	(!A2 * B1 * D1 * X)	0.00238	0.00240	0.00239
	(!A2 * B1 * C1 * !D1 * X)	-0.00179	-0.00183	-0.00184
	(!A2 * B1 * C1 * !D1 * X)	0.00239	0.00240	0.00239
	(!A2 * B1 * !C1 * !D1 * X)	-0.00178	-0.00183	-0.00184
	(!A2 * B1 * !C1 * !D1 * X)	0.00238	0.00241	0.00239
	(!A2 * !B1 * C1 * D1 * X)	-0.00178	-0.00182	-0.00184
	(!A2 * !B1 * C1 * D1 * X)	0.00239	0.00239	0.00239
	(!A2 * !B1 * C1 * !D1 * X)	-0.00178	-0.00183	-0.00184
	(!A2 * !B1 * C1 * !D1 * X)	0.00238	0.00241	0.00239
	(!A2 * !B1 * !C1 * D1 * X)	-0.00178	-0.00184	-0.00184
	(!A2 * !B1 * !C1 * D1 * X)	0.00238	0.00243	0.00240
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00060	-0.00061	-0.00060
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00278	0.00282	0.00279

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	-0.00316	-0.00318	-0.00317
	(A2 * B1 * D1 * X)	0.00419	0.00425	0.00422
	(A2 * B1 * C1 * !D1 * X)	-0.00316	-0.00318	-0.00317
	(A2 * B1 * C1 * !D1 * X)	0.00419	0.00425	0.00422
	(A2 * B1 * !C1 * !D1 * X)	-0.00316	-0.00318	-0.00317
	(A2 * B1 * !C1 * !D1 * X)	0.00421	0.00424	0.00422
	(A2 * !B1 * C1 * D1 * X)	-0.00317	-0.00318	-0.00317
	(A2 * !B1 * C1 * D1 * X)	0.00408	0.00412	0.00409
	(A2 * !B1 * C1 * !D1 * X)	-0.00317	-0.00318	-0.00317
	(A2 * !B1 * C1 * !D1 * X)	0.00408	0.00412	0.00409
	(A2 * !B1 * !C1 * D1 * X)	-0.00316	-0.00318	-0.00316
	(A2 * !B1 * !C1 * D1 * X)	0.00403	0.00405	0.00404
	(!A2 * B1 * D1 * X)	-0.00294	-0.00308	-0.00306
	(!A2 * B1 * D1 * X)	0.00429	0.00435	0.00431
	(!A2 * B1 * C1 * !D1 * X)	-0.00294	-0.00308	-0.00306
	(!A2 * B1 * C1 * !D1 * X)	0.00429	0.00435	0.00431
	(!A2 * B1 * !C1 * !D1 * X)	-0.00293	-0.00308	-0.00306
	(!A2 * B1 * !C1 * !D1 * X)	0.00429	0.00435	0.00431
	(!A2 * !B1 * C1 * D1 * X)	-0.00294	-0.00309	-0.00307
	(!A2 * !B1 * C1 * D1 * X)	0.00429	0.00435	0.00431
	(!A2 * !B1 * C1 * !D1 * X)	-0.00293	-0.00308	-0.00307
	(!A2 * !B1 * C1 * !D1 * X)	0.00429	0.00435	0.00431
	(!A2 * !B1 * !C1 * D1 * X)	-0.00293	-0.00308	-0.00307
	(!A2 * !B1 * !C1 * D1 * X)	0.00429	0.00435	0.00431
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00100	-0.00102	-0.00101
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00497	0.00503	0.00499

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)**	0.00171	0.00171	0.00170
	(A1 * B1 * D1 * X)	-0.00209	-0.00217	-0.00215
	(A1 * B1 * C1 * !D1 * X)	0.00171	0.00171	0.00170
	(A1 * B1 * C1 * !D1 * X)	-0.00209	-0.00216	-0.00215
	(A1 * B1 * !C1 * !D1 * X)	0.00171	0.00171	0.00170
	(A1 * B1 * !C1 * !D1 * X)	-0.00204	-0.00216	-0.00215
	(A1 * !B1 * C1 * D1 * X)	0.00169	0.00171	0.00170
	(A1 * !B1 * C1 * D1 * X)	-0.00193	-0.00210	-0.00209
	(A1 * !B1 * C1 * !D1 * X)	0.00169	0.00171	0.00170
	(A1 * !B1 * C1 * !D1 * X)	-0.00193	-0.00209	-0.00209
	(A1 * !B1 * !C1 * D1 * X)	0.00173	0.00171	0.00170
	(A1 * !B1 * !C1 * D1 * X)	-0.00187	-0.00207	-0.00206
	(!A1 * B1 * X)	0.00162	0.00163	0.00163
	(!A1 * B1 * X)	-0.00219	-0.00220	-0.00220
	(!A1 * !B1 * C1 * X)	0.00162	0.00163	0.00163
	(!A1 * !B1 * C1 * X)	-0.00219	-0.00220	-0.00220
	(!A1 * !B1 * !C1 * D1 * X)	0.00162	0.00164	0.00163
	(!A1 * !B1 * !C1 * D1 * X)	-0.00219	-0.00220	-0.00219
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00143	0.00144	0.00144
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00239	-0.00240	-0.00239

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00191	0.00193	0.00191
	(A1 * B1 * D1 * X)	-0.00225	-0.00236	-0.00235
	(A1 * B1 * C1 * !D1 * X)	0.00190	0.00193	0.00191
	(A1 * B1 * C1 * !D1 * X)	-0.00225	-0.00236	-0.00235
	(A1 * B1 * !C1 * !D1 * X)	0.00191	0.00193	0.00191
	(A1 * B1 * !C1 * !D1 * X)	-0.00222	-0.00236	-0.00235
	(A1 * !B1 * C1 * D1 * X)	0.00191	0.00193	0.00191
	(A1 * !B1 * C1 * D1 * X)	-0.00210	-0.00229	-0.00228
	(A1 * !B1 * C1 * !D1 * X)	0.00191	0.00193	0.00191
	(A1 * !B1 * C1 * !D1 * X)	-0.00210	-0.00229	-0.00228
	(A1 * !B1 * !C1 * D1 * X)	0.00193	0.00193	0.00191
	(A1 * !B1 * !C1 * D1 * X)	-0.00204	-0.00227	-0.00224
	(!A1 * B1 * X)	0.00183	0.00184	0.00183
	(!A1 * B1 * X)	-0.00239	-0.00240	-0.00240
	(!A1 * !B1 * C1 * X)	0.00183	0.00185	0.00184
	(!A1 * !B1 * C1 * X)	-0.00239	-0.00240	-0.00240
	(!A1 * !B1 * !C1 * D1 * X)	0.00183	0.00185	0.00184
	(!A1 * !B1 * !C1 * D1 * X)	-0.00239	-0.00240	-0.00240
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00171	0.00174	0.00172
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00253	-0.00255	-0.00253

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00326	0.00330	0.00326
	(A1 * B1 * D1 * X)	-0.00408	-0.00427	-0.00425
	(A1 * B1 * C1 * !D1 * X)	0.00327	0.00330	0.00326
	(A1 * B1 * C1 * !D1 * X)	-0.00408	-0.00427	-0.00425
	(A1 * B1 * !C1 * !D1 * X)	0.00328	0.00330	0.00326
	(A1 * B1 * !C1 * !D1 * X)	-0.00399	-0.00426	-0.00425
	(A1 * !B1 * C1 * D1 * X)	0.00327	0.00329	0.00326
	(A1 * !B1 * C1 * D1 * X)	-0.00380	-0.00414	-0.00412
	(A1 * !B1 * C1 * !D1 * X)	0.00328	0.00329	0.00326
	(A1 * !B1 * C1 * !D1 * X)	-0.00380	-0.00415	-0.00412
	(A1 * !B1 * !C1 * D1 * X)	0.00333	0.00330	0.00327
	(A1 * !B1 * !C1 * D1 * X)	-0.00371	-0.00407	-0.00407
	(!A1 * B1 * X)	0.00316	0.00318	0.00316
	(!A1 * B1 * X)	-0.00432	-0.00434	-0.00432
	(!A1 * !B1 * C1 * X)	0.00316	0.00317	0.00316
	(!A1 * !B1 * C1 * X)	-0.00432	-0.00434	-0.00432
	(!A1 * !B1 * !C1 * D1 * X)	0.00314	0.00318	0.00316
	(!A1 * !B1 * !C1 * D1 * X)	-0.00430	-0.00433	-0.00432
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00316	0.00318	0.00316
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00433	-0.00434	-0.00432

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)**	-0.00169	-0.00170	-0.00169
	(A1 * B1 * D1 * X)	0.00215	0.00217	0.00215
	(A1 * B1 * C1 * !D1 * X)	-0.00169	-0.00170	-0.00169
	(A1 * B1 * C1 * !D1 * X)	0.00215	0.00216	0.00215
	(A1 * B1 * !C1 * !D1 * X)	-0.00169	-0.00170	-0.00169
	(A1 * B1 * !C1 * !D1 * X)	0.00215	0.00218	0.00215
	(A1 * !B1 * C1 * D1 * X)	-0.00169	-0.00170	-0.00169
	(A1 * !B1 * C1 * D1 * X)	0.00208	0.00210	0.00209
	(A1 * !B1 * C1 * !D1 * X)	-0.00169	-0.00169	-0.00169
	(A1 * !B1 * C1 * !D1 * X)	0.00208	0.00209	0.00209
	(A1 * !B1 * !C1 * D1 * X)	-0.00169	-0.00169	-0.00169
	(A1 * !B1 * !C1 * D1 * X)	0.00205	0.00207	0.00206
	(!A1 * B1 * X)	-0.00160	-0.00163	-0.00163
	(!A1 * B1 * X)	0.00219	0.00220	0.00220
	(!A1 * !B1 * C1 * X)	-0.00159	-0.00163	-0.00163
	(!A1 * !B1 * C1 * X)	0.00219	0.00220	0.00220
	(!A1 * !B1 * !C1 * D1 * X)	-0.00159	-0.00163	-0.00163
	(!A1 * !B1 * !C1 * D1 * X)	0.00219	0.00221	0.00220
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00133	-0.00144	-0.00144
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00248	0.00244	0.00240

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00191	-0.00192	-0.00191
	(A1 * B1 * D1 * X)	0.00234	0.00237	0.00235
	(A1 * B1 * C1 * !D1 * X)	-0.00190	-0.00192	-0.00191
	(A1 * B1 * C1 * !D1 * X)	0.00234	0.00237	0.00235
	(A1 * B1 * !C1 * !D1 * X)	-0.00191	-0.00192	-0.00191
	(A1 * B1 * !C1 * !D1 * X)	0.00234	0.00237	0.00235
	(A1 * !B1 * C1 * D1 * X)	-0.00191	-0.00191	-0.00191
	(A1 * !B1 * C1 * D1 * X)	0.00227	0.00229	0.00228
	(A1 * !B1 * C1 * !D1 * X)	-0.00191	-0.00191	-0.00191
	(A1 * !B1 * C1 * !D1 * X)	0.00227	0.00229	0.00228
	(A1 * !B1 * !C1 * D1 * X)	-0.00190	-0.00192	-0.00191
	(A1 * !B1 * !C1 * D1 * X)	0.00223	0.00227	0.00224
	(!A1 * B1 * X)	-0.00180	-0.00184	-0.00183
	(!A1 * B1 * X)	0.00240	0.00242	0.00241
	(!A1 * !B1 * C1 * X)	-0.00180	-0.00184	-0.00184
	(!A1 * !B1 * C1 * X)	0.00240	0.00241	0.00240
	(!A1 * !B1 * !C1 * D1 * X)	-0.00180	-0.00184	-0.00184
	(!A1 * !B1 * !C1 * D1 * X)	0.00240	0.00241	0.00241
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00159	-0.00171	-0.00172
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00263	0.00256	0.00254

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00325	-0.00326	-0.00325
	(A1 * B1 * D1 * X)	0.00423	0.00427	0.00425
	(A1 * B1 * C1 * !D1 * X)	-0.00325	-0.00326	-0.00325
	(A1 * B1 * C1 * !D1 * X)	0.00423	0.00427	0.00425
	(A1 * B1 * !C1 * !D1 * X)	-0.00325	-0.00326	-0.00325
	(A1 * B1 * !C1 * !D1 * X)	0.00423	0.00426	0.00425
	(A1 * !B1 * C1 * D1 * X)	-0.00325	-0.00327	-0.00325
	(A1 * !B1 * C1 * D1 * X)	0.00410	0.00414	0.00412
	(A1 * !B1 * C1 * !D1 * X)	-0.00325	-0.00327	-0.00325
	(A1 * !B1 * C1 * !D1 * X)	0.00410	0.00415	0.00412
	(A1 * !B1 * !C1 * D1 * X)	-0.00325	-0.00326	-0.00325
	(A1 * !B1 * !C1 * D1 * X)	0.00405	0.00407	0.00407
	(!A1 * B1 * X)	-0.00303	-0.00314	-0.00316
	(!A1 * B1 * X)	0.00432	0.00436	0.00434
	(!A1 * !B1 * C1 * X)	-0.00303	-0.00314	-0.00316
	(!A1 * !B1 * C1 * X)	0.00432	0.00436	0.00434
	(!A1 * !B1 * !C1 * D1 * X)	-0.00302	-0.00314	-0.00316
	(!A1 * !B1 * !C1 * D1 * X)	0.00432	0.00437	0.00434
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00287	-0.00314	-0.00315
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00451	0.00438	0.00434

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)**	0.00175	0.00174	0.00174
	(A1 * A2 * C1 * D1 * X)	-0.00146	-0.00147	-0.00146
	(A1 * A2 * C1 * !D1 * X)	0.00195	0.00185	0.00177
	(A1 * A2 * C1 * !D1 * X)	-0.00142	-0.00144	-0.00143
	(A1 * A2 * !C1 * D1 * X)	0.00176	0.00177	0.00175
	(A1 * A2 * !C1 * D1 * X)	-0.00135	-0.00137	-0.00136
	(A1 * A2 * !C1 * !D1 * X)	0.00173	0.00174	0.00173
	(A1 * A2 * !C1 * !D1 * X)	-0.00109	-0.00109	-0.00109
	(A1 * !A2 * C1 * D1 * X)	0.00173	0.00175	0.00173
	(A1 * !A2 * C1 * D1 * X)	-0.00198	-0.00205	-0.00203
	(A1 * !A2 * C1 * !D1 * X)	0.00198	0.00175	0.00173
	(A1 * !A2 * C1 * !D1 * X)	-0.00174	-0.00205	-0.00204
	(A1 * !A2 * !C1 * D1 * X)	0.00192	0.00173	0.00173
	(A1 * !A2 * !C1 * D1 * X)	-0.00167	-0.00197	-0.00197
	(!A1 * C1 * D1 * X)	0.00173	0.00175	0.00173
	(!A1 * C1 * D1 * X)	-0.00198	-0.00205	-0.00203
	(!A1 * C1 * !D1 * X)	0.00200	0.00175	0.00173
	(!A1 * C1 * !D1 * X)	-0.00173	-0.00204	-0.00204
	(!A1 * !C1 * D1 * X)	0.00193	0.00174	0.00173
	(!A1 * !C1 * D1 * X)	-0.00166	-0.00197	-0.00196

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	0.00186	0.00186	0.00185
	(A1 * A2 * C1 * D1 * X)	-0.00164	-0.00165	-0.00164
	(A1 * A2 * C1 * !D1 * X)	0.00203	0.00198	0.00187
	(A1 * A2 * C1 * !D1 * X)	-0.00157	-0.00160	-0.00159
	(A1 * A2 * !C1 * D1 * X)	0.00185	0.00189	0.00185
	(A1 * A2 * !C1 * D1 * X)	-0.00151	-0.00151	-0.00150
	(A1 * A2 * !C1 * !D1 * X)	0.00184	0.00186	0.00185
	(A1 * A2 * !C1 * !D1 * X)	-0.00121	-0.00122	-0.00121
	(A1 * !A2 * C1 * D1 * X)	0.00183	0.00187	0.00185
	(A1 * !A2 * C1 * D1 * X)	-0.00220	-0.00229	-0.00228
	(A1 * !A2 * C1 * !D1 * X)	0.00204	0.00187	0.00185
	(A1 * !A2 * C1 * !D1 * X)	-0.00200	-0.00230	-0.00228
	(A1 * !A2 * !C1 * D1 * X)	0.00198	0.00187	0.00185
	(A1 * !A2 * !C1 * D1 * X)	-0.00193	-0.00219	-0.00220
	(!A1 * C1 * D1 * X)	0.00183	0.00187	0.00185
	(!A1 * C1 * D1 * X)	-0.00220	-0.00229	-0.00228
	(!A1 * C1 * !D1 * X)	0.00208	0.00187	0.00185
	(!A1 * C1 * !D1 * X)	-0.00201	-0.00229	-0.00228
	(!A1 * !C1 * D1 * X)	0.00199	0.00187	0.00185
	(!A1 * !C1 * D1 * X)	-0.00191	-0.00219	-0.00220

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	0.00342	0.00344	0.00340
	(A1 * A2 * C1 * D1 * X)	-0.00302	-0.00304	-0.00301
	(A1 * A2 * C1 * !D1 * X)	0.00369	0.00362	0.00344
	(A1 * A2 * C1 * !D1 * X)	-0.00291	-0.00295	-0.00292
	(A1 * A2 * !C1 * D1 * X)	0.00342	0.00353	0.00344
	(A1 * A2 * !C1 * D1 * X)	-0.00285	-0.00285	-0.00284
	(A1 * A2 * !C1 * !D1 * X)	0.00340	0.00344	0.00340
	(A1 * A2 * !C1 * !D1 * X)	-0.00228	-0.00230	-0.00228
	(A1 * !A2 * C1 * D1 * X)	0.00338	0.00340	0.00339
	(A1 * !A2 * C1 * D1 * X)	-0.00403	-0.00421	-0.00418
	(A1 * !A2 * C1 * !D1 * X)	0.00377	0.00341	0.00339
	(A1 * !A2 * C1 * !D1 * X)	-0.00365	-0.00420	-0.00420
	(A1 * !A2 * !C1 * D1 * X)	0.00367	0.00346	0.00340
	(A1 * !A2 * !C1 * D1 * X)	-0.00351	-0.00410	-0.00405
	(!A1 * C1 * D1 * X)	0.00339	0.00341	0.00339
	(!A1 * C1 * D1 * X)	-0.00404	-0.00421	-0.00419
	(!A1 * C1 * !D1 * X)	0.00375	0.00341	0.00339
	(!A1 * C1 * !D1 * X)	-0.00367	-0.00421	-0.00420
	(!A1 * !C1 * D1 * X)	0.00367	0.00346	0.00340
	(!A1 * !C1 * D1 * X)	-0.00353	-0.00411	-0.00406

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)**	-0.00173	-0.00174	-0.00173
	(A1 * A2 * C1 * D1 * X)	0.00146	0.00147	0.00146
	(A1 * A2 * C1 * !D1 * X)	-0.00173	-0.00174	-0.00173
	(A1 * A2 * C1 * !D1 * X)	0.00142	0.00144	0.00143
	(A1 * A2 * !C1 * D1 * X)	-0.00172	-0.00174	-0.00173
	(A1 * A2 * !C1 * D1 * X)	0.00135	0.00137	0.00136
	(A1 * A2 * !C1 * !D1 * X)	-0.00165	-0.00166	-0.00166
	(A1 * A2 * !C1 * !D1 * X)	0.00118	0.00118	0.00116
	(A1 * !A2 * C1 * D1 * X)	-0.00172	-0.00173	-0.00172
	(A1 * !A2 * C1 * D1 * X)	0.00202	0.00205	0.00203
	(A1 * !A2 * C1 * !D1 * X)	-0.00172	-0.00173	-0.00172
	(A1 * !A2 * C1 * !D1 * X)	0.00203	0.00205	0.00204
	(A1 * !A2 * !C1 * D1 * X)	-0.00172	-0.00172	-0.00172
	(A1 * !A2 * !C1 * D1 * X)	0.00196	0.00197	0.00197
	(!A1 * C1 * D1 * X)	-0.00172	-0.00173	-0.00172
	(!A1 * C1 * D1 * X)	0.00202	0.00205	0.00203
	(!A1 * C1 * !D1 * X)	-0.00172	-0.00173	-0.00172
	(!A1 * C1 * !D1 * X)	0.00203	0.00204	0.00204
	(!A1 * !C1 * D1 * X)	-0.00172	-0.00172	-0.00172
	(!A1 * !C1 * D1 * X)	0.00196	0.00197	0.00196

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	-0.00184	-0.00185	-0.00184
	(A1 * A2 * C1 * D1 * X)	0.00164	0.00165	0.00164
	(A1 * A2 * C1 * !D1 * X)	-0.00183	-0.00185	-0.00184
	(A1 * A2 * C1 * !D1 * X)	0.00157	0.00160	0.00159
	(A1 * A2 * !C1 * D1 * X)	-0.00184	-0.00185	-0.00184
	(A1 * A2 * !C1 * D1 * X)	0.00151	0.00151	0.00150
	(A1 * A2 * !C1 * !D1 * X)	-0.00175	-0.00176	-0.00176
	(A1 * A2 * !C1 * !D1 * X)	0.00130	0.00130	0.00128
	(A1 * !A2 * C1 * D1 * X)	-0.00183	-0.00185	-0.00184
	(A1 * !A2 * C1 * D1 * X)	0.00227	0.00229	0.00228
	(A1 * !A2 * C1 * !D1 * X)	-0.00184	-0.00185	-0.00184
	(A1 * !A2 * C1 * !D1 * X)	0.00227	0.00230	0.00228
	(A1 * !A2 * !C1 * D1 * X)	-0.00183	-0.00183	-0.00184
	(A1 * !A2 * !C1 * D1 * X)	0.00218	0.00219	0.00220
	(!A1 * C1 * D1 * X)	-0.00183	-0.00185	-0.00184
	(!A1 * C1 * D1 * X)	0.00227	0.00229	0.00228
	(!A1 * C1 * !D1 * X)	-0.00184	-0.00185	-0.00184
	(!A1 * C1 * !D1 * X)	0.00227	0.00229	0.00228
	(!A1 * !C1 * D1 * X)	-0.00183	-0.00184	-0.00184
	(!A1 * !C1 * D1 * X)	0.00218	0.00219	0.00220

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	-0.00339	-0.00341	-0.00339
	(A1 * A2 * C1 * D1 * X)	0.00302	0.00304	0.00301
	(A1 * A2 * C1 * !D1 * X)	-0.00338	-0.00341	-0.00339
	(A1 * A2 * C1 * !D1 * X)	0.00291	0.00295	0.00292
	(A1 * A2 * !C1 * D1 * X)	-0.00341	-0.00342	-0.00341
	(A1 * A2 * !C1 * D1 * X)	0.00285	0.00285	0.00284
	(A1 * A2 * !C1 * !D1 * X)	-0.00322	-0.00324	-0.00321
	(A1 * A2 * !C1 * !D1 * X)	0.00247	0.00249	0.00246
	(A1 * !A2 * C1 * D1 * X)	-0.00338	-0.00340	-0.00339
	(A1 * !A2 * C1 * D1 * X)	0.00417	0.00421	0.00418
	(A1 * !A2 * C1 * !D1 * X)	-0.00337	-0.00339	-0.00338
	(A1 * !A2 * C1 * !D1 * X)	0.00418	0.00420	0.00420
	(A1 * !A2 * !C1 * D1 * X)	-0.00337	-0.00341	-0.00337
	(A1 * !A2 * !C1 * D1 * X)	0.00403	0.00410	0.00405
	(!A1 * C1 * D1 * X)	-0.00337	-0.00340	-0.00339
	(!A1 * C1 * D1 * X)	0.00416	0.00421	0.00419
	(!A1 * C1 * !D1 * X)	-0.00338	-0.00339	-0.00338
	(!A1 * C1 * !D1 * X)	0.00418	0.00421	0.00420
	(!A1 * !C1 * D1 * X)	-0.00337	-0.00341	-0.00337
	(!A1 * !C1 * D1 * X)	0.00403	0.00411	0.00406

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)**	0.00188	0.00188	0.00181
	(A1 * B1 * D1 * X)	-0.00127	-0.00129	-0.00128
	(A1 * B1 * !D1 * X)	0.00176	0.00178	0.00174
	(A1 * B1 * !D1 * X)	-0.00107	-0.00109	-0.00108
	(A1 * A2 * !B1 * D1 * X)	0.00205	0.00182	0.00176
	(A1 * A2 * !B1 * D1 * X)	-0.00126	-0.00139	-0.00138
	(A1 * A2 * !B1 * !D1 * X)	0.00176	0.00180	0.00175
	(A1 * A2 * !B1 * !D1 * X)	-0.00105	-0.00107	-0.00106
	(A1 * !A2 * !B1 * D1 * X)	0.00222	0.00179	0.00174
	(A1 * !A2 * !B1 * D1 * X)	-0.00154	-0.00199	-0.00202
	(!A1 * B1 * D1 * X)	0.00189	0.00189	0.00181
	(!A1 * B1 * D1 * X)	-0.00128	-0.00130	-0.00129
	(!A1 * B1 * !D1 * X)	0.00176	0.00180	0.00175
	(!A1 * B1 * !D1 * X)	-0.00105	-0.00108	-0.00107
	(!A1 * !B1 * D1 * X)	0.00222	0.00179	0.00174
	(!A1 * !B1 * D1 * X)	-0.00154	-0.00200	-0.00202

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00200	0.00200	0.00190
	(A1 * B1 * D1 * X)	-0.00151	-0.00152	-0.00151
	(A1 * B1 * !D1 * X)	0.00185	0.00186	0.00183
	(A1 * B1 * !D1 * X)	-0.00126	-0.00127	-0.00127
	(A1 * A2 * !B1 * D1 * X)	0.00213	0.00190	0.00184
	(A1 * A2 * !B1 * D1 * X)	-0.00149	-0.00161	-0.00160
	(A1 * A2 * !B1 * !D1 * X)	0.00186	0.00188	0.00184
	(A1 * A2 * !B1 * !D1 * X)	-0.00124	-0.00125	-0.00125
	(A1 * !A2 * !B1 * D1 * X)	0.00232	0.00187	0.00183
	(A1 * !A2 * !B1 * D1 * X)	-0.00188	-0.00234	-0.00236
	(!A1 * B1 * D1 * X)	0.00202	0.00201	0.00191
	(!A1 * B1 * D1 * X)	-0.00154	-0.00154	-0.00153
	(!A1 * B1 * !D1 * X)	0.00185	0.00187	0.00184
	(!A1 * B1 * !D1 * X)	-0.00127	-0.00128	-0.00128
	(!A1 * !B1 * D1 * X)	0.00232	0.00187	0.00183
	(!A1 * !B1 * D1 * X)	-0.00188	-0.00234	-0.00236

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00360	0.00368	0.00348
	(A1 * B1 * D1 * X)	-0.00277	-0.00279	-0.00278
	(A1 * B1 * !D1 * X)	0.00334	0.00336	0.00332
	(A1 * B1 * !D1 * X)	-0.00235	-0.00236	-0.00235
	(A1 * A2 * !B1 * D1 * X)	0.00386	0.00346	0.00336
	(A1 * A2 * !B1 * D1 * X)	-0.00277	-0.00299	-0.00297
	(A1 * A2 * !B1 * !D1 * X)	0.00339	0.00340	0.00334
	(A1 * A2 * !B1 * !D1 * X)	-0.00234	-0.00233	-0.00233
	(A1 * !A2 * !B1 * D1 * X)	0.00439	0.00341	0.00331
	(A1 * !A2 * !B1 * D1 * X)	-0.00325	-0.00427	-0.00433
	(!A1 * B1 * D1 * X)	0.00364	0.00373	0.00352
	(!A1 * B1 * D1 * X)	-0.00281	-0.00282	-0.00281
	(!A1 * B1 * !D1 * X)	0.00338	0.00339	0.00333
	(!A1 * B1 * !D1 * X)	-0.00236	-0.00235	-0.00235
	(!A1 * !B1 * D1 * X)	0.00439	0.00341	0.00331
	(!A1 * !B1 * D1 * X)	-0.00325	-0.00427	-0.00433

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)**	-0.00173	-0.00174	-0.00173
	(A1 * B1 * D1 * X)	0.00127	0.00129	0.00128
	(A1 * B1 * !D1 * X)	-0.00173	-0.00172	-0.00172
	(A1 * B1 * !D1 * X)	0.00109	0.00109	0.00110
	(A1 * A2 * !B1 * D1 * X)	-0.00173	-0.00174	-0.00174
	(A1 * A2 * !B1 * D1 * X)	0.00137	0.00139	0.00138
	(A1 * A2 * !B1 * !D1 * X)	-0.00165	-0.00165	-0.00172
	(A1 * A2 * !B1 * !D1 * X)	0.00113	0.00113	0.00109
	(A1 * !A2 * !B1 * D1 * X)	-0.00172	-0.00173	-0.00172
	(A1 * !A2 * !B1 * D1 * X)	0.00201	0.00203	0.00203
	(!A1 * B1 * D1 * X)	-0.00173	-0.00174	-0.00173
	(!A1 * B1 * D1 * X)	0.00128	0.00130	0.00129
	(!A1 * B1 * !D1 * X)	-0.00173	-0.00172	-0.00172
	(!A1 * B1 * !D1 * X)	0.00109	0.00109	0.00110
	(!A1 * !B1 * D1 * X)	-0.00172	-0.00173	-0.00172
	(!A1 * !B1 * D1 * X)	0.00201	0.00203	0.00203

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00183	-0.00183	-0.00183
	(A1 * B1 * D1 * X)	0.00151	0.00152	0.00151
	(A1 * B1 * !D1 * X)	-0.00182	-0.00183	-0.00181
	(A1 * B1 * !D1 * X)	0.00129	0.00130	0.00130
	(A1 * A2 * !B1 * D1 * X)	-0.00183	-0.00183	-0.00182
	(A1 * A2 * !B1 * D1 * X)	0.00161	0.00161	0.00160
	(A1 * A2 * !B1 * !D1 * X)	-0.00172	-0.00173	-0.00181
	(A1 * A2 * !B1 * !D1 * X)	0.00133	0.00133	0.00127
	(A1 * !A2 * !B1 * D1 * X)	-0.00182	-0.00183	-0.00181
	(A1 * !A2 * !B1 * D1 * X)	0.00234	0.00236	0.00236
	(!A1 * B1 * D1 * X)	-0.00183	-0.00184	-0.00183
	(!A1 * B1 * D1 * X)	0.00154	0.00154	0.00153
	(!A1 * B1 * !D1 * X)	-0.00182	-0.00183	-0.00181
	(!A1 * B1 * !D1 * X)	0.00131	0.00132	0.00131
	(!A1 * !B1 * D1 * X)	-0.00182	-0.00183	-0.00181
	(!A1 * !B1 * D1 * X)	0.00234	0.00236	0.00236

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00333	-0.00334	-0.00333
	(A1 * B1 * D1 * X)	0.00277	0.00279	0.00278
	(A1 * B1 * !D1 * X)	-0.00329	-0.00330	-0.00325
	(A1 * B1 * !D1 * X)	0.00239	0.00240	0.00242
	(A1 * A2 * !B1 * D1 * X)	-0.00333	-0.00334	-0.00333
	(A1 * A2 * !B1 * D1 * X)	0.00298	0.00299	0.00297
	(A1 * A2 * !B1 * !D1 * X)	-0.00317	-0.00319	-0.00325
	(A1 * A2 * !B1 * !D1 * X)	0.00244	0.00245	0.00241
	(A1 * !A2 * !B1 * D1 * X)	-0.00328	-0.00330	-0.00327
	(A1 * !A2 * !B1 * D1 * X)	0.00429	0.00433	0.00433
	(!A1 * B1 * D1 * X)	-0.00333	-0.00334	-0.00333
	(!A1 * B1 * D1 * X)	0.00281	0.00282	0.00281
	(!A1 * B1 * !D1 * X)	-0.00329	-0.00330	-0.00325
	(!A1 * B1 * !D1 * X)	0.00240	0.00241	0.00243
	(!A1 * !B1 * D1 * X)	-0.00329	-0.00330	-0.00327
	(!A1 * !B1 * D1 * X)	0.00430	0.00433	0.00433

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	0.00186	0.00188	0.00186
	(A1 * C1 * X)	-0.00101	-0.00102	-0.00101
	(A1 * B1 * !C1 * X)	0.00186	0.00188	0.00186
	(A1 * B1 * !C1 * X)	-0.00100	-0.00101	-0.00100
	(A1 * A2 * !B1 * !C1 * X)	0.00186	0.00188	0.00186
	(A1 * A2 * !B1 * !C1 * X)	-0.00101	-0.00102	-0.00100
	(!A1 * C1 * X)	0.00186	0.00188	0.00186
	(!A1 * C1 * X)	-0.00101	-0.00102	-0.00101
	(!A1 * B1 * !C1 * X)	0.00186	0.00188	0.00186
	(!A1 * B1 * !C1 * X)	-0.00100	-0.00102	-0.00100

sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	0.00224	0.00226	0.00224
	(A1 * C1 * X)	-0.00109	-0.00110	-0.00109
	(A1 * B1 * !C1 * X)	0.00224	0.00226	0.00224
	(A1 * B1 * !C1 * X)	-0.00109	-0.00109	-0.00108
	(A1 * A2 * !B1 * !C1 * X)	0.00224	0.00226	0.00224
	(A1 * A2 * !B1 * !C1 * X)	-0.00109	-0.00109	-0.00108
	(!A1 * C1 * X)	0.00223	0.00226	0.00224
	(!A1 * C1 * X)	-0.00109	-0.00110	-0.00109
	(!A1 * B1 * !C1 * X)	0.00224	0.00226	0.00224
	(!A1 * B1 * !C1 * X)	-0.00109	-0.00109	-0.00108
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	0.00365	0.00366	0.00363
	(A1 * C1 * X)	-0.00207	-0.00207	-0.00205
	(A1 * B1 * !C1 * X)	0.00365	0.00366	0.00363
	(A1 * B1 * !C1 * X)	-0.00207	-0.00207	-0.00205
	(A1 * A2 * !B1 * !C1 * X)	0.00365	0.00366	0.00363
	(A1 * A2 * !B1 * !C1 * X)	-0.00207	-0.00206	-0.00205
	(!A1 * C1 * X)	0.00365	0.00366	0.00363
	(!A1 * C1 * X)	-0.00208	-0.00207	-0.00206
	(!A1 * B1 * !C1 * X)	0.00365	0.00366	0.00363
	(!A1 * B1 * !C1 * X)	-0.00207	-0.00207	-0.00205

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

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

sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	-0.00181	-0.00182	-0.00186
	(A1 * C1 * X)	0.00106	0.00106	0.00102
	(A1 * B1 * !C1 * X)	-0.00175	-0.00176	-0.00185
	(A1 * B1 * !C1 * X)	0.00109	0.00109	0.00102
	(A1 * A2 * !B1 * !C1 * X)	-0.00157	-0.00159	-0.00180
	(A1 * A2 * !B1 * !C1 * X)	0.00120	0.00120	0.00105
	(!A1 * C1 * X)	-0.00181	-0.00182	-0.00186
	(!A1 * C1 * X)	0.00106	0.00106	0.00102
	(!A1 * B1 * !C1 * X)	-0.00175	-0.00176	-0.00185
	(!A1 * B1 * !C1 * X)	0.00109	0.00109	0.00102
sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	-0.00218	-0.00219	-0.00223
	(A1 * C1 * X)	0.00114	0.00114	0.00110
	(A1 * B1 * !C1 * X)	-0.00210	-0.00211	-0.00222
	(A1 * B1 * !C1 * X)	0.00118	0.00119	0.00110
	(A1 * A2 * !B1 * !C1 * X)	-0.00190	-0.00191	-0.00217
	(A1 * A2 * !B1 * !C1 * X)	0.00131	0.00131	0.00113
	(!A1 * C1 * X)	-0.00218	-0.00219	-0.00223
	(!A1 * C1 * X)	0.00114	0.00114	0.00110
	(!A1 * B1 * !C1 * X)	-0.00210	-0.00211	-0.00222
	(!A1 * B1 * !C1 * X)	0.00118	0.00119	0.00110
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	-0.00345	-0.00348	-0.00361
	(A1 * C1 * X)	0.00222	0.00223	0.00209
	(A1 * B1 * !C1 * X)	-0.00329	-0.00332	-0.00358
	(A1 * B1 * !C1 * X)	0.00228	0.00228	0.00208
	(A1 * A2 * !B1 * !C1 * X)	-0.00293	-0.00298	-0.00348
	(A1 * A2 * !B1 * !C1 * X)	0.00248	0.00251	0.00215
	(!A1 * C1 * X)	-0.00345	-0.00348	-0.00361
	(!A1 * C1 * X)	0.00222	0.00223	0.00210
	(!A1 * B1 * !C1 * X)	-0.00329	-0.00332	-0.00358
	(!A1 * B1 * !C1 * X)	0.00228	0.00229	0.00208

SKY130_FD_SC_HS__A211OIx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00288	0.00273	0.00287	0.00292	0.41934
sky130_fd_sc_hs__a211oi_2	0.00528	0.00553	0.00444	0.00422	0.77952
sky130_fd_sc_hs__a211oi_4	0.01063	0.01065	0.00847	0.00859	1.38705

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a211oi_1	0.00000	0.03684	0.10133
sky130_fd_sc_hs__a211oi_2	0.00000	0.07050	0.20266
sky130_fd_sc_hs__a211oi_4	0.00000	0.14100	0.40531

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)	0.11923	0.94867	9.37824
	A2->Y (FR)	0.14317	0.99414	9.59885
	B1->Y (FR)	0.12633	1.01745	10.29490
	C1->Y (FR)	0.09676	0.99933	10.41710
sky130_fd_sc_hs__a211oi_2	A1->Y (FR)	0.10664	0.81086	9.44728
	A2->Y (FR)	0.13762	0.84104	9.47239
	B1->Y (FR)	0.08724	0.83640	10.19380
	C1->Y (FR)	0.04591	0.81114	10.30700
sky130_fd_sc_hs__a211oi_4	A1->Y (FR)	0.10305	0.68446	9.12817
	A2->Y (FR)	0.13781	0.73037	9.35721
	B1->Y (FR)	0.11442	0.75373	10.12320
	C1->Y (FR)	0.07356	0.73456	10.31150

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211oi_1	A1->Y (RF)	0.02725	0.32798	3.12000
	A2->Y (RF)	0.03027	0.29729	2.75620
	B1->Y (RF)	0.02060	0.25697	2.46518
	C1->Y (RF)	0.01785	0.24854	2.45930
sky130_fd_sc_hs__a211oi_2	A1->Y (RF)	0.02436	0.29301	3.29525
	A2->Y (RF)	0.02995	0.26556	2.87702
	B1->Y (RF)	0.03159	0.35519	4.12757
	C1->Y (RF)	0.02178	0.32973	3.99994
sky130_fd_sc_hs__a211oi_4	A1->Y (RF)	0.02492	0.25793	3.30413
	A2->Y (RF)	0.02952	0.21389	2.63025
	B1->Y (RF)	0.03064	0.30599	4.03744
	C1->Y (RF)	0.02122	0.28549	4.00452

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.00049	0.00036	0.01335
	A1	0.00894	0.00881	0.02184
	A2	0.00094	0.00088	0.01406
	A2	0.01063	0.01058	0.02375
	B1	0.00034	0.00061	0.01527
	B1	0.00733	0.00749	0.02228
	C1	0.00007	0.00132	0.02322
	C1	0.00597	0.00704	0.02918
sky130_fd_sc_hs__a211oi_2	A1	-0.00028	-0.00040	0.02387
	A1	0.01589	0.01579	0.04014
	A2	0.00176	0.00150	0.02643
	A2	0.02069	0.02047	0.04543
	B1	0.00080	0.00106	0.01871
	B1	0.01257	0.01281	0.03047
	C1	0.00056	0.00242	0.03035
	C1	0.00960	0.01144	0.03947
sky130_fd_sc_hs__a211oi_4	A1	-0.00108	-0.00133	0.04511
	A1	0.03113	0.03084	0.07757
	A2	0.00221	0.00179	0.04919
	A2	0.03979	0.03944	0.08698
	B1	0.00112	0.00187	0.03691
	B1	0.02402	0.02484	0.06006
	C1	0.00068	0.00478	0.05716
	C1	0.01833	0.02240	0.07507

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.01125	0.01147	0.02325
	A1	0.00295	0.00315	0.01491
	A2	0.01250	0.01262	0.02332
	A2	0.00291	0.00300	0.01373
	B1	0.00788	0.00843	0.02195
	B1	0.00092	0.00146	0.01500
	C1	0.00558	0.00641	0.01906
	C1	-0.00031	0.00049	0.01315
sky130_fd_sc_hs__a211oi_2	A1	0.02101	0.02170	0.04353
	A1	0.00511	0.00573	0.02747
	A2	0.02388	0.02406	0.04448
	A2	0.00509	0.00520	0.02552
	B1	0.01375	0.01442	0.03115
	B1	0.00208	0.00268	0.01909
	C1	0.00753	0.00868	0.02507
	C1	-0.00148	-0.00039	0.01577
sky130_fd_sc_hs__a211oi_4	A1	0.04165	0.04262	0.08483
	A1	0.01007	0.01098	0.05334
	A2	0.04719	0.04764	0.08947
	A2	0.00998	0.01035	0.05198
	B1	0.02567	0.02714	0.05953
	B1	0.00293	0.00437	0.03674
	C1	0.01410	0.01669	0.04795
	C1	-0.00351	-0.00099	0.02984

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)**	0.00181	0.00184	0.00182
	(A2 * B1 * C1 * !Y)	-0.00221	-0.00232	-0.00231
	(A2 * B1 * !C1 * !Y)	0.00186	0.00184	0.00182
	(A2 * B1 * !C1 * !Y)	-0.00215	-0.00232	-0.00231
	(A2 * !B1 * C1 * !Y)	0.00187	0.00183	0.00182
	(A2 * !B1 * C1 * !Y)	-0.00201	-0.00225	-0.00224
	(!A2 * B1 * C1 * !Y)	0.00174	0.00175	0.00174
	(!A2 * B1 * C1 * !Y)	-0.00234	-0.00235	-0.00235
	(!A2 * B1 * !C1 * !Y)	0.00175	0.00176	0.00176
	(!A2 * B1 * !C1 * !Y)	-0.00234	-0.00235	-0.00235
	(!A2 * !B1 * C1 * !Y)	0.00173	0.00174	0.00174
	(!A2 * !B1 * C1 * !Y)	-0.00234	-0.00235	-0.00235
	(!A2 * !B1 * !C1 * Y)	0.00056	0.00055	0.00054
	(!A2 * !B1 * !C1 * Y)	-0.00270	-0.00271	-0.00274
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	0.00372	0.00375	0.00371
	(A2 * B1 * C1 * !Y)	-0.00437	-0.00458	-0.00454
	(A2 * B1 * !C1 * !Y)	0.00376	0.00375	0.00371
	(A2 * B1 * !C1 * !Y)	-0.00431	-0.00451	-0.00454
	(A2 * !B1 * C1 * !Y)	0.00381	0.00375	0.00371
	(A2 * !B1 * C1 * !Y)	-0.00408	-0.00447	-0.00443
	(!A2 * B1 * C1 * !Y)	0.00355	0.00357	0.00356
	(!A2 * B1 * C1 * !Y)	-0.00461	-0.00463	-0.00462
	(!A2 * B1 * !C1 * !Y)	0.00354	0.00357	0.00356
	(!A2 * B1 * !C1 * !Y)	-0.00461	-0.00464	-0.00462
	(!A2 * !B1 * C1 * !Y)	0.00355	0.00357	0.00356
	(!A2 * !B1 * C1 * !Y)	-0.00462	-0.00463	-0.00462
	(!A2 * !B1 * !C1 * Y)	0.00132	0.00133	0.00127
	(!A2 * !B1 * !C1 * Y)	-0.00524	-0.00527	-0.00535

sky130_fd_sc_hs__a211oi_4	**(A2 * B1 * C1 * !Y)**	0.00720	0.00729	0.00722
	(A2 * B1 * C1 * !Y)	-0.00882	-0.00929	-0.00922
	(A2 * B1 * !C1 * !Y)	0.00735	0.00729	0.00722
	(A2 * B1 * !C1 * !Y)	-0.00862	-0.00929	-0.00922
	(A2 * !B1 * C1 * !Y)	0.00746	0.00730	0.00722
	(A2 * !B1 * C1 * !Y)	-0.00814	-0.00905	-0.00896
	(!A2 * B1 * C1 * !Y)	0.00689	0.00695	0.00693
	(!A2 * B1 * C1 * !Y)	-0.00938	-0.00943	-0.00940
	(!A2 * B1 * !C1 * !Y)	0.00690	0.00693	0.00691
	(!A2 * B1 * !C1 * !Y)	-0.00940	-0.00943	-0.00940
	(!A2 * !B1 * C1 * !Y)	0.00689	0.00696	0.00691
	(!A2 * !B1 * C1 * !Y)	-0.00940	-0.00945	-0.00940
	(!A2 * !B1 * !C1 * Y)	0.00229	0.00230	0.00221
	(!A2 * !B1 * !C1 * Y)	-0.01073	-0.01082	-0.01095

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)**	-0.00181	-0.00182	-0.00182
	(A2 * B1 * C1 * !Y)	0.00230	0.00233	0.00231
	(A2 * B1 * !C1 * !Y)	-0.00181	-0.00182	-0.00182
	(A2 * B1 * !C1 * !Y)	0.00230	0.00233	0.00231
	(A2 * !B1 * C1 * !Y)	-0.00181	-0.00182	-0.00181
	(A2 * !B1 * C1 * !Y)	0.00223	0.00225	0.00224
	(!A2 * B1 * C1 * !Y)	-0.00170	-0.00174	-0.00174
	(!A2 * B1 * C1 * !Y)	0.00235	0.00236	0.00235
	(!A2 * B1 * !C1 * !Y)	-0.00170	-0.00175	-0.00176
	(!A2 * B1 * !C1 * !Y)	0.00234	0.00238	0.00236
	(!A2 * !B1 * C1 * !Y)	-0.00169	-0.00174	-0.00174
	(!A2 * !B1 * C1 * !Y)	0.00234	0.00235	0.00236
	(!A2 * !B1 * !C1 * Y)	-0.00053	-0.00054	-0.00053
	(!A2 * !B1 * !C1 * Y)	0.00274	0.00278	0.00274
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	-0.00371	-0.00372	-0.00370
	(A2 * B1 * C1 * !Y)	0.00454	0.00458	0.00454
	(A2 * B1 * !C1 * !Y)	-0.00371	-0.00369	-0.00370
	(A2 * B1 * !C1 * !Y)	0.00454	0.00451	0.00454
	(A2 * !B1 * C1 * !Y)	-0.00371	-0.00372	-0.00370
	(A2 * !B1 * C1 * !Y)	0.00443	0.00447	0.00443
	(!A2 * B1 * C1 * !Y)	-0.00343	-0.00357	-0.00356
	(!A2 * B1 * C1 * !Y)	0.00461	0.00466	0.00464
	(!A2 * B1 * !C1 * !Y)	-0.00343	-0.00357	-0.00356
	(!A2 * B1 * !C1 * !Y)	0.00462	0.00467	0.00464
	(!A2 * !B1 * C1 * !Y)	-0.00343	-0.00357	-0.00356
	(!A2 * !B1 * C1 * !Y)	0.00462	0.00467	0.00464
	(!A2 * !B1 * !C1 * Y)	-0.00123	-0.00126	-0.00124
	(!A2 * !B1 * !C1 * Y)	0.00534	0.00545	0.00536

sky130_fd_sc_hs__a211oi_4	**(A2 * B1 * C1 * !Y)**	-0.00720	-0.00724	-0.00720
	(A2 * B1 * C1 * !Y)	0.00924	0.00930	0.00922
	(A2 * B1 * !C1 * !Y)	-0.00721	-0.00724	-0.00720
	(A2 * B1 * !C1 * !Y)	0.00924	0.00932	0.00922
	(A2 * !B1 * C1 * !Y)	-0.00721	-0.00724	-0.00720
	(A2 * !B1 * C1 * !Y)	0.00898	0.00905	0.00896
	(!A2 * B1 * C1 * !Y)	-0.00668	-0.00695	-0.00693
	(!A2 * B1 * C1 * !Y)	0.00944	0.00948	0.00943
	(!A2 * B1 * !C1 * !Y)	-0.00665	-0.00693	-0.00691
	(!A2 * B1 * !C1 * !Y)	0.00940	0.00949	0.00943
	(!A2 * !B1 * C1 * !Y)	-0.00665	-0.00695	-0.00691
	(!A2 * !B1 * C1 * !Y)	0.00940	0.00948	0.00943
	(!A2 * !B1 * !C1 * Y)	-0.00214	-0.00219	-0.00215
	(!A2 * !B1 * !C1 * Y)	0.01092	0.01115	0.01098

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)**	0.00183	0.00186	0.00184
	(A1 * B1 * C1 * !Y)	-0.00223	-0.00234	-0.00232
	(A1 * B1 * !C1 * !Y)	0.00188	0.00186	0.00184
	(A1 * B1 * !C1 * !Y)	-0.00217	-0.00234	-0.00232
	(A1 * !B1 * C1 * !Y)	0.00190	0.00186	0.00184
	(A1 * !B1 * C1 * !Y)	-0.00205	-0.00227	-0.00226
	(!A1 * B1 * !Y)	0.00176	0.00177	0.00176
	(!A1 * B1 * !Y)	-0.00236	-0.00237	-0.00237
	(!A1 * !B1 * C1 * !Y)	0.00176	0.00177	0.00176
	(!A1 * !B1 * C1 * !Y)	-0.00236	-0.00237	-0.00237
	(!A1 * !B1 * !C1 * Y)	0.00178	0.00178	0.00178
	(!A1 * !B1 * !C1 * Y)	-0.00237	-0.00237	-0.00237

sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	0.00381	0.00384	0.00380
	(A1 * B1 * C1 * !Y)	-0.00451	-0.00472	-0.00468
	(A1 * B1 * !C1 * !Y)	0.00387	0.00384	0.00380
	(A1 * B1 * !C1 * !Y)	-0.00442	-0.00471	-0.00469
	(A1 * !B1 * C1 * !Y)	0.00392	0.00384	0.00380
	(A1 * !B1 * C1 * !Y)	-0.00416	-0.00456	-0.00455
	(!A1 * B1 * !Y)	0.00368	0.00370	0.00369
	(!A1 * B1 * !Y)	-0.00477	-0.00479	-0.00478
	(!A1 * !B1 * C1 * !Y)	0.00369	0.00372	0.00369
	(!A1 * !B1 * C1 * !Y)	-0.00478	-0.00481	-0.00478
	(!A1 * !B1 * !C1 * Y)	0.00342	0.00343	0.00342
	(!A1 * !B1 * !C1 * Y)	-0.00506	-0.00507	-0.00506
sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	0.00742	0.00749	0.00741
	(A1 * B1 * C1 * !Y)	-0.00894	-0.00939	-0.00931
	(A1 * B1 * !C1 * !Y)	0.00758	0.00749	0.00741
	(A1 * B1 * !C1 * !Y)	-0.00871	-0.00938	-0.00931
	(A1 * !B1 * C1 * !Y)	0.00760	0.00750	0.00741
	(A1 * !B1 * C1 * !Y)	-0.00816	-0.00908	-0.00905
	(!A1 * B1 * !Y)	0.00710	0.00713	0.00709
	(!A1 * B1 * !Y)	-0.00949	-0.00953	-0.00950
	(!A1 * !B1 * C1 * !Y)	0.00710	0.00718	0.00713
	(!A1 * !B1 * C1 * !Y)	-0.00947	-0.00954	-0.00950
	(!A1 * !B1 * !C1 * Y)	0.00711	0.00720	0.00714
	(!A1 * !B1 * !C1 * Y)	-0.00948	-0.00954	-0.00950

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)**	-0.00183	-0.00184	-0.00184
	(A1 * B1 * C1 * !Y)	0.00232	0.00234	0.00232
	(A1 * B1 * !C1 * !Y)	-0.00183	-0.00185	-0.00184
	(A1 * B1 * !C1 * !Y)	0.00232	0.00234	0.00232
	(A1 * !B1 * C1 * !Y)	-0.00183	-0.00184	-0.00183
	(A1 * !B1 * C1 * !Y)	0.00225	0.00227	0.00226
	(!A1 * B1 * !Y)	-0.00172	-0.00177	-0.00176
	(!A1 * B1 * !Y)	0.00236	0.00239	0.00237
	(!A1 * !B1 * C1 * !Y)	-0.00172	-0.00177	-0.00176
	(!A1 * !B1 * C1 * !Y)	0.00236	0.00239	0.00237
	(!A1 * !B1 * !C1 * Y)	-0.00165	-0.00177	-0.00178
	(!A1 * !B1 * !C1 * Y)	0.00245	0.00240	0.00237
sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	-0.00380	-0.00381	-0.00379
	(A1 * B1 * C1 * !Y)	0.00470	0.00472	0.00468
	(A1 * B1 * !C1 * !Y)	-0.00380	-0.00381	-0.00379
	(A1 * B1 * !C1 * !Y)	0.00470	0.00472	0.00469
	(A1 * !B1 * C1 * !Y)	-0.00380	-0.00380	-0.00379
	(A1 * !B1 * C1 * !Y)	0.00456	0.00456	0.00455
	(!A1 * B1 * !Y)	-0.00354	-0.00368	-0.00369
	(!A1 * B1 * !Y)	0.00478	0.00483	0.00479
	(!A1 * !B1 * C1 * !Y)	-0.00354	-0.00368	-0.00369
	(!A1 * !B1 * C1 * !Y)	0.00478	0.00483	0.00480
	(!A1 * !B1 * !C1 * Y)	-0.00315	-0.00342	-0.00342
	(!A1 * !B1 * !C1 * Y)	0.00520	0.00511	0.00507

sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	-0.00740	-0.00743	-0.00739
	(A1 * B1 * C1 * !Y)	0.00932	0.00939	0.00931
	(A1 * B1 * !C1 * !Y)	-0.00740	-0.00742	-0.00739
	(A1 * B1 * !C1 * !Y)	0.00932	0.00938	0.00931
	(A1 * !B1 * C1 * !Y)	-0.00740	-0.00741	-0.00739
	(A1 * !B1 * C1 * !Y)	0.00906	0.00908	0.00905
	(!A1 * B1 * !Y)	-0.00687	-0.00711	-0.00709
	(!A1 * B1 * !Y)	0.00949	0.00957	0.00953
	(!A1 * !B1 * C1 * !Y)	-0.00686	-0.00711	-0.00713
	(!A1 * !B1 * C1 * !Y)	0.00949	0.00958	0.00953
	(!A1 * !B1 * !C1 * Y)	-0.00653	-0.00715	-0.00714
	(!A1 * !B1 * !C1 * Y)	0.00991	0.00961	0.00952

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)	0.00219	0.00213	0.00201
	(A1 * A2 * C1 * !Y)	-0.00155	-0.00157	-0.00156
	(A1 * A2 * !C1 * !Y)	0.00195	0.00196	0.00193
	(A1 * A2 * !C1 * !Y)	-0.00118	-0.00119	-0.00120
	(A1 * !A2 * C1 * !Y)	0.00238	0.00196	0.00192
	(A1 * !A2 * C1 * !Y)	-0.00183	-0.00228	-0.00228
	(!A1 * C1 * !Y)	0.00234	0.00195	0.00192
	(!A1 * C1 * !Y)	-0.00181	-0.00228	-0.00228
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	0.00270	0.00267	0.00244
	(A1 * A2 * C1 * !Y)	-0.00302	-0.00302	-0.00301
	(A1 * A2 * !C1 * !Y)	0.00228	0.00229	0.00225
	(A1 * A2 * !C1 * !Y)	-0.00235	-0.00235	-0.00235
	(A1 * !A2 * C1 * !Y)	0.00321	0.00227	0.00223
	(A1 * !A2 * C1 * !Y)	-0.00349	-0.00448	-0.00450
	(!A1 * C1 * !Y)	0.00322	0.00227	0.00223
	(!A1 * C1 * !Y)	-0.00349	-0.00448	-0.00450
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	0.00500	0.00485	0.00441
	(A1 * A2 * C1 * !Y)	-0.00624	-0.00627	-0.00622
	(A1 * A2 * !C1 * !Y)	0.00413	0.00416	0.00406
	(A1 * A2 * !C1 * !Y)	-0.00485	-0.00489	-0.00490
	(A1 * !A2 * C1 * !Y)	0.00611	0.00412	0.00402
	(A1 * !A2 * C1 * !Y)	-0.00719	-0.00922	-0.00930
	(!A1 * C1 * !Y)	0.00605	0.00412	0.00402
	(!A1 * C1 * !Y)	-0.00726	-0.00924	-0.00930

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)	-0.00191	-0.00192	-0.00192
	(A1 * A2 * C1 * !Y)	0.00155	0.00157	0.00156
	(A1 * A2 * !C1 * !Y)	-0.00188	-0.00190	-0.00190
	(A1 * A2 * !C1 * !Y)	0.00123	0.00125	0.00124
	(A1 * !A2 * C1 * !Y)	-0.00191	-0.00191	-0.00190
	(A1 * !A2 * C1 * !Y)	0.00227	0.00228	0.00228
	(!A1 * C1 * !Y)	-0.00191	-0.00191	-0.00190
	(!A1 * C1 * !Y)	0.00228	0.00228	0.00228
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	-0.00228	-0.00228	-0.00228
	(A1 * A2 * C1 * !Y)	0.00302	0.00302	0.00301
	(A1 * A2 * !C1 * !Y)	-0.00217	-0.00219	-0.00217
	(A1 * A2 * !C1 * !Y)	0.00240	0.00243	0.00244
	(A1 * !A2 * C1 * !Y)	-0.00222	-0.00222	-0.00221
	(A1 * !A2 * C1 * !Y)	0.00448	0.00449	0.00450
	(!A1 * C1 * !Y)	-0.00222	-0.00222	-0.00221
	(!A1 * C1 * !Y)	0.00448	0.00449	0.00450
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	-0.00407	-0.00409	-0.00407
	(A1 * A2 * C1 * !Y)	0.00624	0.00627	0.00622
	(A1 * A2 * !C1 * !Y)	-0.00391	-0.00394	-0.00391
	(A1 * A2 * !C1 * !Y)	0.00501	0.00507	0.00507
	(A1 * !A2 * C1 * !Y)	-0.00400	-0.00400	-0.00397
	(A1 * !A2 * C1 * !Y)	0.00927	0.00928	0.00930
	(!A1 * C1 * !Y)	-0.00400	-0.00400	-0.00397
	(!A1 * C1 * !Y)	0.00928	0.00927	0.00930

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	0.00226	0.00228	0.00226
	(A1 * B1 * !Y)	-0.00106	-0.00107	-0.00106
	(A1 * A2 * !B1 * !Y)	0.00227	0.00228	0.00226
	(A1 * A2 * !B1 * !Y)	-0.00106	-0.00106	-0.00105
	(!A1 * B1 * !Y)	0.00227	0.00228	0.00226
	(!A1 * B1 * !Y)	-0.00107	-0.00107	-0.00106
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	0.00239	0.00241	0.00239
	(A1 * B1 * !Y)	-0.00216	-0.00218	-0.00216
	(A1 * A2 * !B1 * !Y)	0.00240	0.00241	0.00239
	(A1 * A2 * !B1 * !Y)	-0.00217	-0.00217	-0.00215
	(!A1 * B1 * !Y)	0.00239	0.00241	0.00239
	(!A1 * B1 * !Y)	-0.00217	-0.00218	-0.00216
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	0.00484	0.00486	0.00482
	(A1 * B1 * !Y)	-0.00439	-0.00438	-0.00434
	(A1 * A2 * !B1 * !Y)	0.00483	0.00486	0.00482
	(A1 * A2 * !B1 * !Y)	-0.00437	-0.00437	-0.00432
	(!A1 * B1 * !Y)	0.00484	0.00487	0.00482
	(!A1 * B1 * !Y)	-0.00439	-0.00440	-0.00435

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	-0.00218	-0.00221	-0.00225
	(A1 * B1 * !Y)	0.00110	0.00112	0.00107
	(A1 * A2 * !B1 * !Y)	-0.00205	-0.00207	-0.00223
	(A1 * A2 * !B1 * !Y)	0.00120	0.00120	0.00108
	(!A1 * B1 * !Y)	-0.00219	-0.00221	-0.00225
	(!A1 * B1 * !Y)	0.00111	0.00112	0.00107
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	-0.00220	-0.00222	-0.00237
	(A1 * B1 * !Y)	0.00234	0.00234	0.00220
	(A1 * A2 * !B1 * !Y)	-0.00194	-0.00197	-0.00232
	(A1 * A2 * !B1 * !Y)	0.00245	0.00247	0.00221
	(!A1 * B1 * !Y)	-0.00219	-0.00222	-0.00237
	(!A1 * B1 * !Y)	0.00233	0.00234	0.00221
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	-0.00447	-0.00453	-0.00479
	(A1 * B1 * !Y)	0.00462	0.00466	0.00442
	(A1 * A2 * !B1 * !Y)	-0.00393	-0.00398	-0.00467
	(A1 * A2 * !B1 * !Y)	0.00493	0.00495	0.00444
	(!A1 * B1 * !Y)	-0.00448	-0.00453	-0.00479
	(!A1 * B1 * !Y)	0.00465	0.00467	0.00443

SKY130_FD_SC_HS__A211Ox

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00266	0.00251	0.00269	0.00267	1.28594
sky130_fd_sc_hs__a211o_2	0.00290	0.00289	0.00286	0.00276	2.44218
sky130_fd_sc_hs__a211o_4	0.00494	0.00507	0.00534	0.00485	4.66806

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a211o_1	0.00000	0.11042	0.26734
sky130_fd_sc_hs__a211o_2	0.00000	0.13474	0.27582
sky130_fd_sc_hs__a211o_4	0.00000	0.27263	0.55163

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)	0.06972	0.53355	5.90471
	A2->X (RR)	0.07294	0.52846	5.83916
	B1->X (RR)	0.05813	0.50084	5.65564
	C1->X (RR)	0.05357	0.48428	5.62865
sky130_fd_sc_hs__a211o_2	A1->X (RR)	0.07016	0.45637	5.80338
	A2->X (RR)	0.07375	0.44702	5.73323
	B1->X (RR)	0.05723	0.42264	5.56361
	C1->X (RR)	0.05323	0.40916	5.53497
sky130_fd_sc_hs__a211o_4	A1->X (RR)	0.07348	0.39421	5.88710
	A2->X (RR)	0.07823	0.38856	5.82885
	B1->X (RR)	0.05559	0.34655	5.58248
	C1->X (RR)	0.05359	0.34066	5.60591

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211o_1	A1->X (FF)	0.16496	0.55892	4.89662
	A2->X (FF)	0.18924	0.59414	4.99778
	B1->X (FF)	0.17012	0.61057	5.26793
	C1->X (FF)	0.14167	0.60202	5.28760
sky130_fd_sc_hs__a211o_2	A1->X (FF)	0.21264	0.60227	5.04251
	A2->X (FF)	0.24330	0.64359	5.16176
	B1->X (FF)	0.22404	0.66566	5.43919
	C1->X (FF)	0.19276	0.65938	5.44713
sky130_fd_sc_hs__a211o_4	A1->X (FF)	0.19927	0.53927	5.00798
	A2->X (FF)	0.21355	0.56631	5.06150
	B1->X (FF)	0.19674	0.58605	5.26206
	C1->X (FF)	0.16457	0.57672	5.29069

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.01440	0.01551	0.05673
	A1	0.00683	0.00795	0.04973
	A2	0.01544	0.01616	0.05368
	A2	0.00680	0.00752	0.04512
	B1	0.01150	0.01359	0.05718
	B1	0.00504	0.00714	0.05092
	C1	0.00945	0.01204	0.06529
	C1	0.00402	0.00663	0.06010
sky130_fd_sc_hs__a211o_2	A1	0.01792	0.01900	0.05906
	A1	0.00971	0.01080	0.05107
	A2	0.01930	0.02004	0.05653
	A2	0.00969	0.01044	0.04729
	B1	0.01496	0.01703	0.05922
	B1	0.00795	0.01004	0.05287
	C1	0.01281	0.01535	0.06691
	C1	0.00684	0.00940	0.06163
sky130_fd_sc_hs__a211o_4	A1	0.03364	0.03655	0.12058
	A1	0.01872	0.02165	0.10595
	A2	0.03635	0.03876	0.11517
	A2	0.01878	0.02119	0.09801
	B1	0.02758	0.03158	0.11550
	B1	0.01486	0.01897	0.10410
	C1	0.02238	0.02796	0.13003
	C1	0.01235	0.01808	0.12126

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.00476	0.00508	0.04054
	A1	0.01241	0.01272	0.04774
	A2	0.00536	0.00563	0.04061
	A2	0.01405	0.01430	0.04853
	B1	0.00425	0.00569	0.04713
	B1	0.01072	0.01213	0.05341
	C1	0.00415	0.00704	0.05955
	C1	0.00957	0.01246	0.06409
sky130_fd_sc_hs__a211o_2	A1	0.00929	0.00834	0.04231
	A1	0.01757	0.01662	0.05043
	A2	0.01023	0.00882	0.04287
	A2	0.01986	0.01848	0.05231
	B1	0.00874	0.00921	0.04891
	B1	0.01577	0.01619	0.05521
	C1	0.00861	0.01046	0.06022
	C1	0.01460	0.01642	0.06609
sky130_fd_sc_hs__a211o_4	A1	0.01801	0.01619	0.09592
	A1	0.03309	0.03121	0.10873
	A2	0.01883	0.01687	0.09141
	A2	0.03647	0.03433	0.10885
	B1	0.01661	0.01739	0.09401
	B1	0.02935	0.03009	0.10464
	C1	0.01660	0.02030	0.11925
	C1	0.02665	0.03030	0.12884

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)**	0.00162	0.00162	0.00161
	(A2 * B1 * C1 * X)	-0.00206	-0.00215	-0.00214
	(A2 * B1 * !C1 * X)	0.00173	0.00162	0.00161
	(A2 * B1 * !C1 * X)	-0.00195	-0.00215	-0.00214
	(A2 * !B1 * C1 * X)	0.00172	0.00162	0.00161
	(A2 * !B1 * C1 * X)	-0.00185	-0.00209	-0.00208
	(!A2 * B1 * C1 * X)	0.00154	0.00156	0.00155
	(!A2 * B1 * C1 * X)	-0.00218	-0.00220	-0.00219
	(!A2 * B1 * !C1 * X)	0.00154	0.00156	0.00155
	(!A2 * B1 * !C1 * X)	-0.00217	-0.00219	-0.00219
	(!A2 * !B1 * C1 * X)	0.00155	0.00156	0.00155
	(!A2 * !B1 * C1 * X)	-0.00219	-0.00220	-0.00218
	(!A2 * !B1 * !C1 * !X)	0.00047	0.00046	0.00045
	(!A2 * !B1 * !C1 * !X)	-0.00258	-0.00257	-0.00260
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	0.00197	0.00198	0.00196
	(A2 * B1 * C1 * X)	-0.00196	-0.00207	-0.00205
	(A2 * B1 * !C1 * X)	0.00205	0.00198	0.00196
	(A2 * B1 * !C1 * X)	-0.00188	-0.00204	-0.00205
	(A2 * !B1 * C1 * X)	0.00205	0.00198	0.00196
	(A2 * !B1 * C1 * X)	-0.00177	-0.00200	-0.00200
	(!A2 * B1 * C1 * X)	0.00188	0.00190	0.00189
	(!A2 * B1 * C1 * X)	-0.00208	-0.00210	-0.00209
	(!A2 * B1 * !C1 * X)	0.00189	0.00191	0.00189
	(!A2 * B1 * !C1 * X)	-0.00208	-0.00210	-0.00209
	(!A2 * !B1 * C1 * X)	0.00189	0.00191	0.00189
	(!A2 * !B1 * C1 * X)	-0.00208	-0.00210	-0.00209
	(!A2 * !B1 * !C1 * !X)	0.00057	0.00057	0.00055
	(!A2 * !B1 * !C1 * !X)	-0.00257	-0.00257	-0.00260

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	0.00315	0.00317	0.00314
	(A2 * B1 * C1 * X)	-0.00409	-0.00427	-0.00425
	(A2 * B1 * !C1 * X)	0.00328	0.00318	0.00314
	(A2 * B1 * !C1 * X)	-0.00393	-0.00425	-0.00426
	(A2 * !B1 * C1 * X)	0.00330	0.00318	0.00314
	(A2 * !B1 * C1 * X)	-0.00373	-0.00417	-0.00416
	(!A2 * B1 * C1 * X)	0.00303	0.00305	0.00304
	(!A2 * B1 * C1 * X)	-0.00434	-0.00436	-0.00434
	(!A2 * B1 * !C1 * X)	0.00300	0.00302	0.00301
	(!A2 * B1 * !C1 * X)	-0.00434	-0.00435	-0.00434
	(!A2 * !B1 * C1 * X)	0.00300	0.00302	0.00301
	(!A2 * !B1 * C1 * X)	-0.00434	-0.00436	-0.00434
	(!A2 * !B1 * !C1 * !X)	0.00092	0.00093	0.00089
	(!A2 * !B1 * !C1 * !X)	-0.00501	-0.00503	-0.00509

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)**	-0.00160	-0.00161	-0.00161
	(A2 * B1 * C1 * X)	0.00213	0.00215	0.00214
	(A2 * B1 * !C1 * X)	-0.00160	-0.00162	-0.00161
	(A2 * B1 * !C1 * X)	0.00213	0.00216	0.00214
	(A2 * !B1 * C1 * X)	-0.00160	-0.00160	-0.00160
	(A2 * !B1 * C1 * X)	0.00207	0.00209	0.00208
	(!A2 * B1 * C1 * X)	-0.00151	-0.00155	-0.00155
	(!A2 * B1 * C1 * X)	0.00220	0.00220	0.00219
	(!A2 * B1 * !C1 * X)	-0.00151	-0.00154	-0.00155
	(!A2 * B1 * !C1 * X)	0.00220	0.00219	0.00219
	(!A2 * !B1 * C1 * X)	-0.00151	-0.00155	-0.00155
	(!A2 * !B1 * C1 * X)	0.00220	0.00221	0.00219
	(!A2 * !B1 * !C1 * !X)	-0.00043	-0.00044	-0.00043
	(!A2 * !B1 * !C1 * !X)	0.00260	0.00265	0.00261
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	-0.00196	-0.00197	-0.00196
	(A2 * B1 * C1 * X)	0.00204	0.00207	0.00205
	(A2 * B1 * !C1 * X)	-0.00196	-0.00196	-0.00196
	(A2 * B1 * !C1 * X)	0.00205	0.00204	0.00205
	(A2 * !B1 * C1 * X)	-0.00195	-0.00195	-0.00195
	(A2 * !B1 * C1 * X)	0.00199	0.00200	0.00200
	(!A2 * B1 * C1 * X)	-0.00183	-0.00189	-0.00189
	(!A2 * B1 * C1 * X)	0.00208	0.00212	0.00209
	(!A2 * B1 * !C1 * X)	-0.00184	-0.00189	-0.00189
	(!A2 * B1 * !C1 * X)	0.00210	0.00212	0.00209
	(!A2 * !B1 * C1 * X)	-0.00184	-0.00189	-0.00189
	(!A2 * !B1 * C1 * X)	0.00210	0.00213	0.00210
	(!A2 * !B1 * !C1 * !X)	-0.00055	-0.00055	-0.00054
	(!A2 * !B1 * !C1 * !X)	0.00261	0.00263	0.00261

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	-0.00314	-0.00315	-0.00314
	(A2 * B1 * C1 * X)	0.00426	0.00427	0.00425
	(A2 * B1 * !C1 * X)	-0.00314	-0.00314	-0.00314
	(A2 * B1 * !C1 * X)	0.00426	0.00425	0.00426
	(A2 * !B1 * C1 * X)	-0.00312	-0.00313	-0.00312
	(A2 * !B1 * C1 * X)	0.00414	0.00417	0.00416
	(!A2 * B1 * C1 * X)	-0.00292	-0.00303	-0.00304
	(!A2 * B1 * C1 * X)	0.00434	0.00440	0.00436
	(!A2 * B1 * !C1 * X)	-0.00292	-0.00302	-0.00301
	(!A2 * B1 * !C1 * X)	0.00434	0.00440	0.00436
	(!A2 * !B1 * C1 * X)	-0.00291	-0.00302	-0.00301
	(!A2 * !B1 * C1 * X)	0.00434	0.00440	0.00436
	(!A2 * !B1 * !C1 * !X)	-0.00086	-0.00088	-0.00086
	(!A2 * !B1 * !C1 * !X)	0.00509	0.00515	0.00510

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)**	0.00166	0.00166	0.00164
	(A1 * B1 * C1 * X)	-0.00204	-0.00213	-0.00211
	(A1 * B1 * !C1 * X)	0.00174	0.00166	0.00164
	(A1 * B1 * !C1 * X)	-0.00194	-0.00212	-0.00212
	(A1 * !B1 * C1 * X)	0.00173	0.00166	0.00164
	(A1 * !B1 * C1 * X)	-0.00184	-0.00206	-0.00206
	(!A1 * B1 * X)	0.00158	0.00159	0.00158
	(!A1 * B1 * X)	-0.00215	-0.00217	-0.00216
	(!A1 * !B1 * C1 * X)	0.00158	0.00159	0.00158
	(!A1 * !B1 * C1 * X)	-0.00215	-0.00216	-0.00216
	(!A1 * !B1 * !C1 * !X)	0.00143	0.00144	0.00144
	(!A1 * !B1 * !C1 * !X)	-0.00230	-0.00231	-0.00230

sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	0.00211	0.00212	0.00210
	(A1 * B1 * C1 * X)	-0.00198	-0.00207	-0.00206
	(A1 * B1 * !C1 * X)	0.00218	0.00212	0.00210
	(A1 * B1 * !C1 * X)	-0.00189	-0.00208	-0.00207
	(A1 * !B1 * C1 * X)	0.00219	0.00212	0.00210
	(A1 * !B1 * C1 * X)	-0.00180	-0.00202	-0.00202
	(!A1 * B1 * X)	0.00201	0.00203	0.00201
	(!A1 * B1 * X)	-0.00210	-0.00211	-0.00210
	(!A1 * !B1 * C1 * X)	0.00202	0.00203	0.00202
	(!A1 * !B1 * C1 * X)	-0.00210	-0.00210	-0.00210
	(!A1 * !B1 * !C1 * !X)	0.00174	0.00175	0.00174
	(!A1 * !B1 * !C1 * !X)	-0.00239	-0.00240	-0.00239
sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	0.00376	0.00379	0.00375
	(A1 * B1 * C1 * X)	-0.00395	-0.00413	-0.00411
	(A1 * B1 * !C1 * X)	0.00384	0.00380	0.00376
	(A1 * B1 * !C1 * X)	-0.00385	-0.00413	-0.00412
	(A1 * !B1 * C1 * X)	0.00388	0.00381	0.00376
	(A1 * !B1 * C1 * X)	-0.00363	-0.00405	-0.00403
	(!A1 * B1 * X)	0.00362	0.00367	0.00364
	(!A1 * B1 * X)	-0.00419	-0.00422	-0.00420
	(!A1 * !B1 * C1 * X)	0.00362	0.00366	0.00365
	(!A1 * !B1 * C1 * X)	-0.00418	-0.00421	-0.00420
	(!A1 * !B1 * !C1 * !X)	0.00355	0.00361	0.00358
	(!A1 * !B1 * !C1 * !X)	-0.00426	-0.00430	-0.00427

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)**	-0.00164	-0.00165	-0.00164
	(A1 * B1 * C1 * X)	0.00211	0.00213	0.00211
	(A1 * B1 * !C1 * X)	-0.00164	-0.00164	-0.00164
	(A1 * B1 * !C1 * X)	0.00211	0.00212	0.00212
	(A1 * !B1 * C1 * X)	-0.00163	-0.00163	-0.00163
	(A1 * !B1 * C1 * X)	0.00205	0.00206	0.00206
	(!A1 * B1 * X)	-0.00154	-0.00159	-0.00158
	(!A1 * B1 * X)	0.00215	0.00218	0.00217
	(!A1 * !B1 * C1 * X)	-0.00155	-0.00159	-0.00158
	(!A1 * !B1 * C1 * X)	0.00217	0.00220	0.00217
	(!A1 * !B1 * !C1 * !X)	-0.00134	-0.00144	-0.00144
	(!A1 * !B1 * !C1 * !X)	0.00239	0.00233	0.00231
sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	-0.00210	-0.00211	-0.00210
	(A1 * B1 * C1 * X)	0.00205	0.00207	0.00206
	(A1 * B1 * !C1 * X)	-0.00209	-0.00211	-0.00210
	(A1 * B1 * !C1 * X)	0.00206	0.00208	0.00207
	(A1 * !B1 * C1 * X)	-0.00209	-0.00209	-0.00209
	(A1 * !B1 * C1 * X)	0.00201	0.00202	0.00202
	(!A1 * B1 * X)	-0.00197	-0.00202	-0.00201
	(!A1 * B1 * X)	0.00210	0.00212	0.00211
	(!A1 * !B1 * C1 * X)	-0.00197	-0.00202	-0.00202
	(!A1 * !B1 * C1 * X)	0.00210	0.00212	0.00211
	(!A1 * !B1 * !C1 * !X)	-0.00161	-0.00173	-0.00174
	(!A1 * !B1 * !C1 * !X)	0.00248	0.00243	0.00241

sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	-0.00375	-0.00376	-0.00375
	(A1 * B1 * C1 * X)	0.00410	0.00413	0.00411
	(A1 * B1 * !C1 * X)	-0.00375	-0.00376	-0.00375
	(A1 * B1 * !C1 * X)	0.00410	0.00413	0.00412
	(A1 * !B1 * C1 * X)	-0.00372	-0.00375	-0.00373
	(A1 * !B1 * C1 * X)	0.00400	0.00405	0.00403
	(!A1 * B1 * X)	-0.00354	-0.00367	-0.00364
	(!A1 * B1 * X)	0.00419	0.00423	0.00421
	(!A1 * !B1 * C1 * X)	-0.00353	-0.00366	-0.00365
	(!A1 * !B1 * C1 * X)	0.00420	0.00424	0.00422
	(!A1 * !B1 * !C1 * !X)	-0.00334	-0.00359	-0.00357
	(!A1 * !B1 * !C1 * !X)	0.00442	0.00431	0.00429

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)	0.00219	0.00208	0.00202
	(A1 * A2 * C1 * X)	-0.00139	-0.00142	-0.00141
	(A1 * A2 * !C1 * X)	0.00193	0.00197	0.00192
	(A1 * A2 * !C1 * X)	-0.00106	-0.00109	-0.00108
	(A1 * !A2 * C1 * X)	0.00235	0.00195	0.00191
	(A1 * !A2 * C1 * X)	-0.00159	-0.00203	-0.00205
	(!A1 * C1 * X)	0.00234	0.00195	0.00191
	(!A1 * C1 * X)	-0.00161	-0.00202	-0.00205
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	0.00226	0.00222	0.00211
	(A1 * A2 * C1 * X)	-0.00139	-0.00143	-0.00141
	(A1 * A2 * !C1 * X)	0.00201	0.00203	0.00199
	(A1 * A2 * !C1 * X)	-0.00107	-0.00108	-0.00109
	(A1 * !A2 * C1 * X)	0.00242	0.00202	0.00198
	(A1 * !A2 * C1 * X)	-0.00157	-0.00203	-0.00204
	(!A1 * C1 * X)	0.00240	0.00202	0.00198
	(!A1 * C1 * X)	-0.00160	-0.00204	-0.00204
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	0.00404	0.00392	0.00372
	(A1 * A2 * C1 * X)	-0.00294	-0.00296	-0.00295
	(A1 * A2 * !C1 * X)	0.00358	0.00360	0.00353
	(A1 * A2 * !C1 * X)	-0.00230	-0.00230	-0.00230
	(A1 * !A2 * C1 * X)	0.00438	0.00358	0.00350
	(A1 * !A2 * C1 * X)	-0.00329	-0.00423	-0.00424
	(!A1 * C1 * X)	0.00440	0.00359	0.00350
	(!A1 * C1 * X)	-0.00326	-0.00421	-0.00424

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)	-0.00191	-0.00192	-0.00191
	(A1 * A2 * C1 * X)	0.00141	0.00142	0.00141
	(A1 * A2 * !C1 * X)	-0.00188	-0.00189	-0.00189
	(A1 * A2 * !C1 * X)	0.00113	0.00114	0.00112
	(A1 * !A2 * C1 * X)	-0.00189	-0.00190	-0.00188
	(A1 * !A2 * C1 * X)	0.00204	0.00205	0.00205
	(!A1 * C1 * X)	-0.00189	-0.00190	-0.00188
	(!A1 * C1 * X)	0.00204	0.00206	0.00205
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	-0.00201	-0.00202	-0.00201
	(A1 * A2 * C1 * X)	0.00142	0.00143	0.00141
	(A1 * A2 * !C1 * X)	-0.00196	-0.00197	-0.00197
	(A1 * A2 * !C1 * X)	0.00113	0.00114	0.00112
	(A1 * !A2 * C1 * X)	-0.00196	-0.00197	-0.00195
	(A1 * !A2 * C1 * X)	0.00205	0.00206	0.00205
	(!A1 * C1 * X)	-0.00196	-0.00197	-0.00195
	(!A1 * C1 * X)	0.00205	0.00206	0.00205
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	-0.00353	-0.00353	-0.00352
	(A1 * A2 * C1 * X)	0.00297	0.00296	0.00295
	(A1 * A2 * !C1 * X)	-0.00346	-0.00348	-0.00346
	(A1 * A2 * !C1 * X)	0.00239	0.00240	0.00238
	(A1 * !A2 * C1 * X)	-0.00346	-0.00347	-0.00345
	(A1 * !A2 * C1 * X)	0.00423	0.00425	0.00426
	(!A1 * C1 * X)	-0.00347	-0.00348	-0.00345
	(!A1 * C1 * X)	0.00425	0.00426	0.00426

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	0.00207	0.00212	0.00208
	(A1 * B1 * X)	-0.00099	-0.00102	-0.00100
	(A1 * A2 * !B1 * X)	0.00208	0.00212	0.00208
	(A1 * A2 * !B1 * X)	-0.00099	-0.00101	-0.00099
	(!A1 * B1 * X)	0.00208	0.00212	0.00208
	(!A1 * B1 * X)	-0.00100	-0.00102	-0.00100
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	0.00210	0.00212	0.00210
	(A1 * B1 * X)	-0.00104	-0.00105	-0.00104
	(A1 * A2 * !B1 * X)	0.00211	0.00212	0.00211
	(A1 * A2 * !B1 * X)	-0.00104	-0.00104	-0.00103
	(!A1 * B1 * X)	0.00210	0.00212	0.00210
	(!A1 * B1 * X)	-0.00104	-0.00105	-0.00104
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	0.00341	0.00344	0.00341
	(A1 * B1 * X)	-0.00201	-0.00202	-0.00200
	(A1 * A2 * !B1 * X)	0.00342	0.00344	0.00341
	(A1 * A2 * !B1 * X)	-0.00201	-0.00201	-0.00199
	(!A1 * B1 * X)	0.00341	0.00344	0.00341
	(!A1 * B1 * X)	-0.00203	-0.00204	-0.00202

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	-0.00203	-0.00205	-0.00207
	(A1 * B1 * X)	0.00104	0.00105	0.00101
	(A1 * A2 * !B1 * X)	-0.00189	-0.00191	-0.00205
	(A1 * A2 * !B1 * X)	0.00113	0.00114	0.00102
	(!A1 * B1 * X)	-0.00203	-0.00205	-0.00207
	(!A1 * B1 * X)	0.00104	0.00105	0.00101
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	-0.00205	-0.00206	-0.00210
	(A1 * B1 * X)	0.00109	0.00109	0.00105
	(A1 * A2 * !B1 * X)	-0.00193	-0.00194	-0.00208
	(A1 * A2 * !B1 * X)	0.00117	0.00117	0.00106
	(!A1 * B1 * X)	-0.00205	-0.00206	-0.00210
	(!A1 * B1 * X)	0.00109	0.00109	0.00105
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	-0.00328	-0.00330	-0.00339
	(A1 * B1 * X)	0.00213	0.00213	0.00204
	(A1 * A2 * !B1 * X)	-0.00302	-0.00304	-0.00335
	(A1 * A2 * !B1 * X)	0.00228	0.00228	0.00205
	(!A1 * B1 * X)	-0.00328	-0.00330	-0.00339
	(!A1 * B1 * X)	0.00214	0.00215	0.00205

SKY130_FD_SC_HS__A21BOIx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00282	0.00274	0.00259	0.61709
sky130_fd_sc_hs__a21boi_2	0.00536	0.00520	0.00256	1.19119
sky130_fd_sc_hs__a21boi_4	0.01064	0.01059	0.00377	2.13106

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21boi_1	0.00000	0.35479	0.67519
sky130_fd_sc_hs__a21boi_2	0.00000	0.24245	0.41400
sky130_fd_sc_hs__a21boi_4	0.00000	0.81616	1.50551

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)	0.06619	0.83888	9.81513
	A2->Y (FR)	0.08370	0.88132	10.10970
	B1_N->Y (RR)	0.08466	0.66091	6.19055
sky130_fd_sc_hs__a21boi_2	A1->Y (FR)	0.06086	0.73008	10.06220
	A2->Y (FR)	0.07877	0.74445	10.03200
	B1_N->Y (RR)	0.08011	0.53349	6.05997
sky130_fd_sc_hs__a21boi_4	A1->Y (FR)	0.06161	0.62755	9.86533
	A2->Y (FR)	0.07840	0.63566	9.67491
	B1_N->Y (RR)	0.07428	0.48004	6.50438

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21boi_1	A1->Y (RF)	0.02489	0.37062	4.22578
	A2->Y (RF)	0.02794	0.33573	3.74968
	B1_N->Y (FF)	0.06059	0.36461	3.00686
sky130_fd_sc_hs__a21boi_2	A1->Y (RF)	0.02335	0.33376	4.53960
	A2->Y (RF)	0.02790	0.29957	3.98107
	B1_N->Y (FF)	0.06531	0.37141	3.13719
sky130_fd_sc_hs__a21boi_4	A1->Y (RF)	0.02441	0.29049	4.57468
	A2->Y (RF)	0.02883	0.24182	3.73426
	B1_N->Y (FF)	0.06837	0.34161	2.79701

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.00119	0.00137	0.01305
	A1	0.00625	0.00642	0.01811
	A2	0.00186	0.00203	0.01385
	A2	0.00810	0.00827	0.02021
	B1_N	0.00934	0.01256	0.07957
	B1_N	0.00622	0.00945	0.07662
sky130_fd_sc_hs__a21boi_2	A1	0.00251	0.00294	0.02436
	A1	0.01230	0.01273	0.03421
	A2	0.00456	0.00485	0.02722
	A2	0.01678	0.01709	0.03944
	B1_N	0.01189	0.01527	0.08813
	B1_N	0.01273	0.01598	0.08942
sky130_fd_sc_hs__a21boi_4	A1	0.00517	0.00620	0.04786
	A1	0.02508	0.02616	0.06778
	A2	0.00841	0.00916	0.05167
	A2	0.03325	0.03414	0.07651
	B1_N	0.02095	0.02625	0.14345
	B1_N	0.02458	0.02964	0.14720

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.00678	0.00715	0.01750
	A1	0.00177	0.00213	0.01223
	A2	0.00800	0.00825	0.01769
	A2	0.00176	0.00195	0.01107
	B1_N	0.00539	0.00952	0.06990
	B1_N	0.00834	0.01244	0.07285
sky130_fd_sc_hs__a21boi_2	A1	0.01232	0.01313	0.03208
	A1	0.00261	0.00341	0.02176
	A2	0.01481	0.01522	0.03251
	A2	0.00256	0.00294	0.02018
	B1_N	0.01037	0.01474	0.07901
	B1_N	0.01131	0.01566	0.07990
sky130_fd_sc_hs__a21boi_4	A1	0.02404	0.02591	0.06151
	A1	0.00430	0.00613	0.04166
	A2	0.02945	0.03050	0.06700
	A2	0.00453	0.00547	0.04141
	B1_N	0.02133	0.02868	0.13543
	B1_N	0.02076	0.02808	0.13486

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)	0.00214	0.00190	0.00187
	(A2 * !B1_N * !Y)	-0.00209	-0.00240	-0.00241
	(!A2 * B1_N * Y)	0.00071	0.00071	0.00069
	(!A2 * B1_N * Y)	-0.00269	-0.00270	-0.00273
	(!A2 * !B1_N * !Y)	0.00180	0.00180	0.00181
	(!A2 * !B1_N * !Y)	-0.00242	-0.00242	-0.00243
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	0.00427	0.00374	0.00368
	(A2 * !B1_N * !Y)	-0.00398	-0.00466	-0.00466
	(!A2 * B1_N * Y)	0.00126	0.00127	0.00121
	(!A2 * B1_N * Y)	-0.00535	-0.00539	-0.00546
	(!A2 * !B1_N * !Y)	0.00352	0.00358	0.00354
	(!A2 * !B1_N * !Y)	-0.00468	-0.00472	-0.00470
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	0.00851	0.00738	0.00725
	(A2 * !B1_N * !Y)	-0.00797	-0.00937	-0.00938
	(!A2 * B1_N * Y)	0.00235	0.00237	0.00227
	(!A2 * B1_N * Y)	-0.01079	-0.01086	-0.01100
	(!A2 * !B1_N * !Y)	0.00694	0.00700	0.00697
	(!A2 * !B1_N * !Y)	-0.00944	-0.00948	-0.00946

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)	-0.00186	-0.00187	-0.00186
	(A2 * !B1_N * !Y)	0.00241	0.00242	0.00241
	(!A2 * B1_N * Y)	-0.00067	-0.00068	-0.00067
	(!A2 * B1_N * Y)	0.00275	0.00279	0.00274
	(!A2 * !B1_N * !Y)	-0.00174	-0.00180	-0.00181
	(!A2 * !B1_N * !Y)	0.00243	0.00247	0.00243
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	-0.00366	-0.00368	-0.00366
	(A2 * !B1_N * !Y)	0.00463	0.00468	0.00466
	(!A2 * B1_N * Y)	-0.00117	-0.00120	-0.00118
	(!A2 * B1_N * Y)	0.00545	0.00557	0.00548
	(!A2 * !B1_N * !Y)	-0.00339	-0.00358	-0.00354
	(!A2 * !B1_N * !Y)	0.00468	0.00473	0.00471
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	-0.00720	-0.00725	-0.00721
	(A2 * !B1_N * !Y)	0.00932	0.00945	0.00938
	(!A2 * B1_N * Y)	-0.00218	-0.00224	-0.00219
	(!A2 * B1_N * Y)	0.01098	0.01122	0.01104
	(!A2 * !B1_N * !Y)	-0.00674	-0.00700	-0.00697
	(!A2 * !B1_N * !Y)	0.00951	0.00955	0.00949

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)	0.00224	0.00198	0.00194
	(A1 * !B1_N * !Y)	-0.00199	-0.00232	-0.00233
	(!A1 * B1_N * Y)	0.00187	0.00187	0.00187
	(!A1 * B1_N * Y)	-0.00235	-0.00236	-0.00235
	(!A1 * !B1_N * !Y)	0.00187	0.00188	0.00187
	(!A1 * !B1_N * !Y)	-0.00234	-0.00235	-0.00235
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	0.00419	0.00368	0.00362
	(A1 * !B1_N * !Y)	-0.00400	-0.00464	-0.00464
	(!A1 * B1_N * Y)	0.00349	0.00350	0.00351
	(!A1 * B1_N * Y)	-0.00466	-0.00468	-0.00468
	(!A1 * !B1_N * !Y)	0.00349	0.00353	0.00351
	(!A1 * !B1_N * !Y)	-0.00467	-0.00470	-0.00468
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	0.00865	0.00746	0.00733
	(A1 * !B1_N * !Y)	-0.00789	-0.00932	-0.00934
	(!A1 * B1_N * Y)	0.00677	0.00682	0.00680
	(!A1 * B1_N * Y)	-0.00970	-0.00974	-0.00973
	(!A1 * !B1_N * !Y)	0.00708	0.00710	0.00707
	(!A1 * !B1_N * !Y)	-0.00941	-0.00943	-0.00941

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)	-0.00193	-0.00195	-0.00193
	(A1 * !B1_N * !Y)	0.00231	0.00235	0.00233
	(!A1 * B1_N * Y)	-0.00176	-0.00186	-0.00187
	(!A1 * B1_N * Y)	0.00245	0.00239	0.00237
	(!A1 * !B1_N * !Y)	-0.00182	-0.00188	-0.00187
	(!A1 * !B1_N * !Y)	0.00234	0.00237	0.00236
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	-0.00360	-0.00361	-0.00360
	(A1 * !B1_N * !Y)	0.00462	0.00465	0.00464
	(!A1 * B1_N * Y)	-0.00323	-0.00350	-0.00350
	(!A1 * B1_N * Y)	0.00484	0.00474	0.00470
	(!A1 * !B1_N * !Y)	-0.00335	-0.00349	-0.00351
	(!A1 * !B1_N * !Y)	0.00468	0.00473	0.00470
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	-0.00731	-0.00733	-0.00729
	(A1 * !B1_N * !Y)	0.00934	0.00940	0.00934
	(!A1 * B1_N * Y)	-0.00624	-0.00679	-0.00678
	(!A1 * B1_N * Y)	0.01006	0.00985	0.00977
	(!A1 * !B1_N * !Y)	-0.00683	-0.00708	-0.00707
	(!A1 * !B1_N * !Y)	0.00941	0.00951	0.00944

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)	0.00568	0.00892	0.07553
	(A1 * A2 * !Y)	0.00088	0.00411	0.07074
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00667	0.00970	0.08250
	(A1 * A2 * !Y)	0.00196	0.00499	0.07779
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.01024	0.01445	0.13116
	(A1 * A2 * !Y)	0.00327	0.00746	0.12423

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)	0.00111	0.00530	0.07220
	(A1 * A2 * !Y)	0.00587	0.01008	0.07697
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00337	0.00749	0.08025
	(A1 * A2 * !Y)	0.00805	0.01218	0.08493
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.00730	0.01444	0.13214
	(A1 * A2 * !Y)	0.01417	0.02137	0.13903

SKY130_FD_SC_HS__A21BOx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00262	0.00252	0.00220	1.15384
sky130_fd_sc_hs__a21bo_2	0.00279	0.00264	0.00230	2.13876
sky130_fd_sc_hs__a21bo_4	0.00484	0.00514	0.00266	4.05434

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21bo_1	0.00000	0.47219	0.78649
sky130_fd_sc_hs__a21bo_2	0.00000	0.51357	0.81724
sky130_fd_sc_hs__a21bo_4	0.00000	0.56386	0.71112

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)	0.06949	0.54000	5.94206
	A2->X (RR)	0.07253	0.53814	5.88122
	B1_N->X (FR)	0.10139	0.70600	8.14341
sky130_fd_sc_hs__a21bo_2	A1->X (RR)	0.06616	0.44797	5.67718
	A2->X (RR)	0.06941	0.44016	5.60404
	B1_N->X (FR)	0.10505	0.61386	7.95282
sky130_fd_sc_hs__a21bo_4	A1->X (RR)	0.06849	0.38495	5.84247
	A2->X (RR)	0.07402	0.38320	5.78778
	B1_N->X (FR)	0.11875	0.58003	8.18655

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21bo_1	A1->X (FF)	0.10848	0.49173	4.67012
	A2->X (FF)	0.12460	0.51993	4.74251
	B1_N->X (RF)	0.12523	0.33511	2.09145
sky130_fd_sc_hs__a21bo_2	A1->X (FF)	0.13543	0.50711	4.61818
	A2->X (FF)	0.15487	0.53888	4.70381
	B1_N->X (RF)	0.16099	0.35099	1.89930
sky130_fd_sc_hs__a21bo_4	A1->X (FF)	0.13010	0.45968	4.55519
	A2->X (FF)	0.14230	0.48514	4.61803
	B1_N->X (RF)	0.14658	0.30674	1.80746

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.01049	0.01252	0.05880
	A1	0.00571	0.00773	0.05453
	A2	0.01165	0.01325	0.05556
	A2	0.00571	0.00732	0.04968
	B1_N	0.00844	0.01273	0.08227
	B1_N	0.01188	0.01618	0.08585
sky130_fd_sc_hs__a21bo_2	A1	0.01375	0.01580	0.06126
	A1	0.00875	0.01082	0.05664
	A2	0.01486	0.01660	0.05830
	A2	0.00871	0.01045	0.05273
	B1_N	0.01196	0.01611	0.08541
	B1_N	0.01563	0.01979	0.08971
sky130_fd_sc_hs__a21bo_4	A1	0.02543	0.02960	0.12160
	A1	0.01671	0.02090	0.11335
	A2	0.02842	0.03168	0.11601
	A2	0.01674	0.02002	0.10478
	B1_N	0.02142	0.02664	0.10800
	B1_N	0.02536	0.03060	0.11242

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.00569	0.00698	0.05122
	A1	0.01053	0.01171	0.05596
	A2	0.00594	0.00718	0.04942
	A2	0.01186	0.01305	0.05487
	B1_N	0.01199	0.01500	0.08182
	B1_N	0.00854	0.01156	0.07828
sky130_fd_sc_hs__a21bo_2	A1	0.00901	0.00983	0.05415
	A1	0.01406	0.01480	0.05753
	A2	0.01000	0.01059	0.05281
	A2	0.01611	0.01670	0.05797
	B1_N	0.01753	0.01953	0.08125
	B1_N	0.01505	0.01701	0.07840
sky130_fd_sc_hs__a21bo_4	A1	0.01804	0.01970	0.10740
	A1	0.02679	0.02823	0.11436
	A2	0.01870	0.02023	0.10493
	A2	0.03030	0.03174	0.11414
	B1_N	0.02964	0.03195	0.10365
	B1_N	0.02781	0.03002	0.10121

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)	0.00198	0.00166	0.00161
	(A2 * !B1_N * X)	-0.00190	-0.00225	-0.00228
	(!A2 * B1_N * !X)	0.00059	0.00059	0.00057
	(!A2 * B1_N * !X)	-0.00255	-0.00255	-0.00257
	(!A2 * !B1_N * X)	0.00154	0.00156	0.00155
	(!A2 * !B1_N * X)	-0.00229	-0.00231	-0.00230
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	0.00224	0.00195	0.00191
	(A2 * !B1_N * X)	-0.00186	-0.00222	-0.00223
	(!A2 * B1_N * !X)	0.00073	0.00074	0.00072
	(!A2 * B1_N * !X)	-0.00252	-0.00253	-0.00256
	(!A2 * !B1_N * X)	0.00184	0.00187	0.00185
	(!A2 * !B1_N * X)	-0.00224	-0.00226	-0.00225
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	0.00370	0.00314	0.00307
	(A2 * !B1_N * X)	-0.00357	-0.00424	-0.00426
	(!A2 * B1_N * !X)	0.00093	0.00094	0.00090
	(!A2 * B1_N * !X)	-0.00490	-0.00493	-0.00499
	(!A2 * !B1_N * X)	0.00296	0.00296	0.00297
	(!A2 * !B1_N * X)	-0.00429	-0.00429	-0.00430

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)	-0.00160	-0.00160	-0.00160
	(A2 * !B1_N * X)	0.00227	0.00227	0.00228
	(!A2 * B1_N * !X)	-0.00055	-0.00056	-0.00055
	(!A2 * B1_N * !X)	0.00259	0.00263	0.00259
	(!A2 * !B1_N * X)	-0.00151	-0.00154	-0.00155
	(!A2 * !B1_N * X)	0.00231	0.00231	0.00231
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	-0.00190	-0.00191	-0.00189
	(A2 * !B1_N * X)	0.00222	0.00225	0.00223
	(!A2 * B1_N * !X)	-0.00070	-0.00071	-0.00069
	(!A2 * B1_N * !X)	0.00259	0.00262	0.00258
	(!A2 * !B1_N * X)	-0.00179	-0.00183	-0.00185
	(!A2 * !B1_N * X)	0.00226	0.00227	0.00226
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	-0.00306	-0.00307	-0.00304
	(A2 * !B1_N * X)	0.00427	0.00430	0.00427
	(!A2 * B1_N * !X)	-0.00086	-0.00089	-0.00086
	(!A2 * B1_N * !X)	0.00499	0.00509	0.00501
	(!A2 * !B1_N * X)	-0.00282	-0.00295	-0.00296
	(!A2 * !B1_N * X)	0.00430	0.00436	0.00432

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)	0.00218	0.00190	0.00187
	(A1 * !B1_N * X)	-0.00177	-0.00209	-0.00210
	(!A1 * B1_N * !X)	0.00181	0.00184	0.00182
	(!A1 * B1_N * !X)	-0.00210	-0.00212	-0.00211
	(!A1 * !B1_N * X)	0.00180	0.00181	0.00181
	(!A1 * !B1_N * X)	-0.00210	-0.00211	-0.00211
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	0.00221	0.00190	0.00186
	(A1 * !B1_N * X)	-0.00179	-0.00216	-0.00218
	(!A1 * B1_N * !X)	0.00179	0.00182	0.00179
	(!A1 * B1_N * !X)	-0.00218	-0.00220	-0.00219
	(!A1 * !B1_N * X)	0.00179	0.00182	0.00180
	(!A1 * !B1_N * X)	-0.00219	-0.00221	-0.00220
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	0.00432	0.00383	0.00377
	(A1 * !B1_N * X)	-0.00362	-0.00424	-0.00424
	(!A1 * B1_N * !X)	0.00366	0.00370	0.00366
	(!A1 * B1_N * !X)	-0.00425	-0.00429	-0.00426
	(!A1 * !B1_N * X)	0.00363	0.00368	0.00365
	(!A1 * !B1_N * X)	-0.00426	-0.00429	-0.00427

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)	-0.00186	-0.00187	-0.00185
	(A1 * !B1_N * X)	0.00208	0.00212	0.00210
	(!A1 * B1_N * !X)	-0.00169	-0.00180	-0.00181
	(!A1 * B1_N * !X)	0.00221	0.00213	0.00213
	(!A1 * !B1_N * X)	-0.00177	-0.00180	-0.00181
	(!A1 * !B1_N * X)	0.00211	0.00212	0.00212
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	-0.00185	-0.00186	-0.00185
	(A1 * !B1_N * X)	0.00218	0.00219	0.00218
	(!A1 * B1_N * !X)	-0.00167	-0.00178	-0.00179
	(!A1 * B1_N * !X)	0.00228	0.00223	0.00221
	(!A1 * !B1_N * X)	-0.00174	-0.00179	-0.00180
	(!A1 * !B1_N * X)	0.00220	0.00222	0.00221
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	-0.00376	-0.00377	-0.00375
	(A1 * !B1_N * X)	0.00422	0.00426	0.00424
	(!A1 * B1_N * !X)	-0.00339	-0.00367	-0.00365
	(!A1 * B1_N * !X)	0.00444	0.00431	0.00428
	(!A1 * !B1_N * X)	-0.00352	-0.00367	-0.00365
	(!A1 * !B1_N * X)	0.00426	0.00431	0.00429

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)	0.00474	0.00785	0.07301
	(A1 * A2 * X)	0.00067	0.00378	0.06894
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00536	0.00827	0.07346
	(A1 * A2 * X)	0.00109	0.00401	0.06920
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00717	0.01023	0.08106
	(A1 * A2 * X)	0.00227	0.00529	0.07614

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)	0.00136	0.00569	0.07079
	(A1 * A2 * X)	0.00542	0.00976	0.07484
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00168	0.00587	0.07107
	(A1 * A2 * X)	0.00591	0.01011	0.07532
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00272	0.00681	0.07743
	(A1 * A2 * X)	0.00759	0.01171	0.08232

SKY130_FD_SC_HS__A21OIx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00292	0.00274	0.00286	0.60906
sky130_fd_sc_hs__a21oi_2	0.00532	0.00553	0.00427	1.05720
sky130_fd_sc_hs__a21oi_4	0.01082	0.01057	0.00842	2.01484

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21oi_1	0.00000	0.05358	0.10133
sky130_fd_sc_hs__a21oi_2	0.00000	0.10397	0.20266
sky130_fd_sc_hs__a21oi_4	0.00000	0.20794	0.40531

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)	0.06607	0.83596	9.74072
	A2->Y (FR)	0.08218	0.87625	10.02580
	B1->Y (FR)	0.06340	0.88955	10.50090
sky130_fd_sc_hs__a21oi_2	A1->Y (FR)	0.06415	0.75064	10.01380
	A2->Y (FR)	0.08436	0.75773	9.83682
	B1->Y (FR)	0.03493	0.74806	10.35580
sky130_fd_sc_hs__a21oi_4	A1->Y (FR)	0.05955	0.63433	9.82495
	A2->Y (FR)	0.07752	0.63821	9.60716
	B1->Y (FR)	0.03179	0.63984	10.22740

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21oi_1	A1->Y (RF)	0.02507	0.36800	4.17262
	A2->Y (RF)	0.02763	0.33396	3.71525
	B1->Y (RF)	0.01557	0.28222	3.28131
sky130_fd_sc_hs__a21oi_2	A1->Y (RF)	0.02402	0.32238	4.21030
	A2->Y (RF)	0.02980	0.28874	3.65879
	B1->Y (RF)	0.02001	0.36864	4.97152
sky130_fd_sc_hs__a21oi_4	A1->Y (RF)	0.02339	0.28241	4.38637
	A2->Y (RF)	0.02729	0.23380	3.55289
	B1->Y (RF)	0.02024	0.32925	5.24021

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	-0.00034	-0.00018	0.01163
	A1	0.00648	0.00663	0.01844
	A2	0.00013	0.00031	0.01238
	A2	0.00815	0.00831	0.02039
	B1	-0.00070	0.00076	0.02281
	B1	0.00471	0.00616	0.02829
sky130_fd_sc_hs__a21oi_2	A1	-0.00077	-0.00040	0.02127
	A1	0.01197	0.01238	0.03405
	A2	0.00098	0.00122	0.02328
	A2	0.01667	0.01694	0.03899
	B1	-0.00009	0.00263	0.02988
	B1	0.00831	0.01063	0.03846
sky130_fd_sc_hs__a21oi_4	A1	-0.00246	-0.00132	0.04230
	A1	0.02364	0.02491	0.06844
	A2	0.00111	0.00207	0.04840
	A2	0.03241	0.03353	0.07978
	B1	-0.00053	0.00393	0.05479
	B1	0.01629	0.02082	0.07261

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	0.00839	0.00872	0.01910
	A1	0.00165	0.00199	0.01215
	A2	0.00963	0.00989	0.01899
	A2	0.00164	0.00183	0.01099
	B1	0.00502	0.00583	0.01781
	B1	-0.00039	0.00039	0.01228
sky130_fd_sc_hs__a21oi_2	A1	0.01522	0.01596	0.03533
	A1	0.00258	0.00330	0.02233
	A2	0.01840	0.01876	0.03721
	A2	0.00266	0.00297	0.02101
	B1	0.00639	0.00777	0.02397
	B1	-0.00201	-0.00073	0.01478
sky130_fd_sc_hs__a21oi_4	A1	0.03046	0.03234	0.06883
	A1	0.00459	0.00645	0.04192
	A2	0.03563	0.03658	0.07341
	A2	0.00433	0.00521	0.04129
	B1	0.01321	0.01553	0.04686
	B1	-0.00358	-0.00137	0.02733

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	0.00218	0.00193	0.00190
	(A2 * B1 * !Y)	-0.00195	-0.00230	-0.00230
	(!A2 * B1 * !Y)	0.00182	0.00183	0.00183
	(!A2 * B1 * !Y)	-0.00234	-0.00234	-0.00234
	(!A2 * !B1 * Y)	0.00057	0.00057	0.00055
	(!A2 * !B1 * Y)	-0.00276	-0.00277	-0.00279
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	0.00443	0.00382	0.00376
	(A2 * B1 * !Y)	-0.00377	-0.00454	-0.00452
	(!A2 * B1 * !Y)	0.00353	0.00357	0.00355
	(!A2 * B1 * !Y)	-0.00460	-0.00463	-0.00461
	(!A2 * !B1 * Y)	0.00122	0.00122	0.00117
	(!A2 * !B1 * Y)	-0.00526	-0.00530	-0.00538
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	0.00893	0.00769	0.00758
	(A2 * B1 * !Y)	-0.00751	-0.00900	-0.00901
	(!A2 * B1 * !Y)	0.00724	0.00729	0.00725
	(!A2 * B1 * !Y)	-0.00917	-0.00920	-0.00916
	(!A2 * !B1 * Y)	0.00230	0.00231	0.00220
	(!A2 * !B1 * Y)	-0.01088	-0.01095	-0.01107

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	-0.00189	-0.00190	-0.00189
	(A2 * B1 * !Y)	0.00231	0.00232	0.00230
	(!A2 * B1 * !Y)	-0.00177	-0.00182	-0.00183
	(!A2 * B1 * !Y)	0.00234	0.00235	0.00235
	(!A2 * !B1 * Y)	-0.00054	-0.00055	-0.00054
	(!A2 * !B1 * Y)	0.00279	0.00284	0.00280
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	-0.00376	-0.00378	-0.00375
	(A2 * B1 * !Y)	0.00451	0.00455	0.00452
	(!A2 * B1 * !Y)	-0.00338	-0.00357	-0.00355
	(!A2 * B1 * !Y)	0.00462	0.00465	0.00461
	(!A2 * !B1 * Y)	-0.00113	-0.00116	-0.00113
	(!A2 * !B1 * Y)	0.00536	0.00547	0.00539
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	-0.00753	-0.00757	-0.00755
	(A2 * B1 * !Y)	0.00893	0.00900	0.00901
	(!A2 * B1 * !Y)	-0.00700	-0.00729	-0.00725
	(!A2 * B1 * !Y)	0.00917	0.00925	0.00919
	(!A2 * !B1 * Y)	-0.00214	-0.00214	-0.00215
	(!A2 * !B1 * Y)	0.01104	0.01106	0.01109

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	0.00220	0.00194	0.00190
	(A1 * B1 * !Y)	-0.00196	-0.00229	-0.00230
	(!A1 * B1 * !Y)	0.00182	0.00183	0.00182
	(!A1 * B1 * !Y)	-0.00234	-0.00235	-0.00234
	(!A1 * !B1 * Y)	0.00183	0.00184	0.00182
	(!A1 * !B1 * Y)	-0.00234	-0.00235	-0.00234
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	0.00457	0.00395	0.00389
	(A1 * B1 * !Y)	-0.00377	-0.00455	-0.00453
	(!A1 * B1 * !Y)	0.00366	0.00371	0.00369
	(!A1 * B1 * !Y)	-0.00460	-0.00463	-0.00462
	(!A1 * !B1 * Y)	0.00353	0.00357	0.00356
	(!A1 * !B1 * Y)	-0.00474	-0.00477	-0.00476
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	0.00872	0.00753	0.00739
	(A1 * B1 * !Y)	-0.00778	-0.00927	-0.00927
	(!A1 * B1 * !Y)	0.00707	0.00710	0.00707
	(!A1 * B1 * !Y)	-0.00942	-0.00941	-0.00942
	(!A1 * !B1 * Y)	0.00702	0.00707	0.00705
	(!A1 * !B1 * Y)	-0.00945	-0.00949	-0.00948

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	-0.00189	-0.00189	-0.00190
	(A1 * B1 * !Y)	0.00229	0.00229	0.00230
	(!A1 * B1 * !Y)	-0.00178	-0.00183	-0.00182
	(!A1 * B1 * !Y)	0.00234	0.00236	0.00235
	(!A1 * !B1 * Y)	-0.00171	-0.00183	-0.00182
	(!A1 * !B1 * Y)	0.00242	0.00237	0.00235
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	-0.00389	-0.00391	-0.00388
	(A1 * B1 * !Y)	0.00452	0.00456	0.00453
	(!A1 * B1 * !Y)	-0.00354	-0.00371	-0.00369
	(!A1 * B1 * !Y)	0.00462	0.00467	0.00463
	(!A1 * !B1 * Y)	-0.00326	-0.00357	-0.00356
	(!A1 * !B1 * Y)	0.00494	0.00480	0.00477
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	-0.00738	-0.00740	-0.00736
	(A1 * B1 * !Y)	0.00927	0.00933	0.00927
	(!A1 * B1 * !Y)	-0.00683	-0.00704	-0.00707
	(!A1 * B1 * !Y)	0.00942	0.00941	0.00946
	(!A1 * !B1 * Y)	-0.00647	-0.00707	-0.00705
	(!A1 * !B1 * Y)	0.00986	0.00958	0.00951

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	0.00222	0.00223	0.00221
	(A1 * A2 * !Y)	-0.00108	-0.00108	-0.00107
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	0.00244	0.00249	0.00245
	(A1 * A2 * !Y)	-0.00221	-0.00225	-0.00222
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	0.00476	0.00478	0.00474
	(A1 * A2 * !Y)	-0.00431	-0.00431	-0.00427

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	-0.00209	-0.00211	-0.00220
	(A1 * A2 * !Y)	0.00117	0.00118	0.00110
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	-0.00221	-0.00224	-0.00243
	(A1 * A2 * !Y)	0.00242	0.00244	0.00226
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	-0.00427	-0.00433	-0.00470
	(A1 * A2 * !Y)	0.00465	0.00467	0.00436

SKY130_FD_SC_HS__A21Ox

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00245	0.00251	0.00251	1.27241
sky130_fd_sc_hs__a21o_2	0.00273	0.00263	0.00277	2.47086
sky130_fd_sc_hs__a21o_4	0.00495	0.00474	0.00505	4.71042

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21o_1	0.00000	0.17098	0.26734
sky130_fd_sc_hs__a21o_2	0.00000	0.21235	0.27582
sky130_fd_sc_hs__a21o_4	0.00000	0.42856	0.55164

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)	0.06526	0.51429	5.87718
	A2->X (RR)	0.06917	0.51298	5.81419
	B1->X (RR)	0.04892	0.47148	5.65765
sky130_fd_sc_hs__a21o_2	A1->X (RR)	0.06386	0.43271	5.80769
	A2->X (RR)	0.06713	0.42552	5.73162
	B1->X (RR)	0.04781	0.39100	5.58538
sky130_fd_sc_hs__a21o_4	A1->X (RR)	0.07352	0.38940	6.02885
	A2->X (RR)	0.07820	0.38326	5.94764
	B1->X (RR)	0.04975	0.33347	5.74139

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21o_1	A1->X (FF)	0.10326	0.49659	4.93286
	A2->X (FF)	0.12139	0.52704	5.01195
	B1->X (FF)	0.10132	0.53032	4.99867
sky130_fd_sc_hs__a21o_2	A1->X (FF)	0.12590	0.50159	4.88423
	A2->X (FF)	0.14482	0.53225	4.96883
	B1->X (FF)	0.12673	0.54655	5.03511
sky130_fd_sc_hs__a21o_4	A1->X (FF)	0.13051	0.47638	4.98149
	A2->X (FF)	0.14954	0.50807	5.06931
	B1->X (FF)	0.12774	0.51884	5.16513

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.01150	0.01349	0.05948
	A1	0.00571	0.00769	0.05374
	A2	0.01291	0.01442	0.05657
	A2	0.00570	0.00721	0.04947
	B1	0.00832	0.01132	0.07405
	B1	0.00368	0.00672	0.06961
sky130_fd_sc_hs__a21o_2	A1	0.01514	0.01725	0.06394
	A1	0.00879	0.01092	0.05782
	A2	0.01646	0.01820	0.06118
	A2	0.00878	0.01054	0.05388
	B1	0.01192	0.01506	0.07960
	B1	0.00678	0.00995	0.07504
sky130_fd_sc_hs__a21o_4	A1	0.02911	0.03281	0.12117
	A1	0.01699	0.02071	0.11127
	A2	0.03130	0.03416	0.11502
	A2	0.01695	0.01982	0.10290
	B1	0.02221	0.02836	0.15278
	B1	0.01249	0.01868	0.14351

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.00412	0.00547	0.04972
	A1	0.00998	0.01121	0.05549
	A2	0.00432	0.00556	0.04739
	A2	0.01152	0.01275	0.05453
	B1	0.00388	0.00757	0.06038
	B1	0.00850	0.01217	0.06449
sky130_fd_sc_hs__a21o_2	A1	0.00748	0.00857	0.05399
	A1	0.01387	0.01476	0.05879
	A2	0.00823	0.00916	0.05336
	A2	0.01590	0.01663	0.05907
	B1	0.00690	0.01066	0.06924
	B1	0.01202	0.01565	0.07388
sky130_fd_sc_hs__a21o_4	A1	0.01540	0.01715	0.10434
	A1	0.02763	0.02910	0.11217
	A2	0.01752	0.01885	0.09790
	A2	0.03183	0.03270	0.11213
	B1	0.01408	0.02106	0.13766
	B1	0.02380	0.03059	0.14424

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	0.00186	0.00156	0.00152
	(A2 * B1 * X)	-0.00175	-0.00209	-0.00211
	(!A2 * B1 * X)	0.00145	0.00147	0.00146
	(!A2 * B1 * X)	-0.00213	-0.00215	-0.00214
	(!A2 * !B1 * !X)	0.00050	0.00050	0.00049
	(!A2 * !B1 * !X)	-0.00241	-0.00241	-0.00244
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	0.00214	0.00186	0.00182
	(A2 * B1 * X)	-0.00176	-0.00212	-0.00214
	(!A2 * B1 * X)	0.00173	0.00175	0.00174
	(!A2 * B1 * X)	-0.00217	-0.00218	-0.00217
	(!A2 * !B1 * !X)	0.00061	0.00061	0.00059
	(!A2 * !B1 * !X)	-0.00247	-0.00249	-0.00252
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	0.00395	0.00334	0.00327
	(A2 * B1 * X)	-0.00344	-0.00421	-0.00423
	(!A2 * B1 * X)	0.00314	0.00315	0.00314
	(!A2 * B1 * X)	-0.00428	-0.00430	-0.00429
	(!A2 * !B1 * !X)	0.00110	0.00110	0.00105
	(!A2 * !B1 * !X)	-0.00495	-0.00497	-0.00505

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	-0.00151	-0.00152	-0.00151
	(A2 * B1 * X)	0.00210	0.00213	0.00211
	(!A2 * B1 * X)	-0.00142	-0.00146	-0.00146
	(!A2 * B1 * X)	0.00216	0.00215	0.00215
	(!A2 * !B1 * !X)	-0.00048	-0.00048	-0.00047
	(!A2 * !B1 * !X)	0.00245	0.00248	0.00244
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	-0.00180	-0.00182	-0.00180
	(A2 * B1 * X)	0.00213	0.00215	0.00214
	(!A2 * B1 * X)	-0.00169	-0.00174	-0.00174
	(!A2 * B1 * X)	0.00219	0.00219	0.00218
	(!A2 * !B1 * !X)	-0.00058	-0.00059	-0.00058
	(!A2 * !B1 * !X)	0.00253	0.00257	0.00253
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	-0.00325	-0.00326	-0.00324
	(A2 * B1 * X)	0.00420	0.00424	0.00423
	(!A2 * B1 * X)	-0.00302	-0.00315	-0.00314
	(!A2 * B1 * X)	0.00428	0.00435	0.00431
	(!A2 * !B1 * !X)	-0.00101	-0.00104	-0.00102
	(!A2 * !B1 * !X)	0.00505	0.00515	0.00507

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	0.00222	0.00194	0.00190
	(A1 * B1 * X)	-0.00175	-0.00208	-0.00208
	(!A1 * B1 * X)	0.00184	0.00187	0.00185
	(!A1 * B1 * X)	-0.00211	-0.00213	-0.00211
	(!A1 * !B1 * !X)	0.00185	0.00185	0.00185
	(!A1 * !B1 * !X)	-0.00211	-0.00212	-0.00211
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	0.00223	0.00195	0.00191
	(A1 * B1 * X)	-0.00178	-0.00212	-0.00214
	(!A1 * B1 * X)	0.00184	0.00184	0.00183
	(!A1 * B1 * X)	-0.00217	-0.00217	-0.00217
	(!A1 * !B1 * !X)	0.00184	0.00186	0.00184
	(!A1 * !B1 * !X)	-0.00216	-0.00218	-0.00217
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	0.00388	0.00328	0.00321
	(A1 * B1 * X)	-0.00348	-0.00420	-0.00422
	(!A1 * B1 * X)	0.00307	0.00310	0.00308
	(!A1 * B1 * X)	-0.00427	-0.00429	-0.00428
	(!A1 * !B1 * !X)	0.00307	0.00311	0.00308
	(!A1 * !B1 * !X)	-0.00427	-0.00430	-0.00428

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	-0.00189	-0.00190	-0.00189
	(A1 * B1 * X)	0.00207	0.00210	0.00208
	(!A1 * B1 * X)	-0.00179	-0.00185	-0.00185
	(!A1 * B1 * X)	0.00211	0.00214	0.00212
	(!A1 * !B1 * !X)	-0.00173	-0.00185	-0.00185
	(!A1 * !B1 * !X)	0.00219	0.00214	0.00212
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	-0.00190	-0.00191	-0.00190
	(A1 * B1 * X)	0.00212	0.00215	0.00214
	(!A1 * B1 * X)	-0.00178	-0.00184	-0.00183
	(!A1 * B1 * X)	0.00217	0.00219	0.00218
	(!A1 * !B1 * !X)	-0.00172	-0.00184	-0.00184
	(!A1 * !B1 * !X)	0.00224	0.00220	0.00218
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	-0.00319	-0.00320	-0.00319
	(A1 * B1 * X)	0.00419	0.00423	0.00422
	(!A1 * B1 * X)	-0.00297	-0.00309	-0.00308
	(!A1 * B1 * X)	0.00428	0.00432	0.00430
	(!A1 * !B1 * !X)	-0.00284	-0.00309	-0.00308
	(!A1 * !B1 * !X)	0.00445	0.00433	0.00430

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	0.00181	0.00184	0.00182
	(A1 * A2 * X)	-0.00102	-0.00103	-0.00102
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	0.00216	0.00218	0.00216
	(A1 * A2 * X)	-0.00101	-0.00102	-0.00101
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	0.00378	0.00380	0.00377
	(A1 * A2 * X)	-0.00212	-0.00212	-0.00210

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	-0.00170	-0.00172	-0.00181
	(A1 * A2 * X)	0.00113	0.00113	0.00105
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	-0.00204	-0.00205	-0.00215
	(A1 * A2 * X)	0.00112	0.00112	0.00103
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	-0.00351	-0.00355	-0.00374
	(A1 * A2 * X)	0.00230	0.00232	0.00215

SKY130_FD_SC_HS__A221OIx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00281	0.00277	0.00287	0.00295	0.00295	0.39614
sky130_fd_sc_hs__a221oi_2	0.00596	0.00538	0.00586	0.00533	0.00544	0.65911
sky130_fd_sc_hs__a221oi_4	0.01098	0.01091	0.01089	0.01058	0.01078	1.17414

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a221oi_1	0.00000	0.04910	0.10133
sky130_fd_sc_hs__a221oi_2	0.00000	0.09819	0.20266
sky130_fd_sc_hs__a221oi_4	0.00000	0.19639	0.40531

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)	0.17516	1.02924	9.45562
	A2->Y (FR)	0.19662	1.05600	9.50933
	B1->Y (FR)	0.15036	1.03175	10.07060
	B2->Y (FR)	0.17477	1.06614	10.18950
	C1->Y (FR)	0.13028	1.04148	10.41260
sky130_fd_sc_hs__a221oi_2	A1->Y (FR)	0.16257	0.84672	8.80541
	A2->Y (FR)	0.20755	0.93109	9.34839
	B1->Y (FR)	0.14669	0.88553	9.77443
	B2->Y (FR)	0.18051	0.93876	10.03070
	C1->Y (FR)	0.12783	0.91805	10.34600
sky130_fd_sc_hs__a221oi_4	A1->Y (FR)	0.18256	0.78264	9.05563
	A2->Y (FR)	0.21927	0.83036	9.23411
	B1->Y (FR)	0.15102	0.78025	9.67583
	B2->Y (FR)	0.19066	0.84016	9.99841
	C1->Y (FR)	0.13697	0.83249	10.50320

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221oi_1	A1->Y (RF)	0.02929	0.33295	3.00313
	A2->Y (RF)	0.03225	0.30192	2.64630
	B1->Y (RF)	0.02991	0.32314	3.04721
	B2->Y (RF)	0.03381	0.29490	2.70025
	C1->Y (RF)	0.01883	0.24520	2.34543
sky130_fd_sc_hs__a221oi_2	A1->Y (RF)	0.02595	0.27720	2.77232
	A2->Y (RF)	0.03111	0.25680	2.47579
	B1->Y (RF)	0.02615	0.25690	2.72831
	B2->Y (RF)	0.03042	0.23818	2.43956
	C1->Y (RF)	0.01658	0.19101	2.11480
sky130_fd_sc_hs__a221oi_4	A1->Y (RF)	0.02821	0.25537	2.88698
	A2->Y (RF)	0.03249	0.21152	2.26827
	B1->Y (RF)	0.03019	0.23530	2.88064
	B2->Y (RF)	0.03445	0.19589	2.25489
	C1->Y (RF)	0.01514	0.14266	1.88151

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221oi_1	A1	0.00135	0.00112	0.01411
	A1	0.01120	0.01097	0.02396
	A2	0.00171	0.00157	0.01476
	A2	0.01292	0.01279	0.02606
	B1	0.00136	0.00136	0.01476
	B1	0.00854	0.00854	0.02200
	B2	0.00185	0.00188	0.01521
	B2	0.01035	0.01039	0.02369
	C1	0.00102	0.00232	0.02601
	C1	0.00698	0.00830	0.03197
sky130_fd_sc_hs__a221oi_2	A1	0.00068	0.00032	0.02733
	A1	0.02088	0.02052	0.04755
	A2	0.00255	0.00212	0.02823
	A2	0.02462	0.02423	0.05033
	B1	0.00077	0.00091	0.02814
	B1	0.01540	0.01551	0.04279
	B2	0.00219	0.00231	0.02998
	B2	0.01886	0.01901	0.04671
	C1	0.00019	0.00340	0.04952
	C1	0.01184	0.01506	0.06145

sky130_fd_sc_hs__a221oi_4	**A1**	0.00049	-0.00039	0.04782
	A1	0.04027	0.03945	0.08780
	A2	0.00341	0.00267	0.05167
	A2	0.04833	0.04750	0.09648
	B1	0.00038	0.00069	0.04843
	B1	0.02991	0.03026	0.07800
	B2	0.00353	0.00381	0.05160
	B2	0.03817	0.03846	0.08638
	C1	-0.00081	0.00530	0.09157
	C1	0.02206	0.02806	0.11392

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221oi_1	**A1**	0.01452	0.01469	0.02692
	A1	0.00490	0.00508	0.01732
	A2	0.01588	0.01595	0.02708
	A2	0.00487	0.00488	0.01607
	B1	0.00894	0.00934	0.02128
	B1	0.00184	0.00223	0.01412
	B2	0.01031	0.01055	0.02127
	B2	0.00184	0.00202	0.01277
	C1	0.00554	0.00633	0.02001
	C1	-0.00042	0.00036	0.01405

sky130_fd_sc_hs__a221oi_2	**A1**	0.02730	0.02781	0.05299
	A1	0.00756	0.00807	0.03326
	A2	0.02965	0.02971	0.05177
	A2	0.00788	0.00788	0.03002
	B1	0.01710	0.01815	0.04240
	B1	0.00262	0.00367	0.02787
	B2	0.01940	0.01993	0.04175
	B2	0.00275	0.00321	0.02507
	C1	0.00994	0.01192	0.03960
	C1	-0.00168	0.00028	0.02795
sky130_fd_sc_hs__a221oi_4	**A1**	0.05483	0.05574	0.10084
	A1	0.01597	0.01677	0.06218
	A2	0.05999	0.05998	0.10498
	A2	0.01583	0.01576	0.06080
	B1	0.03407	0.03618	0.08101
	B1	0.00492	0.00701	0.05178
	B2	0.03954	0.04057	0.08439
	B2	0.00500	0.00595	0.04972
	C1	0.02071	0.02448	0.07867
	C1	-0.00220	0.00153	0.05568

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)**	0.00180	0.00181	0.00180
	(A2 * B1 * B2 * C1 * !Y)	-0.00218	-0.00230	-0.00228
	(A2 * B1 * B2 * !C1 * !Y)	0.00181	0.00181	0.00180
	(A2 * B1 * B2 * !C1 * !Y)	-0.00216	-0.00229	-0.00228
	(A2 * B1 * !B2 * C1 * !Y)	0.00183	0.00181	0.00180
	(A2 * B1 * !B2 * C1 * !Y)	-0.00206	-0.00223	-0.00222
	(A2 * !B1 * C1 * !Y)	0.00183	0.00181	0.00180
	(A2 * !B1 * C1 * !Y)	-0.00206	-0.00222	-0.00222
	(!A2 * B1 * B2 * C1 * !Y)	0.00173	0.00175	0.00174
	(!A2 * B1 * B2 * C1 * !Y)	-0.00232	-0.00233	-0.00233
	(!A2 * B1 * B2 * !C1 * !Y)	0.00173	0.00174	0.00174
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00232	-0.00233	-0.00233
	(!A2 * B1 * !B2 * C1 * !Y)	0.00173	0.00174	0.00174
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00232	-0.00233	-0.00233
	(!A2 * B1 * !B2 * !C1 * Y)	0.00057	0.00057	0.00055
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00265	-0.00264	-0.00268
	(!A2 * !B1 * C1 * !Y)	0.00171	0.00172	0.00172
	(!A2 * !B1 * C1 * !Y)	-0.00232	-0.00233	-0.00233
	(!A2 * !B1 * !C1 * Y)	0.00057	0.00057	0.00055
	(!A2 * !B1 * !C1 * Y)	-0.00265	-0.00265	-0.00268

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	0.00381	0.00386	0.00382
	(A2 * B1 * B2 * C1 * !Y)	-0.00459	-0.00485	-0.00481
	(A2 * B1 * B2 * !C1 * !Y)	0.00387	0.00386	0.00382
	(A2 * B1 * B2 * !C1 * !Y)	-0.00451	-0.00484	-0.00481
	(A2 * B1 * !B2 * C1 * !Y)	0.00390	0.00386	0.00382
	(A2 * B1 * !B2 * C1 * !Y)	-0.00434	-0.00472	-0.00469
	(A2 * !B1 * C1 * !Y)	0.00389	0.00386	0.00382
	(A2 * !B1 * C1 * !Y)	-0.00432	-0.00471	-0.00469
	(!A2 * B1 * B2 * C1 * !Y)	0.00368	0.00372	0.00369
	(!A2 * B1 * B2 * C1 * !Y)	-0.00491	-0.00494	-0.00493
	(!A2 * B1 * B2 * !C1 * !Y)	0.00368	0.00370	0.00369
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00493	-0.00494	-0.00492
	(!A2 * B1 * !B2 * C1 * !Y)	0.00369	0.00371	0.00369
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00493	-0.00495	-0.00492
	(!A2 * B1 * !B2 * !C1 * Y)	0.00129	0.00129	0.00124
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00572	-0.00575	-0.00583
	(!A2 * !B1 * C1 * !Y)	0.00369	0.00370	0.00369
	(!A2 * !B1 * C1 * !Y)	-0.00493	-0.00493	-0.00492
	(!A2 * !B1 * !C1 * Y)	0.00129	0.00129	0.00124
	(!A2 * !B1 * !C1 * Y)	-0.00572	-0.00576	-0.00583

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	0.00737	0.00745	0.00737
	(A2 * B1 * B2 * C1 * !Y)	-0.00884	-0.00932	-0.00926
	(A2 * B1 * B2 * !C1 * !Y)	0.00759	0.00746	0.00737
	(A2 * B1 * B2 * !C1 * !Y)	-0.00846	-0.00932	-0.00924
	(A2 * B1 * !B2 * C1 * !Y)	0.00755	0.00745	0.00737
	(A2 * B1 * !B2 * C1 * !Y)	-0.00817	-0.00909	-0.00901
	(A2 * !B1 * C1 * !Y)	0.00757	0.00745	0.00737
	(A2 * !B1 * C1 * !Y)	-0.00815	-0.00909	-0.00901
	(!A2 * B1 * B2 * C1 * !Y)	0.00713	0.00720	0.00715
	(!A2 * B1 * B2 * C1 * !Y)	-0.00940	-0.00947	-0.00943
	(!A2 * B1 * B2 * !C1 * !Y)	0.00709	0.00714	0.00709
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00941	-0.00945	-0.00940
	(!A2 * B1 * !B2 * C1 * !Y)	0.00706	0.00712	0.00708
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00950	-0.00955	-0.00951
	(!A2 * B1 * !B2 * !C1 * Y)	0.00232	0.00232	0.00222
	(!A2 * B1 * !B2 * !C1 * Y)	-0.01105	-0.01111	-0.01123
	(!A2 * !B1 * C1 * !Y)	0.00707	0.00714	0.00709
	(!A2 * !B1 * C1 * !Y)	-0.00952	-0.00956	-0.00951
	(!A2 * !B1 * !C1 * Y)	0.00232	0.00233	0.00223
	(!A2 * !B1 * !C1 * Y)	-0.01104	-0.01111	-0.01123

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

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

sky130_fd_sc_hs__a221oi_1	**(A2 * B1 * B2 * C1 * !Y)**	-0.00179	-0.00180	-0.00179
	(A2 * B1 * B2 * C1 * !Y)	0.00227	0.00230	0.00228
	(A2 * B1 * B2 * !C1 * !Y)	-0.00179	-0.00180	-0.00179
	(A2 * B1 * B2 * !C1 * !Y)	0.00227	0.00229	0.00228
	(A2 * B1 * !B2 * C1 * !Y)	-0.00179	-0.00180	-0.00179
	(A2 * B1 * !B2 * C1 * !Y)	0.00221	0.00223	0.00222
	(A2 * !B1 * C1 * !Y)	-0.00179	-0.00180	-0.00179
	(A2 * !B1 * C1 * !Y)	0.00221	0.00222	0.00222
	(!A2 * B1 * B2 * C1 * !Y)	-0.00168	-0.00172	-0.00174
	(!A2 * B1 * B2 * C1 * !Y)	0.00232	0.00233	0.00233
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00168	-0.00173	-0.00174
	(!A2 * B1 * B2 * !C1 * !Y)	0.00233	0.00233	0.00233
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00168	-0.00173	-0.00174
	(!A2 * B1 * !B2 * C1 * !Y)	0.00234	0.00235	0.00233
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00054	-0.00055	-0.00054
	(!A2 * B1 * !B2 * !C1 * Y)	0.00268	0.00273	0.00268
	(!A2 * !B1 * C1 * !Y)	-0.00168	-0.00172	-0.00172
	(!A2 * !B1 * C1 * !Y)	0.00234	0.00235	0.00233
	(!A2 * !B1 * !C1 * Y)	-0.00054	-0.00055	-0.00054
	(!A2 * !B1 * !C1 * Y)	0.00268	0.00273	0.00268

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	-0.00381	-0.00382	-0.00381
	(A2 * B1 * B2 * C1 * !Y)	0.00482	0.00485	0.00481
	(A2 * B1 * B2 * !C1 * !Y)	-0.00381	-0.00382	-0.00381
	(A2 * B1 * B2 * !C1 * !Y)	0.00482	0.00484	0.00481
	(A2 * B1 * !B2 * C1 * !Y)	-0.00382	-0.00383	-0.00381
	(A2 * B1 * !B2 * C1 * !Y)	0.00471	0.00472	0.00469
	(A2 * !B1 * C1 * !Y)	-0.00382	-0.00383	-0.00381
	(A2 * !B1 * C1 * !Y)	0.00471	0.00471	0.00469
	(!A2 * B1 * B2 * C1 * !Y)	-0.00356	-0.00372	-0.00369
	(!A2 * B1 * B2 * C1 * !Y)	0.00492	0.00498	0.00494
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00357	-0.00370	-0.00369
	(!A2 * B1 * B2 * !C1 * !Y)	0.00495	0.00496	0.00494
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00358	-0.00371	-0.00369
	(!A2 * B1 * !B2 * C1 * !Y)	0.00495	0.00498	0.00494
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00121	-0.00123	-0.00121
	(!A2 * B1 * !B2 * !C1 * Y)	0.00581	0.00593	0.00584
	(!A2 * !B1 * C1 * !Y)	-0.00357	-0.00370	-0.00369
	(!A2 * !B1 * C1 * !Y)	0.00495	0.00496	0.00494
	(!A2 * !B1 * !C1 * Y)	-0.00121	-0.00123	-0.00121
	(!A2 * !B1 * !C1 * Y)	0.00581	0.00593	0.00584

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	-0.00736	-0.00738	-0.00735
	(A2 * B1 * B2 * C1 * !Y)	0.00927	0.00932	0.00926
	(A2 * B1 * B2 * !C1 * !Y)	-0.00734	-0.00739	-0.00735
	(A2 * B1 * B2 * !C1 * !Y)	0.00921	0.00932	0.00924
	(A2 * B1 * !B2 * C1 * !Y)	-0.00736	-0.00738	-0.00734
	(A2 * B1 * !B2 * C1 * !Y)	0.00902	0.00909	0.00901
	(A2 * !B1 * C1 * !Y)	-0.00736	-0.00738	-0.00734
	(A2 * !B1 * C1 * !Y)	0.00902	0.00909	0.00901
	(!A2 * B1 * B2 * C1 * !Y)	-0.00683	-0.00717	-0.00715
	(!A2 * B1 * B2 * C1 * !Y)	0.00940	0.00953	0.00945
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00687	-0.00712	-0.00709
	(!A2 * B1 * B2 * !C1 * !Y)	0.00944	0.00947	0.00943
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00686	-0.00712	-0.00708
	(!A2 * B1 * !B2 * C1 * !Y)	0.00956	0.00960	0.00954
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00216	-0.00221	-0.00216
	(!A2 * B1 * !B2 * !C1 * Y)	0.01119	0.01142	0.01125
	(!A2 * !B1 * C1 * !Y)	-0.00684	-0.00714	-0.00709
	(!A2 * !B1 * C1 * !Y)	0.00952	0.00959	0.00954
	(!A2 * !B1 * !C1 * Y)	-0.00216	-0.00221	-0.00217
	(!A2 * !B1 * !C1 * Y)	0.01119	0.01142	0.01125

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)**	0.00191	0.00193	0.00191
	(A1 * B1 * B2 * C1 * !Y)	-0.00221	-0.00233	-0.00232
	(A1 * B1 * B2 * !C1 * !Y)	0.00193	0.00193	0.00191
	(A1 * B1 * B2 * !C1 * !Y)	-0.00219	-0.00233	-0.00232
	(A1 * B1 * !B2 * C1 * !Y)	0.00194	0.00193	0.00191
	(A1 * B1 * !B2 * C1 * !Y)	-0.00209	-0.00228	-0.00226
	(A1 * !B1 * C1 * !Y)	0.00194	0.00192	0.00191
	(A1 * !B1 * C1 * !Y)	-0.00209	-0.00228	-0.00226
	(!A1 * B1 * B2 * !Y)	0.00184	0.00184	0.00183
	(!A1 * B1 * B2 * !Y)	-0.00237	-0.00238	-0.00237
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00184	0.00184	0.00183
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00237	-0.00238	-0.00237
	(!A1 * B1 * !B2 * !C1 * Y)	0.00185	0.00185	0.00184
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00237	-0.00237	-0.00236
	(!A1 * !B1 * !C1 * Y)	0.00185	0.00185	0.00184
	(!A1 * !B1 * !C1 * Y)	-0.00237	-0.00237	-0.00236

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00364	0.00368	0.00364
	(A1 * B1 * B2 * C1 * !Y)	-0.00425	-0.00453	-0.00449
	(A1 * B1 * B2 * !C1 * !Y)	0.00370	0.00368	0.00364
	(A1 * B1 * B2 * !C1 * !Y)	-0.00417	-0.00452	-0.00449
	(A1 * B1 * !B2 * C1 * !Y)	0.00372	0.00368	0.00364
	(A1 * B1 * !B2 * C1 * !Y)	-0.00399	-0.00440	-0.00437
	(A1 * !B1 * C1 * !Y)	0.00372	0.00368	0.00364
	(A1 * !B1 * C1 * !Y)	-0.00399	-0.00440	-0.00437
	(!A1 * B1 * B2 * !Y)	0.00351	0.00354	0.00352
	(!A1 * B1 * B2 * !Y)	-0.00457	-0.00460	-0.00458
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00350	0.00355	0.00352
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00457	-0.00460	-0.00458
	(!A1 * B1 * !B2 * !C1 * Y)	0.00333	0.00338	0.00335
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00473	-0.00477	-0.00474
	(!A1 * !B1 * !C1 * Y)	0.00333	0.00338	0.00335
	(!A1 * !B1 * !C1 * Y)	-0.00473	-0.00477	-0.00474

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	0.00747	0.00753	0.00745
	(A1 * B1 * B2 * C1 * !Y)	-0.00889	-0.00932	-0.00930
	(A1 * B1 * B2 * !C1 * !Y)	0.00769	0.00755	0.00745
	(A1 * B1 * B2 * !C1 * !Y)	-0.00848	-0.00930	-0.00927
	(A1 * B1 * !B2 * C1 * !Y)	0.00765	0.00754	0.00744
	(A1 * B1 * !B2 * C1 * !Y)	-0.00824	-0.00905	-0.00904
	(A1 * !B1 * C1 * !Y)	0.00760	0.00754	0.00744
	(A1 * !B1 * C1 * !Y)	-0.00817	-0.00910	-0.00905
	(!A1 * B1 * B2 * !Y)	0.00722	0.00729	0.00725
	(!A1 * B1 * B2 * !Y)	-0.00945	-0.00949	-0.00947
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00722	0.00729	0.00724
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00955	-0.00961	-0.00957
	(!A1 * B1 * !B2 * !C1 * Y)	0.00675	0.00681	0.00678
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00999	-0.01003	-0.01001
	(!A1 * !B1 * !C1 * Y)	0.00675	0.00680	0.00678
	(!A1 * !B1 * !C1 * Y)	-0.00999	-0.01003	-0.01001

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

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

sky130_fd_sc_hs__a221oi_1	**(A1 * B1 * B2 * C1 * !Y)**	-0.00191	-0.00191	-0.00191
	(A1 * B1 * B2 * C1 * !Y)	0.00231	0.00233	0.00232
	(A1 * B1 * B2 * !C1 * !Y)	-0.00191	-0.00191	-0.00191
	(A1 * B1 * B2 * !C1 * !Y)	0.00231	0.00233	0.00232
	(A1 * B1 * !B2 * C1 * !Y)	-0.00191	-0.00192	-0.00191
	(A1 * B1 * !B2 * C1 * !Y)	0.00225	0.00228	0.00226
	(A1 * !B1 * C1 * !Y)	-0.00191	-0.00192	-0.00191
	(A1 * !B1 * C1 * !Y)	0.00225	0.00228	0.00226
	(!A1 * B1 * B2 * !Y)	-0.00181	-0.00184	-0.00183
	(!A1 * B1 * B2 * !Y)	0.00238	0.00239	0.00238
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00180	-0.00184	-0.00183
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00238	0.00239	0.00238
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00174	-0.00185	-0.00184
	(!A1 * B1 * !B2 * !C1 * Y)	0.00246	0.00240	0.00237
	(!A1 * !B1 * !C1 * Y)	-0.00174	-0.00185	-0.00184
	(!A1 * !B1 * !C1 * Y)	0.00246	0.00240	0.00237

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00362	-0.00365	-0.00363
	(A1 * B1 * B2 * C1 * !Y)	0.00446	0.00453	0.00449
	(A1 * B1 * B2 * !C1 * !Y)	-0.00361	-0.00364	-0.00363
	(A1 * B1 * B2 * !C1 * !Y)	0.00445	0.00452	0.00449
	(A1 * B1 * !B2 * C1 * !Y)	-0.00364	-0.00365	-0.00363
	(A1 * B1 * !B2 * C1 * !Y)	0.00437	0.00440	0.00437
	(A1 * !B1 * C1 * !Y)	-0.00363	-0.00365	-0.00363
	(A1 * !B1 * C1 * !Y)	0.00435	0.00440	0.00437
	(!A1 * B1 * B2 * !Y)	-0.00340	-0.00353	-0.00352
	(!A1 * B1 * B2 * !Y)	0.00457	0.00463	0.00459
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00340	-0.00353	-0.00352
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00457	0.00463	0.00460
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00312	-0.00338	-0.00335
	(!A1 * B1 * !B2 * !C1 * Y)	0.00488	0.00478	0.00475
	(!A1 * !B1 * !C1 * Y)	-0.00312	-0.00338	-0.00335
	(!A1 * !B1 * !C1 * Y)	0.00488	0.00478	0.00475

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	-0.00744	-0.00744	-0.00743
	(A1 * B1 * B2 * C1 * !Y)	0.00931	0.00932	0.00930
	(A1 * B1 * B2 * !C1 * !Y)	-0.00744	-0.00745	-0.00743
	(A1 * B1 * B2 * !C1 * !Y)	0.00927	0.00930	0.00927
	(A1 * B1 * !B2 * C1 * !Y)	-0.00743	-0.00743	-0.00742
	(A1 * B1 * !B2 * C1 * !Y)	0.00905	0.00905	0.00904
	(A1 * !B1 * C1 * !Y)	-0.00743	-0.00745	-0.00742
	(A1 * !B1 * C1 * !Y)	0.00906	0.00910	0.00905
	(!A1 * B1 * B2 * !Y)	-0.00695	-0.00721	-0.00724
	(!A1 * B1 * B2 * !Y)	0.00945	0.00955	0.00949
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00694	-0.00719	-0.00723
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00957	0.00965	0.00960
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00625	-0.00679	-0.00678
	(!A1 * B1 * !B2 * !C1 * Y)	0.01033	0.01011	0.01004
	(!A1 * !B1 * !C1 * Y)	-0.00625	-0.00679	-0.00678
	(!A1 * !B1 * !C1 * Y)	0.01033	0.01011	0.01004

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)**	0.00197	0.00195	0.00188
	(A1 * A2 * B2 * C1 * !Y)	-0.00167	-0.00169	-0.00167
	(A1 * A2 * B2 * !C1 * !Y)	0.00185	0.00187	0.00184
	(A1 * A2 * B2 * !C1 * !Y)	-0.00123	-0.00124	-0.00123
	(A1 * A2 * !B2 * C1 * !Y)	0.00179	0.00181	0.00178
	(A1 * A2 * !B2 * C1 * !Y)	-0.00155	-0.00155	-0.00155
	(A1 * A2 * !B2 * !C1 * !Y)	0.00178	0.00182	0.00178
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00122	-0.00123	-0.00123
	(A1 * !A2 * B2 * C1 * !Y)	0.00218	0.00187	0.00184
	(A1 * !A2 * B2 * C1 * !Y)	-0.00193	-0.00231	-0.00230
	(A1 * !A2 * !B2 * C1 * !Y)	0.00177	0.00179	0.00178
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00234	-0.00234	-0.00234
	(A1 * !A2 * !B2 * !C1 * Y)	0.00056	0.00056	0.00055
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00271	-0.00272	-0.00274
	(!A1 * B2 * C1 * !Y)	0.00217	0.00187	0.00184
	(!A1 * B2 * C1 * !Y)	-0.00195	-0.00231	-0.00231
	(!A1 * !B2 * C1 * !Y)	0.00175	0.00177	0.00175
	(!A1 * !B2 * C1 * !Y)	-0.00234	-0.00234	-0.00234
	(!A1 * !B2 * !C1 * Y)	0.00056	0.00056	0.00055
	(!A1 * !B2 * !C1 * Y)	-0.00271	-0.00272	-0.00274

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	0.00404	0.00410	0.00385
	(A1 * A2 * B2 * C1 * !Y)	-0.00336	-0.00335	-0.00334
	(A1 * A2 * B2 * !C1 * !Y)	0.00373	0.00378	0.00373
	(A1 * A2 * B2 * !C1 * !Y)	-0.00253	-0.00257	-0.00256
	(A1 * A2 * !B2 * C1 * !Y)	0.00372	0.00375	0.00365
	(A1 * A2 * !B2 * C1 * !Y)	-0.00311	-0.00312	-0.00312
	(A1 * A2 * !B2 * !C1 * !Y)	0.00360	0.00362	0.00358
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00255	-0.00256	-0.00255
	(A1 * !A2 * B2 * C1 * !Y)	0.00452	0.00376	0.00372
	(A1 * !A2 * B2 * C1 * !Y)	-0.00386	-0.00476	-0.00477
	(A1 * !A2 * !B2 * C1 * !Y)	0.00355	0.00359	0.00356
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00484	-0.00487	-0.00485
	(A1 * !A2 * !B2 * !C1 * Y)	0.00116	0.00116	0.00111
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00565	-0.00568	-0.00573
	(!A1 * B2 * C1 * !Y)	0.00451	0.00373	0.00372
	(!A1 * B2 * C1 * !Y)	-0.00387	-0.00475	-0.00477
	(!A1 * !B2 * C1 * !Y)	0.00355	0.00359	0.00356
	(!A1 * !B2 * C1 * !Y)	-0.00483	-0.00487	-0.00485
	(!A1 * !B2 * !C1 * Y)	0.00116	0.00116	0.00111
	(!A1 * !B2 * !C1 * Y)	-0.00565	-0.00568	-0.00573

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	0.00815	0.00804	0.00758
	(A1 * A2 * B2 * C1 * !Y)	-0.00640	-0.00642	-0.00637
	(A1 * A2 * B2 * !C1 * !Y)	0.00742	0.00751	0.00737
	(A1 * A2 * B2 * !C1 * !Y)	-0.00476	-0.00483	-0.00483
	(A1 * A2 * !B2 * C1 * !Y)	0.00726	0.00731	0.00715
	(A1 * A2 * !B2 * C1 * !Y)	-0.00591	-0.00601	-0.00596
	(A1 * A2 * !B2 * !C1 * !Y)	0.00712	0.00717	0.00707
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00477	-0.00481	-0.00482
	(A1 * !A2 * B2 * C1 * !Y)	0.00907	0.00742	0.00732
	(A1 * !A2 * B2 * C1 * !Y)	-0.00723	-0.00916	-0.00917
	(A1 * !A2 * !B2 * C1 * !Y)	0.00695	0.00700	0.00700
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00938	-0.00944	-0.00943
	(A1 * !A2 * !B2 * !C1 * Y)	0.00230	0.00230	0.00220
	(A1 * !A2 * !B2 * !C1 * Y)	-0.01091	-0.01096	-0.01109
	(!A1 * B2 * C1 * !Y)	0.00902	0.00734	0.00732
	(!A1 * B2 * C1 * !Y)	-0.00728	-0.00912	-0.00917
	(!A1 * !B2 * C1 * !Y)	0.00703	0.00707	0.00703
	(!A1 * !B2 * C1 * !Y)	-0.00943	-0.00947	-0.00943
	(!A1 * !B2 * !C1 * Y)	0.00232	0.00231	0.00221
	(!A1 * !B2 * !C1 * Y)	-0.01093	-0.01096	-0.01109

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)**	-0.00185	-0.00186	-0.00185
	(A1 * A2 * B2 * C1 * !Y)	0.00167	0.00169	0.00167
	(A1 * A2 * B2 * !C1 * !Y)	-0.00176	-0.00178	-0.00178
	(A1 * A2 * B2 * !C1 * !Y)	0.00130	0.00131	0.00130
	(A1 * A2 * !B2 * C1 * !Y)	-0.00173	-0.00177	-0.00178
	(A1 * A2 * !B2 * C1 * !Y)	0.00155	0.00155	0.00155
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00172	-0.00177	-0.00178
	(A1 * A2 * !B2 * !C1 * !Y)	0.00123	0.00123	0.00123
	(A1 * !A2 * B2 * C1 * !Y)	-0.00183	-0.00184	-0.00183
	(A1 * !A2 * B2 * C1 * !Y)	0.00229	0.00231	0.00230
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00172	-0.00176	-0.00178
	(A1 * !A2 * !B2 * C1 * !Y)	0.00235	0.00234	0.00235
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00053	-0.00055	-0.00053
	(A1 * !A2 * !B2 * !C1 * Y)	0.00274	0.00278	0.00275
	(!A1 * B2 * C1 * !Y)	-0.00183	-0.00184	-0.00183
	(!A1 * B2 * C1 * !Y)	0.00229	0.00231	0.00231
	(!A1 * !B2 * C1 * !Y)	-0.00172	-0.00176	-0.00175
	(!A1 * !B2 * C1 * !Y)	0.00235	0.00234	0.00235
	(!A1 * !B2 * !C1 * Y)	-0.00053	-0.00055	-0.00053
	(!A1 * !B2 * !C1 * Y)	0.00274	0.00278	0.00275

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	-0.00375	-0.00375	-0.00374
	(A1 * A2 * B2 * C1 * !Y)	0.00336	0.00335	0.00334
	(A1 * A2 * B2 * !C1 * !Y)	-0.00362	-0.00365	-0.00362
	(A1 * A2 * B2 * !C1 * !Y)	0.00264	0.00267	0.00267
	(A1 * A2 * !B2 * C1 * !Y)	-0.00349	-0.00361	-0.00363
	(A1 * A2 * !B2 * C1 * !Y)	0.00311	0.00312	0.00312
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00347	-0.00362	-0.00358
	(A1 * A2 * !B2 * !C1 * !Y)	0.00256	0.00256	0.00256
	(A1 * !A2 * B2 * C1 * !Y)	-0.00371	-0.00372	-0.00369
	(A1 * !A2 * B2 * C1 * !Y)	0.00476	0.00480	0.00477
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00347	-0.00359	-0.00356
	(A1 * !A2 * !B2 * C1 * !Y)	0.00487	0.00487	0.00486
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00108	-0.00109	-0.00109
	(A1 * !A2 * !B2 * !C1 * Y)	0.00571	0.00572	0.00573
	(!A1 * B2 * C1 * !Y)	-0.00370	-0.00373	-0.00369
	(!A1 * B2 * C1 * !Y)	0.00474	0.00480	0.00477
	(!A1 * !B2 * C1 * !Y)	-0.00344	-0.00359	-0.00356
	(!A1 * !B2 * C1 * !Y)	0.00483	0.00488	0.00486
	(!A1 * !B2 * !C1 * Y)	-0.00108	-0.00109	-0.00109
	(!A1 * !B2 * !C1 * Y)	0.00571	0.00572	0.00573

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	-0.00737	-0.00738	-0.00735
	(A1 * A2 * B2 * C1 * !Y)	0.00640	0.00642	0.00637
	(A1 * A2 * B2 * !C1 * !Y)	-0.00721	-0.00726	-0.00718
	(A1 * A2 * B2 * !C1 * !Y)	0.00506	0.00512	0.00503
	(A1 * A2 * !B2 * C1 * !Y)	-0.00678	-0.00715	-0.00714
	(A1 * A2 * !B2 * C1 * !Y)	0.00591	0.00601	0.00596
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00679	-0.00708	-0.00707
	(A1 * A2 * !B2 * !C1 * !Y)	0.00483	0.00485	0.00483
	(A1 * !A2 * B2 * C1 * !Y)	-0.00730	-0.00730	-0.00726
	(A1 * !A2 * B2 * C1 * !Y)	0.00915	0.00916	0.00917
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00678	-0.00700	-0.00700
	(A1 * !A2 * !B2 * C1 * !Y)	0.00947	0.00949	0.00946
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00214	-0.00214	-0.00214
	(A1 * !A2 * !B2 * !C1 * Y)	0.01106	0.01108	0.01110
	(!A1 * B2 * C1 * !Y)	-0.00728	-0.00731	-0.00726
	(!A1 * B2 * C1 * !Y)	0.00912	0.00918	0.00917
	(!A1 * !B2 * C1 * !Y)	-0.00675	-0.00705	-0.00703
	(!A1 * !B2 * C1 * !Y)	0.00943	0.00949	0.00946
	(!A1 * !B2 * !C1 * Y)	-0.00215	-0.00215	-0.00215
	(!A1 * !B2 * !C1 * Y)	0.01106	0.01108	0.01110

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)**	0.00206	0.00202	0.00194
	(A1 * A2 * B1 * C1 * !Y)	-0.00173	-0.00174	-0.00172
	(A1 * A2 * B1 * !C1 * !Y)	0.00192	0.00193	0.00190
	(A1 * A2 * B1 * !C1 * !Y)	-0.00129	-0.00129	-0.00129
	(A1 * A2 * !B1 * C1 * !Y)	0.00186	0.00188	0.00185
	(A1 * A2 * !B1 * C1 * !Y)	-0.00160	-0.00161	-0.00160
	(A1 * A2 * !B1 * !C1 * !Y)	0.00183	0.00185	0.00183
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00127	-0.00129	-0.00128
	(A1 * !A2 * B1 * C1 * !Y)	0.00225	0.00192	0.00190
	(A1 * !A2 * B1 * C1 * !Y)	-0.00195	-0.00238	-0.00237
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00180	0.00182	0.00181
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00241	-0.00241	-0.00241
	(A1 * !A2 * !B1 * !C1 * Y)	0.00168	0.00170	0.00169
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00253	-0.00255	-0.00254
	(!A1 * B1 * C1 * !Y)	0.00225	0.00192	0.00190
	(!A1 * B1 * C1 * !Y)	-0.00195	-0.00237	-0.00237
	(!A1 * !B1 * !C1 * Y)	0.00170	0.00172	0.00170
	(!A1 * !B1 * !C1 * Y)	-0.00254	-0.00255	-0.00254

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00387	0.00394	0.00372
	(A1 * A2 * B1 * C1 * !Y)	-0.00316	-0.00317	-0.00315
	(A1 * A2 * B1 * !C1 * !Y)	0.00362	0.00367	0.00363
	(A1 * A2 * B1 * !C1 * !Y)	-0.00233	-0.00236	-0.00235
	(A1 * A2 * !B1 * C1 * !Y)	0.00355	0.00360	0.00353
	(A1 * A2 * !B1 * C1 * !Y)	-0.00293	-0.00296	-0.00294
	(A1 * A2 * !B1 * !C1 * !Y)	0.00348	0.00352	0.00348
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00234	-0.00235	-0.00234
	(A1 * !A2 * B1 * C1 * !Y)	0.00431	0.00365	0.00362
	(A1 * !A2 * B1 * C1 * !Y)	-0.00368	-0.00447	-0.00448
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00345	0.00350	0.00347
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00454	-0.00458	-0.00455
	(A1 * !A2 * !B1 * !C1 * Y)	0.00333	0.00338	0.00335
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00466	-0.00470	-0.00467
	(!A1 * B1 * C1 * !Y)	0.00431	0.00365	0.00361
	(!A1 * B1 * C1 * !Y)	-0.00368	-0.00447	-0.00448
	(!A1 * !B1 * !C1 * Y)	0.00333	0.00338	0.00335
	(!A1 * !B1 * !C1 * Y)	-0.00466	-0.00469	-0.00467

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.00822	0.00806	0.00759
	(A1 * A2 * B1 * C1 * !Y)	-0.00640	-0.00641	-0.00637
	(A1 * A2 * B1 * !C1 * !Y)	0.00744	0.00752	0.00738
	(A1 * A2 * B1 * !C1 * !Y)	-0.00478	-0.00484	-0.00484
	(A1 * A2 * !B1 * C1 * !Y)	0.00725	0.00731	0.00715
	(A1 * A2 * !B1 * C1 * !Y)	-0.00595	-0.00596	-0.00596
	(A1 * A2 * !B1 * !C1 * !Y)	0.00712	0.00720	0.00707
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00477	-0.00483	-0.00483
	(A1 * !A2 * B1 * C1 * !Y)	0.00916	0.00747	0.00734
	(A1 * !A2 * B1 * C1 * !Y)	-0.00725	-0.00914	-0.00916
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00702	0.00709	0.00702
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00942	-0.00943	-0.00943
	(A1 * !A2 * !B1 * !C1 * Y)	0.00702	0.00711	0.00707
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00938	-0.00945	-0.00942
	(!A1 * B1 * C1 * !Y)	0.00913	0.00745	0.00734
	(!A1 * B1 * C1 * !Y)	-0.00728	-0.00914	-0.00917
	(!A1 * !B1 * !C1 * Y)	0.00702	0.00709	0.00707
	(!A1 * !B1 * !C1 * Y)	-0.00938	-0.00944	-0.00942

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)**	-0.00191	-0.00192	-0.00191
	(A1 * A2 * B1 * C1 * !Y)	0.00173	0.00174	0.00172
	(A1 * A2 * B1 * !C1 * !Y)	-0.00184	-0.00185	-0.00185
	(A1 * A2 * B1 * !C1 * !Y)	0.00135	0.00136	0.00135
	(A1 * A2 * !B1 * C1 * !Y)	-0.00179	-0.00183	-0.00185
	(A1 * A2 * !B1 * C1 * !Y)	0.00160	0.00161	0.00160
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00178	-0.00183	-0.00183
	(A1 * A2 * !B1 * !C1 * !Y)	0.00128	0.00129	0.00128
	(A1 * !A2 * B1 * C1 * !Y)	-0.00189	-0.00189	-0.00189
	(A1 * !A2 * B1 * C1 * !Y)	0.00237	0.00238	0.00237
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00177	-0.00181	-0.00181
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00241	0.00241	0.00242
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00157	-0.00170	-0.00169
	(A1 * !A2 * !B1 * !C1 * Y)	0.00263	0.00258	0.00255
	(!A1 * B1 * C1 * !Y)	-0.00189	-0.00189	-0.00189
	(!A1 * B1 * C1 * !Y)	0.00237	0.00237	0.00237
	(!A1 * !B1 * !C1 * Y)	-0.00157	-0.00170	-0.00170
	(!A1 * !B1 * !C1 * Y)	0.00263	0.00258	0.00255

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00364	-0.00365	-0.00364
	(A1 * A2 * B1 * C1 * !Y)	0.00316	0.00317	0.00315
	(A1 * A2 * B1 * !C1 * !Y)	-0.00349	-0.00352	-0.00351
	(A1 * A2 * B1 * !C1 * !Y)	0.00244	0.00247	0.00246
	(A1 * A2 * !B1 * C1 * !Y)	-0.00339	-0.00351	-0.00353
	(A1 * A2 * !B1 * C1 * !Y)	0.00293	0.00296	0.00294
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00337	-0.00351	-0.00348
	(A1 * A2 * !B1 * !C1 * !Y)	0.00234	0.00237	0.00234
	(A1 * !A2 * B1 * C1 * !Y)	-0.00361	-0.00361	-0.00360
	(A1 * !A2 * B1 * C1 * !Y)	0.00447	0.00448	0.00448
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00336	-0.00349	-0.00347
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00455	0.00460	0.00457
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00310	-0.00337	-0.00335
	(A1 * !A2 * !B1 * !C1 * Y)	0.00485	0.00472	0.00468
	(!A1 * B1 * C1 * !Y)	-0.00361	-0.00360	-0.00360
	(!A1 * B1 * C1 * !Y)	0.00447	0.00447	0.00448
	(!A1 * !B1 * !C1 * Y)	-0.00310	-0.00337	-0.00335
	(!A1 * !B1 * !C1 * Y)	0.00485	0.00472	0.00468

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00738	-0.00739	-0.00737
	(A1 * A2 * B1 * C1 * !Y)	0.00640	0.00641	0.00637
	(A1 * A2 * B1 * !C1 * !Y)	-0.00722	-0.00726	-0.00719
	(A1 * A2 * B1 * !C1 * !Y)	0.00507	0.00512	0.00504
	(A1 * A2 * !B1 * C1 * !Y)	-0.00683	-0.00707	-0.00713
	(A1 * A2 * !B1 * C1 * !Y)	0.00595	0.00596	0.00596
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00682	-0.00706	-0.00707
	(A1 * A2 * !B1 * !C1 * !Y)	0.00483	0.00485	0.00484
	(A1 * !A2 * B1 * C1 * !Y)	-0.00729	-0.00733	-0.00728
	(A1 * !A2 * B1 * C1 * !Y)	0.00910	0.00919	0.00916
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00679	-0.00704	-0.00702
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00942	0.00943	0.00945
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00647	-0.00704	-0.00707
	(A1 * !A2 * !B1 * !C1 * Y)	0.00982	0.00952	0.00945
	(!A1 * B1 * C1 * !Y)	-0.00729	-0.00733	-0.00728
	(!A1 * B1 * C1 * !Y)	0.00911	0.00919	0.00917
	(!A1 * !B1 * !C1 * Y)	-0.00647	-0.00704	-0.00707
	(!A1 * !B1 * !C1 * Y)	0.00982	0.00952	0.00945

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)	0.00220	0.00222	0.00220
	(A1 * B1 * B2 * !Y)	-0.00117	-0.00118	-0.00117
	(A1 * A2 * B1 * !B2 * !Y)	0.00220	0.00222	0.00220
	(A1 * A2 * B1 * !B2 * !Y)	-0.00118	-0.00118	-0.00117
	(A1 * A2 * !B1 * !Y)	0.00220	0.00222	0.00220
	(A1 * A2 * !B1 * !Y)	-0.00118	-0.00118	-0.00117
	(!A1 * B1 * B2 * !Y)	0.00220	0.00222	0.00220
	(!A1 * B1 * B2 * !Y)	-0.00119	-0.00119	-0.00117
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	0.00413	0.00416	0.00412
	(A1 * B1 * B2 * !Y)	-0.00216	-0.00216	-0.00214
	(A1 * A2 * B1 * !B2 * !Y)	0.00410	0.00416	0.00412
	(A1 * A2 * B1 * !B2 * !Y)	-0.00213	-0.00216	-0.00214
	(A1 * A2 * !B1 * !Y)	0.00410	0.00416	0.00412
	(A1 * A2 * !B1 * !Y)	-0.00213	-0.00216	-0.00214
	(!A1 * B1 * B2 * !Y)	0.00409	0.00416	0.00412
	(!A1 * B1 * B2 * !Y)	-0.00213	-0.00217	-0.00215
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	0.00812	0.00822	0.00815
	(A1 * B1 * B2 * !Y)	-0.00429	-0.00434	-0.00430
	(A1 * A2 * B1 * !B2 * !Y)	0.00813	0.00829	0.00815
	(A1 * A2 * B1 * !B2 * !Y)	-0.00429	-0.00437	-0.00429
	(A1 * A2 * !B1 * !Y)	0.00813	0.00829	0.00815
	(A1 * A2 * !B1 * !Y)	-0.00429	-0.00437	-0.00429
	(!A1 * B1 * B2 * !Y)	0.00813	0.00830	0.00815
	(!A1 * B1 * B2 * !Y)	-0.00431	-0.00439	-0.00431

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)	-0.00206	-0.00208	-0.00218
	(A1 * B1 * B2 * !Y)	0.00128	0.00129	0.00120
	(A1 * A2 * B1 * !B2 * !Y)	-0.00187	-0.00189	-0.00214
	(A1 * A2 * B1 * !B2 * !Y)	0.00140	0.00141	0.00122
	(A1 * A2 * !B1 * !Y)	-0.00187	-0.00189	-0.00214
	(A1 * A2 * !B1 * !Y)	0.00140	0.00141	0.00122
	(!A1 * B1 * B2 * !Y)	-0.00206	-0.00208	-0.00218
	(!A1 * B1 * B2 * !Y)	0.00129	0.00130	0.00120
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	-0.00386	-0.00390	-0.00409
	(A1 * B1 * B2 * !Y)	0.00235	0.00237	0.00219
	(A1 * A2 * B1 * !B2 * !Y)	-0.00354	-0.00359	-0.00402
	(A1 * A2 * B1 * !B2 * !Y)	0.00253	0.00255	0.00222
	(A1 * A2 * !B1 * !Y)	-0.00354	-0.00359	-0.00402
	(A1 * A2 * !B1 * !Y)	0.00254	0.00255	0.00222
	(!A1 * B1 * B2 * !Y)	-0.00386	-0.00390	-0.00409
	(!A1 * B1 * B2 * !Y)	0.00237	0.00238	0.00220
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	-0.00770	-0.00775	-0.00810
	(A1 * B1 * B2 * !Y)	0.00465	0.00465	0.00438
	(A1 * A2 * B1 * !B2 * !Y)	-0.00705	-0.00711	-0.00796
	(A1 * A2 * B1 * !B2 * !Y)	0.00510	0.00511	0.00450
	(A1 * A2 * !B1 * !Y)	-0.00706	-0.00712	-0.00796
	(A1 * A2 * !B1 * !Y)	0.00510	0.00510	0.00449
	(!A1 * B1 * B2 * !Y)	-0.00769	-0.00775	-0.00810
	(!A1 * B1 * B2 * !Y)	0.00467	0.00467	0.00440

SKY130_FD_SC_HS__A221Ox

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00264	0.00274	0.00262	0.00262	0.00259	1.29965
sky130_fd_sc_hs__a221o_2	0.00276	0.00283	0.00283	0.00285	0.00275	2.41292
sky130_fd_sc_hs__a221o_4	0.00488	0.00488	0.00503	0.00514	0.00498	3.70402

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a221o_1	0.00000	0.14862	0.26734
sky130_fd_sc_hs__a221o_2	0.00000	0.18124	0.27582
sky130_fd_sc_hs__a221o_4	0.00000	0.36644	0.55163

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)	0.07692	0.55772	5.97819
	A2->X (RR)	0.08059	0.54846	5.87149
	B1->X (RR)	0.07392	0.53814	5.78562
	B2->X (RR)	0.07755	0.53221	5.73900
	C1->X (RR)	0.05609	0.49477	5.62479
sky130_fd_sc_hs__a221o_2	A1->X (RR)	0.07948	0.48370	5.84131
	A2->X (RR)	0.08333	0.47146	5.73807
	B1->X (RR)	0.07704	0.46801	5.66996
	B2->X (RR)	0.08050	0.45799	5.61776
	C1->X (RR)	0.05753	0.42360	5.50366
sky130_fd_sc_hs__a221o_4	A1->X (RR)	0.09743	0.46500	5.76444
	A2->X (RR)	0.10232	0.43272	5.51987
	B1->X (RR)	0.08553	0.41831	5.45366
	B2->X (RR)	0.09165	0.39917	5.33145
	C1->X (RR)	0.05456	0.34520	5.14976

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221o_1	A1->X (FF)	0.20763	0.61594	4.99627
	A2->X (FF)	0.22562	0.64147	5.06017
	B1->X (FF)	0.18994	0.62700	5.23779
	B2->X (FF)	0.20426	0.65516	5.30641
	C1->X (FF)	0.15962	0.63757	5.34619
sky130_fd_sc_hs__a221o_2	A1->X (FF)	0.25972	0.66255	5.13753
	A2->X (FF)	0.27874	0.69097	5.21856
	B1->X (FF)	0.24926	0.68577	5.44180
	B2->X (FF)	0.25883	0.71038	5.51004
	C1->X (FF)	0.21477	0.69537	5.53800
sky130_fd_sc_hs__a221o_4	A1->X (FF)	0.26907	0.60719	4.47609
	A2->X (FF)	0.29310	0.64656	4.63683
	B1->X (FF)	0.25272	0.63402	4.84743
	B2->X (FF)	0.27283	0.66908	4.94707
	C1->X (FF)	0.21589	0.64736	4.96882

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221o_1	A1	0.01712	0.01811	0.06005
	A1	0.00807	0.00906	0.05158
	A2	0.01840	0.01890	0.05016
	A2	0.00809	0.00860	0.03993
	B1	0.01251	0.01405	0.05175
	B1	0.00578	0.00732	0.04513
	B2	0.01370	0.01484	0.04891
	B2	0.00587	0.00758	0.04125
	C1	0.00951	0.01211	0.06435
	C1	0.00382	0.00645	0.05893
sky130_fd_sc_hs__a221o_2	A1	0.02083	0.02162	0.06178
	A1	0.01131	0.01214	0.05246
	A2	0.02225	0.02260	0.05291
	A2	0.01132	0.01171	0.04239
	B1	0.01639	0.01805	0.05506
	B1	0.00900	0.01067	0.04809
	B2	0.01772	0.01904	0.05293
	B2	0.00916	0.01048	0.04497
	C1	0.01312	0.01569	0.06709
	C1	0.00701	0.00968	0.06168

sky130_fd_sc_hs__a221o_4	**A1**	0.04151	0.04364	0.12148
	A1	0.02407	0.02624	0.10487
	A2	0.04384	0.04503	0.10654
	A2	0.02413	0.02545	0.08804
	B1	0.03171	0.03458	0.10260
	B1	0.01882	0.02175	0.09091
	B2	0.03440	0.03674	0.09979
	B2	0.01894	0.02137	0.08519
	C1	0.02393	0.02939	0.12379
	C1	0.01364	0.01915	0.11352

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221o_1	**A1**	0.00500	0.00512	0.04196
	A1	0.01419	0.01430	0.05029
	A2	0.00528	0.00505	0.03907
	A2	0.01567	0.01544	0.04941
	B1	0.00499	0.00571	0.04499
	B1	0.01176	0.01247	0.05066
	B2	0.00541	0.00610	0.04350
	B2	0.01322	0.01390	0.05034
	C1	0.00445	0.00756	0.06295
	C1	0.01012	0.01319	0.06780

sky130_fd_sc_hs__a221o_2	**A1**	0.01006	0.00916	0.04334
	A1	0.01973	0.01882	0.05212
	A2	0.01057	0.00924	0.04359
	A2	0.02156	0.02022	0.05297
	B1	0.01008	0.00959	0.04684
	B1	0.01752	0.01703	0.05383
	B2	0.01059	0.01016	0.04785
	B2	0.01912	0.01870	0.05465
	C1	0.00916	0.01153	0.06794
	C1	0.01525	0.01757	0.07082
sky130_fd_sc_hs__a221o_4	**A1**	0.01863	0.01640	0.08428
	A1	0.03633	0.03409	0.10027
	A2	0.02046	0.01746	0.08347
	A2	0.04029	0.03728	0.10321
	B1	0.01885	0.01719	0.08484
	B1	0.03179	0.03011	0.09761
	B2	0.02007	0.01841	0.08736
	B2	0.04153	0.03736	0.09537
	C1	0.01714	0.02143	0.11702
	C1	0.02744	0.03146	0.12701

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)**	0.00163	0.00164	0.00162
	(A2 * B1 * B2 * C1 * X)	-0.00206	-0.00216	-0.00215
	(A2 * B1 * B2 * !C1 * X)	0.00167	0.00164	0.00163
	(A2 * B1 * B2 * !C1 * X)	-0.00201	-0.00216	-0.00215
	(A2 * B1 * !B2 * C1 * X)	0.00167	0.00164	0.00163
	(A2 * B1 * !B2 * C1 * X)	-0.00191	-0.00211	-0.00210
	(A2 * !B1 * C1 * X)	0.00167	0.00164	0.00163
	(A2 * !B1 * C1 * X)	-0.00191	-0.00209	-0.00210
	(!A2 * B1 * B2 * C1 * X)	0.00157	0.00158	0.00157
	(!A2 * B1 * B2 * C1 * X)	-0.00219	-0.00221	-0.00220
	(!A2 * B1 * B2 * !C1 * X)	0.00156	0.00157	0.00157
	(!A2 * B1 * B2 * !C1 * X)	-0.00219	-0.00220	-0.00220
	(!A2 * B1 * !B2 * C1 * X)	0.00155	0.00157	0.00156
	(!A2 * B1 * !B2 * C1 * X)	-0.00219	-0.00221	-0.00220
	(!A2 * B1 * !B2 * !C1 * !X)	0.00052	0.00052	0.00050
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00253	-0.00253	-0.00256
	(!A2 * !B1 * C1 * X)	0.00155	0.00157	0.00156
	(!A2 * !B1 * C1 * X)	-0.00219	-0.00220	-0.00220
	(!A2 * !B1 * !C1 * !X)	0.00052	0.00052	0.00050
	(!A2 * !B1 * !C1 * !X)	-0.00253	-0.00253	-0.00256

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	0.00186	0.00186	0.00185
	(A2 * B1 * B2 * C1 * X)	-0.00204	-0.00215	-0.00213
	(A2 * B1 * B2 * !C1 * X)	0.00190	0.00186	0.00185
	(A2 * B1 * B2 * !C1 * X)	-0.00199	-0.00214	-0.00213
	(A2 * B1 * !B2 * C1 * X)	0.00190	0.00186	0.00185
	(A2 * B1 * !B2 * C1 * X)	-0.00189	-0.00208	-0.00208
	(A2 * !B1 * C1 * X)	0.00190	0.00186	0.00185
	(A2 * !B1 * C1 * X)	-0.00189	-0.00208	-0.00208
	(!A2 * B1 * B2 * C1 * X)	0.00178	0.00179	0.00179
	(!A2 * B1 * B2 * C1 * X)	-0.00218	-0.00219	-0.00218
	(!A2 * B1 * B2 * !C1 * X)	0.00176	0.00177	0.00177
	(!A2 * B1 * B2 * !C1 * X)	-0.00217	-0.00219	-0.00218
	(!A2 * B1 * !B2 * C1 * X)	0.00177	0.00179	0.00178
	(!A2 * B1 * !B2 * C1 * X)	-0.00218	-0.00219	-0.00218
	(!A2 * B1 * !B2 * !C1 * !X)	0.00057	0.00057	0.00056
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00255	-0.00255	-0.00258
	(!A2 * !B1 * C1 * X)	0.00178	0.00179	0.00178
	(!A2 * !B1 * C1 * X)	-0.00218	-0.00219	-0.00218
	(!A2 * !B1 * !C1 * !X)	0.00057	0.00057	0.00056
	(!A2 * !B1 * !C1 * !X)	-0.00255	-0.00255	-0.00258

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	0.00366	0.00366	0.00362
	(A2 * B1 * B2 * C1 * X)	-0.00400	-0.00421	-0.00417
	(A2 * B1 * B2 * !C1 * X)	0.00367	0.00366	0.00362
	(A2 * B1 * B2 * !C1 * X)	-0.00396	-0.00421	-0.00418
	(A2 * B1 * !B2 * C1 * X)	0.00370	0.00366	0.00362
	(A2 * B1 * !B2 * C1 * X)	-0.00382	-0.00414	-0.00410
	(A2 * !B1 * C1 * X)	0.00370	0.00366	0.00362
	(A2 * !B1 * C1 * X)	-0.00382	-0.00414	-0.00410
	(!A2 * B1 * B2 * C1 * X)	0.00347	0.00347	0.00347
	(!A2 * B1 * B2 * C1 * X)	-0.00428	-0.00429	-0.00428
	(!A2 * B1 * B2 * !C1 * X)	0.00348	0.00349	0.00348
	(!A2 * B1 * B2 * !C1 * X)	-0.00428	-0.00429	-0.00428
	(!A2 * B1 * !B2 * C1 * X)	0.00347	0.00349	0.00347
	(!A2 * B1 * !B2 * C1 * X)	-0.00427	-0.00430	-0.00427
	(!A2 * B1 * !B2 * !C1 * !X)	0.00162	0.00162	0.00156
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00473	-0.00475	-0.00482
	(!A2 * !B1 * C1 * X)	0.00347	0.00348	0.00347
	(!A2 * !B1 * C1 * X)	-0.00427	-0.00429	-0.00427
	(!A2 * !B1 * !C1 * !X)	0.00162	0.00161	0.00156
	(!A2 * !B1 * !C1 * !X)	-0.00473	-0.00475	-0.00482

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)**	-0.00162	-0.00163	-0.00162
	(A2 * B1 * B2 * C1 * X)	0.00214	0.00216	0.00215
	(A2 * B1 * B2 * !C1 * X)	-0.00162	-0.00162	-0.00162
	(A2 * B1 * B2 * !C1 * X)	0.00214	0.00216	0.00215
	(A2 * B1 * !B2 * C1 * X)	-0.00162	-0.00162	-0.00162
	(A2 * B1 * !B2 * C1 * X)	0.00209	0.00211	0.00210
	(A2 * !B1 * C1 * X)	-0.00162	-0.00162	-0.00162
	(A2 * !B1 * C1 * X)	0.00209	0.00209	0.00210
	(!A2 * B1 * B2 * C1 * X)	-0.00152	-0.00157	-0.00157
	(!A2 * B1 * B2 * C1 * X)	0.00219	0.00223	0.00221
	(!A2 * B1 * B2 * !C1 * X)	-0.00153	-0.00156	-0.00157
	(!A2 * B1 * B2 * !C1 * X)	0.00221	0.00220	0.00221
	(!A2 * B1 * !B2 * C1 * X)	-0.00153	-0.00157	-0.00156
	(!A2 * B1 * !B2 * C1 * X)	0.00221	0.00224	0.00221
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00049	-0.00050	-0.00049
	(!A2 * B1 * !B2 * !C1 * !X)	0.00256	0.00259	0.00257
	(!A2 * !B1 * C1 * X)	-0.00153	-0.00157	-0.00156
	(!A2 * !B1 * C1 * X)	0.00221	0.00224	0.00221
	(!A2 * !B1 * !C1 * !X)	-0.00049	-0.00050	-0.00049
	(!A2 * !B1 * !C1 * !X)	0.00256	0.00259	0.00257

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	-0.00184	-0.00185	-0.00184
	(A2 * B1 * B2 * C1 * X)	0.00212	0.00215	0.00213
	(A2 * B1 * B2 * !C1 * X)	-0.00184	-0.00185	-0.00184
	(A2 * B1 * B2 * !C1 * X)	0.00212	0.00214	0.00213
	(A2 * B1 * !B2 * C1 * X)	-0.00184	-0.00184	-0.00184
	(A2 * B1 * !B2 * C1 * X)	0.00207	0.00208	0.00208
	(A2 * !B1 * C1 * X)	-0.00184	-0.00184	-0.00184
	(A2 * !B1 * C1 * X)	0.00207	0.00208	0.00208
	(!A2 * B1 * B2 * C1 * X)	-0.00173	-0.00177	-0.00179
	(!A2 * B1 * B2 * C1 * X)	0.00219	0.00220	0.00219
	(!A2 * B1 * B2 * !C1 * X)	-0.00173	-0.00177	-0.00177
	(!A2 * B1 * B2 * !C1 * X)	0.00220	0.00219	0.00219
	(!A2 * B1 * !B2 * C1 * X)	-0.00173	-0.00178	-0.00178
	(!A2 * B1 * !B2 * C1 * X)	0.00220	0.00221	0.00219
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00054	-0.00055	-0.00054
	(!A2 * B1 * !B2 * !C1 * !X)	0.00259	0.00261	0.00259
	(!A2 * !B1 * C1 * X)	-0.00173	-0.00177	-0.00178
	(!A2 * !B1 * C1 * X)	0.00220	0.00220	0.00219
	(!A2 * !B1 * !C1 * !X)	-0.00054	-0.00055	-0.00054
	(!A2 * !B1 * !C1 * !X)	0.00259	0.00261	0.00259

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	-0.00362	-0.00364	-0.00362
	(A2 * B1 * B2 * C1 * X)	0.00415	0.00421	0.00417
	(A2 * B1 * B2 * !C1 * X)	-0.00361	-0.00364	-0.00362
	(A2 * B1 * B2 * !C1 * X)	0.00415	0.00421	0.00418
	(A2 * B1 * !B2 * C1 * X)	-0.00360	-0.00363	-0.00360
	(A2 * B1 * !B2 * C1 * X)	0.00408	0.00414	0.00410
	(A2 * !B1 * C1 * X)	-0.00360	-0.00362	-0.00360
	(A2 * !B1 * C1 * X)	0.00408	0.00414	0.00410
	(!A2 * B1 * B2 * C1 * X)	-0.00334	-0.00347	-0.00347
	(!A2 * B1 * B2 * C1 * X)	0.00428	0.00430	0.00429
	(!A2 * B1 * B2 * !C1 * X)	-0.00334	-0.00348	-0.00348
	(!A2 * B1 * B2 * !C1 * X)	0.00428	0.00433	0.00429
	(!A2 * B1 * !B2 * C1 * X)	-0.00334	-0.00349	-0.00347
	(!A2 * B1 * !B2 * C1 * X)	0.00429	0.00431	0.00429
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00153	-0.00154	-0.00153
	(!A2 * B1 * !B2 * !C1 * !X)	0.00482	0.00486	0.00484
	(!A2 * !B1 * C1 * X)	-0.00334	-0.00348	-0.00347
	(!A2 * !B1 * C1 * X)	0.00429	0.00431	0.00429
	(!A2 * !B1 * !C1 * !X)	-0.00153	-0.00154	-0.00153
	(!A2 * !B1 * !C1 * !X)	0.00482	0.00486	0.00484

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)**	0.00189	0.00189	0.00188
	(A1 * B1 * B2 * C1 * X)	-0.00200	-0.00209	-0.00208
	(A1 * B1 * B2 * !C1 * X)	0.00191	0.00189	0.00188
	(A1 * B1 * B2 * !C1 * X)	-0.00194	-0.00209	-0.00209
	(A1 * B1 * !B2 * C1 * X)	0.00192	0.00189	0.00188
	(A1 * B1 * !B2 * C1 * X)	-0.00186	-0.00205	-0.00204
	(A1 * !B1 * C1 * X)	0.00192	0.00189	0.00188
	(A1 * !B1 * C1 * X)	-0.00186	-0.00205	-0.00204
	(!A1 * B1 * B2 * X)	0.00180	0.00182	0.00181
	(!A1 * B1 * B2 * X)	-0.00213	-0.00214	-0.00213
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00181	0.00182	0.00181
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00213	-0.00213	-0.00213
	(!A1 * B1 * !B2 * !C1 * !X)	0.00154	0.00155	0.00154
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00240	-0.00241	-0.00240
	(!A1 * !B1 * !C1 * !X)	0.00154	0.00155	0.00154
	(!A1 * !B1 * !C1 * !X)	-0.00240	-0.00241	-0.00240

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	0.00206	0.00207	0.00206
	(A1 * B1 * B2 * C1 * X)	-0.00197	-0.00208	-0.00207
	(A1 * B1 * B2 * !C1 * X)	0.00209	0.00208	0.00206
	(A1 * B1 * B2 * !C1 * X)	-0.00193	-0.00208	-0.00207
	(A1 * B1 * !B2 * C1 * X)	0.00210	0.00207	0.00206
	(A1 * B1 * !B2 * C1 * X)	-0.00185	-0.00203	-0.00202
	(A1 * !B1 * C1 * X)	0.00210	0.00207	0.00206
	(A1 * !B1 * C1 * X)	-0.00185	-0.00203	-0.00202
	(!A1 * B1 * B2 * X)	0.00199	0.00200	0.00199
	(!A1 * B1 * B2 * X)	-0.00211	-0.00212	-0.00211
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00199	0.00201	0.00199
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00211	-0.00212	-0.00211
	(!A1 * B1 * !B2 * !C1 * !X)	0.00172	0.00173	0.00173
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00237	-0.00238	-0.00238
	(!A1 * !B1 * !C1 * !X)	0.00172	0.00173	0.00173
	(!A1 * !B1 * !C1 * !X)	-0.00237	-0.00238	-0.00238

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	0.00362	0.00361	0.00357
	(A1 * B1 * B2 * C1 * X)	-0.00396	-0.00418	-0.00415
	(A1 * B1 * B2 * !C1 * X)	0.00363	0.00362	0.00358
	(A1 * B1 * B2 * !C1 * X)	-0.00392	-0.00418	-0.00415
	(A1 * B1 * !B2 * C1 * X)	0.00366	0.00362	0.00357
	(A1 * B1 * !B2 * C1 * X)	-0.00378	-0.00411	-0.00407
	(A1 * !B1 * C1 * X)	0.00366	0.00362	0.00357
	(A1 * !B1 * C1 * X)	-0.00378	-0.00411	-0.00407
	(!A1 * B1 * B2 * X)	0.00343	0.00344	0.00343
	(!A1 * B1 * B2 * X)	-0.00425	-0.00426	-0.00425
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00343	0.00344	0.00343
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00424	-0.00425	-0.00425
	(!A1 * B1 * !B2 * !C1 * !X)	0.00336	0.00340	0.00336
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00433	-0.00436	-0.00433
	(!A1 * !B1 * !C1 * !X)	0.00336	0.00340	0.00336
	(!A1 * !B1 * !C1 * !X)	-0.00433	-0.00436	-0.00433

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

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

sky130_fd_sc_hs__a221o_1	**(A1 * B1 * B2 * C1 * X)**	-0.00187	-0.00188	-0.00187
	(A1 * B1 * B2 * C1 * X)	0.00208	0.00209	0.00208
	(A1 * B1 * B2 * !C1 * X)	-0.00187	-0.00188	-0.00187
	(A1 * B1 * B2 * !C1 * X)	0.00208	0.00209	0.00209
	(A1 * B1 * !B2 * C1 * X)	-0.00187	-0.00188	-0.00187
	(A1 * B1 * !B2 * C1 * X)	0.00203	0.00205	0.00204
	(A1 * !B1 * C1 * X)	-0.00187	-0.00188	-0.00187
	(A1 * !B1 * C1 * X)	0.00203	0.00205	0.00204
	(!A1 * B1 * B2 * X)	-0.00179	-0.00182	-0.00181
	(!A1 * B1 * B2 * X)	0.00214	0.00215	0.00214
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00178	-0.00182	-0.00181
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00215	0.00215	0.00214
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00145	-0.00155	-0.00154
	(!A1 * B1 * !B2 * !C1 * !X)	0.00250	0.00243	0.00241
	(!A1 * !B1 * !C1 * !X)	-0.00145	-0.00155	-0.00154
	(!A1 * !B1 * !C1 * !X)	0.00250	0.00245	0.00241

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00205	-0.00206	-0.00205
	(A1 * B1 * B2 * C1 * X)	0.00206	0.00208	0.00207
	(A1 * B1 * B2 * !C1 * X)	-0.00205	-0.00206	-0.00205
	(A1 * B1 * B2 * !C1 * X)	0.00206	0.00208	0.00207
	(A1 * B1 * !B2 * C1 * X)	-0.00205	-0.00206	-0.00205
	(A1 * B1 * !B2 * C1 * X)	0.00201	0.00204	0.00202
	(A1 * !B1 * C1 * X)	-0.00205	-0.00206	-0.00205
	(A1 * !B1 * C1 * X)	0.00201	0.00204	0.00202
	(!A1 * B1 * B2 * X)	-0.00194	-0.00199	-0.00199
	(!A1 * B1 * B2 * X)	0.00211	0.00213	0.00212
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00193	-0.00200	-0.00199
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00211	0.00214	0.00212
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00160	-0.00172	-0.00173
	(!A1 * B1 * !B2 * !C1 * !X)	0.00247	0.00241	0.00239
	(!A1 * !B1 * !C1 * !X)	-0.00160	-0.00172	-0.00173
	(!A1 * !B1 * !C1 * !X)	0.00247	0.00241	0.00239

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	-0.00357	-0.00359	-0.00357
	(A1 * B1 * B2 * C1 * X)	0.00412	0.00418	0.00415
	(A1 * B1 * B2 * !C1 * X)	-0.00357	-0.00359	-0.00357
	(A1 * B1 * B2 * !C1 * X)	0.00412	0.00418	0.00415
	(A1 * B1 * !B2 * C1 * X)	-0.00355	-0.00358	-0.00356
	(A1 * B1 * !B2 * C1 * X)	0.00405	0.00411	0.00407
	(A1 * !B1 * C1 * X)	-0.00355	-0.00358	-0.00356
	(A1 * !B1 * C1 * X)	0.00405	0.00411	0.00407
	(!A1 * B1 * B2 * X)	-0.00332	-0.00344	-0.00343
	(!A1 * B1 * B2 * X)	0.00425	0.00427	0.00426
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00332	-0.00344	-0.00343
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00426	0.00427	0.00426
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00314	-0.00338	-0.00336
	(!A1 * B1 * !B2 * !C1 * !X)	0.00447	0.00437	0.00435
	(!A1 * !B1 * !C1 * !X)	-0.00314	-0.00338	-0.00336
	(!A1 * !B1 * !C1 * !X)	0.00447	0.00437	0.00435

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)**	0.00179	0.00180	0.00171
	(A1 * A2 * B2 * C1 * X)	-0.00153	-0.00155	-0.00153
	(A1 * A2 * B2 * !C1 * X)	0.00165	0.00166	0.00164
	(A1 * A2 * B2 * !C1 * X)	-0.00117	-0.00118	-0.00118
	(A1 * A2 * !B2 * C1 * X)	0.00164	0.00167	0.00161
	(A1 * A2 * !B2 * C1 * X)	-0.00142	-0.00143	-0.00143
	(A1 * A2 * !B2 * !C1 * X)	0.00159	0.00159	0.00159
	(A1 * A2 * !B2 * !C1 * X)	-0.00116	-0.00116	-0.00117
	(A1 * !A2 * B2 * C1 * X)	0.00202	0.00166	0.00163
	(A1 * !A2 * B2 * C1 * X)	-0.00174	-0.00216	-0.00215
	(A1 * !A2 * !B2 * C1 * X)	0.00156	0.00158	0.00156
	(A1 * !A2 * !B2 * C1 * X)	-0.00217	-0.00219	-0.00218
	(A1 * !A2 * !B2 * !C1 * !X)	0.00049	0.00049	0.00048
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00255	-0.00255	-0.00257
	(!A1 * B2 * C1 * X)	0.00202	0.00166	0.00163
	(!A1 * B2 * C1 * X)	-0.00174	-0.00216	-0.00215
	(!A1 * !B2 * C1 * X)	0.00155	0.00157	0.00156
	(!A1 * !B2 * C1 * X)	-0.00217	-0.00218	-0.00218
	(!A1 * !B2 * !C1 * !X)	0.00049	0.00049	0.00048
	(!A1 * !B2 * !C1 * !X)	-0.00255	-0.00255	-0.00257

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	0.00214	0.00214	0.00204
	(A1 * A2 * B2 * C1 * X)	-0.00156	-0.00155	-0.00156
	(A1 * A2 * B2 * !C1 * X)	0.00198	0.00200	0.00197
	(A1 * A2 * B2 * !C1 * X)	-0.00120	-0.00120	-0.00120
	(A1 * A2 * !B2 * C1 * X)	0.00195	0.00197	0.00192
	(A1 * A2 * !B2 * C1 * X)	-0.00144	-0.00145	-0.00145
	(A1 * A2 * !B2 * !C1 * X)	0.00192	0.00192	0.00191
	(A1 * A2 * !B2 * !C1 * X)	-0.00118	-0.00119	-0.00119
	(A1 * !A2 * B2 * C1 * X)	0.00235	0.00199	0.00196
	(A1 * !A2 * B2 * C1 * X)	-0.00177	-0.00218	-0.00218
	(A1 * !A2 * !B2 * C1 * X)	0.00189	0.00191	0.00190
	(A1 * !A2 * !B2 * C1 * X)	-0.00220	-0.00220	-0.00220
	(A1 * !A2 * !B2 * !C1 * !X)	0.00059	0.00059	0.00057
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00267	-0.00268	-0.00270
	(!A1 * B2 * C1 * X)	0.00235	0.00199	0.00196
	(!A1 * B2 * C1 * X)	-0.00177	-0.00218	-0.00218
	(!A1 * !B2 * C1 * X)	0.00189	0.00190	0.00190
	(!A1 * !B2 * C1 * X)	-0.00220	-0.00220	-0.00220
	(!A1 * !B2 * !C1 * !X)	0.00059	0.00059	0.00057
	(!A1 * !B2 * !C1 * !X)	-0.00267	-0.00268	-0.00270

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	0.00381	0.00382	0.00362
	(A1 * A2 * B2 * C1 * X)	-0.00320	-0.00321	-0.00319
	(A1 * A2 * B2 * !C1 * X)	0.00352	0.00356	0.00351
	(A1 * A2 * B2 * !C1 * X)	-0.00238	-0.00242	-0.00241
	(A1 * A2 * !B2 * C1 * X)	0.00350	0.00352	0.00345
	(A1 * A2 * !B2 * C1 * X)	-0.00295	-0.00299	-0.00296
	(A1 * A2 * !B2 * !C1 * X)	0.00339	0.00340	0.00338
	(A1 * A2 * !B2 * !C1 * X)	-0.00238	-0.00240	-0.00240
	(A1 * !A2 * B2 * C1 * X)	0.00431	0.00352	0.00348
	(A1 * !A2 * B2 * C1 * X)	-0.00345	-0.00429	-0.00433
	(A1 * !A2 * !B2 * C1 * X)	0.00336	0.00337	0.00337
	(A1 * !A2 * !B2 * C1 * X)	-0.00437	-0.00437	-0.00437
	(A1 * !A2 * !B2 * !C1 * !X)	0.00126	0.00128	0.00122
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00508	-0.00512	-0.00518
	(!A1 * B2 * C1 * X)	0.00432	0.00353	0.00348
	(!A1 * B2 * C1 * X)	-0.00345	-0.00429	-0.00433
	(!A1 * !B2 * C1 * X)	0.00336	0.00337	0.00336
	(!A1 * !B2 * C1 * X)	-0.00436	-0.00438	-0.00437
	(!A1 * !B2 * !C1 * !X)	0.00126	0.00128	0.00122
	(!A1 * !B2 * !C1 * !X)	-0.00508	-0.00512	-0.00518

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)**	-0.00164	-0.00166	-0.00165
	(A1 * A2 * B2 * C1 * X)	0.00153	0.00155	0.00153
	(A1 * A2 * B2 * !C1 * X)	-0.00158	-0.00159	-0.00158
	(A1 * A2 * B2 * !C1 * X)	0.00122	0.00123	0.00123
	(A1 * A2 * !B2 * C1 * X)	-0.00154	-0.00158	-0.00160
	(A1 * A2 * !B2 * C1 * X)	0.00142	0.00143	0.00143
	(A1 * A2 * !B2 * !C1 * X)	-0.00154	-0.00158	-0.00159
	(A1 * A2 * !B2 * !C1 * X)	0.00118	0.00117	0.00118
	(A1 * !A2 * B2 * C1 * X)	-0.00162	-0.00163	-0.00162
	(A1 * !A2 * B2 * C1 * X)	0.00213	0.00216	0.00215
	(A1 * !A2 * !B2 * C1 * X)	-0.00153	-0.00158	-0.00156
	(A1 * !A2 * !B2 * C1 * X)	0.00219	0.00221	0.00219
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00047	-0.00048	-0.00047
	(A1 * !A2 * !B2 * !C1 * !X)	0.00257	0.00261	0.00257
	(!A1 * B2 * C1 * X)	-0.00162	-0.00163	-0.00162
	(!A1 * B2 * C1 * X)	0.00213	0.00216	0.00215
	(!A1 * !B2 * C1 * X)	-0.00153	-0.00156	-0.00156
	(!A1 * !B2 * C1 * X)	0.00219	0.00218	0.00219
	(!A1 * !B2 * !C1 * !X)	-0.00047	-0.00048	-0.00047
	(!A1 * !B2 * !C1 * !X)	0.00257	0.00261	0.00257

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	-0.00199	-0.00198	-0.00198
	(A1 * A2 * B2 * C1 * X)	0.00156	0.00155	0.00156
	(A1 * A2 * B2 * !C1 * X)	-0.00192	-0.00193	-0.00192
	(A1 * A2 * B2 * !C1 * X)	0.00125	0.00125	0.00125
	(A1 * A2 * !B2 * C1 * X)	-0.00186	-0.00190	-0.00192
	(A1 * A2 * !B2 * C1 * X)	0.00144	0.00145	0.00145
	(A1 * A2 * !B2 * !C1 * X)	-0.00185	-0.00190	-0.00191
	(A1 * A2 * !B2 * !C1 * X)	0.00120	0.00120	0.00120
	(A1 * !A2 * B2 * C1 * X)	-0.00196	-0.00196	-0.00195
	(A1 * !A2 * B2 * C1 * X)	0.00217	0.00218	0.00218
	(A1 * !A2 * !B2 * C1 * X)	-0.00184	-0.00188	-0.00190
	(A1 * !A2 * !B2 * C1 * X)	0.00221	0.00220	0.00221
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00055	-0.00057	-0.00056
	(A1 * !A2 * !B2 * !C1 * !X)	0.00270	0.00274	0.00271
	(!A1 * B2 * C1 * X)	-0.00196	-0.00196	-0.00195
	(!A1 * B2 * C1 * X)	0.00217	0.00218	0.00218
	(!A1 * !B2 * C1 * X)	-0.00184	-0.00189	-0.00190
	(!A1 * !B2 * C1 * X)	0.00221	0.00223	0.00221
	(!A1 * !B2 * !C1 * !X)	-0.00055	-0.00057	-0.00056
	(!A1 * !B2 * !C1 * !X)	0.00270	0.00274	0.00271

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	-0.00353	-0.00354	-0.00353
	(A1 * A2 * B2 * C1 * X)	0.00320	0.00321	0.00319
	(A1 * A2 * B2 * !C1 * X)	-0.00341	-0.00344	-0.00340
	(A1 * A2 * B2 * !C1 * X)	0.00248	0.00251	0.00252
	(A1 * A2 * !B2 * C1 * X)	-0.00328	-0.00344	-0.00344
	(A1 * A2 * !B2 * C1 * X)	0.00295	0.00299	0.00296
	(A1 * A2 * !B2 * !C1 * X)	-0.00326	-0.00340	-0.00338
	(A1 * A2 * !B2 * !C1 * X)	0.00243	0.00243	0.00242
	(A1 * !A2 * B2 * C1 * X)	-0.00345	-0.00347	-0.00344
	(A1 * !A2 * B2 * C1 * X)	0.00430	0.00435	0.00433
	(A1 * !A2 * !B2 * C1 * X)	-0.00322	-0.00336	-0.00337
	(A1 * !A2 * !B2 * C1 * X)	0.00437	0.00437	0.00439
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00118	-0.00120	-0.00118
	(A1 * !A2 * !B2 * !C1 * !X)	0.00518	0.00523	0.00520
	(!A1 * B2 * C1 * X)	-0.00344	-0.00347	-0.00344
	(!A1 * B2 * C1 * X)	0.00430	0.00435	0.00433
	(!A1 * !B2 * C1 * X)	-0.00322	-0.00336	-0.00336
	(!A1 * !B2 * C1 * X)	0.00436	0.00438	0.00439
	(!A1 * !B2 * !C1 * !X)	-0.00118	-0.00120	-0.00118
	(!A1 * !B2 * !C1 * !X)	0.00518	0.00523	0.00520

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)**	0.00187	0.00185	0.00176
	(A1 * A2 * B1 * C1 * X)	-0.00151	-0.00152	-0.00151
	(A1 * A2 * B1 * !C1 * X)	0.00172	0.00173	0.00170
	(A1 * A2 * B1 * !C1 * X)	-0.00114	-0.00114	-0.00114
	(A1 * A2 * !B1 * C1 * X)	0.00167	0.00169	0.00164
	(A1 * A2 * !B1 * C1 * X)	-0.00141	-0.00140	-0.00140
	(A1 * A2 * !B1 * !C1 * X)	0.00163	0.00166	0.00163
	(A1 * A2 * !B1 * !C1 * X)	-0.00112	-0.00114	-0.00114
	(A1 * !A2 * B1 * C1 * X)	0.00211	0.00172	0.00169
	(A1 * !A2 * B1 * C1 * X)	-0.00168	-0.00211	-0.00211
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00162	0.00164	0.00162
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00213	-0.00215	-0.00214
	(A1 * !A2 * !B1 * !C1 * !X)	0.00146	0.00149	0.00147
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00228	-0.00231	-0.00229
	(!A1 * B1 * C1 * X)	0.00211	0.00172	0.00169
	(!A1 * B1 * C1 * X)	-0.00168	-0.00211	-0.00211
	(!A1 * !B1 * !C1 * !X)	0.00147	0.00149	0.00147
	(!A1 * !B1 * !C1 * !X)	-0.00230	-0.00231	-0.00229

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	0.00218	0.00218	0.00209
	(A1 * A2 * B1 * C1 * X)	-0.00145	-0.00147	-0.00145
	(A1 * A2 * B1 * !C1 * X)	0.00204	0.00205	0.00202
	(A1 * A2 * B1 * !C1 * X)	-0.00109	-0.00109	-0.00109
	(A1 * A2 * !B1 * C1 * X)	0.00201	0.00202	0.00198
	(A1 * A2 * !B1 * C1 * X)	-0.00134	-0.00136	-0.00135
	(A1 * A2 * !B1 * !C1 * X)	0.00195	0.00197	0.00194
	(A1 * A2 * !B1 * !C1 * X)	-0.00107	-0.00109	-0.00108
	(A1 * !A2 * B1 * C1 * X)	0.00240	0.00205	0.00202
	(A1 * !A2 * B1 * C1 * X)	-0.00162	-0.00204	-0.00204
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00194	0.00197	0.00195
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00206	-0.00208	-0.00206
	(A1 * !A2 * !B1 * !C1 * !X)	0.00171	0.00171	0.00171
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00231	-0.00231	-0.00231
	(!A1 * B1 * C1 * X)	0.00240	0.00205	0.00202
	(!A1 * B1 * C1 * X)	-0.00162	-0.00204	-0.00204
	(!A1 * !B1 * !C1 * !X)	0.00171	0.00171	0.00171
	(!A1 * !B1 * !C1 * !X)	-0.00231	-0.00231	-0.00231

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	0.00416	0.00415	0.00398
	(A1 * A2 * B1 * C1 * X)	-0.00305	-0.00309	-0.00306
	(A1 * A2 * B1 * !C1 * X)	0.00388	0.00391	0.00388
	(A1 * A2 * B1 * !C1 * X)	-0.00226	-0.00228	-0.00228
	(A1 * A2 * !B1 * C1 * X)	0.00384	0.00386	0.00379
	(A1 * A2 * !B1 * C1 * X)	-0.00283	-0.00285	-0.00284
	(A1 * A2 * !B1 * !C1 * X)	0.00376	0.00379	0.00375
	(A1 * A2 * !B1 * !C1 * X)	-0.00225	-0.00227	-0.00228
	(A1 * !A2 * B1 * C1 * X)	0.00463	0.00391	0.00385
	(A1 * !A2 * B1 * C1 * X)	-0.00334	-0.00420	-0.00420
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00373	0.00376	0.00373
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00423	-0.00426	-0.00424
	(A1 * !A2 * !B1 * !C1 * !X)	0.00367	0.00371	0.00367
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00433	-0.00436	-0.00433
	(!A1 * B1 * C1 * X)	0.00463	0.00391	0.00385
	(!A1 * B1 * C1 * X)	-0.00334	-0.00420	-0.00420
	(!A1 * !B1 * !C1 * !X)	0.00367	0.00371	0.00367
	(!A1 * !B1 * !C1 * !X)	-0.00433	-0.00436	-0.00433

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)**	-0.00170	-0.00171	-0.00170
	(A1 * A2 * B1 * C1 * X)	0.00151	0.00152	0.00151
	(A1 * A2 * B1 * !C1 * X)	-0.00165	-0.00166	-0.00164
	(A1 * A2 * B1 * !C1 * X)	0.00118	0.00119	0.00120
	(A1 * A2 * !B1 * C1 * X)	-0.00161	-0.00163	-0.00164
	(A1 * A2 * !B1 * C1 * X)	0.00141	0.00140	0.00140
	(A1 * A2 * !B1 * !C1 * X)	-0.00159	-0.00163	-0.00163
	(A1 * A2 * !B1 * !C1 * X)	0.00114	0.00115	0.00115
	(A1 * !A2 * B1 * C1 * X)	-0.00168	-0.00169	-0.00167
	(A1 * !A2 * B1 * C1 * X)	0.00211	0.00212	0.00211
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00159	-0.00162	-0.00162
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00215	0.00215	0.00215
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00136	-0.00147	-0.00147
	(A1 * !A2 * !B1 * !C1 * !X)	0.00238	0.00232	0.00230
	(!A1 * B1 * C1 * X)	-0.00168	-0.00169	-0.00167
	(!A1 * B1 * C1 * X)	0.00211	0.00212	0.00211
	(!A1 * !B1 * !C1 * !X)	-0.00136	-0.00147	-0.00147
	(!A1 * !B1 * !C1 * !X)	0.00237	0.00232	0.00230

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00203	-0.00205	-0.00203
	(A1 * A2 * B1 * C1 * X)	0.00145	0.00147	0.00145
	(A1 * A2 * B1 * !C1 * X)	-0.00197	-0.00198	-0.00197
	(A1 * A2 * B1 * !C1 * X)	0.00113	0.00114	0.00114
	(A1 * A2 * !B1 * C1 * X)	-0.00191	-0.00197	-0.00197
	(A1 * A2 * !B1 * C1 * X)	0.00134	0.00136	0.00135
	(A1 * A2 * !B1 * !C1 * X)	-0.00190	-0.00196	-0.00194
	(A1 * A2 * !B1 * !C1 * X)	0.00108	0.00109	0.00109
	(A1 * !A2 * B1 * C1 * X)	-0.00200	-0.00201	-0.00200
	(A1 * !A2 * B1 * C1 * X)	0.00202	0.00205	0.00204
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00189	-0.00195	-0.00195
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00206	0.00210	0.00207
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00157	-0.00170	-0.00170
	(A1 * !A2 * !B1 * !C1 * !X)	0.00240	0.00233	0.00232
	(!A1 * B1 * C1 * X)	-0.00200	-0.00201	-0.00200
	(!A1 * B1 * C1 * X)	0.00202	0.00205	0.00204
	(!A1 * !B1 * !C1 * !X)	-0.00157	-0.00170	-0.00170
	(!A1 * !B1 * !C1 * !X)	0.00240	0.00233	0.00232

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00390	-0.00392	-0.00390
	(A1 * A2 * B1 * C1 * X)	0.00305	0.00309	0.00306
	(A1 * A2 * B1 * !C1 * X)	-0.00376	-0.00379	-0.00376
	(A1 * A2 * B1 * !C1 * X)	0.00237	0.00239	0.00240
	(A1 * A2 * !B1 * C1 * X)	-0.00369	-0.00379	-0.00379
	(A1 * A2 * !B1 * C1 * X)	0.00283	0.00285	0.00284
	(A1 * A2 * !B1 * !C1 * X)	-0.00365	-0.00376	-0.00375
	(A1 * A2 * !B1 * !C1 * X)	0.00228	0.00229	0.00229
	(A1 * !A2 * B1 * C1 * X)	-0.00381	-0.00383	-0.00381
	(A1 * !A2 * B1 * C1 * X)	0.00417	0.00420	0.00420
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00363	-0.00373	-0.00373
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00424	0.00427	0.00426
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00344	-0.00367	-0.00365
	(A1 * !A2 * !B1 * !C1 * !X)	0.00445	0.00437	0.00435
	(!A1 * B1 * C1 * X)	-0.00381	-0.00383	-0.00381
	(!A1 * B1 * C1 * X)	0.00417	0.00420	0.00420
	(!A1 * !B1 * !C1 * !X)	-0.00344	-0.00367	-0.00365
	(!A1 * !B1 * !C1 * !X)	0.00445	0.00437	0.00435

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)	0.00206	0.00208	0.00205
	(A1 * B1 * B2 * X)	-0.00101	-0.00102	-0.00101
	(A1 * A2 * B1 * !B2 * X)	0.00204	0.00208	0.00205
	(A1 * A2 * B1 * !B2 * X)	-0.00100	-0.00102	-0.00100
	(A1 * A2 * !B1 * X)	0.00204	0.00208	0.00205
	(A1 * A2 * !B1 * X)	-0.00100	-0.00102	-0.00100
	(!A1 * B1 * B2 * X)	0.00204	0.00208	0.00205
	(!A1 * B1 * B2 * X)	-0.00100	-0.00103	-0.00101
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	0.00214	0.00217	0.00215
	(A1 * B1 * B2 * X)	-0.00100	-0.00101	-0.00100
	(A1 * A2 * B1 * !B2 * X)	0.00215	0.00217	0.00215
	(A1 * A2 * B1 * !B2 * X)	-0.00100	-0.00101	-0.00100
	(A1 * A2 * !B1 * X)	0.00215	0.00217	0.00215
	(A1 * A2 * !B1 * X)	-0.00100	-0.00101	-0.00100
	(!A1 * B1 * B2 * X)	0.00215	0.00217	0.00215
	(!A1 * B1 * B2 * X)	-0.00101	-0.00102	-0.00101
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	0.00365	0.00366	0.00363
	(A1 * B1 * B2 * X)	-0.00216	-0.00216	-0.00214
	(A1 * A2 * B1 * !B2 * X)	0.00362	0.00367	0.00363
	(A1 * A2 * B1 * !B2 * X)	-0.00212	-0.00215	-0.00213
	(A1 * A2 * !B1 * X)	0.00362	0.00367	0.00363
	(A1 * A2 * !B1 * X)	-0.00212	-0.00215	-0.00213
	(!A1 * B1 * B2 * X)	0.00361	0.00366	0.00363
	(!A1 * B1 * B2 * X)	-0.00216	-0.00219	-0.00217

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)	-0.00192	-0.00194	-0.00203
	(A1 * B1 * B2 * X)	0.00111	0.00112	0.00103
	(A1 * A2 * B1 * !B2 * X)	-0.00178	-0.00180	-0.00200
	(A1 * A2 * B1 * !B2 * X)	0.00119	0.00120	0.00104
	(A1 * A2 * !B1 * X)	-0.00178	-0.00180	-0.00200
	(A1 * A2 * !B1 * X)	0.00119	0.00120	0.00105
	(!A1 * B1 * B2 * X)	-0.00192	-0.00194	-0.00203
	(!A1 * B1 * B2 * X)	0.00111	0.00112	0.00103
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	-0.00203	-0.00205	-0.00214
	(A1 * B1 * B2 * X)	0.00111	0.00111	0.00103
	(A1 * A2 * B1 * !B2 * X)	-0.00189	-0.00190	-0.00210
	(A1 * A2 * B1 * !B2 * X)	0.00119	0.00120	0.00104
	(A1 * A2 * !B1 * X)	-0.00189	-0.00190	-0.00210
	(A1 * A2 * !B1 * X)	0.00120	0.00120	0.00104
	(!A1 * B1 * B2 * X)	-0.00203	-0.00204	-0.00213
	(!A1 * B1 * B2 * X)	0.00112	0.00112	0.00103
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	-0.00337	-0.00340	-0.00360
	(A1 * B1 * B2 * X)	0.00237	0.00238	0.00219
	(A1 * A2 * B1 * !B2 * X)	-0.00306	-0.00309	-0.00353
	(A1 * A2 * B1 * !B2 * X)	0.00257	0.00258	0.00222
	(A1 * A2 * !B1 * X)	-0.00304	-0.00309	-0.00353
	(A1 * A2 * !B1 * X)	0.00256	0.00258	0.00222
	(!A1 * B1 * B2 * X)	-0.00334	-0.00339	-0.00359
	(!A1 * B1 * B2 * X)	0.00239	0.00242	0.00222

SKY130_FD_SC_HS__A222OIx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00267	0.00252	0.00261	0.00264	0.00264	0.00273	0.35416
sky130_fd_sc_hs__a222oi_2	0.00537	0.00476	0.00530	0.00488	0.00482	0.00545	0.61364

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222oi_1	0.00000	0.13361	0.51770
sky130_fd_sc_hs__a222oi_2	0.00000	0.26722	1.03538

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)	0.21590	1.08659	9.36485
	A2->Y (FR)	0.23620	1.11313	9.42278
	B1->Y (FR)	0.18989	1.08773	9.98674
	B2->Y (FR)	0.21360	1.12034	10.09140
	C1->Y (FR)	0.14317	1.06463	10.22130
	C2->Y (FR)	0.16486	1.08758	10.24900
sky130_fd_sc_hs__a222oi_2	A1->Y (FR)	0.21089	0.92275	9.02524
	A2->Y (FR)	0.24027	0.96597	9.20173
	B1->Y (FR)	0.18171	0.91397	9.55152
	B2->Y (FR)	0.21774	0.98891	10.03290
	C1->Y (FR)	0.13223	0.92322	10.16370
	C2->Y (FR)	0.16244	0.95156	10.18560

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222oi_1	A1->Y (RF)	0.04374	0.35954	3.02465
	A2->Y (RF)	0.04703	0.33030	2.71196
	B1->Y (RF)	0.03882	0.33592	2.95275
	B2->Y (RF)	0.04247	0.30890	2.63972
	C1->Y (RF)	0.02747	0.31401	2.92052
	C2->Y (RF)	0.03076	0.28841	2.61008
sky130_fd_sc_hs__a222oi_2	A1->Y (RF)	0.04195	0.30863	2.87673
	A2->Y (RF)	0.04566	0.28630	2.60265
	B1->Y (RF)	0.03795	0.28754	2.84597
	B2->Y (RF)	0.04230	0.26871	2.58364
	C1->Y (RF)	0.02295	0.24425	2.63346
	C2->Y (RF)	0.02732	0.22723	2.36377

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.00105	0.00084	0.01394
	A1	0.01142	0.01122	0.02443
	A2	0.00139	0.00129	0.01463
	A2	0.01284	0.01273	0.02623
	B1	0.00108	0.00107	0.01510
	B1	0.00893	0.00892	0.02302
	B2	0.00146	0.00149	0.01560
	B2	0.01048	0.01041	0.02439
	C1	0.00092	0.00221	0.02413
	C1	0.00663	0.00794	0.02991
	C2	0.00136	0.00269	0.02510
	C2	0.00819	0.00954	0.03198
sky130_fd_sc_hs__a222oi_2	A1	0.00085	0.00050	0.02735
	A1	0.02158	0.02106	0.04806
	A2	0.00209	0.00180	0.02910
	A2	0.02438	0.02411	0.05149
	B1	0.00090	0.00103	0.02933
	B1	0.01679	0.01682	0.04549
	B2	0.00198	0.00206	0.02901
	B2	0.01957	0.01967	0.04658
	C1	0.00069	0.00325	0.04625
	C1	0.01158	0.01413	0.05737
	C2	0.00169	0.00457	0.04801
	C2	0.01532	0.01802	0.06186

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.01654	0.01680	0.02979
	A1	0.00638	0.00658	0.01964
	A2	0.01762	0.01771	0.02927
	A2	0.00634	0.00643	0.01801
	B1	0.01130	0.01175	0.02462
	B1	0.00350	0.00396	0.01680
	B2	0.01252	0.01280	0.02413
	B2	0.00353	0.00376	0.01512
	C1	0.00654	0.00721	0.01956
	C1	0.00083	0.00147	0.01380
	C2	0.00770	0.00814	0.01933
	C2	0.00081	0.00122	0.01243
sky130_fd_sc_hs__a222oi_2	A1	0.03117	0.03172	0.05865
	A1	0.01086	0.01136	0.03830
	A2	0.03287	0.03316	0.05678
	A2	0.01088	0.01113	0.03482
	B1	0.02146	0.02245	0.04858
	B1	0.00572	0.00667	0.03280
	B2	0.02366	0.02420	0.04642
	B2	0.00611	0.00661	0.02887
	C1	0.01150	0.01313	0.03816
	C1	0.00065	0.00222	0.02724
	C2	0.01429	0.01532	0.03830
	C2	0.00058	0.00151	0.02453

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)**	0.00163	0.00162	0.00161
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00204	-0.00214	-0.00213
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00164	0.00163	0.00161
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00201	-0.00214	-0.00213
	(A2 * B1 * B2 * !C1 * !Y)	0.00164	0.00163	0.00161
	(A2 * B1 * B2 * !C1 * !Y)	-0.00201	-0.00215	-0.00214
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00170	0.00163	0.00161
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00190	-0.00210	-0.00209
	(A2 * !B1 * C1 * C2 * !Y)	0.00170	0.00163	0.00161
	(A2 * !B1 * C1 * C2 * !Y)	-0.00189	-0.00209	-0.00209
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00154	0.00154	0.00154
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00219	-0.00220	-0.00219
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00154	0.00155	0.00155
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00218	-0.00219	-0.00219
	(!A2 * B1 * B2 * !C1 * !Y)	0.00154	0.00155	0.00154
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00218	-0.00219	-0.00219
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00154	0.00155	0.00154
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00218	-0.00219	-0.00219
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00055	0.00054	0.00053
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00248	-0.00248	-0.00251
	(!A2 * B1 * !B2 * !C1 * Y)	0.00055	0.00054	0.00053
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00248	-0.00248	-0.00251
	(!A2 * !B1 * C1 * C2 * !Y)	0.00154	0.00156	0.00155
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00218	-0.00219	-0.00219
	(!A2 * !B1 * C1 * !C2 * Y)	0.00055	0.00054	0.00053
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00248	-0.00248	-0.00251
	(!A2 * !B1 * !C1 * Y)	0.00055	0.00054	0.00053
	(!A2 * !B1 * !C1 * Y)	-0.00248	-0.00248	-0.00251

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	0.00333	0.00336	0.00333
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00411	-0.00435	-0.00433
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00341	0.00337	0.00333
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00400	-0.00435	-0.00434
	(A2 * B1 * B2 * !C1 * !Y)	0.00341	0.00337	0.00333
	(A2 * B1 * B2 * !C1 * !Y)	-0.00400	-0.00434	-0.00433
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00351	0.00339	0.00334
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00380	-0.00425	-0.00424
	(A2 * !B1 * C1 * C2 * !Y)	0.00353	0.00338	0.00334
	(A2 * !B1 * C1 * C2 * !Y)	-0.00377	-0.00425	-0.00424
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00322	0.00326	0.00324
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00443	-0.00446	-0.00444
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00319	0.00324	0.00321
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00442	-0.00447	-0.00444
	(!A2 * B1 * B2 * !C1 * !Y)	0.00318	0.00322	0.00320
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00442	-0.00446	-0.00444
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00321	0.00324	0.00321
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00444	-0.00446	-0.00443
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00108	0.00108	0.00104
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00520	-0.00521	-0.00526
	(!A2 * B1 * !B2 * !C1 * Y)	0.00108	0.00108	0.00104
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00520	-0.00521	-0.00526
	(!A2 * !B1 * C1 * C2 * !Y)	0.00321	0.00324	0.00321
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00444	-0.00446	-0.00443
	(!A2 * !B1 * C1 * !C2 * Y)	0.00108	0.00108	0.00104
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00520	-0.00521	-0.00526
	(!A2 * !B1 * !C1 * Y)	0.00108	0.00108	0.00104
	(!A2 * !B1 * !C1 * Y)	-0.00520	-0.00521	-0.00526

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)	-0.00161	-0.00161	-0.00161
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00213	0.00214	0.00213
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00161	-0.00161	-0.00161
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00214	0.00214	0.00213
	(A2 * B1 * B2 * !C1 * !Y)	-0.00161	-0.00161	-0.00161
	(A2 * B1 * B2 * !C1 * !Y)	0.00213	0.00215	0.00214
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00160	-0.00161	-0.00160
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00209	0.00210	0.00209
	(A2 * !B1 * C1 * C2 * !Y)	-0.00160	-0.00160	-0.00160
	(A2 * !B1 * C1 * C2 * !Y)	0.00209	0.00209	0.00209
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00151	-0.00154	-0.00154
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00220	0.00221	0.00220
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00151	-0.00155	-0.00155
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00219	0.00223	0.00220
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00151	-0.00155	-0.00154
	(!A2 * B1 * B2 * !C1 * !Y)	0.00219	0.00219	0.00220
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00150	-0.00154	-0.00154
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00219	0.00220	0.00220
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00052	-0.00053	-0.00052
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00251	0.00254	0.00251
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00052	-0.00053	-0.00052
	(!A2 * B1 * !B2 * !C1 * Y)	0.00251	0.00254	0.00251
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00150	-0.00154	-0.00155
	(!A2 * !B1 * C1 * C2 * !Y)	0.00219	0.00219	0.00220
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00052	-0.00053	-0.00052
	(!A2 * !B1 * C1 * !C2 * Y)	0.00251	0.00254	0.00251
	(!A2 * !B1 * !C1 * Y)	-0.00052	-0.00053	-0.00052
	(!A2 * !B1 * !C1 * Y)	0.00251	0.00254	0.00251

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	-0.00332	-0.00334	-0.00333
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00432	0.00435	0.00433
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00332	-0.00333	-0.00332
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00432	0.00435	0.00434
	(A2 * B1 * B2 * !C1 * !Y)	-0.00332	-0.00333	-0.00332
	(A2 * B1 * B2 * !C1 * !Y)	0.00431	0.00434	0.00433
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00331	-0.00332	-0.00331
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00422	0.00425	0.00424
	(A2 * !B1 * C1 * C2 * !Y)	-0.00331	-0.00333	-0.00331
	(A2 * !B1 * C1 * C2 * !Y)	0.00422	0.00425	0.00424
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00311	-0.00323	-0.00324
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00443	0.00449	0.00445
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00312	-0.00324	-0.00321
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00447	0.00448	0.00446
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00312	-0.00322	-0.00320
	(!A2 * B1 * B2 * !C1 * !Y)	0.00446	0.00448	0.00446
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00311	-0.00324	-0.00321
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00447	0.00448	0.00446
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00102	-0.00104	-0.00102
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00525	0.00535	0.00527
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00102	-0.00104	-0.00102
	(!A2 * B1 * !B2 * !C1 * Y)	0.00525	0.00535	0.00527
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00310	-0.00324	-0.00321
	(!A2 * !B1 * C1 * C2 * !Y)	0.00445	0.00449	0.00446
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00102	-0.00104	-0.00102
	(!A2 * !B1 * C1 * !C2 * Y)	0.00524	0.00535	0.00527
	(!A2 * !B1 * !C1 * Y)	-0.00102	-0.00104	-0.00102
	(!A2 * !B1 * !C1 * Y)	0.00524	0.00535	0.00527

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)	0.00168	0.00169	0.00167
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00203	-0.00214	-0.00213
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00169	0.00169	0.00167
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00200	-0.00212	-0.00214
	(A1 * B1 * B2 * !C1 * !Y)	0.00170	0.00169	0.00167
	(A1 * B1 * B2 * !C1 * !Y)	-0.00200	-0.00212	-0.00214
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00175	0.00169	0.00167
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00190	-0.00210	-0.00210
	(A1 * !B1 * C1 * C2 * !Y)	0.00175	0.00169	0.00167
	(A1 * !B1 * C1 * C2 * !Y)	-0.00190	-0.00210	-0.00209
	(!A1 * B1 * B2 * !Y)	0.00160	0.00160	0.00160
	(!A1 * B1 * B2 * !Y)	-0.00218	-0.00219	-0.00218
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00160	0.00162	0.00160
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00218	-0.00219	-0.00218
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00160	0.00162	0.00160
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00218	-0.00220	-0.00218
	(!A1 * B1 * !B2 * !C1 * Y)	0.00160	0.00162	0.00160
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00218	-0.00220	-0.00218
	(!A1 * !B1 * C1 * !C2 * Y)	0.00160	0.00161	0.00161
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00218	-0.00219	-0.00218
	(!A1 * !B1 * !C1 * Y)	0.00160	0.00162	0.00161
	(!A1 * !B1 * !C1 * Y)	-0.00218	-0.00220	-0.00218

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	0.00314	0.00317	0.00313
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00384	-0.00407	-0.00405
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00318	0.00317	0.00314
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00378	-0.00407	-0.00405
	(A1 * B1 * B2 * !C1 * !Y)	0.00318	0.00317	0.00314
	(A1 * B1 * B2 * !C1 * !Y)	-0.00378	-0.00407	-0.00405
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00327	0.00318	0.00314
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00361	-0.00398	-0.00397
	(A1 * !B1 * C1 * C2 * !Y)	0.00328	0.00318	0.00314
	(A1 * !B1 * C1 * C2 * !Y)	-0.00360	-0.00398	-0.00397
	(!A1 * B1 * B2 * !Y)	0.00299	0.00304	0.00300
	(!A1 * B1 * B2 * !Y)	-0.00412	-0.00416	-0.00413
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00300	0.00305	0.00301
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00411	-0.00414	-0.00412
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00290	0.00290	0.00291
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00422	-0.00422	-0.00423
	(!A1 * B1 * !B2 * !C1 * Y)	0.00290	0.00290	0.00291
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00422	-0.00422	-0.00423
	(!A1 * !B1 * C1 * !C2 * Y)	0.00290	0.00292	0.00291
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00422	-0.00423	-0.00423
	(!A1 * !B1 * !C1 * Y)	0.00290	0.00291	0.00291
	(!A1 * !B1 * !C1 * Y)	-0.00422	-0.00423	-0.00423

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

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

	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00166	-0.00167	-0.00167
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00212	0.00214	0.00213
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00166	-0.00166	-0.00167
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00212	0.00212	0.00214
	(A1 * B1 * B2 * !C1 * !Y)	-0.00166	-0.00166	-0.00167
	(A1 * B1 * B2 * !C1 * !Y)	0.00212	0.00212	0.00214
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00166	-0.00167	-0.00166
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00208	0.00210	0.00210
	(A1 * !B1 * C1 * C2 * !Y)	-0.00166	-0.00167	-0.00166
	(A1 * !B1 * C1 * C2 * !Y)	0.00208	0.00210	0.00209
	(!A1 * B1 * B2 * !Y)	-0.00158	-0.00160	-0.00160
sky130_fd_sc_hs__a222oi_1	**(!A1 * B1 * B2 * !Y)**	0.00219	0.00220	0.00219
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00157	-0.00161	-0.00160
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00220	0.00221	0.00219
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00151	-0.00161	-0.00160
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00228	0.00221	0.00219
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00151	-0.00161	-0.00160
	(!A1 * B1 * !B2 * !C1 * Y)	0.00228	0.00221	0.00219
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00151	-0.00161	-0.00161
	(!A1 * !B1 * C1 * !C2 * Y)	0.00228	0.00221	0.00219
	(!A1 * !B1 * !C1 * Y)	-0.00151	-0.00161	-0.00161
	(!A1 * !B1 * !C1 * Y)	0.00228	0.00221	0.00219

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	-0.00312	-0.00314	-0.00313
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00403	0.00407	0.00405
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00313	-0.00314	-0.00313
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00405	0.00407	0.00405
	(A1 * B1 * B2 * !C1 * !Y)	-0.00313	-0.00314	-0.00313
	(A1 * B1 * B2 * !C1 * !Y)	0.00405	0.00407	0.00405
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00312	-0.00313	-0.00311
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00397	0.00399	0.00397
	(A1 * !B1 * C1 * C2 * !Y)	-0.00312	-0.00313	-0.00311
	(A1 * !B1 * C1 * C2 * !Y)	0.00397	0.00399	0.00397
	(!A1 * B1 * B2 * !Y)	-0.00292	-0.00302	-0.00300
	(!A1 * B1 * B2 * !Y)	0.00412	0.00417	0.00414
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00291	-0.00301	-0.00301
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00413	0.00417	0.00415
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00268	-0.00290	-0.00291
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00440	0.00427	0.00424
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00268	-0.00290	-0.00291
	(!A1 * B1 * !B2 * !C1 * Y)	0.00440	0.00427	0.00424
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00268	-0.00292	-0.00291
	(!A1 * !B1 * C1 * !C2 * Y)	0.00440	0.00427	0.00424
	(!A1 * !B1 * !C1 * Y)	-0.00268	-0.00291	-0.00291
	(!A1 * !B1 * !C1 * Y)	0.00440	0.00427	0.00424

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)**	0.00168	0.00168	0.00164
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00150	-0.00153	-0.00151
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00161	0.00163	0.00161
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00115	-0.00116	-0.00116
	(A1 * A2 * B2 * !C1 * !Y)	0.00161	0.00163	0.00161
	(A1 * A2 * B2 * !C1 * !Y)	-0.00115	-0.00116	-0.00116
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00156	0.00159	0.00156
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00144	-0.00144	-0.00143
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00155	0.00156	0.00155
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00115	-0.00115	-0.00116
	(A1 * A2 * !B2 * !C1 * !Y)	0.00157	0.00158	0.00156
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00115	-0.00116	-0.00116
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00200	0.00164	0.00160
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00168	-0.00211	-0.00212
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00154	0.00155	0.00155
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00214	-0.00215	-0.00214
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00051	0.00051	0.00049
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00246	-0.00248	-0.00249
	(A1 * !A2 * !B2 * !C1 * Y)	0.00050	0.00051	0.00049
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00246	-0.00248	-0.00249
	(!A1 * B2 * C1 * C2 * !Y)	0.00200	0.00164	0.00160
	(!A1 * B2 * C1 * C2 * !Y)	-0.00170	-0.00211	-0.00212
	(!A1 * !B2 * C1 * C2 * !Y)	0.00154	0.00155	0.00155
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00214	-0.00214	-0.00214
	(!A1 * !B2 * C1 * !C2 * Y)	0.00051	0.00051	0.00049
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00246	-0.00248	-0.00249
	(!A1 * !B2 * !C1 * Y)	0.00050	0.00051	0.00049
	(!A1 * !B2 * !C1 * Y)	-0.00246	-0.00248	-0.00249

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	0.00351	0.00354	0.00342
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00306	-0.00305	-0.00305
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00335	0.00338	0.00334
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00240	-0.00242	-0.00240
	(A1 * A2 * B2 * !C1 * !Y)	0.00335	0.00338	0.00334
	(A1 * A2 * B2 * !C1 * !Y)	-0.00241	-0.00242	-0.00240
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00327	0.00330	0.00325
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00288	-0.00291	-0.00289
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00324	0.00326	0.00323
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00239	-0.00240	-0.00239
	(A1 * A2 * !B2 * !C1 * !Y)	0.00322	0.00325	0.00322
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00236	-0.00240	-0.00240
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00420	0.00340	0.00333
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00343	-0.00434	-0.00437
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00318	0.00322	0.00320
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00439	-0.00444	-0.00441
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00105	0.00105	0.00101
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00521	-0.00523	-0.00527
	(A1 * !A2 * !B2 * !C1 * Y)	0.00105	0.00105	0.00101
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00521	-0.00523	-0.00527
	(!A1 * B2 * C1 * C2 * !Y)	0.00418	0.00340	0.00333
	(!A1 * B2 * C1 * C2 * !Y)	-0.00346	-0.00435	-0.00437
	(!A1 * !B2 * C1 * C2 * !Y)	0.00320	0.00323	0.00320
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00442	-0.00444	-0.00441
	(!A1 * !B2 * C1 * !C2 * Y)	0.00105	0.00105	0.00101
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00521	-0.00523	-0.00527
	(!A1 * !B2 * !C1 * Y)	0.00105	0.00105	0.00101
	(!A1 * !B2 * !C1 * Y)	-0.00521	-0.00523	-0.00527

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)	-0.00162	-0.00164	-0.00163
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00150	0.00153	0.00151
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00152	-0.00153	-0.00155
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00124	0.00124	0.00122
	(A1 * A2 * B2 * !C1 * !Y)	-0.00152	-0.00153	-0.00155
	(A1 * A2 * B2 * !C1 * !Y)	0.00124	0.00125	0.00122
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00153	-0.00157	-0.00156
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00144	0.00144	0.00143
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00151	-0.00155	-0.00155
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00116	0.00115	0.00116
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00151	-0.00155	-0.00156
	(A1 * A2 * !B2 * !C1 * !Y)	0.00116	0.00116	0.00116
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00159	-0.00160	-0.00158
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00212	0.00213	0.00212
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00149	-0.00153	-0.00154
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00215	0.00215	0.00215
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00048	-0.00049	-0.00048
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00249	0.00253	0.00250
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00048	-0.00049	-0.00048
	(A1 * !A2 * !B2 * !C1 * Y)	0.00249	0.00253	0.00250
	(!A1 * B2 * C1 * C2 * !Y)	-0.00159	-0.00159	-0.00158
	(!A1 * B2 * C1 * C2 * !Y)	0.00212	0.00211	0.00212
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00149	-0.00153	-0.00154
	(!A1 * !B2 * C1 * C2 * !Y)	0.00215	0.00214	0.00215
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00048	-0.00049	-0.00048
	(!A1 * !B2 * C1 * !C2 * Y)	0.00249	0.00253	0.00250
	(!A1 * !B2 * !C1 * Y)	-0.00048	-0.00049	-0.00048
	(!A1 * !B2 * !C1 * Y)	0.00249	0.00253	0.00250

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	-0.00337	-0.00336	-0.00336
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00306	0.00305	0.00305
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00319	-0.00323	-0.00322
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00251	0.00255	0.00252
	(A1 * A2 * B2 * !C1 * !Y)	-0.00319	-0.00322	-0.00322
	(A1 * A2 * B2 * !C1 * !Y)	0.00252	0.00254	0.00252
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00314	-0.00327	-0.00325
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00288	0.00291	0.00289
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00314	-0.00326	-0.00323
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00241	0.00241	0.00240
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00313	-0.00325	-0.00322
	(A1 * A2 * !B2 * !C1 * !Y)	0.00240	0.00241	0.00240
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00329	-0.00331	-0.00327
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00433	0.00438	0.00437
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00310	-0.00322	-0.00320
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00445	0.00445	0.00444
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00098	-0.00101	-0.00098
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00526	0.00534	0.00527
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00098	-0.00101	-0.00098
	(A1 * !A2 * !B2 * !C1 * Y)	0.00526	0.00534	0.00527
	(!A1 * B2 * C1 * C2 * !Y)	-0.00329	-0.00331	-0.00327
	(!A1 * B2 * C1 * C2 * !Y)	0.00434	0.00438	0.00437
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00309	-0.00323	-0.00320
	(!A1 * !B2 * C1 * C2 * !Y)	0.00443	0.00446	0.00444
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00098	-0.00101	-0.00098
	(!A1 * !B2 * C1 * !C2 * Y)	0.00525	0.00534	0.00527
	(!A1 * !B2 * !C1 * Y)	-0.00098	-0.00101	-0.00098
	(!A1 * !B2 * !C1 * Y)	0.00525	0.00534	0.00527

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)	0.00182	0.00183	0.00178
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00152	-0.00153	-0.00151
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00176	0.00177	0.00175
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00116	-0.00117	-0.00116
	(A1 * A2 * B1 * !C1 * !Y)	0.00177	0.00177	0.00175
	(A1 * A2 * B1 * !C1 * !Y)	-0.00117	-0.00117	-0.00116
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00171	0.00173	0.00171
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00144	-0.00143	-0.00143
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00169	0.00171	0.00169
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00115	-0.00116	-0.00116
	(A1 * A2 * !B1 * !C1 * !Y)	0.00169	0.00171	0.00169
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00115	-0.00116	-0.00116
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00217	0.00178	0.00174
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00168	-0.00212	-0.00213
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00168	0.00168	0.00168
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00215	-0.00215	-0.00215
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00149	0.00151	0.00149
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00234	-0.00236	-0.00234
	(A1 * !A2 * !B1 * !C1 * Y)	0.00149	0.00151	0.00149
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00234	-0.00236	-0.00234
	(!A1 * B1 * C1 * C2 * !Y)	0.00217	0.00178	0.00174
	(!A1 * B1 * C1 * C2 * !Y)	-0.00168	-0.00212	-0.00213
	(!A1 * !B1 * C1 * !C2 * Y)	0.00149	0.00150	0.00149
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00234	-0.00235	-0.00234
	(!A1 * !B1 * !C1 * Y)	0.00149	0.00150	0.00149
	(!A1 * !B1 * !C1 * Y)	-0.00234	-0.00235	-0.00234

	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00342	0.00345	0.00332
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00284	-0.00285	-0.00283
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00325	0.00330	0.00326
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00215	-0.00218	-0.00217
	(A1 * A2 * B1 * !C1 * !Y)	0.00326	0.00330	0.00326
	(A1 * A2 * B1 * !C1 * !Y)	-0.00216	-0.00218	-0.00217
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00317	0.00323	0.00316
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00267	-0.00272	-0.00268
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00313	0.00317	0.00313
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00215	-0.00218	-0.00217
	(A1 * A2 * !B1 * !C1 * !Y)	0.00313	0.00317	0.00313
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00215	-0.00217	-0.00217
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00417	0.00331	0.00325
sky130_fd_sc_hs__a222oi_2	**(A1 * !A2 * B1 * C1 * C2 * !Y)**	-0.00305	-0.00401	-0.00407
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00311	0.00312	0.00312
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00411	-0.00412	-0.00412
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00298	0.00301	0.00298
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00427	-0.00429	-0.00426
	(A1 * !A2 * !B1 * !C1 * Y)	0.00298	0.00301	0.00298
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00427	-0.00429	-0.00426
	(!A1 * B1 * C1 * C2 * !Y)	0.00417	0.00330	0.00325
	(!A1 * B1 * C1 * C2 * !Y)	-0.00308	-0.00401	-0.00407
	(!A1 * !B1 * C1 * !C2 * Y)	0.00298	0.00301	0.00298
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00427	-0.00429	-0.00426
	(!A1 * !B1 * !C1 * Y)	0.00298	0.00301	0.00298
	(!A1 * !B1 * !C1 * Y)	-0.00427	-0.00429	-0.00426

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)	-0.00177	-0.00178	-0.00177
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00152	0.00153	0.00151
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00166	-0.00168	-0.00169
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00124	0.00125	0.00123
	(A1 * A2 * B1 * !C1 * !Y)	-0.00166	-0.00168	-0.00169
	(A1 * A2 * B1 * !C1 * !Y)	0.00124	0.00125	0.00123
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00168	-0.00170	-0.00171
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00144	0.00143	0.00143
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00166	-0.00169	-0.00169
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00117	0.00117	0.00116
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00166	-0.00169	-0.00169
	(A1 * A2 * !B1 * !C1 * !Y)	0.00117	0.00117	0.00116
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00173	-0.00173	-0.00172
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00213	0.00213	0.00213
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00164	-0.00168	-0.00168
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00217	0.00218	0.00216
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00140	-0.00150	-0.00149
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00243	0.00237	0.00235
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00140	-0.00150	-0.00149
	(A1 * !A2 * !B1 * !C1 * Y)	0.00243	0.00237	0.00235
	(!A1 * B1 * C1 * C2 * !Y)	-0.00173	-0.00173	-0.00172
	(!A1 * B1 * C1 * C2 * !Y)	0.00213	0.00213	0.00213
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00140	-0.00150	-0.00149
	(!A1 * !B1 * C1 * !C2 * Y)	0.00243	0.00238	0.00235
	(!A1 * !B1 * !C1 * Y)	-0.00140	-0.00150	-0.00149
	(!A1 * !B1 * !C1 * Y)	0.00243	0.00238	0.00235

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B1 * C1 * C2 * !Y)**	-0.00328	-0.00329	-0.00328
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00284	0.00285	0.00283
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00311	-0.00313	-0.00314
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00229	0.00231	0.00229
	(A1 * A2 * B1 * !C1 * !Y)	-0.00310	-0.00313	-0.00314
	(A1 * A2 * B1 * !C1 * !Y)	0.00228	0.00231	0.00229
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00306	-0.00318	-0.00316
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00267	0.00272	0.00268
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00304	-0.00314	-0.00313
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00217	0.00218	0.00218
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00304	-0.00312	-0.00313
	(A1 * A2 * !B1 * !C1 * !Y)	0.00217	0.00217	0.00218
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00320	-0.00322	-0.00319
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00403	0.00408	0.00407
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00301	-0.00312	-0.00312
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00413	0.00418	0.00415
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00274	-0.00300	-0.00298
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00445	0.00430	0.00428
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00274	-0.00300	-0.00298
	(A1 * !A2 * !B1 * !C1 * Y)	0.00445	0.00430	0.00428
	(!A1 * B1 * C1 * C2 * !Y)	-0.00321	-0.00322	-0.00319
	(!A1 * B1 * C1 * C2 * !Y)	0.00404	0.00408	0.00407
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00274	-0.00300	-0.00298
	(!A1 * !B1 * C1 * !C2 * Y)	0.00445	0.00430	0.00428
	(!A1 * !B1 * !C1 * Y)	-0.00274	-0.00300	-0.00298
	(!A1 * !B1 * !C1 * Y)	0.00445	0.00430	0.00428

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)	0.00192	0.00194	0.00192
	(A1 * B1 * B2 * C2 * !Y)	-0.00102	-0.00103	-0.00102
	(A1 * B1 * B2 * !C2 * !Y)	0.00185	0.00187	0.00186
	(A1 * B1 * B2 * !C2 * !Y)	-0.00101	-0.00102	-0.00102
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00192	0.00194	0.00192
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00102	-0.00103	-0.00102
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00186	0.00190	0.00187
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00101	-0.00103	-0.00102
	(A1 * A2 * !B1 * C2 * !Y)	0.00192	0.00194	0.00192
	(A1 * A2 * !B1 * C2 * !Y)	-0.00102	-0.00103	-0.00102
	(A1 * A2 * !B1 * !C2 * !Y)	0.00185	0.00189	0.00185
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00101	-0.00102	-0.00102
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00057	0.00057	0.00056
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00253	-0.00254	-0.00255
	(A1 * !A2 * !B1 * !C2 * Y)	0.00057	0.00057	0.00056
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00253	-0.00254	-0.00255
	(!A1 * B1 * B2 * C2 * !Y)	0.00192	0.00194	0.00192
	(!A1 * B1 * B2 * C2 * !Y)	-0.00102	-0.00103	-0.00102
	(!A1 * B1 * B2 * !C2 * !Y)	0.00186	0.00187	0.00187
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00101	-0.00102	-0.00102
	(!A1 * B1 * !B2 * !C2 * Y)	0.00057	0.00057	0.00056
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00253	-0.00254	-0.00255
	(!A1 * !B1 * !C2 * Y)	0.00057	0.00057	0.00056
	(!A1 * !B1 * !C2 * Y)	-0.00253	-0.00254	-0.00255

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	0.00340	0.00342	0.00339
	(A1 * B1 * B2 * C2 * !Y)	-0.00201	-0.00201	-0.00199
	(A1 * B1 * B2 * !C2 * !Y)	0.00325	0.00329	0.00327
	(A1 * B1 * B2 * !C2 * !Y)	-0.00197	-0.00199	-0.00198
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00338	0.00342	0.00340
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00198	-0.00201	-0.00199
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00327	0.00329	0.00327
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00197	-0.00199	-0.00198
	(A1 * A2 * !B1 * C2 * !Y)	0.00338	0.00342	0.00340
	(A1 * A2 * !B1 * C2 * !Y)	-0.00198	-0.00201	-0.00199
	(A1 * A2 * !B1 * !C2 * !Y)	0.00326	0.00330	0.00327
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00196	-0.00199	-0.00198
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00100	0.00102	0.00098
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00469	-0.00474	-0.00478
	(A1 * !A2 * !B1 * !C2 * Y)	0.00100	0.00102	0.00098
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00469	-0.00474	-0.00478
	(!A1 * B1 * B2 * C2 * !Y)	0.00338	0.00342	0.00340
	(!A1 * B1 * B2 * C2 * !Y)	-0.00199	-0.00201	-0.00200
	(!A1 * B1 * B2 * !C2 * !Y)	0.00327	0.00333	0.00327
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00197	-0.00199	-0.00199
	(!A1 * B1 * !B2 * !C2 * Y)	0.00100	0.00102	0.00098
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00469	-0.00474	-0.00478
	(!A1 * !B1 * !C2 * Y)	0.00102	0.00102	0.00098
	(!A1 * !B1 * !C2 * Y)	-0.00473	-0.00474	-0.00478

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)**	-0.00179	-0.00180	-0.00191
	(A1 * B1 * B2 * C2 * !Y)	0.00114	0.00114	0.00105
	(A1 * B1 * B2 * !C2 * !Y)	-0.00183	-0.00187	-0.00186
	(A1 * B1 * B2 * !C2 * !Y)	0.00102	0.00103	0.00102
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00160	-0.00161	-0.00186
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00127	0.00127	0.00108
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00182	-0.00187	-0.00187
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00102	0.00103	0.00102
	(A1 * A2 * !B1 * C2 * !Y)	-0.00159	-0.00161	-0.00186
	(A1 * A2 * !B1 * C2 * !Y)	0.00126	0.00127	0.00108
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00182	-0.00186	-0.00185
	(A1 * A2 * !B1 * !C2 * !Y)	0.00102	0.00102	0.00102
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00055	-0.00056	-0.00055
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00256	0.00259	0.00256
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00056	-0.00056	-0.00055
	(A1 * !A2 * !B1 * !C2 * Y)	0.00256	0.00259	0.00256
	(!A1 * B1 * B2 * C2 * !Y)	-0.00178	-0.00180	-0.00191
	(!A1 * B1 * B2 * C2 * !Y)	0.00113	0.00114	0.00105
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00182	-0.00186	-0.00187
	(!A1 * B1 * B2 * !C2 * !Y)	0.00102	0.00103	0.00102
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00056	-0.00056	-0.00055
	(!A1 * B1 * !B2 * !C2 * Y)	0.00256	0.00259	0.00256
	(!A1 * !B1 * !C2 * Y)	-0.00056	-0.00056	-0.00055
	(!A1 * !B1 * !C2 * Y)	0.00256	0.00259	0.00256

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	-0.00313	-0.00317	-0.00337
	(A1 * B1 * B2 * C2 * !Y)	0.00220	0.00222	0.00204
	(A1 * B1 * B2 * !C2 * !Y)	-0.00318	-0.00328	-0.00327
	(A1 * B1 * B2 * !C2 * !Y)	0.00197	0.00199	0.00198
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00281	-0.00285	-0.00330
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00240	0.00242	0.00208
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00319	-0.00329	-0.00327
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00199	0.00199	0.00199
	(A1 * A2 * !B1 * C2 * !Y)	-0.00281	-0.00285	-0.00330
	(A1 * A2 * !B1 * C2 * !Y)	0.00240	0.00242	0.00208
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00318	-0.00327	-0.00327
	(A1 * A2 * !B1 * !C2 * !Y)	0.00198	0.00199	0.00199
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00095	-0.00098	-0.00095
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00476	0.00484	0.00478
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00095	-0.00098	-0.00095
	(A1 * !A2 * !B1 * !C2 * Y)	0.00476	0.00484	0.00479
	(!A1 * B1 * B2 * C2 * !Y)	-0.00313	-0.00316	-0.00337
	(!A1 * B1 * B2 * C2 * !Y)	0.00221	0.00222	0.00205
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00318	-0.00327	-0.00327
	(!A1 * B1 * B2 * !C2 * !Y)	0.00199	0.00199	0.00199
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00095	-0.00095	-0.00095
	(!A1 * B1 * !B2 * !C2 * Y)	0.00476	0.00476	0.00479
	(!A1 * !B1 * !C2 * Y)	-0.00095	-0.00095	-0.00095
	(!A1 * !B1 * !C2 * Y)	0.00476	0.00477	0.00479

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)**	0.00199	0.00201	0.00200
	(A1 * B1 * B2 * C1 * !Y)	-0.00104	-0.00105	-0.00104
	(A1 * B1 * B2 * !C1 * !Y)	0.00193	0.00195	0.00193
	(A1 * B1 * B2 * !C1 * !Y)	-0.00104	-0.00104	-0.00104
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00201	0.00201	0.00200
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00105	-0.00105	-0.00104
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00193	0.00196	0.00194
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00103	-0.00104	-0.00103
	(A1 * A2 * !B1 * C1 * !Y)	0.00201	0.00202	0.00200
	(A1 * A2 * !B1 * C1 * !Y)	-0.00105	-0.00105	-0.00104
	(A1 * A2 * !B1 * !C1 * !Y)	0.00193	0.00195	0.00193
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00103	-0.00104	-0.00103
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00151	0.00153	0.00152
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00238	-0.00240	-0.00239
	(A1 * !A2 * !B1 * !C1 * Y)	0.00151	0.00153	0.00152
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00238	-0.00240	-0.00239
	(!A1 * B1 * B2 * C1 * !Y)	0.00201	0.00202	0.00200
	(!A1 * B1 * B2 * C1 * !Y)	-0.00105	-0.00105	-0.00104
	(!A1 * B1 * B2 * !C1 * !Y)	0.00194	0.00196	0.00193
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00103	-0.00104	-0.00104
	(!A1 * B1 * !B2 * !C1 * Y)	0.00151	0.00153	0.00152
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00238	-0.00240	-0.00239
	(!A1 * !B1 * !C1 * Y)	0.00151	0.00154	0.00152
	(!A1 * !B1 * !C1 * Y)	-0.00238	-0.00240	-0.00239

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00402	0.00404	0.00400
	(A1 * B1 * B2 * C1 * !Y)	-0.00208	-0.00209	-0.00207
	(A1 * B1 * B2 * !C1 * !Y)	0.00388	0.00392	0.00389
	(A1 * B1 * B2 * !C1 * !Y)	-0.00206	-0.00207	-0.00206
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00402	0.00407	0.00400
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00208	-0.00210	-0.00206
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00389	0.00393	0.00389
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00205	-0.00207	-0.00206
	(A1 * A2 * !B1 * C1 * !Y)	0.00401	0.00407	0.00400
	(A1 * A2 * !B1 * C1 * !Y)	-0.00208	-0.00210	-0.00206
	(A1 * A2 * !B1 * !C1 * !Y)	0.00389	0.00393	0.00389
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00205	-0.00207	-0.00206
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00303	0.00308	0.00304
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00477	-0.00481	-0.00478
	(A1 * !A2 * !B1 * !C1 * Y)	0.00303	0.00306	0.00304
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00477	-0.00480	-0.00478
	(!A1 * B1 * B2 * C1 * !Y)	0.00402	0.00407	0.00400
	(!A1 * B1 * B2 * C1 * !Y)	-0.00209	-0.00211	-0.00207
	(!A1 * B1 * B2 * !C1 * !Y)	0.00389	0.00393	0.00389
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00205	-0.00207	-0.00206
	(!A1 * B1 * !B2 * !C1 * Y)	0.00303	0.00305	0.00304
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00477	-0.00479	-0.00478
	(!A1 * !B1 * !C1 * Y)	0.00303	0.00307	0.00304
	(!A1 * !B1 * !C1 * Y)	-0.00477	-0.00481	-0.00478

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)**	-0.00186	-0.00188	-0.00198
	(A1 * B1 * B2 * C1 * !Y)	0.00116	0.00116	0.00107
	(A1 * B1 * B2 * !C1 * !Y)	-0.00191	-0.00194	-0.00193
	(A1 * B1 * B2 * !C1 * !Y)	0.00104	0.00104	0.00104
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00167	-0.00169	-0.00194
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00128	0.00128	0.00109
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00191	-0.00194	-0.00194
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00104	0.00104	0.00104
	(A1 * A2 * !B1 * C1 * !Y)	-0.00167	-0.00169	-0.00194
	(A1 * A2 * !B1 * C1 * !Y)	0.00128	0.00128	0.00109
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00191	-0.00194	-0.00193
	(A1 * A2 * !B1 * !C1 * !Y)	0.00104	0.00104	0.00104
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00143	-0.00153	-0.00152
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00248	0.00241	0.00240
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00143	-0.00153	-0.00152
	(A1 * !A2 * !B1 * !C1 * Y)	0.00248	0.00241	0.00240
	(!A1 * B1 * B2 * C1 * !Y)	-0.00186	-0.00188	-0.00198
	(!A1 * B1 * B2 * C1 * !Y)	0.00116	0.00116	0.00107
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00191	-0.00194	-0.00193
	(!A1 * B1 * B2 * !C1 * !Y)	0.00105	0.00104	0.00104
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00143	-0.00153	-0.00152
	(!A1 * B1 * !B2 * !C1 * Y)	0.00248	0.00241	0.00240
	(!A1 * !B1 * !C1 * Y)	-0.00143	-0.00153	-0.00152
	(!A1 * !B1 * !C1 * Y)	0.00248	0.00241	0.00240

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00373	-0.00377	-0.00397
	(A1 * B1 * B2 * C1 * !Y)	0.00227	0.00229	0.00212
	(A1 * B1 * B2 * !C1 * !Y)	-0.00382	-0.00389	-0.00389
	(A1 * B1 * B2 * !C1 * !Y)	0.00207	0.00207	0.00206
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00341	-0.00345	-0.00390
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00248	0.00249	0.00216
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00381	-0.00389	-0.00389
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00207	0.00207	0.00206
	(A1 * A2 * !B1 * C1 * !Y)	-0.00341	-0.00345	-0.00390
	(A1 * A2 * !B1 * C1 * !Y)	0.00248	0.00249	0.00216
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00381	-0.00389	-0.00389
	(A1 * A2 * !B1 * !C1 * !Y)	0.00207	0.00207	0.00206
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00285	-0.00304	-0.00304
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00495	0.00482	0.00479
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00285	-0.00304	-0.00304
	(A1 * !A2 * !B1 * !C1 * Y)	0.00495	0.00482	0.00479
	(!A1 * B1 * B2 * C1 * !Y)	-0.00373	-0.00377	-0.00397
	(!A1 * B1 * B2 * C1 * !Y)	0.00228	0.00230	0.00212
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00381	-0.00389	-0.00389
	(!A1 * B1 * B2 * !C1 * !Y)	0.00208	0.00208	0.00207
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00285	-0.00305	-0.00304
	(!A1 * B1 * !B2 * !C1 * Y)	0.00495	0.00482	0.00479
	(!A1 * !B1 * !C1 * Y)	-0.00285	-0.00304	-0.00304
	(!A1 * !B1 * !C1 * Y)	0.00495	0.00482	0.00479

SKY130_FD_SC_HS__A222Ox

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00258	0.00263	0.00267	0.00257	0.00265	0.00271	1.28571
sky130_fd_sc_hs__a222o_2	0.00262	0.00248	0.00260	0.00256	0.00262	0.00276	2.14703

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222o_1	0.00000	0.18127	0.52618
sky130_fd_sc_hs__a222o_2	0.00000	0.22892	0.53466

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)	0.09128	0.59348	6.08425
	A2->X (RR)	0.09516	0.58208	5.98441
	B1->X (RR)	0.08450	0.57027	5.88556
	B2->X (RR)	0.08770	0.56167	5.83292
	C1->X (RR)	0.07264	0.53986	5.80903
	C2->X (RR)	0.07594	0.53286	5.76539
sky130_fd_sc_hs__a222o_2	A1->X (RR)	0.10774	0.55644	5.95704
	A2->X (RR)	0.11274	0.53239	5.90304
	B1->X (RR)	0.09467	0.52000	5.80632
	B2->X (RR)	0.09800	0.50841	5.77208
	C1->X (RR)	0.08117	0.49267	5.74963
	C2->X (RR)	0.08505	0.48195	5.68053

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222o_1	A1->X (FF)	0.25536	0.69529	5.19002
	A2->X (FF)	0.27187	0.71858	5.24934
	B1->X (FF)	0.23667	0.70456	5.49145
	B2->X (FF)	0.24729	0.72924	5.56067
	C1->X (FF)	0.17589	0.67653	5.49756
	C2->X (FF)	0.18886	0.69944	5.54676
sky130_fd_sc_hs__a222o_2	A1->X (FF)	0.30392	0.71141	4.97927
	A2->X (FF)	0.30699	0.72924	5.04302
	B1->X (FF)	0.28415	0.72996	5.24300
	B2->X (FF)	0.27040	0.71867	5.25073
	C1->X (FF)	0.21077	0.68315	5.12712
	C2->X (FF)	0.23271	0.71642	5.24029

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.02020	0.02062	0.06108
	A1	0.00978	0.01021	0.05121
	A2	0.02141	0.02143	0.05171
	A2	0.00981	0.00984	0.04069
	B1	0.01557	0.01715	0.05530
	B1	0.00733	0.00891	0.04707
	B2	0.01659	0.01765	0.05210
	B2	0.00744	0.00850	0.04304
	C1	0.00991	0.01210	0.06152
	C1	0.00391	0.00612	0.05561
	C2	0.01098	0.01273	0.05945
	C2	0.00398	0.00573	0.05256
sky130_fd_sc_hs__a222o_2	A1	0.02378	0.02489	0.05474
	A1	0.01367	0.01479	0.04575
	A2	0.02494	0.02576	0.06385
	A2	0.01357	0.01440	0.05252
	B1	0.01845	0.02000	0.05437
	B1	0.01063	0.01223	0.04689
	B2	0.01951	0.02078	0.05252
	B2	0.01060	0.01194	0.04410
	C1	0.01349	0.01520	0.05755
	C1	0.00783	0.00958	0.05243
	C2	0.01464	0.01588	0.05470
	C2	0.00777	0.00902	0.04848

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.00554	0.00549	0.03839
	A1	0.01612	0.01607	0.04897
	A2	0.00589	0.00549	0.03818
	A2	0.01761	0.01722	0.04930
	B1	0.00544	0.00579	0.04513
	B1	0.01374	0.01409	0.05287
	B2	0.00591	0.00635	0.04437
	B2	0.01508	0.01551	0.05276
	C1	0.00530	0.00792	0.06024
	C1	0.01129	0.01388	0.06521
	C2	0.00578	0.00865	0.06059
	C2	0.01272	0.01541	0.06597
sky130_fd_sc_hs__a222o_2	A1	0.00918	0.00779	0.04294
	A1	0.01942	0.01806	0.05300
	A2	0.01061	0.00985	0.04893
	A2	0.02202	0.02129	0.05888
	B1	0.00907	0.00904	0.04761
	B1	0.01696	0.01689	0.05404
	B2	0.00963	0.00955	0.04697
	B2	0.01853	0.01845	0.05481
	C1	0.00886	0.01071	0.05474
	C1	0.01450	0.01634	0.05925
	C2	0.00945	0.01118	0.05519
	C2	0.01625	0.01796	0.06158

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)**	0.00162	0.00164	0.00162
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00202	-0.00213	-0.00212
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00164	0.00164	0.00162
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00199	-0.00213	-0.00212
	(A2 * B1 * B2 * !C1 * X)	0.00164	0.00164	0.00162
	(A2 * B1 * B2 * !C1 * X)	-0.00199	-0.00213	-0.00212
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00169	0.00164	0.00163
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00189	-0.00208	-0.00208
	(A2 * !B1 * C1 * C2 * X)	0.00169	0.00164	0.00163
	(A2 * !B1 * C1 * C2 * X)	-0.00189	-0.00208	-0.00207
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00155	0.00157	0.00156
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00216	-0.00217	-0.00216
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00155	0.00157	0.00155
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00216	-0.00218	-0.00216
	(!A2 * B1 * B2 * !C1 * X)	0.00155	0.00156	0.00155
	(!A2 * B1 * B2 * !C1 * X)	-0.00216	-0.00217	-0.00216
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00156	0.00156	0.00156
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00216	-0.00217	-0.00216
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00053	0.00053	0.00052
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00248	-0.00249	-0.00251
	(!A2 * B1 * !B2 * !C1 * !X)	0.00053	0.00053	0.00052
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00248	-0.00249	-0.00251
	(!A2 * !B1 * C1 * C2 * X)	0.00157	0.00157	0.00157
	(!A2 * !B1 * C1 * C2 * X)	-0.00216	-0.00217	-0.00216
	(!A2 * !B1 * C1 * !C2 * !X)	0.00053	0.00053	0.00052
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00248	-0.00249	-0.00251
	(!A2 * !B1 * !C1 * !X)	0.00053	0.00053	0.00052
	(!A2 * !B1 * !C1 * !X)	-0.00248	-0.00249	-0.00251

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	0.00175	0.00175	0.00174
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00203	-0.00211	-0.00210
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00178	0.00176	0.00174
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00197	-0.00210	-0.00210
	(A2 * B1 * B2 * !C1 * X)	0.00178	0.00176	0.00174
	(A2 * B1 * B2 * !C1 * X)	-0.00197	-0.00210	-0.00210
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00182	0.00176	0.00174
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00187	-0.00204	-0.00206
	(A2 * !B1 * C1 * C2 * X)	0.00183	0.00176	0.00174
	(A2 * !B1 * C1 * C2 * X)	-0.00186	-0.00205	-0.00206
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00169	0.00169	0.00169
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00213	-0.00214	-0.00213
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00168	0.00169	0.00169
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00212	-0.00212	-0.00212
	(!A2 * B1 * B2 * !C1 * X)	0.00168	0.00169	0.00169
	(!A2 * B1 * B2 * !C1 * X)	-0.00212	-0.00212	-0.00212
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00169	0.00168	0.00169
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00215	-0.00214	-0.00214
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00062	0.00062	0.00058
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00253	-0.00254	-0.00260
	(!A2 * B1 * !B2 * !C1 * !X)	0.00062	0.00062	0.00058
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00253	-0.00254	-0.00260
	(!A2 * !B1 * C1 * C2 * X)	0.00168	0.00169	0.00169
	(!A2 * !B1 * C1 * C2 * X)	-0.00214	-0.00215	-0.00214
	(!A2 * !B1 * C1 * !C2 * !X)	0.00062	0.00062	0.00058
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00254	-0.00254	-0.00260
	(!A2 * !B1 * !C1 * !X)	0.00062	0.00062	0.00058
	(!A2 * !B1 * !C1 * !X)	-0.00254	-0.00254	-0.00260

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)	-0.00161	-0.00162	-0.00162
	(A2 * B1 * B2 * C1 * C2 * X)	0.00211	0.00213	0.00212
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00161	-0.00162	-0.00162
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00211	0.00213	0.00212
	(A2 * B1 * B2 * !C1 * X)	-0.00161	-0.00162	-0.00162
	(A2 * B1 * B2 * !C1 * X)	0.00211	0.00213	0.00212
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00161	-0.00162	-0.00161
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00206	0.00208	0.00208
	(A2 * !B1 * C1 * C2 * X)	-0.00161	-0.00162	-0.00161
	(A2 * !B1 * C1 * C2 * X)	0.00206	0.00208	0.00207
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00153	-0.00156	-0.00156
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00217	0.00217	0.00217
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00153	-0.00157	-0.00155
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00217	0.00220	0.00217
	(!A2 * B1 * B2 * !C1 * X)	-0.00152	-0.00156	-0.00155
	(!A2 * B1 * B2 * !C1 * X)	0.00216	0.00220	0.00217
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00152	-0.00156	-0.00156
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00217	0.00217	0.00217
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00051	-0.00051	-0.00050
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00253	0.00254	0.00252
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00051	-0.00051	-0.00050
	(!A2 * B1 * !B2 * !C1 * !X)	0.00253	0.00254	0.00252
	(!A2 * !B1 * C1 * C2 * X)	-0.00152	-0.00156	-0.00157
	(!A2 * !B1 * C1 * C2 * X)	0.00217	0.00217	0.00217
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00051	-0.00051	-0.00050
	(!A2 * !B1 * C1 * !C2 * !X)	0.00253	0.00254	0.00252
	(!A2 * !B1 * !C1 * !X)	-0.00051	-0.00051	-0.00051
	(!A2 * !B1 * !C1 * !X)	0.00253	0.00254	0.00252

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	-0.00173	-0.00174	-0.00174
	(A2 * B1 * B2 * C1 * C2 * X)	0.00209	0.00211	0.00210
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00173	-0.00175	-0.00174
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00209	0.00211	0.00210
	(A2 * B1 * B2 * !C1 * X)	-0.00173	-0.00174	-0.00174
	(A2 * B1 * B2 * !C1 * X)	0.00209	0.00211	0.00210
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00173	-0.00173	-0.00173
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00204	0.00204	0.00206
	(A2 * !B1 * C1 * C2 * X)	-0.00173	-0.00173	-0.00173
	(A2 * !B1 * C1 * C2 * X)	0.00205	0.00205	0.00206
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00162	-0.00169	-0.00169
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00213	0.00215	0.00214
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00162	-0.00169	-0.00169
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00213	0.00215	0.00213
	(!A2 * B1 * B2 * !C1 * X)	-0.00161	-0.00169	-0.00169
	(!A2 * B1 * B2 * !C1 * X)	0.00213	0.00215	0.00213
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00160	-0.00168	-0.00169
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00215	0.00218	0.00216
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00056	-0.00057	-0.00056
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00260	0.00263	0.00261
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00056	-0.00057	-0.00056
	(!A2 * B1 * !B2 * !C1 * !X)	0.00260	0.00263	0.00261
	(!A2 * !B1 * C1 * C2 * X)	-0.00160	-0.00169	-0.00169
	(!A2 * !B1 * C1 * C2 * X)	0.00215	0.00218	0.00216
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00056	-0.00057	-0.00056
	(!A2 * !B1 * C1 * !C2 * !X)	0.00260	0.00263	0.00261
	(!A2 * !B1 * !C1 * !X)	-0.00056	-0.00057	-0.00056
	(!A2 * !B1 * !C1 * !X)	0.00260	0.00263	0.00261

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)	0.00181	0.00182	0.00181
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00195	-0.00205	-0.00205
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00182	0.00183	0.00181
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00193	-0.00206	-0.00205
	(A1 * B1 * B2 * !C1 * X)	0.00182	0.00183	0.00181
	(A1 * B1 * B2 * !C1 * X)	-0.00193	-0.00206	-0.00205
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00187	0.00183	0.00182
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00184	-0.00201	-0.00201
	(A1 * !B1 * C1 * C2 * X)	0.00187	0.00183	0.00182
	(A1 * !B1 * C1 * C2 * X)	-0.00184	-0.00202	-0.00201
	(!A1 * B1 * B2 * X)	0.00174	0.00175	0.00174
	(!A1 * B1 * B2 * X)	-0.00208	-0.00209	-0.00209
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00175	0.00176	0.00176
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00208	-0.00209	-0.00209
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00149	0.00150	0.00149
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00234	-0.00235	-0.00234
	(!A1 * B1 * !B2 * !C1 * !X)	0.00149	0.00150	0.00149
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00234	-0.00235	-0.00234
	(!A1 * !B1 * C1 * !C2 * !X)	0.00149	0.00150	0.00149
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00234	-0.00235	-0.00234
	(!A1 * !B1 * !C1 * !X)	0.00149	0.00150	0.00149
	(!A1 * !B1 * !C1 * !X)	-0.00234	-0.00235	-0.00234

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * C2 * X)**	0.00171	0.00171	0.00170
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00203	-0.00212	-0.00210
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00173	0.00171	0.00170
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00199	-0.00211	-0.00211
	(A1 * B1 * B2 * !C1 * X)	0.00173	0.00171	0.00170
	(A1 * B1 * B2 * !C1 * X)	-0.00199	-0.00211	-0.00211
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00178	0.00172	0.00170
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00188	-0.00206	-0.00205
	(A1 * !B1 * C1 * C2 * X)	0.00176	0.00172	0.00170
	(A1 * !B1 * C1 * C2 * X)	-0.00188	-0.00206	-0.00206
	(!A1 * B1 * B2 * X)	0.00163	0.00164	0.00164
	(!A1 * B1 * B2 * X)	-0.00212	-0.00214	-0.00213
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00165	0.00166	0.00164
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00213	-0.00214	-0.00213
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00164	0.00164	0.00163
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00214	-0.00214	-0.00214
	(!A1 * B1 * !B2 * !C1 * !X)	0.00164	0.00164	0.00163
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00214	-0.00214	-0.00214
	(!A1 * !B1 * C1 * !C2 * !X)	0.00162	0.00164	0.00163
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00213	-0.00215	-0.00214
	(!A1 * !B1 * !C1 * !X)	0.00162	0.00164	0.00163
	(!A1 * !B1 * !C1 * !X)	-0.00213	-0.00215	-0.00214

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

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

sky130_fd_sc_hs__a222o_1	**(A1 * B1 * B2 * C1 * C2 * X)**	-0.00180	-0.00181	-0.00181
	(A1 * B1 * B2 * C1 * C2 * X)	0.00204	0.00205	0.00205
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00180	-0.00181	-0.00181
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00204	0.00206	0.00205
	(A1 * B1 * B2 * !C1 * X)	-0.00180	-0.00181	-0.00181
	(A1 * B1 * B2 * !C1 * X)	0.00204	0.00206	0.00205
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00180	-0.00181	-0.00180
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00200	0.00201	0.00201
	(A1 * !B1 * C1 * C2 * X)	-0.00180	-0.00181	-0.00180
	(A1 * !B1 * C1 * C2 * X)	0.00200	0.00203	0.00201
	(!A1 * B1 * B2 * X)	-0.00171	-0.00175	-0.00174
	(!A1 * B1 * B2 * X)	0.00208	0.00211	0.00210
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00170	-0.00176	-0.00176
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00209	0.00212	0.00210
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00138	-0.00150	-0.00149
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00243	0.00238	0.00236
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00138	-0.00150	-0.00149
	(!A1 * B1 * !B2 * !C1 * !X)	0.00243	0.00238	0.00236
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00138	-0.00150	-0.00149
	(!A1 * !B1 * C1 * !C2 * !X)	0.00243	0.00238	0.00236
	(!A1 * !B1 * !C1 * !X)	-0.00138	-0.00150	-0.00149
	(!A1 * !B1 * !C1 * !X)	0.00243	0.00238	0.00235

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * C2 * X)**	-0.00169	-0.00170	-0.00169
	(A1 * B1 * B2 * C1 * C2 * X)	0.00210	0.00212	0.00210
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00169	-0.00170	-0.00169
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00210	0.00211	0.00211
	(A1 * B1 * B2 * !C1 * X)	-0.00169	-0.00170	-0.00169
	(A1 * B1 * B2 * !C1 * X)	0.00210	0.00211	0.00211
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00169	-0.00170	-0.00169
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00204	0.00208	0.00205
	(A1 * !B1 * C1 * C2 * X)	-0.00169	-0.00170	-0.00169
	(A1 * !B1 * C1 * C2 * X)	0.00205	0.00206	0.00206
	(!A1 * B1 * B2 * X)	-0.00157	-0.00164	-0.00164
	(!A1 * B1 * B2 * X)	0.00213	0.00216	0.00214
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00158	-0.00164	-0.00164
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00215	0.00216	0.00214
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00152	-0.00163	-0.00163
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00222	0.00217	0.00215
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00152	-0.00163	-0.00163
	(!A1 * B1 * !B2 * !C1 * !X)	0.00222	0.00217	0.00215
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00151	-0.00163	-0.00163
	(!A1 * !B1 * C1 * !C2 * !X)	0.00220	0.00218	0.00215
	(!A1 * !B1 * !C1 * !X)	-0.00151	-0.00163	-0.00163
	(!A1 * !B1 * !C1 * !X)	0.00220	0.00218	0.00215

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)**	0.00171	0.00175	0.00171
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00155	-0.00157	-0.00155
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00169	0.00170	0.00169
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00122	-0.00123	-0.00122
	(A1 * A2 * B2 * !C1 * X)	0.00169	0.00170	0.00169
	(A1 * A2 * B2 * !C1 * X)	-0.00122	-0.00123	-0.00122
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00165	0.00168	0.00165
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00150	-0.00150	-0.00149
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00162	0.00164	0.00162
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00121	-0.00123	-0.00122
	(A1 * A2 * !B2 * !C1 * X)	0.00163	0.00164	0.00163
	(A1 * A2 * !B2 * !C1 * X)	-0.00121	-0.00122	-0.00122
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00205	0.00172	0.00168
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00179	-0.00219	-0.00220
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00163	0.00164	0.00163
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00223	-0.00223	-0.00222
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00055	0.00055	0.00054
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00259	-0.00260	-0.00261
	(A1 * !A2 * !B2 * !C1 * !X)	0.00055	0.00055	0.00054
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00259	-0.00260	-0.00261
	(!A1 * B2 * C1 * C2 * X)	0.00205	0.00172	0.00168
	(!A1 * B2 * C1 * C2 * X)	-0.00179	-0.00219	-0.00219
	(!A1 * !B2 * C1 * C2 * X)	0.00162	0.00164	0.00163
	(!A1 * !B2 * C1 * C2 * X)	-0.00222	-0.00223	-0.00222
	(!A1 * !B2 * C1 * !C2 * !X)	0.00055	0.00055	0.00054
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00259	-0.00260	-0.00261
	(!A1 * !B2 * !C1 * !X)	0.00055	0.00055	0.00054
	(!A1 * !B2 * !C1 * !X)	-0.00259	-0.00260	-0.00261

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	0.00172	0.00172	0.00167
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00146	-0.00148	-0.00146
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00164	0.00166	0.00164
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00112	-0.00113	-0.00112
	(A1 * A2 * B2 * !C1 * X)	0.00164	0.00166	0.00164
	(A1 * A2 * B2 * !C1 * X)	-0.00112	-0.00113	-0.00112
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00160	0.00163	0.00160
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00140	-0.00141	-0.00139
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00157	0.00158	0.00157
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00111	-0.00112	-0.00112
	(A1 * A2 * !B2 * !C1 * X)	0.00158	0.00159	0.00158
	(A1 * A2 * !B2 * !C1 * X)	-0.00111	-0.00112	-0.00112
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00208	0.00166	0.00163
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00158	-0.00206	-0.00207
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00154	0.00156	0.00155
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00210	-0.00211	-0.00210
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00053	0.00053	0.00051
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00242	-0.00242	-0.00244
	(A1 * !A2 * !B2 * !C1 * !X)	0.00053	0.00053	0.00051
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00242	-0.00242	-0.00244
	(!A1 * B2 * C1 * C2 * X)	0.00206	0.00166	0.00163
	(!A1 * B2 * C1 * C2 * X)	-0.00161	-0.00206	-0.00207
	(!A1 * !B2 * C1 * C2 * X)	0.00155	0.00157	0.00155
	(!A1 * !B2 * C1 * C2 * X)	-0.00211	-0.00211	-0.00210
	(!A1 * !B2 * C1 * !C2 * !X)	0.00054	0.00054	0.00053
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00241	-0.00242	-0.00244
	(!A1 * !B2 * !C1 * !X)	0.00054	0.00054	0.00053
	(!A1 * !B2 * !C1 * !X)	-0.00241	-0.00242	-0.00244

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)	-0.00169	-0.00170	-0.00169
	(A1 * A2 * B2 * C1 * C2 * X)	0.00155	0.00157	0.00155
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00160	-0.00161	-0.00160
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00129	0.00130	0.00130
	(A1 * A2 * B2 * !C1 * X)	-0.00160	-0.00161	-0.00160
	(A1 * A2 * B2 * !C1 * X)	0.00129	0.00130	0.00130
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00160	-0.00165	-0.00165
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00150	0.00150	0.00149
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00159	-0.00164	-0.00162
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00123	0.00123	0.00122
	(A1 * A2 * !B2 * !C1 * X)	-0.00159	-0.00162	-0.00163
	(A1 * A2 * !B2 * !C1 * X)	0.00122	0.00122	0.00122
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00168	-0.00168	-0.00166
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00219	0.00220	0.00220
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00157	-0.00161	-0.00162
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00223	0.00223	0.00224
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00053	-0.00054	-0.00053
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00262	0.00265	0.00262
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00053	-0.00054	-0.00053
	(A1 * !A2 * !B2 * !C1 * !X)	0.00262	0.00265	0.00262
	(!A1 * B2 * C1 * C2 * X)	-0.00168	-0.00168	-0.00166
	(!A1 * B2 * C1 * C2 * X)	0.00219	0.00220	0.00219
	(!A1 * !B2 * C1 * C2 * X)	-0.00157	-0.00161	-0.00162
	(!A1 * !B2 * C1 * C2 * X)	0.00223	0.00223	0.00224
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00053	-0.00054	-0.00053
	(!A1 * !B2 * C1 * !C2 * !X)	0.00262	0.00265	0.00262
	(!A1 * !B2 * !C1 * !X)	-0.00053	-0.00054	-0.00053
	(!A1 * !B2 * !C1 * !X)	0.00262	0.00265	0.00262

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	-0.00164	-0.00166	-0.00165
	(A1 * A2 * B2 * C1 * C2 * X)	0.00146	0.00148	0.00146
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00156	-0.00157	-0.00157
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00120	0.00121	0.00119
	(A1 * A2 * B2 * !C1 * X)	-0.00156	-0.00157	-0.00157
	(A1 * A2 * B2 * !C1 * X)	0.00120	0.00121	0.00118
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00155	-0.00159	-0.00160
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00140	0.00141	0.00139
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00154	-0.00157	-0.00157
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00113	0.00112	0.00112
	(A1 * A2 * !B2 * !C1 * X)	-0.00154	-0.00157	-0.00158
	(A1 * A2 * !B2 * !C1 * X)	0.00113	0.00112	0.00112
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00161	-0.00162	-0.00160
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00204	0.00207	0.00207
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00152	-0.00155	-0.00155
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00212	0.00211	0.00212
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00050	-0.00051	-0.00050
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00245	0.00247	0.00245
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00050	-0.00051	-0.00050
	(A1 * !A2 * !B2 * !C1 * !X)	0.00245	0.00247	0.00245
	(!A1 * B2 * C1 * C2 * X)	-0.00161	-0.00162	-0.00160
	(!A1 * B2 * C1 * C2 * X)	0.00205	0.00207	0.00207
	(!A1 * !B2 * C1 * C2 * X)	-0.00152	-0.00155	-0.00155
	(!A1 * !B2 * C1 * C2 * X)	0.00212	0.00211	0.00212
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00051	-0.00052	-0.00051
	(!A1 * !B2 * C1 * !C2 * !X)	0.00245	0.00246	0.00245
	(!A1 * !B2 * !C1 * !X)	-0.00051	-0.00052	-0.00051
	(!A1 * !B2 * !C1 * !X)	0.00245	0.00246	0.00245

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)	0.00165	0.00168	0.00165
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00148	-0.00150	-0.00148
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00164	0.00164	0.00162
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00115	-0.00115	-0.00115
	(A1 * A2 * B1 * !C1 * X)	0.00164	0.00164	0.00162
	(A1 * A2 * B1 * !C1 * X)	-0.00115	-0.00115	-0.00115
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00158	0.00161	0.00158
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00143	-0.00142	-0.00143
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00156	0.00158	0.00157
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00113	-0.00115	-0.00114
	(A1 * A2 * !B1 * !C1 * X)	0.00156	0.00158	0.00157
	(A1 * A2 * !B1 * !C1 * X)	-0.00113	-0.00115	-0.00114
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00198	0.00165	0.00162
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00167	-0.00209	-0.00210
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00155	0.00157	0.00155
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00212	-0.00214	-0.00212
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00149	0.00151	0.00149
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00220	-0.00221	-0.00220
	(A1 * !A2 * !B1 * !C1 * !X)	0.00149	0.00149	0.00149
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00220	-0.00220	-0.00220
	(!A1 * B1 * C1 * C2 * X)	0.00198	0.00165	0.00162
	(!A1 * B1 * C1 * C2 * X)	-0.00167	-0.00209	-0.00210
	(!A1 * !B1 * C1 * !C2 * !X)	0.00149	0.00151	0.00149
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00220	-0.00221	-0.00220
	(!A1 * !B1 * !C1 * !X)	0.00149	0.00149	0.00149
	(!A1 * !B1 * !C1 * !X)	-0.00220	-0.00220	-0.00220

	(A1 * A2 * B1 * C1 * C2 * X)	0.00172	0.00174	0.00169
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00146	-0.00148	-0.00146
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00167	0.00167	0.00165
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00113	-0.00113	-0.00112
	(A1 * A2 * B1 * !C1 * X)	0.00167	0.00167	0.00165
	(A1 * A2 * B1 * !C1 * X)	-0.00113	-0.00113	-0.00112
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00162	0.00164	0.00162
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00138	-0.00139	-0.00139
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00160	0.00161	0.00159
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00111	-0.00112	-0.00112
	(A1 * A2 * !B1 * !C1 * X)	0.00160	0.00161	0.00159
	(A1 * A2 * !B1 * !C1 * X)	-0.00111	-0.00112	-0.00112
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00206	0.00168	0.00165
sky130_fd_sc_hs__a222o_2	**(A1 * !A2 * B1 * C1 * C2 * X)**	-0.00162	-0.00206	-0.00207
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00157	0.00158	0.00158
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00210	-0.00210	-0.00210
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00154	0.00154	0.00154
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00210	-0.00211	-0.00211
	(A1 * !A2 * !B1 * !C1 * !X)	0.00154	0.00156	0.00154
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00210	-0.00212	-0.00211
	(!A1 * B1 * C1 * C2 * X)	0.00209	0.00168	0.00165
	(!A1 * B1 * C1 * C2 * X)	-0.00160	-0.00206	-0.00207
	(!A1 * !B1 * C1 * !C2 * !X)	0.00157	0.00159	0.00158
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00210	-0.00211	-0.00210
	(!A1 * !B1 * !C1 * !X)	0.00157	0.00159	0.00158
	(!A1 * !B1 * !C1 * !X)	-0.00210	-0.00211	-0.00210

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)	-0.00163	-0.00164	-0.00163
	(A1 * A2 * B1 * C1 * C2 * X)	0.00148	0.00150	0.00148
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00154	-0.00155	-0.00154
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00122	0.00122	0.00122
	(A1 * A2 * B1 * !C1 * X)	-0.00154	-0.00155	-0.00154
	(A1 * A2 * B1 * !C1 * X)	0.00122	0.00122	0.00122
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00154	-0.00157	-0.00158
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00143	0.00142	0.00143
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00153	-0.00156	-0.00157
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00115	0.00115	0.00115
	(A1 * A2 * !B1 * !C1 * X)	-0.00153	-0.00156	-0.00157
	(A1 * A2 * !B1 * !C1 * X)	0.00115	0.00115	0.00115
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00161	-0.00161	-0.00160
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00210	0.00210	0.00210
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00152	-0.00156	-0.00155
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00214	0.00215	0.00214
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00139	-0.00149	-0.00149
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00229	0.00223	0.00220
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00139	-0.00149	-0.00149
	(A1 * !A2 * !B1 * !C1 * !X)	0.00229	0.00223	0.00220
	(!A1 * B1 * C1 * C2 * X)	-0.00161	-0.00161	-0.00160
	(!A1 * B1 * C1 * C2 * X)	0.00210	0.00210	0.00210
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00139	-0.00149	-0.00149
	(!A1 * !B1 * C1 * !C2 * !X)	0.00229	0.00223	0.00220
	(!A1 * !B1 * !C1 * !X)	-0.00139	-0.00149	-0.00149
	(!A1 * !B1 * !C1 * !X)	0.00229	0.00223	0.00220

	(A1 * A2 * B1 * C1 * C2 * X)	-0.00166	-0.00168	-0.00167
	(A1 * A2 * B1 * C1 * C2 * X)	0.00146	0.00148	0.00146
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00157	-0.00158	-0.00159
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00121	0.00121	0.00119
	(A1 * A2 * B1 * !C1 * X)	-0.00157	-0.00158	-0.00159
	(A1 * A2 * B1 * !C1 * X)	0.00121	0.00121	0.00119
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00156	-0.00160	-0.00162
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00138	0.00139	0.00139
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00155	-0.00159	-0.00159
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00112	0.00113	0.00112
	(A1 * A2 * !B1 * !C1 * X)	-0.00155	-0.00159	-0.00159
	(A1 * A2 * !B1 * !C1 * X)	0.00112	0.00113	0.00112
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00163	-0.00164	-0.00162
sky130_fd_sc_hs__a222o_2	**(A1 * !A2 * B1 * C1 * C2 * X)**	0.00205	0.00207	0.00207
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00153	-0.00158	-0.00158
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00211	0.00214	0.00212
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00142	-0.00153	-0.00154
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00220	0.00214	0.00212
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00142	-0.00153	-0.00154
	(A1 * !A2 * !B1 * !C1 * !X)	0.00220	0.00214	0.00212
	(!A1 * B1 * C1 * C2 * X)	-0.00164	-0.00164	-0.00162
	(!A1 * B1 * C1 * C2 * X)	0.00207	0.00207	0.00207
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00147	-0.00158	-0.00158
	(!A1 * !B1 * C1 * !C2 * !X)	0.00219	0.00213	0.00211
	(!A1 * !B1 * !C1 * !X)	-0.00147	-0.00158	-0.00158
	(!A1 * !B1 * !C1 * !X)	0.00219	0.00213	0.00211

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)	0.00194	0.00196	0.00195
	(A1 * B1 * B2 * C2 * X)	-0.00108	-0.00109	-0.00108
	(A1 * B1 * B2 * !C2 * X)	0.00189	0.00192	0.00189
	(A1 * B1 * B2 * !C2 * X)	-0.00107	-0.00109	-0.00108
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00195	0.00196	0.00195
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00108	-0.00109	-0.00108
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00189	0.00191	0.00190
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00107	-0.00108	-0.00108
	(A1 * A2 * !B1 * C2 * X)	0.00195	0.00196	0.00195
	(A1 * A2 * !B1 * C2 * X)	-0.00108	-0.00109	-0.00108
	(A1 * A2 * !B1 * !C2 * X)	0.00189	0.00193	0.00190
	(A1 * A2 * !B1 * !C2 * X)	-0.00106	-0.00108	-0.00108
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00059	0.00059	0.00057
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00262	-0.00262	-0.00264
	(A1 * !A2 * !B1 * !C2 * !X)	0.00059	0.00059	0.00057
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00262	-0.00262	-0.00264
	(!A1 * B1 * B2 * C2 * X)	0.00195	0.00196	0.00195
	(!A1 * B1 * B2 * C2 * X)	-0.00108	-0.00109	-0.00108
	(!A1 * B1 * B2 * !C2 * X)	0.00188	0.00190	0.00189
	(!A1 * B1 * B2 * !C2 * X)	-0.00107	-0.00109	-0.00108
	(!A1 * B1 * !B2 * !C2 * !X)	0.00059	0.00059	0.00057
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00262	-0.00262	-0.00264
	(!A1 * !B1 * !C2 * !X)	0.00059	0.00059	0.00057
	(!A1 * !B1 * !C2 * !X)	-0.00262	-0.00262	-0.00264

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	0.00189	0.00191	0.00190
	(A1 * B1 * B2 * C2 * X)	-0.00101	-0.00102	-0.00101
	(A1 * B1 * B2 * !C2 * X)	0.00184	0.00187	0.00185
	(A1 * B1 * B2 * !C2 * X)	-0.00101	-0.00102	-0.00101
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00189	0.00191	0.00190
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00101	-0.00102	-0.00101
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00184	0.00185	0.00184
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00101	-0.00102	-0.00101
	(A1 * A2 * !B1 * C2 * X)	0.00189	0.00191	0.00190
	(A1 * A2 * !B1 * C2 * X)	-0.00101	-0.00102	-0.00101
	(A1 * A2 * !B1 * !C2 * X)	0.00184	0.00186	0.00184
	(A1 * A2 * !B1 * !C2 * X)	-0.00101	-0.00102	-0.00101
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00058	0.00058	0.00056
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00249	-0.00250	-0.00252
	(A1 * !A2 * !B1 * !C2 * !X)	0.00058	0.00058	0.00056
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00249	-0.00250	-0.00252
	(!A1 * B1 * B2 * C2 * X)	0.00189	0.00191	0.00190
	(!A1 * B1 * B2 * C2 * X)	-0.00102	-0.00103	-0.00101
	(!A1 * B1 * B2 * !C2 * X)	0.00184	0.00185	0.00185
	(!A1 * B1 * B2 * !C2 * X)	-0.00101	-0.00101	-0.00101
	(!A1 * B1 * !B2 * !C2 * !X)	0.00058	0.00058	0.00056
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00249	-0.00250	-0.00252
	(!A1 * !B1 * !C2 * !X)	0.00058	0.00058	0.00056
	(!A1 * !B1 * !C2 * !X)	-0.00249	-0.00250	-0.00252

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)**	-0.00177	-0.00179	-0.00193
	(A1 * B1 * B2 * C2 * X)	0.00124	0.00124	0.00112
	(A1 * B1 * B2 * !C2 * X)	-0.00186	-0.00190	-0.00189
	(A1 * B1 * B2 * !C2 * X)	0.00108	0.00109	0.00108
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00161	-0.00163	-0.00189
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00133	0.00133	0.00113
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00185	-0.00190	-0.00190
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00108	0.00109	0.00108
	(A1 * A2 * !B1 * C2 * X)	-0.00162	-0.00163	-0.00189
	(A1 * A2 * !B1 * C2 * X)	0.00133	0.00133	0.00113
	(A1 * A2 * !B1 * !C2 * X)	-0.00185	-0.00189	-0.00190
	(A1 * A2 * !B1 * !C2 * X)	0.00108	0.00108	0.00108
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00057	-0.00058	-0.00056
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00265	0.00267	0.00265
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00057	-0.00058	-0.00056
	(A1 * !A2 * !B1 * !C2 * !X)	0.00265	0.00267	0.00265
	(!A1 * B1 * B2 * C2 * X)	-0.00177	-0.00179	-0.00193
	(!A1 * B1 * B2 * C2 * X)	0.00124	0.00124	0.00112
	(!A1 * B1 * B2 * !C2 * X)	-0.00185	-0.00190	-0.00189
	(!A1 * B1 * B2 * !C2 * X)	0.00108	0.00109	0.00108
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00057	-0.00058	-0.00056
	(!A1 * B1 * !B2 * !C2 * !X)	0.00265	0.00267	0.00265
	(!A1 * !B1 * !C2 * !X)	-0.00057	-0.00058	-0.00056
	(!A1 * !B1 * !C2 * !X)	0.00265	0.00267	0.00265

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	-0.00176	-0.00178	-0.00188
	(A1 * B1 * B2 * C2 * X)	0.00113	0.00113	0.00104
	(A1 * B1 * B2 * !C2 * X)	-0.00180	-0.00185	-0.00185
	(A1 * B1 * B2 * !C2 * X)	0.00102	0.00102	0.00101
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00159	-0.00161	-0.00184
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00125	0.00125	0.00107
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00180	-0.00184	-0.00184
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00102	0.00102	0.00101
	(A1 * A2 * !B1 * C2 * X)	-0.00159	-0.00161	-0.00184
	(A1 * A2 * !B1 * C2 * X)	0.00125	0.00125	0.00107
	(A1 * A2 * !B1 * !C2 * X)	-0.00180	-0.00184	-0.00184
	(A1 * A2 * !B1 * !C2 * X)	0.00102	0.00102	0.00101
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00056	-0.00056	-0.00055
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00253	0.00254	0.00253
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00056	-0.00056	-0.00055
	(A1 * !A2 * !B1 * !C2 * !X)	0.00253	0.00254	0.00253
	(!A1 * B1 * B2 * C2 * X)	-0.00176	-0.00178	-0.00188
	(!A1 * B1 * B2 * C2 * X)	0.00113	0.00113	0.00104
	(!A1 * B1 * B2 * !C2 * X)	-0.00180	-0.00184	-0.00185
	(!A1 * B1 * B2 * !C2 * X)	0.00102	0.00101	0.00101
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00056	-0.00056	-0.00055
	(!A1 * B1 * !B2 * !C2 * !X)	0.00253	0.00254	0.00253
	(!A1 * !B1 * !C2 * !X)	-0.00056	-0.00056	-0.00055
	(!A1 * !B1 * !C2 * !X)	0.00253	0.00254	0.00253

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)**	0.00196	0.00196	0.00195
	(A1 * B1 * B2 * C1 * X)	-0.00104	-0.00104	-0.00103
	(A1 * B1 * B2 * !C1 * X)	0.00188	0.00190	0.00189
	(A1 * B1 * B2 * !C1 * X)	-0.00103	-0.00104	-0.00103
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00196	0.00196	0.00195
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00104	-0.00104	-0.00103
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00188	0.00190	0.00189
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00102	-0.00104	-0.00103
	(A1 * A2 * !B1 * C1 * X)	0.00196	0.00196	0.00195
	(A1 * A2 * !B1 * C1 * X)	-0.00104	-0.00104	-0.00103
	(A1 * A2 * !B1 * !C1 * X)	0.00188	0.00191	0.00189
	(A1 * A2 * !B1 * !C1 * X)	-0.00102	-0.00104	-0.00103
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00151	0.00152	0.00152
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00233	-0.00234	-0.00233
	(A1 * !A2 * !B1 * !C1 * !X)	0.00151	0.00153	0.00152
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00233	-0.00234	-0.00233
	(!A1 * B1 * B2 * C1 * X)	0.00196	0.00196	0.00195
	(!A1 * B1 * B2 * C1 * X)	-0.00105	-0.00105	-0.00104
	(!A1 * B1 * B2 * !C1 * X)	0.00188	0.00191	0.00189
	(!A1 * B1 * B2 * !C1 * X)	-0.00103	-0.00104	-0.00103
	(!A1 * B1 * !B2 * !C1 * !X)	0.00151	0.00152	0.00152
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00233	-0.00234	-0.00233
	(!A1 * !B1 * !C1 * !X)	0.00151	0.00152	0.00152
	(!A1 * !B1 * !C1 * !X)	-0.00233	-0.00234	-0.00233

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	0.00201	0.00202	0.00201
	(A1 * B1 * B2 * C1 * X)	-0.00105	-0.00105	-0.00104
	(A1 * B1 * B2 * !C1 * X)	0.00194	0.00196	0.00194
	(A1 * B1 * B2 * !C1 * X)	-0.00103	-0.00104	-0.00103
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00201	0.00202	0.00201
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00105	-0.00105	-0.00104
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00194	0.00196	0.00194
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00103	-0.00104	-0.00103
	(A1 * A2 * !B1 * C1 * X)	0.00201	0.00202	0.00201
	(A1 * A2 * !B1 * C1 * X)	-0.00105	-0.00105	-0.00104
	(A1 * A2 * !B1 * !C1 * X)	0.00194	0.00196	0.00194
	(A1 * A2 * !B1 * !C1 * X)	-0.00103	-0.00104	-0.00103
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00150	0.00150	0.00150
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00243	-0.00243	-0.00243
	(A1 * !A2 * !B1 * !C1 * !X)	0.00150	0.00151	0.00150
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00243	-0.00244	-0.00243
	(!A1 * B1 * B2 * C1 * X)	0.00201	0.00203	0.00201
	(!A1 * B1 * B2 * C1 * X)	-0.00105	-0.00105	-0.00104
	(!A1 * B1 * B2 * !C1 * X)	0.00194	0.00196	0.00194
	(!A1 * B1 * B2 * !C1 * X)	-0.00103	-0.00104	-0.00103
	(!A1 * B1 * !B2 * !C1 * !X)	0.00150	0.00150	0.00149
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00243	-0.00243	-0.00243
	(!A1 * !B1 * !C1 * !X)	0.00150	0.00150	0.00150
	(!A1 * !B1 * !C1 * !X)	-0.00243	-0.00243	-0.00243

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)**	-0.00177	-0.00179	-0.00193
	(A1 * B1 * B2 * C1 * X)	0.00119	0.00119	0.00107
	(A1 * B1 * B2 * !C1 * X)	-0.00186	-0.00190	-0.00189
	(A1 * B1 * B2 * !C1 * X)	0.00104	0.00104	0.00103
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00161	-0.00163	-0.00189
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00129	0.00129	0.00108
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00186	-0.00189	-0.00189
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00104	0.00104	0.00103
	(A1 * A2 * !B1 * C1 * X)	-0.00161	-0.00163	-0.00189
	(A1 * A2 * !B1 * C1 * X)	0.00129	0.00129	0.00108
	(A1 * A2 * !B1 * !C1 * X)	-0.00186	-0.00189	-0.00189
	(A1 * A2 * !B1 * !C1 * X)	0.00104	0.00104	0.00103
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00142	-0.00152	-0.00152
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00243	0.00237	0.00234
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00142	-0.00152	-0.00152
	(A1 * !A2 * !B1 * !C1 * !X)	0.00243	0.00237	0.00234
	(!A1 * B1 * B2 * C1 * X)	-0.00177	-0.00178	-0.00193
	(!A1 * B1 * B2 * C1 * X)	0.00119	0.00119	0.00107
	(!A1 * B1 * B2 * !C1 * X)	-0.00186	-0.00189	-0.00189
	(!A1 * B1 * B2 * !C1 * X)	0.00104	0.00104	0.00104
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00142	-0.00152	-0.00152
	(!A1 * B1 * !B2 * !C1 * !X)	0.00243	0.00237	0.00234
	(!A1 * !B1 * !C1 * !X)	-0.00142	-0.00152	-0.00152
	(!A1 * !B1 * !C1 * !X)	0.00243	0.00237	0.00234

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00188	-0.00189	-0.00199
	(A1 * B1 * B2 * C1 * X)	0.00116	0.00115	0.00106
	(A1 * B1 * B2 * !C1 * X)	-0.00192	-0.00196	-0.00194
	(A1 * B1 * B2 * !C1 * X)	0.00104	0.00104	0.00103
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00171	-0.00172	-0.00195
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00128	0.00127	0.00109
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00192	-0.00196	-0.00194
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00104	0.00105	0.00104
	(A1 * A2 * !B1 * C1 * X)	-0.00171	-0.00172	-0.00195
	(A1 * A2 * !B1 * C1 * X)	0.00128	0.00128	0.00109
	(A1 * A2 * !B1 * !C1 * X)	-0.00192	-0.00196	-0.00194
	(A1 * A2 * !B1 * !C1 * X)	0.00104	0.00105	0.00104
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00139	-0.00150	-0.00150
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00253	0.00246	0.00244
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00139	-0.00150	-0.00150
	(A1 * !A2 * !B1 * !C1 * !X)	0.00253	0.00246	0.00244
	(!A1 * B1 * B2 * C1 * X)	-0.00188	-0.00189	-0.00199
	(!A1 * B1 * B2 * C1 * X)	0.00116	0.00115	0.00106
	(!A1 * B1 * B2 * !C1 * X)	-0.00192	-0.00196	-0.00194
	(!A1 * B1 * B2 * !C1 * X)	0.00104	0.00105	0.00104
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00139	-0.00150	-0.00149
	(!A1 * B1 * !B2 * !C1 * !X)	0.00253	0.00245	0.00244
	(!A1 * !B1 * !C1 * !X)	-0.00139	-0.00150	-0.00150
	(!A1 * !B1 * !C1 * !X)	0.00253	0.00246	0.00244

SKY130_FD_SC_HS__A22OIx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00280	0.00278	0.00290	0.00291	0.59700
sky130_fd_sc_hs__a22oi_2	0.00611	0.00537	0.00584	0.00533	1.04731
sky130_fd_sc_hs__a22oi_4	0.01073	0.01060	0.01084	0.01068	1.92432

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a22oi_1	0.00000	0.06003	0.20266
sky130_fd_sc_hs__a22oi_2	0.00000	0.12006	0.40531
sky130_fd_sc_hs__a22oi_4	0.00000	0.24012	0.81062

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)	0.09167	0.88060	9.91969
	A2->Y (FR)	0.10777	0.90178	9.97703
	B1->Y (FR)	0.06633	0.87934	10.30040
	B2->Y (FR)	0.08266	0.90692	10.45330
sky130_fd_sc_hs__a22oi_2	A1->Y (FR)	0.09698	0.75195	9.56965
	A2->Y (FR)	0.11662	0.78575	9.79428
	B1->Y (FR)	0.06819	0.76253	10.11980
	B2->Y (FR)	0.08997	0.80295	10.42000
sky130_fd_sc_hs__a22oi_4	A1->Y (FR)	0.09003	0.64083	9.33594
	A2->Y (FR)	0.11325	0.67410	9.56866
	B1->Y (FR)	0.06365	0.66056	9.95553
	B2->Y (FR)	0.08768	0.69987	10.29210

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22oi_1	A1->Y (RF)	0.03193	0.37832	4.15114
	A2->Y (RF)	0.03568	0.34275	3.67619
	B1->Y (RF)	0.02104	0.36124	4.19043
	B2->Y (RF)	0.02552	0.33413	3.74842
sky130_fd_sc_hs__a22oi_2	A1->Y (RF)	0.03312	0.32101	3.98344
	A2->Y (RF)	0.03671	0.29585	3.59727
	B1->Y (RF)	0.02063	0.29504	3.95982
	B2->Y (RF)	0.02551	0.27306	3.56777
sky130_fd_sc_hs__a22oi_4	A1->Y (RF)	0.03377	0.29348	4.23997
	A2->Y (RF)	0.03801	0.24588	3.45984
	B1->Y (RF)	0.01989	0.26472	4.23909
	B2->Y (RF)	0.02440	0.21791	3.41813

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	-0.00025	-0.00020	0.01209
	A1	0.00786	0.00793	0.02029
	A2	0.00036	0.00043	0.01280
	A2	0.00985	0.00994	0.02233
	B1	-0.00035	0.00085	0.02072
	B1	0.00514	0.00634	0.02630
	B2	0.00005	0.00120	0.02083
	B2	0.00693	0.00809	0.02786
sky130_fd_sc_hs__a22oi_2	A1	0.00005	0.00023	0.02539
	A1	0.01713	0.01732	0.04258
	A2	0.00159	0.00174	0.02736
	A2	0.02040	0.02057	0.04629
	B1	-0.00037	0.00345	0.04283
	B1	0.01109	0.01488	0.05435
	B2	0.00163	0.00517	0.04380
	B2	0.01514	0.01868	0.05726
sky130_fd_sc_hs__a22oi_4	A1	-0.00207	-0.00140	0.04642
	A1	0.03021	0.03093	0.07878
	A2	0.00124	0.00176	0.05107
	A2	0.03868	0.03932	0.08867
	B1	-0.00260	0.00332	0.07541
	B1	0.01891	0.02482	0.09690
	B2	0.00092	0.00629	0.07843
	B2	0.02757	0.03298	0.10546

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	0.01115	0.01151	0.02258
	A1	0.00316	0.00349	0.01426
	A2	0.01255	0.01279	0.02244
	A2	0.00310	0.00328	0.01300
	B1	0.00519	0.00583	0.01651
	B1	-0.00029	0.00034	0.01073
	B2	0.00668	0.00714	0.01669
	B2	-0.00026	0.00014	0.00943
sky130_fd_sc_hs__a22oi_2	A1	0.02244	0.02316	0.04533
	A1	0.00562	0.00630	0.02806
	A2	0.02439	0.02483	0.04420
	A2	0.00567	0.00607	0.02531
	B1	0.01107	0.01258	0.03451
	B1	-0.00036	0.00110	0.02288
	B2	0.01342	0.01433	0.03370
	B2	-0.00020	0.00065	0.01998
sky130_fd_sc_hs__a22oi_4	A1	0.04245	0.04444	0.08514
	A1	0.01065	0.01249	0.05287
	A2	0.04789	0.04887	0.08824
	A2	0.01057	0.01147	0.05054
	B1	0.02015	0.02303	0.06281
	B1	-0.00131	0.00153	0.04086
	B2	0.02587	0.02782	0.06578
	B2	-0.00106	0.00082	0.03811

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)	0.00207	0.00183	0.00180
	(A2 * B1 * B2 * !Y)	-0.00196	-0.00228	-0.00228
	(!A2 * B1 * B2 * !Y)	0.00174	0.00176	0.00175
	(!A2 * B1 * B2 * !Y)	-0.00232	-0.00233	-0.00232
	(!A2 * B1 * !B2 * Y)	0.00061	0.00061	0.00059
	(!A2 * B1 * !B2 * Y)	-0.00264	-0.00264	-0.00268
	(!A2 * !B1 * Y)	0.00061	0.00061	0.00059
	(!A2 * !B1 * Y)	-0.00264	-0.00264	-0.00268
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	0.00468	0.00401	0.00393
	(A2 * B1 * B2 * !Y)	-0.00398	-0.00485	-0.00486
	(!A2 * B1 * B2 * !Y)	0.00376	0.00379	0.00377
	(!A2 * B1 * B2 * !Y)	-0.00495	-0.00498	-0.00496
	(!A2 * B1 * !B2 * Y)	0.00121	0.00122	0.00118
	(!A2 * B1 * !B2 * Y)	-0.00588	-0.00593	-0.00598
	(!A2 * !B1 * Y)	0.00121	0.00122	0.00118
	(!A2 * !B1 * Y)	-0.00588	-0.00593	-0.00598
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	0.00864	0.00743	0.00730
	(A2 * B1 * B2 * !Y)	-0.00771	-0.00924	-0.00924
	(!A2 * B1 * B2 * !Y)	0.00697	0.00702	0.00698
	(!A2 * B1 * B2 * !Y)	-0.00943	-0.00947	-0.00941
	(!A2 * B1 * !B2 * Y)	0.00232	0.00232	0.00222
	(!A2 * B1 * !B2 * Y)	-0.01083	-0.01089	-0.01101
	(!A2 * !B1 * Y)	0.00232	0.00233	0.00223
	(!A2 * !B1 * Y)	-0.01083	-0.01089	-0.01101

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)	-0.00179	-0.00180	-0.00179
	(A2 * B1 * B2 * !Y)	0.00227	0.00228	0.00228
	(!A2 * B1 * B2 * !Y)	-0.00168	-0.00175	-0.00175
	(!A2 * B1 * B2 * !Y)	0.00233	0.00235	0.00233
	(!A2 * B1 * !B2 * Y)	-0.00057	-0.00058	-0.00057
	(!A2 * B1 * !B2 * Y)	0.00267	0.00272	0.00268
	(!A2 * !B1 * Y)	-0.00057	-0.00058	-0.00057
	(!A2 * !B1 * Y)	0.00267	0.00272	0.00268
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	-0.00391	-0.00393	-0.00391
	(A2 * B1 * B2 * !Y)	0.00483	0.00488	0.00486
	(!A2 * B1 * B2 * !Y)	-0.00367	-0.00379	-0.00377
	(!A2 * B1 * B2 * !Y)	0.00499	0.00500	0.00498
	(!A2 * B1 * !B2 * Y)	-0.00115	-0.00114	-0.00115
	(!A2 * B1 * !B2 * Y)	0.00596	0.00595	0.00599
	(!A2 * !B1 * Y)	-0.00115	-0.00117	-0.00115
	(!A2 * !B1 * Y)	0.00596	0.00608	0.00598
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	-0.00728	-0.00730	-0.00725
	(A2 * B1 * B2 * !Y)	0.00923	0.00930	0.00924
	(!A2 * B1 * B2 * !Y)	-0.00671	-0.00700	-0.00698
	(!A2 * B1 * B2 * !Y)	0.00943	0.00950	0.00945
	(!A2 * B1 * !B2 * Y)	-0.00216	-0.00216	-0.00216
	(!A2 * B1 * !B2 * Y)	0.01099	0.01101	0.01103
	(!A2 * !B1 * Y)	-0.00217	-0.00217	-0.00217
	(!A2 * !B1 * Y)	0.01099	0.01101	0.01103

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)	0.00218	0.00194	0.00190
	(A1 * B1 * B2 * !Y)	-0.00202	-0.00236	-0.00237
	(!A1 * B1 * B2 * !Y)	0.00183	0.00184	0.00184
	(!A1 * B1 * B2 * !Y)	-0.00241	-0.00242	-0.00241
	(!A1 * B1 * !B2 * Y)	0.00183	0.00183	0.00184
	(!A1 * B1 * !B2 * Y)	-0.00241	-0.00241	-0.00241
	(!A1 * !B1 * Y)	0.00183	0.00185	0.00184
	(!A1 * !B1 * Y)	-0.00241	-0.00242	-0.00241
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	0.00417	0.00367	0.00361
	(A1 * B1 * B2 * !Y)	-0.00384	-0.00451	-0.00451
	(!A1 * B1 * B2 * !Y)	0.00345	0.00350	0.00346
	(!A1 * B1 * B2 * !Y)	-0.00458	-0.00462	-0.00459
	(!A1 * B1 * !B2 * Y)	0.00333	0.00336	0.00334
	(!A1 * B1 * !B2 * Y)	-0.00471	-0.00473	-0.00471
	(!A1 * !B1 * Y)	0.00333	0.00336	0.00334
	(!A1 * !B1 * Y)	-0.00471	-0.00473	-0.00471
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	0.00865	0.00749	0.00735
	(A1 * B1 * B2 * !Y)	-0.00775	-0.00926	-0.00928
	(!A1 * B1 * B2 * !Y)	0.00703	0.00713	0.00707
	(!A1 * B1 * B2 * !Y)	-0.00942	-0.00949	-0.00945
	(!A1 * B1 * !B2 * Y)	0.00699	0.00707	0.00704
	(!A1 * B1 * !B2 * Y)	-0.00941	-0.00947	-0.00945
	(!A1 * !B1 * Y)	0.00700	0.00705	0.00700
	(!A1 * !B1 * Y)	-0.00946	-0.00949	-0.00944

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)	-0.00189	-0.00190	-0.00189
	(A1 * B1 * B2 * !Y)	0.00236	0.00238	0.00237
	(!A1 * B1 * B2 * !Y)	-0.00178	-0.00184	-0.00184
	(!A1 * B1 * B2 * !Y)	0.00241	0.00243	0.00242
	(!A1 * B1 * !B2 * Y)	-0.00172	-0.00183	-0.00184
	(!A1 * B1 * !B2 * Y)	0.00247	0.00244	0.00242
	(!A1 * !B1 * Y)	-0.00172	-0.00184	-0.00184
	(!A1 * !B1 * Y)	0.00247	0.00244	0.00242
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	-0.00360	-0.00361	-0.00359
	(A1 * B1 * B2 * !Y)	0.00451	0.00453	0.00451
	(!A1 * B1 * B2 * !Y)	-0.00335	-0.00347	-0.00346
	(!A1 * B1 * B2 * !Y)	0.00459	0.00464	0.00461
	(!A1 * B1 * !B2 * Y)	-0.00309	-0.00336	-0.00334
	(!A1 * B1 * !B2 * Y)	0.00489	0.00476	0.00472
	(!A1 * !B1 * Y)	-0.00309	-0.00336	-0.00334
	(!A1 * !B1 * Y)	0.00489	0.00476	0.00472
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	-0.00733	-0.00735	-0.00730
	(A1 * B1 * B2 * !Y)	0.00927	0.00933	0.00928
	(!A1 * B1 * B2 * !Y)	-0.00678	-0.00703	-0.00707
	(!A1 * B1 * B2 * !Y)	0.00945	0.00955	0.00949
	(!A1 * B1 * !B2 * Y)	-0.00645	-0.00707	-0.00704
	(!A1 * B1 * !B2 * Y)	0.00986	0.00956	0.00948
	(!A1 * !B1 * Y)	-0.00645	-0.00705	-0.00700
	(!A1 * !B1 * Y)	0.00986	0.00956	0.00948

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)	0.00206	0.00208	0.00206
	(A1 * A2 * B2 * !Y)	-0.00110	-0.00110	-0.00109
	(A1 * A2 * !B2 * !Y)	0.00200	0.00204	0.00201
	(A1 * A2 * !B2 * !Y)	-0.00109	-0.00110	-0.00109
	(A1 * !A2 * !B2 * Y)	0.00055	0.00056	0.00054
	(A1 * !A2 * !B2 * Y)	-0.00275	-0.00277	-0.00278
	(!A1 * !B2 * Y)	0.00056	0.00056	0.00054
	(!A1 * !B2 * Y)	-0.00275	-0.00277	-0.00278
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	0.00442	0.00445	0.00441
	(A1 * A2 * B2 * !Y)	-0.00215	-0.00214	-0.00212
	(A1 * A2 * !B2 * !Y)	0.00423	0.00428	0.00425
	(A1 * A2 * !B2 * !Y)	-0.00211	-0.00212	-0.00212
	(A1 * !A2 * !B2 * Y)	0.00131	0.00131	0.00126
	(A1 * !A2 * !B2 * Y)	-0.00549	-0.00552	-0.00557
	(!A1 * !B2 * Y)	0.00131	0.00131	0.00126
	(!A1 * !B2 * Y)	-0.00549	-0.00552	-0.00557
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	0.00815	0.00832	0.00819
	(A1 * A2 * B2 * !Y)	-0.00427	-0.00436	-0.00429
	(A1 * A2 * !B2 * !Y)	0.00787	0.00801	0.00788
	(A1 * A2 * !B2 * !Y)	-0.00427	-0.00429	-0.00428
	(A1 * !A2 * !B2 * Y)	0.00230	0.00231	0.00220
	(A1 * !A2 * !B2 * Y)	-0.01089	-0.01094	-0.01105
	(!A1 * !B2 * Y)	0.00228	0.00231	0.00220
	(!A1 * !B2 * Y)	-0.01081	-0.01094	-0.01105

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)	-0.00188	-0.00190	-0.00204
	(A1 * A2 * B2 * !Y)	0.00124	0.00125	0.00113
	(A1 * A2 * !B2 * !Y)	-0.00195	-0.00200	-0.00200
	(A1 * A2 * !B2 * !Y)	0.00110	0.00110	0.00109
	(A1 * !A2 * !B2 * Y)	-0.00052	-0.00053	-0.00053
	(A1 * !A2 * !B2 * Y)	0.00277	0.00278	0.00279
	(!A1 * !B2 * Y)	-0.00052	-0.00053	-0.00053
	(!A1 * !B2 * Y)	0.00277	0.00278	0.00279
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	-0.00408	-0.00413	-0.00437
	(A1 * A2 * B2 * !Y)	0.00238	0.00239	0.00218
	(A1 * A2 * !B2 * !Y)	-0.00414	-0.00428	-0.00425
	(A1 * A2 * !B2 * !Y)	0.00211	0.00212	0.00212
	(A1 * !A2 * !B2 * Y)	-0.00123	-0.00124	-0.00123
	(A1 * !A2 * !B2 * Y)	0.00555	0.00558	0.00558
	(!A1 * !B2 * Y)	-0.00123	-0.00123	-0.00123
	(!A1 * !B2 * Y)	0.00555	0.00557	0.00558
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	-0.00758	-0.00765	-0.00812
	(A1 * A2 * B2 * !Y)	0.00480	0.00481	0.00440
	(A1 * A2 * !B2 * !Y)	-0.00762	-0.00793	-0.00788
	(A1 * A2 * !B2 * !Y)	0.00427	0.00429	0.00428
	(A1 * !A2 * !B2 * Y)	-0.00214	-0.00215	-0.00214
	(A1 * !A2 * !B2 * Y)	0.01102	0.01108	0.01107
	(!A1 * !B2 * Y)	-0.00214	-0.00215	-0.00215
	(!A1 * !B2 * Y)	0.01102	0.01107	0.01107

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)	0.00226	0.00227	0.00225
	(A1 * A2 * B1 * !Y)	-0.00111	-0.00112	-0.00111
	(A1 * A2 * !B1 * !Y)	0.00218	0.00222	0.00218
	(A1 * A2 * !B1 * !Y)	-0.00110	-0.00110	-0.00110
	(A1 * !A2 * !B1 * Y)	0.00185	0.00186	0.00185
	(A1 * !A2 * !B1 * Y)	-0.00249	-0.00249	-0.00249
	(!A1 * !B1 * Y)	0.00185	0.00186	0.00185
	(!A1 * !B1 * Y)	-0.00249	-0.00249	-0.00249
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	0.00389	0.00394	0.00391
	(A1 * A2 * B1 * !Y)	-0.00212	-0.00215	-0.00213
	(A1 * A2 * !B1 * !Y)	0.00376	0.00383	0.00376
	(A1 * A2 * !B1 * !Y)	-0.00212	-0.00213	-0.00213
	(A1 * !A2 * !B1 * Y)	0.00331	0.00336	0.00333
	(A1 * !A2 * !B1 * Y)	-0.00466	-0.00469	-0.00467
	(!A1 * !B1 * Y)	0.00331	0.00336	0.00333
	(!A1 * !B1 * Y)	-0.00466	-0.00469	-0.00467
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	0.00815	0.00832	0.00818
	(A1 * A2 * B1 * !Y)	-0.00428	-0.00437	-0.00429
	(A1 * A2 * !B1 * !Y)	0.00783	0.00800	0.00786
	(A1 * A2 * !B1 * !Y)	-0.00426	-0.00430	-0.00428
	(A1 * !A2 * !B1 * Y)	0.00705	0.00713	0.00705
	(A1 * !A2 * !B1 * Y)	-0.00941	-0.00946	-0.00940
	(!A1 * !B1 * Y)	0.00705	0.00713	0.00705
	(!A1 * !B1 * Y)	-0.00941	-0.00946	-0.00940

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)	-0.00206	-0.00209	-0.00223
	(A1 * A2 * B1 * !Y)	0.00125	0.00126	0.00114
	(A1 * A2 * !B1 * !Y)	-0.00213	-0.00217	-0.00218
	(A1 * A2 * !B1 * !Y)	0.00110	0.00110	0.00110
	(A1 * !A2 * !B1 * Y)	-0.00173	-0.00184	-0.00185
	(A1 * !A2 * !B1 * Y)	0.00258	0.00250	0.00250
	(!A1 * !B1 * Y)	-0.00173	-0.00183	-0.00185
	(!A1 * !B1 * Y)	0.00258	0.00249	0.00250
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	-0.00358	-0.00362	-0.00387
	(A1 * A2 * B1 * !Y)	0.00239	0.00240	0.00219
	(A1 * A2 * !B1 * !Y)	-0.00364	-0.00377	-0.00376
	(A1 * A2 * !B1 * !Y)	0.00212	0.00213	0.00213
	(A1 * !A2 * !B1 * Y)	-0.00308	-0.00335	-0.00333
	(A1 * !A2 * !B1 * Y)	0.00483	0.00472	0.00468
	(!A1 * !B1 * Y)	-0.00308	-0.00335	-0.00333
	(!A1 * !B1 * Y)	0.00483	0.00472	0.00468
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	-0.00758	-0.00764	-0.00811
	(A1 * A2 * B1 * !Y)	0.00480	0.00481	0.00441
	(A1 * A2 * !B1 * !Y)	-0.00764	-0.00789	-0.00786
	(A1 * A2 * !B1 * !Y)	0.00427	0.00430	0.00428
	(A1 * !A2 * !B1 * Y)	-0.00645	-0.00704	-0.00705
	(A1 * !A2 * !B1 * Y)	0.00977	0.00950	0.00942
	(!A1 * !B1 * Y)	-0.00646	-0.00704	-0.00705
	(!A1 * !B1 * Y)	0.00977	0.00950	0.00942

SKY130_FD_SC_HS__A22Ox

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00272	0.00251	0.00266	0.00273	1.25951
sky130_fd_sc_hs__a22o_2	0.00284	0.00263	0.00279	0.00273	2.42501
sky130_fd_sc_hs__a22o_4	0.00484	0.00509	0.00484	0.00531	4.96067

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a22o_1	0.00000	0.20205	0.52619
sky130_fd_sc_hs__a22o_2	0.00000	0.26063	0.53467
sky130_fd_sc_hs__a22o_4	0.00000	0.52551	1.06933

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)	0.07977	0.55946	6.04272
	A2->X (RR)	0.08448	0.54739	6.00646
	B1->X (RR)	0.06531	0.52376	5.98019
	B2->X (RR)	0.06909	0.52031	5.93755
sky130_fd_sc_hs__a22o_2	A1->X (RR)	0.07909	0.48021	5.97772
	A2->X (RR)	0.08401	0.46281	5.90128
	B1->X (RR)	0.06611	0.44654	5.88721
	B2->X (RR)	0.06948	0.43877	5.83915
sky130_fd_sc_hs__a22o_4	A1->X (RR)	0.07659	0.39989	6.11140
	A2->X (RR)	0.08306	0.39332	6.04986
	B1->X (RR)	0.06572	0.36964	5.97794
	B2->X (RR)	0.06969	0.36544	5.96354

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22o_1	A1->X (FF)	0.12843	0.52879	4.90045
	A2->X (FF)	0.13942	0.55710	5.00717
	B1->X (FF)	0.11098	0.54195	5.04725
	B2->X (FF)	0.11868	0.55595	5.06919
sky130_fd_sc_hs__a22o_2	A1->X (FF)	0.15614	0.54171	4.91496
	A2->X (FF)	0.16873	0.57339	5.03860
	B1->X (FF)	0.14046	0.56486	5.06919
	B2->X (FF)	0.14697	0.57893	5.10596
sky130_fd_sc_hs__a22o_4	A1->X (FF)	0.15195	0.51351	5.19572
	A2->X (FF)	0.16157	0.53452	5.25336
	B1->X (FF)	0.13560	0.53652	5.27763
	B2->X (FF)	0.13778	0.53953	5.28830

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.01403	0.01555	0.05236
	A1	0.00662	0.00814	0.04547
	A2	0.01539	0.01670	0.06014
	A2	0.00662	0.00795	0.05191
	B1	0.00899	0.01171	0.06626
	B1	0.00400	0.00673	0.06182
	B2	0.01011	0.01226	0.06460
	B2	0.00394	0.00608	0.05845
sky130_fd_sc_hs__a22o_2	A1	0.01745	0.01902	0.05564
	A1	0.00975	0.01138	0.04912
	A2	0.01876	0.02017	0.06341
	A2	0.00967	0.01108	0.05432
	B1	0.01224	0.01484	0.06912
	B1	0.00697	0.00960	0.06398
	B2	0.01346	0.01567	0.06775
	B2	0.00695	0.00920	0.06144
sky130_fd_sc_hs__a22o_4	A1	0.03423	0.03784	0.13149
	A1	0.01985	0.02352	0.11928
	A2	0.03705	0.03995	0.12581
	A2	0.01992	0.02282	0.11088
	B1	0.02398	0.02923	0.13869
	B1	0.01449	0.01984	0.13150
	B2	0.02634	0.03024	0.14028
	B2	0.01415	0.01809	0.13033

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.00386	0.00465	0.04796
	A1	0.01133	0.01205	0.05484
	A2	0.00468	0.00582	0.04941
	A2	0.01339	0.01452	0.05810
	B1	0.00385	0.00735	0.06728
	B1	0.00883	0.01223	0.07152
	B2	0.00420	0.00758	0.06592
	B2	0.01033	0.01371	0.07146
sky130_fd_sc_hs__a22o_2	A1	0.00728	0.00825	0.05190
	A1	0.01501	0.01570	0.05766
	A2	0.00880	0.00983	0.05339
	A2	0.01783	0.01873	0.06190
	B1	0.00721	0.01085	0.07193
	B1	0.01248	0.01601	0.07480
	B2	0.00778	0.01142	0.07070
	B2	0.01423	0.01754	0.07572
sky130_fd_sc_hs__a22o_4	A1	0.01484	0.01679	0.10874
	A1	0.02935	0.03091	0.11965
	A2	0.01534	0.01729	0.10681
	A2	0.03248	0.03404	0.11937
	B1	0.01477	0.02062	0.13006
	B1	0.02427	0.02997	0.12874
	B2	0.01577	0.02168	0.13381
	B2	0.02786	0.03365	0.14035

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)	0.00221	0.00193	0.00189
	(A2 * B1 * B2 * X)	-0.00169	-0.00202	-0.00205
	(!A2 * B1 * B2 * X)	0.00184	0.00183	0.00184
	(!A2 * B1 * B2 * X)	-0.00208	-0.00207	-0.00207
	(!A2 * B1 * !B2 * !X)	0.00061	0.00060	0.00057
	(!A2 * B1 * !B2 * !X)	-0.00261	-0.00261	-0.00266
	(!A2 * !B1 * !X)	0.00061	0.00060	0.00057
	(!A2 * !B1 * !X)	-0.00261	-0.00261	-0.00266
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	0.00240	0.00212	0.00209
	(A2 * B1 * B2 * X)	-0.00167	-0.00200	-0.00203
	(!A2 * B1 * B2 * X)	0.00201	0.00203	0.00202
	(!A2 * B1 * B2 * X)	-0.00204	-0.00205	-0.00205
	(!A2 * B1 * !B2 * !X)	0.00067	0.00066	0.00062
	(!A2 * B1 * !B2 * !X)	-0.00261	-0.00262	-0.00268
	(!A2 * !B1 * !X)	0.00067	0.00066	0.00062
	(!A2 * !B1 * !X)	-0.00261	-0.00262	-0.00268
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	0.00375	0.00316	0.00308
	(A2 * B1 * B2 * X)	-0.00345	-0.00419	-0.00424
	(!A2 * B1 * B2 * X)	0.00295	0.00297	0.00297
	(!A2 * B1 * B2 * X)	-0.00429	-0.00432	-0.00430
	(!A2 * B1 * !B2 * !X)	0.00092	0.00093	0.00089
	(!A2 * B1 * !B2 * !X)	-0.00491	-0.00493	-0.00499
	(!A2 * !B1 * !X)	0.00092	0.00093	0.00089
	(!A2 * !B1 * !X)	-0.00490	-0.00492	-0.00499

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)	-0.00188	-0.00188	-0.00187
	(A2 * B1 * B2 * X)	0.00204	0.00205	0.00205
	(!A2 * B1 * B2 * X)	-0.00174	-0.00183	-0.00184
	(!A2 * B1 * B2 * X)	0.00208	0.00210	0.00209
	(!A2 * B1 * !B2 * !X)	-0.00055	-0.00057	-0.00055
	(!A2 * B1 * !B2 * !X)	0.00266	0.00272	0.00267
	(!A2 * !B1 * !X)	-0.00056	-0.00057	-0.00056
	(!A2 * !B1 * !X)	0.00267	0.00272	0.00267
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	-0.00207	-0.00206	-0.00207
	(A2 * B1 * B2 * X)	0.00202	0.00201	0.00203
	(!A2 * B1 * B2 * X)	-0.00193	-0.00203	-0.00202
	(!A2 * B1 * B2 * X)	0.00206	0.00208	0.00206
	(!A2 * B1 * !B2 * !X)	-0.00060	-0.00061	-0.00060
	(!A2 * B1 * !B2 * !X)	0.00268	0.00273	0.00269
	(!A2 * !B1 * !X)	-0.00060	-0.00061	-0.00060
	(!A2 * !B1 * !X)	0.00270	0.00273	0.00269
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	-0.00305	-0.00306	-0.00304
	(A2 * B1 * B2 * X)	0.00424	0.00426	0.00424
	(!A2 * B1 * B2 * X)	-0.00284	-0.00297	-0.00296
	(!A2 * B1 * B2 * X)	0.00431	0.00435	0.00433
	(!A2 * B1 * !B2 * !X)	-0.00086	-0.00088	-0.00087
	(!A2 * B1 * !B2 * !X)	0.00498	0.00508	0.00500
	(!A2 * !B1 * !X)	-0.00086	-0.00088	-0.00087
	(!A2 * !B1 * !X)	0.00498	0.00504	0.00500

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)	0.00218	0.00190	0.00187
	(A1 * B1 * B2 * X)	-0.00170	-0.00203	-0.00205
	(!A1 * B1 * B2 * X)	0.00181	0.00182	0.00181
	(!A1 * B1 * B2 * X)	-0.00207	-0.00208	-0.00207
	(!A1 * B1 * !B2 * !X)	0.00179	0.00180	0.00179
	(!A1 * B1 * !B2 * !X)	-0.00208	-0.00209	-0.00208
	(!A1 * !B1 * !X)	0.00179	0.00180	0.00179
	(!A1 * !B1 * !X)	-0.00208	-0.00209	-0.00208
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	0.00224	0.00196	0.00192
	(A1 * B1 * B2 * X)	-0.00177	-0.00209	-0.00212
	(!A1 * B1 * B2 * X)	0.00186	0.00186	0.00186
	(!A1 * B1 * B2 * X)	-0.00214	-0.00214	-0.00214
	(!A1 * B1 * !B2 * !X)	0.00186	0.00187	0.00185
	(!A1 * B1 * !B2 * !X)	-0.00215	-0.00216	-0.00214
	(!A1 * !B1 * !X)	0.00184	0.00187	0.00185
	(!A1 * !B1 * !X)	-0.00214	-0.00216	-0.00214
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	0.00434	0.00381	0.00374
	(A1 * B1 * B2 * X)	-0.00343	-0.00415	-0.00416
	(!A1 * B1 * B2 * X)	0.00361	0.00366	0.00363
	(!A1 * B1 * B2 * X)	-0.00420	-0.00424	-0.00422
	(!A1 * B1 * !B2 * !X)	0.00353	0.00359	0.00355
	(!A1 * B1 * !B2 * !X)	-0.00428	-0.00432	-0.00430
	(!A1 * !B1 * !X)	0.00353	0.00359	0.00355
	(!A1 * !B1 * !X)	-0.00428	-0.00432	-0.00430

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)	-0.00185	-0.00186	-0.00184
	(A1 * B1 * B2 * X)	0.00204	0.00206	0.00205
	(!A1 * B1 * B2 * X)	-0.00172	-0.00179	-0.00180
	(!A1 * B1 * B2 * X)	0.00208	0.00210	0.00209
	(!A1 * B1 * !B2 * !X)	-0.00168	-0.00178	-0.00179
	(!A1 * B1 * !B2 * !X)	0.00213	0.00210	0.00209
	(!A1 * !B1 * !X)	-0.00168	-0.00179	-0.00179
	(!A1 * !B1 * !X)	0.00213	0.00210	0.00209
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	-0.00190	-0.00191	-0.00190
	(A1 * B1 * B2 * X)	0.00211	0.00212	0.00212
	(!A1 * B1 * B2 * X)	-0.00177	-0.00185	-0.00186
	(!A1 * B1 * B2 * X)	0.00214	0.00217	0.00215
	(!A1 * B1 * !B2 * !X)	-0.00174	-0.00185	-0.00185
	(!A1 * B1 * !B2 * !X)	0.00221	0.00218	0.00215
	(!A1 * !B1 * !X)	-0.00172	-0.00185	-0.00185
	(!A1 * !B1 * !X)	0.00219	0.00218	0.00215
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	-0.00372	-0.00373	-0.00370
	(A1 * B1 * B2 * X)	0.00413	0.00418	0.00416
	(!A1 * B1 * B2 * X)	-0.00350	-0.00364	-0.00362
	(!A1 * B1 * B2 * X)	0.00423	0.00427	0.00425
	(!A1 * B1 * !B2 * !X)	-0.00332	-0.00357	-0.00355
	(!A1 * B1 * !B2 * !X)	0.00445	0.00434	0.00432
	(!A1 * !B1 * !X)	-0.00332	-0.00357	-0.00355
	(!A1 * !B1 * !X)	0.00445	0.00434	0.00432

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)	0.00181	0.00183	0.00182
	(A1 * A2 * B2 * X)	-0.00100	-0.00101	-0.00100
	(A1 * A2 * !B2 * X)	0.00176	0.00179	0.00176
	(A1 * A2 * !B2 * X)	-0.00099	-0.00101	-0.00100
	(A1 * !A2 * !B2 * !X)	0.00052	0.00052	0.00051
	(A1 * !A2 * !B2 * !X)	-0.00242	-0.00244	-0.00245
	(!A1 * !B2 * !X)	0.00054	0.00055	0.00053
	(!A1 * !B2 * !X)	-0.00242	-0.00244	-0.00245
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	0.00203	0.00205	0.00203
	(A1 * A2 * B2 * X)	-0.00099	-0.00100	-0.00099
	(A1 * A2 * !B2 * X)	0.00196	0.00198	0.00197
	(A1 * A2 * !B2 * X)	-0.00097	-0.00099	-0.00098
	(A1 * !A2 * !B2 * !X)	0.00056	0.00057	0.00055
	(A1 * !A2 * !B2 * !X)	-0.00247	-0.00248	-0.00251
	(!A1 * !B2 * !X)	0.00058	0.00058	0.00056
	(!A1 * !B2 * !X)	-0.00247	-0.00248	-0.00251
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	0.00337	0.00340	0.00338
	(A1 * A2 * B2 * X)	-0.00197	-0.00198	-0.00196
	(A1 * A2 * !B2 * X)	0.00325	0.00330	0.00325
	(A1 * A2 * !B2 * X)	-0.00194	-0.00196	-0.00195
	(A1 * !A2 * !B2 * !X)	0.00096	0.00097	0.00093
	(A1 * !A2 * !B2 * !X)	-0.00470	-0.00474	-0.00478
	(!A1 * !B2 * !X)	0.00096	0.00097	0.00093
	(!A1 * !B2 * !X)	-0.00470	-0.00474	-0.00478

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)	-0.00169	-0.00170	-0.00180
	(A1 * A2 * B2 * X)	0.00111	0.00111	0.00102
	(A1 * A2 * !B2 * X)	-0.00171	-0.00176	-0.00176
	(A1 * A2 * !B2 * X)	0.00100	0.00101	0.00100
	(A1 * !A2 * !B2 * !X)	-0.00049	-0.00051	-0.00049
	(A1 * !A2 * !B2 * !X)	0.00245	0.00249	0.00246
	(!A1 * !B2 * !X)	-0.00052	-0.00053	-0.00052
	(!A1 * !B2 * !X)	0.00245	0.00249	0.00246
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	-0.00190	-0.00191	-0.00202
	(A1 * A2 * B2 * X)	0.00110	0.00110	0.00101
	(A1 * A2 * !B2 * X)	-0.00192	-0.00197	-0.00197
	(A1 * A2 * !B2 * X)	0.00099	0.00099	0.00098
	(A1 * !A2 * !B2 * !X)	-0.00053	-0.00055	-0.00053
	(A1 * !A2 * !B2 * !X)	0.00251	0.00254	0.00251
	(!A1 * !B2 * !X)	-0.00054	-0.00056	-0.00054
	(!A1 * !B2 * !X)	0.00251	0.00254	0.00251
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	-0.00309	-0.00312	-0.00335
	(A1 * A2 * B2 * X)	0.00218	0.00219	0.00201
	(A1 * A2 * !B2 * X)	-0.00315	-0.00330	-0.00325
	(A1 * A2 * !B2 * X)	0.00194	0.00196	0.00196
	(A1 * !A2 * !B2 * !X)	-0.00090	-0.00093	-0.00090
	(A1 * !A2 * !B2 * !X)	0.00477	0.00485	0.00479
	(!A1 * !B2 * !X)	-0.00090	-0.00093	-0.00090
	(!A1 * !B2 * !X)	0.00477	0.00485	0.00479

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)	0.00190	0.00191	0.00190
	(A1 * A2 * B1 * X)	-0.00110	-0.00110	-0.00109
	(A1 * A2 * !B1 * X)	0.00185	0.00188	0.00185
	(A1 * A2 * !B1 * X)	-0.00108	-0.00109	-0.00108
	(A1 * !A2 * !B1 * !X)	0.00159	0.00160	0.00158
	(A1 * !A2 * !B1 * !X)	-0.00220	-0.00220	-0.00219
	(!A1 * !B1 * !X)	0.00168	0.00170	0.00168
	(!A1 * !B1 * !X)	-0.00219	-0.00220	-0.00218
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	0.00200	0.00201	0.00199
	(A1 * A2 * B1 * X)	-0.00104	-0.00104	-0.00103
	(A1 * A2 * !B1 * X)	0.00192	0.00194	0.00192
	(A1 * A2 * !B1 * X)	-0.00102	-0.00103	-0.00103
	(A1 * !A2 * !B1 * !X)	0.00175	0.00178	0.00176
	(A1 * !A2 * !B1 * !X)	-0.00210	-0.00212	-0.00210
	(!A1 * !B1 * !X)	0.00180	0.00183	0.00180
	(!A1 * !B1 * !X)	-0.00210	-0.00211	-0.00210
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	0.00369	0.00371	0.00367
	(A1 * A2 * B1 * X)	-0.00218	-0.00218	-0.00215
	(A1 * A2 * !B1 * X)	0.00359	0.00362	0.00358
	(A1 * A2 * !B1 * X)	-0.00212	-0.00214	-0.00214
	(A1 * !A2 * !B1 * !X)	0.00286	0.00289	0.00288
	(A1 * !A2 * !B1 * !X)	-0.00473	-0.00475	-0.00474
	(!A1 * !B1 * !X)	0.00290	0.00294	0.00291
	(!A1 * !B1 * !X)	-0.00473	-0.00477	-0.00474

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)	-0.00177	-0.00178	-0.00188
	(A1 * A2 * B1 * X)	0.00120	0.00120	0.00111
	(A1 * A2 * !B1 * X)	-0.00180	-0.00184	-0.00185
	(A1 * A2 * !B1 * X)	0.00108	0.00109	0.00109
	(A1 * !A2 * !B1 * !X)	-0.00146	-0.00157	-0.00158
	(A1 * !A2 * !B1 * !X)	0.00229	0.00224	0.00220
	(!A1 * !B1 * !X)	-0.00156	-0.00168	-0.00168
	(!A1 * !B1 * !X)	0.00227	0.00221	0.00219
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	-0.00186	-0.00187	-0.00198
	(A1 * A2 * B1 * X)	0.00115	0.00115	0.00106
	(A1 * A2 * !B1 * X)	-0.00187	-0.00193	-0.00192
	(A1 * A2 * !B1 * X)	0.00103	0.00104	0.00103
	(A1 * !A2 * !B1 * !X)	-0.00163	-0.00176	-0.00176
	(A1 * !A2 * !B1 * !X)	0.00220	0.00213	0.00211
	(!A1 * !B1 * !X)	-0.00167	-0.00180	-0.00180
	(!A1 * !B1 * !X)	0.00219	0.00212	0.00211
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	-0.00340	-0.00342	-0.00364
	(A1 * A2 * B1 * X)	0.00240	0.00239	0.00221
	(A1 * A2 * !B1 * X)	-0.00348	-0.00356	-0.00358
	(A1 * A2 * !B1 * X)	0.00216	0.00216	0.00215
	(A1 * !A2 * !B1 * !X)	-0.00269	-0.00289	-0.00288
	(A1 * !A2 * !B1 * !X)	0.00492	0.00479	0.00476
	(!A1 * !B1 * !X)	-0.00269	-0.00291	-0.00290
	(!A1 * !B1 * !X)	0.00492	0.00479	0.00476

SKY130_FD_SC_HS__A2BB2OIx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00236	0.00255	0.00274	0.00292	0.57191
sky130_fd_sc_hs__a2bb2oi_2	0.00258	0.00268	0.00534	0.00538	1.17899
sky130_fd_sc_hs__a2bb2oi_4	0.00407	0.00428	0.01061	0.01080	2.09884

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2bb2oi_1	0.00000	0.13452	0.33642
sky130_fd_sc_hs__a2bb2oi_2	0.00000	0.17970	0.41399
sky130_fd_sc_hs__a2bb2oi_4	0.00000	0.35191	0.82798

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)	0.09697	0.70645	6.08168
	A2_N->Y (RR)	0.09139	0.68247	6.00805
	B1->Y (FR)	0.08862	0.89791	10.05340
	B2->Y (FR)	0.06884	0.84150	9.63872
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (RR)	0.08852	0.56328	6.05910
	A2_N->Y (RR)	0.08399	0.54697	6.00902
	B1->Y (FR)	0.08117	0.75840	10.17870
	B2->Y (FR)	0.06015	0.72725	9.99959
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (RR)	0.10931	0.53271	6.35778
	A2_N->Y (RR)	0.09869	0.50348	6.27027
	B1->Y (FR)	0.08105	0.64749	9.84480
	B2->Y (FR)	0.05871	0.61295	9.55536

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)	0.09689	0.40984	3.16490
	A2_N->Y (FF)	0.08620	0.41260	3.14334
	B1->Y (RF)	0.02780	0.32571	3.53732
	B2->Y (RF)	0.02488	0.35977	3.99272
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (FF)	0.12245	0.44597	3.50380
	A2_N->Y (FF)	0.11083	0.45485	3.42769
	B1->Y (RF)	0.02865	0.30141	3.98540
	B2->Y (RF)	0.02347	0.33499	4.54463
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (FF)	0.12351	0.40985	2.99420
	A2_N->Y (FF)	0.10492	0.41137	3.17797
	B1->Y (RF)	0.02790	0.24035	3.69393
	B2->Y (RF)	0.02356	0.28724	4.50471

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	0.01137	0.01321	0.05666
	A1_N	0.00733	0.00915	0.05275
	A2_N	0.00936	0.01157	0.06478
	A2_N	0.00632	0.00852	0.06186
	B1	0.00199	0.00215	0.01442
	B1	0.00819	0.00835	0.02062
	B2	0.00125	0.00140	0.01354
	B2	0.00638	0.00655	0.01868
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.01462	0.01724	0.06626
	A1_N	0.01408	0.01649	0.06591
	A2_N	0.01237	0.01497	0.07196
	A2_N	0.01293	0.01541	0.07283
	B1	0.00455	0.00480	0.02671
	B1	0.01696	0.01724	0.03917
	B2	0.00252	0.00296	0.02446
	B2	0.01230	0.01273	0.03431
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.02698	0.02977	0.10146
	A1_N	0.02732	0.02997	0.10259
	A2_N	0.02215	0.02608	0.11795
	A2_N	0.02465	0.02827	0.12142
	B1	0.00835	0.00917	0.05342
	B1	0.03337	0.03426	0.07843
	B2	0.00488	0.00605	0.04974
	B2	0.02479	0.02591	0.06975

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	A1_N	0.00608	0.00782	0.04956
	A1_N	0.00995	0.01166	0.05346
	A2_N	0.00601	0.00913	0.05697
	A2_N	0.00887	0.01196	0.05984
	B1	0.00779	0.00801	0.01748
	B1	0.00158	0.00177	0.01113
	B2	0.00669	0.00708	0.01808
	B2	0.00158	0.00194	0.01240
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.01063	0.01243	0.05854
	A1_N	0.01311	0.01479	0.06083
	A2_N	0.01086	0.01401	0.06288
	A2_N	0.01213	0.01517	0.06401
	B1	0.01498	0.01530	0.03228
	B1	0.00252	0.00285	0.01973
	B2	0.01227	0.01313	0.03204
	B2	0.00256	0.00333	0.02179
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.02238	0.02463	0.08198
	A1_N	0.02533	0.02724	0.08463
	A2_N	0.02181	0.02699	0.11711
	A2_N	0.02272	0.02762	0.11774
	B1	0.02951	0.03051	0.06626
	B1	0.00443	0.00535	0.04060
	B2	0.02416	0.02595	0.06337
	B2	0.00444	0.00618	0.04272

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)	0.00180	0.00149	0.00146
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00179	-0.00213	-0.00214
	(!A2_N * B1 * B2 * !Y)	0.00744	0.00905	0.05150
	(!A2_N * B1 * B2 * !Y)	0.00173	0.00334	0.04581
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00227	0.00197	0.00193
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00173	-0.00206	-0.00207
	(!A2_N * B1 * B2 * !Y)	0.00934	0.01138	0.05902
	(!A2_N * B1 * B2 * !Y)	0.00311	0.00514	0.05284
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00283	0.00211	0.00203
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00339	-0.00420	-0.00424
	(!A2_N * B1 * B2 * !Y)	0.01637	0.01868	0.09040
	(!A2_N * B1 * B2 * !Y)	0.00612	0.00838	0.08021

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)	-0.00144	-0.00145	-0.00144
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00214	0.00216	0.00215
	(!A2_N * B1 * B2 * !Y)	0.00192	0.00345	0.04558
	(!A2_N * B1 * B2 * !Y)	0.00761	0.00916	0.05127
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00191	-0.00192	-0.00190
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00207	0.00209	0.00208
	(!A2_N * B1 * B2 * !Y)	0.00335	0.00486	0.05155
	(!A2_N * B1 * B2 * !Y)	0.00951	0.01105	0.05774
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00201	-0.00202	-0.00200
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00425	0.00427	0.00425
	(!A2_N * B1 * B2 * !Y)	0.00773	0.00956	0.08120
	(!A2_N * B1 * B2 * !Y)	0.01790	0.01977	0.09139

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)	0.00171	0.00173	0.00171
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00103	-0.00104	-0.00103
	(!A1_N * B1 * B2 * !Y)	0.00551	0.00769	0.06041
	(!A1_N * B1 * B2 * !Y)	0.00079	0.00296	0.05570
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00193	0.00195	0.00194
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00102	-0.00103	-0.00102
	(!A1_N * B1 * B2 * !Y)	0.00720	0.00956	0.06700
	(!A1_N * B1 * B2 * !Y)	0.00217	0.00451	0.06199
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00276	0.00279	0.00277
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00208	-0.00210	-0.00209
	(!A1_N * B1 * B2 * !Y)	0.01157	0.01448	0.10450
	(!A1_N * B1 * B2 * !Y)	0.00323	0.00613	0.09618

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)	-0.00165	-0.00167	-0.00171
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00107	0.00108	0.00104
	(!A1_N * B1 * B2 * !Y)	0.00186	0.00483	0.05755
	(!A1_N * B1 * B2 * !Y)	0.00654	0.00954	0.06224
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00188	-0.00189	-0.00193
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00108	0.00108	0.00104
	(!A1_N * B1 * B2 * !Y)	0.00358	0.00652	0.06357
	(!A1_N * B1 * B2 * !Y)	0.00858	0.01152	0.06857
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00259	-0.00261	-0.00275
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00225	0.00225	0.00213
	(!A1_N * B1 * B2 * !Y)	0.00711	0.01187	0.10254
	(!A1_N * B1 * B2 * !Y)	0.01541	0.02016	0.11083

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)	0.00184	0.00185	0.00184
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00233	-0.00234	-0.00233
	(!A1_N * !A2_N * B2 * !Y)	0.00222	0.00195	0.00191
	(!A1_N * !A2_N * B2 * !Y)	-0.00196	-0.00231	-0.00231
	(!A1_N * !A2_N * !B2 * !Y)	0.00184	0.00186	0.00184
	(!A1_N * !A2_N * !B2 * !Y)	-0.00233	-0.00234	-0.00233
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00351	0.00357	0.00353
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00471	-0.00475	-0.00472
	(!A1_N * !A2_N * B2 * !Y)	0.00432	0.00375	0.00369
	(!A1_N * !A2_N * B2 * !Y)	-0.00400	-0.00468	-0.00468
	(!A1_N * !A2_N * !B2 * !Y)	0.00352	0.00355	0.00353
	(!A1_N * !A2_N * !B2 * !Y)	-0.00471	-0.00473	-0.00472
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00707	0.00713	0.00710
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00944	-0.00949	-0.00946
	(!A1_N * !A2_N * B2 * !Y)	0.00870	0.00752	0.00738
	(!A1_N * !A2_N * B2 * !Y)	-0.00792	-0.00936	-0.00936
	(!A1_N * !A2_N * !B2 * !Y)	0.00703	0.00706	0.00703
	(!A1_N * !A2_N * !B2 * !Y)	-0.00946	-0.00948	-0.00946

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)	-0.00173	-0.00185	-0.00184
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00240	0.00236	0.00234
	(!A1_N * !A2_N * B2 * !Y)	-0.00190	-0.00191	-0.00190
	(!A1_N * !A2_N * B2 * !Y)	0.00230	0.00231	0.00231
	(!A1_N * !A2_N * !B2 * !Y)	-0.00179	-0.00185	-0.00184
	(!A1_N * !A2_N * !B2 * !Y)	0.00233	0.00235	0.00234
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00326	-0.00357	-0.00353
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00491	0.00477	0.00474
	(!A1_N * !A2_N * B2 * !Y)	-0.00368	-0.00370	-0.00368
	(!A1_N * !A2_N * B2 * !Y)	0.00466	0.00471	0.00468
	(!A1_N * !A2_N * !B2 * !Y)	-0.00341	-0.00355	-0.00353
	(!A1_N * !A2_N * !B2 * !Y)	0.00472	0.00478	0.00474
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00649	-0.00712	-0.00710
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00988	0.00957	0.00949
	(!A1_N * !A2_N * B2 * !Y)	-0.00737	-0.00740	-0.00735
	(!A1_N * !A2_N * B2 * !Y)	0.00936	0.00943	0.00936
	(!A1_N * !A2_N * !B2 * !Y)	-0.00682	-0.00706	-0.00703
	(!A1_N * !A2_N * !B2 * !Y)	0.00946	0.00954	0.00950

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)	0.00075	0.00076	0.00074
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00272	-0.00275	-0.00277
	(!A1_N * !A2_N * B1 * !Y)	0.00221	0.00194	0.00190
	(!A1_N * !A2_N * B1 * !Y)	-0.00211	-0.00246	-0.00246
	(!A1_N * !A2_N * !B1 * !Y)	0.00182	0.00185	0.00183
	(!A1_N * !A2_N * !B1 * !Y)	-0.00248	-0.00250	-0.00248
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00125	0.00126	0.00120
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00533	-0.00537	-0.00544
	(!A1_N * !A2_N * B1 * !Y)	0.00426	0.00374	0.00368
	(!A1_N * !A2_N * B1 * !Y)	-0.00397	-0.00464	-0.00464
	(!A1_N * !A2_N * !B1 * !Y)	0.00351	0.00357	0.00354
	(!A1_N * !A2_N * !B1 * !Y)	-0.00466	-0.00471	-0.00468
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00235	0.00237	0.00227
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.01088	-0.01096	-0.01110
	(!A1_N * !A2_N * B1 * !Y)	0.00863	0.00747	0.00734
	(!A1_N * !A2_N * B1 * !Y)	-0.00794	-0.00939	-0.00940
	(!A1_N * !A2_N * !B1 * !Y)	0.00700	0.00705	0.00703
	(!A1_N * !A2_N * !B1 * !Y)	-0.00948	-0.00952	-0.00950

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)	-0.00073	-0.00074	-0.00073
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00278	0.00282	0.00278
	(!A1_N * !A2_N * B1 * !Y)	-0.00190	-0.00191	-0.00189
	(!A1_N * !A2_N * B1 * !Y)	0.00246	0.00248	0.00246
	(!A1_N * !A2_N * !B1 * !Y)	-0.00178	-0.00185	-0.00183
	(!A1_N * !A2_N * !B1 * !Y)	0.00248	0.00252	0.00249
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00117	-0.00120	-0.00117
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00543	0.00555	0.00546
	(!A1_N * !A2_N * B1 * !Y)	-0.00367	-0.00368	-0.00367
	(!A1_N * !A2_N * B1 * !Y)	0.00462	0.00466	0.00464
	(!A1_N * !A2_N * !B1 * !Y)	-0.00338	-0.00357	-0.00354
	(!A1_N * !A2_N * !B1 * !Y)	0.00467	0.00472	0.00470
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00221	-0.00226	-0.00221
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.01107	0.01130	0.01112
	(!A1_N * !A2_N * B1 * !Y)	-0.00733	-0.00734	-0.00730
	(!A1_N * !A2_N * B1 * !Y)	0.00940	0.00945	0.00940
	(!A1_N * !A2_N * !B1 * !Y)	-0.00678	-0.00705	-0.00703
	(!A1_N * !A2_N * !B1 * !Y)	0.00955	0.00958	0.00953

SKY130_FD_SC_HS__A2BB2Ox

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00232	0.00240	0.00255	0.00247	1.26157
sky130_fd_sc_hs__a2bb2o_2	0.00245	0.00250	0.00268	0.00286	2.15180
sky130_fd_sc_hs__a2bb2o_4	0.00267	0.00283	0.00484	0.00487	4.64905

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2bb2o_1	0.00000	0.24707	0.44773
sky130_fd_sc_hs__a2bb2o_2	0.00000	0.30488	0.47848
sky130_fd_sc_hs__a2bb2o_4	0.00000	0.46411	0.57512

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)	0.13981	0.73172	8.32840
	A2_N->X (FR)	0.12781	0.73394	8.38486
	B1->X (RR)	0.07214	0.52619	5.92302
	B2->X (RR)	0.06806	0.52822	5.98710
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (FR)	0.14516	0.65065	8.11495
	A2_N->X (FR)	0.13292	0.65271	8.17107
	B1->X (RR)	0.07095	0.44360	5.63135
	B2->X (RR)	0.06827	0.45193	5.70300
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (FR)	0.18069	0.62635	8.42232
	A2_N->X (FR)	0.17002	0.63422	8.46875
	B1->X (RR)	0.08078	0.38710	5.91379
	B2->X (RR)	0.07576	0.39370	6.00142

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)	0.13512	0.36435	2.10926
	A2_N->X (RF)	0.12830	0.34269	1.99452
	B1->X (FF)	0.12641	0.52590	4.85894
	B2->X (FF)	0.10760	0.49419	4.77761
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (RF)	0.16092	0.36027	1.82210
	A2_N->X (RF)	0.15390	0.33483	1.68110
	B1->X (FF)	0.15162	0.53435	4.68102
	B2->X (FF)	0.13400	0.50523	4.59532
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (RF)	0.15795	0.33650	2.14325
	A2_N->X (RF)	0.14981	0.31436	2.01666
	B1->X (FF)	0.15453	0.51243	5.02327
	B2->X (FF)	0.13367	0.47916	4.92438

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	0.01032	0.01208	0.05454
	A1_N	0.01394	0.01573	0.05899
	A2_N	0.01023	0.01348	0.06867
	A2_N	0.01285	0.01612	0.07379
	B1	0.01188	0.01334	0.05541
	B1	0.00575	0.00721	0.04983
	B2	0.01056	0.01251	0.05862
	B2	0.00576	0.00770	0.05434
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.01369	0.01589	0.05728
	A1_N	0.01753	0.01983	0.06249
	A2_N	0.01375	0.01739	0.07304
	A2_N	0.01634	0.02010	0.07720
	B1	0.01542	0.01720	0.05992
	B1	0.00921	0.01099	0.05426
	B2	0.01430	0.01634	0.06264
	B2	0.00923	0.01129	0.05795
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.02329	0.02561	0.07184
	A1_N	0.02602	0.02865	0.08526
	A2_N	0.02313	0.02685	0.08526
	A2_N	0.02453	0.02866	0.08798
	B1	0.02861	0.03150	0.11252
	B1	0.01702	0.01992	0.10098
	B2	0.02621	0.03000	0.11854
	B2	0.01706	0.02087	0.11159

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	A1_N	0.01519	0.01694	0.05966
	A1_N	0.01145	0.01309	0.05579
	A2_N	0.01298	0.01523	0.06881
	A2_N	0.01029	0.01255	0.06590
	B1	0.00597	0.00712	0.04983
	B1	0.01208	0.01321	0.05494
	B2	0.00558	0.00684	0.05207
	B2	0.01042	0.01162	0.05569
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.01923	0.02062	0.06191
	A1_N	0.01523	0.01661	0.05782
	A2_N	0.01703	0.01875	0.07142
	A2_N	0.01423	0.01595	0.06841
	B1	0.00982	0.01051	0.05286
	B1	0.01600	0.01668	0.05862
	B2	0.00914	0.00994	0.05340
	B2	0.01423	0.01500	0.05847
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.03321	0.03437	0.08552
	A1_N	0.03007	0.03115	0.08173
	A2_N	0.03048	0.03240	0.09297
	A2_N	0.02851	0.03036	0.09058
	B1	0.02108	0.02222	0.10120
	B1	0.03256	0.03333	0.11257
	B2	0.01906	0.02041	0.10447
	B2	0.02825	0.02950	0.11257

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)	0.00191	0.00160	0.00156
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00167	-0.00201	-0.00202
	(!A2_N * B1 * B2 * X)	0.00719	0.00881	0.05113
	(!A2_N * B1 * B2 * X)	0.00170	0.00330	0.04565
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00197	0.00165	0.00161
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00176	-0.00212	-0.00213
	(!A2_N * B1 * B2 * X)	0.00736	0.00917	0.05057
	(!A2_N * B1 * B2 * X)	0.00159	0.00337	0.04482
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00216	0.00186	0.00182
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00195	-0.00230	-0.00230
	(!A2_N * B1 * B2 * X)	0.00950	0.01137	0.05937
	(!A2_N * B1 * B2 * X)	0.00301	0.00486	0.05290

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)	-0.00154	-0.00155	-0.00154
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00202	0.00205	0.00204
	(!A2_N * B1 * B2 * X)	0.00188	0.00341	0.04539
	(!A2_N * B1 * B2 * X)	0.00736	0.00891	0.05088
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00160	-0.00160	-0.00159
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00214	0.00216	0.00214
	(!A2_N * B1 * B2 * X)	0.00177	0.00328	0.04455
	(!A2_N * B1 * B2 * X)	0.00751	0.00903	0.05031
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00180	-0.00181	-0.00180
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00230	0.00231	0.00231
	(!A2_N * B1 * B2 * X)	0.00160	0.00313	0.05026
	(!A2_N * B1 * B2 * X)	0.00804	0.00956	0.05672

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)	0.00170	0.00172	0.00171
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00098	-0.00099	-0.00098
	(!A1_N * B1 * B2 * X)	0.00514	0.00739	0.05955
	(!A1_N * B1 * B2 * X)	0.00070	0.00292	0.05509
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00172	0.00174	0.00172
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00097	-0.00098	-0.00097
	(!A1_N * B1 * B2 * X)	0.00526	0.00748	0.05947
	(!A1_N * B1 * B2 * X)	0.00068	0.00287	0.05489
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00204	0.00206	0.00204
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00108	-0.00109	-0.00108
	(!A1_N * B1 * B2 * X)	0.00731	0.00967	0.06631
	(!A1_N * B1 * B2 * X)	0.00198	0.00432	0.06099

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)	-0.00165	-0.00166	-0.00170
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00103	0.00103	0.00099
	(!A1_N * B1 * B2 * X)	0.00184	0.00479	0.05691
	(!A1_N * B1 * B2 * X)	0.00627	0.00925	0.06135
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00167	-0.00168	-0.00171
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00103	0.00103	0.00099
	(!A1_N * B1 * B2 * X)	0.00180	0.00476	0.05670
	(!A1_N * B1 * B2 * X)	0.00635	0.00932	0.06126
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00198	-0.00199	-0.00203
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00114	0.00114	0.00110
	(!A1_N * B1 * B2 * X)	0.00155	0.00451	0.06069
	(!A1_N * B1 * B2 * X)	0.00684	0.00982	0.06598

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)	0.00191	0.00193	0.00192
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00211	-0.00212	-0.00212
	(!A1_N * !A2_N * B2 * X)	0.00227	0.00201	0.00197
	(!A1_N * !A2_N * B2 * X)	-0.00178	-0.00210	-0.00210
	(!A1_N * !A2_N * !B2 * X)	0.00191	0.00194	0.00192
	(!A1_N * !A2_N * !B2 * X)	-0.00211	-0.00213	-0.00212
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00184	0.00186	0.00185
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00215	-0.00216	-0.00215
	(!A1_N * !A2_N * B2 * X)	0.00224	0.00197	0.00193
	(!A1_N * !A2_N * B2 * X)	-0.00179	-0.00212	-0.00214
	(!A1_N * !A2_N * !B2 * X)	0.00184	0.00185	0.00184
	(!A1_N * !A2_N * !B2 * X)	-0.00216	-0.00216	-0.00216
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00315	0.00316	0.00314
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00433	-0.00433	-0.00432
	(!A1_N * !A2_N * B2 * X)	0.00397	0.00333	0.00326
	(!A1_N * !A2_N * B2 * X)	-0.00353	-0.00427	-0.00428
	(!A1_N * !A2_N * !B2 * X)	0.00315	0.00316	0.00315
	(!A1_N * !A2_N * !B2 * X)	-0.00432	-0.00432	-0.00432

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)	-0.00181	-0.00193	-0.00192
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00219	0.00215	0.00213
	(!A1_N * !A2_N * B2 * X)	-0.00196	-0.00197	-0.00196
	(!A1_N * !A2_N * B2 * X)	0.00209	0.00213	0.00211
	(!A1_N * !A2_N * !B2 * X)	-0.00187	-0.00193	-0.00192
	(!A1_N * !A2_N * !B2 * X)	0.00212	0.00215	0.00213
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00173	-0.00185	-0.00185
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00224	0.00219	0.00217
	(!A1_N * !A2_N * B2 * X)	-0.00192	-0.00193	-0.00192
	(!A1_N * !A2_N * B2 * X)	0.00213	0.00216	0.00214
	(!A1_N * !A2_N * !B2 * X)	-0.00180	-0.00185	-0.00184
	(!A1_N * !A2_N * !B2 * X)	0.00216	0.00218	0.00217
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00285	-0.00313	-0.00314
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00451	0.00438	0.00434
	(!A1_N * !A2_N * B2 * X)	-0.00323	-0.00325	-0.00323
	(!A1_N * !A2_N * B2 * X)	0.00426	0.00430	0.00429
	(!A1_N * !A2_N * !B2 * X)	-0.00300	-0.00312	-0.00314
	(!A1_N * !A2_N * !B2 * X)	0.00432	0.00437	0.00434

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)	0.00070	0.00070	0.00068
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00240	-0.00240	-0.00243
	(!A1_N * !A2_N * B1 * X)	0.00187	0.00157	0.00154
	(!A1_N * !A2_N * B1 * X)	-0.00194	-0.00227	-0.00228
	(!A1_N * !A2_N * !B1 * X)	0.00148	0.00149	0.00148
	(!A1_N * !A2_N * !B1 * X)	-0.00231	-0.00230	-0.00230
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00068	0.00068	0.00066
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00259	-0.00260	-0.00263
	(!A1_N * !A2_N * B1 * X)	0.00224	0.00194	0.00190
	(!A1_N * !A2_N * B1 * X)	-0.00188	-0.00225	-0.00227
	(!A1_N * !A2_N * !B1 * X)	0.00181	0.00182	0.00181
	(!A1_N * !A2_N * !B1 * X)	-0.00229	-0.00231	-0.00229
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00115	0.00116	0.00111
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00483	-0.00486	-0.00493
	(!A1_N * !A2_N * B1 * X)	0.00394	0.00333	0.00326
	(!A1_N * !A2_N * B1 * X)	-0.00353	-0.00426	-0.00428
	(!A1_N * !A2_N * !B1 * X)	0.00315	0.00317	0.00315
	(!A1_N * !A2_N * !B1 * X)	-0.00430	-0.00434	-0.00431

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)	-0.00066	-0.00068	-0.00066
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00243	0.00247	0.00243
	(!A1_N * !A2_N * B1 * X)	-0.00153	-0.00154	-0.00152
	(!A1_N * !A2_N * B1 * X)	0.00228	0.00231	0.00229
	(!A1_N * !A2_N * !B1 * X)	-0.00144	-0.00147	-0.00148
	(!A1_N * !A2_N * !B1 * X)	0.00232	0.00230	0.00231
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00066	-0.00066	-0.00065
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00264	0.00267	0.00263
	(!A1_N * !A2_N * B1 * X)	-0.00189	-0.00190	-0.00188
	(!A1_N * !A2_N * B1 * X)	0.00226	0.00229	0.00227
	(!A1_N * !A2_N * !B1 * X)	-0.00176	-0.00181	-0.00181
	(!A1_N * !A2_N * !B1 * X)	0.00229	0.00231	0.00230
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00108	-0.00111	-0.00108
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00492	0.00502	0.00495
	(!A1_N * !A2_N * B1 * X)	-0.00324	-0.00326	-0.00323
	(!A1_N * !A2_N * B1 * X)	0.00426	0.00432	0.00429
	(!A1_N * !A2_N * !B1 * X)	-0.00299	-0.00315	-0.00315
	(!A1_N * !A2_N * !B1 * X)	0.00430	0.00437	0.00433

SKY130_FD_SC_HS__A311OIx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00292	0.00298	0.00289	0.00305	0.00291	0.40561
sky130_fd_sc_hs__a311oi_2	0.00556	0.00535	0.00517	0.00444	0.00433	0.74658
sky130_fd_sc_hs__a311oi_4	0.01075	0.01045	0.01046	0.00834	0.00847	1.34013

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a311oi_1	0.00000	0.04021	0.10133
sky130_fd_sc_hs__a311oi_2	0.00000	0.07671	0.20266
sky130_fd_sc_hs__a311oi_4	0.00000	0.15341	0.40531

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)	0.13280	0.96924	9.37112
	A2->Y (FR)	0.16549	1.03074	9.67725
	A3->Y (FR)	0.17929	1.02771	9.49333
	B1->Y (FR)	0.14276	1.04841	10.40420
	C1->Y (FR)	0.10914	1.02723	10.50430
sky130_fd_sc_hs__a311oi_2	A1->Y (FR)	0.11329	0.80834	9.15969
	A2->Y (FR)	0.14079	0.84029	9.25365
	A3->Y (FR)	0.16696	0.86907	9.29059
	B1->Y (FR)	0.14235	0.89101	10.06450
	C1->Y (FR)	0.10126	0.85940	10.18380
sky130_fd_sc_hs__a311oi_4	A1->Y (FR)	0.10713	0.67869	8.82468
	A2->Y (FR)	0.13905	0.71838	9.02041
	A3->Y (FR)	0.17011	0.76104	9.19315
	B1->Y (FR)	0.14336	0.78632	10.07260
	C1->Y (FR)	0.10182	0.76427	10.24310

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311oi_1	A1->Y (RF)	0.03867	0.39648	3.76011
	A2->Y (RF)	0.04547	0.37284	3.44640
	A3->Y (RF)	0.04816	0.33058	2.91357
	B1->Y (RF)	0.02258	0.26019	2.40774
	C1->Y (RF)	0.01944	0.25176	2.40486
sky130_fd_sc_hs__a311oi_2	A1->Y (RF)	0.03586	0.38045	4.22797
	A2->Y (RF)	0.04232	0.32888	3.52437
	A3->Y (RF)	0.04692	0.29147	2.95060
	B1->Y (RF)	0.03043	0.34192	3.89379
	C1->Y (RF)	0.02194	0.32454	3.86513
sky130_fd_sc_hs__a311oi_4	A1->Y (RF)	0.03625	0.33583	4.24474
	A2->Y (RF)	0.04348	0.28802	3.50532
	A3->Y (RF)	0.04768	0.24065	2.76877
	B1->Y (RF)	0.02767	0.28012	3.63001
	C1->Y (RF)	0.02101	0.28238	3.90774

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311oi_1	A1	0.00068	0.00049	0.01214
	A1	0.00973	0.00955	0.02122
	A2	0.00145	0.00122	0.01305
	A2	0.01176	0.01155	0.02338
	A3	0.00177	0.00163	0.01392
	A3	0.01336	0.01325	0.02553
	B1	0.00042	0.00069	0.01615
	B1	0.00804	0.00832	0.02384
	C1	0.00029	0.00151	0.02393
	C1	0.00666	0.00767	0.03034
sky130_fd_sc_hs__a311oi_2	A1	0.00003	-0.00029	0.02130
	A1	0.01681	0.01652	0.03821
	A2	0.00156	0.00118	0.02331
	A2	0.02066	0.02031	0.04254
	A3	0.00327	0.00295	0.02555
	A3	0.02467	0.02428	0.04706
	B1	0.00093	0.00126	0.01998
	B1	0.01258	0.01283	0.03168
	C1	0.00070	0.00259	0.03163
	C1	0.00961	0.01131	0.04063

sky130_fd_sc_hs__a311oi_4	**A1**	-0.00072	-0.00123	0.04053
	A1	0.03209	0.03160	0.07348
	A2	0.00243	0.00162	0.04494
	A2	0.04002	0.03924	0.08273
	A3	0.00537	0.00473	0.04891
	A3	0.04802	0.04746	0.09176
	B1	0.00109	0.00202	0.04011
	B1	0.02369	0.02465	0.06271
	C1	0.00070	0.00479	0.05916
	C1	0.01811	0.02204	0.07675

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311oi_1	**A1**	0.01196	0.01218	0.02242
	A1	0.00307	0.00321	0.01355
	A2	0.01331	0.01331	0.02247
	A2	0.00307	0.00303	0.01218
	A3	0.01461	0.01456	0.02471
	A3	0.00301	0.00297	0.01314
	B1	0.00866	0.00920	0.02313
	B1	0.00108	0.00159	0.01555
	C1	0.00620	0.00699	0.02005
	C1	-0.00017	0.00060	0.01365

sky130_fd_sc_hs__a311oi_2	**A1**	0.02254	0.02287	0.04136
	A1	0.00612	0.00637	0.02475
	A2	0.02503	0.02504	0.04325
	A2	0.00618	0.00613	0.02399
	A3	0.02749	0.02748	0.04765
	A3	0.00614	0.00604	0.02583
	B1	0.01338	0.01410	0.03186
	B1	0.00184	0.00248	0.01999
	C1	0.00726	0.00840	0.02569
	C1	-0.00164	-0.00054	0.01634
sky130_fd_sc_hs__a311oi_4	**A1**	0.04351	0.04428	0.08042
	A1	0.01139	0.01217	0.04788
	A2	0.04854	0.04859	0.08332
	A2	0.01139	0.01134	0.04621
	A3	0.05387	0.05387	0.09421
	A3	0.01127	0.01115	0.05141
	B1	0.02534	0.02707	0.06296
	B1	0.00291	0.00455	0.04005
	C1	0.01401	0.01637	0.04859
	C1	-0.00338	-0.00108	0.03114

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)**	0.00192	0.00193	0.00191
	(A2 * A3 * B1 * C1 * !Y)	-0.00215	-0.00227	-0.00225
	(A2 * A3 * B1 * !C1 * !Y)	0.00194	0.00193	0.00191
	(A2 * A3 * B1 * !C1 * !Y)	-0.00211	-0.00226	-0.00225
	(A2 * A3 * !B1 * C1 * !Y)	0.00197	0.00192	0.00191
	(A2 * A3 * !B1 * C1 * !Y)	-0.00198	-0.00221	-0.00220
	(A2 * !A3 * B1 * C1 * !Y)	0.00181	0.00182	0.00181
	(A2 * !A3 * B1 * C1 * !Y)	-0.00230	-0.00231	-0.00230
	(A2 * !A3 * B1 * !C1 * !Y)	0.00181	0.00181	0.00181
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00230	-0.00230	-0.00230
	(A2 * !A3 * !B1 * C1 * !Y)	0.00182	0.00182	0.00182
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00230	-0.00230	-0.00230
	(A2 * !A3 * !B1 * !C1 * Y)	0.00056	0.00056	0.00053
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00269	-0.00270	-0.00278
	(!A2 * B1 * C1 * !Y)	0.00184	0.00186	0.00184
	(!A2 * B1 * C1 * !Y)	-0.00229	-0.00231	-0.00230
	(!A2 * B1 * !C1 * !Y)	0.00183	0.00185	0.00184
	(!A2 * B1 * !C1 * !Y)	-0.00230	-0.00231	-0.00230
	(!A2 * !B1 * C1 * !Y)	0.00185	0.00186	0.00185
	(!A2 * !B1 * C1 * !Y)	-0.00230	-0.00231	-0.00230
	(!A2 * !B1 * !C1 * Y)	0.00058	0.00058	0.00056
	(!A2 * !B1 * !C1 * Y)	-0.00274	-0.00275	-0.00278

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	0.00373	0.00376	0.00373
	(A2 * A3 * B1 * C1 * !Y)	-0.00447	-0.00470	-0.00468
	(A2 * A3 * B1 * !C1 * !Y)	0.00375	0.00376	0.00373
	(A2 * A3 * B1 * !C1 * !Y)	-0.00442	-0.00471	-0.00468
	(A2 * A3 * !B1 * C1 * !Y)	0.00381	0.00376	0.00373
	(A2 * A3 * !B1 * C1 * !Y)	-0.00417	-0.00460	-0.00456
	(A2 * !A3 * B1 * C1 * !Y)	0.00357	0.00360	0.00356
	(A2 * !A3 * B1 * C1 * !Y)	-0.00481	-0.00483	-0.00479
	(A2 * !A3 * B1 * !C1 * !Y)	0.00356	0.00357	0.00356
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00479	-0.00480	-0.00479
	(A2 * !A3 * !B1 * C1 * !Y)	0.00357	0.00357	0.00357
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00480	-0.00479	-0.00479
	(A2 * !A3 * !B1 * !C1 * Y)	0.00125	0.00124	0.00115
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00540	-0.00541	-0.00559
	(!A2 * B1 * C1 * !Y)	0.00362	0.00364	0.00363
	(!A2 * B1 * C1 * !Y)	-0.00478	-0.00480	-0.00479
	(!A2 * B1 * !C1 * !Y)	0.00361	0.00364	0.00363
	(!A2 * B1 * !C1 * !Y)	-0.00478	-0.00480	-0.00479
	(!A2 * !B1 * C1 * !Y)	0.00357	0.00361	0.00359
	(!A2 * !B1 * C1 * !Y)	-0.00477	-0.00480	-0.00479
	(!A2 * !B1 * !C1 * Y)	0.00124	0.00123	0.00119
	(!A2 * !B1 * !C1 * Y)	-0.00553	-0.00554	-0.00561

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	0.00728	0.00738	0.00730
	(A2 * A3 * B1 * C1 * !Y)	-0.00883	-0.00934	-0.00925
	(A2 * A3 * B1 * !C1 * !Y)	0.00732	0.00738	0.00730
	(A2 * A3 * B1 * !C1 * !Y)	-0.00870	-0.00936	-0.00927
	(A2 * A3 * !B1 * C1 * !Y)	0.00750	0.00739	0.00731
	(A2 * A3 * !B1 * C1 * !Y)	-0.00827	-0.00903	-0.00903
	(A2 * !A3 * B1 * C1 * !Y)	0.00687	0.00693	0.00689
	(A2 * !A3 * B1 * C1 * !Y)	-0.00946	-0.00952	-0.00949
	(A2 * !A3 * B1 * !C1 * !Y)	0.00686	0.00692	0.00689
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00947	-0.00952	-0.00949
	(A2 * !A3 * !B1 * C1 * !Y)	0.00684	0.00687	0.00685
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00949	-0.00951	-0.00949
	(A2 * !A3 * !B1 * !C1 * Y)	0.00234	0.00234	0.00216
	(A2 * !A3 * !B1 * !C1 * Y)	-0.01064	-0.01072	-0.01103
	(!A2 * B1 * C1 * !Y)	0.00697	0.00702	0.00700
	(!A2 * B1 * C1 * !Y)	-0.00947	-0.00951	-0.00949
	(!A2 * B1 * !C1 * !Y)	0.00695	0.00702	0.00700
	(!A2 * B1 * !C1 * !Y)	-0.00944	-0.00951	-0.00949
	(!A2 * !B1 * C1 * !Y)	0.00700	0.00702	0.00700
	(!A2 * !B1 * C1 * !Y)	-0.00950	-0.00951	-0.00949
	(!A2 * !B1 * !C1 * Y)	0.00235	0.00236	0.00227
	(!A2 * !B1 * !C1 * Y)	-0.01090	-0.01098	-0.01108

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)**	-0.00191	-0.00192	-0.00191
	(A2 * A3 * B1 * C1 * !Y)	0.00224	0.00227	0.00225
	(A2 * A3 * B1 * !C1 * !Y)	-0.00191	-0.00191	-0.00191
	(A2 * A3 * B1 * !C1 * !Y)	0.00224	0.00226	0.00225
	(A2 * A3 * !B1 * C1 * !Y)	-0.00190	-0.00191	-0.00190
	(A2 * A3 * !B1 * C1 * !Y)	0.00218	0.00221	0.00220
	(A2 * !A3 * B1 * C1 * !Y)	-0.00166	-0.00181	-0.00181
	(A2 * !A3 * B1 * C1 * !Y)	0.00230	0.00232	0.00231
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00164	-0.00181	-0.00181
	(A2 * !A3 * B1 * !C1 * !Y)	0.00230	0.00233	0.00231
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00162	-0.00182	-0.00182
	(A2 * !A3 * !B1 * C1 * !Y)	0.00230	0.00233	0.00231
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00053	-0.00054	-0.00053
	(A2 * !A3 * !B1 * !C1 * Y)	0.00278	0.00281	0.00278
	(!A2 * B1 * C1 * !Y)	-0.00178	-0.00184	-0.00184
	(!A2 * B1 * C1 * !Y)	0.00229	0.00232	0.00231
	(!A2 * B1 * !C1 * !Y)	-0.00179	-0.00185	-0.00184
	(!A2 * B1 * !C1 * !Y)	0.00231	0.00233	0.00231
	(!A2 * !B1 * C1 * !Y)	-0.00179	-0.00185	-0.00185
	(!A2 * !B1 * C1 * !Y)	0.00231	0.00233	0.00231
	(!A2 * !B1 * !C1 * Y)	-0.00055	-0.00056	-0.00055
	(!A2 * !B1 * !C1 * Y)	0.00279	0.00283	0.00279

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	-0.00373	-0.00373	-0.00372
	(A2 * A3 * B1 * C1 * !Y)	0.00469	0.00470	0.00468
	(A2 * A3 * B1 * !C1 * !Y)	-0.00372	-0.00374	-0.00372
	(A2 * A3 * B1 * !C1 * !Y)	0.00467	0.00472	0.00468
	(A2 * A3 * !B1 * C1 * !Y)	-0.00372	-0.00374	-0.00372
	(A2 * A3 * !B1 * C1 * !Y)	0.00455	0.00460	0.00456
	(A2 * !A3 * B1 * C1 * !Y)	-0.00322	-0.00358	-0.00356
	(A2 * !A3 * B1 * C1 * !Y)	0.00481	0.00485	0.00480
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00315	-0.00357	-0.00356
	(A2 * !A3 * B1 * !C1 * !Y)	0.00479	0.00482	0.00481
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00313	-0.00357	-0.00357
	(A2 * !A3 * !B1 * C1 * !Y)	0.00480	0.00483	0.00481
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00112	-0.00116	-0.00113
	(A2 * !A3 * !B1 * !C1 * Y)	0.00558	0.00571	0.00562
	(!A2 * B1 * C1 * !Y)	-0.00347	-0.00363	-0.00363
	(!A2 * B1 * C1 * !Y)	0.00478	0.00485	0.00480
	(!A2 * B1 * !C1 * !Y)	-0.00348	-0.00364	-0.00363
	(!A2 * B1 * !C1 * !Y)	0.00479	0.00483	0.00481
	(!A2 * !B1 * C1 * !Y)	-0.00347	-0.00361	-0.00359
	(!A2 * !B1 * C1 * !Y)	0.00479	0.00482	0.00481
	(!A2 * !B1 * !C1 * Y)	-0.00116	-0.00119	-0.00116
	(!A2 * !B1 * !C1 * Y)	0.00559	0.00571	0.00562

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	-0.00728	-0.00733	-0.00729
	(A2 * A3 * B1 * C1 * !Y)	0.00925	0.00934	0.00925
	(A2 * A3 * B1 * !C1 * !Y)	-0.00729	-0.00732	-0.00728
	(A2 * A3 * B1 * !C1 * !Y)	0.00927	0.00936	0.00927
	(A2 * A3 * !B1 * C1 * !Y)	-0.00730	-0.00729	-0.00729
	(A2 * A3 * !B1 * C1 * !Y)	0.00904	0.00903	0.00903
	(A2 * !A3 * B1 * C1 * !Y)	-0.00612	-0.00693	-0.00689
	(A2 * !A3 * B1 * C1 * !Y)	0.00946	0.00955	0.00951
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00607	-0.00692	-0.00689
	(A2 * !A3 * B1 * !C1 * !Y)	0.00953	0.00958	0.00952
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00596	-0.00687	-0.00685
	(A2 * !A3 * !B1 * C1 * !Y)	0.00953	0.00962	0.00952
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00215	-0.00218	-0.00215
	(A2 * !A3 * !B1 * !C1 * Y)	0.01105	0.01121	0.01109
	(!A2 * B1 * C1 * !Y)	-0.00680	-0.00702	-0.00700
	(!A2 * B1 * C1 * !Y)	0.00949	0.00956	0.00952
	(!A2 * B1 * !C1 * !Y)	-0.00678	-0.00702	-0.00700
	(!A2 * B1 * !C1 * !Y)	0.00947	0.00958	0.00952
	(!A2 * !B1 * C1 * !Y)	-0.00681	-0.00702	-0.00700
	(!A2 * !B1 * C1 * !Y)	0.00953	0.00957	0.00952
	(!A2 * !B1 * !C1 * Y)	-0.00221	-0.00226	-0.00221
	(!A2 * !B1 * !C1 * Y)	0.01106	0.01128	0.01110

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)**	0.00200	0.00201	0.00199
	(A1 * A3 * B1 * C1 * !Y)	-0.00214	-0.00227	-0.00225
	(A1 * A3 * B1 * !C1 * !Y)	0.00202	0.00201	0.00199
	(A1 * A3 * B1 * !C1 * !Y)	-0.00211	-0.00227	-0.00225
	(A1 * A3 * !B1 * C1 * !Y)	0.00204	0.00200	0.00199
	(A1 * A3 * !B1 * C1 * !Y)	-0.00198	-0.00220	-0.00220
	(A1 * !A3 * B1 * C1 * !Y)	0.00191	0.00193	0.00192
	(A1 * !A3 * B1 * C1 * !Y)	-0.00230	-0.00230	-0.00230
	(A1 * !A3 * B1 * !C1 * !Y)	0.00192	0.00193	0.00192
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00229	-0.00230	-0.00230
	(A1 * !A3 * !B1 * C1 * !Y)	0.00192	0.00193	0.00193
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00229	-0.00231	-0.00230
	(A1 * !A3 * !B1 * !C1 * Y)	0.00069	0.00068	0.00069
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00254	-0.00253	-0.00253
	(!A1 * A3 * B1 * !Y)	0.00191	0.00194	0.00191
	(!A1 * A3 * B1 * !Y)	-0.00230	-0.00232	-0.00230
	(!A1 * A3 * !B1 * C1 * !Y)	0.00194	0.00196	0.00194
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00230	-0.00231	-0.00230
	(!A1 * A3 * !B1 * !C1 * Y)	0.00169	0.00171	0.00169
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00254	-0.00255	-0.00254
	(!A1 * !A3 * B1 * !Y)	0.00113	0.00115	0.00114
	(!A1 * !A3 * B1 * !Y)	-0.00230	-0.00231	-0.00230
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00113	0.00114	0.00114
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00230	-0.00231	-0.00230
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00082	0.00082	0.00082
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00254	-0.00256	-0.00255

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00367	0.00371	0.00367
	(A1 * A3 * B1 * C1 * !Y)	-0.00442	-0.00466	-0.00463
	(A1 * A3 * B1 * !C1 * !Y)	0.00369	0.00371	0.00367
	(A1 * A3 * B1 * !C1 * !Y)	-0.00437	-0.00464	-0.00463
	(A1 * A3 * !B1 * C1 * !Y)	0.00376	0.00370	0.00368
	(A1 * A3 * !B1 * C1 * !Y)	-0.00413	-0.00453	-0.00451
	(A1 * !A3 * B1 * C1 * !Y)	0.00355	0.00356	0.00355
	(A1 * !A3 * B1 * C1 * !Y)	-0.00475	-0.00476	-0.00475
	(A1 * !A3 * B1 * !C1 * !Y)	0.00351	0.00352	0.00351
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00475	-0.00476	-0.00475
	(A1 * !A3 * !B1 * C1 * !Y)	0.00351	0.00352	0.00351
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00475	-0.00476	-0.00474
	(A1 * !A3 * !B1 * !C1 * Y)	0.00154	0.00154	0.00154
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00477	-0.00476	-0.00475
	(!A1 * A3 * B1 * !Y)	0.00354	0.00356	0.00355
	(!A1 * A3 * B1 * !Y)	-0.00474	-0.00476	-0.00475
	(!A1 * A3 * !B1 * C1 * !Y)	0.00352	0.00356	0.00354
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00473	-0.00476	-0.00474
	(!A1 * A3 * !B1 * !C1 * Y)	0.00354	0.00358	0.00355
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00475	-0.00477	-0.00475
	(!A1 * !A3 * B1 * !Y)	0.00201	0.00203	0.00202
	(!A1 * !A3 * B1 * !Y)	-0.00474	-0.00476	-0.00475
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00201	0.00204	0.00202
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00474	-0.00478	-0.00475
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00184	0.00186	0.00184
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00479	-0.00482	-0.00479

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	0.00731	0.00739	0.00732
	(A1 * A3 * B1 * C1 * !Y)	-0.00879	-0.00929	-0.00921
	(A1 * A3 * B1 * !C1 * !Y)	0.00737	0.00739	0.00732
	(A1 * A3 * B1 * !C1 * !Y)	-0.00868	-0.00928	-0.00921
	(A1 * A3 * !B1 * C1 * !Y)	0.00751	0.00741	0.00733
	(A1 * A3 * !B1 * C1 * !Y)	-0.00823	-0.00905	-0.00897
	(A1 * !A3 * B1 * C1 * !Y)	0.00693	0.00698	0.00696
	(A1 * !A3 * B1 * C1 * !Y)	-0.00939	-0.00944	-0.00942
	(A1 * !A3 * B1 * !C1 * !Y)	0.00696	0.00698	0.00696
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00943	-0.00944	-0.00942
	(A1 * !A3 * !B1 * C1 * !Y)	0.00691	0.00695	0.00694
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00940	-0.00944	-0.00942
	(A1 * !A3 * !B1 * !C1 * Y)	0.00293	0.00294	0.00295
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00942	-0.00944	-0.00941
	(!A1 * A3 * B1 * !Y)	0.00700	0.00706	0.00703
	(!A1 * A3 * B1 * !Y)	-0.00938	-0.00944	-0.00942
	(!A1 * A3 * !B1 * C1 * !Y)	0.00699	0.00708	0.00702
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00939	-0.00947	-0.00942
	(!A1 * A3 * !B1 * !C1 * Y)	0.00701	0.00707	0.00704
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00939	-0.00944	-0.00941
	(!A1 * !A3 * B1 * !Y)	0.00383	0.00386	0.00384
	(!A1 * !A3 * B1 * !Y)	-0.00940	-0.00944	-0.00942
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00383	0.00386	0.00385
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00940	-0.00944	-0.00942
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00352	0.00351	0.00352
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00950	-0.00947	-0.00949

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)**	-0.00199	-0.00200	-0.00199
	(A1 * A3 * B1 * C1 * !Y)	0.00225	0.00227	0.00225
	(A1 * A3 * B1 * !C1 * !Y)	-0.00199	-0.00200	-0.00199
	(A1 * A3 * B1 * !C1 * !Y)	0.00225	0.00227	0.00225
	(A1 * A3 * !B1 * C1 * !Y)	-0.00198	-0.00199	-0.00198
	(A1 * A3 * !B1 * C1 * !Y)	0.00219	0.00220	0.00220
	(A1 * !A3 * B1 * C1 * !Y)	-0.00186	-0.00191	-0.00192
	(A1 * !A3 * B1 * C1 * !Y)	0.00230	0.00230	0.00231
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00186	-0.00192	-0.00192
	(A1 * !A3 * B1 * !C1 * !Y)	0.00229	0.00233	0.00231
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00187	-0.00193	-0.00193
	(A1 * !A3 * !B1 * C1 * !Y)	0.00231	0.00232	0.00231
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00065	-0.00066	-0.00067
	(A1 * !A3 * !B1 * !C1 * Y)	0.00259	0.00261	0.00255
	(!A1 * A3 * B1 * !Y)	-0.00186	-0.00194	-0.00191
	(!A1 * A3 * B1 * !Y)	0.00230	0.00233	0.00231
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00186	-0.00194	-0.00193
	(!A1 * A3 * !B1 * C1 * !Y)	0.00230	0.00233	0.00231
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00153	-0.00169	-0.00169
	(!A1 * A3 * !B1 * !C1 * Y)	0.00265	0.00257	0.00255
	(!A1 * !A3 * B1 * !Y)	-0.00113	-0.00115	-0.00114
	(!A1 * !A3 * B1 * !Y)	0.00231	0.00233	0.00231
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00113	-0.00114	-0.00114
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00232	0.00233	0.00231
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00082	-0.00082	-0.00082
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00265	0.00267	0.00257

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00367	-0.00368	-0.00367
	(A1 * A3 * B1 * C1 * !Y)	0.00464	0.00466	0.00463
	(A1 * A3 * B1 * !C1 * !Y)	-0.00367	-0.00367	-0.00366
	(A1 * A3 * B1 * !C1 * !Y)	0.00464	0.00464	0.00463
	(A1 * A3 * !B1 * C1 * !Y)	-0.00367	-0.00368	-0.00367
	(A1 * A3 * !B1 * C1 * !Y)	0.00452	0.00453	0.00451
	(A1 * !A3 * B1 * C1 * !Y)	-0.00339	-0.00356	-0.00355
	(A1 * !A3 * B1 * C1 * !Y)	0.00475	0.00479	0.00476
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00339	-0.00352	-0.00351
	(A1 * !A3 * B1 * !C1 * !Y)	0.00475	0.00478	0.00476
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00339	-0.00352	-0.00351
	(A1 * !A3 * !B1 * C1 * !Y)	0.00475	0.00479	0.00476
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00145	-0.00147	-0.00149
	(A1 * !A3 * !B1 * !C1 * Y)	0.00484	0.00492	0.00480
	(!A1 * A3 * B1 * !Y)	-0.00343	-0.00356	-0.00355
	(!A1 * A3 * B1 * !Y)	0.00476	0.00480	0.00476
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00343	-0.00356	-0.00354
	(!A1 * A3 * !B1 * C1 * !Y)	0.00477	0.00480	0.00476
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00321	-0.00356	-0.00355
	(!A1 * A3 * !B1 * !C1 * Y)	0.00503	0.00480	0.00477
	(!A1 * !A3 * B1 * !Y)	-0.00201	-0.00203	-0.00202
	(!A1 * !A3 * B1 * !Y)	0.00474	0.00481	0.00476
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00201	-0.00204	-0.00202
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00474	0.00481	0.00476
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00184	-0.00186	-0.00184
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00500	0.00507	0.00486

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00731	-0.00734	-0.00731
	(A1 * A3 * B1 * C1 * !Y)	0.00923	0.00929	0.00921
	(A1 * A3 * B1 * !C1 * !Y)	-0.00732	-0.00734	-0.00730
	(A1 * A3 * B1 * !C1 * !Y)	0.00923	0.00929	0.00921
	(A1 * A3 * !B1 * C1 * !Y)	-0.00732	-0.00735	-0.00731
	(A1 * A3 * !B1 * C1 * !Y)	0.00898	0.00905	0.00897
	(A1 * !A3 * B1 * C1 * !Y)	-0.00673	-0.00698	-0.00696
	(A1 * !A3 * B1 * C1 * !Y)	0.00942	0.00948	0.00945
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00673	-0.00698	-0.00696
	(A1 * !A3 * B1 * !C1 * !Y)	0.00943	0.00951	0.00945
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00674	-0.00695	-0.00694
	(A1 * !A3 * !B1 * C1 * !Y)	0.00946	0.00952	0.00945
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00278	-0.00282	-0.00286
	(A1 * !A3 * !B1 * !C1 * Y)	0.00962	0.00974	0.00951
	(!A1 * A3 * B1 * !Y)	-0.00679	-0.00706	-0.00703
	(!A1 * A3 * B1 * !Y)	0.00938	0.00949	0.00945
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00679	-0.00708	-0.00702
	(!A1 * A3 * !B1 * C1 * !Y)	0.00939	0.00949	0.00945
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00627	-0.00707	-0.00704
	(!A1 * A3 * !B1 * !C1 * Y)	0.01000	0.00949	0.00945
	(!A1 * !A3 * B1 * !Y)	-0.00383	-0.00386	-0.00384
	(!A1 * !A3 * B1 * !Y)	0.00941	0.00956	0.00945
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00383	-0.00386	-0.00385
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00941	0.00956	0.00946
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00352	-0.00351	-0.00352
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00991	0.01004	0.00961

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)**	0.00213	0.00213	0.00210
	(A1 * A2 * B1 * C1 * !Y)	-0.00216	-0.00228	-0.00227
	(A1 * A2 * B1 * !C1 * !Y)	0.00213	0.00213	0.00210
	(A1 * A2 * B1 * !C1 * !Y)	-0.00214	-0.00228	-0.00227
	(A1 * A2 * !B1 * C1 * !Y)	0.00216	0.00212	0.00210
	(A1 * A2 * !B1 * C1 * !Y)	-0.00203	-0.00222	-0.00222
	(A1 * !A2 * !B1 * !C1 * Y)	0.00185	0.00186	0.00185
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00250	-0.00251	-0.00250
	(!A2 * B1 * !Y)	0.00201	0.00203	0.00202
	(!A2 * B1 * !Y)	-0.00230	-0.00231	-0.00231
	(!A2 * !B1 * C1 * !Y)	0.00201	0.00203	0.00202
	(!A2 * !B1 * C1 * !Y)	-0.00230	-0.00231	-0.00231
	(!A1 * A2 * B1 * !Y)	0.00199	0.00202	0.00200
	(!A1 * A2 * B1 * !Y)	-0.00230	-0.00232	-0.00231
	(!A1 * A2 * !B1 * C1 * !Y)	0.00199	0.00202	0.00200
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00230	-0.00232	-0.00231
	(!A1 * A2 * !B1 * !C1 * Y)	0.00182	0.00184	0.00183
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00249	-0.00250	-0.00250
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00185	0.00186	0.00185
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00250	-0.00251	-0.00250

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00360	0.00364	0.00360
	(A1 * A2 * B1 * C1 * !Y)	-0.00433	-0.00456	-0.00454
	(A1 * A2 * B1 * !C1 * !Y)	0.00362	0.00364	0.00360
	(A1 * A2 * B1 * !C1 * !Y)	-0.00430	-0.00455	-0.00454
	(A1 * A2 * !B1 * C1 * !Y)	0.00369	0.00364	0.00360
	(A1 * A2 * !B1 * C1 * !Y)	-0.00408	-0.00445	-0.00443
	(A1 * !A2 * !B1 * !C1 * Y)	0.00346	0.00351	0.00349
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00462	-0.00466	-0.00464
	(!A2 * B1 * !Y)	0.00347	0.00351	0.00349
	(!A2 * B1 * !Y)	-0.00462	-0.00466	-0.00464
	(!A2 * !B1 * C1 * !Y)	0.00347	0.00351	0.00349
	(!A2 * !B1 * C1 * !Y)	-0.00462	-0.00465	-0.00464
	(!A1 * A2 * B1 * !Y)	0.00344	0.00344	0.00343
	(!A1 * A2 * B1 * !Y)	-0.00465	-0.00465	-0.00464
	(!A1 * A2 * !B1 * C1 * !Y)	0.00341	0.00345	0.00343
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00462	-0.00465	-0.00464
	(!A1 * A2 * !B1 * !C1 * Y)	0.00341	0.00344	0.00343
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00462	-0.00465	-0.00464
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00347	0.00351	0.00349
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00463	-0.00466	-0.00464

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.00731	0.00737	0.00730
	(A1 * A2 * B1 * C1 * !Y)	-0.00877	-0.00925	-0.00917
	(A1 * A2 * B1 * !C1 * !Y)	0.00736	0.00738	0.00730
	(A1 * A2 * B1 * !C1 * !Y)	-0.00868	-0.00917	-0.00917
	(A1 * A2 * !B1 * C1 * !Y)	0.00748	0.00739	0.00731
	(A1 * A2 * !B1 * C1 * !Y)	-0.00824	-0.00897	-0.00894
	(A1 * !A2 * !B1 * !C1 * Y)	0.00699	0.00708	0.00702
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00935	-0.00942	-0.00938
	(!A2 * B1 * !Y)	0.00698	0.00701	0.00697
	(!A2 * B1 * !Y)	-0.00937	-0.00940	-0.00938
	(!A2 * !B1 * C1 * !Y)	0.00694	0.00704	0.00699
	(!A2 * !B1 * C1 * !Y)	-0.00933	-0.00942	-0.00937
	(!A1 * A2 * B1 * !Y)	0.00682	0.00689	0.00687
	(!A1 * A2 * B1 * !Y)	-0.00933	-0.00940	-0.00938
	(!A1 * A2 * !B1 * C1 * !Y)	0.00683	0.00689	0.00686
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00935	-0.00939	-0.00937
	(!A1 * A2 * !B1 * !C1 * Y)	0.00691	0.00698	0.00695
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00934	-0.00940	-0.00938
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00699	0.00705	0.00702
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00936	-0.00940	-0.00938

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)**	-0.00210	-0.00211	-0.00210
	(A1 * A2 * B1 * C1 * !Y)	0.00226	0.00228	0.00227
	(A1 * A2 * B1 * !C1 * !Y)	-0.00210	-0.00211	-0.00210
	(A1 * A2 * B1 * !C1 * !Y)	0.00226	0.00228	0.00227
	(A1 * A2 * !B1 * C1 * !Y)	-0.00210	-0.00210	-0.00210
	(A1 * A2 * !B1 * C1 * !Y)	0.00221	0.00222	0.00222
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00177	-0.00185	-0.00185
	(A1 * !A2 * !B1 * !C1 * Y)	0.00250	0.00254	0.00251
	(!A2 * B1 * !Y)	-0.00198	-0.00203	-0.00202
	(!A2 * B1 * !Y)	0.00231	0.00233	0.00232
	(!A2 * !B1 * C1 * !Y)	-0.00198	-0.00202	-0.00202
	(!A2 * !B1 * C1 * !Y)	0.00231	0.00232	0.00232
	(!A1 * A2 * B1 * !Y)	-0.00189	-0.00201	-0.00200
	(!A1 * A2 * B1 * !Y)	0.00231	0.00233	0.00232
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00189	-0.00201	-0.00200
	(!A1 * A2 * !B1 * C1 * !Y)	0.00231	0.00233	0.00232
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00170	-0.00183	-0.00183
	(!A1 * A2 * !B1 * !C1 * Y)	0.00250	0.00253	0.00250
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00178	-0.00185	-0.00185
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00250	0.00254	0.00251

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00359	-0.00360	-0.00359
	(A1 * A2 * B1 * C1 * !Y)	0.00454	0.00456	0.00454
	(A1 * A2 * B1 * !C1 * !Y)	-0.00359	-0.00360	-0.00359
	(A1 * A2 * B1 * !C1 * !Y)	0.00454	0.00455	0.00454
	(A1 * A2 * !B1 * C1 * !Y)	-0.00360	-0.00361	-0.00359
	(A1 * A2 * !B1 * C1 * !Y)	0.00444	0.00445	0.00443
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00328	-0.00348	-0.00349
	(A1 * !A2 * !B1 * !C1 * Y)	0.00464	0.00469	0.00466
	(!A2 * B1 * !Y)	-0.00333	-0.00347	-0.00349
	(!A2 * B1 * !Y)	0.00463	0.00469	0.00465
	(!A2 * !B1 * C1 * !Y)	-0.00333	-0.00347	-0.00349
	(!A2 * !B1 * C1 * !Y)	0.00464	0.00469	0.00466
	(!A1 * A2 * B1 * !Y)	-0.00314	-0.00342	-0.00343
	(!A1 * A2 * B1 * !Y)	0.00466	0.00469	0.00465
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00313	-0.00341	-0.00343
	(!A1 * A2 * !B1 * C1 * !Y)	0.00464	0.00469	0.00466
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00312	-0.00340	-0.00343
	(!A1 * A2 * !B1 * !C1 * Y)	0.00466	0.00471	0.00466
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00331	-0.00349	-0.00349
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00464	0.00469	0.00466

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00729	-0.00732	-0.00728
	(A1 * A2 * B1 * C1 * !Y)	0.00919	0.00926	0.00917
	(A1 * A2 * B1 * !C1 * !Y)	-0.00729	-0.00728	-0.00728
	(A1 * A2 * B1 * !C1 * !Y)	0.00919	0.00917	0.00917
	(A1 * A2 * !B1 * C1 * !Y)	-0.00730	-0.00730	-0.00729
	(A1 * A2 * !B1 * C1 * !Y)	0.00896	0.00897	0.00894
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00661	-0.00704	-0.00702
	(A1 * !A2 * !B1 * !C1 * Y)	0.00938	0.00947	0.00940
	(!A2 * B1 * !Y)	-0.00673	-0.00699	-0.00697
	(!A2 * B1 * !Y)	0.00937	0.00945	0.00940
	(!A2 * !B1 * C1 * !Y)	-0.00673	-0.00699	-0.00699
	(!A2 * !B1 * C1 * !Y)	0.00937	0.00945	0.00941
	(!A1 * A2 * B1 * !Y)	-0.00633	-0.00689	-0.00687
	(!A1 * A2 * B1 * !Y)	0.00942	0.00947	0.00940
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00632	-0.00688	-0.00686
	(!A1 * A2 * !B1 * C1 * !Y)	0.00942	0.00948	0.00941
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00629	-0.00689	-0.00695
	(!A1 * A2 * !B1 * !C1 * Y)	0.00947	0.00951	0.00941
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00667	-0.00705	-0.00702
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00938	0.00947	0.00941

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)**	0.00233	0.00228	0.00215
	(A1 * A2 * A3 * C1 * !Y)	-0.00154	-0.00157	-0.00155
	(A1 * A2 * A3 * !C1 * !Y)	0.00207	0.00208	0.00204
	(A1 * A2 * A3 * !C1 * !Y)	-0.00117	-0.00117	-0.00117
	(A1 * A2 * !A3 * C1 * !Y)	0.00246	0.00206	0.00202
	(A1 * A2 * !A3 * C1 * !Y)	-0.00178	-0.00226	-0.00226
	(A1 * !A2 * C1 * !Y)	0.00246	0.00206	0.00202
	(A1 * !A2 * C1 * !Y)	-0.00178	-0.00225	-0.00226
	(!A1 * C1 * !Y)	0.00244	0.00206	0.00202
	(!A1 * C1 * !Y)	-0.00180	-0.00226	-0.00226
sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * A3 * C1 * !Y)**	0.00258	0.00244	0.00222
	(A1 * A2 * A3 * C1 * !Y)	-0.00324	-0.00328	-0.00323
	(A1 * A2 * A3 * !C1 * !Y)	0.00211	0.00213	0.00207
	(A1 * A2 * A3 * !C1 * !Y)	-0.00244	-0.00246	-0.00247
	(A1 * A2 * !A3 * C1 * !Y)	0.00305	0.00208	0.00204
	(A1 * A2 * !A3 * C1 * !Y)	-0.00365	-0.00463	-0.00467
	(A1 * !A2 * C1 * !Y)	0.00305	0.00207	0.00204
	(A1 * !A2 * C1 * !Y)	-0.00366	-0.00463	-0.00467
	(!A1 * C1 * !Y)	0.00304	0.00210	0.00204
	(!A1 * C1 * !Y)	-0.00367	-0.00467	-0.00467
sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	0.00507	0.00477	0.00430
	(A1 * A2 * A3 * C1 * !Y)	-0.00632	-0.00629	-0.00630
	(A1 * A2 * A3 * !C1 * !Y)	0.00407	0.00408	0.00398
	(A1 * A2 * A3 * !C1 * !Y)	-0.00481	-0.00481	-0.00482
	(A1 * A2 * !A3 * C1 * !Y)	0.00602	0.00405	0.00392
	(A1 * A2 * !A3 * C1 * !Y)	-0.00712	-0.00913	-0.00922
	(A1 * !A2 * C1 * !Y)	0.00596	0.00404	0.00392
	(A1 * !A2 * C1 * !Y)	-0.00707	-0.00913	-0.00922
	(!A1 * C1 * !Y)	0.00591	0.00403	0.00392
	(!A1 * C1 * !Y)	-0.00711	-0.00914	-0.00922

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)	-0.00205	-0.00207	-0.00206
	(A1 * A2 * A3 * C1 * !Y)	0.00154	0.00157	0.00155
	(A1 * A2 * A3 * !C1 * !Y)	-0.00199	-0.00201	-0.00201
	(A1 * A2 * A3 * !C1 * !Y)	0.00121	0.00123	0.00121
	(A1 * A2 * !A3 * C1 * !Y)	-0.00201	-0.00202	-0.00201
	(A1 * A2 * !A3 * C1 * !Y)	0.00225	0.00226	0.00226
	(A1 * !A2 * C1 * !Y)	-0.00201	-0.00202	-0.00201
	(A1 * !A2 * C1 * !Y)	0.00225	0.00226	0.00226
	(!A1 * C1 * !Y)	-0.00201	-0.00202	-0.00201
	(!A1 * C1 * !Y)	0.00226	0.00226	0.00226
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * A3 * C1 * !Y)	-0.00208	-0.00209	-0.00208
	(A1 * A2 * A3 * C1 * !Y)	0.00324	0.00328	0.00323
	(A1 * A2 * A3 * !C1 * !Y)	-0.00198	-0.00199	-0.00199
	(A1 * A2 * A3 * !C1 * !Y)	0.00256	0.00257	0.00257
	(A1 * A2 * !A3 * C1 * !Y)	-0.00204	-0.00205	-0.00202
	(A1 * A2 * !A3 * C1 * !Y)	0.00465	0.00472	0.00467
	(A1 * !A2 * C1 * !Y)	-0.00204	-0.00205	-0.00202
	(A1 * !A2 * C1 * !Y)	0.00466	0.00472	0.00467
	(!A1 * C1 * !Y)	-0.00204	-0.00205	-0.00202
	(!A1 * C1 * !Y)	0.00466	0.00470	0.00467

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	-0.00399	-0.00398	-0.00399
	(A1 * A2 * A3 * C1 * !Y)	0.00632	0.00629	0.00630
	(A1 * A2 * A3 * !C1 * !Y)	-0.00376	-0.00380	-0.00382
	(A1 * A2 * A3 * !C1 * !Y)	0.00498	0.00504	0.00500
	(A1 * A2 * !A3 * C1 * !Y)	-0.00390	-0.00392	-0.00388
	(A1 * A2 * !A3 * C1 * !Y)	0.00914	0.00922	0.00922
	(A1 * !A2 * C1 * !Y)	-0.00391	-0.00391	-0.00388
	(A1 * !A2 * C1 * !Y)	0.00919	0.00922	0.00922
	(!A1 * C1 * !Y)	-0.00388	-0.00391	-0.00388
	(!A1 * C1 * !Y)	0.00912	0.00922	0.00922

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)	0.00215	0.00216	0.00214
	(A1 * A2 * B1 * !Y)	-0.00112	-0.00112	-0.00111
	(A1 * A2 * A3 * !B1 * !Y)	0.00215	0.00217	0.00215
	(A1 * A2 * A3 * !B1 * !Y)	-0.00112	-0.00112	-0.00111
	(A1 * !A2 * B1 * !Y)	0.00214	0.00216	0.00214
	(A1 * !A2 * B1 * !Y)	-0.00111	-0.00112	-0.00111
	(!A1 * B1 * !Y)	0.00215	0.00216	0.00214
	(!A1 * B1 * !Y)	-0.00112	-0.00112	-0.00111
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	0.00242	0.00243	0.00241
	(A1 * A2 * B1 * !Y)	-0.00218	-0.00218	-0.00216
	(A1 * A2 * A3 * !B1 * !Y)	0.00241	0.00243	0.00241
	(A1 * A2 * A3 * !B1 * !Y)	-0.00217	-0.00218	-0.00215
	(A1 * !A2 * B1 * !Y)	0.00242	0.00243	0.00241
	(A1 * !A2 * B1 * !Y)	-0.00218	-0.00218	-0.00217
	(!A1 * B1 * !Y)	0.00242	0.00243	0.00241
	(!A1 * B1 * !Y)	-0.00218	-0.00218	-0.00217
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	0.00481	0.00482	0.00479
	(A1 * A2 * B1 * !Y)	-0.00433	-0.00433	-0.00429
	(A1 * A2 * A3 * !B1 * !Y)	0.00476	0.00486	0.00479
	(A1 * A2 * A3 * !B1 * !Y)	-0.00425	-0.00435	-0.00427
	(A1 * !A2 * B1 * !Y)	0.00481	0.00483	0.00479
	(A1 * !A2 * B1 * !Y)	-0.00434	-0.00433	-0.00429
	(!A1 * B1 * !Y)	0.00481	0.00483	0.00479
	(!A1 * B1 * !Y)	-0.00433	-0.00433	-0.00429

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)	-0.00207	-0.00210	-0.00214
	(A1 * A2 * B1 * !Y)	0.00116	0.00117	0.00113
	(A1 * A2 * A3 * !B1 * !Y)	-0.00192	-0.00194	-0.00211
	(A1 * A2 * A3 * !B1 * !Y)	0.00126	0.00127	0.00114
	(A1 * !A2 * B1 * !Y)	-0.00208	-0.00210	-0.00214
	(A1 * !A2 * B1 * !Y)	0.00116	0.00117	0.00113
	(!A1 * B1 * !Y)	-0.00208	-0.00210	-0.00214
	(!A1 * B1 * !Y)	0.00116	0.00117	0.00113
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	-0.00221	-0.00224	-0.00239
	(A1 * A2 * B1 * !Y)	0.00232	0.00234	0.00220
	(A1 * A2 * A3 * !B1 * !Y)	-0.00186	-0.00189	-0.00231
	(A1 * A2 * A3 * !B1 * !Y)	0.00252	0.00254	0.00223
	(A1 * !A2 * B1 * !Y)	-0.00221	-0.00224	-0.00239
	(A1 * !A2 * B1 * !Y)	0.00232	0.00235	0.00221
	(!A1 * B1 * !Y)	-0.00221	-0.00224	-0.00239
	(!A1 * B1 * !Y)	0.00233	0.00235	0.00221
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	-0.00444	-0.00449	-0.00476
	(A1 * A2 * B1 * !Y)	0.00457	0.00460	0.00437
	(A1 * A2 * A3 * !B1 * !Y)	-0.00376	-0.00381	-0.00460
	(A1 * A2 * A3 * !B1 * !Y)	0.00497	0.00499	0.00442
	(A1 * !A2 * B1 * !Y)	-0.00444	-0.00449	-0.00476
	(A1 * !A2 * B1 * !Y)	0.00458	0.00461	0.00437
	(!A1 * B1 * !Y)	-0.00445	-0.00450	-0.00476
	(!A1 * B1 * !Y)	0.00459	0.00461	0.00437

SKY130_FD_SC_HS__A311Ox

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00266	0.00252	0.00254	0.00261	0.00270	1.28478
sky130_fd_sc_hs__a311o_2	0.00275	0.00274	0.00290	0.00294	0.00279	2.15964
sky130_fd_sc_hs__a311o_4	0.00503	0.00469	0.00496	0.00484	0.00483	3.63373

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a311o_1	0.00000	0.12178	0.26734
sky130_fd_sc_hs__a311o_2	0.00000	0.14890	0.27582
sky130_fd_sc_hs__a311o_4	0.00000	0.30114	0.55163

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)	0.08533	0.56842	6.09739
	A2->X (RR)	0.09098	0.56881	6.05329
	A3->X (RR)	0.09475	0.55251	5.90163
	B1->X (RR)	0.05911	0.51244	5.68583
	C1->X (RR)	0.05475	0.49707	5.65738
sky130_fd_sc_hs__a311o_2	A1->X (RR)	0.09247	0.51238	5.90686
	A2->X (RR)	0.09842	0.50831	5.85214
	A3->X (RR)	0.10259	0.48983	5.65973
	B1->X (RR)	0.06234	0.44882	5.46822
	C1->X (RR)	0.05812	0.43608	5.42953
sky130_fd_sc_hs__a311o_4	A1->X (RR)	0.11478	0.48693	5.83053
	A2->X (RR)	0.12456	0.48833	5.78184
	A3->X (RR)	0.12833	0.44149	5.45117
	B1->X (RR)	0.06048	0.36339	5.12567
	C1->X (RR)	0.05549	0.34735	5.08241

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311o_1	A1->X (FF)	0.16561	0.56629	4.88101
	A2->X (FF)	0.19015	0.60147	4.98624
	A3->X (FF)	0.20802	0.62646	5.09364
	B1->X (FF)	0.18784	0.64454	5.42644
	C1->X (FF)	0.16040	0.63737	5.44509
sky130_fd_sc_hs__a311o_2	A1->X (FF)	0.21999	0.60129	4.65168
	A2->X (FF)	0.25294	0.64443	4.77090
	A3->X (FF)	0.27471	0.67307	4.85965
	B1->X (FF)	0.25424	0.69628	5.17947
	C1->X (FF)	0.22215	0.68915	5.18893
sky130_fd_sc_hs__a311o_4	A1->X (FF)	0.23465	0.55781	4.28546
	A2->X (FF)	0.26554	0.59909	4.37101
	A3->X (FF)	0.29117	0.63778	4.56019
	B1->X (FF)	0.26929	0.66677	4.90183
	C1->X (FF)	0.22352	0.65349	4.95146

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311o_1	A1	0.01451	0.01529	0.05330
	A1	0.00669	0.00748	0.04602
	A2	0.01539	0.01563	0.05026
	A2	0.00667	0.00691	0.04210
	A3	0.01654	0.01653	0.04567
	A3	0.00665	0.00665	0.03580
	B1	0.01122	0.01334	0.05601
	B1	0.00481	0.00694	0.04981
	C1	0.00938	0.01192	0.06401
	C1	0.00381	0.00637	0.05869
sky130_fd_sc_hs__a311o_2	A1	0.01876	0.01953	0.05694
	A1	0.01037	0.01116	0.04859
	A2	0.01998	0.02033	0.05442
	A2	0.01037	0.01073	0.04502
	A3	0.02146	0.02149	0.04371
	A3	0.01037	0.01044	0.03309
	B1	0.01562	0.01767	0.05633
	B1	0.00835	0.01043	0.04953
	C1	0.01341	0.01587	0.06240
	C1	0.00723	0.00974	0.05671

sky130_fd_sc_hs__a311o_4	**A1**	0.03738	0.03888	0.11090
	A1	0.02250	0.02409	0.09640
	A2	0.03939	0.04008	0.10659
	A2	0.02237	0.02313	0.09008
	A3	0.04210	0.04265	0.10100
	A3	0.02257	0.02319	0.08263
	B1	0.03205	0.03530	0.10560
	B1	0.01736	0.02077	0.09523
	C1	0.02386	0.02892	0.12094
	C1	0.01391	0.01899	0.11098

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311o_1	**A1**	0.00427	0.00449	0.03531
	A1	0.01217	0.01239	0.04269
	A2	0.00524	0.00532	0.03565
	A2	0.01399	0.01407	0.04437
	A3	0.00568	0.00545	0.03597
	A3	0.01553	0.01530	0.04579
	B1	0.00401	0.00545	0.04856
	B1	0.01043	0.01187	0.05442
	C1	0.00374	0.00669	0.06062
	C1	0.00930	0.01224	0.06517

sky130_fd_sc_hs__a311o_2	**A1**	0.00965	0.00851	0.03950
	A1	0.01810	0.01697	0.04792
	A2	0.01092	0.00929	0.04147
	A2	0.02053	0.01892	0.05026
	A3	0.01144	0.00873	0.03917
	A3	0.02244	0.01984	0.04926
	B1	0.00862	0.00900	0.04944
	B1	0.01589	0.01626	0.05593
	C1	0.00849	0.01048	0.06173
	C1	0.01466	0.01661	0.06684
sky130_fd_sc_hs__a311o_4	**A1**	0.02030	0.01743	0.07989
	A1	0.03534	0.03206	0.09475
	A2	0.02378	0.01957	0.08393
	A2	0.04083	0.03660	0.09838
	A3	0.02480	0.01911	0.08422
	A3	0.04420	0.03894	0.10168
	B1	0.01827	0.01800	0.08699
	B1	0.03633	0.03453	0.09957
	C1	0.01801	0.02085	0.11313
	C1	0.03384	0.03518	0.12234

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)**	0.00181	0.00181	0.00179
	(A2 * A3 * B1 * C1 * X)	-0.00197	-0.00207	-0.00204
	(A2 * A3 * B1 * !C1 * X)	0.00184	0.00181	0.00179
	(A2 * A3 * B1 * !C1 * X)	-0.00190	-0.00207	-0.00205
	(A2 * A3 * !B1 * C1 * X)	0.00187	0.00181	0.00179
	(A2 * A3 * !B1 * C1 * X)	-0.00180	-0.00202	-0.00200
	(A2 * !A3 * B1 * C1 * X)	0.00170	0.00171	0.00170
	(A2 * !A3 * B1 * C1 * X)	-0.00209	-0.00210	-0.00210
	(A2 * !A3 * B1 * !C1 * X)	0.00170	0.00172	0.00171
	(A2 * !A3 * B1 * !C1 * X)	-0.00209	-0.00210	-0.00209
	(A2 * !A3 * !B1 * C1 * X)	0.00170	0.00172	0.00171
	(A2 * !A3 * !B1 * C1 * X)	-0.00209	-0.00210	-0.00209
	(A2 * !A3 * !B1 * !C1 * !X)	0.00069	0.00069	0.00066
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00238	-0.00239	-0.00245
	(!A2 * B1 * C1 * X)	0.00172	0.00174	0.00172
	(!A2 * B1 * C1 * X)	-0.00209	-0.00211	-0.00210
	(!A2 * B1 * !C1 * X)	0.00172	0.00173	0.00172
	(!A2 * B1 * !C1 * X)	-0.00209	-0.00210	-0.00209
	(!A2 * !B1 * C1 * X)	0.00173	0.00175	0.00173
	(!A2 * !B1 * C1 * X)	-0.00209	-0.00211	-0.00209
	(!A2 * !B1 * !C1 * !X)	0.00070	0.00070	0.00068
	(!A2 * !B1 * !C1 * !X)	-0.00242	-0.00244	-0.00246

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	0.00191	0.00191	0.00189
	(A2 * A3 * B1 * C1 * X)	-0.00194	-0.00205	-0.00204
	(A2 * A3 * B1 * !C1 * X)	0.00195	0.00191	0.00189
	(A2 * A3 * B1 * !C1 * X)	-0.00188	-0.00205	-0.00204
	(A2 * A3 * !B1 * C1 * X)	0.00197	0.00191	0.00189
	(A2 * A3 * !B1 * C1 * X)	-0.00177	-0.00200	-0.00199
	(A2 * !A3 * B1 * C1 * X)	0.00181	0.00182	0.00181
	(A2 * !A3 * B1 * C1 * X)	-0.00208	-0.00209	-0.00208
	(A2 * !A3 * B1 * !C1 * X)	0.00180	0.00181	0.00181
	(A2 * !A3 * B1 * !C1 * X)	-0.00208	-0.00208	-0.00208
	(A2 * !A3 * !B1 * C1 * X)	0.00179	0.00180	0.00179
	(A2 * !A3 * !B1 * C1 * X)	-0.00208	-0.00209	-0.00208
	(A2 * !A3 * !B1 * !C1 * !X)	0.00058	0.00057	0.00054
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00245	-0.00245	-0.00253
	(!A2 * B1 * C1 * X)	0.00182	0.00184	0.00183
	(!A2 * B1 * C1 * X)	-0.00207	-0.00209	-0.00208
	(!A2 * B1 * !C1 * X)	0.00182	0.00184	0.00183
	(!A2 * B1 * !C1 * X)	-0.00207	-0.00208	-0.00208
	(!A2 * !B1 * C1 * X)	0.00184	0.00185	0.00184
	(!A2 * !B1 * C1 * X)	-0.00207	-0.00209	-0.00208
	(!A2 * !B1 * !C1 * !X)	0.00059	0.00060	0.00057
	(!A2 * !B1 * !C1 * !X)	-0.00250	-0.00251	-0.00254

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	0.00327	0.00329	0.00326
	(A2 * A3 * B1 * C1 * X)	-0.00407	-0.00427	-0.00425
	(A2 * A3 * B1 * !C1 * X)	0.00331	0.00329	0.00326
	(A2 * A3 * B1 * !C1 * X)	-0.00401	-0.00426	-0.00425
	(A2 * A3 * !B1 * C1 * X)	0.00339	0.00330	0.00326
	(A2 * A3 * !B1 * C1 * X)	-0.00379	-0.00417	-0.00416
	(A2 * !A3 * B1 * C1 * X)	0.00309	0.00311	0.00309
	(A2 * !A3 * B1 * C1 * X)	-0.00434	-0.00436	-0.00434
	(A2 * !A3 * B1 * !C1 * X)	0.00309	0.00310	0.00309
	(A2 * !A3 * B1 * !C1 * X)	-0.00434	-0.00436	-0.00434
	(A2 * !A3 * !B1 * C1 * X)	0.00310	0.00310	0.00310
	(A2 * !A3 * !B1 * C1 * X)	-0.00435	-0.00435	-0.00434
	(A2 * !A3 * !B1 * !C1 * !X)	0.00109	0.00110	0.00100
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00483	-0.00486	-0.00503
	(!A2 * B1 * C1 * X)	0.00315	0.00319	0.00316
	(!A2 * B1 * C1 * X)	-0.00434	-0.00436	-0.00434
	(!A2 * B1 * !C1 * X)	0.00315	0.00318	0.00316
	(!A2 * B1 * !C1 * X)	-0.00434	-0.00436	-0.00434
	(!A2 * !B1 * C1 * X)	0.00316	0.00319	0.00317
	(!A2 * !B1 * C1 * X)	-0.00433	-0.00436	-0.00434
	(!A2 * !B1 * !C1 * !X)	0.00118	0.00119	0.00112
	(!A2 * !B1 * !C1 * !X)	-0.00491	-0.00493	-0.00503

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)**	-0.00179	-0.00180	-0.00179
	(A2 * A3 * B1 * C1 * X)	0.00204	0.00207	0.00204
	(A2 * A3 * B1 * !C1 * X)	-0.00178	-0.00180	-0.00179
	(A2 * A3 * B1 * !C1 * X)	0.00203	0.00207	0.00205
	(A2 * A3 * !B1 * C1 * X)	-0.00178	-0.00179	-0.00178
	(A2 * A3 * !B1 * C1 * X)	0.00200	0.00202	0.00200
	(A2 * !A3 * B1 * C1 * X)	-0.00157	-0.00171	-0.00170
	(A2 * !A3 * B1 * C1 * X)	0.00209	0.00212	0.00210
	(A2 * !A3 * B1 * !C1 * X)	-0.00156	-0.00172	-0.00171
	(A2 * !A3 * B1 * !C1 * X)	0.00209	0.00212	0.00210
	(A2 * !A3 * !B1 * C1 * X)	-0.00155	-0.00172	-0.00171
	(A2 * !A3 * !B1 * C1 * X)	0.00209	0.00212	0.00210
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00065	-0.00066	-0.00065
	(A2 * !A3 * !B1 * !C1 * !X)	0.00245	0.00249	0.00246
	(!A2 * B1 * C1 * X)	-0.00169	-0.00174	-0.00172
	(!A2 * B1 * C1 * X)	0.00209	0.00213	0.00210
	(!A2 * B1 * !C1 * X)	-0.00168	-0.00173	-0.00172
	(!A2 * B1 * !C1 * X)	0.00209	0.00213	0.00210
	(!A2 * !B1 * C1 * X)	-0.00168	-0.00174	-0.00173
	(!A2 * !B1 * C1 * X)	0.00209	0.00212	0.00210
	(!A2 * !B1 * !C1 * !X)	-0.00066	-0.00068	-0.00067
	(!A2 * !B1 * !C1 * !X)	0.00245	0.00250	0.00246

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	-0.00189	-0.00190	-0.00189
	(A2 * A3 * B1 * C1 * X)	0.00203	0.00205	0.00204
	(A2 * A3 * B1 * !C1 * X)	-0.00189	-0.00190	-0.00189
	(A2 * A3 * B1 * !C1 * X)	0.00203	0.00205	0.00204
	(A2 * A3 * !B1 * C1 * X)	-0.00188	-0.00189	-0.00188
	(A2 * A3 * !B1 * C1 * X)	0.00198	0.00200	0.00199
	(A2 * !A3 * B1 * C1 * X)	-0.00165	-0.00180	-0.00181
	(A2 * !A3 * B1 * C1 * X)	0.00208	0.00210	0.00209
	(A2 * !A3 * B1 * !C1 * X)	-0.00164	-0.00180	-0.00181
	(A2 * !A3 * B1 * !C1 * X)	0.00208	0.00210	0.00209
	(A2 * !A3 * !B1 * C1 * X)	-0.00162	-0.00180	-0.00179
	(A2 * !A3 * !B1 * C1 * X)	0.00208	0.00211	0.00209
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00054	-0.00055	-0.00054
	(A2 * !A3 * !B1 * !C1 * !X)	0.00254	0.00256	0.00254
	(!A2 * B1 * C1 * X)	-0.00177	-0.00183	-0.00183
	(!A2 * B1 * C1 * X)	0.00208	0.00210	0.00209
	(!A2 * B1 * !C1 * X)	-0.00176	-0.00182	-0.00183
	(!A2 * B1 * !C1 * X)	0.00207	0.00208	0.00209
	(!A2 * !B1 * C1 * X)	-0.00176	-0.00183	-0.00183
	(!A2 * !B1 * C1 * X)	0.00207	0.00212	0.00209
	(!A2 * !B1 * !C1 * !X)	-0.00056	-0.00056	-0.00056
	(!A2 * !B1 * !C1 * !X)	0.00255	0.00256	0.00254

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	-0.00326	-0.00327	-0.00326
	(A2 * A3 * B1 * C1 * X)	0.00425	0.00427	0.00425
	(A2 * A3 * B1 * !C1 * X)	-0.00326	-0.00326	-0.00326
	(A2 * A3 * B1 * !C1 * X)	0.00425	0.00426	0.00425
	(A2 * A3 * !B1 * C1 * X)	-0.00325	-0.00325	-0.00324
	(A2 * A3 * !B1 * C1 * X)	0.00416	0.00417	0.00416
	(A2 * !A3 * B1 * C1 * X)	-0.00275	-0.00308	-0.00309
	(A2 * !A3 * B1 * C1 * X)	0.00434	0.00437	0.00436
	(A2 * !A3 * B1 * !C1 * X)	-0.00273	-0.00310	-0.00309
	(A2 * !A3 * B1 * !C1 * X)	0.00434	0.00439	0.00436
	(A2 * !A3 * !B1 * C1 * X)	-0.00273	-0.00310	-0.00310
	(A2 * !A3 * !B1 * C1 * X)	0.00435	0.00437	0.00436
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00100	-0.00102	-0.00100
	(A2 * !A3 * !B1 * !C1 * !X)	0.00504	0.00510	0.00506
	(!A2 * B1 * C1 * X)	-0.00302	-0.00317	-0.00316
	(!A2 * B1 * C1 * X)	0.00436	0.00439	0.00436
	(!A2 * B1 * !C1 * X)	-0.00302	-0.00317	-0.00316
	(!A2 * B1 * !C1 * X)	0.00436	0.00440	0.00436
	(!A2 * !B1 * C1 * X)	-0.00301	-0.00317	-0.00316
	(!A2 * !B1 * C1 * X)	0.00437	0.00438	0.00436
	(!A2 * !B1 * !C1 * !X)	-0.00108	-0.00110	-0.00108
	(!A2 * !B1 * !C1 * !X)	0.00504	0.00510	0.00506

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)**	0.00157	0.00157	0.00156
	(A1 * A3 * B1 * C1 * X)	-0.00202	-0.00211	-0.00210
	(A1 * A3 * B1 * !C1 * X)	0.00163	0.00157	0.00156
	(A1 * A3 * B1 * !C1 * X)	-0.00194	-0.00211	-0.00210
	(A1 * A3 * !B1 * C1 * X)	0.00164	0.00157	0.00156
	(A1 * A3 * !B1 * C1 * X)	-0.00183	-0.00204	-0.00205
	(A1 * !A3 * B1 * C1 * X)	0.00149	0.00150	0.00150
	(A1 * !A3 * B1 * C1 * X)	-0.00215	-0.00216	-0.00215
	(A1 * !A3 * B1 * !C1 * X)	0.00149	0.00150	0.00150
	(A1 * !A3 * B1 * !C1 * X)	-0.00216	-0.00216	-0.00215
	(A1 * !A3 * !B1 * C1 * X)	0.00150	0.00150	0.00150
	(A1 * !A3 * !B1 * C1 * X)	-0.00216	-0.00216	-0.00215
	(A1 * !A3 * !B1 * !C1 * !X)	0.00058	0.00057	0.00057
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00224	-0.00224	-0.00224
	(!A1 * A3 * B1 * X)	0.00150	0.00150	0.00149
	(!A1 * A3 * B1 * X)	-0.00215	-0.00216	-0.00215
	(!A1 * A3 * !B1 * C1 * X)	0.00150	0.00151	0.00150
	(!A1 * A3 * !B1 * C1 * X)	-0.00215	-0.00216	-0.00215
	(!A1 * A3 * !B1 * !C1 * !X)	0.00141	0.00141	0.00141
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00224	-0.00224	-0.00224
	(!A1 * !A3 * B1 * X)	0.00084	0.00085	0.00085
	(!A1 * !A3 * B1 * X)	-0.00214	-0.00216	-0.00215
	(!A1 * !A3 * !B1 * C1 * X)	0.00085	0.00085	0.00085
	(!A1 * !A3 * !B1 * C1 * X)	-0.00214	-0.00215	-0.00215
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00069	0.00070	0.00069
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00224	-0.00226	-0.00225

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	0.00190	0.00190	0.00188
	(A1 * A3 * B1 * C1 * X)	-0.00195	-0.00205	-0.00204
	(A1 * A3 * B1 * !C1 * X)	0.00193	0.00190	0.00188
	(A1 * A3 * B1 * !C1 * X)	-0.00188	-0.00205	-0.00204
	(A1 * A3 * !B1 * C1 * X)	0.00195	0.00189	0.00188
	(A1 * A3 * !B1 * C1 * X)	-0.00178	-0.00199	-0.00199
	(A1 * !A3 * B1 * C1 * X)	0.00178	0.00178	0.00179
	(A1 * !A3 * B1 * C1 * X)	-0.00208	-0.00207	-0.00208
	(A1 * !A3 * B1 * !C1 * X)	0.00179	0.00180	0.00179
	(A1 * !A3 * B1 * !C1 * X)	-0.00208	-0.00208	-0.00208
	(A1 * !A3 * !B1 * C1 * X)	0.00179	0.00181	0.00180
	(A1 * !A3 * !B1 * C1 * X)	-0.00207	-0.00209	-0.00208
	(A1 * !A3 * !B1 * !C1 * !X)	0.00069	0.00070	0.00069
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00221	-0.00222	-0.00220
	(!A1 * A3 * B1 * X)	0.00181	0.00183	0.00182
	(!A1 * A3 * B1 * X)	-0.00208	-0.00209	-0.00208
	(!A1 * A3 * !B1 * C1 * X)	0.00182	0.00184	0.00182
	(!A1 * A3 * !B1 * C1 * X)	-0.00207	-0.00209	-0.00208
	(!A1 * A3 * !B1 * !C1 * !X)	0.00169	0.00172	0.00170
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00220	-0.00221	-0.00220
	(!A1 * !A3 * B1 * X)	0.00103	0.00104	0.00103
	(!A1 * !A3 * B1 * X)	-0.00207	-0.00209	-0.00208
	(!A1 * !A3 * !B1 * C1 * X)	0.00103	0.00104	0.00104
	(!A1 * !A3 * !B1 * C1 * X)	-0.00207	-0.00209	-0.00208
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00082	0.00082	0.00082
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00221	-0.00222	-0.00222

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	0.00313	0.00315	0.00312
	(A1 * A3 * B1 * C1 * X)	-0.00402	-0.00422	-0.00420
	(A1 * A3 * B1 * !C1 * X)	0.00314	0.00315	0.00312
	(A1 * A3 * B1 * !C1 * X)	-0.00399	-0.00422	-0.00420
	(A1 * A3 * !B1 * C1 * X)	0.00321	0.00315	0.00312
	(A1 * A3 * !B1 * C1 * X)	-0.00380	-0.00414	-0.00412
	(A1 * !A3 * B1 * C1 * X)	0.00297	0.00300	0.00299
	(A1 * !A3 * B1 * C1 * X)	-0.00426	-0.00429	-0.00428
	(A1 * !A3 * B1 * !C1 * X)	0.00299	0.00300	0.00299
	(A1 * !A3 * B1 * !C1 * X)	-0.00428	-0.00429	-0.00427
	(A1 * !A3 * !B1 * C1 * X)	0.00300	0.00300	0.00300
	(A1 * !A3 * !B1 * C1 * X)	-0.00428	-0.00428	-0.00427
	(A1 * !A3 * !B1 * !C1 * !X)	0.00133	0.00134	0.00135
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00427	-0.00428	-0.00426
	(!A1 * A3 * B1 * X)	0.00299	0.00302	0.00300
	(!A1 * A3 * B1 * X)	-0.00427	-0.00429	-0.00427
	(!A1 * A3 * !B1 * C1 * X)	0.00299	0.00303	0.00300
	(!A1 * A3 * !B1 * C1 * X)	-0.00426	-0.00429	-0.00427
	(!A1 * A3 * !B1 * !C1 * !X)	0.00299	0.00302	0.00300
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00426	-0.00428	-0.00427
	(!A1 * !A3 * B1 * X)	0.00182	0.00182	0.00181
	(!A1 * !A3 * B1 * X)	-0.00427	-0.00429	-0.00428
	(!A1 * !A3 * !B1 * C1 * X)	0.00182	0.00183	0.00182
	(!A1 * !A3 * !B1 * C1 * X)	-0.00428	-0.00429	-0.00427
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00165	0.00165	0.00164
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00431	-0.00431	-0.00430

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)**	-0.00155	-0.00156	-0.00156
	(A1 * A3 * B1 * C1 * X)	0.00209	0.00211	0.00210
	(A1 * A3 * B1 * !C1 * X)	-0.00155	-0.00156	-0.00156
	(A1 * A3 * B1 * !C1 * X)	0.00209	0.00211	0.00210
	(A1 * A3 * !B1 * C1 * X)	-0.00155	-0.00155	-0.00155
	(A1 * A3 * !B1 * C1 * X)	0.00204	0.00204	0.00205
	(A1 * !A3 * B1 * C1 * X)	-0.00146	-0.00150	-0.00150
	(A1 * !A3 * B1 * C1 * X)	0.00216	0.00218	0.00216
	(A1 * !A3 * B1 * !C1 * X)	-0.00146	-0.00150	-0.00150
	(A1 * !A3 * B1 * !C1 * X)	0.00216	0.00218	0.00216
	(A1 * !A3 * !B1 * C1 * X)	-0.00145	-0.00150	-0.00150
	(A1 * !A3 * !B1 * C1 * X)	0.00217	0.00217	0.00216
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00054	-0.00055	-0.00055
	(A1 * !A3 * !B1 * !C1 * !X)	0.00228	0.00230	0.00226
	(!A1 * A3 * B1 * X)	-0.00145	-0.00150	-0.00149
	(!A1 * A3 * B1 * X)	0.00215	0.00218	0.00216
	(!A1 * A3 * !B1 * C1 * X)	-0.00145	-0.00150	-0.00150
	(!A1 * A3 * !B1 * C1 * X)	0.00215	0.00218	0.00216
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00127	-0.00141	-0.00141
	(!A1 * A3 * !B1 * !C1 * !X)	0.00235	0.00227	0.00225
	(!A1 * !A3 * B1 * X)	-0.00084	-0.00085	-0.00085
	(!A1 * !A3 * B1 * X)	0.00216	0.00218	0.00216
	(!A1 * !A3 * !B1 * C1 * X)	-0.00085	-0.00085	-0.00085
	(!A1 * !A3 * !B1 * C1 * X)	0.00216	0.00218	0.00216
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00069	-0.00070	-0.00069
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00234	0.00237	0.00228

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	-0.00188	-0.00189	-0.00188
	(A1 * A3 * B1 * C1 * X)	0.00203	0.00205	0.00204
	(A1 * A3 * B1 * !C1 * X)	-0.00188	-0.00189	-0.00188
	(A1 * A3 * B1 * !C1 * X)	0.00203	0.00205	0.00204
	(A1 * A3 * !B1 * C1 * X)	-0.00187	-0.00188	-0.00187
	(A1 * A3 * !B1 * C1 * X)	0.00198	0.00199	0.00199
	(A1 * !A3 * B1 * C1 * X)	-0.00175	-0.00178	-0.00179
	(A1 * !A3 * B1 * C1 * X)	0.00208	0.00208	0.00209
	(A1 * !A3 * B1 * !C1 * X)	-0.00175	-0.00180	-0.00179
	(A1 * !A3 * B1 * !C1 * X)	0.00208	0.00208	0.00209
	(A1 * !A3 * !B1 * C1 * X)	-0.00175	-0.00180	-0.00180
	(A1 * !A3 * !B1 * C1 * X)	0.00208	0.00210	0.00209
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00066	-0.00066	-0.00067
	(A1 * !A3 * !B1 * !C1 * !X)	0.00226	0.00228	0.00222
	(!A1 * A3 * B1 * X)	-0.00175	-0.00182	-0.00182
	(!A1 * A3 * B1 * X)	0.00208	0.00210	0.00209
	(!A1 * A3 * !B1 * C1 * X)	-0.00175	-0.00182	-0.00182
	(!A1 * A3 * !B1 * C1 * X)	0.00208	0.00211	0.00209
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00153	-0.00170	-0.00170
	(!A1 * A3 * !B1 * !C1 * !X)	0.00231	0.00223	0.00221
	(!A1 * !A3 * B1 * X)	-0.00103	-0.00104	-0.00103
	(!A1 * !A3 * B1 * X)	0.00207	0.00211	0.00209
	(!A1 * !A3 * !B1 * C1 * X)	-0.00103	-0.00104	-0.00104
	(!A1 * !A3 * !B1 * C1 * X)	0.00210	0.00211	0.00209
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00082	-0.00082	-0.00082
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00232	0.00234	0.00225

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	-0.00312	-0.00313	-0.00312
	(A1 * A3 * B1 * C1 * X)	0.00420	0.00423	0.00420
	(A1 * A3 * B1 * !C1 * X)	-0.00312	-0.00313	-0.00312
	(A1 * A3 * B1 * !C1 * X)	0.00420	0.00422	0.00420
	(A1 * A3 * !B1 * C1 * X)	-0.00311	-0.00312	-0.00310
	(A1 * A3 * !B1 * C1 * X)	0.00413	0.00414	0.00412
	(A1 * !A3 * B1 * C1 * X)	-0.00290	-0.00300	-0.00299
	(A1 * !A3 * B1 * C1 * X)	0.00429	0.00431	0.00429
	(A1 * !A3 * B1 * !C1 * X)	-0.00290	-0.00300	-0.00299
	(A1 * !A3 * B1 * !C1 * X)	0.00429	0.00432	0.00429
	(A1 * !A3 * !B1 * C1 * X)	-0.00290	-0.00300	-0.00300
	(A1 * !A3 * !B1 * C1 * X)	0.00430	0.00432	0.00429
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00124	-0.00126	-0.00130
	(A1 * !A3 * !B1 * !C1 * !X)	0.00440	0.00445	0.00433
	(!A1 * A3 * B1 * X)	-0.00288	-0.00302	-0.00300
	(!A1 * A3 * B1 * X)	0.00429	0.00431	0.00429
	(!A1 * A3 * !B1 * C1 * X)	-0.00288	-0.00303	-0.00300
	(!A1 * A3 * !B1 * C1 * X)	0.00430	0.00431	0.00429
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00264	-0.00302	-0.00300
	(!A1 * A3 * !B1 * !C1 * !X)	0.00458	0.00431	0.00429
	(!A1 * !A3 * B1 * X)	-0.00182	-0.00182	-0.00181
	(!A1 * !A3 * B1 * X)	0.00427	0.00434	0.00429
	(!A1 * !A3 * !B1 * C1 * X)	-0.00182	-0.00183	-0.00182
	(!A1 * !A3 * !B1 * C1 * X)	0.00428	0.00434	0.00429
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00165	-0.00165	-0.00164
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00449	0.00457	0.00437

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)**	0.00171	0.00172	0.00171
	(A1 * A2 * B1 * C1 * X)	-0.00197	-0.00208	-0.00206
	(A1 * A2 * B1 * !C1 * X)	0.00175	0.00172	0.00171
	(A1 * A2 * B1 * !C1 * X)	-0.00192	-0.00207	-0.00207
	(A1 * A2 * !B1 * C1 * X)	0.00178	0.00172	0.00171
	(A1 * A2 * !B1 * C1 * X)	-0.00182	-0.00202	-0.00202
	(A1 * !A2 * !B1 * !C1 * !X)	0.00143	0.00145	0.00144
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00232	-0.00233	-0.00232
	(!A2 * B1 * X)	0.00164	0.00165	0.00165
	(!A2 * B1 * X)	-0.00210	-0.00211	-0.00211
	(!A2 * !B1 * C1 * X)	0.00165	0.00165	0.00165
	(!A2 * !B1 * C1 * X)	-0.00210	-0.00211	-0.00211
	(!A1 * A2 * B1 * X)	0.00161	0.00161	0.00161
	(!A1 * A2 * B1 * X)	-0.00211	-0.00211	-0.00211
	(!A1 * A2 * !B1 * C1 * X)	0.00161	0.00162	0.00161
	(!A1 * A2 * !B1 * C1 * X)	-0.00211	-0.00211	-0.00211
	(!A1 * A2 * !B1 * !C1 * !X)	0.00140	0.00140	0.00139
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00233	-0.00233	-0.00232
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00143	0.00145	0.00144
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00232	-0.00234	-0.00232

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	0.00216	0.00216	0.00214
	(A1 * A2 * B1 * C1 * X)	-0.00193	-0.00204	-0.00202
	(A1 * A2 * B1 * !C1 * X)	0.00219	0.00216	0.00214
	(A1 * A2 * B1 * !C1 * X)	-0.00188	-0.00203	-0.00203
	(A1 * A2 * !B1 * C1 * X)	0.00221	0.00216	0.00214
	(A1 * A2 * !B1 * C1 * X)	-0.00177	-0.00198	-0.00198
	(A1 * !A2 * !B1 * !C1 * !X)	0.00170	0.00172	0.00171
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00242	-0.00243	-0.00243
	(!A2 * B1 * X)	0.00206	0.00208	0.00207
	(!A2 * B1 * X)	-0.00206	-0.00207	-0.00207
	(!A2 * !B1 * C1 * X)	0.00205	0.00206	0.00205
	(!A2 * !B1 * C1 * X)	-0.00206	-0.00207	-0.00206
	(!A1 * A2 * B1 * X)	0.00207	0.00207	0.00206
	(!A1 * A2 * B1 * X)	-0.00206	-0.00207	-0.00206
	(!A1 * A2 * !B1 * C1 * X)	0.00204	0.00205	0.00204
	(!A1 * A2 * !B1 * C1 * X)	-0.00207	-0.00207	-0.00206
	(!A1 * A2 * !B1 * !C1 * !X)	0.00168	0.00168	0.00167
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00243	-0.00243	-0.00243
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00170	0.00171	0.00171
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00242	-0.00243	-0.00243

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	0.00358	0.00360	0.00356
	(A1 * A2 * B1 * C1 * X)	-0.00390	-0.00410	-0.00408
	(A1 * A2 * B1 * !C1 * X)	0.00360	0.00360	0.00356
	(A1 * A2 * B1 * !C1 * X)	-0.00386	-0.00410	-0.00408
	(A1 * A2 * !B1 * C1 * X)	0.00368	0.00360	0.00356
	(A1 * A2 * !B1 * C1 * X)	-0.00366	-0.00402	-0.00399
	(A1 * !A2 * !B1 * !C1 * !X)	0.00306	0.00307	0.00305
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00453	-0.00454	-0.00453
	(!A2 * B1 * X)	0.00343	0.00344	0.00343
	(!A2 * B1 * X)	-0.00415	-0.00414	-0.00416
	(!A2 * !B1 * C1 * X)	0.00343	0.00345	0.00343
	(!A2 * !B1 * C1 * X)	-0.00415	-0.00416	-0.00415
	(!A1 * A2 * B1 * X)	0.00343	0.00344	0.00342
	(!A1 * A2 * B1 * X)	-0.00417	-0.00416	-0.00416
	(!A1 * A2 * !B1 * C1 * X)	0.00344	0.00345	0.00343
	(!A1 * A2 * !B1 * C1 * X)	-0.00416	-0.00416	-0.00415
	(!A1 * A2 * !B1 * !C1 * !X)	0.00307	0.00307	0.00306
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00453	-0.00453	-0.00452
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00305	0.00309	0.00305
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00453	-0.00456	-0.00453

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)**	-0.00170	-0.00171	-0.00171
	(A1 * A2 * B1 * C1 * X)	0.00206	0.00208	0.00206
	(A1 * A2 * B1 * !C1 * X)	-0.00170	-0.00171	-0.00171
	(A1 * A2 * B1 * !C1 * X)	0.00206	0.00207	0.00207
	(A1 * A2 * !B1 * C1 * X)	-0.00170	-0.00170	-0.00170
	(A1 * A2 * !B1 * C1 * X)	0.00201	0.00202	0.00202
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00137	-0.00144	-0.00144
	(A1 * !A2 * !B1 * !C1 * !X)	0.00234	0.00235	0.00233
	(!A2 * B1 * X)	-0.00160	-0.00165	-0.00165
	(!A2 * B1 * X)	0.00210	0.00213	0.00212
	(!A2 * !B1 * C1 * X)	-0.00160	-0.00164	-0.00165
	(!A2 * !B1 * C1 * X)	0.00210	0.00211	0.00212
	(!A1 * A2 * B1 * X)	-0.00152	-0.00161	-0.00161
	(!A1 * A2 * B1 * X)	0.00211	0.00214	0.00212
	(!A1 * A2 * !B1 * C1 * X)	-0.00152	-0.00162	-0.00161
	(!A1 * A2 * !B1 * C1 * X)	0.00211	0.00214	0.00212
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00130	-0.00140	-0.00139
	(!A1 * A2 * !B1 * !C1 * !X)	0.00233	0.00236	0.00233
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00139	-0.00144	-0.00144
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00234	0.00235	0.00233

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00214	-0.00215	-0.00214
	(A1 * A2 * B1 * C1 * X)	0.00202	0.00204	0.00202
	(A1 * A2 * B1 * !C1 * X)	-0.00214	-0.00214	-0.00214
	(A1 * A2 * B1 * !C1 * X)	0.00202	0.00203	0.00203
	(A1 * A2 * !B1 * C1 * X)	-0.00213	-0.00214	-0.00213
	(A1 * A2 * !B1 * C1 * X)	0.00197	0.00198	0.00198
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00162	-0.00171	-0.00171
	(A1 * !A2 * !B1 * !C1 * !X)	0.00242	0.00245	0.00244
	(!A2 * B1 * X)	-0.00201	-0.00206	-0.00207
	(!A2 * B1 * X)	0.00206	0.00207	0.00207
	(!A2 * !B1 * C1 * X)	-0.00201	-0.00205	-0.00205
	(!A2 * !B1 * C1 * X)	0.00206	0.00207	0.00207
	(!A1 * A2 * B1 * X)	-0.00192	-0.00204	-0.00206
	(!A1 * A2 * B1 * X)	0.00206	0.00208	0.00207
	(!A1 * A2 * !B1 * C1 * X)	-0.00192	-0.00205	-0.00204
	(!A1 * A2 * !B1 * C1 * X)	0.00207	0.00210	0.00207
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00155	-0.00168	-0.00167
	(!A1 * A2 * !B1 * !C1 * !X)	0.00243	0.00246	0.00244
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00163	-0.00171	-0.00171
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00242	0.00245	0.00244

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00356	-0.00357	-0.00356
	(A1 * A2 * B1 * C1 * X)	0.00408	0.00410	0.00408
	(A1 * A2 * B1 * !C1 * X)	-0.00356	-0.00357	-0.00356
	(A1 * A2 * B1 * !C1 * X)	0.00408	0.00410	0.00408
	(A1 * A2 * !B1 * C1 * X)	-0.00355	-0.00356	-0.00354
	(A1 * A2 * !B1 * C1 * X)	0.00400	0.00402	0.00399
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00293	-0.00307	-0.00305
	(A1 * !A2 * !B1 * !C1 * !X)	0.00453	0.00458	0.00455
	(!A2 * B1 * X)	-0.00334	-0.00342	-0.00343
	(!A2 * B1 * X)	0.00415	0.00414	0.00417
	(!A2 * !B1 * C1 * X)	-0.00334	-0.00344	-0.00343
	(!A2 * !B1 * C1 * X)	0.00415	0.00420	0.00417
	(!A1 * A2 * B1 * X)	-0.00323	-0.00341	-0.00342
	(!A1 * A2 * B1 * X)	0.00417	0.00422	0.00417
	(!A1 * A2 * !B1 * C1 * X)	-0.00322	-0.00341	-0.00343
	(!A1 * A2 * !B1 * C1 * X)	0.00418	0.00422	0.00417
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00285	-0.00303	-0.00306
	(!A1 * A2 * !B1 * !C1 * !X)	0.00456	0.00459	0.00454
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00294	-0.00308	-0.00305
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00453	0.00458	0.00455

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)**	0.00205	0.00193	0.00186
	(A1 * A2 * A3 * C1 * X)	-0.00138	-0.00143	-0.00142
	(A1 * A2 * A3 * !C1 * X)	0.00178	0.00181	0.00176
	(A1 * A2 * A3 * !C1 * X)	-0.00106	-0.00109	-0.00108
	(A1 * A2 * !A3 * C1 * X)	0.00218	0.00179	0.00174
	(A1 * A2 * !A3 * C1 * X)	-0.00160	-0.00203	-0.00205
	(A1 * !A2 * C1 * X)	0.00218	0.00179	0.00174
	(A1 * !A2 * C1 * X)	-0.00160	-0.00203	-0.00205
	(!A1 * C1 * X)	0.00217	0.00179	0.00174
	(!A1 * C1 * X)	-0.00161	-0.00203	-0.00205
sky130_fd_sc_hs__a311o_2	**(A1 * A2 * A3 * C1 * X)**	0.00234	0.00228	0.00217
	(A1 * A2 * A3 * C1 * X)	-0.00138	-0.00144	-0.00143
	(A1 * A2 * A3 * !C1 * X)	0.00208	0.00210	0.00206
	(A1 * A2 * A3 * !C1 * X)	-0.00107	-0.00108	-0.00108
	(A1 * A2 * !A3 * C1 * X)	0.00247	0.00208	0.00204
	(A1 * A2 * !A3 * C1 * X)	-0.00158	-0.00203	-0.00204
	(A1 * !A2 * C1 * X)	0.00247	0.00208	0.00204
	(A1 * !A2 * C1 * X)	-0.00158	-0.00203	-0.00204
	(!A1 * C1 * X)	0.00246	0.00208	0.00204
	(!A1 * C1 * X)	-0.00161	-0.00204	-0.00204
sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	0.00379	0.00366	0.00342
	(A1 * A2 * A3 * C1 * X)	-0.00302	-0.00313	-0.00310
	(A1 * A2 * A3 * !C1 * X)	0.00330	0.00334	0.00327
	(A1 * A2 * A3 * !C1 * X)	-0.00231	-0.00234	-0.00235
	(A1 * A2 * !A3 * C1 * X)	0.00423	0.00332	0.00325
	(A1 * A2 * !A3 * C1 * X)	-0.00321	-0.00420	-0.00426
	(A1 * !A2 * C1 * X)	0.00423	0.00332	0.00325
	(A1 * !A2 * C1 * X)	-0.00321	-0.00420	-0.00426
	(!A1 * C1 * X)	0.00423	0.00332	0.00325
	(!A1 * C1 * X)	-0.00321	-0.00420	-0.00426

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)	-0.00176	-0.00177	-0.00176
	(A1 * A2 * A3 * C1 * X)	0.00142	0.00143	0.00142
	(A1 * A2 * A3 * !C1 * X)	-0.00171	-0.00173	-0.00173
	(A1 * A2 * A3 * !C1 * X)	0.00113	0.00114	0.00112
	(A1 * A2 * !A3 * C1 * X)	-0.00173	-0.00173	-0.00172
	(A1 * A2 * !A3 * C1 * X)	0.00204	0.00206	0.00206
	(A1 * !A2 * C1 * X)	-0.00173	-0.00173	-0.00172
	(A1 * !A2 * C1 * X)	0.00204	0.00206	0.00206
	(!A1 * C1 * X)	-0.00173	-0.00174	-0.00172
	(!A1 * C1 * X)	0.00204	0.00206	0.00206
sky130_fd_sc_hs__a311o_2	(A1 * A2 * A3 * C1 * X)	-0.00207	-0.00208	-0.00207
	(A1 * A2 * A3 * C1 * X)	0.00143	0.00144	0.00143
	(A1 * A2 * A3 * !C1 * X)	-0.00202	-0.00203	-0.00203
	(A1 * A2 * A3 * !C1 * X)	0.00113	0.00114	0.00112
	(A1 * A2 * !A3 * C1 * X)	-0.00202	-0.00203	-0.00201
	(A1 * A2 * !A3 * C1 * X)	0.00205	0.00206	0.00205
	(A1 * !A2 * C1 * X)	-0.00202	-0.00203	-0.00201
	(A1 * !A2 * C1 * X)	0.00205	0.00206	0.00205
	(!A1 * C1 * X)	-0.00202	-0.00203	-0.00201
	(!A1 * C1 * X)	0.00205	0.00205	0.00205

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	-0.00328	-0.00329	-0.00327
	(A1 * A2 * A3 * C1 * X)	0.00311	0.00313	0.00310
	(A1 * A2 * A3 * !C1 * X)	-0.00317	-0.00320	-0.00319
	(A1 * A2 * A3 * !C1 * X)	0.00242	0.00246	0.00244
	(A1 * A2 * !A3 * C1 * X)	-0.00322	-0.00323	-0.00320
	(A1 * A2 * !A3 * C1 * X)	0.00425	0.00429	0.00427
	(A1 * !A2 * C1 * X)	-0.00322	-0.00323	-0.00320
	(A1 * !A2 * C1 * X)	0.00425	0.00429	0.00427
	(!A1 * C1 * X)	-0.00322	-0.00323	-0.00320
	(!A1 * C1 * X)	0.00426	0.00429	0.00427

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)	0.00211	0.00216	0.00212
	(A1 * A2 * B1 * X)	-0.00099	-0.00101	-0.00099
	(A1 * A2 * A3 * !B1 * X)	0.00212	0.00216	0.00212
	(A1 * A2 * A3 * !B1 * X)	-0.00099	-0.00101	-0.00099
	(A1 * !A2 * B1 * X)	0.00211	0.00216	0.00212
	(A1 * !A2 * B1 * X)	-0.00099	-0.00102	-0.00100
	(!A1 * B1 * X)	0.00211	0.00216	0.00212
	(!A1 * B1 * X)	-0.00099	-0.00102	-0.00100
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	0.00210	0.00212	0.00210
	(A1 * A2 * B1 * X)	-0.00106	-0.00107	-0.00106
	(A1 * A2 * A3 * !B1 * X)	0.00211	0.00212	0.00210
	(A1 * A2 * A3 * !B1 * X)	-0.00107	-0.00106	-0.00105
	(A1 * !A2 * B1 * X)	0.00210	0.00212	0.00210
	(A1 * !A2 * B1 * X)	-0.00106	-0.00107	-0.00106
	(!A1 * B1 * X)	0.00211	0.00212	0.00210
	(!A1 * B1 * X)	-0.00107	-0.00107	-0.00106
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	0.00343	0.00348	0.00345
	(A1 * A2 * B1 * X)	-0.00224	-0.00228	-0.00225
	(A1 * A2 * A3 * !B1 * X)	0.00344	0.00349	0.00346
	(A1 * A2 * A3 * !B1 * X)	-0.00224	-0.00227	-0.00225
	(A1 * !A2 * B1 * X)	0.00343	0.00348	0.00346
	(A1 * !A2 * B1 * X)	-0.00224	-0.00228	-0.00226
	(!A1 * B1 * X)	0.00343	0.00349	0.00346
	(!A1 * B1 * X)	-0.00224	-0.00228	-0.00226

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)	-0.00206	-0.00206	-0.00211
	(A1 * A2 * B1 * X)	0.00104	0.00104	0.00101
	(A1 * A2 * A3 * !B1 * X)	-0.00192	-0.00192	-0.00209
	(A1 * A2 * A3 * !B1 * X)	0.00113	0.00113	0.00102
	(A1 * !A2 * B1 * X)	-0.00206	-0.00206	-0.00211
	(A1 * !A2 * B1 * X)	0.00104	0.00104	0.00101
	(!A1 * B1 * X)	-0.00206	-0.00206	-0.00211
	(!A1 * B1 * X)	0.00104	0.00104	0.00101
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	-0.00205	-0.00206	-0.00209
	(A1 * A2 * B1 * X)	0.00111	0.00111	0.00107
	(A1 * A2 * A3 * !B1 * X)	-0.00190	-0.00192	-0.00207
	(A1 * A2 * A3 * !B1 * X)	0.00118	0.00120	0.00108
	(A1 * !A2 * B1 * X)	-0.00205	-0.00206	-0.00209
	(A1 * !A2 * B1 * X)	0.00111	0.00111	0.00107
	(!A1 * B1 * X)	-0.00205	-0.00206	-0.00209
	(!A1 * B1 * X)	0.00111	0.00111	0.00107
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	-0.00327	-0.00331	-0.00343
	(A1 * A2 * B1 * X)	0.00240	0.00243	0.00229
	(A1 * A2 * A3 * !B1 * X)	-0.00296	-0.00300	-0.00337
	(A1 * A2 * A3 * !B1 * X)	0.00260	0.00262	0.00232
	(A1 * !A2 * B1 * X)	-0.00327	-0.00331	-0.00343
	(A1 * !A2 * B1 * X)	0.00241	0.00243	0.00230
	(!A1 * B1 * X)	-0.00327	-0.00331	-0.00343
	(!A1 * B1 * X)	0.00240	0.00243	0.00230

SKY130_FD_SC_HS__A31OIx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00287	0.00296	0.00285	0.00291	0.62126
sky130_fd_sc_hs__a31oi_2	0.00549	0.00535	0.00570	0.00437	1.18116
sky130_fd_sc_hs__a31oi_4	0.01112	0.01056	0.01054	0.00882	1.91711

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a31oi_1	0.00000	0.05703	0.11218
sky130_fd_sc_hs__a31oi_2	0.00000	0.11035	0.22436
sky130_fd_sc_hs__a31oi_4	0.00000	0.22071	0.44871

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)	0.07279	0.84972	9.86454
	A2->Y (FR)	0.09306	0.88980	10.11680
	A3->Y (FR)	0.10291	0.89381	10.02870
	B1->Y (FR)	0.06886	0.89724	10.58150
sky130_fd_sc_hs__a31oi_2	A1->Y (FR)	0.06620	0.73460	9.99955
	A2->Y (FR)	0.08061	0.74370	9.94881
	A3->Y (FR)	0.09235	0.74399	9.73294
	B1->Y (FR)	0.05307	0.75002	10.41080
sky130_fd_sc_hs__a31oi_4	A1->Y (FR)	0.06696	0.62874	9.44339
	A2->Y (FR)	0.08527	0.63615	9.29532
	A3->Y (FR)	0.10484	0.66594	9.47363
	B1->Y (FR)	0.07617	0.68414	10.14350

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31oi_1	A1->Y (RF)	0.03448	0.44716	5.11027
	A2->Y (RF)	0.04107	0.42044	4.68945
	A3->Y (RF)	0.04359	0.37558	4.04910
	B1->Y (RF)	0.01722	0.29050	3.34017
sky130_fd_sc_hs__a31oi_2	A1->Y (RF)	0.03398	0.42394	5.69878
	A2->Y (RF)	0.03851	0.35570	4.68988
	A3->Y (RF)	0.04275	0.32260	4.13388
	B1->Y (RF)	0.02131	0.39835	5.52684
sky130_fd_sc_hs__a31oi_4	A1->Y (RF)	0.03628	0.37601	5.61820
	A2->Y (RF)	0.04329	0.31827	4.65787
	A3->Y (RF)	0.04727	0.26818	3.82582
	B1->Y (RF)	0.01962	0.30139	4.69123

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	0.00002	0.00010	0.01048
	A1	0.00716	0.00723	0.01765
	A2	0.00082	0.00081	0.01125
	A2	0.00929	0.00926	0.01973
	A3	0.00118	0.00124	0.01190
	A3	0.01093	0.01099	0.02165
	B1	-0.00052	0.00092	0.02342
	B1	0.00529	0.00674	0.02825
sky130_fd_sc_hs__a31oi_2	A1	0.00005	0.00025	0.01924
	A1	0.01353	0.01370	0.03272
	A2	0.00148	0.00159	0.02168
	A2	0.01728	0.01747	0.03757
	A3	0.00272	0.00284	0.02298
	A3	0.02126	0.02138	0.04090
	B1	0.00072	0.00348	0.03019
	B1	0.00907	0.01190	0.03890
sky130_fd_sc_hs__a31oi_4	A1	-0.00175	-0.00121	0.03639
	A1	0.02584	0.02639	0.06419
	A2	0.00226	0.00235	0.04181
	A2	0.03459	0.03483	0.07450
	A3	0.00514	0.00537	0.04610
	A3	0.04257	0.04289	0.08368
	B1	-0.00032	0.00454	0.06053
	B1	0.01728	0.02227	0.07925

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	0.00916	0.00944	0.01857
	A1	0.00210	0.00238	0.01126
	A2	0.01053	0.01060	0.01879
	A2	0.00208	0.00215	0.01002
	A3	0.01180	0.01190	0.02076
	A3	0.00199	0.00205	0.01077
	B1	0.00568	0.00642	0.01878
	B1	-0.00014	0.00060	0.01286
sky130_fd_sc_hs__a31oi_2	A1	0.01690	0.01734	0.03314
	A1	0.00360	0.00404	0.01964
	A2	0.01931	0.01964	0.03560
	A2	0.00352	0.00373	0.01923
	A3	0.02225	0.02243	0.03957
	A3	0.00358	0.00367	0.02090
	B1	0.00648	0.00767	0.02459
	B1	-0.00187	-0.00085	0.01415
sky130_fd_sc_hs__a31oi_4	A1	0.03415	0.03528	0.06516
	A1	0.00693	0.00784	0.03799
	A2	0.03893	0.03918	0.07142
	A2	0.00665	0.00685	0.03705
	A3	0.04431	0.04451	0.07944
	A3	0.00654	0.00668	0.04148
	B1	0.01379	0.01617	0.04980
	B1	-0.00379	-0.00143	0.03076

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)**	0.00211	0.00191	0.00188
	(A2 * A3 * B1 * !Y)	-0.00197	-0.00226	-0.00226
	(A2 * !A3 * B1 * !Y)	0.00177	0.00179	0.00177
	(A2 * !A3 * B1 * !Y)	-0.00230	-0.00231	-0.00230
	(A2 * !A3 * !B1 * Y)	0.00058	0.00058	0.00055
	(A2 * !A3 * !B1 * Y)	-0.00265	-0.00266	-0.00273
	(!A2 * B1 * !Y)	0.00181	0.00182	0.00181
	(!A2 * B1 * !Y)	-0.00230	-0.00231	-0.00230
	(!A2 * !B1 * Y)	0.00060	0.00060	0.00058
	(!A2 * !B1 * Y)	-0.00270	-0.00271	-0.00274
sky130_fd_sc_hs__a31oi_2	**(A2 * A3 * B1 * !Y)**	0.00422	0.00383	0.00378
	(A2 * A3 * B1 * !Y)	-0.00404	-0.00463	-0.00460
	(A2 * !A3 * B1 * !Y)	0.00359	0.00361	0.00359
	(A2 * !A3 * B1 * !Y)	-0.00470	-0.00470	-0.00469
	(A2 * !A3 * !B1 * Y)	0.00114	0.00115	0.00106
	(A2 * !A3 * !B1 * Y)	-0.00540	-0.00545	-0.00561
	(!A2 * B1 * !Y)	0.00362	0.00364	0.00362
	(!A2 * B1 * !Y)	-0.00470	-0.00471	-0.00469
	(!A2 * !B1 * Y)	0.00111	0.00112	0.00108
	(!A2 * !B1 * Y)	-0.00554	-0.00559	-0.00565
sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	0.00879	0.00793	0.00782
	(A2 * A3 * B1 * !Y)	-0.00779	-0.00916	-0.00908
	(A2 * !A3 * B1 * !Y)	0.00737	0.00742	0.00740
	(A2 * !A3 * B1 * !Y)	-0.00924	-0.00928	-0.00925
	(A2 * !A3 * !B1 * Y)	0.00243	0.00243	0.00223
	(A2 * !A3 * !B1 * Y)	-0.01084	-0.01092	-0.01125
	(!A2 * B1 * !Y)	0.00752	0.00758	0.00753
	(!A2 * B1 * !Y)	-0.00923	-0.00929	-0.00925
	(!A2 * !B1 * Y)	0.00249	0.00250	0.00238
	(!A2 * !B1 * Y)	-0.01111	-0.01118	-0.01129

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)	-0.00187	-0.00188	-0.00187
	(A2 * A3 * B1 * !Y)	0.00225	0.00227	0.00226
	(A2 * !A3 * B1 * !Y)	-0.00161	-0.00179	-0.00177
	(A2 * !A3 * B1 * !Y)	0.00230	0.00233	0.00231
	(A2 * !A3 * !B1 * Y)	-0.00055	-0.00056	-0.00055
	(A2 * !A3 * !B1 * Y)	0.00273	0.00277	0.00274
	(!A2 * B1 * !Y)	-0.00176	-0.00182	-0.00181
	(!A2 * B1 * !Y)	0.00231	0.00233	0.00231
	(!A2 * !B1 * Y)	-0.00056	-0.00058	-0.00056
	(!A2 * !B1 * Y)	0.00273	0.00279	0.00274
sky130_fd_sc_hs__a31oi_2	(A2 * A3 * B1 * !Y)	-0.00377	-0.00379	-0.00377
	(A2 * A3 * B1 * !Y)	0.00457	0.00463	0.00460
	(A2 * !A3 * B1 * !Y)	-0.00318	-0.00361	-0.00359
	(A2 * !A3 * B1 * !Y)	0.00471	0.00474	0.00470
	(A2 * !A3 * !B1 * Y)	-0.00103	-0.00105	-0.00103
	(A2 * !A3 * !B1 * Y)	0.00562	0.00574	0.00565
	(!A2 * B1 * !Y)	-0.00351	-0.00364	-0.00362
	(!A2 * B1 * !Y)	0.00471	0.00473	0.00470
	(!A2 * !B1 * Y)	-0.00105	-0.00107	-0.00105
	(!A2 * !B1 * Y)	0.00563	0.00575	0.00566

sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	-0.00782	-0.00785	-0.00780
	(A2 * A3 * B1 * !Y)	0.00908	0.00916	0.00908
	(A2 * !A3 * B1 * !Y)	-0.00655	-0.00742	-0.00740
	(A2 * !A3 * B1 * !Y)	0.00929	0.00936	0.00928
	(A2 * !A3 * !B1 * Y)	-0.00224	-0.00226	-0.00223
	(A2 * !A3 * !B1 * Y)	0.01126	0.01136	0.01131
	(!A2 * B1 * !Y)	-0.00727	-0.00758	-0.00753
	(!A2 * B1 * !Y)	0.00923	0.00935	0.00928
	(!A2 * !B1 * Y)	-0.00232	-0.00233	-0.00232
	(!A2 * !B1 * Y)	0.01127	0.01137	0.01131

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)**	0.00222	0.00203	0.00200
	(A1 * A3 * B1 * !Y)	-0.00196	-0.00226	-0.00226
	(A1 * !A3 * B1 * !Y)	0.00193	0.00194	0.00193
	(A1 * !A3 * B1 * !Y)	-0.00230	-0.00230	-0.00230
	(A1 * !A3 * !B1 * Y)	0.00070	0.00070	0.00070
	(A1 * !A3 * !B1 * Y)	-0.00254	-0.00254	-0.00253
	(!A1 * A3 * B1 * !Y)	0.00193	0.00195	0.00194
	(!A1 * A3 * B1 * !Y)	-0.00229	-0.00230	-0.00230
	(!A1 * A3 * !B1 * Y)	0.00169	0.00170	0.00170
	(!A1 * A3 * !B1 * Y)	-0.00253	-0.00254	-0.00254
	(!A1 * !A3 * B1 * !Y)	0.00116	0.00118	0.00117
	(!A1 * !A3 * B1 * !Y)	-0.00229	-0.00231	-0.00230
	(!A1 * !A3 * !B1 * Y)	0.00084	0.00085	0.00084
	(!A1 * !A3 * !B1 * Y)	-0.00255	-0.00256	-0.00255

sky130_fd_sc_hs__a31oi_2	**(A1 * A3 * B1 * !Y)**	0.00392	0.00356	0.00351
	(A1 * A3 * B1 * !Y)	-0.00408	-0.00462	-0.00463
	(A1 * !A3 * B1 * !Y)	0.00335	0.00336	0.00336
	(A1 * !A3 * B1 * !Y)	-0.00472	-0.00473	-0.00472
	(A1 * !A3 * !B1 * Y)	0.00137	0.00138	0.00138
	(A1 * !A3 * !B1 * Y)	-0.00472	-0.00473	-0.00473
	(!A1 * A3 * B1 * !Y)	0.00340	0.00341	0.00340
	(!A1 * A3 * B1 * !Y)	-0.00472	-0.00473	-0.00472
	(!A1 * A3 * !B1 * Y)	0.00332	0.00336	0.00335
	(!A1 * A3 * !B1 * Y)	-0.00470	-0.00474	-0.00472
	(!A1 * !A3 * B1 * !Y)	0.00185	0.00187	0.00185
	(!A1 * !A3 * B1 * !Y)	-0.00472	-0.00475	-0.00472
	(!A1 * !A3 * !B1 * Y)	0.00165	0.00166	0.00165
	(!A1 * !A3 * !B1 * Y)	-0.00477	-0.00479	-0.00478
sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	0.00841	0.00754	0.00743
	(A1 * A3 * B1 * !Y)	-0.00803	-0.00931	-0.00928
	(A1 * !A3 * B1 * !Y)	0.00705	0.00707	0.00705
	(A1 * !A3 * B1 * !Y)	-0.00947	-0.00949	-0.00946
	(A1 * !A3 * !B1 * Y)	0.00299	0.00301	0.00303
	(A1 * !A3 * !B1 * Y)	-0.00952	-0.00957	-0.00953
	(!A1 * A3 * B1 * !Y)	0.00712	0.00717	0.00715
	(!A1 * A3 * B1 * !Y)	-0.00944	-0.00948	-0.00946
	(!A1 * A3 * !B1 * Y)	0.00706	0.00711	0.00709
	(!A1 * A3 * !B1 * Y)	-0.00950	-0.00954	-0.00952
	(!A1 * !A3 * B1 * !Y)	0.00409	0.00411	0.00408
	(!A1 * !A3 * B1 * !Y)	-0.00946	-0.00952	-0.00947
	(!A1 * !A3 * !B1 * Y)	0.00365	0.00366	0.00364
	(!A1 * !A3 * !B1 * Y)	-0.00962	-0.00964	-0.00961

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)	-0.00200	-0.00201	-0.00200
	(A1 * A3 * B1 * !Y)	0.00225	0.00227	0.00226
	(A1 * !A3 * B1 * !Y)	-0.00188	-0.00193	-0.00193
	(A1 * !A3 * B1 * !Y)	0.00231	0.00233	0.00230
	(A1 * !A3 * !B1 * Y)	-0.00067	-0.00067	-0.00068
	(A1 * !A3 * !B1 * Y)	0.00258	0.00261	0.00255
	(!A1 * A3 * B1 * !Y)	-0.00187	-0.00194	-0.00194
	(!A1 * A3 * B1 * !Y)	0.00230	0.00233	0.00231
	(!A1 * A3 * !B1 * Y)	-0.00155	-0.00170	-0.00170
	(!A1 * A3 * !B1 * Y)	0.00264	0.00257	0.00254
	(!A1 * !A3 * B1 * !Y)	-0.00116	-0.00118	-0.00117
	(!A1 * !A3 * B1 * !Y)	0.00231	0.00233	0.00231
	(!A1 * !A3 * !B1 * Y)	-0.00084	-0.00085	-0.00084
	(!A1 * !A3 * !B1 * Y)	0.00264	0.00268	0.00258
sky130_fd_sc_hs__a31oi_2	(A1 * A3 * B1 * !Y)	-0.00350	-0.00349	-0.00349
	(A1 * A3 * B1 * !Y)	0.00464	0.00462	0.00463
	(A1 * !A3 * B1 * !Y)	-0.00324	-0.00336	-0.00336
	(A1 * !A3 * B1 * !Y)	0.00472	0.00476	0.00473
	(A1 * !A3 * !B1 * Y)	-0.00130	-0.00132	-0.00133
	(A1 * !A3 * !B1 * Y)	0.00483	0.00490	0.00478
	(!A1 * A3 * B1 * !Y)	-0.00323	-0.00339	-0.00339
	(!A1 * A3 * B1 * !Y)	0.00472	0.00477	0.00473
	(!A1 * A3 * !B1 * Y)	-0.00305	-0.00336	-0.00335
	(!A1 * A3 * !B1 * Y)	0.00494	0.00478	0.00474
	(!A1 * !A3 * B1 * !Y)	-0.00185	-0.00187	-0.00185
	(!A1 * !A3 * B1 * !Y)	0.00472	0.00479	0.00473
	(!A1 * !A3 * !B1 * Y)	-0.00165	-0.00166	-0.00165
	(!A1 * !A3 * !B1 * Y)	0.00497	0.00505	0.00484

sky130_fd_sc_hs__a31oi_4	(A1 * A3 * B1 * !Y)	-0.00743	-0.00745	-0.00741
	(A1 * A3 * B1 * !Y)	0.00929	0.00934	0.00928
	(A1 * !A3 * B1 * !Y)	-0.00681	-0.00707	-0.00705
	(A1 * !A3 * B1 * !Y)	0.00947	0.00956	0.00950
	(A1 * !A3 * !B1 * Y)	-0.00284	-0.00288	-0.00293
	(A1 * !A3 * !B1 * Y)	0.00974	0.00988	0.00963
	(!A1 * A3 * B1 * !Y)	-0.00692	-0.00717	-0.00715
	(!A1 * A3 * B1 * !Y)	0.00951	0.00953	0.00950
	(!A1 * A3 * !B1 * Y)	-0.00636	-0.00711	-0.00709
	(!A1 * A3 * !B1 * Y)	0.01016	0.00959	0.00955
	(!A1 * !A3 * B1 * !Y)	-0.00409	-0.00411	-0.00408
	(!A1 * !A3 * B1 * !Y)	0.00946	0.00961	0.00950
	(!A1 * !A3 * !B1 * Y)	-0.00365	-0.00366	-0.00364
	(!A1 * !A3 * !B1 * Y)	0.01000	0.01017	0.00974

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)	0.00228	0.00210	0.00207
	(A1 * A2 * B1 * !Y)	-0.00206	-0.00233	-0.00233
	(A1 * !A2 * !B1 * Y)	0.00185	0.00187	0.00186
	(A1 * !A2 * !B1 * Y)	-0.00250	-0.00252	-0.00251
	(!A2 * B1 * !Y)	0.00199	0.00200	0.00200
	(!A2 * B1 * !Y)	-0.00236	-0.00236	-0.00236
	(!A1 * A2 * B1 * !Y)	0.00197	0.00198	0.00196
	(!A1 * A2 * B1 * !Y)	-0.00236	-0.00238	-0.00236
	(!A1 * A2 * !B1 * Y)	0.00180	0.00183	0.00182
	(!A1 * A2 * !B1 * Y)	-0.00249	-0.00252	-0.00251
	(!A1 * !A2 * !B1 * Y)	0.00186	0.00187	0.00186
	(!A1 * !A2 * !B1 * Y)	-0.00250	-0.00251	-0.00251

sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	0.00429	0.00392	0.00387
	(A1 * A2 * B1 * !Y)	-0.00404	-0.00460	-0.00459
	(A1 * !A2 * !B1 * Y)	0.00365	0.00368	0.00366
	(A1 * !A2 * !B1 * Y)	-0.00467	-0.00469	-0.00468
	(!A2 * B1 * !Y)	0.00373	0.00377	0.00374
	(!A2 * B1 * !Y)	-0.00466	-0.00469	-0.00467
	(!A1 * A2 * B1 * !Y)	0.00363	0.00367	0.00365
	(!A1 * A2 * B1 * !Y)	-0.00465	-0.00468	-0.00467
	(!A1 * A2 * !B1 * Y)	0.00362	0.00366	0.00364
	(!A1 * A2 * !B1 * Y)	-0.00466	-0.00469	-0.00468
	(!A1 * !A2 * !B1 * Y)	0.00366	0.00369	0.00367
	(!A1 * !A2 * !B1 * Y)	-0.00467	-0.00469	-0.00468
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	0.00829	0.00750	0.00738
	(A1 * A2 * B1 * !Y)	-0.00809	-0.00928	-0.00925
	(A1 * !A2 * !B1 * Y)	0.00702	0.00708	0.00707
	(A1 * !A2 * !B1 * Y)	-0.00939	-0.00945	-0.00944
	(!A2 * B1 * !Y)	0.00701	0.00704	0.00701
	(!A2 * B1 * !Y)	-0.00942	-0.00945	-0.00943
	(!A1 * A2 * B1 * !Y)	0.00699	0.00700	0.00697
	(!A1 * A2 * B1 * !Y)	-0.00945	-0.00945	-0.00943
	(!A1 * A2 * !B1 * Y)	0.00694	0.00704	0.00699
	(!A1 * A2 * !B1 * Y)	-0.00938	-0.00947	-0.00943
	(!A1 * !A2 * !B1 * Y)	0.00699	0.00702	0.00699
	(!A1 * !A2 * !B1 * Y)	-0.00943	-0.00945	-0.00944

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)**	-0.00206	-0.00207	-0.00207
	(A1 * A2 * B1 * !Y)	0.00232	0.00234	0.00233
	(A1 * !A2 * !B1 * Y)	-0.00178	-0.00186	-0.00186
	(A1 * !A2 * !B1 * Y)	0.00250	0.00253	0.00252
	(!A2 * B1 * !Y)	-0.00194	-0.00198	-0.00200
	(!A2 * B1 * !Y)	0.00236	0.00236	0.00237
	(!A1 * A2 * B1 * !Y)	-0.00186	-0.00198	-0.00196
	(!A1 * A2 * B1 * !Y)	0.00236	0.00239	0.00237
	(!A1 * A2 * !B1 * Y)	-0.00171	-0.00183	-0.00182
	(!A1 * A2 * !B1 * Y)	0.00251	0.00254	0.00251
	(!A1 * !A2 * !B1 * Y)	-0.00179	-0.00186	-0.00186
	(!A1 * !A2 * !B1 * Y)	0.00250	0.00253	0.00252
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	-0.00385	-0.00387	-0.00385
	(A1 * A2 * B1 * !Y)	0.00457	0.00462	0.00459
	(A1 * !A2 * !B1 * Y)	-0.00346	-0.00366	-0.00366
	(A1 * !A2 * !B1 * Y)	0.00468	0.00472	0.00469
	(!A2 * B1 * !Y)	-0.00361	-0.00373	-0.00374
	(!A2 * B1 * !Y)	0.00467	0.00472	0.00469
	(!A1 * A2 * B1 * !Y)	-0.00337	-0.00365	-0.00365
	(!A1 * A2 * B1 * !Y)	0.00468	0.00472	0.00469
	(!A1 * A2 * !B1 * Y)	-0.00335	-0.00364	-0.00364
	(!A1 * A2 * !B1 * Y)	0.00471	0.00475	0.00469
	(!A1 * !A2 * !B1 * Y)	-0.00351	-0.00368	-0.00367
	(!A1 * !A2 * !B1 * Y)	0.00467	0.00473	0.00469

sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	-0.00737	-0.00740	-0.00736
	(A1 * A2 * B1 * !Y)	0.00925	0.00932	0.00925
	(A1 * !A2 * !B1 * Y)	-0.00668	-0.00708	-0.00707
	(A1 * !A2 * !B1 * Y)	0.00943	0.00953	0.00946
	(!A2 * B1 * !Y)	-0.00678	-0.00702	-0.00701
	(!A2 * B1 * !Y)	0.00942	0.00945	0.00946
	(!A1 * A2 * B1 * !Y)	-0.00641	-0.00696	-0.00697
	(!A1 * A2 * B1 * !Y)	0.00947	0.00952	0.00946
	(!A1 * A2 * !B1 * Y)	-0.00638	-0.00697	-0.00699
	(!A1 * A2 * !B1 * Y)	0.00951	0.00956	0.00946
	(!A1 * !A2 * !B1 * Y)	-0.00672	-0.00702	-0.00699
	(!A1 * !A2 * !B1 * Y)	0.00943	0.00953	0.00946

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)**	0.00228	0.00230	0.00227
	(A1 * A2 * A3 * !Y)	-0.00107	-0.00107	-0.00106
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * A3 * !Y)**	0.00241	0.00244	0.00242
	(A1 * A2 * A3 * !Y)	-0.00211	-0.00213	-0.00211
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * A3 * !Y)**	0.00501	0.00511	0.00503
	(A1 * A2 * A3 * !Y)	-0.00430	-0.00439	-0.00432

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)	-0.00213	-0.00215	-0.00226
	(A1 * A2 * A3 * !Y)	0.00117	0.00118	0.00109
sky130_fd_sc_hs__a31oi_2	(A1 * A2 * A3 * !Y)	-0.00209	-0.00212	-0.00238
	(A1 * A2 * A3 * !Y)	0.00238	0.00238	0.00217
sky130_fd_sc_hs__a31oi_4	(A1 * A2 * A3 * !Y)	-0.00440	-0.00446	-0.00496
	(A1 * A2 * A3 * !Y)	0.00482	0.00485	0.00443

SKY130_FD_SC_HS__A31Ox

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00256	0.00254	0.00254	0.00275	1.28410
sky130_fd_sc_hs__a31o_2	0.00284	0.00275	0.00277	0.00268	2.44824
sky130_fd_sc_hs__a31o_4	0.00504	0.00490	0.00489	0.00502	4.86718

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a31o_1	0.00000	0.18632	0.26759
sky130_fd_sc_hs__a31o_2	0.00000	0.23350	0.27607
sky130_fd_sc_hs__a31o_4	0.00000	0.47084	0.55214

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)	0.07764	0.54566	6.09774
	A2->X (RR)	0.08335	0.54657	6.05121
	A3->X (RR)	0.08662	0.53247	5.89890
	B1->X (RR)	0.05290	0.49372	5.76821
sky130_fd_sc_hs__a31o_2	A1->X (RR)	0.08029	0.46748	5.91047
	A2->X (RR)	0.08577	0.46491	5.85053
	A3->X (RR)	0.08902	0.44821	5.71451
	B1->X (RR)	0.05088	0.40679	5.55605
sky130_fd_sc_hs__a31o_4	A1->X (RR)	0.09352	0.43476	6.24718
	A2->X (RR)	0.09973	0.42293	6.13355
	A3->X (RR)	0.10409	0.40417	5.99552
	B1->X (RR)	0.05070	0.34534	5.77832

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31o_1	A1->X (FF)	0.10645	0.49365	4.68412
	A2->X (FF)	0.12462	0.52359	4.78361
	A3->X (FF)	0.13491	0.54235	4.88198
	B1->X (FF)	0.11502	0.55039	5.09455
sky130_fd_sc_hs__a31o_2	A1->X (FF)	0.13926	0.52107	4.79686
	A2->X (FF)	0.16229	0.55499	4.90643
	A3->X (FF)	0.16877	0.56625	4.95489
	B1->X (FF)	0.14745	0.58378	5.16290
sky130_fd_sc_hs__a31o_4	A1->X (FF)	0.13790	0.48512	4.90915
	A2->X (FF)	0.15548	0.51444	5.01687
	A3->X (FF)	0.17210	0.54177	5.13687
	B1->X (FF)	0.14528	0.55006	5.29673

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.01185	0.01333	0.05615
	A1	0.00556	0.00703	0.05041
	A2	0.01289	0.01382	0.05311
	A2	0.00555	0.00649	0.04633
	A3	0.01403	0.01468	0.04796
	A3	0.00552	0.00617	0.03945
	B1	0.00902	0.01221	0.07630
	B1	0.00364	0.00686	0.07102
sky130_fd_sc_hs__a31o_2	A1	0.01579	0.01745	0.05924
	A1	0.00895	0.01066	0.05245
	A2	0.01695	0.01794	0.05659
	A2	0.00894	0.00995	0.04892
	A3	0.01826	0.01901	0.05265
	A3	0.00892	0.00966	0.04372
	B1	0.01240	0.01549	0.07846
	B1	0.00687	0.00999	0.07362
sky130_fd_sc_hs__a31o_4	A1	0.03099	0.03395	0.11622
	A1	0.01836	0.02139	0.10544
	A2	0.03321	0.03517	0.11166
	A2	0.01833	0.02037	0.09893
	A3	0.03561	0.03732	0.11626
	A3	0.01830	0.02002	0.10125
	B1	0.02215	0.02867	0.16038
	B1	0.01245	0.01909	0.15108

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.00410	0.00526	0.04199
	A1	0.01045	0.01145	0.04832
	A2	0.00478	0.00577	0.04219
	A2	0.01212	0.01309	0.04879
	A3	0.00507	0.00579	0.04199
	A3	0.01352	0.01422	0.04999
	B1	0.00333	0.00769	0.07342
	B1	0.00870	0.01293	0.07799
sky130_fd_sc_hs__a31o_2	A1	0.00787	0.00861	0.04635
	A1	0.01474	0.01520	0.05186
	A2	0.00893	0.00914	0.04639
	A2	0.01693	0.01712	0.05335
	A3	0.00935	0.00940	0.04740
	A3	0.01860	0.01858	0.05544
	B1	0.00691	0.01066	0.07645
	B1	0.01242	0.01605	0.08049
sky130_fd_sc_hs__a31o_4	A1	0.01631	0.01719	0.09553
	A1	0.02907	0.02944	0.10756
	A2	0.01797	0.01842	0.09752
	A2	0.03288	0.03300	0.10884
	A3	0.02002	0.01988	0.10525
	A3	0.03714	0.03668	0.11453
	B1	0.01447	0.02162	0.15134
	B1	0.02416	0.03132	0.15911

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)**	0.00187	0.00161	0.00157
	(A2 * A3 * B1 * X)	-0.00177	-0.00210	-0.00211
	(A2 * !A3 * B1 * X)	0.00147	0.00148	0.00147
	(A2 * !A3 * B1 * X)	-0.00215	-0.00216	-0.00215
	(A2 * !A3 * !B1 * !X)	0.00047	0.00046	0.00043
	(A2 * !A3 * !B1 * !X)	-0.00245	-0.00245	-0.00252
	(!A2 * B1 * X)	0.00151	0.00152	0.00151
	(!A2 * B1 * X)	-0.00215	-0.00216	-0.00215
	(!A2 * !B1 * !X)	0.00048	0.00048	0.00046
	(!A2 * !B1 * !X)	-0.00249	-0.00250	-0.00252
sky130_fd_sc_hs__a31o_2	**(A2 * A3 * B1 * X)**	0.00226	0.00201	0.00198
	(A2 * A3 * B1 * X)	-0.00171	-0.00203	-0.00204
	(A2 * !A3 * B1 * X)	0.00186	0.00187	0.00186
	(A2 * !A3 * B1 * X)	-0.00207	-0.00208	-0.00207
	(A2 * !A3 * !B1 * !X)	0.00060	0.00060	0.00056
	(A2 * !A3 * !B1 * !X)	-0.00251	-0.00252	-0.00260
	(!A2 * B1 * X)	0.00191	0.00193	0.00191
	(!A2 * B1 * X)	-0.00208	-0.00209	-0.00207
	(!A2 * !B1 * !X)	0.00062	0.00061	0.00059
	(!A2 * !B1 * !X)	-0.00256	-0.00257	-0.00260
sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	0.00389	0.00341	0.00336
	(A2 * A3 * B1 * X)	-0.00356	-0.00422	-0.00423
	(A2 * !A3 * B1 * X)	0.00317	0.00318	0.00317
	(A2 * !A3 * B1 * X)	-0.00432	-0.00433	-0.00432
	(A2 * !A3 * !B1 * !X)	0.00112	0.00111	0.00103
	(A2 * !A3 * !B1 * !X)	-0.00494	-0.00495	-0.00512
	(!A2 * B1 * X)	0.00326	0.00327	0.00326
	(!A2 * B1 * X)	-0.00431	-0.00433	-0.00432
	(!A2 * !B1 * !X)	0.00112	0.00111	0.00107
	(!A2 * !B1 * !X)	-0.00506	-0.00507	-0.00513

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)	-0.00156	-0.00157	-0.00156
	(A2 * A3 * B1 * X)	0.00210	0.00211	0.00211
	(A2 * !A3 * B1 * X)	-0.00134	-0.00148	-0.00147
	(A2 * !A3 * B1 * X)	0.00215	0.00218	0.00216
	(A2 * !A3 * !B1 * !X)	-0.00044	-0.00044	-0.00043
	(A2 * !A3 * !B1 * !X)	0.00253	0.00255	0.00253
	(!A2 * B1 * X)	-0.00147	-0.00151	-0.00151
	(!A2 * B1 * X)	0.00216	0.00216	0.00216
	(!A2 * !B1 * !X)	-0.00045	-0.00046	-0.00045
	(!A2 * !B1 * !X)	0.00253	0.00257	0.00253
sky130_fd_sc_hs__a31o_2	(A2 * A3 * B1 * X)	-0.00197	-0.00197	-0.00197
	(A2 * A3 * B1 * X)	0.00203	0.00204	0.00204
	(A2 * !A3 * B1 * X)	-0.00172	-0.00187	-0.00186
	(A2 * !A3 * B1 * X)	0.00207	0.00210	0.00208
	(A2 * !A3 * !B1 * !X)	-0.00056	-0.00057	-0.00056
	(A2 * !A3 * !B1 * !X)	0.00260	0.00263	0.00261
	(!A2 * B1 * X)	-0.00186	-0.00191	-0.00191
	(!A2 * B1 * X)	0.00209	0.00210	0.00208
	(!A2 * !B1 * !X)	-0.00057	-0.00059	-0.00057
	(!A2 * !B1 * !X)	0.00260	0.00265	0.00261

sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	-0.00333	-0.00335	-0.00333
	(A2 * A3 * B1 * X)	0.00421	0.00424	0.00423
	(A2 * !A3 * B1 * X)	-0.00290	-0.00318	-0.00317
	(A2 * !A3 * B1 * X)	0.00432	0.00437	0.00434
	(A2 * !A3 * !B1 * !X)	-0.00101	-0.00103	-0.00101
	(A2 * !A3 * !B1 * !X)	0.00513	0.00523	0.00515
	(!A2 * B1 * X)	-0.00312	-0.00325	-0.00325
	(!A2 * B1 * X)	0.00431	0.00440	0.00434
	(!A2 * !B1 * !X)	-0.00104	-0.00106	-0.00104
	(!A2 * !B1 * !X)	0.00513	0.00523	0.00515

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)**	0.00184	0.00158	0.00155
	(A1 * A3 * B1 * X)	-0.00177	-0.00209	-0.00210
	(A1 * !A3 * B1 * X)	0.00148	0.00149	0.00149
	(A1 * !A3 * B1 * X)	-0.00214	-0.00215	-0.00214
	(A1 * !A3 * !B1 * !X)	0.00057	0.00057	0.00057
	(A1 * !A3 * !B1 * !X)	-0.00222	-0.00222	-0.00221
	(!A1 * A3 * B1 * X)	0.00148	0.00150	0.00149
	(!A1 * A3 * B1 * X)	-0.00214	-0.00215	-0.00214
	(!A1 * A3 * !B1 * !X)	0.00142	0.00142	0.00142
	(!A1 * A3 * !B1 * !X)	-0.00222	-0.00222	-0.00221
	(!A1 * !A3 * B1 * X)	0.00082	0.00083	0.00083
	(!A1 * !A3 * B1 * X)	-0.00214	-0.00215	-0.00214
	(!A1 * !A3 * !B1 * !X)	0.00068	0.00069	0.00068
	(!A1 * !A3 * !B1 * !X)	-0.00222	-0.00223	-0.00222

sky130_fd_sc_hs__a31o_2	**(A1 * A3 * B1 * X)**	0.00219	0.00194	0.00191
	(A1 * A3 * B1 * X)	-0.00170	-0.00203	-0.00204
	(A1 * !A3 * B1 * X)	0.00182	0.00184	0.00183
	(A1 * !A3 * B1 * X)	-0.00207	-0.00208	-0.00207
	(A1 * !A3 * !B1 * !X)	0.00071	0.00071	0.00071
	(A1 * !A3 * !B1 * !X)	-0.00222	-0.00222	-0.00221
	(!A1 * A3 * B1 * X)	0.00184	0.00186	0.00184
	(!A1 * A3 * B1 * X)	-0.00207	-0.00208	-0.00207
	(!A1 * A3 * !B1 * !X)	0.00170	0.00171	0.00170
	(!A1 * A3 * !B1 * !X)	-0.00222	-0.00223	-0.00222
	(!A1 * !A3 * B1 * X)	0.00108	0.00109	0.00108
	(!A1 * !A3 * B1 * X)	-0.00207	-0.00208	-0.00207
	(!A1 * !A3 * !B1 * !X)	0.00085	0.00085	0.00085
	(!A1 * !A3 * !B1 * !X)	-0.00223	-0.00224	-0.00223
sky130_fd_sc_hs__a31o_4	**(A1 * A3 * B1 * X)**	0.00387	0.00338	0.00332
	(A1 * A3 * B1 * X)	-0.00357	-0.00426	-0.00427
	(A1 * !A3 * B1 * X)	0.00320	0.00320	0.00320
	(A1 * !A3 * B1 * X)	-0.00437	-0.00437	-0.00436
	(A1 * !A3 * !B1 * !X)	0.00144	0.00143	0.00144
	(A1 * !A3 * !B1 * !X)	-0.00439	-0.00439	-0.00438
	(!A1 * A3 * B1 * X)	0.00322	0.00324	0.00323
	(!A1 * A3 * B1 * X)	-0.00435	-0.00436	-0.00435
	(!A1 * A3 * !B1 * !X)	0.00318	0.00321	0.00320
	(!A1 * A3 * !B1 * !X)	-0.00435	-0.00437	-0.00436
	(!A1 * !A3 * B1 * X)	0.00188	0.00189	0.00188
	(!A1 * !A3 * B1 * X)	-0.00435	-0.00437	-0.00436
	(!A1 * !A3 * !B1 * !X)	0.00171	0.00173	0.00171
	(!A1 * !A3 * !B1 * !X)	-0.00441	-0.00445	-0.00441

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)	-0.00154	-0.00154	-0.00154
	(A1 * A3 * B1 * X)	0.00209	0.00210	0.00210
	(A1 * !A3 * B1 * X)	-0.00144	-0.00148	-0.00149
	(A1 * !A3 * B1 * X)	0.00216	0.00215	0.00215
	(A1 * !A3 * !B1 * !X)	-0.00054	-0.00054	-0.00055
	(A1 * !A3 * !B1 * !X)	0.00225	0.00228	0.00223
	(!A1 * A3 * B1 * X)	-0.00144	-0.00149	-0.00149
	(!A1 * A3 * B1 * X)	0.00214	0.00217	0.00215
	(!A1 * A3 * !B1 * !X)	-0.00128	-0.00142	-0.00142
	(!A1 * A3 * !B1 * !X)	0.00232	0.00225	0.00222
	(!A1 * !A3 * B1 * X)	-0.00082	-0.00083	-0.00083
	(!A1 * !A3 * B1 * X)	0.00215	0.00218	0.00215
	(!A1 * !A3 * !B1 * !X)	-0.00068	-0.00069	-0.00068
	(!A1 * !A3 * !B1 * !X)	0.00230	0.00233	0.00225
sky130_fd_sc_hs__a31o_2	(A1 * A3 * B1 * X)	-0.00190	-0.00191	-0.00190
	(A1 * A3 * B1 * X)	0.00203	0.00205	0.00204
	(A1 * !A3 * B1 * X)	-0.00179	-0.00184	-0.00183
	(A1 * !A3 * B1 * X)	0.00209	0.00210	0.00208
	(A1 * !A3 * !B1 * !X)	-0.00067	-0.00068	-0.00069
	(A1 * !A3 * !B1 * !X)	0.00227	0.00229	0.00224
	(!A1 * A3 * B1 * X)	-0.00177	-0.00185	-0.00184
	(!A1 * A3 * B1 * X)	0.00207	0.00210	0.00208
	(!A1 * A3 * !B1 * !X)	-0.00154	-0.00170	-0.00170
	(!A1 * A3 * !B1 * !X)	0.00232	0.00225	0.00223
	(!A1 * !A3 * B1 * X)	-0.00108	-0.00109	-0.00108
	(!A1 * !A3 * B1 * X)	0.00208	0.00210	0.00208
	(!A1 * !A3 * !B1 * !X)	-0.00085	-0.00085	-0.00085
	(!A1 * !A3 * !B1 * !X)	0.00233	0.00236	0.00226

sky130_fd_sc_hs__a31o_4	**(A1 * A3 * B1 * X)**	-0.00330	-0.00331	-0.00329
	(A1 * A3 * B1 * X)	0.00425	0.00429	0.00427
	(A1 * !A3 * B1 * X)	-0.00304	-0.00320	-0.00319
	(A1 * !A3 * B1 * X)	0.00439	0.00440	0.00438
	(A1 * !A3 * !B1 * !X)	-0.00135	-0.00137	-0.00138
	(A1 * !A3 * !B1 * !X)	0.00449	0.00453	0.00443
	(!A1 * A3 * B1 * X)	-0.00308	-0.00322	-0.00321
	(!A1 * A3 * B1 * X)	0.00436	0.00441	0.00438
	(!A1 * A3 * !B1 * !X)	-0.00288	-0.00321	-0.00320
	(!A1 * A3 * !B1 * !X)	0.00461	0.00442	0.00438
	(!A1 * !A3 * B1 * X)	-0.00188	-0.00189	-0.00188
	(!A1 * !A3 * B1 * X)	0.00436	0.00443	0.00438
	(!A1 * !A3 * !B1 * !X)	-0.00171	-0.00173	-0.00171
	(!A1 * !A3 * !B1 * !X)	0.00463	0.00468	0.00449

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)**	0.00195	0.00173	0.00170
	(A1 * A2 * B1 * X)	-0.00177	-0.00206	-0.00207
	(A1 * !A2 * !B1 * !X)	0.00145	0.00146	0.00144
	(A1 * !A2 * !B1 * !X)	-0.00231	-0.00231	-0.00230
	(!A2 * B1 * X)	0.00163	0.00164	0.00163
	(!A2 * B1 * X)	-0.00210	-0.00211	-0.00211
	(!A1 * A2 * B1 * X)	0.00162	0.00162	0.00161
	(!A1 * A2 * B1 * X)	-0.00211	-0.00211	-0.00211
	(!A1 * A2 * !B1 * !X)	0.00141	0.00141	0.00140
	(!A1 * A2 * !B1 * !X)	-0.00231	-0.00231	-0.00230
	(!A1 * !A2 * !B1 * !X)	0.00144	0.00145	0.00144
	(!A1 * !A2 * !B1 * !X)	-0.00230	-0.00231	-0.00230

sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	0.00228	0.00207	0.00204
	(A1 * A2 * B1 * X)	-0.00172	-0.00200	-0.00201
	(A1 * !A2 * !B1 * !X)	0.00170	0.00172	0.00170
	(A1 * !A2 * !B1 * !X)	-0.00232	-0.00232	-0.00231
	(!A2 * B1 * X)	0.00197	0.00198	0.00197
	(!A2 * B1 * X)	-0.00205	-0.00205	-0.00204
	(!A1 * A2 * B1 * X)	0.00194	0.00194	0.00193
	(!A1 * A2 * B1 * X)	-0.00205	-0.00205	-0.00204
	(!A1 * A2 * !B1 * !X)	0.00167	0.00167	0.00166
	(!A1 * A2 * !B1 * !X)	-0.00232	-0.00232	-0.00231
	(!A1 * !A2 * !B1 * !X)	0.00170	0.00171	0.00170
	(!A1 * !A2 * !B1 * !X)	-0.00231	-0.00232	-0.00231
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	0.00383	0.00335	0.00328
	(A1 * A2 * B1 * X)	-0.00361	-0.00427	-0.00428
	(A1 * !A2 * !B1 * !X)	0.00316	0.00318	0.00316
	(A1 * !A2 * !B1 * !X)	-0.00438	-0.00439	-0.00437
	(!A2 * B1 * X)	0.00316	0.00317	0.00316
	(!A2 * B1 * X)	-0.00437	-0.00438	-0.00437
	(!A1 * A2 * B1 * X)	0.00309	0.00310	0.00309
	(!A1 * A2 * B1 * X)	-0.00438	-0.00437	-0.00437
	(!A1 * A2 * !B1 * !X)	0.00309	0.00310	0.00308
	(!A1 * A2 * !B1 * !X)	-0.00438	-0.00438	-0.00437
	(!A1 * !A2 * !B1 * !X)	0.00315	0.00317	0.00315
	(!A1 * !A2 * !B1 * !X)	-0.00438	-0.00439	-0.00437

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)**	-0.00169	-0.00170	-0.00169
	(A1 * A2 * B1 * X)	0.00206	0.00208	0.00207
	(A1 * !A2 * !B1 * !X)	-0.00139	-0.00145	-0.00144
	(A1 * !A2 * !B1 * !X)	0.00232	0.00233	0.00231
	(!A2 * B1 * X)	-0.00159	-0.00163	-0.00163
	(!A2 * B1 * X)	0.00210	0.00213	0.00212
	(!A1 * A2 * B1 * X)	-0.00151	-0.00162	-0.00161
	(!A1 * A2 * B1 * X)	0.00211	0.00214	0.00212
	(!A1 * A2 * !B1 * !X)	-0.00132	-0.00141	-0.00140
	(!A1 * A2 * !B1 * !X)	0.00231	0.00233	0.00231
	(!A1 * !A2 * !B1 * !X)	-0.00140	-0.00145	-0.00144
	(!A1 * !A2 * !B1 * !X)	0.00232	0.00233	0.00231
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	-0.00203	-0.00204	-0.00203
	(A1 * A2 * B1 * X)	0.00200	0.00202	0.00201
	(A1 * !A2 * !B1 * !X)	-0.00164	-0.00171	-0.00170
	(A1 * !A2 * !B1 * !X)	0.00233	0.00235	0.00232
	(!A2 * B1 * X)	-0.00193	-0.00197	-0.00197
	(!A2 * B1 * X)	0.00206	0.00207	0.00205
	(!A1 * A2 * B1 * X)	-0.00183	-0.00194	-0.00193
	(!A1 * A2 * B1 * X)	0.00205	0.00208	0.00205
	(!A1 * A2 * !B1 * !X)	-0.00155	-0.00167	-0.00166
	(!A1 * A2 * !B1 * !X)	0.00232	0.00234	0.00232
	(!A1 * !A2 * !B1 * !X)	-0.00165	-0.00171	-0.00170
	(!A1 * !A2 * !B1 * !X)	0.00233	0.00235	0.00232

sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	-0.00326	-0.00328	-0.00326
	(A1 * A2 * B1 * X)	0.00426	0.00430	0.00428
	(A1 * !A2 * !B1 * !X)	-0.00297	-0.00314	-0.00315
	(A1 * !A2 * !B1 * !X)	0.00438	0.00442	0.00439
	(!A2 * B1 * X)	-0.00302	-0.00314	-0.00316
	(!A2 * B1 * X)	0.00437	0.00441	0.00439
	(!A1 * A2 * B1 * X)	-0.00286	-0.00309	-0.00309
	(!A1 * A2 * B1 * X)	0.00438	0.00442	0.00439
	(!A1 * A2 * !B1 * !X)	-0.00284	-0.00310	-0.00308
	(!A1 * A2 * !B1 * !X)	0.00441	0.00444	0.00439
	(!A1 * !A2 * !B1 * !X)	-0.00299	-0.00314	-0.00315
	(!A1 * !A2 * !B1 * !X)	0.00438	0.00442	0.00439

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)**	0.00225	0.00229	0.00226
	(A1 * A2 * A3 * X)	-0.00099	-0.00102	-0.00100
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * A3 * X)**	0.00214	0.00216	0.00214
	(A1 * A2 * A3 * X)	-0.00097	-0.00099	-0.00098
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * A3 * X)**	0.00371	0.00375	0.00372
	(A1 * A2 * A3 * X)	-0.00213	-0.00214	-0.00212

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)	-0.00213	-0.00215	-0.00224
	(A1 * A2 * A3 * X)	0.00110	0.00111	0.00102
sky130_fd_sc_hs__a31o_2	(A1 * A2 * A3 * X)	-0.00202	-0.00203	-0.00213
	(A1 * A2 * A3 * X)	0.00108	0.00108	0.00100
sky130_fd_sc_hs__a31o_4	(A1 * A2 * A3 * X)	-0.00339	-0.00342	-0.00368
	(A1 * A2 * A3 * X)	0.00239	0.00239	0.00218

SKY130_FD_SC_HS__A32OIx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00293	0.00293	0.00265	0.00299	0.00277	0.61263
sky130_fd_sc_hs__a32oi_2	0.00552	0.00538	0.00529	0.00557	0.00543	1.11478
sky130_fd_sc_hs__a32oi_4	0.01093	0.01062	0.01057	0.01112	0.01077	1.81007

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a32oi_1	0.00000	0.06162	0.20266
sky130_fd_sc_hs__a32oi_2	0.00000	0.12324	0.40531
sky130_fd_sc_hs__a32oi_4	0.00000	0.24647	0.81062

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)	0.10292	0.89927	10.07140
	A2->Y (FR)	0.11741	0.91306	10.07120
	A3->Y (FR)	0.12872	0.92079	10.01650
	B1->Y (FR)	0.07280	0.89946	10.54280
	B2->Y (FR)	0.06944	0.89789	10.54590
sky130_fd_sc_hs__a32oi_2	A1->Y (FR)	0.09259	0.73940	9.53615
	A2->Y (FR)	0.11945	0.79051	9.94714
	A3->Y (FR)	0.13066	0.79689	9.83415
	B1->Y (FR)	0.06295	0.76121	10.30740
	B2->Y (FR)	0.08443	0.78982	10.44510
sky130_fd_sc_hs__a32oi_4	A1->Y (FR)	0.10684	0.67388	9.48967
	A2->Y (FR)	0.12742	0.68904	9.42834
	A3->Y (FR)	0.14413	0.70695	9.42783
	B1->Y (FR)	0.08709	0.68771	9.92054
	B2->Y (FR)	0.11428	0.73250	10.24790

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32oi_1	A1->Y (RF)	0.04522	0.45794	5.05205
	A2->Y (RF)	0.05046	0.43069	4.65763
	A3->Y (RF)	0.05323	0.38361	3.99401
	B1->Y (RF)	0.02350	0.36650	4.19410
	B2->Y (RF)	0.02625	0.33104	3.73242
sky130_fd_sc_hs__a32oi_2	A1->Y (RF)	0.04733	0.43077	5.49739
	A2->Y (RF)	0.05636	0.40573	5.03306
	A3->Y (RF)	0.05916	0.33139	3.95741
	B1->Y (RF)	0.02051	0.32166	4.36031
	B2->Y (RF)	0.02606	0.28776	3.79298
sky130_fd_sc_hs__a32oi_4	A1->Y (RF)	0.04834	0.37284	5.19199
	A2->Y (RF)	0.05640	0.33937	4.60150
	A3->Y (RF)	0.05919	0.26643	3.50666
	B1->Y (RF)	0.02135	0.26591	4.06915
	B2->Y (RF)	0.02598	0.21814	3.25594

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32oi_1	A1	0.00043	0.00039	0.01149
	A1	0.00898	0.00895	0.02016
	A2	0.00098	0.00091	0.01218
	A2	0.01079	0.01073	0.02210
	A3	0.00169	0.00171	0.01325
	A3	0.01256	0.01259	0.02412
	B1	0.00025	0.00147	0.02251
	B1	0.00606	0.00710	0.02803
	B2	0.00079	0.00201	0.02312
	B2	0.00777	0.00881	0.03019
sky130_fd_sc_hs__a32oi_2	A1	-0.00094	-0.00083	0.01965
	A1	0.01578	0.01592	0.03653
	A2	0.00151	0.00128	0.02145
	A2	0.02079	0.02040	0.04075
	A3	0.00242	0.00248	0.02355
	A3	0.02414	0.02421	0.04539
	B1	-0.00136	0.00143	0.03941
	B1	0.00965	0.01247	0.05083
	B2	0.00083	0.00330	0.04166
	B2	0.01443	0.01647	0.05530

sky130_fd_sc_hs__a32oi_4	**A1**	-0.00167	-0.00154	0.03993
	A1	0.03190	0.03207	0.07364
	A2	0.00209	0.00174	0.04490
	A2	0.04063	0.04028	0.08391
	A3	0.00411	0.00434	0.04982
	A3	0.04767	0.04784	0.09427
	B1	-0.00257	0.00332	0.07755
	B1	0.01984	0.02581	0.10114
	B2	0.00124	0.00653	0.08045
	B2	0.02868	0.03398	0.10790

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32oi_1	**A1**	0.01219	0.01245	0.02269
	A1	0.00375	0.00399	0.01373
	A2	0.01350	0.01362	0.02230
	A2	0.00374	0.00384	0.01238
	A3	0.01459	0.01477	0.02455
	A3	0.00369	0.00377	0.01324
	B1	0.00573	0.00635	0.01759
	B1	-0.00007	0.00054	0.01151
	B2	0.00696	0.00741	0.01752
	B2	-0.00008	0.00031	0.01023

sky130_fd_sc_hs__a32oi_2	**A1**	0.02371	0.02436	0.04233
	A1	0.00721	0.00775	0.02537
	A2	0.02641	0.02649	0.04189
	A2	0.00724	0.00726	0.02262
	A3	0.02902	0.02920	0.04763
	A3	0.00718	0.00728	0.02577
	B1	0.01042	0.01182	0.03317
	B1	-0.00056	0.00079	0.02145
	B2	0.01328	0.01412	0.03316
	B2	-0.00050	0.00031	0.01903
sky130_fd_sc_hs__a32oi_4	**A1**	0.04642	0.04719	0.08107
	A1	0.01338	0.01405	0.04785
	A2	0.05149	0.05156	0.08284
	A2	0.01316	0.01323	0.04445
	A3	0.05666	0.05692	0.09644
	A3	0.01293	0.01311	0.05141
	B1	0.02113	0.02422	0.06447
	B1	-0.00118	0.00178	0.04210
	B2	0.02683	0.02861	0.06774
	B2	-0.00091	0.00086	0.03920

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)**	0.00215	0.00198	0.00195
	(A2 * A3 * B1 * B2 * !Y)	-0.00200	-0.00225	-0.00226
	(A2 * !A3 * B1 * B2 * !Y)	0.00183	0.00184	0.00183
	(A2 * !A3 * B1 * B2 * !Y)	-0.00229	-0.00230	-0.00230
	(A2 * !A3 * B1 * !B2 * Y)	0.00062	0.00062	0.00058
	(A2 * !A3 * B1 * !B2 * Y)	-0.00268	-0.00270	-0.00277
	(A2 * !A3 * !B1 * Y)	0.00062	0.00061	0.00058
	(A2 * !A3 * !B1 * Y)	-0.00268	-0.00269	-0.00277
	(!A2 * B1 * B2 * !Y)	0.00186	0.00187	0.00187
	(!A2 * B1 * B2 * !Y)	-0.00229	-0.00230	-0.00230
	(!A2 * B1 * !B2 * Y)	0.00060	0.00060	0.00059
	(!A2 * B1 * !B2 * Y)	-0.00274	-0.00275	-0.00278
	(!A2 * !B1 * Y)	0.00060	0.00060	0.00059
	(!A2 * !B1 * Y)	-0.00274	-0.00275	-0.00278
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	0.00423	0.00391	0.00387
	(A2 * A3 * B1 * B2 * !Y)	-0.00397	-0.00451	-0.00451
	(A2 * !A3 * B1 * B2 * !Y)	0.00364	0.00365	0.00365
	(A2 * !A3 * B1 * B2 * !Y)	-0.00458	-0.00459	-0.00459
	(A2 * !A3 * B1 * !B2 * Y)	0.00127	0.00128	0.00118
	(A2 * !A3 * B1 * !B2 * Y)	-0.00526	-0.00531	-0.00549
	(A2 * !A3 * !B1 * Y)	0.00128	0.00129	0.00118
	(A2 * !A3 * !B1 * Y)	-0.00526	-0.00531	-0.00549
	(!A2 * B1 * B2 * !Y)	0.00371	0.00373	0.00373
	(!A2 * B1 * B2 * !Y)	-0.00458	-0.00459	-0.00459
	(!A2 * B1 * !B2 * Y)	0.00131	0.00132	0.00126
	(!A2 * B1 * !B2 * Y)	-0.00538	-0.00542	-0.00550
	(!A2 * !B1 * Y)	0.00132	0.00133	0.00126
	(!A2 * !B1 * Y)	-0.00538	-0.00542	-0.00550

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	0.00865	0.00774	0.00764
	(A2 * A3 * B1 * B2 * !Y)	-0.00770	-0.00905	-0.00902
	(A2 * !A3 * B1 * B2 * !Y)	0.00718	0.00720	0.00719
	(A2 * !A3 * B1 * B2 * !Y)	-0.00921	-0.00922	-0.00919
	(A2 * !A3 * B1 * !B2 * Y)	0.00229	0.00230	0.00212
	(A2 * !A3 * B1 * !B2 * Y)	-0.01071	-0.01079	-0.01110
	(A2 * !A3 * !B1 * Y)	0.00228	0.00230	0.00213
	(A2 * !A3 * !B1 * Y)	-0.01068	-0.01078	-0.01110
	(!A2 * B1 * B2 * !Y)	0.00733	0.00741	0.00735
	(!A2 * B1 * B2 * !Y)	-0.00920	-0.00925	-0.00919
	(!A2 * B1 * !B2 * Y)	0.00236	0.00237	0.00226
	(!A2 * B1 * !B2 * Y)	-0.01096	-0.01104	-0.01115
	(!A2 * !B1 * Y)	0.00236	0.00238	0.00227
	(!A2 * !B1 * Y)	-0.01093	-0.01103	-0.01115

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)**	-0.00195	-0.00196	-0.00195
	(A2 * A3 * B1 * B2 * !Y)	0.00224	0.00227	0.00226
	(A2 * !A3 * B1 * B2 * !Y)	-0.00165	-0.00184	-0.00183
	(A2 * !A3 * B1 * B2 * !Y)	0.00229	0.00232	0.00231
	(A2 * !A3 * B1 * !B2 * Y)	-0.00057	-0.00057	-0.00056
	(A2 * !A3 * B1 * !B2 * Y)	0.00279	0.00281	0.00278
	(A2 * !A3 * !B1 * Y)	-0.00057	-0.00057	-0.00056
	(A2 * !A3 * !B1 * Y)	0.00277	0.00281	0.00278
	(!A2 * B1 * B2 * !Y)	-0.00183	-0.00187	-0.00187
	(!A2 * B1 * B2 * !Y)	0.00230	0.00234	0.00231
	(!A2 * B1 * !B2 * Y)	-0.00058	-0.00058	-0.00057
	(!A2 * B1 * !B2 * Y)	0.00279	0.00283	0.00278
	(!A2 * !B1 * Y)	-0.00057	-0.00059	-0.00057
	(!A2 * !B1 * Y)	0.00277	0.00283	0.00278
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	-0.00384	-0.00389	-0.00385
	(A2 * A3 * B1 * B2 * !Y)	0.00449	0.00459	0.00451
	(A2 * !A3 * B1 * B2 * !Y)	-0.00319	-0.00365	-0.00365
	(A2 * !A3 * B1 * B2 * !Y)	0.00460	0.00465	0.00461
	(A2 * !A3 * B1 * !B2 * Y)	-0.00118	-0.00121	-0.00118
	(A2 * !A3 * B1 * !B2 * Y)	0.00549	0.00560	0.00551
	(A2 * !A3 * !B1 * Y)	-0.00118	-0.00121	-0.00118
	(A2 * !A3 * !B1 * Y)	0.00548	0.00560	0.00551
	(!A2 * B1 * B2 * !Y)	-0.00358	-0.00373	-0.00373
	(!A2 * B1 * B2 * !Y)	0.00459	0.00463	0.00460
	(!A2 * B1 * !B2 * Y)	-0.00122	-0.00125	-0.00122
	(!A2 * B1 * !B2 * Y)	0.00549	0.00561	0.00552
	(!A2 * !B1 * Y)	-0.00122	-0.00125	-0.00123
	(!A2 * !B1 * Y)	0.00549	0.00561	0.00552

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	-0.00760	-0.00763	-0.00760
	(A2 * A3 * B1 * B2 * !Y)	0.00898	0.00905	0.00902
	(A2 * !A3 * B1 * B2 * !Y)	-0.00626	-0.00720	-0.00719
	(A2 * !A3 * B1 * B2 * !Y)	0.00924	0.00932	0.00923
	(A2 * !A3 * B1 * !B2 * Y)	-0.00213	-0.00218	-0.00212
	(A2 * !A3 * B1 * !B2 * Y)	0.01111	0.01134	0.01116
	(A2 * !A3 * !B1 * Y)	-0.00214	-0.00218	-0.00213
	(A2 * !A3 * !B1 * Y)	0.01111	0.01134	0.01116
	(!A2 * B1 * B2 * !Y)	-0.00710	-0.00737	-0.00735
	(!A2 * B1 * B2 * !Y)	0.00921	0.00927	0.00923
	(!A2 * B1 * !B2 * Y)	-0.00220	-0.00225	-0.00220
	(!A2 * B1 * !B2 * Y)	0.01112	0.01135	0.01117
	(!A2 * !B1 * Y)	-0.00221	-0.00226	-0.00221
	(!A2 * !B1 * Y)	0.01112	0.01135	0.01117

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)**	0.00220	0.00203	0.00201
	(A1 * A3 * B1 * B2 * !Y)	-0.00198	-0.00226	-0.00226
	(A1 * !A3 * B1 * B2 * !Y)	0.00193	0.00194	0.00194
	(A1 * !A3 * B1 * B2 * !Y)	-0.00229	-0.00231	-0.00230
	(A1 * !A3 * B1 * !B2 * Y)	0.00083	0.00083	0.00083
	(A1 * !A3 * B1 * !B2 * Y)	-0.00242	-0.00242	-0.00241
	(A1 * !A3 * !B1 * Y)	0.00083	0.00083	0.00082
	(A1 * !A3 * !B1 * Y)	-0.00242	-0.00242	-0.00241
	(!A1 * A3 * B1 * B2 * !Y)	0.00193	0.00195	0.00194
	(!A1 * A3 * B1 * B2 * !Y)	-0.00229	-0.00231	-0.00230
	(!A1 * A3 * B1 * !B2 * Y)	0.00181	0.00181	0.00182
	(!A1 * A3 * B1 * !B2 * Y)	-0.00241	-0.00241	-0.00242
	(!A1 * A3 * !B1 * Y)	0.00181	0.00182	0.00182
	(!A1 * A3 * !B1 * Y)	-0.00241	-0.00242	-0.00242
	(!A1 * !A3 * B1 * B2 * !Y)	0.00115	0.00116	0.00115
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00230	-0.00231	-0.00230
	(!A1 * !A3 * B1 * !B2 * Y)	0.00096	0.00097	0.00097
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00242	-0.00243	-0.00242
	(!A1 * !A3 * !B1 * Y)	0.00096	0.00097	0.00097
	(!A1 * !A3 * !B1 * Y)	-0.00242	-0.00243	-0.00242

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	0.00421	0.00377	0.00371
	(A1 * A3 * B1 * B2 * !Y)	-0.00399	-0.00466	-0.00466
	(A1 * !A3 * B1 * B2 * !Y)	0.00352	0.00356	0.00354
	(A1 * !A3 * B1 * B2 * !Y)	-0.00474	-0.00479	-0.00476
	(A1 * !A3 * B1 * !B2 * Y)	0.00152	0.00152	0.00154
	(A1 * !A3 * B1 * !B2 * Y)	-0.00481	-0.00482	-0.00481
	(A1 * !A3 * !B1 * Y)	0.00152	0.00153	0.00155
	(A1 * !A3 * !B1 * Y)	-0.00481	-0.00481	-0.00481
	(!A1 * A3 * B1 * B2 * !Y)	0.00362	0.00363	0.00362
	(!A1 * A3 * B1 * B2 * !Y)	-0.00476	-0.00476	-0.00475
	(!A1 * A3 * B1 * !B2 * Y)	0.00351	0.00357	0.00353
	(!A1 * A3 * B1 * !B2 * Y)	-0.00479	-0.00483	-0.00480
	(!A1 * A3 * !B1 * Y)	0.00352	0.00357	0.00354
	(!A1 * A3 * !B1 * Y)	-0.00479	-0.00483	-0.00480
	(!A1 * !A3 * B1 * B2 * !Y)	0.00211	0.00210	0.00211
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00477	-0.00477	-0.00477
	(!A1 * !A3 * B1 * !B2 * Y)	0.00187	0.00187	0.00186
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00486	-0.00486	-0.00485
	(!A1 * !A3 * !B1 * Y)	0.00187	0.00187	0.00187
	(!A1 * !A3 * !B1 * Y)	-0.00486	-0.00486	-0.00485

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	0.00854	0.00756	0.00745
	(A1 * A3 * B1 * B2 * !Y)	-0.00787	-0.00927	-0.00925
	(A1 * !A3 * B1 * B2 * !Y)	0.00700	0.00703	0.00702
	(A1 * !A3 * B1 * B2 * !Y)	-0.00942	-0.00947	-0.00944
	(A1 * !A3 * B1 * !B2 * Y)	0.00292	0.00292	0.00294
	(A1 * !A3 * B1 * !B2 * Y)	-0.00956	-0.00957	-0.00953
	(A1 * !A3 * !B1 * Y)	0.00292	0.00293	0.00295
	(A1 * !A3 * !B1 * Y)	-0.00956	-0.00957	-0.00953
	(!A1 * A3 * B1 * B2 * !Y)	0.00712	0.00717	0.00715
	(!A1 * A3 * B1 * B2 * !Y)	-0.00942	-0.00946	-0.00944
	(!A1 * A3 * B1 * !B2 * Y)	0.00705	0.00710	0.00708
	(!A1 * A3 * B1 * !B2 * Y)	-0.00951	-0.00954	-0.00952
	(!A1 * A3 * !B1 * Y)	0.00705	0.00710	0.00708
	(!A1 * A3 * !B1 * Y)	-0.00951	-0.00954	-0.00952
	(!A1 * !A3 * B1 * B2 * !Y)	0.00398	0.00400	0.00396
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00945	-0.00951	-0.00944
	(!A1 * !A3 * B1 * !B2 * Y)	0.00351	0.00352	0.00350
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00963	-0.00966	-0.00961
	(!A1 * !A3 * !B1 * Y)	0.00352	0.00352	0.00350
	(!A1 * !A3 * !B1 * Y)	-0.00963	-0.00965	-0.00961

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)**	-0.00200	-0.00201	-0.00200
	(A1 * A3 * B1 * B2 * !Y)	0.00225	0.00227	0.00226
	(A1 * !A3 * B1 * B2 * !Y)	-0.00188	-0.00194	-0.00194
	(A1 * !A3 * B1 * B2 * !Y)	0.00231	0.00232	0.00231
	(A1 * !A3 * B1 * !B2 * Y)	-0.00079	-0.00080	-0.00080
	(A1 * !A3 * B1 * !B2 * Y)	0.00246	0.00249	0.00243
	(A1 * !A3 * !B1 * Y)	-0.00079	-0.00080	-0.00080
	(A1 * !A3 * !B1 * Y)	0.00246	0.00249	0.00243
	(!A1 * A3 * B1 * B2 * !Y)	-0.00188	-0.00193	-0.00194
	(!A1 * A3 * B1 * B2 * !Y)	0.00230	0.00231	0.00231
	(!A1 * A3 * B1 * !B2 * Y)	-0.00166	-0.00181	-0.00182
	(!A1 * A3 * B1 * !B2 * Y)	0.00254	0.00243	0.00243
	(!A1 * A3 * !B1 * Y)	-0.00166	-0.00181	-0.00182
	(!A1 * A3 * !B1 * Y)	0.00254	0.00243	0.00243
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00115	-0.00116	-0.00115
	(!A1 * !A3 * B1 * B2 * !Y)	0.00231	0.00234	0.00231
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00096	-0.00097	-0.00097
	(!A1 * !A3 * B1 * !B2 * Y)	0.00254	0.00256	0.00245
	(!A1 * !A3 * !B1 * Y)	-0.00096	-0.00097	-0.00097
	(!A1 * !A3 * !B1 * Y)	0.00254	0.00256	0.00245

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	-0.00369	-0.00370	-0.00369
	(A1 * A3 * B1 * B2 * !Y)	0.00464	0.00467	0.00466
	(A1 * !A3 * B1 * B2 * !Y)	-0.00342	-0.00356	-0.00354
	(A1 * !A3 * B1 * B2 * !Y)	0.00477	0.00481	0.00478
	(A1 * !A3 * B1 * !B2 * Y)	-0.00145	-0.00146	-0.00149
	(A1 * !A3 * B1 * !B2 * Y)	0.00497	0.00500	0.00487
	(A1 * !A3 * !B1 * Y)	-0.00146	-0.00146	-0.00149
	(A1 * !A3 * !B1 * Y)	0.00497	0.00500	0.00487
	(!A1 * A3 * B1 * B2 * !Y)	-0.00344	-0.00361	-0.00360
	(!A1 * A3 * B1 * B2 * !Y)	0.00478	0.00480	0.00477
	(!A1 * A3 * B1 * !B2 * Y)	-0.00314	-0.00356	-0.00353
	(!A1 * A3 * B1 * !B2 * Y)	0.00513	0.00485	0.00482
	(!A1 * A3 * !B1 * Y)	-0.00314	-0.00356	-0.00354
	(!A1 * A3 * !B1 * Y)	0.00513	0.00485	0.00482
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00211	-0.00210	-0.00211
	(!A1 * !A3 * B1 * B2 * !Y)	0.00477	0.00484	0.00479
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00187	-0.00187	-0.00186
	(!A1 * !A3 * B1 * !B2 * Y)	0.00505	0.00513	0.00491
	(!A1 * !A3 * !B1 * Y)	-0.00187	-0.00187	-0.00187
	(!A1 * !A3 * !B1 * Y)	0.00505	0.00513	0.00491

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	-0.00743	-0.00743	-0.00740
	(A1 * A3 * B1 * B2 * !Y)	0.00925	0.00927	0.00925
	(A1 * !A3 * B1 * B2 * !Y)	-0.00684	-0.00703	-0.00702
	(A1 * !A3 * B1 * B2 * !Y)	0.00946	0.00960	0.00948
	(A1 * !A3 * B1 * !B2 * Y)	-0.00276	-0.00280	-0.00285
	(A1 * !A3 * B1 * !B2 * Y)	0.00974	0.00987	0.00963
	(A1 * !A3 * !B1 * Y)	-0.00277	-0.00281	-0.00285
	(A1 * !A3 * !B1 * Y)	0.00974	0.00987	0.00963
	(!A1 * A3 * B1 * B2 * !Y)	-0.00689	-0.00717	-0.00715
	(!A1 * A3 * B1 * B2 * !Y)	0.00943	0.00953	0.00948
	(!A1 * A3 * B1 * !B2 * Y)	-0.00622	-0.00710	-0.00708
	(!A1 * A3 * B1 * !B2 * Y)	0.01019	0.00960	0.00955
	(!A1 * A3 * !B1 * Y)	-0.00623	-0.00710	-0.00708
	(!A1 * A3 * !B1 * Y)	0.01018	0.00959	0.00955
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00398	-0.00400	-0.00396
	(!A1 * !A3 * B1 * B2 * !Y)	0.00945	0.00959	0.00948
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00351	-0.00352	-0.00350
	(!A1 * !A3 * B1 * !B2 * Y)	0.01000	0.01015	0.00973
	(!A1 * !A3 * !B1 * Y)	-0.00352	-0.00352	-0.00350
	(!A1 * !A3 * !B1 * Y)	0.01000	0.01015	0.00973

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)**	0.00206	0.00191	0.00189
	(A1 * A2 * B1 * B2 * !Y)	-0.00203	-0.00228	-0.00228
	(A1 * !A2 * B1 * !B2 * Y)	0.00181	0.00183	0.00182
	(A1 * !A2 * B1 * !B2 * Y)	-0.00231	-0.00233	-0.00232
	(A1 * !A2 * !B1 * Y)	0.00181	0.00184	0.00182
	(A1 * !A2 * !B1 * Y)	-0.00231	-0.00233	-0.00232
	(!A2 * B1 * B2 * !Y)	0.00181	0.00183	0.00182
	(!A2 * B1 * B2 * !Y)	-0.00231	-0.00233	-0.00232
	(!A1 * A2 * B1 * B2 * !Y)	0.00179	0.00179	0.00178
	(!A1 * A2 * B1 * B2 * !Y)	-0.00232	-0.00233	-0.00232
	(!A1 * A2 * B1 * !B2 * Y)	0.00179	0.00179	0.00178
	(!A1 * A2 * B1 * !B2 * Y)	-0.00232	-0.00233	-0.00232
	(!A1 * A2 * !B1 * Y)	0.00179	0.00179	0.00178
	(!A1 * A2 * !B1 * Y)	-0.00232	-0.00233	-0.00232
	(!A1 * !A2 * B1 * !B2 * Y)	0.00181	0.00184	0.00182
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00231	-0.00233	-0.00232
	(!A1 * !A2 * !B1 * Y)	0.00181	0.00183	0.00182
	(!A1 * !A2 * !B1 * Y)	-0.00231	-0.00233	-0.00232

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	0.00423	0.00386	0.00380
	(A1 * A2 * B1 * B2 * !Y)	-0.00400	-0.00461	-0.00460
	(A1 * !A2 * B1 * !B2 * Y)	0.00361	0.00367	0.00362
	(A1 * !A2 * B1 * !B2 * Y)	-0.00469	-0.00473	-0.00470
	(A1 * !A2 * !B1 * Y)	0.00361	0.00367	0.00362
	(A1 * !A2 * !B1 * Y)	-0.00469	-0.00474	-0.00470
	(!A2 * B1 * B2 * !Y)	0.00362	0.00368	0.00363
	(!A2 * B1 * B2 * !Y)	-0.00469	-0.00473	-0.00470
	(!A1 * A2 * B1 * B2 * !Y)	0.00360	0.00365	0.00362
	(!A1 * A2 * B1 * B2 * !Y)	-0.00468	-0.00472	-0.00470
	(!A1 * A2 * B1 * !B2 * Y)	0.00359	0.00364	0.00361
	(!A1 * A2 * B1 * !B2 * Y)	-0.00469	-0.00472	-0.00470
	(!A1 * A2 * !B1 * Y)	0.00359	0.00364	0.00361
	(!A1 * A2 * !B1 * Y)	-0.00469	-0.00472	-0.00470
	(!A1 * !A2 * B1 * !B2 * Y)	0.00362	0.00367	0.00362
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00470	-0.00474	-0.00470
	(!A1 * !A2 * !B1 * Y)	0.00362	0.00367	0.00362
	(!A1 * !A2 * !B1 * Y)	-0.00470	-0.00474	-0.00470

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	0.00835	0.00750	0.00737
	(A1 * A2 * B1 * B2 * !Y)	-0.00800	-0.00929	-0.00930
	(A1 * !A2 * B1 * !B2 * Y)	0.00706	0.00709	0.00707
	(A1 * !A2 * B1 * !B2 * Y)	-0.00950	-0.00952	-0.00950
	(A1 * !A2 * !B1 * Y)	0.00706	0.00709	0.00707
	(A1 * !A2 * !B1 * Y)	-0.00950	-0.00952	-0.00950
	(!A2 * B1 * B2 * !Y)	0.00707	0.00711	0.00708
	(!A2 * B1 * B2 * !Y)	-0.00949	-0.00952	-0.00949
	(!A1 * A2 * B1 * B2 * !Y)	0.00697	0.00704	0.00700
	(!A1 * A2 * B1 * B2 * !Y)	-0.00946	-0.00952	-0.00949
	(!A1 * A2 * B1 * !B2 * Y)	0.00696	0.00704	0.00699
	(!A1 * A2 * B1 * !B2 * Y)	-0.00948	-0.00954	-0.00950
	(!A1 * A2 * !B1 * Y)	0.00696	0.00704	0.00699
	(!A1 * A2 * !B1 * Y)	-0.00948	-0.00954	-0.00950
	(!A1 * !A2 * B1 * !B2 * Y)	0.00706	0.00709	0.00706
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00950	-0.00952	-0.00950
	(!A1 * !A2 * !B1 * Y)	0.00706	0.00709	0.00706
	(!A1 * !A2 * !B1 * Y)	-0.00950	-0.00952	-0.00950

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)**	-0.00188	-0.00188	-0.00188
	(A1 * A2 * B1 * B2 * !Y)	0.00227	0.00229	0.00228
	(A1 * !A2 * B1 * !B2 * Y)	-0.00175	-0.00183	-0.00182
	(A1 * !A2 * B1 * !B2 * Y)	0.00233	0.00234	0.00233
	(A1 * !A2 * !B1 * Y)	-0.00175	-0.00183	-0.00182
	(A1 * !A2 * !B1 * Y)	0.00233	0.00234	0.00233
	(!A2 * B1 * B2 * !Y)	-0.00177	-0.00182	-0.00182
	(!A2 * B1 * B2 * !Y)	0.00234	0.00234	0.00233
	(!A1 * A2 * B1 * B2 * !Y)	-0.00167	-0.00179	-0.00178
	(!A1 * A2 * B1 * B2 * !Y)	0.00232	0.00236	0.00233
	(!A1 * A2 * B1 * !B2 * Y)	-0.00167	-0.00179	-0.00178
	(!A1 * A2 * B1 * !B2 * Y)	0.00232	0.00235	0.00233
	(!A1 * A2 * !B1 * Y)	-0.00167	-0.00179	-0.00178
	(!A1 * A2 * !B1 * Y)	0.00232	0.00235	0.00233
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00177	-0.00183	-0.00182
	(!A1 * !A2 * B1 * !B2 * Y)	0.00233	0.00234	0.00233
	(!A1 * !A2 * !B1 * Y)	-0.00177	-0.00183	-0.00182
	(!A1 * !A2 * !B1 * Y)	0.00233	0.00234	0.00233

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	-0.00377	-0.00379	-0.00377
	(A1 * A2 * B1 * B2 * !Y)	0.00458	0.00461	0.00460
	(A1 * !A2 * B1 * !B2 * Y)	-0.00349	-0.00367	-0.00362
	(A1 * !A2 * B1 * !B2 * Y)	0.00470	0.00475	0.00472
	(A1 * !A2 * !B1 * Y)	-0.00349	-0.00367	-0.00362
	(A1 * !A2 * !B1 * Y)	0.00470	0.00475	0.00472
	(!A2 * B1 * B2 * !Y)	-0.00352	-0.00364	-0.00363
	(!A2 * B1 * B2 * !Y)	0.00470	0.00475	0.00472
	(!A1 * A2 * B1 * B2 * !Y)	-0.00339	-0.00361	-0.00362
	(!A1 * A2 * B1 * B2 * !Y)	0.00472	0.00476	0.00472
	(!A1 * A2 * B1 * !B2 * Y)	-0.00338	-0.00360	-0.00361
	(!A1 * A2 * B1 * !B2 * Y)	0.00472	0.00477	0.00471
	(!A1 * A2 * !B1 * Y)	-0.00338	-0.00360	-0.00361
	(!A1 * A2 * !B1 * Y)	0.00472	0.00477	0.00471
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00350	-0.00367	-0.00362
	(!A1 * !A2 * B1 * !B2 * Y)	0.00470	0.00475	0.00472
	(!A1 * !A2 * !B1 * Y)	-0.00350	-0.00367	-0.00362
	(!A1 * !A2 * !B1 * Y)	0.00470	0.00475	0.00472

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	-0.00735	-0.00734	-0.00733
	(A1 * A2 * B1 * B2 * !Y)	0.00930	0.00929	0.00930
	(A1 * !A2 * B1 * !B2 * Y)	-0.00669	-0.00706	-0.00707
	(A1 * !A2 * B1 * !B2 * Y)	0.00950	0.00959	0.00953
	(A1 * !A2 * !B1 * Y)	-0.00669	-0.00707	-0.00707
	(A1 * !A2 * !B1 * Y)	0.00950	0.00959	0.00953
	(!A2 * B1 * B2 * !Y)	-0.00679	-0.00700	-0.00708
	(!A2 * B1 * B2 * !Y)	0.00950	0.00952	0.00953
	(!A1 * A2 * B1 * B2 * !Y)	-0.00646	-0.00695	-0.00700
	(!A1 * A2 * B1 * B2 * !Y)	0.00954	0.00960	0.00953
	(!A1 * A2 * B1 * !B2 * Y)	-0.00644	-0.00696	-0.00699
	(!A1 * A2 * B1 * !B2 * Y)	0.00957	0.00963	0.00953
	(!A1 * A2 * !B1 * Y)	-0.00644	-0.00696	-0.00699
	(!A1 * A2 * !B1 * Y)	0.00957	0.00963	0.00953
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00674	-0.00707	-0.00706
	(!A1 * !A2 * B1 * !B2 * Y)	0.00950	0.00959	0.00953
	(!A1 * !A2 * !B1 * Y)	-0.00674	-0.00707	-0.00706
	(!A1 * !A2 * !B1 * Y)	0.00950	0.00959	0.00953

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)**	0.00219	0.00223	0.00220
	(A1 * A2 * A3 * B2 * !Y)	-0.00106	-0.00108	-0.00106
	(A1 * A2 * A3 * !B2 * !Y)	0.00213	0.00215	0.00214
	(A1 * A2 * A3 * !B2 * !Y)	-0.00105	-0.00106	-0.00106
	(A1 * A2 * !A3 * !B2 * Y)	0.00060	0.00060	0.00058
	(A1 * A2 * !A3 * !B2 * Y)	-0.00280	-0.00282	-0.00284
	(A1 * !A2 * !B2 * Y)	0.00060	0.00060	0.00058
	(A1 * !A2 * !B2 * Y)	-0.00280	-0.00282	-0.00284
	(!A1 * !B2 * Y)	0.00060	0.00060	0.00058
	(!A1 * !B2 * Y)	-0.00281	-0.00282	-0.00284
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B2 * !Y)**	0.00415	0.00424	0.00417
	(A1 * A2 * A3 * B2 * !Y)	-0.00211	-0.00216	-0.00212
	(A1 * A2 * A3 * !B2 * !Y)	0.00402	0.00406	0.00403
	(A1 * A2 * A3 * !B2 * !Y)	-0.00211	-0.00213	-0.00212
	(A1 * A2 * !A3 * !B2 * Y)	0.00125	0.00125	0.00119
	(A1 * A2 * !A3 * !B2 * Y)	-0.00542	-0.00545	-0.00552
	(A1 * !A2 * !B2 * Y)	0.00125	0.00125	0.00119
	(A1 * !A2 * !B2 * Y)	-0.00542	-0.00545	-0.00552
	(!A1 * !B2 * Y)	0.00126	0.00126	0.00119
	(!A1 * !B2 * Y)	-0.00542	-0.00545	-0.00552
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	0.00839	0.00857	0.00843
	(A1 * A2 * A3 * B2 * !Y)	-0.00429	-0.00439	-0.00430
	(A1 * A2 * A3 * !B2 * !Y)	0.00809	0.00809	0.00809
	(A1 * A2 * A3 * !B2 * !Y)	-0.00429	-0.00430	-0.00429
	(A1 * A2 * !A3 * !B2 * Y)	0.00238	0.00239	0.00227
	(A1 * A2 * !A3 * !B2 * Y)	-0.01103	-0.01108	-0.01121
	(A1 * !A2 * !B2 * Y)	0.00238	0.00239	0.00227
	(A1 * !A2 * !B2 * Y)	-0.01103	-0.01108	-0.01121
	(!A1 * !B2 * Y)	0.00239	0.00239	0.00228
	(!A1 * !B2 * Y)	-0.01103	-0.01108	-0.01121

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)	-0.00198	-0.00201	-0.00217
	(A1 * A2 * A3 * B2 * !Y)	0.00123	0.00124	0.00110
	(A1 * A2 * A3 * !B2 * !Y)	-0.00207	-0.00215	-0.00214
	(A1 * A2 * A3 * !B2 * !Y)	0.00105	0.00106	0.00106
	(A1 * A2 * !A3 * !B2 * Y)	-0.00058	-0.00057	-0.00057
	(A1 * A2 * !A3 * !B2 * Y)	0.00284	0.00283	0.00284
	(A1 * !A2 * !B2 * Y)	-0.00058	-0.00057	-0.00057
	(A1 * !A2 * !B2 * Y)	0.00284	0.00283	0.00284
	(!A1 * !B2 * Y)	-0.00058	-0.00057	-0.00057
	(!A1 * !B2 * Y)	0.00284	0.00283	0.00284
sky130_fd_sc_hs__a32oi_2	(A1 * A2 * A3 * B2 * !Y)	-0.00375	-0.00380	-0.00412
	(A1 * A2 * A3 * B2 * !Y)	0.00246	0.00247	0.00220
	(A1 * A2 * A3 * !B2 * !Y)	-0.00388	-0.00405	-0.00403
	(A1 * A2 * A3 * !B2 * !Y)	0.00211	0.00213	0.00212
	(A1 * A2 * !A3 * !B2 * Y)	-0.00116	-0.00116	-0.00116
	(A1 * A2 * !A3 * !B2 * Y)	0.00551	0.00552	0.00553
	(A1 * !A2 * !B2 * Y)	-0.00116	-0.00116	-0.00116
	(A1 * !A2 * !B2 * Y)	0.00551	0.00552	0.00553
	(!A1 * !B2 * Y)	-0.00116	-0.00116	-0.00116
	(!A1 * !B2 * Y)	0.00550	0.00552	0.00553

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	-0.00765	-0.00768	-0.00834
	(A1 * A2 * A3 * B2 * !Y)	0.00491	0.00490	0.00444
	(A1 * A2 * A3 * !B2 * !Y)	-0.00784	-0.00809	-0.00809
	(A1 * A2 * A3 * !B2 * !Y)	0.00429	0.00434	0.00430
	(A1 * A2 * !A3 * !B2 * Y)	-0.00221	-0.00223	-0.00221
	(A1 * A2 * !A3 * !B2 * Y)	0.01117	0.01125	0.01122
	(A1 * !A2 * !B2 * Y)	-0.00221	-0.00223	-0.00221
	(A1 * !A2 * !B2 * Y)	0.01117	0.01124	0.01122
	(!A1 * !B2 * Y)	-0.00222	-0.00223	-0.00222
	(!A1 * !B2 * Y)	0.01118	0.01124	0.01122

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)**	0.00212	0.00213	0.00211
	(A1 * A2 * A3 * B1 * !Y)	-0.00113	-0.00113	-0.00112
	(A1 * A2 * A3 * !B1 * !Y)	0.00203	0.00205	0.00203
	(A1 * A2 * A3 * !B1 * !Y)	-0.00111	-0.00112	-0.00111
	(A1 * A2 * !A3 * !B1 * Y)	0.00182	0.00184	0.00182
	(A1 * A2 * !A3 * !B1 * Y)	-0.00240	-0.00241	-0.00240
	(A1 * !A2 * !B1 * Y)	0.00182	0.00184	0.00182
	(A1 * !A2 * !B1 * Y)	-0.00240	-0.00241	-0.00240
	(!A1 * !B1 * Y)	0.00182	0.00184	0.00182
	(!A1 * !B1 * Y)	-0.00240	-0.00241	-0.00240

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00414	0.00423	0.00416
	(A1 * A2 * A3 * B1 * !Y)	-0.00217	-0.00222	-0.00218
	(A1 * A2 * A3 * !B1 * !Y)	0.00404	0.00408	0.00405
	(A1 * A2 * A3 * !B1 * !Y)	-0.00216	-0.00218	-0.00217
	(A1 * A2 * !A3 * !B1 * Y)	0.00363	0.00366	0.00363
	(A1 * A2 * !A3 * !B1 * Y)	-0.00471	-0.00473	-0.00471
	(A1 * !A2 * !B1 * Y)	0.00363	0.00366	0.00363
	(A1 * !A2 * !B1 * Y)	-0.00471	-0.00473	-0.00471
	(!A1 * !B1 * Y)	0.00363	0.00366	0.00363
	(!A1 * !B1 * Y)	-0.00471	-0.00473	-0.00471
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00822	0.00840	0.00825
	(A1 * A2 * A3 * B1 * !Y)	-0.00432	-0.00441	-0.00433
	(A1 * A2 * A3 * !B1 * !Y)	0.00789	0.00806	0.00792
	(A1 * A2 * A3 * !B1 * !Y)	-0.00429	-0.00434	-0.00432
	(A1 * A2 * !A3 * !B1 * Y)	0.00707	0.00721	0.00713
	(A1 * A2 * !A3 * !B1 * Y)	-0.00937	-0.00947	-0.00942
	(A1 * !A2 * !B1 * Y)	0.00708	0.00708	0.00708
	(A1 * !A2 * !B1 * Y)	-0.00943	-0.00942	-0.00941
	(!A1 * !B1 * Y)	0.00708	0.00721	0.00713
	(!A1 * !B1 * Y)	-0.00938	-0.00947	-0.00942

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)**	-0.00190	-0.00192	-0.00209
	(A1 * A2 * A3 * B1 * !Y)	0.00130	0.00130	0.00116
	(A1 * A2 * A3 * !B1 * !Y)	-0.00200	-0.00204	-0.00203
	(A1 * A2 * A3 * !B1 * !Y)	0.00112	0.00112	0.00112
	(A1 * A2 * !A3 * !B1 * Y)	-0.00171	-0.00182	-0.00182
	(A1 * A2 * !A3 * !B1 * Y)	0.00249	0.00244	0.00241
	(A1 * !A2 * !B1 * Y)	-0.00171	-0.00182	-0.00182
	(A1 * !A2 * !B1 * Y)	0.00249	0.00244	0.00241
	(!A1 * !B1 * Y)	-0.00171	-0.00183	-0.00182
	(!A1 * !B1 * Y)	0.00249	0.00242	0.00241
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00374	-0.00379	-0.00411
	(A1 * A2 * A3 * B1 * !Y)	0.00252	0.00252	0.00225
	(A1 * A2 * A3 * !B1 * !Y)	-0.00389	-0.00403	-0.00405
	(A1 * A2 * A3 * !B1 * !Y)	0.00217	0.00218	0.00217
	(A1 * A2 * !A3 * !B1 * Y)	-0.00333	-0.00362	-0.00363
	(A1 * A2 * !A3 * !B1 * Y)	0.00488	0.00476	0.00472
	(A1 * !A2 * !B1 * Y)	-0.00333	-0.00362	-0.00363
	(A1 * !A2 * !B1 * Y)	0.00488	0.00476	0.00472
	(!A1 * !B1 * Y)	-0.00333	-0.00364	-0.00363
	(!A1 * !B1 * Y)	0.00488	0.00474	0.00472
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	-0.00750	-0.00756	-0.00816
	(A1 * A2 * A3 * B1 * !Y)	0.00496	0.00496	0.00446
	(A1 * A2 * A3 * !B1 * !Y)	-0.00769	-0.00796	-0.00792
	(A1 * A2 * A3 * !B1 * !Y)	0.00431	0.00434	0.00432
	(A1 * A2 * !A3 * !B1 * Y)	-0.00652	-0.00712	-0.00713
	(A1 * A2 * !A3 * !B1 * Y)	0.00980	0.00951	0.00944
	(A1 * !A2 * !B1 * Y)	-0.00652	-0.00708	-0.00708
	(A1 * !A2 * !B1 * Y)	0.00980	0.00951	0.00944
	(!A1 * !B1 * Y)	-0.00653	-0.00712	-0.00713
	(!A1 * !B1 * Y)	0.00980	0.00951	0.00944

SKY130_FD_SC_HS__A32Ox

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00261	0.00258	0.00267	0.00260	0.00242	1.26855
sky130_fd_sc_hs__a32o_2	0.00279	0.00275	0.00283	0.00274	0.00260	2.15277
sky130_fd_sc_hs__a32o_4	0.00479	0.00538	0.00484	0.00498	0.00567	4.72069

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a32o_1	0.00000	0.21628	0.52619
sky130_fd_sc_hs__a32o_2	0.00000	0.28369	0.53467
sky130_fd_sc_hs__a32o_4	0.00000	0.57137	1.06934

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)	0.09250	0.58923	6.24591
	A2->X (RR)	0.10050	0.58769	6.20601
	A3->X (RR)	0.10431	0.57011	6.04135
	B1->X (RR)	0.06772	0.53582	5.97245
	B2->X (RR)	0.07052	0.52845	5.89825
sky130_fd_sc_hs__a32o_2	A1->X (RR)	0.09444	0.51711	5.97580
	A2->X (RR)	0.10051	0.51133	5.91300
	A3->X (RR)	0.10451	0.49227	5.71002
	B1->X (RR)	0.06929	0.46349	5.64805
	B2->X (RR)	0.07277	0.45300	5.57190
sky130_fd_sc_hs__a32o_4	A1->X (RR)	0.10329	0.46140	6.31887
	A2->X (RR)	0.11415	0.46085	6.29322
	A3->X (RR)	0.11587	0.43941	6.12933
	B1->X (RR)	0.06837	0.39166	6.00322
	B2->X (RR)	0.07220	0.38455	5.94833

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32o_1	A1->X (FF)	0.14506	0.55830	4.83712
	A2->X (FF)	0.16086	0.58556	4.94731
	A3->X (FF)	0.16772	0.59662	5.00871
	B1->X (FF)	0.12504	0.57390	5.14063
	B2->X (FF)	0.13631	0.59843	5.20565
sky130_fd_sc_hs__a32o_2	A1->X (FF)	0.17470	0.56258	4.57899
	A2->X (FF)	0.19240	0.59164	4.67758
	A3->X (FF)	0.20565	0.61213	4.77431
	B1->X (FF)	0.15662	0.58853	4.86532
	B2->X (FF)	0.17304	0.62047	4.95978
sky130_fd_sc_hs__a32o_4	A1->X (FF)	0.16436	0.52187	4.94281
	A2->X (FF)	0.17347	0.54173	4.99766
	A3->X (FF)	0.19515	0.57418	5.12532
	B1->X (FF)	0.15444	0.56247	5.17411
	B2->X (FF)	0.16358	0.57890	5.22375

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32o_1	A1	0.01509	0.01590	0.05725
	A1	0.00738	0.00820	0.04998
	A2	0.01611	0.01643	0.05415
	A2	0.00736	0.00769	0.04588
	A3	0.01729	0.01734	0.04741
	A3	0.00734	0.00739	0.03798
	B1	0.00940	0.01219	0.07003
	B1	0.00413	0.00691	0.06529
	B2	0.01048	0.01259	0.06624
	B2	0.00411	0.00623	0.06042
sky130_fd_sc_hs__a32o_2	A1	0.01877	0.01972	0.06136
	A1	0.01081	0.01178	0.05450
	A2	0.01996	0.02046	0.05866
	A2	0.01079	0.01130	0.04950
	A3	0.02139	0.02156	0.04684
	A3	0.01080	0.01101	0.03664
	B1	0.01299	0.01556	0.07017
	B1	0.00747	0.01005	0.06504
	B2	0.01430	0.01639	0.06646
	B2	0.00745	0.00954	0.06021

sky130_fd_sc_hs__a32o_4	**A1**	0.03637	0.03898	0.12363
	A1	0.02161	0.02426	0.11022
	A2	0.03866	0.04009	0.11571
	A2	0.02159	0.02312	0.10202
	A3	0.04129	0.04277	0.12204
	A3	0.02163	0.02322	0.10442
	B1	0.02406	0.02936	0.14644
	B1	0.01408	0.01947	0.13870
	B2	0.02732	0.03155	0.14600
	B2	0.01393	0.01825	0.13481

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32o_1	**A1**	0.00453	0.00522	0.03998
	A1	0.01230	0.01298	0.04699
	A2	0.00519	0.00586	0.03990
	A2	0.01394	0.01460	0.04852
	A3	0.00544	0.00577	0.04041
	A3	0.01532	0.01567	0.04952
	B1	0.00434	0.00760	0.06911
	B1	0.00961	0.01285	0.07395
	B2	0.00471	0.00808	0.06714
	B2	0.01103	0.01432	0.07269

sky130_fd_sc_hs__a32o_2	**A1**	0.00767	0.00821	0.04307
	A1	0.01568	0.01622	0.05106
	A2	0.00863	0.00901	0.04431
	A2	0.01781	0.01816	0.05345
	A3	0.00887	0.00866	0.04393
	A3	0.01937	0.01906	0.05267
	B1	0.00719	0.01059	0.07070
	B1	0.01270	0.01593	0.07607
	B2	0.00791	0.01101	0.07005
	B2	0.01472	0.01778	0.07555
sky130_fd_sc_hs__a32o_4	**A1**	0.01517	0.01641	0.09854
	A1	0.03007	0.03103	0.11213
	A2	0.01653	0.01783	0.09494
	A2	0.03406	0.03479	0.11243
	A3	0.01873	0.01923	0.09863
	A3	0.03825	0.03847	0.11807
	B1	0.01437	0.02039	0.13103
	B1	0.02437	0.03033	0.13927
	B2	0.01443	0.02104	0.13377
	B2	0.02766	0.03422	0.14594

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)**	0.00196	0.00172	0.00169
	(A2 * A3 * B1 * B2 * X)	-0.00169	-0.00203	-0.00205
	(A2 * !A3 * B1 * B2 * X)	0.00158	0.00159	0.00158
	(A2 * !A3 * B1 * B2 * X)	-0.00208	-0.00208	-0.00208
	(A2 * !A3 * B1 * !B2 * !X)	0.00053	0.00053	0.00050
	(A2 * !A3 * B1 * !B2 * !X)	-0.00243	-0.00244	-0.00250
	(A2 * !A3 * !B1 * !X)	0.00053	0.00053	0.00050
	(A2 * !A3 * !B1 * !X)	-0.00243	-0.00243	-0.00250
	(!A2 * B1 * B2 * X)	0.00163	0.00164	0.00163
	(!A2 * B1 * B2 * X)	-0.00207	-0.00208	-0.00208
	(!A2 * B1 * !B2 * !X)	0.00055	0.00054	0.00053
	(!A2 * B1 * !B2 * !X)	-0.00247	-0.00248	-0.00251
	(!A2 * !B1 * !X)	0.00054	0.00054	0.00053
	(!A2 * !B1 * !X)	-0.00247	-0.00248	-0.00251
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	0.00220	0.00196	0.00193
	(A2 * A3 * B1 * B2 * X)	-0.00171	-0.00202	-0.00204
	(A2 * !A3 * B1 * B2 * X)	0.00182	0.00183	0.00182
	(A2 * !A3 * B1 * B2 * X)	-0.00208	-0.00208	-0.00207
	(A2 * !A3 * B1 * !B2 * !X)	0.00059	0.00059	0.00055
	(A2 * !A3 * B1 * !B2 * !X)	-0.00247	-0.00247	-0.00255
	(A2 * !A3 * !B1 * !X)	0.00059	0.00059	0.00055
	(A2 * !A3 * !B1 * !X)	-0.00247	-0.00247	-0.00255
	(!A2 * B1 * B2 * X)	0.00186	0.00187	0.00187
	(!A2 * B1 * B2 * X)	-0.00207	-0.00208	-0.00207
	(!A2 * B1 * !B2 * !X)	0.00061	0.00060	0.00058
	(!A2 * B1 * !B2 * !X)	-0.00252	-0.00252	-0.00256
	(!A2 * !B1 * !X)	0.00061	0.00060	0.00058
	(!A2 * !B1 * !X)	-0.00252	-0.00252	-0.00256

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	0.00351	0.00312	0.00307
	(A2 * A3 * B1 * B2 * X)	-0.00348	-0.00406	-0.00409
	(A2 * !A3 * B1 * B2 * X)	0.00291	0.00292	0.00291
	(A2 * !A3 * B1 * B2 * X)	-0.00415	-0.00416	-0.00415
	(A2 * !A3 * B1 * !B2 * !X)	0.00100	0.00100	0.00091
	(A2 * !A3 * B1 * !B2 * !X)	-0.00461	-0.00462	-0.00479
	(A2 * !A3 * !B1 * !X)	0.00100	0.00100	0.00091
	(A2 * !A3 * !B1 * !X)	-0.00461	-0.00462	-0.00479
	(!A2 * B1 * B2 * X)	0.00296	0.00297	0.00297
	(!A2 * B1 * B2 * X)	-0.00414	-0.00416	-0.00414
	(!A2 * B1 * !B2 * !X)	0.00097	0.00096	0.00093
	(!A2 * B1 * !B2 * !X)	-0.00474	-0.00475	-0.00481
	(!A2 * !B1 * !X)	0.00097	0.00096	0.00093
	(!A2 * !B1 * !X)	-0.00474	-0.00475	-0.00481

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)**	-0.00168	-0.00168	-0.00167
	(A2 * A3 * B1 * B2 * X)	0.00205	0.00205	0.00205
	(A2 * !A3 * B1 * B2 * X)	-0.00145	-0.00159	-0.00158
	(A2 * !A3 * B1 * B2 * X)	0.00210	0.00211	0.00209
	(A2 * !A3 * B1 * !B2 * !X)	-0.00050	-0.00051	-0.00050
	(A2 * !A3 * B1 * !B2 * !X)	0.00251	0.00254	0.00251
	(A2 * !A3 * !B1 * !X)	-0.00050	-0.00051	-0.00050
	(A2 * !A3 * !B1 * !X)	0.00251	0.00254	0.00251
	(!A2 * B1 * B2 * X)	-0.00158	-0.00164	-0.00163
	(!A2 * B1 * B2 * X)	0.00208	0.00212	0.00209
	(!A2 * B1 * !B2 * !X)	-0.00052	-0.00052	-0.00051
	(!A2 * B1 * !B2 * !X)	0.00252	0.00255	0.00251
	(!A2 * !B1 * !X)	-0.00051	-0.00052	-0.00051
	(!A2 * !B1 * !X)	0.00251	0.00255	0.00251
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	-0.00191	-0.00192	-0.00191
	(A2 * A3 * B1 * B2 * X)	0.00203	0.00205	0.00204
	(A2 * !A3 * B1 * B2 * X)	-0.00165	-0.00183	-0.00182
	(A2 * !A3 * B1 * B2 * X)	0.00208	0.00211	0.00209
	(A2 * !A3 * B1 * !B2 * !X)	-0.00056	-0.00056	-0.00055
	(A2 * !A3 * B1 * !B2 * !X)	0.00257	0.00259	0.00256
	(A2 * !A3 * !B1 * !X)	-0.00055	-0.00056	-0.00055
	(A2 * !A3 * !B1 * !X)	0.00256	0.00259	0.00256
	(!A2 * B1 * B2 * X)	-0.00180	-0.00186	-0.00186
	(!A2 * B1 * B2 * X)	0.00209	0.00211	0.00209
	(!A2 * B1 * !B2 * !X)	-0.00056	-0.00058	-0.00056
	(!A2 * B1 * !B2 * !X)	0.00256	0.00260	0.00256
	(!A2 * !B1 * !X)	-0.00056	-0.00058	-0.00056
	(!A2 * !B1 * !X)	0.00256	0.00260	0.00256

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	-0.00304	-0.00305	-0.00303
	(A2 * A3 * B1 * B2 * X)	0.00406	0.00411	0.00409
	(A2 * !A3 * B1 * B2 * X)	-0.00256	-0.00292	-0.00291
	(A2 * !A3 * B1 * B2 * X)	0.00416	0.00419	0.00418
	(A2 * !A3 * B1 * !B2 * !X)	-0.00086	-0.00087	-0.00085
	(A2 * !A3 * B1 * !B2 * !X)	0.00481	0.00486	0.00483
	(A2 * !A3 * !B1 * !X)	-0.00086	-0.00087	-0.00085
	(A2 * !A3 * !B1 * !X)	0.00480	0.00486	0.00483
	(!A2 * B1 * B2 * X)	-0.00283	-0.00297	-0.00296
	(!A2 * B1 * B2 * X)	0.00415	0.00420	0.00417
	(!A2 * B1 * !B2 * !X)	-0.00089	-0.00091	-0.00090
	(!A2 * B1 * !B2 * !X)	0.00481	0.00487	0.00483
	(!A2 * !B1 * !X)	-0.00089	-0.00091	-0.00090
	(!A2 * !B1 * !X)	0.00481	0.00487	0.00483

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)**	0.00192	0.00169	0.00166
	(A1 * A3 * B1 * B2 * X)	-0.00171	-0.00203	-0.00205
	(A1 * !A3 * B1 * B2 * X)	0.00159	0.00160	0.00160
	(A1 * !A3 * B1 * B2 * X)	-0.00207	-0.00208	-0.00208
	(A1 * !A3 * B1 * !B2 * !X)	0.00062	0.00062	0.00062
	(A1 * !A3 * B1 * !B2 * !X)	-0.00222	-0.00222	-0.00221
	(A1 * !A3 * !B1 * !X)	0.00062	0.00062	0.00062
	(A1 * !A3 * !B1 * !X)	-0.00222	-0.00222	-0.00221
	(!A1 * A3 * B1 * B2 * X)	0.00159	0.00161	0.00160
	(!A1 * A3 * B1 * B2 * X)	-0.00207	-0.00208	-0.00208
	(!A1 * A3 * B1 * !B2 * !X)	0.00146	0.00148	0.00146
	(!A1 * A3 * B1 * !B2 * !X)	-0.00222	-0.00223	-0.00221
	(!A1 * A3 * !B1 * !X)	0.00146	0.00148	0.00146
	(!A1 * A3 * !B1 * !X)	-0.00222	-0.00223	-0.00221
	(!A1 * !A3 * B1 * B2 * X)	0.00094	0.00095	0.00095
	(!A1 * !A3 * B1 * B2 * X)	-0.00207	-0.00209	-0.00208
	(!A1 * !A3 * B1 * !B2 * !X)	0.00073	0.00074	0.00074
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00222	-0.00223	-0.00223
	(!A1 * !A3 * !B1 * !X)	0.00073	0.00074	0.00074
	(!A1 * !A3 * !B1 * !X)	-0.00222	-0.00223	-0.00223

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	0.00216	0.00192	0.00189
	(A1 * A3 * B1 * B2 * X)	-0.00172	-0.00202	-0.00204
	(A1 * !A3 * B1 * B2 * X)	0.00182	0.00183	0.00182
	(A1 * !A3 * B1 * B2 * X)	-0.00207	-0.00208	-0.00207
	(A1 * !A3 * B1 * !B2 * !X)	0.00070	0.00070	0.00070
	(A1 * !A3 * B1 * !B2 * !X)	-0.00221	-0.00221	-0.00220
	(A1 * !A3 * !B1 * !X)	0.00070	0.00070	0.00070
	(A1 * !A3 * !B1 * !X)	-0.00221	-0.00221	-0.00220
	(!A1 * A3 * B1 * B2 * X)	0.00183	0.00185	0.00184
	(!A1 * A3 * B1 * B2 * X)	-0.00207	-0.00208	-0.00207
	(!A1 * A3 * B1 * !B2 * !X)	0.00169	0.00171	0.00170
	(!A1 * A3 * B1 * !B2 * !X)	-0.00220	-0.00222	-0.00221
	(!A1 * A3 * !B1 * !X)	0.00169	0.00171	0.00170
	(!A1 * A3 * !B1 * !X)	-0.00220	-0.00222	-0.00221
	(!A1 * !A3 * B1 * B2 * X)	0.00106	0.00107	0.00106
	(!A1 * !A3 * B1 * B2 * X)	-0.00206	-0.00208	-0.00207
	(!A1 * !A3 * B1 * !B2 * !X)	0.00084	0.00084	0.00084
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00222	-0.00223	-0.00222
	(!A1 * !A3 * !B1 * !X)	0.00084	0.00084	0.00084
	(!A1 * !A3 * !B1 * !X)	-0.00222	-0.00223	-0.00222

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	0.00393	0.00333	0.00325
	(A1 * A3 * B1 * B2 * X)	-0.00361	-0.00439	-0.00444
	(A1 * !A3 * B1 * B2 * X)	0.00314	0.00318	0.00315
	(A1 * !A3 * B1 * B2 * X)	-0.00451	-0.00455	-0.00452
	(A1 * !A3 * B1 * !B2 * !X)	0.00129	0.00130	0.00129
	(A1 * !A3 * B1 * !B2 * !X)	-0.00471	-0.00473	-0.00472
	(A1 * !A3 * !B1 * !X)	0.00129	0.00130	0.00129
	(A1 * !A3 * !B1 * !X)	-0.00471	-0.00473	-0.00472
	(!A1 * A3 * B1 * B2 * X)	0.00315	0.00318	0.00316
	(!A1 * A3 * B1 * B2 * X)	-0.00451	-0.00454	-0.00452
	(!A1 * A3 * B1 * !B2 * !X)	0.00295	0.00299	0.00296
	(!A1 * A3 * B1 * !B2 * !X)	-0.00471	-0.00474	-0.00471
	(!A1 * A3 * !B1 * !X)	0.00295	0.00298	0.00296
	(!A1 * A3 * !B1 * !X)	-0.00471	-0.00474	-0.00471
	(!A1 * !A3 * B1 * B2 * X)	0.00196	0.00196	0.00195
	(!A1 * !A3 * B1 * B2 * X)	-0.00453	-0.00453	-0.00452
	(!A1 * !A3 * B1 * !B2 * !X)	0.00160	0.00162	0.00160
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00475	-0.00478	-0.00476
	(!A1 * !A3 * !B1 * !X)	0.00160	0.00162	0.00160
	(!A1 * !A3 * !B1 * !X)	-0.00475	-0.00478	-0.00476

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)**	-0.00164	-0.00164	-0.00164
	(A1 * A3 * B1 * B2 * X)	0.00203	0.00204	0.00205
	(A1 * !A3 * B1 * B2 * X)	-0.00155	-0.00159	-0.00160
	(A1 * !A3 * B1 * B2 * X)	0.00210	0.00212	0.00209
	(A1 * !A3 * B1 * !B2 * !X)	-0.00059	-0.00059	-0.00060
	(A1 * !A3 * B1 * !B2 * !X)	0.00225	0.00228	0.00223
	(A1 * !A3 * !B1 * !X)	-0.00059	-0.00059	-0.00060
	(A1 * !A3 * !B1 * !X)	0.00225	0.00228	0.00223
	(!A1 * A3 * B1 * B2 * X)	-0.00154	-0.00160	-0.00160
	(!A1 * A3 * B1 * B2 * X)	0.00208	0.00211	0.00209
	(!A1 * A3 * B1 * !B2 * !X)	-0.00132	-0.00147	-0.00146
	(!A1 * A3 * B1 * !B2 * !X)	0.00232	0.00224	0.00222
	(!A1 * A3 * !B1 * !X)	-0.00132	-0.00147	-0.00146
	(!A1 * A3 * !B1 * !X)	0.00232	0.00224	0.00222
	(!A1 * !A3 * B1 * B2 * X)	-0.00094	-0.00095	-0.00095
	(!A1 * !A3 * B1 * B2 * X)	0.00209	0.00211	0.00209
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00073	-0.00074	-0.00074
	(!A1 * !A3 * B1 * !B2 * !X)	0.00231	0.00234	0.00225
	(!A1 * !A3 * !B1 * !X)	-0.00073	-0.00074	-0.00074
	(!A1 * !A3 * !B1 * !X)	0.00231	0.00234	0.00225

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	-0.00188	-0.00188	-0.00187
	(A1 * A3 * B1 * B2 * X)	0.00203	0.00204	0.00204
	(A1 * !A3 * B1 * B2 * X)	-0.00175	-0.00181	-0.00182
	(A1 * !A3 * B1 * B2 * X)	0.00207	0.00211	0.00209
	(A1 * !A3 * B1 * !B2 * !X)	-0.00066	-0.00067	-0.00068
	(A1 * !A3 * B1 * !B2 * !X)	0.00226	0.00228	0.00223
	(A1 * !A3 * !B1 * !X)	-0.00066	-0.00067	-0.00068
	(A1 * !A3 * !B1 * !X)	0.00226	0.00228	0.00223
	(!A1 * A3 * B1 * B2 * X)	-0.00176	-0.00183	-0.00183
	(!A1 * A3 * B1 * B2 * X)	0.00208	0.00211	0.00209
	(!A1 * A3 * B1 * !B2 * !X)	-0.00153	-0.00169	-0.00169
	(!A1 * A3 * B1 * !B2 * !X)	0.00232	0.00224	0.00222
	(!A1 * A3 * !B1 * !X)	-0.00153	-0.00169	-0.00169
	(!A1 * A3 * !B1 * !X)	0.00232	0.00224	0.00222
	(!A1 * !A3 * B1 * B2 * X)	-0.00106	-0.00107	-0.00106
	(!A1 * !A3 * B1 * B2 * X)	0.00209	0.00211	0.00209
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00084	-0.00084	-0.00084
	(!A1 * !A3 * B1 * !B2 * !X)	0.00232	0.00235	0.00225
	(!A1 * !A3 * !B1 * !X)	-0.00084	-0.00084	-0.00084
	(!A1 * !A3 * !B1 * !X)	0.00232	0.00235	0.00225

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	-0.00322	-0.00323	-0.00321
	(A1 * A3 * B1 * B2 * X)	0.00441	0.00445	0.00444
	(A1 * !A3 * B1 * B2 * X)	-0.00298	-0.00316	-0.00315
	(A1 * !A3 * B1 * B2 * X)	0.00454	0.00457	0.00455
	(A1 * !A3 * B1 * !B2 * !X)	-0.00120	-0.00122	-0.00123
	(A1 * !A3 * B1 * !B2 * !X)	0.00481	0.00487	0.00477
	(A1 * !A3 * !B1 * !X)	-0.00120	-0.00122	-0.00123
	(A1 * !A3 * !B1 * !X)	0.00481	0.00487	0.00477
	(!A1 * A3 * B1 * B2 * X)	-0.00301	-0.00314	-0.00314
	(!A1 * A3 * B1 * B2 * X)	0.00453	0.00458	0.00455
	(!A1 * A3 * B1 * !B2 * !X)	-0.00261	-0.00295	-0.00295
	(!A1 * A3 * B1 * !B2 * !X)	0.00497	0.00478	0.00473
	(!A1 * A3 * !B1 * !X)	-0.00261	-0.00295	-0.00295
	(!A1 * A3 * !B1 * !X)	0.00497	0.00478	0.00473
	(!A1 * !A3 * B1 * B2 * X)	-0.00196	-0.00196	-0.00195
	(!A1 * !A3 * B1 * B2 * X)	0.00453	0.00460	0.00455
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00160	-0.00162	-0.00160
	(!A1 * !A3 * B1 * !B2 * !X)	0.00500	0.00503	0.00483
	(!A1 * !A3 * !B1 * !X)	-0.00160	-0.00162	-0.00160
	(!A1 * !A3 * !B1 * !X)	0.00500	0.00503	0.00483

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)**	0.00208	0.00188	0.00186
	(A1 * A2 * B1 * B2 * X)	-0.00172	-0.00200	-0.00202
	(A1 * !A2 * B1 * !B2 * !X)	0.00148	0.00149	0.00148
	(A1 * !A2 * B1 * !B2 * !X)	-0.00236	-0.00237	-0.00236
	(A1 * !A2 * !B1 * !X)	0.00148	0.00149	0.00148
	(A1 * !A2 * !B1 * !X)	-0.00236	-0.00237	-0.00236
	(!A2 * B1 * B2 * X)	0.00178	0.00179	0.00179
	(!A2 * B1 * B2 * X)	-0.00204	-0.00205	-0.00205
	(!A1 * A2 * B1 * B2 * X)	0.00176	0.00177	0.00176
	(!A1 * A2 * B1 * B2 * X)	-0.00205	-0.00205	-0.00205
	(!A1 * A2 * B1 * !B2 * !X)	0.00145	0.00145	0.00145
	(!A1 * A2 * B1 * !B2 * !X)	-0.00237	-0.00237	-0.00236
	(!A1 * A2 * !B1 * !X)	0.00145	0.00145	0.00145
	(!A1 * A2 * !B1 * !X)	-0.00237	-0.00237	-0.00236
	(!A1 * !A2 * B1 * !B2 * !X)	0.00147	0.00148	0.00148
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00236	-0.00237	-0.00236
	(!A1 * !A2 * !B1 * !X)	0.00147	0.00148	0.00148
	(!A1 * !A2 * !B1 * !X)	-0.00236	-0.00237	-0.00236

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	0.00234	0.00213	0.00210
	(A1 * A2 * B1 * B2 * X)	-0.00171	-0.00201	-0.00203
	(A1 * !A2 * B1 * !B2 * !X)	0.00172	0.00173	0.00172
	(A1 * !A2 * B1 * !B2 * !X)	-0.00236	-0.00237	-0.00236
	(A1 * !A2 * !B1 * !X)	0.00172	0.00173	0.00172
	(A1 * !A2 * !B1 * !X)	-0.00236	-0.00237	-0.00236
	(!A2 * B1 * B2 * X)	0.00202	0.00204	0.00203
	(!A2 * B1 * B2 * X)	-0.00205	-0.00206	-0.00205
	(!A1 * A2 * B1 * B2 * X)	0.00202	0.00203	0.00202
	(!A1 * A2 * B1 * B2 * X)	-0.00206	-0.00206	-0.00205
	(!A1 * A2 * B1 * !B2 * !X)	0.00170	0.00170	0.00170
	(!A1 * A2 * B1 * !B2 * !X)	-0.00237	-0.00236	-0.00236
	(!A1 * A2 * !B1 * !X)	0.00170	0.00170	0.00170
	(!A1 * A2 * !B1 * !X)	-0.00237	-0.00237	-0.00236
	(!A1 * !A2 * B1 * !B2 * !X)	0.00172	0.00172	0.00172
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00236	-0.00236	-0.00236
	(!A1 * !A2 * !B1 * !X)	0.00172	0.00173	0.00172
	(!A1 * !A2 * !B1 * !X)	-0.00236	-0.00236	-0.00236

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	0.00382	0.00330	0.00323
	(A1 * A2 * B1 * B2 * X)	-0.00354	-0.00424	-0.00429
	(A1 * !A2 * B1 * !B2 * !X)	0.00309	0.00311	0.00310
	(A1 * !A2 * B1 * !B2 * !X)	-0.00436	-0.00438	-0.00437
	(A1 * !A2 * !B1 * !X)	0.00309	0.00311	0.00310
	(A1 * !A2 * !B1 * !X)	-0.00436	-0.00437	-0.00437
	(!A2 * B1 * B2 * X)	0.00310	0.00313	0.00311
	(!A2 * B1 * B2 * X)	-0.00435	-0.00437	-0.00436
	(!A1 * A2 * B1 * B2 * X)	0.00303	0.00305	0.00303
	(!A1 * A2 * B1 * B2 * X)	-0.00437	-0.00438	-0.00436
	(!A1 * A2 * B1 * !B2 * !X)	0.00302	0.00303	0.00302
	(!A1 * A2 * B1 * !B2 * !X)	-0.00438	-0.00438	-0.00437
	(!A1 * A2 * !B1 * !X)	0.00302	0.00303	0.00302
	(!A1 * A2 * !B1 * !X)	-0.00438	-0.00438	-0.00437
	(!A1 * !A2 * B1 * !B2 * !X)	0.00309	0.00311	0.00310
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00436	-0.00438	-0.00437
	(!A1 * !A2 * !B1 * !X)	0.00307	0.00310	0.00308
	(!A1 * !A2 * !B1 * !X)	-0.00436	-0.00438	-0.00437

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)**	-0.00184	-0.00185	-0.00184
	(A1 * A2 * B1 * B2 * X)	0.00200	0.00202	0.00202
	(A1 * !A2 * B1 * !B2 * !X)	-0.00142	-0.00149	-0.00148
	(A1 * !A2 * B1 * !B2 * !X)	0.00238	0.00240	0.00237
	(A1 * !A2 * !B1 * !X)	-0.00142	-0.00149	-0.00148
	(A1 * !A2 * !B1 * !X)	0.00238	0.00240	0.00237
	(!A2 * B1 * B2 * X)	-0.00174	-0.00178	-0.00179
	(!A2 * B1 * B2 * X)	0.00205	0.00206	0.00206
	(!A1 * A2 * B1 * B2 * X)	-0.00166	-0.00177	-0.00176
	(!A1 * A2 * B1 * B2 * X)	0.00205	0.00208	0.00206
	(!A1 * A2 * B1 * !B2 * !X)	-0.00134	-0.00145	-0.00145
	(!A1 * A2 * B1 * !B2 * !X)	0.00237	0.00240	0.00237
	(!A1 * A2 * !B1 * !X)	-0.00134	-0.00145	-0.00145
	(!A1 * A2 * !B1 * !X)	0.00237	0.00239	0.00237
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00143	-0.00148	-0.00148
	(!A1 * !A2 * B1 * !B2 * !X)	0.00238	0.00239	0.00237
	(!A1 * !A2 * !B1 * !X)	-0.00143	-0.00148	-0.00148
	(!A1 * !A2 * !B1 * !X)	0.00238	0.00240	0.00237

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	-0.00208	-0.00209	-0.00208
	(A1 * A2 * B1 * B2 * X)	0.00201	0.00203	0.00203
	(A1 * !A2 * B1 * !B2 * !X)	-0.00164	-0.00173	-0.00172
	(A1 * !A2 * B1 * !B2 * !X)	0.00236	0.00239	0.00237
	(A1 * !A2 * !B1 * !X)	-0.00164	-0.00173	-0.00172
	(A1 * !A2 * !B1 * !X)	0.00236	0.00239	0.00237
	(!A2 * B1 * B2 * X)	-0.00196	-0.00201	-0.00203
	(!A2 * B1 * B2 * X)	0.00206	0.00208	0.00207
	(!A1 * A2 * B1 * B2 * X)	-0.00187	-0.00201	-0.00201
	(!A1 * A2 * B1 * B2 * X)	0.00207	0.00209	0.00207
	(!A1 * A2 * B1 * !B2 * !X)	-0.00157	-0.00170	-0.00170
	(!A1 * A2 * B1 * !B2 * !X)	0.00237	0.00239	0.00237
	(!A1 * A2 * !B1 * !X)	-0.00157	-0.00170	-0.00170
	(!A1 * A2 * !B1 * !X)	0.00237	0.00239	0.00237
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00165	-0.00172	-0.00172
	(!A1 * !A2 * B1 * !B2 * !X)	0.00236	0.00240	0.00237
	(!A1 * !A2 * !B1 * !X)	-0.00165	-0.00173	-0.00172
	(!A1 * !A2 * !B1 * !X)	0.00236	0.00239	0.00237

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	-0.00319	-0.00321	-0.00318
	(A1 * A2 * B1 * B2 * X)	0.00426	0.00431	0.00429
	(A1 * !A2 * B1 * !B2 * !X)	-0.00291	-0.00310	-0.00310
	(A1 * !A2 * B1 * !B2 * !X)	0.00438	0.00442	0.00439
	(A1 * !A2 * !B1 * !X)	-0.00291	-0.00310	-0.00310
	(A1 * !A2 * !B1 * !X)	0.00438	0.00442	0.00439
	(!A2 * B1 * B2 * X)	-0.00297	-0.00309	-0.00311
	(!A2 * B1 * B2 * X)	0.00438	0.00442	0.00439
	(!A1 * A2 * B1 * B2 * X)	-0.00278	-0.00303	-0.00303
	(!A1 * A2 * B1 * B2 * X)	0.00438	0.00442	0.00439
	(!A1 * A2 * B1 * !B2 * !X)	-0.00276	-0.00303	-0.00302
	(!A1 * A2 * B1 * !B2 * !X)	0.00441	0.00444	0.00439
	(!A1 * A2 * !B1 * !X)	-0.00276	-0.00303	-0.00302
	(!A1 * A2 * !B1 * !X)	0.00441	0.00444	0.00439
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00294	-0.00310	-0.00310
	(!A1 * !A2 * B1 * !B2 * !X)	0.00438	0.00442	0.00439
	(!A1 * !A2 * !B1 * !X)	-0.00294	-0.00310	-0.00308
	(!A1 * !A2 * !B1 * !X)	0.00438	0.00442	0.00439

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)**	0.00182	0.00184	0.00182
	(A1 * A2 * A3 * B2 * X)	-0.00098	-0.00099	-0.00098
	(A1 * A2 * A3 * !B2 * X)	0.00177	0.00178	0.00177
	(A1 * A2 * A3 * !B2 * X)	-0.00097	-0.00098	-0.00097
	(A1 * A2 * !A3 * !B2 * !X)	0.00052	0.00052	0.00050
	(A1 * A2 * !A3 * !B2 * !X)	-0.00244	-0.00246	-0.00247
	(A1 * !A2 * !B2 * !X)	0.00052	0.00052	0.00050
	(A1 * !A2 * !B2 * !X)	-0.00244	-0.00246	-0.00247
	(!A1 * !B2 * !X)	0.00052	0.00052	0.00050
	(!A1 * !B2 * !X)	-0.00244	-0.00246	-0.00247
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B2 * X)**	0.00203	0.00205	0.00203
	(A1 * A2 * A3 * B2 * X)	-0.00099	-0.00100	-0.00099
	(A1 * A2 * A3 * !B2 * X)	0.00197	0.00198	0.00198
	(A1 * A2 * A3 * !B2 * X)	-0.00098	-0.00099	-0.00099
	(A1 * A2 * !A3 * !B2 * !X)	0.00064	0.00064	0.00061
	(A1 * A2 * !A3 * !B2 * !X)	-0.00243	-0.00245	-0.00248
	(A1 * !A2 * !B2 * !X)	0.00064	0.00064	0.00061
	(A1 * !A2 * !B2 * !X)	-0.00243	-0.00245	-0.00248
	(!A1 * !B2 * !X)	0.00064	0.00064	0.00061
	(!A1 * !B2 * !X)	-0.00244	-0.00245	-0.00248
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	0.00365	0.00367	0.00364
	(A1 * A2 * A3 * B2 * X)	-0.00200	-0.00200	-0.00197
	(A1 * A2 * A3 * !B2 * X)	0.00347	0.00353	0.00348
	(A1 * A2 * A3 * !B2 * X)	-0.00196	-0.00198	-0.00197
	(A1 * A2 * !A3 * !B2 * !X)	0.00095	0.00095	0.00092
	(A1 * A2 * !A3 * !B2 * !X)	-0.00494	-0.00496	-0.00500
	(A1 * !A2 * !B2 * !X)	0.00095	0.00095	0.00092
	(A1 * !A2 * !B2 * !X)	-0.00494	-0.00496	-0.00500
	(!A1 * !B2 * !X)	0.00095	0.00095	0.00092
	(!A1 * !B2 * !X)	-0.00494	-0.00496	-0.00500

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)	-0.00164	-0.00166	-0.00180
	(A1 * A2 * A3 * B2 * X)	0.00113	0.00113	0.00101
	(A1 * A2 * A3 * !B2 * X)	-0.00172	-0.00178	-0.00177
	(A1 * A2 * A3 * !B2 * X)	0.00097	0.00098	0.00098
	(A1 * A2 * !A3 * !B2 * !X)	-0.00049	-0.00050	-0.00049
	(A1 * A2 * !A3 * !B2 * !X)	0.00247	0.00251	0.00248
	(A1 * !A2 * !B2 * !X)	-0.00049	-0.00050	-0.00049
	(A1 * !A2 * !B2 * !X)	0.00247	0.00251	0.00248
	(!A1 * !B2 * !X)	-0.00049	-0.00050	-0.00049
	(!A1 * !B2 * !X)	0.00247	0.00251	0.00248
sky130_fd_sc_hs__a32o_2	(A1 * A2 * A3 * B2 * X)	-0.00186	-0.00187	-0.00201
	(A1 * A2 * A3 * B2 * X)	0.00114	0.00114	0.00102
	(A1 * A2 * A3 * !B2 * X)	-0.00191	-0.00198	-0.00198
	(A1 * A2 * A3 * !B2 * X)	0.00099	0.00099	0.00099
	(A1 * A2 * !A3 * !B2 * !X)	-0.00060	-0.00061	-0.00060
	(A1 * A2 * !A3 * !B2 * !X)	0.00248	0.00251	0.00248
	(A1 * !A2 * !B2 * !X)	-0.00060	-0.00061	-0.00060
	(A1 * !A2 * !B2 * !X)	0.00248	0.00251	0.00248
	(!A1 * !B2 * !X)	-0.00060	-0.00061	-0.00060
	(!A1 * !B2 * !X)	0.00248	0.00251	0.00248

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	-0.00325	-0.00330	-0.00360
	(A1 * A2 * A3 * B2 * X)	0.00227	0.00229	0.00204
	(A1 * A2 * A3 * !B2 * X)	-0.00341	-0.00353	-0.00348
	(A1 * A2 * A3 * !B2 * X)	0.00198	0.00198	0.00197
	(A1 * A2 * !A3 * !B2 * !X)	-0.00088	-0.00092	-0.00089
	(A1 * A2 * !A3 * !B2 * !X)	0.00499	0.00507	0.00501
	(A1 * !A2 * !B2 * !X)	-0.00088	-0.00092	-0.00089
	(A1 * !A2 * !B2 * !X)	0.00499	0.00507	0.00501
	(!A1 * !B2 * !X)	-0.00088	-0.00092	-0.00089
	(!A1 * !B2 * !X)	0.00499	0.00507	0.00501

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)**	0.00178	0.00180	0.00178
	(A1 * A2 * A3 * B1 * X)	-0.00103	-0.00104	-0.00103
	(A1 * A2 * A3 * !B1 * X)	0.00174	0.00177	0.00174
	(A1 * A2 * A3 * !B1 * X)	-0.00101	-0.00103	-0.00102
	(A1 * A2 * !A3 * !B1 * !X)	0.00158	0.00159	0.00158
	(A1 * A2 * !A3 * !B1 * !X)	-0.00211	-0.00211	-0.00210
	(A1 * !A2 * !B1 * !X)	0.00158	0.00158	0.00158
	(A1 * !A2 * !B1 * !X)	-0.00211	-0.00211	-0.00210
	(!A1 * !B1 * !X)	0.00158	0.00159	0.00158
	(!A1 * !B1 * !X)	-0.00211	-0.00211	-0.00210

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	0.00206	0.00207	0.00205
	(A1 * A2 * A3 * B1 * X)	-0.00105	-0.00105	-0.00104
	(A1 * A2 * A3 * !B1 * X)	0.00199	0.00199	0.00199
	(A1 * A2 * A3 * !B1 * X)	-0.00103	-0.00103	-0.00104
	(A1 * A2 * !A3 * !B1 * !X)	0.00185	0.00188	0.00186
	(A1 * A2 * !A3 * !B1 * !X)	-0.00211	-0.00213	-0.00212
	(A1 * !A2 * !B1 * !X)	0.00185	0.00188	0.00186
	(A1 * !A2 * !B1 * !X)	-0.00211	-0.00213	-0.00212
	(!A1 * !B1 * !X)	0.00185	0.00188	0.00186
	(!A1 * !B1 * !X)	-0.00211	-0.00213	-0.00212
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	0.00459	0.00463	0.00461
	(A1 * A2 * A3 * B1 * X)	-0.00205	-0.00207	-0.00206
	(A1 * A2 * A3 * !B1 * X)	0.00447	0.00451	0.00448
	(A1 * A2 * A3 * !B1 * X)	-0.00204	-0.00206	-0.00205
	(A1 * A2 * !A3 * !B1 * !X)	0.00391	0.00397	0.00394
	(A1 * A2 * !A3 * !B1 * !X)	-0.00444	-0.00448	-0.00446
	(A1 * !A2 * !B1 * !X)	0.00391	0.00397	0.00394
	(A1 * !A2 * !B1 * !X)	-0.00444	-0.00448	-0.00446
	(!A1 * !B1 * !X)	0.00391	0.00397	0.00394
	(!A1 * !B1 * !X)	-0.00444	-0.00448	-0.00446

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)**	-0.00160	-0.00162	-0.00176
	(A1 * A2 * A3 * B1 * X)	0.00117	0.00118	0.00106
	(A1 * A2 * A3 * !B1 * X)	-0.00169	-0.00173	-0.00173
	(A1 * A2 * A3 * !B1 * X)	0.00103	0.00103	0.00102
	(A1 * A2 * !A3 * !B1 * !X)	-0.00149	-0.00159	-0.00158
	(A1 * A2 * !A3 * !B1 * !X)	0.00220	0.00213	0.00211
	(A1 * !A2 * !B1 * !X)	-0.00149	-0.00158	-0.00158
	(A1 * !A2 * !B1 * !X)	0.00220	0.00213	0.00211
	(!A1 * !B1 * !X)	-0.00149	-0.00159	-0.00158
	(!A1 * !B1 * !X)	0.00220	0.00213	0.00211
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00187	-0.00189	-0.00203
	(A1 * A2 * A3 * B1 * X)	0.00119	0.00119	0.00108
	(A1 * A2 * A3 * !B1 * X)	-0.00194	-0.00199	-0.00199
	(A1 * A2 * A3 * !B1 * X)	0.00105	0.00105	0.00104
	(A1 * A2 * !A3 * !B1 * !X)	-0.00176	-0.00185	-0.00186
	(A1 * A2 * !A3 * !B1 * !X)	0.00220	0.00214	0.00213
	(A1 * !A2 * !B1 * !X)	-0.00176	-0.00185	-0.00186
	(A1 * !A2 * !B1 * !X)	0.00220	0.00214	0.00213
	(!A1 * !B1 * !X)	-0.00176	-0.00185	-0.00186
	(!A1 * !B1 * !X)	0.00220	0.00214	0.00213
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	-0.00421	-0.00425	-0.00456
	(A1 * A2 * A3 * B1 * X)	0.00236	0.00237	0.00213
	(A1 * A2 * A3 * !B1 * X)	-0.00438	-0.00446	-0.00448
	(A1 * A2 * A3 * !B1 * X)	0.00206	0.00207	0.00206
	(A1 * A2 * !A3 * !B1 * !X)	-0.00369	-0.00396	-0.00394
	(A1 * A2 * !A3 * !B1 * !X)	0.00469	0.00450	0.00448
	(A1 * !A2 * !B1 * !X)	-0.00369	-0.00396	-0.00394
	(A1 * !A2 * !B1 * !X)	0.00469	0.00450	0.00448
	(!A1 * !B1 * !X)	-0.00369	-0.00397	-0.00394
	(!A1 * !B1 * !X)	0.00469	0.00450	0.00448

SKY130_FD_SC_HS__A41OIx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00288	0.00292	0.00287	0.00290	0.00293	0.56778
sky130_fd_sc_hs__a41oi_2	0.00558	0.00545	0.00535	0.00535	0.00430	1.09296
sky130_fd_sc_hs__a41oi_4	0.01090	0.01057	0.01069	0.01058	0.00850	1.85241

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a41oi_1	0.00000	0.05741	0.14562
sky130_fd_sc_hs__a41oi_2	0.00000	0.11084	0.29124
sky130_fd_sc_hs__a41oi_4	0.00000	0.22168	0.58247

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)	0.08747	0.88264	9.84264
	A2->Y (FR)	0.10831	0.91820	10.01990
	A3->Y (FR)	0.11915	0.90942	9.78332
	A4->Y (FR)	0.12146	0.87525	9.37706
	B1->Y (FR)	0.07465	0.92095	10.57250
sky130_fd_sc_hs__a41oi_2	A1->Y (FR)	0.07276	0.75804	10.02710
	A2->Y (FR)	0.09040	0.75304	9.72152
	A3->Y (FR)	0.10575	0.77395	9.79807
	A4->Y (FR)	0.12151	0.79602	9.84796
	B1->Y (FR)	0.08526	0.79234	10.31080
sky130_fd_sc_hs__a41oi_4	A1->Y (FR)	0.06746	0.62662	9.27078
	A2->Y (FR)	0.08921	0.63206	9.04670
	A3->Y (FR)	0.10887	0.66243	9.24237
	A4->Y (FR)	0.12809	0.69612	9.46456
	B1->Y (FR)	0.09291	0.71373	10.20330

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41oi_1	A1->Y (RF)	0.04358	0.49739	5.48729
	A2->Y (RF)	0.05210	0.47765	5.13957
	A3->Y (RF)	0.05741	0.44072	4.57565
	A4->Y (RF)	0.06104	0.40643	4.03103
	B1->Y (RF)	0.01725	0.27780	3.08172
sky130_fd_sc_hs__a41oi_2	A1->Y (RF)	0.04138	0.48342	6.35350
	A2->Y (RF)	0.05326	0.46734	5.96964
	A3->Y (RF)	0.05946	0.40916	5.05955
	A4->Y (RF)	0.06430	0.38006	4.52595
	B1->Y (RF)	0.01985	0.37590	5.12175
sky130_fd_sc_hs__a41oi_4	A1->Y (RF)	0.04015	0.41568	6.14915
	A2->Y (RF)	0.05419	0.39780	5.68816
	A3->Y (RF)	0.06140	0.34640	4.82571
	A4->Y (RF)	0.06512	0.30535	4.12215
	B1->Y (RF)	0.01881	0.30144	4.66377

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41oi_1	A1	0.00036	0.00034	0.01018
	A1	0.00803	0.00800	0.01785
	A2	0.00129	0.00118	0.01069
	A2	0.01007	0.00997	0.01948
	A3	0.00204	0.00194	0.01229
	A3	0.01193	0.01183	0.02195
	A4	0.00247	0.00242	0.01288
	A4	0.01361	0.01355	0.02405
	B1	-0.00008	0.00146	0.02584
	B1	0.00581	0.00738	0.03205
sky130_fd_sc_hs__a41oi_2	A1	-0.00096	-0.00075	0.01627
	A1	0.01305	0.01330	0.03030
	A2	0.00137	0.00115	0.01896
	A2	0.01791	0.01773	0.03575
	A3	0.00269	0.00251	0.02081
	A3	0.02150	0.02137	0.03959
	A4	0.00439	0.00423	0.02276
	A4	0.02577	0.02562	0.04409
	B1	-0.00027	0.00267	0.03090
	B1	0.00827	0.01123	0.03998

sky130_fd_sc_hs__a41oi_4	**A1**	-0.00269	-0.00200	0.03544
	A1	0.02519	0.02592	0.06367
	A2	0.00257	0.00227	0.04168
	A2	0.03544	0.03523	0.07496
	A3	0.00521	0.00487	0.04484
	A3	0.04313	0.04292	0.08312
	A4	0.00784	0.00778	0.04893
	A4	0.05067	0.05057	0.09178
	B1	-0.00100	0.00439	0.06751
	B1	0.01589	0.02130	0.08443

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41oi_1	**A1**	0.01020	0.01040	0.01901
	A1	0.00264	0.00281	0.01113
	A2	0.01137	0.01136	0.01893
	A2	0.00265	0.00263	0.00990
	A3	0.01253	0.01252	0.02075
	A3	0.00260	0.00256	0.01045
	A4	0.01388	0.01382	0.02283
	A4	0.00263	0.00256	0.01146
	B1	0.00547	0.00627	0.01930
	B1	-0.00042	0.00034	0.01341

sky130_fd_sc_hs__a41oi_2	**A1**	0.01865	0.01897	0.03306
	A1	0.00487	0.00516	0.01930
	A2	0.02125	0.02108	0.03506
	A2	0.00477	0.00462	0.01734
	A3	0.02365	0.02353	0.03799
	A3	0.00476	0.00456	0.01912
	A4	0.02638	0.02614	0.04295
	A4	0.00469	0.00446	0.02048
	B1	0.00666	0.00782	0.02415
	B1	-0.00191	-0.00082	0.01508
sky130_fd_sc_hs__a41oi_4	**A1**	0.03614	0.03707	0.06890
	A1	0.00868	0.00963	0.04013
	A2	0.04124	0.04108	0.07088
	A2	0.00850	0.00832	0.03624
	A3	0.04658	0.04640	0.07855
	A3	0.00837	0.00803	0.03963
	A4	0.05169	0.05149	0.08877
	A4	0.00832	0.00799	0.04444
	B1	0.01310	0.01621	0.05517
	B1	-0.00383	-0.00084	0.03701

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)**	0.00210	0.00196	0.00193
	(A2 * A3 * A4 * B1 * !Y)	-0.00206	-0.00234	-0.00233
	(A2 * A3 * !A4 * B1 * !Y)	0.00182	0.00184	0.00182
	(A2 * A3 * !A4 * B1 * !Y)	-0.00238	-0.00238	-0.00238
	(A2 * A3 * !A4 * !B1 * Y)	0.00068	0.00068	0.00062
	(A2 * A3 * !A4 * !B1 * Y)	-0.00266	-0.00268	-0.00279
	(A2 * !A3 * B1 * !Y)	0.00185	0.00185	0.00185
	(A2 * !A3 * B1 * !Y)	-0.00238	-0.00239	-0.00238
	(A2 * !A3 * !B1 * Y)	0.00068	0.00067	0.00063
	(A2 * !A3 * !B1 * Y)	-0.00271	-0.00272	-0.00280
	(!A2 * B1 * !Y)	0.00187	0.00189	0.00188
	(!A2 * B1 * !Y)	-0.00238	-0.00239	-0.00238
	(!A2 * !B1 * Y)	0.00068	0.00067	0.00065
	(!A2 * !B1 * Y)	-0.00277	-0.00278	-0.00281
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	0.00419	0.00389	0.00385
	(A2 * A3 * A4 * B1 * !Y)	-0.00402	-0.00456	-0.00455
	(A2 * A3 * !A4 * B1 * !Y)	0.00360	0.00363	0.00361
	(A2 * A3 * !A4 * B1 * !Y)	-0.00465	-0.00467	-0.00465
	(A2 * A3 * !A4 * !B1 * Y)	0.00125	0.00126	0.00111
	(A2 * A3 * !A4 * !B1 * Y)	-0.00524	-0.00530	-0.00558
	(A2 * !A3 * B1 * !Y)	0.00363	0.00366	0.00363
	(A2 * !A3 * B1 * !Y)	-0.00465	-0.00467	-0.00465
	(A2 * !A3 * !B1 * Y)	0.00120	0.00121	0.00111
	(A2 * !A3 * !B1 * Y)	-0.00538	-0.00545	-0.00561
	(!A2 * B1 * !Y)	0.00369	0.00372	0.00370
	(!A2 * B1 * !Y)	-0.00465	-0.00466	-0.00465
	(!A2 * !B1 * Y)	0.00121	0.00122	0.00116
	(!A2 * !B1 * Y)	-0.00552	-0.00558	-0.00564

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	0.00841	0.00780	0.00771
	(A2 * A3 * A4 * B1 * !Y)	-0.00797	-0.00904	-0.00901
	(A2 * A3 * !A4 * B1 * !Y)	0.00719	0.00721	0.00719
	(A2 * A3 * !A4 * B1 * !Y)	-0.00923	-0.00923	-0.00921
	(A2 * A3 * !A4 * !B1 * Y)	0.00253	0.00254	0.00225
	(A2 * A3 * !A4 * !B1 * Y)	-0.01034	-0.01042	-0.01098
	(A2 * !A3 * B1 * !Y)	0.00729	0.00733	0.00729
	(A2 * !A3 * B1 * !Y)	-0.00923	-0.00925	-0.00921
	(A2 * !A3 * !B1 * Y)	0.00245	0.00245	0.00226
	(A2 * !A3 * !B1 * Y)	-0.01061	-0.01068	-0.01102
	(!A2 * B1 * !Y)	0.00742	0.00748	0.00743
	(!A2 * B1 * !Y)	-0.00921	-0.00926	-0.00921
	(!A2 * !B1 * Y)	0.00257	0.00257	0.00244
	(!A2 * !B1 * Y)	-0.01085	-0.01091	-0.01107

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)**	-0.00192	-0.00194	-0.00193
	(A2 * A3 * A4 * B1 * !Y)	0.00231	0.00235	0.00233
	(A2 * A3 * !A4 * B1 * !Y)	-0.00160	-0.00181	-0.00182
	(A2 * A3 * !A4 * B1 * !Y)	0.00238	0.00238	0.00239
	(A2 * A3 * !A4 * !B1 * Y)	-0.00062	-0.00063	-0.00062
	(A2 * A3 * !A4 * !B1 * Y)	0.00280	0.00284	0.00281
	(A2 * !A3 * B1 * !Y)	-0.00166	-0.00185	-0.00185
	(A2 * !A3 * B1 * !Y)	0.00238	0.00241	0.00239
	(A2 * !A3 * !B1 * Y)	-0.00062	-0.00064	-0.00063
	(A2 * !A3 * !B1 * Y)	0.00279	0.00284	0.00281
	(!A2 * B1 * !Y)	-0.00182	-0.00188	-0.00188
	(!A2 * B1 * !Y)	0.00239	0.00241	0.00239
	(!A2 * !B1 * Y)	-0.00064	-0.00065	-0.00064
	(!A2 * !B1 * Y)	0.00281	0.00286	0.00281
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	-0.00383	-0.00384	-0.00383
	(A2 * A3 * A4 * B1 * !Y)	0.00453	0.00456	0.00455
	(A2 * A3 * !A4 * B1 * !Y)	-0.00307	-0.00363	-0.00361
	(A2 * A3 * !A4 * B1 * !Y)	0.00465	0.00470	0.00467
	(A2 * A3 * !A4 * !B1 * Y)	-0.00109	-0.00112	-0.00110
	(A2 * A3 * !A4 * !B1 * Y)	0.00562	0.00574	0.00565
	(A2 * !A3 * B1 * !Y)	-0.00319	-0.00366	-0.00363
	(A2 * !A3 * B1 * !Y)	0.00465	0.00470	0.00467
	(A2 * !A3 * !B1 * Y)	-0.00110	-0.00112	-0.00110
	(A2 * !A3 * !B1 * Y)	0.00562	0.00574	0.00565
	(!A2 * B1 * !Y)	-0.00356	-0.00372	-0.00370
	(!A2 * B1 * !Y)	0.00465	0.00470	0.00467
	(!A2 * !B1 * Y)	-0.00113	-0.00116	-0.00113
	(!A2 * !B1 * Y)	0.00563	0.00575	0.00565

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	-0.00770	-0.00771	-0.00768
	(A2 * A3 * A4 * B1 * !Y)	0.00901	0.00904	0.00901
	(A2 * A3 * !A4 * B1 * !Y)	-0.00605	-0.00721	-0.00719
	(A2 * A3 * !A4 * B1 * !Y)	0.00925	0.00932	0.00925
	(A2 * A3 * !A4 * !B1 * Y)	-0.00228	-0.00232	-0.00225
	(A2 * A3 * !A4 * !B1 * Y)	0.01103	0.01126	0.01108
	(A2 * !A3 * B1 * !Y)	-0.00628	-0.00733	-0.00729
	(A2 * !A3 * B1 * !Y)	0.00925	0.00931	0.00924
	(A2 * !A3 * !B1 * Y)	-0.00229	-0.00233	-0.00226
	(A2 * !A3 * !B1 * Y)	0.01103	0.01126	0.01108
	(!A2 * B1 * !Y)	-0.00714	-0.00745	-0.00743
	(!A2 * B1 * !Y)	0.00921	0.00928	0.00924
	(!A2 * !B1 * Y)	-0.00237	-0.00242	-0.00238
	(!A2 * !B1 * Y)	0.01104	0.01127	0.01109

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)**	0.00203	0.00188	0.00186
	(A1 * A3 * A4 * B1 * !Y)	-0.00206	-0.00231	-0.00233
	(A1 * A3 * !A4 * B1 * !Y)	0.00177	0.00177	0.00177
	(A1 * A3 * !A4 * B1 * !Y)	-0.00238	-0.00238	-0.00238
	(A1 * A3 * !A4 * !B1 * Y)	0.00068	0.00069	0.00070
	(A1 * A3 * !A4 * !B1 * Y)	-0.00247	-0.00248	-0.00248
	(A1 * !A3 * B1 * !Y)	0.00180	0.00182	0.00181
	(A1 * !A3 * B1 * !Y)	-0.00237	-0.00239	-0.00238
	(A1 * !A3 * !B1 * Y)	0.00074	0.00073	0.00074
	(A1 * !A3 * !B1 * Y)	-0.00249	-0.00248	-0.00248
	(!A1 * A3 * A4 * B1 * !Y)	0.00180	0.00182	0.00181
	(!A1 * A3 * A4 * B1 * !Y)	-0.00237	-0.00239	-0.00238
	(!A1 * A3 * A4 * !B1 * Y)	0.00169	0.00170	0.00169
	(!A1 * A3 * A4 * !B1 * Y)	-0.00249	-0.00249	-0.00248
	(!A1 * A3 * !A4 * B1 * !Y)	0.00105	0.00106	0.00105
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00237	-0.00239	-0.00238
	(!A1 * A3 * !A4 * !B1 * Y)	0.00089	0.00089	0.00089
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00250	-0.00250	-0.00250
	(!A1 * !A3 * B1 * !Y)	0.00110	0.00109	0.00109
	(!A1 * !A3 * B1 * !Y)	-0.00239	-0.00238	-0.00238
	(!A1 * !A3 * !B1 * Y)	0.00089	0.00090	0.00090
	(!A1 * !A3 * !B1 * Y)	-0.00249	-0.00251	-0.00250

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00410	0.00380	0.00376
	(A1 * A3 * A4 * B1 * !Y)	-0.00408	-0.00465	-0.00463
	(A1 * A3 * !A4 * B1 * !Y)	0.00355	0.00356	0.00355
	(A1 * A3 * !A4 * B1 * !Y)	-0.00474	-0.00475	-0.00474
	(A1 * A3 * !A4 * !B1 * Y)	0.00152	0.00152	0.00154
	(A1 * A3 * !A4 * !B1 * Y)	-0.00478	-0.00480	-0.00479
	(A1 * !A3 * B1 * !Y)	0.00360	0.00362	0.00361
	(A1 * !A3 * B1 * !Y)	-0.00473	-0.00475	-0.00474
	(A1 * !A3 * !B1 * Y)	0.00160	0.00161	0.00162
	(A1 * !A3 * !B1 * Y)	-0.00478	-0.00481	-0.00479
	(!A1 * A3 * A4 * B1 * !Y)	0.00365	0.00366	0.00365
	(!A1 * A3 * A4 * B1 * !Y)	-0.00474	-0.00475	-0.00474
	(!A1 * A3 * A4 * !B1 * Y)	0.00355	0.00357	0.00355
	(!A1 * A3 * A4 * !B1 * Y)	-0.00480	-0.00481	-0.00479
	(!A1 * A3 * !A4 * B1 * !Y)	0.00213	0.00213	0.00212
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00475	-0.00475	-0.00474
	(!A1 * A3 * !A4 * !B1 * Y)	0.00195	0.00196	0.00194
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00483	-0.00485	-0.00482
	(!A1 * !A3 * B1 * !Y)	0.00219	0.00219	0.00218
	(!A1 * !A3 * B1 * !Y)	-0.00475	-0.00475	-0.00474
	(!A1 * !A3 * !B1 * Y)	0.00193	0.00194	0.00193
	(!A1 * !A3 * !B1 * Y)	-0.00484	-0.00485	-0.00483

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00814	0.00752	0.00742
	(A1 * A3 * A4 * B1 * !Y)	-0.00810	-0.00923	-0.00919
	(A1 * A3 * !A4 * B1 * !Y)	0.00691	0.00694	0.00691
	(A1 * A3 * !A4 * B1 * !Y)	-0.00941	-0.00945	-0.00941
	(A1 * A3 * !A4 * !B1 * Y)	0.00288	0.00290	0.00298
	(A1 * A3 * !A4 * !B1 * Y)	-0.00943	-0.00947	-0.00943
	(A1 * !A3 * B1 * !Y)	0.00701	0.00706	0.00704
	(A1 * !A3 * B1 * !Y)	-0.00939	-0.00944	-0.00941
	(A1 * !A3 * !B1 * Y)	0.00300	0.00302	0.00305
	(A1 * !A3 * !B1 * Y)	-0.00943	-0.00947	-0.00943
	(!A1 * A3 * A4 * B1 * !Y)	0.00711	0.00716	0.00714
	(!A1 * A3 * A4 * B1 * !Y)	-0.00939	-0.00943	-0.00941
	(!A1 * A3 * A4 * !B1 * Y)	0.00707	0.00712	0.00710
	(!A1 * A3 * A4 * !B1 * Y)	-0.00943	-0.00948	-0.00946
	(!A1 * A3 * !A4 * B1 * !Y)	0.00399	0.00404	0.00403
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00936	-0.00944	-0.00941
	(!A1 * A3 * !A4 * !B1 * Y)	0.00372	0.00378	0.00374
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00945	-0.00956	-0.00950
	(!A1 * !A3 * B1 * !Y)	0.00409	0.00412	0.00408
	(!A1 * !A3 * B1 * !Y)	-0.00940	-0.00948	-0.00941
	(!A1 * !A3 * !B1 * Y)	0.00367	0.00368	0.00366
	(!A1 * !A3 * !B1 * Y)	-0.00952	-0.00955	-0.00951

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)**	-0.00185	-0.00185	-0.00185
	(A1 * A3 * A4 * B1 * !Y)	0.00231	0.00231	0.00233
	(A1 * A3 * !A4 * B1 * !Y)	-0.00156	-0.00177	-0.00177
	(A1 * A3 * !A4 * B1 * !Y)	0.00238	0.00240	0.00239
	(A1 * A3 * !A4 * !B1 * Y)	-0.00068	-0.00069	-0.00070
	(A1 * A3 * !A4 * !B1 * Y)	0.00255	0.00256	0.00250
	(A1 * !A3 * B1 * !Y)	-0.00174	-0.00181	-0.00181
	(A1 * !A3 * B1 * !Y)	0.00239	0.00240	0.00239
	(A1 * !A3 * !B1 * Y)	-0.00070	-0.00070	-0.00071
	(A1 * !A3 * !B1 * Y)	0.00254	0.00256	0.00251
	(!A1 * A3 * A4 * B1 * !Y)	-0.00174	-0.00181	-0.00181
	(!A1 * A3 * A4 * B1 * !Y)	0.00239	0.00241	0.00239
	(!A1 * A3 * A4 * !B1 * Y)	-0.00152	-0.00170	-0.00169
	(!A1 * A3 * A4 * !B1 * Y)	0.00263	0.00251	0.00249
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00105	-0.00106	-0.00105
	(!A1 * A3 * !A4 * B1 * !Y)	0.00238	0.00241	0.00239
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00089	-0.00089	-0.00089
	(!A1 * A3 * !A4 * !B1 * Y)	0.00260	0.00258	0.00250
	(!A1 * !A3 * B1 * !Y)	-0.00110	-0.00109	-0.00109
	(!A1 * !A3 * B1 * !Y)	0.00240	0.00241	0.00239
	(!A1 * !A3 * !B1 * Y)	-0.00089	-0.00090	-0.00090
	(!A1 * !A3 * !B1 * Y)	0.00262	0.00263	0.00253

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00374	-0.00378	-0.00374
	(A1 * A3 * A4 * B1 * !Y)	0.00461	0.00471	0.00463
	(A1 * A3 * !A4 * B1 * !Y)	-0.00311	-0.00356	-0.00355
	(A1 * A3 * !A4 * B1 * !Y)	0.00474	0.00479	0.00476
	(A1 * A3 * !A4 * !B1 * Y)	-0.00147	-0.00149	-0.00151
	(A1 * A3 * !A4 * !B1 * Y)	0.00492	0.00498	0.00484
	(A1 * !A3 * B1 * !Y)	-0.00349	-0.00362	-0.00361
	(A1 * !A3 * B1 * !Y)	0.00474	0.00477	0.00476
	(A1 * !A3 * !B1 * Y)	-0.00152	-0.00154	-0.00157
	(A1 * !A3 * !B1 * Y)	0.00493	0.00497	0.00484
	(!A1 * A3 * A4 * B1 * !Y)	-0.00347	-0.00366	-0.00365
	(!A1 * A3 * A4 * B1 * !Y)	0.00474	0.00479	0.00476
	(!A1 * A3 * A4 * !B1 * Y)	-0.00307	-0.00357	-0.00355
	(!A1 * A3 * A4 * !B1 * Y)	0.00520	0.00483	0.00480
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00213	-0.00213	-0.00212
	(!A1 * A3 * !A4 * B1 * !Y)	0.00475	0.00481	0.00476
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00195	-0.00196	-0.00194
	(!A1 * A3 * !A4 * !B1 * Y)	0.00503	0.00496	0.00483
	(!A1 * !A3 * B1 * !Y)	-0.00219	-0.00219	-0.00218
	(!A1 * !A3 * B1 * !Y)	0.00478	0.00481	0.00476
	(!A1 * !A3 * !B1 * Y)	-0.00193	-0.00194	-0.00193
	(!A1 * !A3 * !B1 * Y)	0.00508	0.00512	0.00490

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00739	-0.00743	-0.00740
	(A1 * A3 * A4 * B1 * !Y)	0.00915	0.00924	0.00919
	(A1 * A3 * !A4 * B1 * !Y)	-0.00599	-0.00694	-0.00691
	(A1 * A3 * !A4 * B1 * !Y)	0.00941	0.00953	0.00945
	(A1 * A3 * !A4 * !B1 * Y)	-0.00278	-0.00283	-0.00288
	(A1 * A3 * !A4 * !B1 * Y)	0.00967	0.00981	0.00955
	(A1 * !A3 * B1 * !Y)	-0.00683	-0.00706	-0.00704
	(A1 * !A3 * B1 * !Y)	0.00941	0.00949	0.00945
	(A1 * !A3 * !B1 * Y)	-0.00284	-0.00289	-0.00295
	(A1 * !A3 * !B1 * Y)	0.00966	0.00981	0.00955
	(!A1 * A3 * A4 * B1 * !Y)	-0.00685	-0.00716	-0.00714
	(!A1 * A3 * A4 * B1 * !Y)	0.00941	0.00950	0.00944
	(!A1 * A3 * A4 * !B1 * Y)	-0.00607	-0.00712	-0.00710
	(!A1 * A3 * A4 * !B1 * Y)	0.01028	0.00957	0.00949
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00399	-0.00404	-0.00403
	(!A1 * A3 * !A4 * B1 * !Y)	0.00942	0.00955	0.00945
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00372	-0.00378	-0.00374
	(!A1 * A3 * !A4 * !B1 * Y)	0.00991	0.00979	0.00952
	(!A1 * !A3 * B1 * !Y)	-0.00409	-0.00412	-0.00408
	(!A1 * !A3 * B1 * !Y)	0.00940	0.00955	0.00945
	(!A1 * !A3 * !B1 * Y)	-0.00367	-0.00368	-0.00366
	(!A1 * !A3 * !B1 * Y)	0.00988	0.01007	0.00963

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)**	0.00198	0.00185	0.00183
	(A1 * A2 * A4 * B1 * !Y)	-0.00208	-0.00233	-0.00232
	(A1 * A2 * !A4 * B1 * !Y)	0.00174	0.00176	0.00175
	(A1 * A2 * !A4 * B1 * !Y)	-0.00236	-0.00239	-0.00238
	(A1 * A2 * !A4 * !B1 * Y)	0.00072	0.00072	0.00072
	(A1 * A2 * !A4 * !B1 * Y)	-0.00243	-0.00244	-0.00242
	(A1 * !A2 * A4 * !B1 * Y)	0.00169	0.00172	0.00170
	(A1 * !A2 * A4 * !B1 * Y)	-0.00245	-0.00246	-0.00245
	(A1 * !A2 * !A4 * !B1 * Y)	0.00085	0.00086	0.00085
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00245	-0.00247	-0.00246
	(!A2 * A4 * B1 * !Y)	0.00176	0.00178	0.00177
	(!A2 * A4 * B1 * !Y)	-0.00237	-0.00238	-0.00238
	(!A2 * !A4 * B1 * !Y)	0.00100	0.00101	0.00100
	(!A2 * !A4 * B1 * !Y)	-0.00237	-0.00239	-0.00238
	(!A1 * A2 * A4 * B1 * !Y)	0.00174	0.00175	0.00174
	(!A1 * A2 * A4 * B1 * !Y)	-0.00238	-0.00238	-0.00238
	(!A1 * A2 * A4 * !B1 * Y)	0.00167	0.00168	0.00167
	(!A1 * A2 * A4 * !B1 * Y)	-0.00246	-0.00245	-0.00245
	(!A1 * A2 * !A4 * B1 * !Y)	0.00101	0.00101	0.00101
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00238	-0.00238	-0.00238
	(!A1 * A2 * !A4 * !B1 * Y)	0.00085	0.00087	0.00086
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00245	-0.00248	-0.00246
	(!A1 * !A2 * A4 * !B1 * Y)	0.00169	0.00171	0.00170
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00245	-0.00246	-0.00245
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00090	0.00091	0.00090
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00246	-0.00247	-0.00246

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	0.00403	0.00373	0.00369
	(A1 * A2 * A4 * B1 * !Y)	-0.00410	-0.00464	-0.00461
	(A1 * A2 * !A4 * B1 * !Y)	0.00350	0.00351	0.00351
	(A1 * A2 * !A4 * B1 * !Y)	-0.00471	-0.00472	-0.00471
	(A1 * A2 * !A4 * !B1 * Y)	0.00159	0.00160	0.00160
	(A1 * A2 * !A4 * !B1 * Y)	-0.00464	-0.00465	-0.00461
	(A1 * !A2 * A4 * !B1 * Y)	0.00352	0.00355	0.00353
	(A1 * !A2 * A4 * !B1 * Y)	-0.00470	-0.00473	-0.00471
	(A1 * !A2 * !A4 * !B1 * Y)	0.00190	0.00190	0.00189
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00472	-0.00474	-0.00472
	(!A2 * A4 * B1 * !Y)	0.00353	0.00356	0.00355
	(!A2 * A4 * B1 * !Y)	-0.00470	-0.00472	-0.00472
	(!A2 * !A4 * B1 * !Y)	0.00203	0.00204	0.00203
	(!A2 * !A4 * B1 * !Y)	-0.00471	-0.00473	-0.00471
	(!A1 * A2 * A4 * B1 * !Y)	0.00349	0.00353	0.00351
	(!A1 * A2 * A4 * B1 * !Y)	-0.00469	-0.00473	-0.00471
	(!A1 * A2 * A4 * !B1 * Y)	0.00348	0.00351	0.00350
	(!A1 * A2 * A4 * !B1 * Y)	-0.00470	-0.00473	-0.00472
	(!A1 * A2 * !A4 * B1 * !Y)	0.00203	0.00205	0.00203
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00470	-0.00475	-0.00471
	(!A1 * A2 * !A4 * !B1 * Y)	0.00187	0.00189	0.00188
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00472	-0.00475	-0.00474
	(!A1 * !A2 * A4 * !B1 * Y)	0.00351	0.00355	0.00353
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00470	-0.00474	-0.00472
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00198	0.00199	0.00197
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00472	-0.00474	-0.00472

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	0.00807	0.00744	0.00734
	(A1 * A2 * A4 * B1 * !Y)	-0.00820	-0.00933	-0.00929
	(A1 * A2 * !A4 * B1 * !Y)	0.00699	0.00702	0.00700
	(A1 * A2 * !A4 * B1 * !Y)	-0.00952	-0.00955	-0.00951
	(A1 * A2 * !A4 * !B1 * Y)	0.00299	0.00303	0.00301
	(A1 * A2 * !A4 * !B1 * Y)	-0.00935	-0.00943	-0.00931
	(A1 * !A2 * A4 * !B1 * Y)	0.00693	0.00697	0.00697
	(A1 * !A2 * A4 * !B1 * Y)	-0.00949	-0.00953	-0.00952
	(A1 * !A2 * !A4 * !B1 * Y)	0.00352	0.00353	0.00352
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00953	-0.00955	-0.00952
	(!A2 * A4 * B1 * !Y)	0.00695	0.00697	0.00698
	(!A2 * A4 * B1 * !Y)	-0.00949	-0.00951	-0.00951
	(!A2 * !A4 * B1 * !Y)	0.00380	0.00381	0.00379
	(!A2 * !A4 * B1 * !Y)	-0.00950	-0.00955	-0.00951
	(!A1 * A2 * A4 * B1 * !Y)	0.00696	0.00698	0.00696
	(!A1 * A2 * A4 * B1 * !Y)	-0.00954	-0.00953	-0.00951
	(!A1 * A2 * A4 * !B1 * Y)	0.00696	0.00698	0.00695
	(!A1 * A2 * A4 * !B1 * Y)	-0.00954	-0.00954	-0.00952
	(!A1 * A2 * !A4 * B1 * !Y)	0.00390	0.00394	0.00392
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00948	-0.00954	-0.00951
	(!A1 * A2 * !A4 * !B1 * Y)	0.00362	0.00366	0.00363
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00953	-0.00961	-0.00954
	(!A1 * !A2 * A4 * !B1 * Y)	0.00691	0.00697	0.00694
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00949	-0.00954	-0.00952
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00370	0.00370	0.00369
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00952	-0.00955	-0.00952

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)**	-0.00182	-0.00183	-0.00182
	(A1 * A2 * A4 * B1 * !Y)	0.00231	0.00234	0.00232
	(A1 * A2 * !A4 * B1 * !Y)	-0.00171	-0.00176	-0.00175
	(A1 * A2 * !A4 * B1 * !Y)	0.00238	0.00240	0.00238
	(A1 * A2 * !A4 * !B1 * Y)	-0.00068	-0.00069	-0.00069
	(A1 * A2 * !A4 * !B1 * Y)	0.00247	0.00251	0.00248
	(A1 * !A2 * A4 * !B1 * Y)	-0.00160	-0.00170	-0.00170
	(A1 * !A2 * A4 * !B1 * Y)	0.00245	0.00248	0.00246
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00085	-0.00086	-0.00085
	(A1 * !A2 * !A4 * !B1 * Y)	0.00255	0.00257	0.00250
	(!A2 * A4 * B1 * !Y)	-0.00170	-0.00178	-0.00177
	(!A2 * A4 * B1 * !Y)	0.00237	0.00241	0.00238
	(!A2 * !A4 * B1 * !Y)	-0.00100	-0.00101	-0.00100
	(!A2 * !A4 * B1 * !Y)	0.00239	0.00241	0.00238
	(!A1 * A2 * A4 * B1 * !Y)	-0.00158	-0.00175	-0.00174
	(!A1 * A2 * A4 * B1 * !Y)	0.00238	0.00240	0.00238
	(!A1 * A2 * A4 * !B1 * Y)	-0.00150	-0.00165	-0.00167
	(!A1 * A2 * A4 * !B1 * Y)	0.00246	0.00245	0.00246
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00101	-0.00101	-0.00101
	(!A1 * A2 * !A4 * B1 * !Y)	0.00238	0.00241	0.00238
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00085	-0.00087	-0.00086
	(!A1 * A2 * !A4 * !B1 * Y)	0.00247	0.00251	0.00247
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00161	-0.00170	-0.00170
	(!A1 * !A2 * A4 * !B1 * Y)	0.00245	0.00248	0.00246
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00090	-0.00091	-0.00090
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00246	0.00249	0.00247

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	-0.00368	-0.00371	-0.00367
	(A1 * A2 * A4 * B1 * !Y)	0.00461	0.00469	0.00461
	(A1 * A2 * !A4 * B1 * !Y)	-0.00338	-0.00351	-0.00351
	(A1 * A2 * !A4 * B1 * !Y)	0.00473	0.00480	0.00473
	(A1 * A2 * !A4 * !B1 * Y)	-0.00149	-0.00151	-0.00151
	(A1 * A2 * !A4 * !B1 * Y)	0.00476	0.00483	0.00475
	(A1 * !A2 * A4 * !B1 * Y)	-0.00334	-0.00355	-0.00353
	(A1 * !A2 * A4 * !B1 * Y)	0.00471	0.00475	0.00473
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00190	-0.00190	-0.00189
	(A1 * !A2 * !A4 * !B1 * Y)	0.00491	0.00496	0.00479
	(!A2 * A4 * B1 * !Y)	-0.00342	-0.00356	-0.00355
	(!A2 * A4 * B1 * !Y)	0.00471	0.00475	0.00473
	(!A2 * !A4 * B1 * !Y)	-0.00203	-0.00204	-0.00203
	(!A2 * !A4 * B1 * !Y)	0.00471	0.00478	0.00473
	(!A1 * A2 * A4 * B1 * !Y)	-0.00316	-0.00353	-0.00351
	(!A1 * A2 * A4 * B1 * !Y)	0.00473	0.00476	0.00473
	(!A1 * A2 * A4 * !B1 * Y)	-0.00313	-0.00351	-0.00350
	(!A1 * A2 * A4 * !B1 * Y)	0.00477	0.00476	0.00473
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00203	-0.00205	-0.00203
	(!A1 * A2 * !A4 * B1 * !Y)	0.00472	0.00478	0.00473
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00187	-0.00189	-0.00188
	(!A1 * A2 * !A4 * !B1 * Y)	0.00476	0.00483	0.00475
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00338	-0.00355	-0.00353
	(!A1 * !A2 * A4 * !B1 * Y)	0.00471	0.00475	0.00473
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00198	-0.00199	-0.00197
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00472	0.00479	0.00473

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	-0.00733	-0.00738	-0.00731
	(A1 * A2 * A4 * B1 * !Y)	0.00930	0.00944	0.00929
	(A1 * A2 * !A4 * B1 * !Y)	-0.00677	-0.00702	-0.00700
	(A1 * A2 * !A4 * B1 * !Y)	0.00952	0.00968	0.00955
	(A1 * A2 * !A4 * !B1 * Y)	-0.00277	-0.00281	-0.00281
	(A1 * A2 * !A4 * !B1 * Y)	0.00967	0.00981	0.00962
	(A1 * !A2 * A4 * !B1 * Y)	-0.00651	-0.00697	-0.00697
	(A1 * !A2 * A4 * !B1 * Y)	0.00950	0.00959	0.00954
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00352	-0.00353	-0.00352
	(A1 * !A2 * !A4 * !B1 * Y)	0.00995	0.01005	0.00969
	(!A2 * A4 * B1 * !Y)	-0.00674	-0.00697	-0.00698
	(!A2 * A4 * B1 * !Y)	0.00949	0.00959	0.00955
	(!A2 * !A4 * B1 * !Y)	-0.00380	-0.00381	-0.00379
	(!A2 * !A4 * B1 * !Y)	0.00950	0.00965	0.00955
	(!A1 * A2 * A4 * B1 * !Y)	-0.00612	-0.00698	-0.00696
	(!A1 * A2 * A4 * B1 * !Y)	0.00956	0.00958	0.00955
	(!A1 * A2 * A4 * !B1 * Y)	-0.00604	-0.00698	-0.00695
	(!A1 * A2 * A4 * !B1 * Y)	0.00968	0.00958	0.00954
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00390	-0.00394	-0.00392
	(!A1 * A2 * !A4 * B1 * !Y)	0.00953	0.00965	0.00955
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00362	-0.00366	-0.00363
	(!A1 * A2 * !A4 * !B1 * Y)	0.00961	0.00973	0.00956
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00662	-0.00697	-0.00694
	(!A1 * !A2 * A4 * !B1 * Y)	0.00949	0.00959	0.00954
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00370	-0.00370	-0.00369
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00952	0.00965	0.00955

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)**	0.00210	0.00197	0.00195
	(A1 * A2 * A3 * B1 * !Y)	-0.00207	-0.00232	-0.00231
	(A1 * A2 * !A3 * !B1 * Y)	0.00171	0.00173	0.00172
	(A1 * A2 * !A3 * !B1 * Y)	-0.00252	-0.00254	-0.00253
	(A1 * !A2 * A3 * !B1 * Y)	0.00172	0.00172	0.00171
	(A1 * !A2 * A3 * !B1 * Y)	-0.00253	-0.00253	-0.00253
	(A1 * !A2 * !A3 * !B1 * Y)	0.00170	0.00172	0.00171
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00252	-0.00254	-0.00253
	(!A3 * B1 * !Y)	0.00189	0.00190	0.00189
	(!A3 * B1 * !Y)	-0.00236	-0.00237	-0.00237
	(!A2 * A3 * B1 * !Y)	0.00185	0.00186	0.00185
	(!A2 * A3 * B1 * !Y)	-0.00237	-0.00237	-0.00237
	(!A1 * A2 * A3 * B1 * !Y)	0.00186	0.00188	0.00187
	(!A1 * A2 * A3 * B1 * !Y)	-0.00236	-0.00238	-0.00237
	(!A1 * A2 * A3 * !B1 * Y)	0.00170	0.00171	0.00170
	(!A1 * A2 * A3 * !B1 * Y)	-0.00252	-0.00253	-0.00253
	(!A1 * !A3 * !B1 * Y)	0.00170	0.00171	0.00171
	(!A1 * !A3 * !B1 * Y)	-0.00252	-0.00253	-0.00253
	(!A1 * !A2 * A3 * !B1 * Y)	0.00169	0.00169	0.00169
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00253	-0.00253	-0.00253

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00404	0.00376	0.00371
	(A1 * A2 * A3 * B1 * !Y)	-0.00413	-0.00465	-0.00462
	(A1 * A2 * !A3 * !B1 * Y)	0.00352	0.00358	0.00354
	(A1 * A2 * !A3 * !B1 * Y)	-0.00471	-0.00476	-0.00473
	(A1 * !A2 * A3 * !B1 * Y)	0.00353	0.00355	0.00353
	(A1 * !A2 * A3 * !B1 * Y)	-0.00473	-0.00475	-0.00473
	(A1 * !A2 * !A3 * !B1 * Y)	0.00352	0.00357	0.00354
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00472	-0.00475	-0.00473
	(!A3 * B1 * !Y)	0.00353	0.00358	0.00354
	(!A3 * B1 * !Y)	-0.00471	-0.00476	-0.00473
	(!A2 * A3 * B1 * !Y)	0.00353	0.00355	0.00353
	(!A2 * A3 * B1 * !Y)	-0.00473	-0.00474	-0.00473
	(!A1 * A2 * A3 * B1 * !Y)	0.00349	0.00351	0.00350
	(!A1 * A2 * A3 * B1 * !Y)	-0.00473	-0.00473	-0.00473
	(!A1 * A2 * A3 * !B1 * Y)	0.00350	0.00351	0.00350
	(!A1 * A2 * A3 * !B1 * Y)	-0.00473	-0.00474	-0.00473
	(!A1 * !A3 * !B1 * Y)	0.00352	0.00357	0.00354
	(!A1 * !A3 * !B1 * Y)	-0.00472	-0.00475	-0.00473
	(!A1 * !A2 * A3 * !B1 * Y)	0.00352	0.00353	0.00352
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00473	-0.00473	-0.00473

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00806	0.00746	0.00736
	(A1 * A2 * A3 * B1 * !Y)	-0.00824	-0.00918	-0.00922
	(A1 * A2 * !A3 * !B1 * Y)	0.00705	0.00712	0.00709
	(A1 * A2 * !A3 * !B1 * Y)	-0.00943	-0.00948	-0.00946
	(A1 * !A2 * A3 * !B1 * Y)	0.00688	0.00694	0.00691
	(A1 * !A2 * A3 * !B1 * Y)	-0.00943	-0.00948	-0.00946
	(A1 * !A2 * !A3 * !B1 * Y)	0.00705	0.00711	0.00708
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00943	-0.00948	-0.00946
	(!A3 * B1 * !Y)	0.00702	0.00707	0.00702
	(!A3 * B1 * !Y)	-0.00945	-0.00945	-0.00945
	(!A2 * A3 * B1 * !Y)	0.00687	0.00693	0.00691
	(!A2 * A3 * B1 * !Y)	-0.00942	-0.00947	-0.00945
	(!A1 * A2 * A3 * B1 * !Y)	0.00683	0.00682	0.00682
	(!A1 * A2 * A3 * B1 * !Y)	-0.00947	-0.00946	-0.00945
	(!A1 * A2 * A3 * !B1 * Y)	0.00685	0.00685	0.00684
	(!A1 * A2 * A3 * !B1 * Y)	-0.00948	-0.00946	-0.00946
	(!A1 * !A3 * !B1 * Y)	0.00705	0.00708	0.00708
	(!A1 * !A3 * !B1 * Y)	-0.00943	-0.00945	-0.00946
	(!A1 * !A2 * A3 * !B1 * Y)	0.00687	0.00693	0.00690
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00944	-0.00948	-0.00946

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)**	-0.00194	-0.00195	-0.00194
	(A1 * A2 * A3 * B1 * !Y)	0.00230	0.00233	0.00231
	(A1 * A2 * !A3 * !B1 * Y)	-0.00164	-0.00173	-0.00172
	(A1 * A2 * !A3 * !B1 * Y)	0.00252	0.00255	0.00253
	(A1 * !A2 * A3 * !B1 * Y)	-0.00158	-0.00170	-0.00171
	(A1 * !A2 * A3 * !B1 * Y)	0.00253	0.00258	0.00254
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00165	-0.00172	-0.00171
	(A1 * !A2 * !A3 * !B1 * Y)	0.00252	0.00256	0.00253
	(!A3 * B1 * !Y)	-0.00182	-0.00187	-0.00189
	(!A3 * B1 * !Y)	0.00236	0.00239	0.00237
	(!A2 * A3 * B1 * !Y)	-0.00174	-0.00186	-0.00185
	(!A2 * A3 * B1 * !Y)	0.00237	0.00240	0.00237
	(!A1 * A2 * A3 * B1 * !Y)	-0.00171	-0.00186	-0.00187
	(!A1 * A2 * A3 * B1 * !Y)	0.00236	0.00240	0.00237
	(!A1 * A2 * A3 * !B1 * Y)	-0.00154	-0.00169	-0.00170
	(!A1 * A2 * A3 * !B1 * Y)	0.00252	0.00256	0.00253
	(!A1 * !A3 * !B1 * Y)	-0.00165	-0.00171	-0.00171
	(!A1 * !A3 * !B1 * Y)	0.00252	0.00256	0.00253
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00158	-0.00169	-0.00169
	(!A1 * !A2 * A3 * !B1 * Y)	0.00253	0.00256	0.00254

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00370	-0.00371	-0.00370
	(A1 * A2 * A3 * B1 * !Y)	0.00461	0.00465	0.00462
	(A1 * A2 * !A3 * !B1 * Y)	-0.00337	-0.00358	-0.00354
	(A1 * A2 * !A3 * !B1 * Y)	0.00472	0.00477	0.00474
	(A1 * !A2 * A3 * !B1 * Y)	-0.00321	-0.00349	-0.00353
	(A1 * !A2 * A3 * !B1 * Y)	0.00475	0.00479	0.00474
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00339	-0.00357	-0.00354
	(A1 * !A2 * !A3 * !B1 * Y)	0.00472	0.00477	0.00474
	(!A3 * B1 * !Y)	-0.00342	-0.00356	-0.00354
	(!A3 * B1 * !Y)	0.00472	0.00477	0.00474
	(!A2 * A3 * B1 * !Y)	-0.00322	-0.00351	-0.00353
	(!A2 * A3 * B1 * !Y)	0.00475	0.00478	0.00474
	(!A1 * A2 * A3 * B1 * !Y)	-0.00316	-0.00347	-0.00350
	(!A1 * A2 * A3 * B1 * !Y)	0.00475	0.00480	0.00474
	(!A1 * A2 * A3 * !B1 * Y)	-0.00315	-0.00347	-0.00350
	(!A1 * A2 * A3 * !B1 * Y)	0.00475	0.00480	0.00474
	(!A1 * !A3 * !B1 * Y)	-0.00339	-0.00357	-0.00354
	(!A1 * !A3 * !B1 * Y)	0.00472	0.00477	0.00474
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00321	-0.00349	-0.00352
	(!A1 * !A2 * A3 * !B1 * Y)	0.00474	0.00479	0.00474

sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * B1 * !Y)	-0.00735	-0.00733	-0.00733
	(A1 * A2 * A3 * B1 * !Y)	0.00922	0.00918	0.00922
	(A1 * A2 * !A3 * !B1 * Y)	-0.00666	-0.00710	-0.00709
	(A1 * A2 * !A3 * !B1 * Y)	0.00945	0.00955	0.00948
	(A1 * !A2 * A3 * !B1 * Y)	-0.00635	-0.00693	-0.00691
	(A1 * !A2 * A3 * !B1 * Y)	0.00950	0.00959	0.00948
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00674	-0.00711	-0.00708
	(A1 * !A2 * !A3 * !B1 * Y)	0.00945	0.00955	0.00948
	(!A3 * B1 * !Y)	-0.00681	-0.00702	-0.00702
	(!A3 * B1 * !Y)	0.00945	0.00945	0.00949
	(!A2 * A3 * B1 * !Y)	-0.00636	-0.00692	-0.00691
	(!A2 * A3 * B1 * !Y)	0.00950	0.00956	0.00949
	(!A1 * A2 * A3 * B1 * !Y)	-0.00627	-0.00682	-0.00682
	(!A1 * A2 * A3 * B1 * !Y)	0.00950	0.00959	0.00949
	(!A1 * A2 * A3 * !B1 * Y)	-0.00627	-0.00685	-0.00684
	(!A1 * A2 * A3 * !B1 * Y)	0.00950	0.00958	0.00948
	(!A1 * !A3 * !B1 * Y)	-0.00674	-0.00708	-0.00708
	(!A1 * !A3 * !B1 * Y)	0.00945	0.00955	0.00948
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00635	-0.00693	-0.00690
	(!A1 * !A2 * A3 * !B1 * Y)	0.00950	0.00959	0.00948

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)	0.00228	0.00231	0.00227
	(A1 * A2 * A3 * A4 * !Y)	-0.00109	-0.00110	-0.00108
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	0.00243	0.00244	0.00242
	(A1 * A2 * A3 * A4 * !Y)	-0.00222	-0.00222	-0.00220
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	0.00476	0.00486	0.00478
	(A1 * A2 * A3 * A4 * !Y)	-0.00432	-0.00442	-0.00434

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)	-0.00207	-0.00209	-0.00225
	(A1 * A2 * A3 * A4 * !Y)	0.00123	0.00123	0.00111
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	-0.00201	-0.00204	-0.00238
	(A1 * A2 * A3 * A4 * !Y)	0.00252	0.00253	0.00227
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	-0.00400	-0.00407	-0.00470
	(A1 * A2 * A3 * A4 * !Y)	0.00493	0.00496	0.00447

SKY130_FD_SC_HS__A41Ox

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00270	0.00267	0.00270	0.00264	0.00278	1.29369
sky130_fd_sc_hs__a41o_2	0.00266	0.00274	0.00280	0.00264	0.00280	2.45115
sky130_fd_sc_hs__a41o_4	0.00525	0.00510	0.00526	0.00506	0.00518	4.01638

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a41o_1	0.00000	0.18926	0.34320
sky130_fd_sc_hs__a41o_2	0.00000	0.24126	0.35169
sky130_fd_sc_hs__a41o_4	0.00000	0.48252	0.70337

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)	0.09227	0.56919	6.16129
	A2->X (RR)	0.10000	0.57507	6.13010
	A3->X (RR)	0.10598	0.56806	6.05228
	A4->X (RR)	0.10929	0.55438	5.93851
	B1->X (RR)	0.05445	0.49610	5.74219
sky130_fd_sc_hs__a41o_2	A1->X (RR)	0.09663	0.50750	6.14880
	A2->X (RR)	0.10549	0.50989	6.10733
	A3->X (RR)	0.11120	0.49821	6.01750
	A4->X (RR)	0.11406	0.48088	5.89444
	B1->X (RR)	0.05091	0.41829	5.69102
sky130_fd_sc_hs__a41o_4	A1->X (RR)	0.11161	0.48089	6.16024
	A2->X (RR)	0.12336	0.48882	6.18951
	A3->X (RR)	0.12899	0.45542	5.97161
	A4->X (RR)	0.13300	0.44019	5.84028
	B1->X (RR)	0.04807	0.35543	5.54739

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41o_1	A1->X (FF)	0.11743	0.50637	4.77582
	A2->X (FF)	0.13891	0.53908	4.86335
	A3->X (FF)	0.15378	0.56500	4.96375
	A4->X (FF)	0.16840	0.59077	5.06870
	B1->X (FF)	0.14087	0.59657	5.14296
sky130_fd_sc_hs__a41o_2	A1->X (FF)	0.13750	0.51344	4.75007
	A2->X (FF)	0.16034	0.54763	4.84398
	A3->X (FF)	0.17362	0.56936	4.92760
	A4->X (FF)	0.18646	0.59115	5.02744
	B1->X (FF)	0.16019	0.60127	5.11070
sky130_fd_sc_hs__a41o_4	A1->X (FF)	0.14387	0.47872	4.42336
	A2->X (FF)	0.16493	0.51067	4.50717
	A3->X (FF)	0.18102	0.53811	4.66569
	A4->X (FF)	0.19775	0.56461	4.77961
	B1->X (FF)	0.16787	0.58450	4.95244

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41o_1	A1	0.01453	0.01606	0.05838
	A1	0.00788	0.00941	0.05224
	A2	0.01582	0.01682	0.05576
	A2	0.00789	0.00890	0.04836
	A3	0.01706	0.01791	0.05796
	A3	0.00788	0.00874	0.04934
	A4	0.01837	0.01916	0.06023
	A4	0.00787	0.00866	0.05029
	B1	0.01004	0.01342	0.08222
	B1	0.00489	0.00830	0.07723
sky130_fd_sc_hs__a41o_2	A1	0.01698	0.01843	0.06028
	A1	0.01031	0.01180	0.05472
	A2	0.01832	0.01934	0.05781
	A2	0.01034	0.01138	0.05094
	A3	0.01961	0.02049	0.05994
	A3	0.01033	0.01124	0.05183
	A4	0.02084	0.02167	0.06224
	A4	0.01030	0.01118	0.05181
	B1	0.01220	0.01533	0.08344
	B1	0.00702	0.01022	0.07866

sky130_fd_sc_hs__a41o_4	**A1**	0.03311	0.03543	0.10303
	A1	0.01976	0.02213	0.09166
	A2	0.03559	0.03678	0.10895
	A2	0.01980	0.02099	0.09501
	A3	0.03842	0.03950	0.11636
	A3	0.01976	0.02085	0.09976
	A4	0.04090	0.04190	0.12123
	A4	0.01972	0.02083	0.10044
	B1	0.02242	0.02864	0.15179
	B1	0.01243	0.01871	0.14266

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41o_1	**A1**	0.00423	0.00501	0.04604
	A1	0.01095	0.01166	0.05276
	A2	0.00492	0.00559	0.04589
	A2	0.01286	0.01349	0.05259
	A3	0.00573	0.00634	0.04757
	A3	0.01481	0.01543	0.05549
	A4	0.00634	0.00694	0.04902
	A4	0.01666	0.01724	0.05833
	B1	0.00383	0.00805	0.06986
	B1	0.00897	0.01305	0.07448

sky130_fd_sc_hs__a41o_2	**A1**	0.00784	0.00826	0.04844
	A1	0.01456	0.01499	0.05502
	A2	0.00900	0.00957	0.04979
	A2	0.01698	0.01701	0.05545
	A3	0.00983	0.00983	0.05079
	A3	0.01902	0.01896	0.05849
	A4	0.01053	0.01030	0.05092
	A4	0.02087	0.02063	0.06109
	B1	0.00695	0.01099	0.07304
	B1	0.01213	0.01611	0.07713
sky130_fd_sc_hs__a41o_4	**A1**	0.01550	0.01531	0.08896
	A1	0.02898	0.02874	0.10119
	A2	0.01842	0.01842	0.09208
	A2	0.03423	0.03371	0.10629
	A3	0.01990	0.01920	0.09921
	A3	0.03837	0.03751	0.11431
	A4	0.02221	0.02086	0.10210
	A4	0.04292	0.04155	0.12061
	B1	0.01379	0.02133	0.14189
	B1	0.02375	0.03117	0.15028

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)**	0.00199	0.00182	0.00180
	(A2 * A3 * A4 * B1 * X)	-0.00185	-0.00211	-0.00211
	(A2 * A3 * !A4 * B1 * X)	0.00168	0.00170	0.00169
	(A2 * A3 * !A4 * B1 * X)	-0.00216	-0.00217	-0.00216
	(A2 * A3 * !A4 * !B1 * !X)	0.00061	0.00061	0.00055
	(A2 * A3 * !A4 * !B1 * !X)	-0.00237	-0.00238	-0.00251
	(A2 * !A3 * B1 * X)	0.00170	0.00171	0.00170
	(A2 * !A3 * B1 * X)	-0.00216	-0.00216	-0.00216
	(A2 * !A3 * !B1 * !X)	0.00059	0.00059	0.00055
	(A2 * !A3 * !B1 * !X)	-0.00243	-0.00244	-0.00252
	(!A2 * B1 * X)	0.00173	0.00174	0.00174
	(!A2 * B1 * X)	-0.00216	-0.00216	-0.00216
	(!A2 * !B1 * !X)	0.00058	0.00058	0.00056
	(!A2 * !B1 * !X)	-0.00248	-0.00249	-0.00252
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	0.00198	0.00180	0.00178
	(A2 * A3 * A4 * B1 * X)	-0.00186	-0.00212	-0.00212
	(A2 * A3 * !A4 * B1 * X)	0.00166	0.00167	0.00167
	(A2 * A3 * !A4 * B1 * X)	-0.00216	-0.00218	-0.00217
	(A2 * A3 * !A4 * !B1 * !X)	0.00062	0.00062	0.00056
	(A2 * A3 * !A4 * !B1 * !X)	-0.00235	-0.00236	-0.00249
	(A2 * !A3 * B1 * X)	0.00168	0.00169	0.00169
	(A2 * !A3 * B1 * X)	-0.00216	-0.00217	-0.00217
	(A2 * !A3 * !B1 * !X)	0.00061	0.00061	0.00057
	(A2 * !A3 * !B1 * !X)	-0.00241	-0.00241	-0.00250
	(!A2 * B1 * X)	0.00171	0.00172	0.00171
	(!A2 * B1 * X)	-0.00217	-0.00217	-0.00217
	(!A2 * !B1 * !X)	0.00062	0.00061	0.00059
	(!A2 * !B1 * !X)	-0.00246	-0.00246	-0.00251

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	0.00411	0.00381	0.00376
	(A2 * A3 * A4 * B1 * X)	-0.00379	-0.00429	-0.00431
	(A2 * A3 * !A4 * B1 * X)	0.00350	0.00353	0.00351
	(A2 * A3 * !A4 * B1 * X)	-0.00440	-0.00443	-0.00440
	(A2 * A3 * !A4 * !B1 * !X)	0.00135	0.00135	0.00120
	(A2 * A3 * !A4 * !B1 * !X)	-0.00478	-0.00481	-0.00510
	(A2 * !A3 * B1 * X)	0.00353	0.00354	0.00353
	(A2 * !A3 * B1 * X)	-0.00441	-0.00442	-0.00440
	(A2 * !A3 * !B1 * !X)	0.00129	0.00129	0.00120
	(A2 * !A3 * !B1 * !X)	-0.00493	-0.00495	-0.00513
	(!A2 * B1 * X)	0.00360	0.00364	0.00361
	(!A2 * B1 * X)	-0.00439	-0.00443	-0.00440
	(!A2 * !B1 * !X)	0.00134	0.00134	0.00128
	(!A2 * !B1 * !X)	-0.00505	-0.00506	-0.00515

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)**	-0.00178	-0.00179	-0.00178
	(A2 * A3 * A4 * B1 * X)	0.00210	0.00212	0.00211
	(A2 * A3 * !A4 * B1 * X)	-0.00150	-0.00169	-0.00169
	(A2 * A3 * !A4 * B1 * X)	0.00216	0.00221	0.00217
	(A2 * A3 * !A4 * !B1 * !X)	-0.00054	-0.00054	-0.00053
	(A2 * A3 * !A4 * !B1 * !X)	0.00252	0.00255	0.00252
	(A2 * !A3 * B1 * X)	-0.00154	-0.00171	-0.00170
	(A2 * !A3 * B1 * X)	0.00216	0.00220	0.00217
	(A2 * !A3 * !B1 * !X)	-0.00054	-0.00055	-0.00054
	(A2 * !A3 * !B1 * !X)	0.00252	0.00255	0.00253
	(!A2 * B1 * X)	-0.00167	-0.00172	-0.00174
	(!A2 * B1 * X)	0.00216	0.00217	0.00217
	(!A2 * !B1 * !X)	-0.00055	-0.00056	-0.00055
	(!A2 * !B1 * !X)	0.00252	0.00257	0.00253
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	-0.00177	-0.00178	-0.00177
	(A2 * A3 * A4 * B1 * X)	0.00211	0.00213	0.00212
	(A2 * A3 * !A4 * B1 * X)	-0.00149	-0.00167	-0.00167
	(A2 * A3 * !A4 * B1 * X)	0.00217	0.00220	0.00218
	(A2 * A3 * !A4 * !B1 * !X)	-0.00056	-0.00057	-0.00056
	(A2 * A3 * !A4 * !B1 * !X)	0.00251	0.00254	0.00251
	(A2 * !A3 * B1 * X)	-0.00154	-0.00169	-0.00169
	(A2 * !A3 * B1 * X)	0.00217	0.00219	0.00218
	(A2 * !A3 * !B1 * !X)	-0.00056	-0.00057	-0.00056
	(A2 * !A3 * !B1 * !X)	0.00251	0.00254	0.00251
	(!A2 * B1 * X)	-0.00166	-0.00172	-0.00171
	(!A2 * B1 * X)	0.00218	0.00221	0.00218
	(!A2 * !B1 * !X)	-0.00057	-0.00058	-0.00057
	(!A2 * !B1 * !X)	0.00251	0.00254	0.00252

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	-0.00374	-0.00374	-0.00374
	(A2 * A3 * A4 * B1 * X)	0.00429	0.00429	0.00431
	(A2 * A3 * !A4 * B1 * X)	-0.00303	-0.00353	-0.00351
	(A2 * A3 * !A4 * B1 * X)	0.00443	0.00445	0.00442
	(A2 * A3 * !A4 * !B1 * !X)	-0.00119	-0.00122	-0.00120
	(A2 * A3 * !A4 * !B1 * !X)	0.00514	0.00524	0.00516
	(A2 * !A3 * B1 * X)	-0.00312	-0.00354	-0.00353
	(A2 * !A3 * B1 * X)	0.00443	0.00444	0.00442
	(A2 * !A3 * !B1 * !X)	-0.00120	-0.00123	-0.00120
	(A2 * !A3 * !B1 * !X)	0.00514	0.00524	0.00516
	(!A2 * B1 * X)	-0.00347	-0.00364	-0.00361
	(!A2 * B1 * X)	0.00440	0.00445	0.00442
	(!A2 * !B1 * !X)	-0.00124	-0.00127	-0.00124
	(!A2 * !B1 * !X)	0.00515	0.00525	0.00517

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)**	0.00201	0.00185	0.00183
	(A1 * A3 * A4 * B1 * X)	-0.00182	-0.00210	-0.00210
	(A1 * A3 * !A4 * B1 * X)	0.00175	0.00176	0.00175
	(A1 * A3 * !A4 * B1 * X)	-0.00214	-0.00215	-0.00215
	(A1 * A3 * !A4 * !B1 * !X)	0.00075	0.00075	0.00075
	(A1 * A3 * !A4 * !B1 * !X)	-0.00216	-0.00217	-0.00215
	(A1 * !A3 * B1 * X)	0.00176	0.00178	0.00177
	(A1 * !A3 * B1 * X)	-0.00214	-0.00215	-0.00215
	(A1 * !A3 * !B1 * !X)	0.00078	0.00078	0.00077
	(A1 * !A3 * !B1 * !X)	-0.00216	-0.00217	-0.00215
	(!A1 * A3 * A4 * B1 * X)	0.00175	0.00177	0.00176
	(!A1 * A3 * A4 * B1 * X)	-0.00214	-0.00215	-0.00215
	(!A1 * A3 * A4 * !B1 * !X)	0.00175	0.00176	0.00176
	(!A1 * A3 * A4 * !B1 * !X)	-0.00215	-0.00216	-0.00216
	(!A1 * A3 * !A4 * B1 * X)	0.00101	0.00102	0.00101
	(!A1 * A3 * !A4 * B1 * X)	-0.00215	-0.00216	-0.00215
	(!A1 * A3 * !A4 * !B1 * !X)	0.00095	0.00095	0.00095
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00216	-0.00217	-0.00216
	(!A1 * !A3 * B1 * X)	0.00100	0.00102	0.00101
	(!A1 * !A3 * B1 * X)	-0.00214	-0.00216	-0.00215
	(!A1 * !A3 * !B1 * !X)	0.00092	0.00092	0.00092
	(!A1 * !A3 * !B1 * !X)	-0.00216	-0.00216	-0.00216

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	0.00203	0.00187	0.00185
	(A1 * A3 * A4 * B1 * X)	-0.00182	-0.00210	-0.00211
	(A1 * A3 * !A4 * B1 * X)	0.00177	0.00177	0.00177
	(A1 * A3 * !A4 * B1 * X)	-0.00215	-0.00216	-0.00215
	(A1 * A3 * !A4 * !B1 * !X)	0.00076	0.00077	0.00077
	(A1 * A3 * !A4 * !B1 * !X)	-0.00216	-0.00217	-0.00215
	(A1 * !A3 * B1 * X)	0.00178	0.00179	0.00179
	(A1 * !A3 * B1 * X)	-0.00215	-0.00216	-0.00215
	(A1 * !A3 * !B1 * !X)	0.00081	0.00081	0.00081
	(A1 * !A3 * !B1 * !X)	-0.00216	-0.00216	-0.00215
	(!A1 * A3 * A4 * B1 * X)	0.00177	0.00178	0.00177
	(!A1 * A3 * A4 * B1 * X)	-0.00215	-0.00216	-0.00215
	(!A1 * A3 * A4 * !B1 * !X)	0.00177	0.00180	0.00178
	(!A1 * A3 * A4 * !B1 * !X)	-0.00216	-0.00218	-0.00216
	(!A1 * A3 * !A4 * B1 * X)	0.00102	0.00103	0.00103
	(!A1 * A3 * !A4 * B1 * X)	-0.00215	-0.00216	-0.00215
	(!A1 * A3 * !A4 * !B1 * !X)	0.00097	0.00097	0.00096
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00217	-0.00218	-0.00217
	(!A1 * !A3 * B1 * X)	0.00106	0.00107	0.00107
	(!A1 * !A3 * B1 * X)	-0.00215	-0.00216	-0.00215
	(!A1 * !A3 * !B1 * !X)	0.00097	0.00099	0.00097
	(!A1 * !A3 * !B1 * !X)	-0.00216	-0.00218	-0.00217

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	0.00401	0.00372	0.00367
	(A1 * A3 * A4 * B1 * X)	-0.00373	-0.00423	-0.00424
	(A1 * A3 * !A4 * B1 * X)	0.00344	0.00345	0.00344
	(A1 * A3 * !A4 * B1 * X)	-0.00434	-0.00435	-0.00433
	(A1 * A3 * !A4 * !B1 * !X)	0.00144	0.00146	0.00147
	(A1 * A3 * !A4 * !B1 * !X)	-0.00432	-0.00436	-0.00432
	(A1 * !A3 * B1 * X)	0.00346	0.00349	0.00348
	(A1 * !A3 * B1 * X)	-0.00432	-0.00435	-0.00433
	(A1 * !A3 * !B1 * !X)	0.00146	0.00149	0.00149
	(A1 * !A3 * !B1 * !X)	-0.00432	-0.00436	-0.00433
	(!A1 * A3 * A4 * B1 * X)	0.00351	0.00354	0.00353
	(!A1 * A3 * A4 * B1 * X)	-0.00432	-0.00434	-0.00433
	(!A1 * A3 * A4 * !B1 * !X)	0.00351	0.00353	0.00352
	(!A1 * A3 * A4 * !B1 * !X)	-0.00432	-0.00434	-0.00433
	(!A1 * A3 * !A4 * B1 * X)	0.00198	0.00199	0.00197
	(!A1 * A3 * !A4 * B1 * X)	-0.00435	-0.00437	-0.00434
	(!A1 * A3 * !A4 * !B1 * !X)	0.00186	0.00186	0.00186
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00435	-0.00436	-0.00436
	(!A1 * !A3 * B1 * X)	0.00197	0.00198	0.00196
	(!A1 * !A3 * B1 * X)	-0.00434	-0.00437	-0.00434
	(!A1 * !A3 * !B1 * !X)	0.00178	0.00179	0.00178
	(!A1 * !A3 * !B1 * !X)	-0.00438	-0.00438	-0.00437

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)**	-0.00181	-0.00183	-0.00182
	(A1 * A3 * A4 * B1 * X)	0.00209	0.00212	0.00210
	(A1 * A3 * !A4 * B1 * X)	-0.00154	-0.00173	-0.00175
	(A1 * A3 * !A4 * B1 * X)	0.00214	0.00216	0.00216
	(A1 * A3 * !A4 * !B1 * !X)	-0.00072	-0.00073	-0.00074
	(A1 * A3 * !A4 * !B1 * !X)	0.00220	0.00222	0.00217
	(A1 * !A3 * B1 * X)	-0.00171	-0.00177	-0.00177
	(A1 * !A3 * B1 * X)	0.00216	0.00217	0.00216
	(A1 * !A3 * !B1 * !X)	-0.00074	-0.00074	-0.00075
	(A1 * !A3 * !B1 * !X)	0.00220	0.00222	0.00217
	(!A1 * A3 * A4 * B1 * X)	-0.00171	-0.00176	-0.00176
	(!A1 * A3 * A4 * B1 * X)	0.00216	0.00217	0.00216
	(!A1 * A3 * A4 * !B1 * !X)	-0.00157	-0.00174	-0.00176
	(!A1 * A3 * A4 * !B1 * !X)	0.00232	0.00218	0.00217
	(!A1 * A3 * !A4 * B1 * X)	-0.00101	-0.00102	-0.00101
	(!A1 * A3 * !A4 * B1 * X)	0.00215	0.00218	0.00216
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00095	-0.00095	-0.00095
	(!A1 * A3 * !A4 * !B1 * !X)	0.00227	0.00225	0.00217
	(!A1 * !A3 * B1 * X)	-0.00100	-0.00102	-0.00101
	(!A1 * !A3 * B1 * X)	0.00216	0.00218	0.00216
	(!A1 * !A3 * !B1 * !X)	-0.00092	-0.00092	-0.00092
	(!A1 * !A3 * !B1 * !X)	0.00227	0.00229	0.00219

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	-0.00183	-0.00184	-0.00183
	(A1 * A3 * A4 * B1 * X)	0.00209	0.00212	0.00211
	(A1 * A3 * !A4 * B1 * X)	-0.00155	-0.00177	-0.00177
	(A1 * A3 * !A4 * B1 * X)	0.00215	0.00218	0.00216
	(A1 * A3 * !A4 * !B1 * !X)	-0.00075	-0.00076	-0.00077
	(A1 * A3 * !A4 * !B1 * !X)	0.00222	0.00224	0.00218
	(A1 * !A3 * B1 * X)	-0.00172	-0.00179	-0.00179
	(A1 * !A3 * B1 * X)	0.00217	0.00218	0.00216
	(A1 * !A3 * !B1 * !X)	-0.00077	-0.00077	-0.00078
	(A1 * !A3 * !B1 * !X)	0.00222	0.00224	0.00218
	(!A1 * A3 * A4 * B1 * X)	-0.00172	-0.00178	-0.00177
	(!A1 * A3 * A4 * B1 * X)	0.00217	0.00218	0.00216
	(!A1 * A3 * A4 * !B1 * !X)	-0.00159	-0.00178	-0.00178
	(!A1 * A3 * A4 * !B1 * !X)	0.00232	0.00219	0.00218
	(!A1 * A3 * !A4 * B1 * X)	-0.00102	-0.00103	-0.00103
	(!A1 * A3 * !A4 * B1 * X)	0.00216	0.00219	0.00216
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00097	-0.00097	-0.00096
	(!A1 * A3 * !A4 * !B1 * !X)	0.00227	0.00225	0.00218
	(!A1 * !A3 * B1 * X)	-0.00106	-0.00107	-0.00107
	(!A1 * !A3 * B1 * X)	0.00217	0.00219	0.00216
	(!A1 * !A3 * !B1 * !X)	-0.00097	-0.00099	-0.00097
	(!A1 * !A3 * !B1 * !X)	0.00228	0.00231	0.00220

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	-0.00365	-0.00365	-0.00365
	(A1 * A3 * A4 * B1 * X)	0.00422	0.00423	0.00424
	(A1 * A3 * !A4 * B1 * X)	-0.00301	-0.00345	-0.00344
	(A1 * A3 * !A4 * B1 * X)	0.00436	0.00439	0.00435
	(A1 * A3 * !A4 * !B1 * !X)	-0.00135	-0.00137	-0.00139
	(A1 * A3 * !A4 * !B1 * !X)	0.00445	0.00451	0.00439
	(A1 * !A3 * B1 * X)	-0.00337	-0.00348	-0.00348
	(A1 * !A3 * B1 * X)	0.00436	0.00436	0.00435
	(A1 * !A3 * !B1 * !X)	-0.00139	-0.00141	-0.00143
	(A1 * !A3 * !B1 * !X)	0.00445	0.00451	0.00439
	(!A1 * A3 * A4 * B1 * X)	-0.00338	-0.00352	-0.00353
	(!A1 * A3 * A4 * B1 * X)	0.00434	0.00436	0.00435
	(!A1 * A3 * A4 * !B1 * !X)	-0.00303	-0.00353	-0.00352
	(!A1 * A3 * A4 * !B1 * !X)	0.00474	0.00439	0.00435
	(!A1 * A3 * !A4 * B1 * X)	-0.00198	-0.00199	-0.00197
	(!A1 * A3 * !A4 * B1 * X)	0.00435	0.00441	0.00436
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00186	-0.00186	-0.00186
	(!A1 * A3 * !A4 * !B1 * !X)	0.00459	0.00452	0.00437
	(!A1 * !A3 * B1 * X)	-0.00197	-0.00198	-0.00196
	(!A1 * !A3 * B1 * X)	0.00434	0.00441	0.00436
	(!A1 * !A3 * !B1 * !X)	-0.00178	-0.00179	-0.00178
	(!A1 * !A3 * !B1 * !X)	0.00457	0.00465	0.00443

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)**	0.00200	0.00182	0.00179
	(A1 * A2 * A4 * B1 * X)	-0.00185	-0.00213	-0.00214
	(A1 * A2 * !A4 * B1 * X)	0.00173	0.00174	0.00174
	(A1 * A2 * !A4 * B1 * X)	-0.00218	-0.00219	-0.00219
	(A1 * A2 * !A4 * !B1 * !X)	0.00078	0.00080	0.00080
	(A1 * A2 * !A4 * !B1 * !X)	-0.00214	-0.00216	-0.00214
	(A1 * !A2 * A4 * !B1 * !X)	0.00172	0.00173	0.00172
	(A1 * !A2 * A4 * !B1 * !X)	-0.00218	-0.00219	-0.00219
	(A1 * !A2 * !A4 * !B1 * !X)	0.00095	0.00096	0.00095
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00219	-0.00220	-0.00219
	(!A2 * A4 * B1 * X)	0.00173	0.00175	0.00174
	(!A2 * A4 * B1 * X)	-0.00219	-0.00219	-0.00219
	(!A2 * !A4 * B1 * X)	0.00101	0.00102	0.00101
	(!A2 * !A4 * B1 * X)	-0.00218	-0.00219	-0.00219
	(!A1 * A2 * A4 * B1 * X)	0.00171	0.00171	0.00170
	(!A1 * A2 * A4 * B1 * X)	-0.00219	-0.00219	-0.00219
	(!A1 * A2 * A4 * !B1 * !X)	0.00170	0.00170	0.00170
	(!A1 * A2 * A4 * !B1 * !X)	-0.00219	-0.00219	-0.00219
	(!A1 * A2 * !A4 * B1 * X)	0.00099	0.00099	0.00099
	(!A1 * A2 * !A4 * B1 * X)	-0.00219	-0.00219	-0.00219
	(!A1 * A2 * !A4 * !B1 * !X)	0.00092	0.00093	0.00092
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00218	-0.00220	-0.00219
	(!A1 * !A2 * A4 * !B1 * !X)	0.00174	0.00175	0.00174
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00219	-0.00220	-0.00219
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00099	0.00100	0.00099
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00218	-0.00220	-0.00219

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	0.00207	0.00190	0.00187
	(A1 * A2 * A4 * B1 * X)	-0.00184	-0.00211	-0.00212
	(A1 * A2 * !A4 * B1 * X)	0.00180	0.00181	0.00181
	(A1 * A2 * !A4 * B1 * X)	-0.00217	-0.00218	-0.00217
	(A1 * A2 * !A4 * !B1 * !X)	0.00083	0.00083	0.00083
	(A1 * A2 * !A4 * !B1 * !X)	-0.00215	-0.00216	-0.00214
	(A1 * !A2 * A4 * !B1 * !X)	0.00182	0.00182	0.00181
	(A1 * !A2 * A4 * !B1 * !X)	-0.00217	-0.00218	-0.00217
	(A1 * !A2 * !A4 * !B1 * !X)	0.00096	0.00097	0.00096
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00217	-0.00219	-0.00217
	(!A2 * A4 * B1 * X)	0.00181	0.00182	0.00181
	(!A2 * A4 * B1 * X)	-0.00217	-0.00217	-0.00217
	(!A2 * !A4 * B1 * X)	0.00102	0.00103	0.00102
	(!A2 * !A4 * B1 * X)	-0.00217	-0.00218	-0.00217
	(!A1 * A2 * A4 * B1 * X)	0.00180	0.00180	0.00180
	(!A1 * A2 * A4 * B1 * X)	-0.00217	-0.00218	-0.00217
	(!A1 * A2 * A4 * !B1 * !X)	0.00178	0.00178	0.00178
	(!A1 * A2 * A4 * !B1 * !X)	-0.00217	-0.00217	-0.00217
	(!A1 * A2 * !A4 * B1 * X)	0.00105	0.00105	0.00104
	(!A1 * A2 * !A4 * B1 * X)	-0.00217	-0.00218	-0.00217
	(!A1 * A2 * !A4 * !B1 * !X)	0.00097	0.00098	0.00097
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00217	-0.00218	-0.00217
	(!A1 * !A2 * A4 * !B1 * !X)	0.00182	0.00182	0.00181
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00217	-0.00218	-0.00217
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00101	0.00101	0.00101
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00217	-0.00218	-0.00217

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	0.00410	0.00379	0.00374
	(A1 * A2 * A4 * B1 * X)	-0.00376	-0.00428	-0.00429
	(A1 * A2 * !A4 * B1 * X)	0.00356	0.00358	0.00358
	(A1 * A2 * !A4 * B1 * X)	-0.00437	-0.00440	-0.00439
	(A1 * A2 * !A4 * !B1 * !X)	0.00159	0.00159	0.00157
	(A1 * A2 * !A4 * !B1 * !X)	-0.00433	-0.00435	-0.00430
	(A1 * !A2 * A4 * !B1 * !X)	0.00359	0.00360	0.00359
	(A1 * !A2 * A4 * !B1 * !X)	-0.00440	-0.00440	-0.00439
	(A1 * !A2 * !A4 * !B1 * !X)	0.00186	0.00186	0.00185
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00441	-0.00440	-0.00440
	(!A2 * A4 * B1 * X)	0.00354	0.00359	0.00356
	(!A2 * A4 * B1 * X)	-0.00438	-0.00442	-0.00439
	(!A2 * !A4 * B1 * X)	0.00199	0.00201	0.00200
	(!A2 * !A4 * B1 * X)	-0.00439	-0.00441	-0.00440
	(!A1 * A2 * A4 * B1 * X)	0.00354	0.00358	0.00354
	(!A1 * A2 * A4 * B1 * X)	-0.00439	-0.00442	-0.00439
	(!A1 * A2 * A4 * !B1 * !X)	0.00354	0.00355	0.00354
	(!A1 * A2 * A4 * !B1 * !X)	-0.00440	-0.00440	-0.00439
	(!A1 * A2 * !A4 * B1 * X)	0.00201	0.00201	0.00201
	(!A1 * A2 * !A4 * B1 * X)	-0.00441	-0.00441	-0.00440
	(!A1 * A2 * !A4 * !B1 * !X)	0.00187	0.00188	0.00186
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00442	-0.00443	-0.00441
	(!A1 * !A2 * A4 * !B1 * !X)	0.00359	0.00360	0.00359
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00440	-0.00440	-0.00439
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00194	0.00195	0.00194
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00440	-0.00441	-0.00440

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)**	-0.00178	-0.00179	-0.00178
	(A1 * A2 * A4 * B1 * X)	0.00213	0.00215	0.00214
	(A1 * A2 * !A4 * B1 * X)	-0.00167	-0.00174	-0.00174
	(A1 * A2 * !A4 * B1 * X)	0.00220	0.00221	0.00220
	(A1 * A2 * !A4 * !B1 * !X)	-0.00075	-0.00076	-0.00075
	(A1 * A2 * !A4 * !B1 * !X)	0.00223	0.00225	0.00221
	(A1 * !A2 * A4 * !B1 * !X)	-0.00163	-0.00173	-0.00172
	(A1 * !A2 * A4 * !B1 * !X)	0.00218	0.00222	0.00220
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00095	-0.00096	-0.00095
	(A1 * !A2 * !A4 * !B1 * !X)	0.00228	0.00230	0.00222
	(!A2 * A4 * B1 * X)	-0.00166	-0.00174	-0.00174
	(!A2 * A4 * B1 * X)	0.00219	0.00222	0.00220
	(!A2 * !A4 * B1 * X)	-0.00101	-0.00102	-0.00101
	(!A2 * !A4 * B1 * X)	0.00221	0.00222	0.00220
	(!A1 * A2 * A4 * B1 * X)	-0.00153	-0.00168	-0.00170
	(!A1 * A2 * A4 * B1 * X)	0.00219	0.00220	0.00220
	(!A1 * A2 * A4 * !B1 * !X)	-0.00152	-0.00168	-0.00170
	(!A1 * A2 * A4 * !B1 * !X)	0.00220	0.00219	0.00220
	(!A1 * A2 * !A4 * B1 * X)	-0.00099	-0.00099	-0.00099
	(!A1 * A2 * !A4 * B1 * X)	0.00219	0.00222	0.00220
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00092	-0.00093	-0.00092
	(!A1 * A2 * !A4 * !B1 * !X)	0.00220	0.00224	0.00219
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00165	-0.00174	-0.00174
	(!A1 * !A2 * A4 * !B1 * !X)	0.00219	0.00222	0.00220
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00099	-0.00100	-0.00099
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00220	0.00222	0.00220

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	-0.00186	-0.00186	-0.00186
	(A1 * A2 * A4 * B1 * X)	0.00211	0.00211	0.00212
	(A1 * A2 * !A4 * B1 * X)	-0.00175	-0.00181	-0.00181
	(A1 * A2 * !A4 * B1 * X)	0.00218	0.00219	0.00218
	(A1 * A2 * !A4 * !B1 * !X)	-0.00079	-0.00079	-0.00079
	(A1 * A2 * !A4 * !B1 * !X)	0.00221	0.00223	0.00219
	(A1 * !A2 * A4 * !B1 * !X)	-0.00171	-0.00181	-0.00181
	(A1 * !A2 * A4 * !B1 * !X)	0.00217	0.00220	0.00218
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00096	-0.00097	-0.00096
	(A1 * !A2 * !A4 * !B1 * !X)	0.00225	0.00228	0.00221
	(!A2 * A4 * B1 * X)	-0.00174	-0.00181	-0.00181
	(!A2 * A4 * B1 * X)	0.00217	0.00220	0.00218
	(!A2 * !A4 * B1 * X)	-0.00102	-0.00103	-0.00102
	(!A2 * !A4 * B1 * X)	0.00219	0.00220	0.00218
	(!A1 * A2 * A4 * B1 * X)	-0.00161	-0.00178	-0.00180
	(!A1 * A2 * A4 * B1 * X)	0.00217	0.00220	0.00218
	(!A1 * A2 * A4 * !B1 * !X)	-0.00160	-0.00176	-0.00178
	(!A1 * A2 * A4 * !B1 * !X)	0.00218	0.00218	0.00218
	(!A1 * A2 * !A4 * B1 * X)	-0.00105	-0.00105	-0.00104
	(!A1 * A2 * !A4 * B1 * X)	0.00217	0.00220	0.00218
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00097	-0.00098	-0.00097
	(!A1 * A2 * !A4 * !B1 * !X)	0.00218	0.00222	0.00218
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00173	-0.00181	-0.00181
	(!A1 * !A2 * A4 * !B1 * !X)	0.00217	0.00220	0.00218
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00101	-0.00101	-0.00101
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00218	0.00220	0.00218

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	-0.00373	-0.00374	-0.00372
	(A1 * A2 * A4 * B1 * X)	0.00429	0.00431	0.00429
	(A1 * A2 * !A4 * B1 * X)	-0.00343	-0.00358	-0.00358
	(A1 * A2 * !A4 * B1 * X)	0.00440	0.00443	0.00441
	(A1 * A2 * !A4 * !B1 * !X)	-0.00145	-0.00146	-0.00146
	(A1 * A2 * !A4 * !B1 * !X)	0.00451	0.00455	0.00445
	(A1 * !A2 * A4 * !B1 * !X)	-0.00335	-0.00356	-0.00359
	(A1 * !A2 * A4 * !B1 * !X)	0.00441	0.00444	0.00441
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00186	-0.00186	-0.00185
	(A1 * !A2 * !A4 * !B1 * !X)	0.00465	0.00468	0.00449
	(!A2 * A4 * B1 * X)	-0.00344	-0.00356	-0.00356
	(!A2 * A4 * B1 * X)	0.00440	0.00444	0.00441
	(!A2 * !A4 * B1 * X)	-0.00199	-0.00201	-0.00200
	(!A2 * !A4 * B1 * X)	0.00440	0.00447	0.00442
	(!A1 * A2 * A4 * B1 * X)	-0.00317	-0.00355	-0.00354
	(!A1 * A2 * A4 * B1 * X)	0.00442	0.00445	0.00441
	(!A1 * A2 * A4 * !B1 * !X)	-0.00314	-0.00350	-0.00354
	(!A1 * A2 * A4 * !B1 * !X)	0.00446	0.00443	0.00441
	(!A1 * A2 * !A4 * B1 * X)	-0.00201	-0.00201	-0.00201
	(!A1 * A2 * !A4 * B1 * X)	0.00441	0.00447	0.00442
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00187	-0.00188	-0.00186
	(!A1 * A2 * !A4 * !B1 * !X)	0.00445	0.00451	0.00443
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00339	-0.00356	-0.00359
	(!A1 * !A2 * A4 * !B1 * !X)	0.00440	0.00444	0.00441
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00194	-0.00195	-0.00194
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00440	0.00447	0.00442

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)**	0.00210	0.00194	0.00191
	(A1 * A2 * A3 * B1 * X)	-0.00186	-0.00213	-0.00213
	(A1 * A2 * !A3 * !B1 * !X)	0.00184	0.00186	0.00185
	(A1 * A2 * !A3 * !B1 * !X)	-0.00218	-0.00219	-0.00218
	(A1 * !A2 * A3 * !B1 * !X)	0.00181	0.00182	0.00180
	(A1 * !A2 * A3 * !B1 * !X)	-0.00218	-0.00219	-0.00218
	(A1 * !A2 * !A3 * !B1 * !X)	0.00184	0.00186	0.00185
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00218	-0.00219	-0.00218
	(!A3 * B1 * X)	0.00185	0.00185	0.00184
	(!A3 * B1 * X)	-0.00218	-0.00218	-0.00218
	(!A2 * A3 * B1 * X)	0.00181	0.00182	0.00181
	(!A2 * A3 * B1 * X)	-0.00218	-0.00219	-0.00218
	(!A1 * A2 * A3 * B1 * X)	0.00179	0.00180	0.00178
	(!A1 * A2 * A3 * B1 * X)	-0.00218	-0.00219	-0.00218
	(!A1 * A2 * A3 * !B1 * !X)	0.00179	0.00178	0.00179
	(!A1 * A2 * A3 * !B1 * !X)	-0.00218	-0.00218	-0.00218
	(!A1 * !A3 * !B1 * !X)	0.00184	0.00186	0.00185
	(!A1 * !A3 * !B1 * !X)	-0.00218	-0.00219	-0.00218
	(!A1 * !A2 * A3 * !B1 * !X)	0.00181	0.00181	0.00180
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00218	-0.00218	-0.00218

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	0.00210	0.00193	0.00190
	(A1 * A2 * A3 * B1 * X)	-0.00186	-0.00213	-0.00213
	(A1 * A2 * !A3 * !B1 * !X)	0.00181	0.00183	0.00182
	(A1 * A2 * !A3 * !B1 * !X)	-0.00217	-0.00219	-0.00218
	(A1 * !A2 * A3 * !B1 * !X)	0.00179	0.00180	0.00179
	(A1 * !A2 * A3 * !B1 * !X)	-0.00218	-0.00219	-0.00218
	(A1 * !A2 * !A3 * !B1 * !X)	0.00184	0.00185	0.00184
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00218	-0.00219	-0.00218
	(!A3 * B1 * X)	0.00181	0.00182	0.00182
	(!A3 * B1 * X)	-0.00218	-0.00218	-0.00218
	(!A2 * A3 * B1 * X)	0.00179	0.00180	0.00179
	(!A2 * A3 * B1 * X)	-0.00218	-0.00219	-0.00218
	(!A1 * A2 * A3 * B1 * X)	0.00178	0.00179	0.00177
	(!A1 * A2 * A3 * B1 * X)	-0.00218	-0.00219	-0.00218
	(!A1 * A2 * A3 * !B1 * !X)	0.00178	0.00179	0.00177
	(!A1 * A2 * A3 * !B1 * !X)	-0.00218	-0.00219	-0.00218
	(!A1 * !A3 * !B1 * !X)	0.00182	0.00184	0.00183
	(!A1 * !A3 * !B1 * !X)	-0.00218	-0.00219	-0.00218
	(!A1 * !A2 * A3 * !B1 * !X)	0.00179	0.00180	0.00179
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00218	-0.00219	-0.00218

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A3 * B1 * X)**	0.00399	0.00375	0.00370
	(A1 * A2 * A3 * B1 * X)	-0.00375	-0.00419	-0.00420
	(A1 * A2 * !A3 * !B1 * !X)	0.00351	0.00354	0.00353
	(A1 * A2 * !A3 * !B1 * !X)	-0.00428	-0.00430	-0.00429
	(A1 * !A2 * A3 * !B1 * !X)	0.00350	0.00351	0.00349
	(A1 * !A2 * A3 * !B1 * !X)	-0.00430	-0.00430	-0.00429
	(A1 * !A2 * !A3 * !B1 * !X)	0.00351	0.00354	0.00353
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00428	-0.00430	-0.00429
	(!A3 * B1 * X)	0.00352	0.00356	0.00354
	(!A3 * B1 * X)	-0.00427	-0.00430	-0.00429
	(!A2 * A3 * B1 * X)	0.00350	0.00350	0.00349
	(!A2 * A3 * B1 * X)	-0.00430	-0.00429	-0.00429
	(!A1 * A2 * A3 * B1 * X)	0.00347	0.00351	0.00348
	(!A1 * A2 * A3 * B1 * X)	-0.00428	-0.00431	-0.00429
	(!A1 * A2 * A3 * !B1 * !X)	0.00347	0.00349	0.00346
	(!A1 * A2 * A3 * !B1 * !X)	-0.00430	-0.00431	-0.00429
	(!A1 * !A3 * !B1 * !X)	0.00351	0.00354	0.00353
	(!A1 * !A3 * !B1 * !X)	-0.00428	-0.00430	-0.00429
	(!A1 * !A2 * A3 * !B1 * !X)	0.00350	0.00353	0.00349
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00430	-0.00431	-0.00429

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)**	-0.00190	-0.00191	-0.00190
	(A1 * A2 * A3 * B1 * X)	0.00212	0.00215	0.00213
	(A1 * A2 * !A3 * !B1 * !X)	-0.00178	-0.00185	-0.00185
	(A1 * A2 * !A3 * !B1 * !X)	0.00219	0.00220	0.00219
	(A1 * !A2 * A3 * !B1 * !X)	-0.00170	-0.00182	-0.00180
	(A1 * !A2 * A3 * !B1 * !X)	0.00218	0.00221	0.00219
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00179	-0.00185	-0.00185
	(A1 * !A2 * !A3 * !B1 * !X)	0.00219	0.00220	0.00219
	(!A3 * B1 * X)	-0.00180	-0.00184	-0.00184
	(!A3 * B1 * X)	0.00219	0.00220	0.00219
	(!A2 * A3 * B1 * X)	-0.00170	-0.00182	-0.00181
	(!A2 * A3 * B1 * X)	0.00218	0.00220	0.00219
	(!A1 * A2 * A3 * B1 * X)	-0.00166	-0.00180	-0.00178
	(!A1 * A2 * A3 * B1 * X)	0.00218	0.00221	0.00219
	(!A1 * A2 * A3 * !B1 * !X)	-0.00166	-0.00178	-0.00179
	(!A1 * A2 * A3 * !B1 * !X)	0.00218	0.00221	0.00219
	(!A1 * !A3 * !B1 * !X)	-0.00179	-0.00185	-0.00185
	(!A1 * !A3 * !B1 * !X)	0.00219	0.00220	0.00219
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00170	-0.00181	-0.00180
	(!A1 * !A2 * A3 * !B1 * !X)	0.00218	0.00221	0.00219

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00188	-0.00190	-0.00188
	(A1 * A2 * A3 * B1 * X)	0.00212	0.00215	0.00213
	(A1 * A2 * !A3 * !B1 * !X)	-0.00176	-0.00183	-0.00182
	(A1 * A2 * !A3 * !B1 * !X)	0.00219	0.00220	0.00219
	(A1 * !A2 * A3 * !B1 * !X)	-0.00168	-0.00180	-0.00179
	(A1 * !A2 * A3 * !B1 * !X)	0.00218	0.00221	0.00219
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00177	-0.00183	-0.00184
	(A1 * !A2 * !A3 * !B1 * !X)	0.00219	0.00220	0.00219
	(!A3 * B1 * X)	-0.00178	-0.00182	-0.00182
	(!A3 * B1 * X)	0.00219	0.00220	0.00219
	(!A2 * A3 * B1 * X)	-0.00168	-0.00180	-0.00179
	(!A2 * A3 * B1 * X)	0.00218	0.00221	0.00219
	(!A1 * A2 * A3 * B1 * X)	-0.00165	-0.00179	-0.00177
	(!A1 * A2 * A3 * B1 * X)	0.00218	0.00221	0.00219
	(!A1 * A2 * A3 * !B1 * !X)	-0.00165	-0.00179	-0.00177
	(!A1 * A2 * A3 * !B1 * !X)	0.00218	0.00221	0.00219
	(!A1 * !A3 * !B1 * !X)	-0.00177	-0.00183	-0.00183
	(!A1 * !A3 * !B1 * !X)	0.00219	0.00220	0.00219
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00168	-0.00180	-0.00179
	(!A1 * !A2 * A3 * !B1 * !X)	0.00218	0.00221	0.00219

sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * B1 * X)	-0.00369	-0.00368	-0.00368
	(A1 * A2 * A3 * B1 * X)	0.00420	0.00419	0.00420
	(A1 * A2 * !A3 * !B1 * !X)	-0.00335	-0.00354	-0.00353
	(A1 * A2 * !A3 * !B1 * !X)	0.00429	0.00434	0.00431
	(A1 * !A2 * A3 * !B1 * !X)	-0.00321	-0.00346	-0.00349
	(A1 * !A2 * A3 * !B1 * !X)	0.00432	0.00436	0.00431
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00338	-0.00354	-0.00353
	(A1 * !A2 * !A3 * !B1 * !X)	0.00429	0.00434	0.00431
	(!A3 * B1 * X)	-0.00341	-0.00355	-0.00354
	(!A3 * B1 * X)	0.00429	0.00433	0.00431
	(!A2 * A3 * B1 * X)	-0.00321	-0.00348	-0.00349
	(!A2 * A3 * B1 * X)	0.00432	0.00434	0.00431
	(!A1 * A2 * A3 * B1 * X)	-0.00316	-0.00346	-0.00348
	(!A1 * A2 * A3 * B1 * X)	0.00432	0.00434	0.00431
	(!A1 * A2 * A3 * !B1 * !X)	-0.00315	-0.00345	-0.00346
	(!A1 * A2 * A3 * !B1 * !X)	0.00432	0.00436	0.00431
	(!A1 * !A3 * !B1 * !X)	-0.00338	-0.00354	-0.00353
	(!A1 * !A3 * !B1 * !X)	0.00429	0.00434	0.00431
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00321	-0.00347	-0.00349
	(!A1 * !A2 * A3 * !B1 * !X)	0.00432	0.00436	0.00431

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)	0.00215	0.00218	0.00215
	(A1 * A2 * A3 * A4 * X)	-0.00103	-0.00103	-0.00101
sky130_fd_sc_hs__a41o_2	(A1 * A2 * A3 * A4 * X)	0.00217	0.00220	0.00217
	(A1 * A2 * A3 * A4 * X)	-0.00104	-0.00105	-0.00103
sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * A4 * X)	0.00406	0.00415	0.00408
	(A1 * A2 * A3 * A4 * X)	-0.00211	-0.00216	-0.00212

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)	-0.00195	-0.00197	-0.00212
	(A1 * A2 * A3 * A4 * X)	0.00116	0.00117	0.00105
sky130_fd_sc_hs__a41o_2	(A1 * A2 * A3 * A4 * X)	-0.00198	-0.00199	-0.00215
	(A1 * A2 * A3 * A4 * X)	0.00119	0.00119	0.00107
sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * A4 * X)	-0.00367	-0.00371	-0.00403
	(A1 * A2 * A3 * A4 * X)	0.00244	0.00245	0.00219

SKY130_FD_SC_HS__AND2Bx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00259	0.00245	1.29945
sky130_fd_sc_hs__and2b_2	0.00233	0.00285	2.14005
sky130_fd_sc_hs__and2b_4	0.00261	0.00514	4.69685

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2b_1	0.00000	0.68366	1.20852
sky130_fd_sc_hs__and2b_2	0.00000	0.59098	0.80876
sky130_fd_sc_hs__and2b_4	0.00000	1.05643	2.43613

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)	0.10194	0.68474	8.14249
	B->X (RR)	0.05943	0.48519	5.96748
sky130_fd_sc_hs__and2b_2	A_N->X (FR)	0.11179	0.62020	7.95399
	B->X (RR)	0.06303	0.41517	5.57426
sky130_fd_sc_hs__and2b_4	A_N->X (FR)	0.11188	0.55414	8.19654
	B->X (RR)	0.06405	0.34570	5.96216

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)	0.08620	0.29897	2.23459
	B->X (FF)	0.06704	0.46036	4.69413
sky130_fd_sc_hs__and2b_2	A_N->X (RF)	0.09704	0.26367	1.79359
	B->X (FF)	0.07693	0.44585	4.35530
sky130_fd_sc_hs__and2b_4	A_N->X (RF)	0.09563	0.24278	2.07748
	B->X (FF)	0.07808	0.42628	4.76548

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	0.00738	0.01144	0.08233
	A_N	0.01173	0.01580	0.08681
	B	0.00937	0.01142	0.06624
	B	0.00501	0.00706	0.06243
sky130_fd_sc_hs__and2b_2	A_N	0.01149	0.01566	0.08453
	A_N	0.01540	0.01957	0.08907
	B	0.01316	0.01489	0.05533
	B	0.00804	0.00979	0.05083
sky130_fd_sc_hs__and2b_4	A_N	0.02158	0.02682	0.10676
	A_N	0.02575	0.03100	0.11127
	B	0.02501	0.02970	0.14745
	B	0.01600	0.02080	0.14067

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	A_N	0.01293	0.01593	0.08602
	A_N	0.00859	0.01156	0.08136
	B	0.00419	0.00817	0.06552
	B	0.00853	0.01246	0.06953
sky130_fd_sc_hs__and2b_2	A_N	0.01602	0.01895	0.08333
	A_N	0.01209	0.01497	0.07922
	B	0.00703	0.01057	0.06803
	B	0.01213	0.01560	0.07236
sky130_fd_sc_hs__and2b_4	A_N	0.02514	0.02930	0.10961
	A_N	0.02098	0.02510	0.10531
	B	0.01421	0.02206	0.14672
	B	0.02320	0.03100	0.15562

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	0.00734	0.01034	0.07660
	(!B * !X)	0.00251	0.00549	0.07176
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00709	0.01018	0.07518
	(!B * !X)	0.00258	0.00565	0.07068
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.00888	0.01214	0.08484
	(!B * !X)	0.00375	0.00698	0.07969

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	-0.00007	0.00407	0.07018
	(!B * !X)	0.00478	0.00894	0.07502
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00025	0.00422	0.06917
	(!B * !X)	0.00476	0.00877	0.07368
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.00057	0.00449	0.07675
	(!B * !X)	0.00573	0.00968	0.08192

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	0.00165	0.00166	0.00166
	(A_N * !X)	-0.00205	-0.00205	-0.00205
sky130_fd_sc_hs__and2b_2	(A_N * !X)	0.00202	0.00203	0.00202
	(A_N * !X)	-0.00232	-0.00233	-0.00232
sky130_fd_sc_hs__and2b_4	(A_N * !X)	0.00355	0.00356	0.00355
	(A_N * !X)	-0.00414	-0.00415	-0.00414

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	-0.00154	-0.00164	-0.00165
	(A_N * !X)	0.00214	0.00209	0.00207
sky130_fd_sc_hs__and2b_2	(A_N * !X)	-0.00192	-0.00201	-0.00201
	(A_N * !X)	0.00242	0.00237	0.00234
sky130_fd_sc_hs__and2b_4	(A_N * !X)	-0.00336	-0.00354	-0.00353
	(A_N * !X)	0.00428	0.00419	0.00416

SKY130_FD_SC_HS__AND2x

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00251	0.00246	1.26200
sky130_fd_sc_hs__and2_2	0.00273	0.00301	2.39096
sky130_fd_sc_hs__and2_4	0.00445	0.00493	4.75213

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2_1	0.00000	0.38245	1.20371
sky130_fd_sc_hs__and2_2	0.00000	0.28977	0.53468
sky130_fd_sc_hs__and2_4	0.00000	0.92113	2.42439

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)	0.05511	0.49422	6.13369
	B->X (RR)	0.05949	0.49101	5.94039
sky130_fd_sc_hs__and2_2	A->X (RR)	0.05724	0.41738	5.96941
	B->X (RR)	0.06188	0.41154	5.78330
sky130_fd_sc_hs__and2_4	A->X (RR)	0.05664	0.34795	6.10604
	B->X (RR)	0.06334	0.34769	6.00441

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and2_1	A->X (FF)	0.06057	0.43767	4.53627
	B->X (FF)	0.06910	0.46227	4.63376
sky130_fd_sc_hs__and2_2	A->X (FF)	0.06566	0.42730	4.51791
	B->X (FF)	0.07504	0.45062	4.63515
sky130_fd_sc_hs__and2_4	A->X (FF)	0.07150	0.40696	4.69480
	B->X (FF)	0.07948	0.42492	4.74640

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.00866	0.01180	0.07965
	A	0.00392	0.00707	0.07541
	B	0.00953	0.01132	0.06118
	B	0.00394	0.00573	0.05613
sky130_fd_sc_hs__and2_2	A	0.01196	0.01484	0.08247
	A	0.00678	0.00968	0.07846
	B	0.01351	0.01521	0.06406
	B	0.00690	0.00865	0.05773
sky130_fd_sc_hs__and2_4	A	0.02219	0.02863	0.16513
	A	0.01402	0.02053	0.15902
	B	0.02511	0.03006	0.14910
	B	0.01393	0.01897	0.14009

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.00328	0.00769	0.06560
	A	0.00802	0.01229	0.06921
	B	0.00414	0.00787	0.06373
	B	0.00968	0.01337	0.06813
sky130_fd_sc_hs__and2_2	A	0.00675	0.01123	0.06918
	A	0.01191	0.01638	0.07397
	B	0.00715	0.01095	0.06804
	B	0.01369	0.01741	0.07349
sky130_fd_sc_hs__and2_4	A	0.01322	0.02156	0.15207
	A	0.02138	0.02958	0.15779
	B	0.01387	0.02192	0.15122
	B	0.02495	0.03287	0.16052

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	0.00090	0.00090	0.00088
	(!B * !X)	-0.00215	-0.00217	-0.00219
sky130_fd_sc_hs__and2_2	(!B * !X)	0.00064	0.00064	0.00062
	(!B * !X)	-0.00253	-0.00254	-0.00257
sky130_fd_sc_hs__and2_4	(!B * !X)	0.00096	0.00095	0.00092
	(!B * !X)	-0.00419	-0.00419	-0.00427

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	-0.00087	-0.00088	-0.00087
	(!B * !X)	0.00219	0.00223	0.00220
sky130_fd_sc_hs__and2_2	(!B * !X)	-0.00061	-0.00062	-0.00061
	(!B * !X)	0.00257	0.00262	0.00257
sky130_fd_sc_hs__and2_4	(!B * !X)	-0.00090	-0.00091	-0.00089
	(!B * !X)	0.00430	0.00435	0.00428

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	0.00146	0.00147	0.00147
	(!A * !X)	-0.00206	-0.00207	-0.00207
sky130_fd_sc_hs__and2_2	(!A * !X)	0.00170	0.00172	0.00171
	(!A * !X)	-0.00249	-0.00250	-0.00249
sky130_fd_sc_hs__and2_4	(!A * !X)	0.00343	0.00344	0.00343
	(!A * !X)	-0.00385	-0.00386	-0.00385

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	-0.00137	-0.00147	-0.00147
	(!A * !X)	0.00215	0.00209	0.00208
sky130_fd_sc_hs__and2_2	(!A * !X)	-0.00158	-0.00170	-0.00171
	(!A * !X)	0.00258	0.00254	0.00251
sky130_fd_sc_hs__and2_4	(!A * !X)	-0.00323	-0.00344	-0.00343
	(!A * !X)	0.00401	0.00390	0.00387

SKY130_FD_SC_HS__AND3Bx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00228	0.00241	0.00240	1.25485
sky130_fd_sc_hs__and3b_2	0.00236	0.00288	0.00276	2.13803
sky130_fd_sc_hs__and3b_4	0.00264	0.00494	0.00507	4.68246

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__and3b_1	0.00000	0.61927	1.80612
sky130_fd_sc_hs__and3b_2	0.00000	0.58095	0.80876
sky130_fd_sc_hs__and3b_4	0.00000	0.69678	1.59880

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)	0.11332	0.70247	8.15287
	B->X (RR)	0.07616	0.53206	6.21694
	C->X (RR)	0.08016	0.51939	6.01775
sky130_fd_sc_hs__and3b_2	A_N->X (FR)	0.12549	0.63551	7.94005
	B->X (RR)	0.08175	0.46325	5.95263
	C->X (RR)	0.08599	0.44684	5.66186
sky130_fd_sc_hs__and3b_4	A_N->X (FR)	0.13917	0.59646	8.27349
	B->X (RR)	0.09560	0.41892	6.40447
	C->X (RR)	0.09930	0.38806	6.15297

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)	0.09082	0.29267	2.06038
	B->X (FF)	0.07614	0.47092	4.54824
	C->X (FF)	0.08034	0.48398	4.61674
sky130_fd_sc_hs__and3b_2	A_N->X (RF)	0.09625	0.25784	1.67841
	B->X (FF)	0.07902	0.44624	4.18956
	C->X (FF)	0.08898	0.47144	4.33675
sky130_fd_sc_hs__and3b_4	A_N->X (RF)	0.09398	0.24037	2.02674
	B->X (FF)	0.07546	0.41529	4.51093
	C->X (FF)	0.08010	0.43190	4.68255

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	0.00907	0.01318	0.08410
	A_N	0.01266	0.01679	0.08783
	B	0.01054	0.01255	0.07405
	B	0.00608	0.00810	0.07006
	C	0.01166	0.01305	0.06248
	C	0.00623	0.00762	0.05757
sky130_fd_sc_hs__and3b_2	A_N	0.01304	0.01717	0.08609
	A_N	0.01682	0.02097	0.09055
	B	0.01486	0.01663	0.07736
	B	0.00963	0.01144	0.07323
	C	0.01614	0.01724	0.05584
	C	0.00985	0.01095	0.05009
sky130_fd_sc_hs__and3b_4	A_N	0.02404	0.02869	0.10742
	A_N	0.02775	0.03250	0.11137
	B	0.02759	0.03070	0.14443
	B	0.01835	0.02154	0.13639
	C	0.03010	0.03298	0.14673
	C	0.01844	0.02133	0.13711

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	A_N	0.01211	0.01565	0.08612
	A_N	0.00851	0.01201	0.08235
	B	0.00438	0.00819	0.06672
	B	0.00883	0.01253	0.07067
	C	0.00477	0.00815	0.06703
	C	0.01011	0.01348	0.07162
sky130_fd_sc_hs__and3b_2	A_N	0.01571	0.01919	0.08809
	A_N	0.01193	0.01536	0.08413
	B	0.00726	0.01100	0.06989
	B	0.01244	0.01609	0.07426
	C	0.00776	0.01071	0.06708
	C	0.01393	0.01686	0.07180
sky130_fd_sc_hs__and3b_4	A_N	0.02635	0.03038	0.11004
	A_N	0.02262	0.02659	0.10516
	B	0.01544	0.02228	0.13597
	B	0.02468	0.03146	0.14304
	C	0.01626	0.02315	0.14359
	C	0.02771	0.03448	0.15481

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)	0.00632	0.00975	0.07631
	(B * !C * !X)	0.00198	0.00539	0.07198
	(!B * !X)	0.00631	0.00973	0.07630
	(!B * !X)	0.00198	0.00538	0.07198
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00687	0.01001	0.07525
	(B * !C * !X)	0.00238	0.00548	0.07075
	(!B * !X)	0.00686	0.01000	0.07522
	(!B * !X)	0.00238	0.00549	0.07074
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.00950	0.01269	0.08527
	(B * !C * !X)	0.00451	0.00767	0.08028
	(!B * !X)	0.00945	0.01264	0.08522
	(!B * !X)	0.00452	0.00768	0.08028

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	0.00421	0.07074
	(B * !C * !X)	0.00440	0.00864	0.07514
	(!B * !X)	-0.00002	0.00421	0.07075
	(!B * !X)	0.00431	0.00854	0.07508
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00015	0.00415	0.06925
	(B * !C * !X)	0.00473	0.00877	0.07384
	(!B * !X)	0.00013	0.00414	0.06927
	(!B * !X)	0.00462	0.00865	0.07377
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.00042	0.00425	0.07631
	(B * !C * !X)	0.00560	0.00945	0.08145
	(!B * !X)	0.00046	0.00429	0.07639
	(!B * !X)	0.00542	0.00928	0.08134

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)	0.00166	0.00167	0.00166
	(A_N * C * !X)	-0.00189	-0.00190	-0.00189
	(A_N * !C * !X)	0.00102	0.00101	0.00101
	(A_N * !C * !X)	-0.00192	-0.00191	-0.00191
	(!A_N * !C * !X)	0.00061	0.00061	0.00061
	(!A_N * !C * !X)	-0.00216	-0.00217	-0.00217
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	0.00205	0.00205	0.00205
	(A_N * C * !X)	-0.00225	-0.00225	-0.00225
	(A_N * !C * !X)	0.00127	0.00128	0.00128
	(A_N * !C * !X)	-0.00225	-0.00226	-0.00226
	(!A_N * !C * !X)	0.00083	0.00082	0.00082
	(!A_N * !C * !X)	-0.00255	-0.00255	-0.00256
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	0.00322	0.00327	0.00324
	(A_N * C * !X)	-0.00430	-0.00434	-0.00432
	(A_N * !C * !X)	0.00192	0.00192	0.00191
	(A_N * !C * !X)	-0.00437	-0.00437	-0.00436
	(!A_N * !C * !X)	0.00133	0.00132	0.00134
	(!A_N * !C * !X)	-0.00462	-0.00460	-0.00462

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)	-0.00152	-0.00165	-0.00165
	(A_N * C * !X)	0.00202	0.00194	0.00191
	(A_N * !C * !X)	-0.00102	-0.00101	-0.00101
	(A_N * !C * !X)	0.00202	0.00203	0.00195
	(!A_N * !C * !X)	-0.00058	-0.00059	-0.00059
	(!A_N * !C * !X)	0.00220	0.00223	0.00219
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	-0.00190	-0.00203	-0.00204
	(A_N * C * !X)	0.00238	0.00227	0.00227
	(A_N * !C * !X)	-0.00127	-0.00128	-0.00128
	(A_N * !C * !X)	0.00238	0.00240	0.00230
	(!A_N * !C * !X)	-0.00078	-0.00079	-0.00079
	(!A_N * !C * !X)	0.00260	0.00263	0.00258
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	-0.00290	-0.00325	-0.00324
	(A_N * C * !X)	0.00460	0.00437	0.00434
	(A_N * !C * !X)	-0.00192	-0.00192	-0.00191
	(A_N * !C * !X)	0.00456	0.00463	0.00444
	(!A_N * !C * !X)	-0.00124	-0.00127	-0.00129
	(!A_N * !C * !X)	0.00471	0.00477	0.00467

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)	0.00145	0.00146	0.00145
	(A_N * B * !X)	-0.00197	-0.00198	-0.00198
	(A_N * !B * !X)	0.00148	0.00149	0.00148
	(A_N * !B * !X)	-0.00197	-0.00199	-0.00198
	(!A_N * !B * !X)	0.00147	0.00147	0.00148
	(!A_N * !B * !X)	-0.00198	-0.00198	-0.00198
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	0.00184	0.00182	0.00183
	(A_N * B * !X)	-0.00225	-0.00224	-0.00225
	(A_N * !B * !X)	0.00184	0.00187	0.00185
	(A_N * !B * !X)	-0.00224	-0.00226	-0.00225
	(!A_N * !B * !X)	0.00184	0.00186	0.00185
	(!A_N * !B * !X)	-0.00225	-0.00227	-0.00225
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	0.00308	0.00311	0.00310
	(A_N * B * !X)	-0.00444	-0.00447	-0.00446
	(A_N * !B * !X)	0.00307	0.00310	0.00308
	(A_N * !B * !X)	-0.00446	-0.00448	-0.00447
	(!A_N * !B * !X)	0.00307	0.00310	0.00308
	(!A_N * !B * !X)	-0.00445	-0.00448	-0.00447

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)	-0.00137	-0.00146	-0.00145
	(A_N * B * !X)	0.00200	0.00202	0.00200
	(A_N * !B * !X)	-0.00143	-0.00147	-0.00148
	(A_N * !B * !X)	0.00200	0.00201	0.00200
	(!A_N * !B * !X)	-0.00142	-0.00147	-0.00148
	(!A_N * !B * !X)	0.00202	0.00200	0.00199
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	-0.00172	-0.00182	-0.00183
	(A_N * B * !X)	0.00227	0.00229	0.00227
	(A_N * !B * !X)	-0.00176	-0.00183	-0.00184
	(A_N * !B * !X)	0.00225	0.00228	0.00227
	(!A_N * !B * !X)	-0.00175	-0.00184	-0.00185
	(!A_N * !B * !X)	0.00227	0.00228	0.00226
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	-0.00291	-0.00309	-0.00310
	(A_N * B * !X)	0.00451	0.00454	0.00449
	(A_N * !B * !X)	-0.00298	-0.00310	-0.00308
	(A_N * !B * !X)	0.00447	0.00452	0.00449
	(!A_N * !B * !X)	-0.00295	-0.00310	-0.00308
	(!A_N * !B * !X)	0.00451	0.00452	0.00449

SKY130_FD_SC_HS__AND3x

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00258	0.00238	0.00235	1.29624
sky130_fd_sc_hs__and3_2	0.00256	0.00235	0.00238	2.50462
sky130_fd_sc_hs__and3_4	0.00466	0.00453	0.00469	4.70538

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and3_1	0.00000	0.31805	1.80131
sky130_fd_sc_hs__and3_2	0.00000	0.40778	1.80979
sky130_fd_sc_hs__and3_4	0.00000	0.81555	3.61959

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)	0.06688	0.51588	6.19294
	B->X (RR)	0.07264	0.51820	6.12810
	C->X (RR)	0.07609	0.50727	5.99466
sky130_fd_sc_hs__and3_2	A->X (RR)	0.07563	0.46445	6.33431
	B->X (RR)	0.08135	0.46318	6.26499
	C->X (RR)	0.08468	0.44708	6.05321
sky130_fd_sc_hs__and3_4	A->X (RR)	0.08272	0.41701	6.48036
	B->X (RR)	0.09147	0.41936	6.42968
	C->X (RR)	0.09536	0.38790	6.15754

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and3_1	A->X (FF)	0.06646	0.44798	4.54400
	B->X (FF)	0.07545	0.47208	4.63050
	C->X (FF)	0.07715	0.48141	4.69309
sky130_fd_sc_hs__and3_2	A->X (FF)	0.07992	0.45151	4.56538
	B->X (FF)	0.08821	0.47285	4.64884
	C->X (FF)	0.09200	0.48421	4.73204
sky130_fd_sc_hs__and3_4	A->X (FF)	0.07421	0.40622	4.47588
	B->X (FF)	0.08317	0.42862	4.55109
	C->X (FF)	0.08917	0.44790	4.72695

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.00972	0.01240	0.07640
	A	0.00473	0.00743	0.07194
	B	0.01033	0.01232	0.07362
	B	0.00476	0.00737	0.06860
	C	0.01144	0.01305	0.07029
	C	0.00472	0.00632	0.06414
sky130_fd_sc_hs__and3_2	A	0.01303	0.01557	0.07875
	A	0.00808	0.01063	0.07445
	B	0.01363	0.01554	0.07587
	B	0.00811	0.01011	0.07124
	C	0.01480	0.01619	0.06498
	C	0.00809	0.00949	0.05940
sky130_fd_sc_hs__and3_4	A	0.02470	0.02931	0.15202
	A	0.01551	0.02031	0.14375
	B	0.02696	0.03029	0.14813
	B	0.01563	0.01903	0.13788
	C	0.02949	0.03269	0.14655
	C	0.01562	0.01884	0.13471

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.00313	0.00702	0.06535
	A	0.00812	0.01187	0.06931
	B	0.00430	0.00803	0.06611
	B	0.00981	0.01347	0.07071
	C	0.00472	0.00832	0.06873
	C	0.01131	0.01490	0.07464
sky130_fd_sc_hs__and3_2	A	0.00639	0.01009	0.06965
	A	0.01137	0.01503	0.07296
	B	0.00762	0.01141	0.06966
	B	0.01309	0.01663	0.07465
	C	0.00786	0.01139	0.07138
	C	0.01444	0.01770	0.07550
sky130_fd_sc_hs__and3_4	A	0.01363	0.02085	0.13965
	A	0.02279	0.02994	0.14708
	B	0.01573	0.02263	0.13951
	B	0.02697	0.03373	0.15020
	C	0.01660	0.02332	0.15028
	C	0.03017	0.03674	0.16025

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	0.00096	0.00097	0.00093
	(B * !C * !X)	-0.00210	-0.00211	-0.00218
	(!B * !X)	0.00097	0.00098	0.00095
	(!B * !X)	-0.00214	-0.00216	-0.00218
sky130_fd_sc_hs__and3_2	(B * !C * !X)	0.00097	0.00098	0.00095
	(B * !C * !X)	-0.00207	-0.00208	-0.00215
	(!B * !X)	0.00099	0.00100	0.00098
	(!B * !X)	-0.00211	-0.00212	-0.00215
sky130_fd_sc_hs__and3_4	(B * !C * !X)	0.00111	0.00111	0.00102
	(B * !C * !X)	-0.00428	-0.00430	-0.00446
	(!B * !X)	0.00115	0.00114	0.00109
	(!B * !X)	-0.00439	-0.00438	-0.00448

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	-0.00093	-0.00094	-0.00093
	(B * !C * !X)	0.00218	0.00221	0.00219
	(!B * !X)	-0.00094	-0.00096	-0.00094
	(!B * !X)	0.00218	0.00222	0.00219
sky130_fd_sc_hs__and3_2	(B * !C * !X)	-0.00095	-0.00096	-0.00095
	(B * !C * !X)	0.00215	0.00218	0.00216
	(!B * !X)	-0.00096	-0.00098	-0.00096
	(!B * !X)	0.00215	0.00219	0.00216
sky130_fd_sc_hs__and3_4	(B * !C * !X)	-0.00101	-0.00104	-0.00102
	(B * !C * !X)	0.00447	0.00457	0.00450
	(!B * !X)	-0.00105	-0.00108	-0.00105
	(!B * !X)	0.00447	0.00457	0.00450

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	0.00059	0.00059	0.00060
	(A * !C * !X)	-0.00190	-0.00190	-0.00189
	(!A * C * !X)	0.00142	0.00143	0.00142
	(!A * C * !X)	-0.00189	-0.00190	-0.00190
	(!A * !C * !X)	0.00073	0.00073	0.00072
	(!A * !C * !X)	-0.00191	-0.00191	-0.00190
sky130_fd_sc_hs__and3_2	(A * !C * !X)	0.00057	0.00057	0.00058
	(A * !C * !X)	-0.00186	-0.00186	-0.00186
	(!A * C * !X)	0.00141	0.00142	0.00142
	(!A * C * !X)	-0.00186	-0.00186	-0.00186
	(!A * !C * !X)	0.00069	0.00070	0.00070
	(!A * !C * !X)	-0.00186	-0.00187	-0.00187
sky130_fd_sc_hs__and3_4	(A * !C * !X)	0.00139	0.00139	0.00140
	(A * !C * !X)	-0.00370	-0.00370	-0.00369
	(!A * C * !X)	0.00310	0.00313	0.00312
	(!A * C * !X)	-0.00368	-0.00371	-0.00370
	(!A * !C * !X)	0.00167	0.00168	0.00168
	(!A * !C * !X)	-0.00372	-0.00373	-0.00373

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	-0.00056	-0.00057	-0.00058
	(A * !C * !X)	0.00193	0.00196	0.00191
	(!A * C * !X)	-0.00128	-0.00143	-0.00142
	(!A * C * !X)	0.00200	0.00193	0.00191
	(!A * !C * !X)	-0.00073	-0.00073	-0.00072
	(!A * !C * !X)	0.00199	0.00202	0.00193
sky130_fd_sc_hs__and3_2	(A * !C * !X)	-0.00054	-0.00055	-0.00056
	(A * !C * !X)	0.00190	0.00192	0.00188
	(!A * C * !X)	-0.00128	-0.00142	-0.00142
	(!A * C * !X)	0.00197	0.00189	0.00187
	(!A * !C * !X)	-0.00069	-0.00070	-0.00070
	(!A * !C * !X)	0.00195	0.00198	0.00189
sky130_fd_sc_hs__and3_4	(A * !C * !X)	-0.00130	-0.00132	-0.00135
	(A * !C * !X)	0.00381	0.00386	0.00375
	(!A * C * !X)	-0.00277	-0.00313	-0.00312
	(!A * C * !X)	0.00399	0.00374	0.00372
	(!A * !C * !X)	-0.00167	-0.00168	-0.00168
	(!A * !C * !X)	0.00392	0.00398	0.00380

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	0.00147	0.00149	0.00147
	(A * !B * !X)	-0.00195	-0.00196	-0.00195
	(!A * B * !X)	0.00143	0.00144	0.00143
	(!A * B * !X)	-0.00195	-0.00195	-0.00195
	(!A * !B * !X)	0.00146	0.00148	0.00147
	(!A * !B * !X)	-0.00195	-0.00196	-0.00195
sky130_fd_sc_hs__and3_2	(A * !B * !X)	0.00145	0.00146	0.00145
	(A * !B * !X)	-0.00196	-0.00197	-0.00196
	(!A * B * !X)	0.00145	0.00145	0.00144
	(!A * B * !X)	-0.00197	-0.00197	-0.00196
	(!A * !B * !X)	0.00144	0.00145	0.00145
	(!A * !B * !X)	-0.00196	-0.00197	-0.00196
sky130_fd_sc_hs__and3_4	(A * !B * !X)	0.00308	0.00312	0.00309
	(A * !B * !X)	-0.00388	-0.00391	-0.00389
	(!A * B * !X)	0.00307	0.00307	0.00306
	(!A * B * !X)	-0.00390	-0.00389	-0.00389
	(!A * !B * !X)	0.00308	0.00310	0.00309
	(!A * !B * !X)	-0.00388	-0.00390	-0.00389

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	-0.00142	-0.00148	-0.00147
	(A * !B * !X)	0.00196	0.00197	0.00196
	(!A * B * !X)	-0.00135	-0.00144	-0.00143
	(!A * B * !X)	0.00196	0.00198	0.00196
	(!A * !B * !X)	-0.00143	-0.00148	-0.00147
	(!A * !B * !X)	0.00196	0.00197	0.00196
sky130_fd_sc_hs__and3_2	(A * !B * !X)	-0.00140	-0.00145	-0.00145
	(A * !B * !X)	0.00197	0.00198	0.00197
	(!A * B * !X)	-0.00132	-0.00144	-0.00144
	(!A * B * !X)	0.00197	0.00199	0.00197
	(!A * !B * !X)	-0.00141	-0.00145	-0.00145
	(!A * !B * !X)	0.00198	0.00198	0.00197
sky130_fd_sc_hs__and3_4	(A * !B * !X)	-0.00294	-0.00309	-0.00309
	(A * !B * !X)	0.00390	0.00393	0.00391
	(!A * B * !X)	-0.00283	-0.00305	-0.00306
	(!A * B * !X)	0.00392	0.00395	0.00391
	(!A * !B * !X)	-0.00295	-0.00308	-0.00309
	(!A * !B * !X)	0.00389	0.00393	0.00391

SKY130_FD_SC_HS__AND4BBx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00233	0.00236	0.00249	0.00243	1.13094
sky130_fd_sc_hs__and4bb_2	0.00236	0.00225	0.00273	0.00279	2.37972
sky130_fd_sc_hs__and4bb_4	0.00255	0.00271	0.00506	0.00491	4.57846

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4bb_1	0.00000	0.85036	2.40853
sky130_fd_sc_hs__and4bb_2	0.00000	0.86055	1.39886
sky130_fd_sc_hs__and4bb_4	0.00000	0.78813	2.12824

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)	0.13567	0.74615	8.15253
	B_N->X (FR)	0.14069	0.74727	8.06825
	C->X (RR)	0.10239	0.57654	6.24875
	D->X (RR)	0.10569	0.56516	6.13494
sky130_fd_sc_hs__and4bb_2	A_N->X (FR)	0.13220	0.63785	8.05599
	B_N->X (FR)	0.14572	0.65404	8.07225
	C->X (RR)	0.10459	0.48446	6.17999
	D->X (RR)	0.10911	0.46948	5.95090
sky130_fd_sc_hs__and4bb_4	A_N->X (FR)	0.16634	0.63835	8.28420
	B_N->X (FR)	0.18449	0.66073	8.31445
	C->X (RR)	0.13135	0.45194	6.45780
	D->X (RR)	0.13536	0.42869	6.21609

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)	0.09651	0.29757	1.96058
	B_N->X (RF)	0.10066	0.30458	1.92187
	C->X (FF)	0.08512	0.48568	4.44639
	D->X (FF)	0.09168	0.50340	4.55676
sky130_fd_sc_hs__and4bb_2	A_N->X (RF)	0.09775	0.27514	2.13734
	B_N->X (RF)	0.10807	0.29551	2.22098
	C->X (FF)	0.08860	0.48513	4.65302
	D->X (FF)	0.09478	0.50104	4.76545
sky130_fd_sc_hs__and4bb_4	A_N->X (RF)	0.10626	0.25794	2.01886
	B_N->X (RF)	0.10893	0.26632	2.03767
	C->X (FF)	0.08141	0.43108	4.48454
	D->X (FF)	0.08645	0.44892	4.64743

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	0.00975	0.01374	0.08141
	A_N	0.01344	0.01745	0.08523
	B_N	0.01062	0.01484	0.08355
	B_N	0.01477	0.01902	0.08790
	C	0.01206	0.01384	0.07520
	C	0.00765	0.00944	0.07122
	D	0.01309	0.01481	0.07851
	D	0.00780	0.00953	0.07372
sky130_fd_sc_hs__and4bb_2	A_N	0.01331	0.01730	0.08696
	A_N	0.01683	0.02085	0.09093
	B_N	0.01525	0.01872	0.08381
	B_N	0.01889	0.02239	0.08789
	C	0.01655	0.01742	0.07546
	C	0.01143	0.01235	0.07140
	D	0.01793	0.01838	0.06391
	D	0.01161	0.01211	0.05873
sky130_fd_sc_hs__and4bb_4	A_N	0.02767	0.03146	0.10783
	A_N	0.03084	0.03469	0.11120
	B_N	0.03030	0.03390	0.10928
	B_N	0.03405	0.03769	0.11305
	C	0.03300	0.03453	0.14607
	C	0.02347	0.02513	0.13755
	D	0.03514	0.03638	0.14292
	D	0.02354	0.02489	0.13328

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4bb_1	A_N	0.01303	0.01586	0.08093
	A_N	0.00934	0.01217	0.07724
	B_N	0.01338	0.01690	0.08685
	B_N	0.00922	0.01268	0.08249
	C	0.00563	0.00915	0.07194
	C	0.01004	0.01353	0.07627
	D	0.00616	0.00976	0.07484
	D	0.01135	0.01487	0.07999
sky130_fd_sc_hs__and4bb_2	A_N	0.01561	0.01886	0.08898
	A_N	0.01209	0.01531	0.08437
	B_N	0.01646	0.01939	0.08347
	B_N	0.01280	0.01574	0.07933
	C	0.00833	0.01178	0.06720
	C	0.01344	0.01674	0.07165
	D	0.00883	0.01166	0.06640
	D	0.01501	0.01784	0.07246
sky130_fd_sc_hs__and4bb_4	A_N	0.02656	0.03054	0.10863
	A_N	0.02339	0.02730	0.10482
	B_N	0.02866	0.03252	0.11156
	B_N	0.02490	0.02869	0.10718
	C	0.01609	0.02210	0.13618
	C	0.02561	0.03156	0.14247
	D	0.01757	0.02289	0.14236
	D	0.02895	0.03422	0.15085

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)	0.00634	0.00951	0.07471
	(B_N * !X)	0.00218	0.00534	0.07056
	(!B_N * C * !D * !X)	0.00661	0.00980	0.07499
	(!B_N * C * !D * !X)	0.00244	0.00560	0.07083
	(!B_N * !C * !X)	0.00661	0.00979	0.07499
	(!B_N * !C * !X)	0.00244	0.00561	0.07084
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00645	0.00968	0.07619
	(B_N * !X)	0.00225	0.00545	0.07198
	(!B_N * C * !D * !X)	0.00670	0.00994	0.07645
	(!B_N * C * !D * !X)	0.00249	0.00569	0.07222
	(!B_N * !C * !X)	0.00670	0.00994	0.07644
	(!B_N * !C * !X)	0.00250	0.00570	0.07223
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.00902	0.01207	0.08345
	(B_N * !X)	0.00464	0.00770	0.07909
	(!B_N * C * !D * !X)	0.00954	0.01259	0.08396
	(!B_N * C * !D * !X)	0.00515	0.00818	0.07957
	(!B_N * !C * !X)	0.00953	0.01258	0.08396
	(!B_N * !C * !X)	0.00516	0.00819	0.07958

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)	0.00044	0.00449	0.06959
	(B_N * !X)	0.00459	0.00867	0.07376
	(!B_N * C * !D * !X)	0.00018	0.00424	0.06931
	(!B_N * C * !D * !X)	0.00445	0.00853	0.07357
	(!B_N * !C * !X)	0.00017	0.00422	0.06930
	(!B_N * !C * !X)	0.00435	0.00843	0.07349
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00029	0.00446	0.07090
	(B_N * !X)	0.00449	0.00868	0.07511
	(!B_N * C * !D * !X)	0.00005	0.00422	0.07063
	(!B_N * C * !D * !X)	0.00439	0.00858	0.07495
	(!B_N * !C * !X)	0.00003	0.00420	0.07062
	(!B_N * !C * !X)	0.00428	0.00846	0.07486
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.00143	0.00506	0.07593
	(B_N * !X)	0.00579	0.00944	0.08031
	(!B_N * C * !D * !X)	0.00095	0.00459	0.07542
	(!B_N * C * !D * !X)	0.00555	0.00920	0.08000
	(!B_N * !C * !X)	0.00090	0.00454	0.07540
	(!B_N * !C * !X)	0.00533	0.00898	0.07984

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)	0.00639	0.00948	0.07538
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00176	0.00484	0.07075
	(!C * !X)	0.00648	0.00966	0.07575
	(!C * !X)	0.00175	0.00491	0.07102
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00648	0.00923	0.07514
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00213	0.00488	0.07080
	(!C * !X)	0.00656	0.00954	0.07561
	(!C * !X)	0.00212	0.00507	0.07114
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00905	0.01159	0.08315
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00410	0.00664	0.07820
	(!C * !X)	0.00921	0.01214	0.08403
	(!C * !X)	0.00404	0.00696	0.07885

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)	0.00123	0.00534	0.07139
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00585	0.00998	0.07601
	(!C * !X)	0.00059	0.00473	0.07089
	(!C * !X)	0.00529	0.00945	0.07559
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00179	0.00579	0.07176
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00612	0.01015	0.07611
	(!C * !X)	0.00103	0.00507	0.07114
	(!C * !X)	0.00546	0.00951	0.07558
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00369	0.00737	0.07868
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00863	0.01234	0.08363
	(!C * !X)	0.00230	0.00603	0.07759
	(!C * !X)	0.00743	0.01116	0.08272

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)**	0.00185	0.00188	0.00186
	(A_N * B_N * D * !X)	-0.00184	-0.00186	-0.00184
	(A_N * B_N * !D * !X)	0.00129	0.00131	0.00129
	(A_N * B_N * !D * !X)	-0.00185	-0.00186	-0.00184
	(A_N * !B_N * D * !X)	0.00144	0.00145	0.00144
	(A_N * !B_N * D * !X)	-0.00227	-0.00228	-0.00226
	(A_N * !B_N * !D * !X)	0.00081	0.00082	0.00081
	(A_N * !B_N * !D * !X)	-0.00245	-0.00247	-0.00246
	(!A_N * B_N * D * !X)	0.00185	0.00186	0.00186
	(!A_N * B_N * D * !X)	-0.00184	-0.00185	-0.00185
	(!A_N * B_N * !D * !X)	0.00125	0.00126	0.00124
	(!A_N * B_N * !D * !X)	-0.00185	-0.00186	-0.00185
	(!A_N * !B_N * !D * !X)	0.00066	0.00066	0.00066
	(!A_N * !B_N * !D * !X)	-0.00228	-0.00229	-0.00228
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	0.00198	0.00199	0.00199
	(A_N * B_N * D * !X)	-0.00217	-0.00218	-0.00217
	(A_N * B_N * !D * !X)	0.00131	0.00132	0.00131
	(A_N * B_N * !D * !X)	-0.00217	-0.00219	-0.00217
	(A_N * !B_N * D * !X)	0.00168	0.00168	0.00168
	(A_N * !B_N * D * !X)	-0.00250	-0.00250	-0.00249
	(A_N * !B_N * !D * !X)	0.00091	0.00091	0.00090
	(A_N * !B_N * !D * !X)	-0.00274	-0.00275	-0.00274
	(!A_N * B_N * D * !X)	0.00198	0.00199	0.00198
	(!A_N * B_N * D * !X)	-0.00217	-0.00218	-0.00217
	(!A_N * B_N * !D * !X)	0.00125	0.00126	0.00125
	(!A_N * B_N * !D * !X)	-0.00218	-0.00219	-0.00218
	(!A_N * !B_N * !D * !X)	0.00072	0.00073	0.00073
	(!A_N * !B_N * !D * !X)	-0.00253	-0.00254	-0.00253

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * D * !X)**	0.00334	0.00335	0.00334
	(A_N * B_N * D * !X)	-0.00451	-0.00451	-0.00450
	(A_N * B_N * !D * !X)	0.00208	0.00211	0.00208
	(A_N * B_N * !D * !X)	-0.00451	-0.00455	-0.00451
	(A_N * !B_N * D * !X)	0.00320	0.00323	0.00319
	(A_N * !B_N * D * !X)	-0.00469	-0.00471	-0.00468
	(A_N * !B_N * !D * !X)	0.00180	0.00181	0.00179
	(A_N * !B_N * !D * !X)	-0.00514	-0.00516	-0.00514
	(!A_N * B_N * D * !X)	0.00334	0.00335	0.00334
	(!A_N * B_N * D * !X)	-0.00451	-0.00452	-0.00451
	(!A_N * B_N * !D * !X)	0.00199	0.00202	0.00199
	(!A_N * B_N * !D * !X)	-0.00452	-0.00457	-0.00453
	(!A_N * !B_N * !D * !X)	0.00146	0.00147	0.00147
	(!A_N * !B_N * !D * !X)	-0.00472	-0.00473	-0.00474

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)**	-0.00182	-0.00185	-0.00184
	(A_N * B_N * D * !X)	0.00188	0.00189	0.00187
	(A_N * B_N * !D * !X)	-0.00129	-0.00131	-0.00129
	(A_N * B_N * !D * !X)	0.00187	0.00189	0.00187
	(A_N * !B_N * D * !X)	-0.00133	-0.00144	-0.00144
	(A_N * !B_N * D * !X)	0.00237	0.00228	0.00226
	(A_N * !B_N * !D * !X)	-0.00081	-0.00082	-0.00081
	(A_N * !B_N * !D * !X)	0.00252	0.00257	0.00252
	(!A_N * B_N * D * !X)	-0.00180	-0.00186	-0.00185
	(!A_N * B_N * D * !X)	0.00191	0.00188	0.00187
	(!A_N * B_N * !D * !X)	-0.00125	-0.00126	-0.00124
	(!A_N * B_N * !D * !X)	0.00194	0.00196	0.00189
	(!A_N * !B_N * !D * !X)	-0.00062	-0.00063	-0.00063
	(!A_N * !B_N * !D * !X)	0.00231	0.00235	0.00231
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	-0.00192	-0.00197	-0.00196
	(A_N * B_N * D * !X)	0.00219	0.00222	0.00220
	(A_N * B_N * !D * !X)	-0.00131	-0.00132	-0.00131
	(A_N * B_N * !D * !X)	0.00220	0.00222	0.00220
	(A_N * !B_N * D * !X)	-0.00152	-0.00165	-0.00167
	(A_N * !B_N * D * !X)	0.00262	0.00253	0.00251
	(A_N * !B_N * !D * !X)	-0.00091	-0.00091	-0.00090
	(A_N * !B_N * !D * !X)	0.00279	0.00286	0.00281
	(!A_N * B_N * D * !X)	-0.00190	-0.00198	-0.00197
	(!A_N * B_N * D * !X)	0.00222	0.00221	0.00219
	(!A_N * B_N * !D * !X)	-0.00125	-0.00126	-0.00125
	(!A_N * B_N * !D * !X)	0.00228	0.00230	0.00222
	(!A_N * !B_N * !D * !X)	-0.00068	-0.00069	-0.00069
	(!A_N * !B_N * !D * !X)	0.00257	0.00260	0.00256

sky130_fd_sc_hs__and4bb_4	(A_N * B_N * D * !X)	-0.00325	-0.00333	-0.00332
	(A_N * B_N * D * !X)	0.00452	0.00455	0.00453
	(A_N * B_N * !D * !X)	-0.00208	-0.00211	-0.00208
	(A_N * B_N * !D * !X)	0.00454	0.00460	0.00455
	(A_N * !B_N * D * !X)	-0.00289	-0.00317	-0.00319
	(A_N * !B_N * D * !X)	0.00495	0.00474	0.00469
	(A_N * !B_N * !D * !X)	-0.00180	-0.00181	-0.00179
	(A_N * !B_N * !D * !X)	0.00520	0.00534	0.00526
	(!A_N * B_N * D * !X)	-0.00320	-0.00333	-0.00332
	(!A_N * B_N * D * !X)	0.00459	0.00455	0.00453
	(!A_N * B_N * !D * !X)	-0.00199	-0.00202	-0.00199
	(!A_N * B_N * !D * !X)	0.00473	0.00479	0.00462
	(!A_N * !B_N * !D * !X)	-0.00137	-0.00139	-0.00139
	(!A_N * !B_N * !D * !X)	0.00482	0.00489	0.00482

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)	0.00169	0.00171	0.00170
	(A_N * B_N * C * !X)	-0.00180	-0.00181	-0.00180
	(A_N * !C * !X)	0.00170	0.00171	0.00170
	(A_N * !C * !X)	-0.00180	-0.00181	-0.00180
	(A_N * !B_N * C * !X)	0.00147	0.00148	0.00147
	(A_N * !B_N * C * !X)	-0.00204	-0.00205	-0.00204
	(!A_N * B_N * C * !X)	0.00169	0.00170	0.00169
	(!A_N * B_N * C * !X)	-0.00180	-0.00181	-0.00181
	(!A_N * B_N * !C * !X)	0.00169	0.00170	0.00170
	(!A_N * B_N * !C * !X)	-0.00180	-0.00181	-0.00181
	(!A_N * !B_N * !C * !X)	0.00149	0.00150	0.00149
	(!A_N * !B_N * !C * !X)	-0.00201	-0.00202	-0.00201

sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	0.00180	0.00180	0.00179
	(A_N * B_N * C * !X)	-0.00230	-0.00231	-0.00230
	(A_N * !C * !X)	0.00180	0.00182	0.00180
	(A_N * !C * !X)	-0.00229	-0.00231	-0.00230
	(A_N * !B_N * C * !X)	0.00167	0.00169	0.00168
	(A_N * !B_N * C * !X)	-0.00242	-0.00244	-0.00242
	(!A_N * B_N * C * !X)	0.00177	0.00178	0.00177
	(!A_N * B_N * C * !X)	-0.00231	-0.00231	-0.00230
	(!A_N * B_N * !C * !X)	0.00179	0.00180	0.00180
	(!A_N * B_N * !C * !X)	-0.00230	-0.00231	-0.00230
	(!A_N * !B_N * !C * !X)	0.00171	0.00173	0.00172
	(!A_N * !B_N * !C * !X)	-0.00238	-0.00239	-0.00238
sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	0.00300	0.00302	0.00302
	(A_N * B_N * C * !X)	-0.00444	-0.00446	-0.00446
	(A_N * !C * !X)	0.00300	0.00304	0.00301
	(A_N * !C * !X)	-0.00445	-0.00448	-0.00446
	(A_N * !B_N * C * !X)	0.00300	0.00302	0.00299
	(A_N * !B_N * C * !X)	-0.00454	-0.00456	-0.00453
	(!A_N * B_N * C * !X)	0.00303	0.00304	0.00302
	(!A_N * B_N * C * !X)	-0.00447	-0.00447	-0.00446
	(!A_N * B_N * !C * !X)	0.00302	0.00306	0.00304
	(!A_N * B_N * !C * !X)	-0.00445	-0.00448	-0.00446
	(!A_N * !B_N * !C * !X)	0.00302	0.00306	0.00304
	(!A_N * !B_N * !C * !X)	-0.00445	-0.00449	-0.00447

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)**	-0.00158	-0.00168	-0.00168
	(A_N * B_N * C * !X)	0.00182	0.00185	0.00183
	(A_N * !C * !X)	-0.00164	-0.00168	-0.00169
	(A_N * !C * !X)	0.00184	0.00184	0.00183
	(A_N * !B_N * C * !X)	-0.00135	-0.00148	-0.00147
	(A_N * !B_N * C * !X)	0.00210	0.00207	0.00205
	(!A_N * B_N * C * !X)	-0.00159	-0.00169	-0.00169
	(!A_N * B_N * C * !X)	0.00182	0.00184	0.00182
	(!A_N * B_N * !C * !X)	-0.00165	-0.00169	-0.00170
	(!A_N * B_N * !C * !X)	0.00183	0.00183	0.00182
	(!A_N * !B_N * !C * !X)	-0.00144	-0.00150	-0.00149
	(!A_N * !B_N * !C * !X)	0.00205	0.00203	0.00202
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	-0.00166	-0.00177	-0.00177
	(A_N * B_N * C * !X)	0.00232	0.00235	0.00233
	(A_N * !C * !X)	-0.00171	-0.00178	-0.00178
	(A_N * !C * !X)	0.00232	0.00234	0.00233
	(A_N * !B_N * C * !X)	-0.00154	-0.00169	-0.00168
	(A_N * !B_N * C * !X)	0.00249	0.00245	0.00243
	(!A_N * B_N * C * !X)	-0.00167	-0.00178	-0.00177
	(!A_N * B_N * C * !X)	0.00232	0.00235	0.00232
	(!A_N * B_N * !C * !X)	-0.00172	-0.00179	-0.00179
	(!A_N * B_N * !C * !X)	0.00231	0.00234	0.00232
	(!A_N * !B_N * !C * !X)	-0.00163	-0.00171	-0.00172
	(!A_N * !B_N * !C * !X)	0.00240	0.00241	0.00239

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	-0.00282	-0.00299	-0.00301
	(A_N * B_N * C * !X)	0.00450	0.00454	0.00449
	(A_N * !C * !X)	-0.00289	-0.00302	-0.00301
	(A_N * !C * !X)	0.00447	0.00452	0.00449
	(A_N * !B_N * C * !X)	-0.00274	-0.00297	-0.00299
	(A_N * !B_N * C * !X)	0.00465	0.00462	0.00455
	(!A_N * B_N * C * !X)	-0.00282	-0.00300	-0.00301
	(!A_N * B_N * C * !X)	0.00450	0.00454	0.00449
	(!A_N * B_N * !C * !X)	-0.00289	-0.00302	-0.00303
	(!A_N * B_N * !C * !X)	0.00447	0.00452	0.00449
	(!A_N * !B_N * !C * !X)	-0.00286	-0.00302	-0.00303
	(!A_N * !B_N * !C * !X)	0.00451	0.00452	0.00449

SKY130_FD_SC_HS__AND4Bx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00247	0.00260	0.00250	0.00243	1.24693
sky130_fd_sc_hs__and4b_2	0.00229	0.00278	0.00277	0.00285	2.13264
sky130_fd_sc_hs__and4b_4	0.00251	0.00514	0.00552	0.00513	4.00619

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__and4b_1	0.00000	0.54915	2.40372
sky130_fd_sc_hs__and4b_2	0.00000	0.55933	1.05719
sky130_fd_sc_hs__and4b_4	0.00000	0.65284	2.11650

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)	0.12465	0.71939	8.19909
	B->X (RR)	0.09236	0.56991	6.46839
	C->X (RR)	0.09740	0.56313	6.38299
	D->X (RR)	0.10201	0.54949	6.14047
sky130_fd_sc_hs__and4b_2	A_N->X (FR)	0.14029	0.65864	7.98175
	B->X (RR)	0.09617	0.49400	6.08015
	C->X (RR)	0.10219	0.48474	5.98238
	D->X (RR)	0.10616	0.46876	5.70527
sky130_fd_sc_hs__and4b_4	A_N->X (FR)	0.17213	0.65627	8.23536
	B->X (RR)	0.11242	0.45977	6.33305
	C->X (RR)	0.12515	0.45112	6.12767
	D->X (RR)	0.12559	0.43459	6.06294

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)	0.09043	0.29928	2.14603
	B->X (FF)	0.07716	0.47485	4.47134
	C->X (FF)	0.08423	0.49332	4.58369
	D->X (FF)	0.09076	0.51241	4.70360
sky130_fd_sc_hs__and4b_2	A_N->X (RF)	0.10409	0.27506	1.79448
	B->X (FF)	0.08557	0.45966	4.21701
	C->X (FF)	0.09375	0.47923	4.32869
	D->X (FF)	0.09850	0.49272	4.41724
sky130_fd_sc_hs__and4b_4	A_N->X (RF)	0.11647	0.27006	1.68533
	B->X (FF)	0.08405	0.42001	4.11555
	C->X (FF)	0.09210	0.44035	4.23220
	D->X (FF)	0.10599	0.47293	4.40960

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	0.00924	0.01321	0.08318
	A_N	0.01276	0.01671	0.08678
	B	0.01116	0.01255	0.07003
	B	0.00601	0.00741	0.06509
	C	0.01231	0.01353	0.07294
	C	0.00625	0.00747	0.06717
	D	0.01321	0.01382	0.06092
	D	0.00623	0.00684	0.05443
sky130_fd_sc_hs__and4b_2	A_N	0.01334	0.01718	0.08334
	A_N	0.01666	0.02055	0.08716
	B	0.01487	0.01619	0.07247
	B	0.00940	0.01074	0.06805
	C	0.01608	0.01721	0.07523
	C	0.00960	0.01073	0.06985
	D	0.01748	0.01816	0.05628
	D	0.00959	0.01030	0.04886
sky130_fd_sc_hs__and4b_4	A_N	0.02737	0.03158	0.10726
	A_N	0.03113	0.03540	0.11126
	B	0.02989	0.03255	0.13963
	B	0.01982	0.02252	0.13105
	C	0.03308	0.03507	0.12853
	C	0.02040	0.02247	0.11779
	D	0.03469	0.03648	0.14819
	D	0.02051	0.02230	0.13601

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4b_1	A_N	0.01207	0.01518	0.08494
	A_N	0.00855	0.01163	0.08132
	B	0.00443	0.00784	0.06018
	B	0.00957	0.01295	0.06487
	C	0.00472	0.00822	0.06334
	C	0.01070	0.01415	0.06853
	D	0.00549	0.00853	0.06321
	D	0.01230	0.01525	0.06918
sky130_fd_sc_hs__and4b_2	A_N	0.01637	0.01914	0.08200
	A_N	0.01304	0.01581	0.07868
	B	0.00779	0.01123	0.06588
	B	0.01324	0.01667	0.07097
	C	0.00860	0.01187	0.06957
	C	0.01498	0.01810	0.07481
	D	0.00875	0.01153	0.06650
	D	0.01643	0.01896	0.07347
sky130_fd_sc_hs__and4b_4	A_N	0.02860	0.03191	0.10410
	A_N	0.02485	0.02811	0.10017
	B	0.01480	0.02107	0.13450
	B	0.02481	0.03099	0.14191
	C	0.01601	0.02157	0.13587
	C	0.02846	0.03389	0.14567
	D	0.01851	0.02376	0.13990
	D	0.03231	0.03735	0.15248

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)	0.00647	0.00970	0.07636
	(B * C * !D * !X)	0.00180	0.00500	0.07168
	(B * !C * !X)	0.00648	0.00970	0.07636
	(B * !C * !X)	0.00180	0.00500	0.07168
	(!B * !X)	0.00646	0.00968	0.07635
	(!B * !X)	0.00180	0.00500	0.07168
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00720	0.01030	0.07529
	(B * C * !D * !X)	0.00273	0.00581	0.07084
	(B * !C * !X)	0.00719	0.01030	0.07529
	(B * !C * !X)	0.00273	0.00582	0.07084
	(!B * !X)	0.00718	0.01028	0.07527
	(!B * !X)	0.00273	0.00582	0.07084
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.01117	0.01410	0.08443
	(B * C * !D * !X)	0.00577	0.00868	0.07905
	(B * !C * !X)	0.01115	0.01408	0.08442
	(B * !C * !X)	0.00577	0.00868	0.07905
	(!B * !X)	0.01108	0.01401	0.08434
	(!B * !X)	0.00578	0.00868	0.07905

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)	0.00009	0.00431	0.07080
	(B * C * !D * !X)	0.00489	0.00912	0.07558
	(B * !C * !X)	0.00006	0.00428	0.07078
	(B * !C * !X)	0.00483	0.00905	0.07555
	(!B * !X)	0.00008	0.00430	0.07082
	(!B * !X)	0.00475	0.00898	0.07550
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00021	0.00416	0.06910
	(B * C * !D * !X)	0.00482	0.00878	0.07368
	(B * !C * !X)	0.00020	0.00415	0.06910
	(B * !C * !X)	0.00476	0.00872	0.07365
	(!B * !X)	0.00021	0.00416	0.06913
	(!B * !X)	0.00465	0.00865	0.07358
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.00063	0.00459	0.07388
	(B * C * !D * !X)	0.00628	0.01024	0.07948
	(B * !C * !X)	0.00061	0.00457	0.07389
	(B * !C * !X)	0.00615	0.01014	0.07941
	(!B * !X)	0.00062	0.00425	0.07395
	(!B * !X)	0.00594	0.00959	0.07928

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)**	0.00171	0.00173	0.00172
	(A_N * C * D * !X)	-0.00208	-0.00209	-0.00209
	(A_N * C * !D * !X)	0.00108	0.00109	0.00109
	(A_N * C * !D * !X)	-0.00209	-0.00210	-0.00210
	(A_N * !C * !X)	0.00104	0.00104	0.00105
	(A_N * !C * !X)	-0.00208	-0.00209	-0.00210
	(!A_N * C * !D * !X)	0.00065	0.00065	0.00065
	(!A_N * C * !D * !X)	-0.00234	-0.00235	-0.00236
	(!A_N * !C * !X)	0.00065	0.00065	0.00065
	(!A_N * !C * !X)	-0.00236	-0.00236	-0.00237
sky130_fd_sc_hs__and4b_2	**(A_N * C * D * !X)**	0.00196	0.00197	0.00196
	(A_N * C * D * !X)	-0.00219	-0.00219	-0.00219
	(A_N * C * !D * !X)	0.00121	0.00121	0.00120
	(A_N * C * !D * !X)	-0.00220	-0.00221	-0.00220
	(A_N * !C * !X)	0.00122	0.00124	0.00122
	(A_N * !C * !X)	-0.00220	-0.00222	-0.00220
	(!A_N * C * !D * !X)	0.00069	0.00069	0.00069
	(!A_N * C * !D * !X)	-0.00249	-0.00250	-0.00252
	(!A_N * !C * !X)	0.00073	0.00073	0.00073
	(!A_N * !C * !X)	-0.00252	-0.00253	-0.00252
sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	0.00399	0.00402	0.00400
	(A_N * C * D * !X)	-0.00417	-0.00419	-0.00417
	(A_N * C * !D * !X)	0.00270	0.00273	0.00270
	(A_N * C * !D * !X)	-0.00419	-0.00421	-0.00419
	(A_N * !C * !X)	0.00277	0.00277	0.00278
	(A_N * !C * !X)	-0.00419	-0.00419	-0.00420
	(!A_N * C * !D * !X)	0.00158	0.00160	0.00159
	(!A_N * C * !D * !X)	-0.00486	-0.00491	-0.00494
	(!A_N * !C * !X)	0.00166	0.00168	0.00166
	(!A_N * !C * !X)	-0.00491	-0.00496	-0.00496

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)	-0.00157	-0.00172	-0.00171
	(A_N * C * D * !X)	0.00225	0.00212	0.00211
	(A_N * C * !D * !X)	-0.00108	-0.00109	-0.00109
	(A_N * C * !D * !X)	0.00221	0.00219	0.00212
	(A_N * !C * !X)	-0.00104	-0.00104	-0.00105
	(A_N * !C * !X)	0.00219	0.00222	0.00213
	(!A_N * C * !D * !X)	-0.00062	-0.00062	-0.00062
	(!A_N * C * !D * !X)	0.00240	0.00243	0.00238
	(!A_N * !C * !X)	-0.00063	-0.00063	-0.00063
	(!A_N * !C * !X)	0.00241	0.00242	0.00238
sky130_fd_sc_hs__and4b_2	(A_N * C * D * !X)	-0.00180	-0.00196	-0.00195
	(A_N * C * D * !X)	0.00235	0.00223	0.00221
	(A_N * C * !D * !X)	-0.00121	-0.00121	-0.00120
	(A_N * C * !D * !X)	0.00232	0.00230	0.00222
	(A_N * !C * !X)	-0.00122	-0.00124	-0.00122
	(A_N * !C * !X)	0.00233	0.00235	0.00224
	(!A_N * C * !D * !X)	-0.00067	-0.00068	-0.00069
	(!A_N * C * !D * !X)	0.00256	0.00259	0.00255
	(!A_N * !C * !X)	-0.00069	-0.00070	-0.00070
	(!A_N * !C * !X)	0.00256	0.00259	0.00255

sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	-0.00372	-0.00401	-0.00400
	(A_N * C * D * !X)	0.00443	0.00423	0.00419
	(A_N * C * !D * !X)	-0.00270	-0.00273	-0.00270
	(A_N * C * !D * !X)	0.00439	0.00433	0.00421
	(A_N * !C * !X)	-0.00277	-0.00277	-0.00278
	(A_N * !C * !X)	0.00444	0.00446	0.00427
	(!A_N * C * !D * !X)	-0.00155	-0.00156	-0.00157
	(!A_N * C * !D * !X)	0.00504	0.00507	0.00500
	(!A_N * !C * !X)	-0.00158	-0.00160	-0.00161
	(!A_N * !C * !X)	0.00504	0.00508	0.00500

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)**	0.00174	0.00175	0.00174
	(A_N * B * D * !X)	-0.00188	-0.00189	-0.00189
	(A_N * B * !D * !X)	0.00112	0.00113	0.00112
	(A_N * B * !D * !X)	-0.00189	-0.00191	-0.00190
	(A_N * !B * D * !X)	0.00174	0.00177	0.00175
	(A_N * !B * D * !X)	-0.00188	-0.00190	-0.00189
	(A_N * !B * !D * !X)	0.00111	0.00113	0.00112
	(A_N * !B * !D * !X)	-0.00189	-0.00191	-0.00190
	(!A_N * B * !D * !X)	0.00094	0.00095	0.00094
	(!A_N * B * !D * !X)	-0.00190	-0.00191	-0.00189
	(!A_N * !B * D * !X)	0.00173	0.00176	0.00174
	(!A_N * !B * D * !X)	-0.00190	-0.00192	-0.00191
	(!A_N * !B * !D * !X)	0.00106	0.00107	0.00107
	(!A_N * !B * !D * !X)	-0.00191	-0.00193	-0.00192

sky130_fd_sc_hs__and4b_2	**(A_N * B * D * !X)**	0.00171	0.00172	0.00171
	(A_N * B * D * !X)	-0.00217	-0.00217	-0.00217
	(A_N * B * !D * !X)	0.00093	0.00094	0.00093
	(A_N * B * !D * !X)	-0.00217	-0.00218	-0.00217
	(A_N * !B * D * !X)	0.00172	0.00174	0.00172
	(A_N * !B * D * !X)	-0.00216	-0.00218	-0.00217
	(A_N * !B * !D * !X)	0.00092	0.00092	0.00092
	(A_N * !B * !D * !X)	-0.00217	-0.00218	-0.00218
	(!A_N * B * !D * !X)	0.00072	0.00072	0.00072
	(!A_N * B * !D * !X)	-0.00219	-0.00220	-0.00218
	(!A_N * !B * D * !X)	0.00169	0.00172	0.00170
	(!A_N * !B * D * !X)	-0.00219	-0.00221	-0.00219
	(!A_N * !B * !D * !X)	0.00084	0.00085	0.00085
	(!A_N * !B * !D * !X)	-0.00220	-0.00221	-0.00220
sky130_fd_sc_hs__and4b_4	**(A_N * B * D * !X)**	0.00377	0.00383	0.00379
	(A_N * B * D * !X)	-0.00442	-0.00445	-0.00443
	(A_N * B * !D * !X)	0.00246	0.00249	0.00247
	(A_N * B * !D * !X)	-0.00444	-0.00446	-0.00444
	(A_N * !B * D * !X)	0.00375	0.00379	0.00376
	(A_N * !B * D * !X)	-0.00443	-0.00445	-0.00443
	(A_N * !B * !D * !X)	0.00251	0.00253	0.00251
	(A_N * !B * !D * !X)	-0.00444	-0.00446	-0.00444
	(!A_N * B * !D * !X)	0.00206	0.00208	0.00208
	(!A_N * B * !D * !X)	-0.00446	-0.00450	-0.00446
	(!A_N * !B * D * !X)	0.00370	0.00373	0.00371
	(!A_N * !B * D * !X)	-0.00448	-0.00450	-0.00448
	(!A_N * !B * !D * !X)	0.00234	0.00235	0.00234
	(!A_N * !B * !D * !X)	-0.00451	-0.00452	-0.00452

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)	-0.00159	-0.00174	-0.00174
	(A_N * B * D * !X)	0.00192	0.00191	0.00190
	(A_N * B * !D * !X)	-0.00112	-0.00113	-0.00112
	(A_N * B * !D * !X)	0.00192	0.00196	0.00191
	(A_N * !B * D * !X)	-0.00170	-0.00176	-0.00175
	(A_N * !B * D * !X)	0.00190	0.00192	0.00190
	(A_N * !B * !D * !X)	-0.00111	-0.00113	-0.00112
	(A_N * !B * !D * !X)	0.00191	0.00193	0.00191
	(!A_N * B * !D * !X)	-0.00089	-0.00090	-0.00090
	(!A_N * B * !D * !X)	0.00195	0.00198	0.00193
	(!A_N * !B * D * !X)	-0.00166	-0.00175	-0.00174
	(!A_N * !B * D * !X)	0.00195	0.00193	0.00191
	(!A_N * !B * !D * !X)	-0.00106	-0.00107	-0.00107
	(!A_N * !B * !D * !X)	0.00201	0.00203	0.00195
sky130_fd_sc_hs__and4b_2	(A_N * B * D * !X)	-0.00155	-0.00168	-0.00171
	(A_N * B * D * !X)	0.00219	0.00218	0.00219
	(A_N * B * !D * !X)	-0.00093	-0.00094	-0.00093
	(A_N * B * !D * !X)	0.00220	0.00224	0.00219
	(A_N * !B * D * !X)	-0.00164	-0.00172	-0.00171
	(A_N * !B * D * !X)	0.00218	0.00220	0.00219
	(A_N * !B * !D * !X)	-0.00092	-0.00092	-0.00092
	(A_N * !B * !D * !X)	0.00219	0.00222	0.00220
	(!A_N * B * !D * !X)	-0.00067	-0.00069	-0.00068
	(!A_N * B * !D * !X)	0.00224	0.00226	0.00222
	(!A_N * !B * D * !X)	-0.00159	-0.00170	-0.00170
	(!A_N * !B * D * !X)	0.00222	0.00222	0.00220
	(!A_N * !B * !D * !X)	-0.00084	-0.00085	-0.00085
	(!A_N * !B * !D * !X)	0.00229	0.00231	0.00224

sky130_fd_sc_hs__and4b_4	(A_N * B * D * !X)	-0.00349	-0.00378	-0.00378
	(A_N * B * D * !X)	0.00447	0.00449	0.00445
	(A_N * B * !D * !X)	-0.00246	-0.00249	-0.00247
	(A_N * B * !D * !X)	0.00447	0.00452	0.00446
	(A_N * !B * D * !X)	-0.00363	-0.00379	-0.00376
	(A_N * !B * D * !X)	0.00445	0.00449	0.00445
	(A_N * !B * !D * !X)	-0.00251	-0.00253	-0.00251
	(A_N * !B * !D * !X)	0.00445	0.00450	0.00446
	(!A_N * B * !D * !X)	-0.00199	-0.00201	-0.00201
	(!A_N * B * !D * !X)	0.00458	0.00461	0.00454
	(!A_N * !B * D * !X)	-0.00353	-0.00373	-0.00371
	(!A_N * !B * D * !X)	0.00455	0.00454	0.00450
	(!A_N * !B * !D * !X)	-0.00234	-0.00235	-0.00234
	(!A_N * !B * !D * !X)	0.00471	0.00476	0.00459

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)	0.00143	0.00144	0.00143
	(A_N * B * C * !X)	-0.00204	-0.00205	-0.00204
	(A_N * !C * !X)	0.00148	0.00149	0.00148
	(A_N * !C * !X)	-0.00205	-0.00205	-0.00205
	(A_N * !B * C * !X)	0.00143	0.00144	0.00144
	(A_N * !B * C * !X)	-0.00204	-0.00205	-0.00205
	(!A_N * B * !C * !X)	0.00148	0.00148	0.00148
	(!A_N * B * !C * !X)	-0.00205	-0.00206	-0.00205
	(!A_N * !B * C * !X)	0.00143	0.00145	0.00143
	(!A_N * !B * C * !X)	-0.00205	-0.00206	-0.00205
	(!A_N * !B * !C * !X)	0.00148	0.00149	0.00148
	(!A_N * !B * !C * !X)	-0.00205	-0.00206	-0.00205

sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	0.00170	0.00170	0.00170
	(A_N * B * C * !X)	-0.00234	-0.00234	-0.00234
	(A_N * !C * !X)	0.00172	0.00173	0.00172
	(A_N * !C * !X)	-0.00233	-0.00234	-0.00234
	(A_N * !B * C * !X)	0.00170	0.00171	0.00170
	(A_N * !B * C * !X)	-0.00234	-0.00234	-0.00234
	(!A_N * B * !C * !X)	0.00171	0.00172	0.00171
	(!A_N * B * !C * !X)	-0.00236	-0.00237	-0.00236
	(!A_N * !B * C * !X)	0.00170	0.00170	0.00170
	(!A_N * !B * C * !X)	-0.00237	-0.00237	-0.00236
	(!A_N * !B * !C * !X)	0.00169	0.00170	0.00169
	(!A_N * !B * !C * !X)	-0.00236	-0.00237	-0.00236
sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	0.00311	0.00312	0.00311
	(A_N * B * C * !X)	-0.00440	-0.00441	-0.00440
	(A_N * !C * !X)	0.00310	0.00312	0.00311
	(A_N * !C * !X)	-0.00439	-0.00441	-0.00440
	(A_N * !B * C * !X)	0.00311	0.00313	0.00312
	(A_N * !B * C * !X)	-0.00439	-0.00441	-0.00440
	(!A_N * B * !C * !X)	0.00304	0.00307	0.00305
	(!A_N * B * !C * !X)	-0.00445	-0.00448	-0.00446
	(!A_N * !B * C * !X)	0.00305	0.00309	0.00306
	(!A_N * !B * C * !X)	-0.00444	-0.00448	-0.00446
	(!A_N * !B * !C * !X)	0.00306	0.00307	0.00306
	(!A_N * !B * !C * !X)	-0.00446	-0.00447	-0.00446

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)**	-0.00132	-0.00144	-0.00143
	(A_N * B * C * !X)	0.00206	0.00208	0.00206
	(A_N * !C * !X)	-0.00142	-0.00147	-0.00148
	(A_N * !C * !X)	0.00207	0.00208	0.00206
	(A_N * !B * C * !X)	-0.00134	-0.00144	-0.00144
	(A_N * !B * C * !X)	0.00206	0.00208	0.00206
	(!A_N * B * !C * !X)	-0.00142	-0.00148	-0.00148
	(!A_N * B * !C * !X)	0.00206	0.00207	0.00206
	(!A_N * !B * C * !X)	-0.00134	-0.00145	-0.00143
	(!A_N * !B * C * !X)	0.00205	0.00208	0.00206
	(!A_N * !B * !C * !X)	-0.00143	-0.00148	-0.00148
	(!A_N * !B * !C * !X)	0.00207	0.00207	0.00206
sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	-0.00157	-0.00170	-0.00170
	(A_N * B * C * !X)	0.00235	0.00238	0.00236
	(A_N * !C * !X)	-0.00165	-0.00173	-0.00172
	(A_N * !C * !X)	0.00234	0.00238	0.00236
	(A_N * !B * C * !X)	-0.00158	-0.00171	-0.00170
	(A_N * !B * C * !X)	0.00235	0.00238	0.00236
	(!A_N * B * !C * !X)	-0.00162	-0.00171	-0.00171
	(!A_N * B * !C * !X)	0.00236	0.00240	0.00237
	(!A_N * !B * C * !X)	-0.00156	-0.00169	-0.00170
	(!A_N * !B * C * !X)	0.00237	0.00240	0.00237
	(!A_N * !B * !C * !X)	-0.00164	-0.00170	-0.00169
	(!A_N * !B * !C * !X)	0.00236	0.00240	0.00237

sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	-0.00282	-0.00312	-0.00311
	(A_N * B * C * !X)	0.00442	0.00447	0.00443
	(A_N * !C * !X)	-0.00297	-0.00312	-0.00310
	(A_N * !C * !X)	0.00441	0.00445	0.00443
	(A_N * !B * C * !X)	-0.00285	-0.00311	-0.00312
	(A_N * !B * C * !X)	0.00442	0.00447	0.00443
	(!A_N * B * !C * !X)	-0.00288	-0.00305	-0.00304
	(!A_N * B * !C * !X)	0.00448	0.00451	0.00448
	(!A_N * !B * C * !X)	-0.00280	-0.00306	-0.00306
	(!A_N * !B * C * !X)	0.00448	0.00452	0.00448
	(!A_N * !B * !C * !X)	-0.00293	-0.00307	-0.00306
	(!A_N * !B * !C * !X)	0.00446	0.00451	0.00448

SKY130_FD_SC_HS__AND4x

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00262	0.00259	0.00249	0.00252	1.25281
sky130_fd_sc_hs__and4_2	0.00282	0.00290	0.00275	0.00271	2.12448
sky130_fd_sc_hs__and4_4	0.00489	0.00505	0.00553	0.00494	4.65227

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4_1	0.00000	0.24793	2.39891
sky130_fd_sc_hs__and4_2	0.00000	0.25812	1.05238
sky130_fd_sc_hs__and4_4	0.00000	0.51754	2.10476

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)	0.08311	0.56085	6.45112
	B->X (RR)	0.09025	0.56549	6.39976
	C->X (RR)	0.09449	0.55752	6.31284
	D->X (RR)	0.09960	0.54428	6.08560
sky130_fd_sc_hs__and4_2	A->X (RR)	0.08900	0.50011	6.17302
	B->X (RR)	0.09687	0.50135	6.11829
	C->X (RR)	0.10198	0.49129	6.02591
	D->X (RR)	0.10607	0.47475	5.72145
sky130_fd_sc_hs__and4_4	A->X (RR)	0.09512	0.43944	6.50378
	B->X (RR)	0.10594	0.44719	6.50414
	C->X (RR)	0.11681	0.43850	6.33639
	D->X (RR)	0.11688	0.42179	6.27927

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and4_1	A->X (FF)	0.06889	0.44669	4.35221
	B->X (FF)	0.07694	0.46914	4.42944
	C->X (FF)	0.08354	0.48721	4.53192
	D->X (FF)	0.09029	0.50513	4.64547
sky130_fd_sc_hs__and4_2	A->X (FF)	0.07327	0.42861	4.03985
	B->X (FF)	0.08301	0.45238	4.13445
	C->X (FF)	0.08983	0.47022	4.24637
	D->X (FF)	0.09952	0.49388	4.38170
sky130_fd_sc_hs__and4_4	A->X (FF)	0.07369	0.40802	4.49426
	B->X (FF)	0.07826	0.41662	4.49767
	C->X (FF)	0.08561	0.43654	4.61840
	D->X (FF)	0.08798	0.44954	4.72160

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.01040	0.01260	0.07416
	A	0.00521	0.00743	0.06923
	B	0.01133	0.01298	0.07163
	B	0.00525	0.00691	0.06585
	C	0.01238	0.01385	0.07431
	C	0.00527	0.00673	0.06757
	D	0.01359	0.01452	0.06341
	D	0.00526	0.00619	0.05560
sky130_fd_sc_hs__and4_2	A	0.01427	0.01616	0.07614
	A	0.00853	0.01045	0.07142
	B	0.01556	0.01686	0.07370
	B	0.00870	0.01001	0.06787
	C	0.01668	0.01781	0.07683
	C	0.00870	0.00987	0.06993
	D	0.01807	0.01869	0.05638
	D	0.00874	0.00939	0.04743
sky130_fd_sc_hs__and4_4	A	0.02690	0.03097	0.14498
	A	0.01702	0.02116	0.13599
	B	0.02942	0.03217	0.14256
	B	0.01697	0.01977	0.13098
	C	0.03247	0.03455	0.13671
	C	0.01704	0.01923	0.12259
	D	0.03382	0.03595	0.15476
	D	0.01707	0.01928	0.13974

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.00386	0.00746	0.06348
	A	0.00904	0.01252	0.06851
	B	0.00447	0.00815	0.06340
	B	0.01051	0.01406	0.06938
	C	0.00488	0.00833	0.06636
	C	0.01190	0.01532	0.07288
	D	0.00534	0.00843	0.06660
	D	0.01345	0.01647	0.07346
sky130_fd_sc_hs__and4_2	A	0.00678	0.01029	0.06688
	A	0.01250	0.01600	0.07127
	B	0.00751	0.01094	0.06642
	B	0.01433	0.01772	0.07250
	C	0.00833	0.01170	0.06969
	C	0.01616	0.01938	0.07662
	D	0.00875	0.01124	0.06535
	D	0.01779	0.02025	0.07433
sky130_fd_sc_hs__and4_4	A	0.01364	0.02007	0.13633
	A	0.02351	0.02986	0.14455
	B	0.01436	0.02104	0.13716
	B	0.02672	0.03321	0.14743
	C	0.01553	0.02167	0.13997
	C	0.03065	0.03657	0.15270
	D	0.01760	0.02394	0.14900
	D	0.03388	0.03999	0.16298

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)	0.00057	0.00057	0.00052
	(B * C * !D * !X)	-0.00225	-0.00226	-0.00236
	(B * !C * !X)	0.00055	0.00054	0.00052
	(B * !C * !X)	-0.00230	-0.00230	-0.00237
	(!B * !X)	0.00055	0.00054	0.00053
	(!B * !X)	-0.00234	-0.00234	-0.00237
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	0.00069	0.00070	0.00064
	(B * C * !D * !X)	-0.00253	-0.00256	-0.00268
	(B * !C * !X)	0.00067	0.00067	0.00063
	(B * !C * !X)	-0.00260	-0.00260	-0.00269
	(!B * !X)	0.00066	0.00066	0.00064
	(!B * !X)	-0.00266	-0.00265	-0.00269
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	0.00097	0.00098	0.00087
	(B * C * !D * !X)	-0.00467	-0.00472	-0.00494
	(B * !C * !X)	0.00095	0.00096	0.00088
	(B * !C * !X)	-0.00477	-0.00480	-0.00496
	(!B * !X)	0.00093	0.00093	0.00089
	(!B * !X)	-0.00492	-0.00492	-0.00498

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)	-0.00051	-0.00052	-0.00051
	(B * C * !D * !X)	0.00236	0.00240	0.00238
	(B * !C * !X)	-0.00051	-0.00052	-0.00051
	(B * !C * !X)	0.00236	0.00240	0.00238
	(!B * !X)	-0.00052	-0.00053	-0.00052
	(!B * !X)	0.00237	0.00242	0.00238
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	-0.00062	-0.00063	-0.00061
	(B * C * !D * !X)	0.00269	0.00272	0.00270
	(B * !C * !X)	-0.00062	-0.00063	-0.00062
	(B * !C * !X)	0.00269	0.00272	0.00270
	(!B * !X)	-0.00063	-0.00064	-0.00063
	(!B * !X)	0.00270	0.00274	0.00270
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	-0.00083	-0.00084	-0.00082
	(B * C * !D * !X)	0.00497	0.00504	0.00499
	(B * !C * !X)	-0.00083	-0.00085	-0.00082
	(B * !C * !X)	0.00497	0.00504	0.00499
	(!B * !X)	-0.00086	-0.00089	-0.00087
	(!B * !X)	0.00497	0.00507	0.00500

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)**	0.00062	0.00063	0.00062
	(A * C * !D * !X)	-0.00193	-0.00194	-0.00192
	(A * !C * !X)	0.00063	0.00063	0.00063
	(A * !C * !X)	-0.00193	-0.00193	-0.00192
	(!A * C * D * !X)	0.00150	0.00151	0.00151
	(!A * C * D * !X)	-0.00193	-0.00194	-0.00193
	(!A * C * !D * !X)	0.00078	0.00078	0.00078
	(!A * C * !D * !X)	-0.00193	-0.00194	-0.00193
	(!A * !C * !X)	0.00074	0.00074	0.00073
	(!A * !C * !X)	-0.00194	-0.00194	-0.00193
sky130_fd_sc_hs__and4_2	**(A * C * !D * !X)**	0.00074	0.00074	0.00073
	(A * C * !D * !X)	-0.00230	-0.00231	-0.00229
	(A * !C * !X)	0.00076	0.00076	0.00076
	(A * !C * !X)	-0.00230	-0.00229	-0.00229
	(!A * C * D * !X)	0.00175	0.00175	0.00175
	(!A * C * D * !X)	-0.00230	-0.00230	-0.00230
	(!A * C * !D * !X)	0.00093	0.00093	0.00093
	(!A * C * !D * !X)	-0.00229	-0.00230	-0.00230
	(!A * !C * !X)	0.00090	0.00090	0.00090
	(!A * !C * !X)	-0.00230	-0.00231	-0.00230
sky130_fd_sc_hs__and4_4	**(A * C * !D * !X)**	0.00155	0.00158	0.00156
	(A * C * !D * !X)	-0.00432	-0.00436	-0.00433
	(A * !C * !X)	0.00163	0.00166	0.00163
	(A * !C * !X)	-0.00434	-0.00437	-0.00434
	(!A * C * D * !X)	0.00336	0.00339	0.00337
	(!A * C * D * !X)	-0.00432	-0.00433	-0.00432
	(!A * C * !D * !X)	0.00189	0.00189	0.00189
	(!A * C * !D * !X)	-0.00436	-0.00435	-0.00435
	(!A * !C * !X)	0.00191	0.00192	0.00191
	(!A * !C * !X)	-0.00437	-0.00438	-0.00438

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)	-0.00059	-0.00060	-0.00060
	(A * C * !D * !X)	0.00196	0.00199	0.00194
	(A * !C * !X)	-0.00060	-0.00061	-0.00061
	(A * !C * !X)	0.00196	0.00199	0.00194
	(!A * C * D * !X)	-0.00132	-0.00148	-0.00150
	(!A * C * D * !X)	0.00208	0.00196	0.00194
	(!A * C * !D * !X)	-0.00078	-0.00078	-0.00078
	(!A * C * !D * !X)	0.00206	0.00204	0.00195
	(!A * !C * !X)	-0.00074	-0.00074	-0.00073
	(!A * !C * !X)	0.00202	0.00204	0.00196
sky130_fd_sc_hs__and4_2	(A * C * !D * !X)	-0.00071	-0.00071	-0.00072
	(A * C * !D * !X)	0.00234	0.00236	0.00231
	(A * !C * !X)	-0.00072	-0.00073	-0.00073
	(A * !C * !X)	0.00234	0.00237	0.00231
	(!A * C * D * !X)	-0.00156	-0.00173	-0.00174
	(!A * C * D * !X)	0.00246	0.00233	0.00231
	(!A * C * !D * !X)	-0.00093	-0.00093	-0.00093
	(!A * C * !D * !X)	0.00242	0.00240	0.00231
	(!A * !C * !X)	-0.00090	-0.00090	-0.00090
	(!A * !C * !X)	0.00242	0.00243	0.00233

sky130_fd_sc_hs__and4_4	**(A * C * !D * !X)**	-0.00151	-0.00153	-0.00154
	(A * C * !D * !X)	0.00441	0.00445	0.00438
	(A * !C * !X)	-0.00155	-0.00157	-0.00158
	(A * !C * !X)	0.00442	0.00446	0.00438
	(!A * C * D * !X)	-0.00302	-0.00336	-0.00336
	(!A * C * D * !X)	0.00461	0.00438	0.00434
	(!A * C * !D * !X)	-0.00189	-0.00189	-0.00189
	(!A * C * !D * !X)	0.00460	0.00452	0.00438
	(!A * !C * !X)	-0.00191	-0.00192	-0.00191
	(!A * !C * !X)	0.00463	0.00463	0.00446

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)**	0.00074	0.00074	0.00073
	(A * B * !D * !X)	-0.00184	-0.00185	-0.00183
	(A * !B * D * !X)	0.00155	0.00155	0.00155
	(A * !B * D * !X)	-0.00186	-0.00187	-0.00187
	(A * !B * !D * !X)	0.00085	0.00086	0.00085
	(A * !B * !D * !X)	-0.00187	-0.00188	-0.00187
	(!A * B * D * !X)	0.00152	0.00153	0.00152
	(!A * B * D * !X)	-0.00186	-0.00187	-0.00186
	(!A * B * !D * !X)	0.00083	0.00084	0.00083
	(!A * B * !D * !X)	-0.00186	-0.00187	-0.00187
	(!A * !B * D * !X)	0.00154	0.00156	0.00155
	(!A * !B * D * !X)	-0.00186	-0.00187	-0.00187
	(!A * !B * !D * !X)	0.00089	0.00089	0.00088
	(!A * !B * !D * !X)	-0.00187	-0.00187	-0.00187

sky130_fd_sc_hs__and4_2	**(A * B * !D * !X)**	0.00078	0.00080	0.00079
	(A * B * !D * !X)	-0.00212	-0.00214	-0.00212
	(A * !B * D * !X)	0.00174	0.00177	0.00175
	(A * !B * D * !X)	-0.00216	-0.00218	-0.00216
	(A * !B * !D * !X)	0.00094	0.00096	0.00095
	(A * !B * !D * !X)	-0.00216	-0.00218	-0.00216
	(!A * B * D * !X)	0.00169	0.00171	0.00170
	(!A * B * D * !X)	-0.00215	-0.00216	-0.00216
	(!A * B * !D * !X)	0.00091	0.00092	0.00091
	(!A * B * !D * !X)	-0.00216	-0.00217	-0.00216
	(!A * !B * D * !X)	0.00175	0.00176	0.00175
	(!A * !B * D * !X)	-0.00216	-0.00217	-0.00216
	(!A * !B * !D * !X)	0.00100	0.00100	0.00099
	(!A * !B * !D * !X)	-0.00216	-0.00218	-0.00216
sky130_fd_sc_hs__and4_4	**(A * B * !D * !X)**	0.00205	0.00206	0.00207
	(A * B * !D * !X)	-0.00442	-0.00444	-0.00442
	(A * !B * D * !X)	0.00372	0.00373	0.00372
	(A * !B * D * !X)	-0.00448	-0.00449	-0.00448
	(A * !B * !D * !X)	0.00232	0.00232	0.00232
	(A * !B * !D * !X)	-0.00450	-0.00451	-0.00450
	(!A * B * D * !X)	0.00367	0.00370	0.00369
	(!A * B * D * !X)	-0.00446	-0.00448	-0.00447
	(!A * B * !D * !X)	0.00227	0.00226	0.00227
	(!A * B * !D * !X)	-0.00450	-0.00449	-0.00450
	(!A * !B * D * !X)	0.00371	0.00373	0.00372
	(!A * !B * D * !X)	-0.00448	-0.00449	-0.00448
	(!A * !B * !D * !X)	0.00240	0.00242	0.00241
	(!A * !B * !D * !X)	-0.00451	-0.00452	-0.00451

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)	-0.00069	-0.00070	-0.00070
	(A * B * !D * !X)	0.00190	0.00192	0.00188
	(A * !B * D * !X)	-0.00147	-0.00155	-0.00155
	(A * !B * D * !X)	0.00187	0.00189	0.00187
	(A * !B * !D * !X)	-0.00085	-0.00086	-0.00085
	(A * !B * !D * !X)	0.00194	0.00196	0.00189
	(!A * B * D * !X)	-0.00137	-0.00153	-0.00152
	(!A * B * D * !X)	0.00189	0.00189	0.00187
	(!A * B * !D * !X)	-0.00083	-0.00084	-0.00083
	(!A * B * !D * !X)	0.00191	0.00193	0.00188
	(!A * !B * D * !X)	-0.00149	-0.00156	-0.00155
	(!A * !B * D * !X)	0.00187	0.00190	0.00187
	(!A * !B * !D * !X)	-0.00089	-0.00089	-0.00088
	(!A * !B * !D * !X)	0.00187	0.00189	0.00187
sky130_fd_sc_hs__and4_2	(A * B * !D * !X)	-0.00075	-0.00075	-0.00075
	(A * B * !D * !X)	0.00220	0.00222	0.00218
	(A * !B * D * !X)	-0.00164	-0.00175	-0.00175
	(A * !B * D * !X)	0.00216	0.00219	0.00217
	(A * !B * !D * !X)	-0.00094	-0.00096	-0.00095
	(A * !B * !D * !X)	0.00225	0.00227	0.00219
	(!A * B * D * !X)	-0.00153	-0.00169	-0.00170
	(!A * B * D * !X)	0.00218	0.00217	0.00217
	(!A * B * !D * !X)	-0.00091	-0.00092	-0.00091
	(!A * B * !D * !X)	0.00218	0.00222	0.00217
	(!A * !B * D * !X)	-0.00166	-0.00175	-0.00175
	(!A * !B * D * !X)	0.00216	0.00219	0.00217
	(!A * !B * !D * !X)	-0.00100	-0.00100	-0.00099
	(!A * !B * !D * !X)	0.00217	0.00219	0.00217

sky130_fd_sc_hs__and4_4	(A * B * !D * !X)	-0.00197	-0.00199	-0.00200
	(A * B * !D * !X)	0.00455	0.00460	0.00453
	(A * !B * D * !X)	-0.00354	-0.00373	-0.00372
	(A * !B * D * !X)	0.00450	0.00453	0.00449
	(A * !B * !D * !X)	-0.00232	-0.00232	-0.00232
	(A * !B * !D * !X)	0.00469	0.00474	0.00458
	(!A * B * D * !X)	-0.00337	-0.00370	-0.00369
	(!A * B * D * !X)	0.00453	0.00453	0.00449
	(!A * B * !D * !X)	-0.00227	-0.00226	-0.00227
	(!A * B * !D * !X)	0.00454	0.00460	0.00453
	(!A * !B * D * !X)	-0.00358	-0.00373	-0.00372
	(!A * !B * D * !X)	0.00450	0.00453	0.00449
	(!A * !B * !D * !X)	-0.00240	-0.00242	-0.00241
	(!A * !B * !D * !X)	0.00452	0.00456	0.00453

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)	0.00152	0.00153	0.00152
	(A * B * !C * !X)	-0.00206	-0.00206	-0.00206
	(A * !B * C * !X)	0.00148	0.00149	0.00148
	(A * !B * C * !X)	-0.00206	-0.00206	-0.00206
	(A * !B * !C * !X)	0.00151	0.00153	0.00152
	(A * !B * !C * !X)	-0.00206	-0.00207	-0.00206
	(!A * B * C * !X)	0.00146	0.00146	0.00146
	(!A * B * C * !X)	-0.00205	-0.00206	-0.00206
	(!A * !C * !X)	0.00151	0.00153	0.00152
	(!A * !C * !X)	-0.00206	-0.00207	-0.00206
	(!A * !B * C * !X)	0.00148	0.00149	0.00148
	(!A * !B * C * !X)	-0.00206	-0.00206	-0.00206

sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	0.00177	0.00179	0.00178
	(A * B * !C * !X)	-0.00223	-0.00224	-0.00223
	(A * !B * C * !X)	0.00177	0.00176	0.00176
	(A * !B * C * !X)	-0.00223	-0.00224	-0.00223
	(A * !B * !C * !X)	0.00177	0.00180	0.00178
	(A * !B * !C * !X)	-0.00223	-0.00225	-0.00223
	(!A * B * C * !X)	0.00172	0.00173	0.00171
	(!A * B * C * !X)	-0.00223	-0.00225	-0.00223
	(!A * !C * !X)	0.00177	0.00179	0.00178
	(!A * !C * !X)	-0.00223	-0.00224	-0.00223
	(!A * !B * C * !X)	0.00178	0.00178	0.00177
	(!A * !B * C * !X)	-0.00223	-0.00224	-0.00223
sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	0.00294	0.00295	0.00294
	(A * B * !C * !X)	-0.00438	-0.00439	-0.00438
	(A * !B * C * !X)	0.00295	0.00298	0.00297
	(A * !B * C * !X)	-0.00436	-0.00438	-0.00438
	(A * !B * !C * !X)	0.00292	0.00296	0.00294
	(A * !B * !C * !X)	-0.00436	-0.00439	-0.00438
	(!A * B * C * !X)	0.00295	0.00298	0.00294
	(!A * B * C * !X)	-0.00438	-0.00440	-0.00438
	(!A * !C * !X)	0.00291	0.00294	0.00293
	(!A * !C * !X)	-0.00436	-0.00439	-0.00437
	(!A * !B * C * !X)	0.00295	0.00299	0.00297
	(!A * !B * C * !X)	-0.00436	-0.00440	-0.00438

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)**	-0.00146	-0.00152	-0.00152
	(A * B * !C * !X)	0.00207	0.00208	0.00207
	(A * !B * C * !X)	-0.00139	-0.00149	-0.00148
	(A * !B * C * !X)	0.00206	0.00209	0.00207
	(A * !B * !C * !X)	-0.00147	-0.00152	-0.00152
	(A * !B * !C * !X)	0.00207	0.00208	0.00207
	(!A * B * C * !X)	-0.00135	-0.00146	-0.00146
	(!A * B * C * !X)	0.00206	0.00209	0.00207
	(!A * !C * !X)	-0.00147	-0.00152	-0.00152
	(!A * !C * !X)	0.00207	0.00208	0.00207
	(!A * !B * C * !X)	-0.00139	-0.00149	-0.00148
	(!A * !B * C * !X)	0.00206	0.00209	0.00207
sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	-0.00171	-0.00178	-0.00178
	(A * B * !C * !X)	0.00224	0.00226	0.00224
	(A * !B * C * !X)	-0.00163	-0.00176	-0.00176
	(A * !B * C * !X)	0.00223	0.00226	0.00224
	(A * !B * !C * !X)	-0.00172	-0.00178	-0.00178
	(A * !B * !C * !X)	0.00224	0.00226	0.00224
	(!A * B * C * !X)	-0.00159	-0.00173	-0.00171
	(!A * B * C * !X)	0.00223	0.00226	0.00224
	(!A * !C * !X)	-0.00172	-0.00178	-0.00178
	(!A * !C * !X)	0.00224	0.00226	0.00224
	(!A * !B * C * !X)	-0.00163	-0.00177	-0.00177
	(!A * !B * C * !X)	0.00223	0.00226	0.00224

sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	-0.00280	-0.00295	-0.00294
	(A * B * !C * !X)	0.00438	0.00442	0.00439
	(A * !B * C * !X)	-0.00270	-0.00293	-0.00297
	(A * !B * C * !X)	0.00440	0.00444	0.00440
	(A * !B * !C * !X)	-0.00283	-0.00296	-0.00294
	(A * !B * !C * !X)	0.00438	0.00442	0.00439
	(!A * B * C * !X)	-0.00261	-0.00293	-0.00294
	(!A * B * C * !X)	0.00439	0.00444	0.00439
	(!A * !C * !X)	-0.00281	-0.00294	-0.00293
	(!A * !C * !X)	0.00438	0.00442	0.00439
	(!A * !B * C * !X)	-0.00270	-0.00293	-0.00297
	(!A * !B * C * !X)	0.00440	0.00444	0.00440

SKY130_FD_SC_HS__BUFx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00252	1.24100
sky130_fd_sc_hs__buf_16	0.01639	19.04166
sky130_fd_sc_hs__buf_2	0.00270	2.27100
sky130_fd_sc_hs__buf_4	0.00371	4.74931
sky130_fd_sc_hs__buf_8	0.00839	8.99734
sky130_fd_sc_hs__bufbuf_16	0.00300	19.07496
sky130_fd_sc_hs__bufbuf_8	0.00235	9.05062

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__buf_1	0.00000	0.35612	0.60610
sky130_fd_sc_hs__buf_16	0.00000	1.20794	1.67216
sky130_fd_sc_hs__buf_2	0.00000	0.24511	0.27582
sky130_fd_sc_hs__buf_4	0.00000	0.82148	1.22916
sky130_fd_sc_hs__buf_8	0.00000	0.60397	0.83608
sky130_fd_sc_hs__bufbuf_16	0.00000	1.42757	1.98464
sky130_fd_sc_hs__bufbuf_8	0.00000	0.96009	0.97796

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)	0.04806	0.48150	5.92225
sky130_fd_sc_hs__buf_16	A->X (RR)	0.04977	0.23130	5.94016
sky130_fd_sc_hs__buf_2	A->X (RR)	0.05020	0.39823	5.58411
sky130_fd_sc_hs__buf_4	A->X (RR)	0.06047	0.37821	6.34336
sky130_fd_sc_hs__buf_8	A->X (RR)	0.04962	0.27798	5.84542
sky130_fd_sc_hs__bufbuf_16	A->X (RR)	0.14705	0.33780	5.93836
sky130_fd_sc_hs__bufbuf_8	A->X (RR)	0.15560	0.36390	5.76970

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__buf_1	A->X (FF)	0.05765	0.42206	4.39542
sky130_fd_sc_hs__buf_16	A->X (FF)	0.06919	0.36696	4.75938
sky130_fd_sc_hs__buf_2	A->X (FF)	0.06820	0.42736	4.36311
sky130_fd_sc_hs__buf_4	A->X (FF)	0.06709	0.38851	4.37054
sky130_fd_sc_hs__buf_8	A->X (FF)	0.07025	0.39447	4.82837
sky130_fd_sc_hs__bufbuf_16	A->X (FF)	0.17493	0.47379	4.68001
sky130_fd_sc_hs__bufbuf_8	A->X (FF)	0.15521	0.43345	4.45540

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	A	0.00803	0.01061	0.06253
	A	0.00355	0.00615	0.05807
sky130_fd_sc_hs__buf_16	A	0.08100	0.10134	0.49321
	A	0.05186	0.07219	0.47293
sky130_fd_sc_hs__buf_2	A	0.01183	0.01417	0.05875
	A	0.00702	0.00945	0.05460
sky130_fd_sc_hs__buf_4	A	0.01930	0.02413	0.12744
	A	0.01270	0.01754	0.12216
sky130_fd_sc_hs__buf_8	A	0.04118	0.05029	0.23841
	A	0.02621	0.03546	0.22425
sky130_fd_sc_hs__bufbuf_16	A	0.09740	0.10642	0.19157
	A	0.09203	0.10146	0.19510
sky130_fd_sc_hs__bufbuf_8	A	0.04896	0.05404	0.12391
	A	0.04477	0.04997	0.12091

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	A	0.00363	0.00754	0.06471
	A	0.00812	0.01194	0.06915
sky130_fd_sc_hs__buf_16	A	0.05543	0.07861	0.47545
	A	0.08462	0.10782	0.49548
sky130_fd_sc_hs__buf_2	A	0.00662	0.01025	0.06384
	A	0.01142	0.01495	0.06837
sky130_fd_sc_hs__buf_4	A	0.01401	0.02100	0.12137
	A	0.02061	0.02754	0.12456
sky130_fd_sc_hs__buf_8	A	0.02713	0.03890	0.22733
	A	0.04211	0.05375	0.24180
sky130_fd_sc_hs__bufbuf_16	A	0.09523	0.10357	0.19496
	A	0.10058	0.10888	0.19198
sky130_fd_sc_hs__bufbuf_8	A	0.04447	0.05078	0.11879
	A	0.04868	0.05470	0.12296

SKY130_FD_SC_HS__CLKBUFx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00267	1.27701
sky130_fd_sc_hs__clkbuf_16	0.00903	19.34646
sky130_fd_sc_hs__clkbuf_2	0.00268	2.12167
sky130_fd_sc_hs__clkbuf_4	0.00247	4.68794
sky130_fd_sc_hs__clkbuf_8	0.00463	9.09560

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__clkbuf_1	0.00000	0.10359	0.10359
sky130_fd_sc_hs__clkbuf_16	0.00000	1.03584	1.63028
sky130_fd_sc_hs__clkbuf_2	0.00000	0.15538	0.20491
sky130_fd_sc_hs__clkbuf_4	0.00000	0.25896	0.40757
sky130_fd_sc_hs__clkbuf_8	0.00000	0.51792	0.81514

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)	0.05125	0.50463	6.26881
sky130_fd_sc_hs__clkbuf_16	A->X (RR)	0.06889	0.31687	6.48802
sky130_fd_sc_hs__clkbuf_2	A->X (RR)	0.05698	0.44199	5.89667
sky130_fd_sc_hs__clkbuf_4	A->X (RR)	0.07288	0.42213	6.33192
sky130_fd_sc_hs__clkbuf_8	A->X (RR)	0.06868	0.35741	6.30115

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkbuf_1	A->X (FF)	0.05479	0.53855	6.47199
sky130_fd_sc_hs__clkbuf_16	A->X (FF)	0.08207	0.43517	6.86244
sky130_fd_sc_hs__clkbuf_2	A->X (FF)	0.06381	0.48578	5.79652
sky130_fd_sc_hs__clkbuf_4	A->X (FF)	0.08195	0.50824	6.53897
sky130_fd_sc_hs__clkbuf_8	A->X (FF)	0.07901	0.45946	6.54374

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00778	0.00975	0.05225
	A	0.00305	0.00501	0.04789
sky130_fd_sc_hs__clkbuf_16	A	0.06335	0.07287	0.27027
	A	0.04723	0.05686	0.25770
sky130_fd_sc_hs__clkbuf_2	A	0.01060	0.01222	0.04636
	A	0.00597	0.00761	0.04181
sky130_fd_sc_hs__clkbuf_4	A	0.01675	0.01880	0.06231
	A	0.01236	0.01448	0.05927
sky130_fd_sc_hs__clkbuf_8	A	0.03206	0.03679	0.13227
	A	0.02380	0.02868	0.12680

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00293	0.00590	0.05670
	A	0.00766	0.01064	0.06124
sky130_fd_sc_hs__clkbuf_16	A	0.04228	0.05567	0.26575
	A	0.05836	0.07172	0.27633
sky130_fd_sc_hs__clkbuf_2	A	0.00481	0.00761	0.05367
	A	0.00943	0.01221	0.05669
sky130_fd_sc_hs__clkbuf_4	A	0.01061	0.01426	0.06275
	A	0.01499	0.01839	0.06568
sky130_fd_sc_hs__clkbuf_8	A	0.02077	0.02784	0.13339
	A	0.02903	0.03561	0.13728

SKY130_FD_SC_HS__CLKDLYINVx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00254	1.28494
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00257	1.28108
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00259	1.27707
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00252	1.27971
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00256	1.27333
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00259	1.27837

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__clkdlyinv3sd1_1	0.00000	0.23414	0.26337
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00000	0.10423	0.20380
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00000	0.10512	0.20380
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00000	0.49525	0.52448
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00000	0.10551	0.20508
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00000	0.10818	0.20686

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)	0.08351	0.64772	7.81153
sky130_fd_sc_hs__clkdlyinv3sd2_1	A->Y (FR)	0.09296	0.66478	7.80536
sky130_fd_sc_hs__clkdlyinv3sd3_1	A->Y (FR)	0.10712	0.69382	7.84134
sky130_fd_sc_hs__clkdlyinv5sd1_1	A->Y (FR)	0.15096	0.71377	7.85773
sky130_fd_sc_hs__clkdlyinv5sd2_1	A->Y (FR)	0.20457	0.77621	7.90054
sky130_fd_sc_hs__clkdlyinv5sd3_1	A->Y (FR)	0.32815	0.91795	8.11400

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkdlyinv3sd1_1	A->Y (RF)	0.08225	0.44103	4.66813
sky130_fd_sc_hs__clkdlyinv3sd2_1	A->Y (RF)	0.10993	0.48668	4.81210
sky130_fd_sc_hs__clkdlyinv3sd3_1	A->Y (RF)	0.16872	0.57643	5.00024
sky130_fd_sc_hs__clkdlyinv5sd1_1	A->Y (RF)	0.14971	0.50740	4.69345
sky130_fd_sc_hs__clkdlyinv5sd2_1	A->Y (RF)	0.22491	0.60158	4.88809
sky130_fd_sc_hs__clkdlyinv5sd3_1	A->Y (RF)	0.39960	0.80973	5.25554

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	A	0.00625	0.00956	0.06943
	A	0.01077	0.01411	0.07435
sky130_fd_sc_hs__clkdlyinv3sd2_1	A	0.00668	0.00961	0.06685
	A	0.01127	0.01422	0.07184
sky130_fd_sc_hs__clkdlyinv3sd3_1	A	0.00750	0.00995	0.06576
	A	0.01213	0.01458	0.07078
sky130_fd_sc_hs__clkdlyinv5sd1_1	A	0.01384	0.01685	0.07645
	A	0.01835	0.02135	0.08139
sky130_fd_sc_hs__clkdlyinv5sd2_1	A	0.01532	0.01789	0.07470
	A	0.01988	0.02247	0.07964
sky130_fd_sc_hs__clkdlyinv5sd3_1	A	0.01845	0.02052	0.07580
	A	0.02308	0.02516	0.08061

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A**	0.01058	0.01316	0.07256
	A	0.00607	0.00860	0.06803
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A**	0.01135	0.01366	0.07012
	A	0.00678	0.00906	0.06556
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A**	0.01339	0.01554	0.07128
	A	0.00878	0.01090	0.06630
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A**	0.01794	0.02027	0.07976
	A	0.01345	0.01577	0.07523
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A**	0.01974	0.02180	0.07800
	A	0.01519	0.01724	0.07346
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A**	0.02444	0.02628	0.08143
	A	0.01983	0.02166	0.07647

SKY130_FD_SC_HS__CLKINVx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00325	1.72462
sky130_fd_sc_hs__clkinv_16	0.04819	25.66796
sky130_fd_sc_hs__clkinv_2	0.00620	3.30674
sky130_fd_sc_hs__clkinv_4	0.01229	6.51841
sky130_fd_sc_hs__clkinv_8	0.02459	12.00277

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__clkinv_1	0.00000	0.59874	1.19523
sky130_fd_sc_hs__clkinv_16	0.00000	1.23399	2.43189
sky130_fd_sc_hs__clkinv_2	0.00000	0.15425	0.30399
sky130_fd_sc_hs__clkinv_4	0.00000	0.30850	0.60797
sky130_fd_sc_hs__clkinv_8	0.00000	0.61699	1.21595

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)	0.01975	0.63815	9.98586
sky130_fd_sc_hs__clkinv_16	A->Y (FR)	0.01440	0.37548	9.95209
sky130_fd_sc_hs__clkinv_2	A->Y (FR)	0.01841	0.57899	10.31840
sky130_fd_sc_hs__clkinv_4	A->Y (FR)	0.01629	0.50531	10.28530
sky130_fd_sc_hs__clkinv_8	A->Y (FR)	0.01666	0.43689	10.01110

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkinv_1	A->Y (RF)	0.02258	0.64353	10.22730
sky130_fd_sc_hs__clkinv_16	A->Y (RF)	0.01613	0.32199	10.09070
sky130_fd_sc_hs__clkinv_2	A->Y (RF)	0.01998	0.53597	9.93372
sky130_fd_sc_hs__clkinv_4	A->Y (RF)	0.01766	0.45598	10.00900
sky130_fd_sc_hs__clkinv_8	A->Y (RF)	0.01811	0.37855	9.66519

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	-0.00042	0.00155	0.01832
	A	0.00536	0.00736	0.02410
sky130_fd_sc_hs__clkinv_16	A	-0.01531	0.01883	0.18090
	A	0.07017	0.10500	0.26652
sky130_fd_sc_hs__clkinv_2	A	-0.00128	0.00222	0.02284
	A	0.00971	0.01335	0.03440
sky130_fd_sc_hs__clkinv_4	A	-0.00292	0.00371	0.04873
	A	0.01890	0.02552	0.07166
sky130_fd_sc_hs__clkinv_8	A	-0.00571	0.01257	0.11964
	A	0.03797	0.05630	0.16333

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	0.00423	0.00484	0.01130
	A	-0.00154	-0.00096	0.00544
sky130_fd_sc_hs__clkinv_16	A	0.05829	0.07641	0.16983
	A	-0.02734	-0.00964	0.08329
sky130_fd_sc_hs__clkinv_2	A	0.00836	0.00976	0.02165
	A	-0.00263	-0.00128	0.01047
sky130_fd_sc_hs__clkinv_4	A	0.01516	0.01870	0.04393
	A	-0.00663	-0.00342	0.02210
sky130_fd_sc_hs__clkinv_8	A	0.02987	0.03825	0.10023
	A	-0.01375	-0.00584	0.05641

SKY130_FD_SC_HS__CONB

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00161	1.27325
sky130_fd_sc_hs__dlymetal6s4s_1	0.00161	1.27325
sky130_fd_sc_hs__dlymetal6s6s_1	0.00161	1.27095

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlymetal6s2s_1	0.00000	0.18728	0.31076
sky130_fd_sc_hs__dlymetal6s4s_1	0.00000	0.18728	0.31076
sky130_fd_sc_hs__dlymetal6s6s_1	0.00000	0.18728	0.31076

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)**	0.05828	0.49027	5.66473
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (RR)**	0.11548	0.54661	5.64525
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (RR)**	0.16573	0.59442	5.68217

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlymetal6s2s_1	**A->X (FF)**	0.08520	0.51855	4.98785
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (FF)**	0.16871	0.58823	4.99546
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (FF)**	0.24634	0.66770	5.06964

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.02045	0.02204	0.06609
	A	0.01759	0.01919	0.06368
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.02045	0.02256	0.07762
	A	0.01759	0.01970	0.07512
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.02048	0.02164	0.05025
	A	0.01762	0.01879	0.04759

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.01739	0.01900	0.04823
	A	0.02025	0.02184	0.05083
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.01744	0.01952	0.05814
	A	0.02029	0.02237	0.06073
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.01746	0.01919	0.04671
	A	0.02032	0.02204	0.04952

SKY130_FD_SC_HS__DFBBNx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00175	0.00173	0.00547	0.00301	1.26885	1.18756
sky130_fd_sc_hs__dfbbn_2	0.00175	0.00175	0.00543	0.00301	2.40983	2.35632

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfbbn_1	0.00000	1.45933	3.02992
sky130_fd_sc_hs__dfbbn_2	0.00000	1.36967	2.80097

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)	0.32966	0.94577	8.48693
	SET_B->Q (FR)	0.16603	0.81439	8.50083
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FR)	0.36945	0.88444	8.41717
	SET_B->Q (FR)	0.19037	0.75197	8.44721

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)	0.33009	0.72561	4.87636
	RESET_B->Q (FF)	0.20701	0.62972	4.83071
	SET_B->Q (RF)	0.12271	0.36373	2.23529
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FF)	0.36176	0.71203	4.74171
	RESET_B->Q (FF)	0.23717	0.61745	4.72237
	SET_B->Q (RF)	0.15160	0.36418	2.20364

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)	0.30130	0.94656	8.62626
	RESET_B->Q_N (FR)	0.17964	0.85575	8.59033
	SET_B->Q_N (RR)	0.09493	0.59273	6.26410
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FR)	0.30667	0.84867	8.43810
	RESET_B->Q_N (FR)	0.18387	0.75614	8.42855
	SET_B->Q_N (RR)	0.09852	0.50547	6.13572

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)	0.26790	0.71436	4.74710
	SET_B->Q_N (FF)	0.10993	0.58712	4.95610
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FF)	0.29192	0.71192	4.67109
	SET_B->Q_N (FF)	0.12086	0.57611	4.91483

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)	0.00545	0.07537	2.52439
	setup	CLK_N (F)	0.08372	-0.00248	-2.51975
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	0.00407	0.07415	2.53097
	setup	CLK_N (F)	0.08108	-0.00648	-2.52705

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)	-0.11375	-0.17212	-0.71041
	setup	CLK_N (F)	0.13474	0.18505	0.72157
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.11632	-0.17062	-0.70964
	setup	CLK_N (F)	0.13426	0.18505	0.72059

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)	0.00545	0.07537	2.52439
	setup	CLK_N (F)	0.08372	-0.00248	-2.51975
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	0.00407	0.07415	2.53097
	setup	CLK_N (F)	0.08108	-0.00648	-2.52705

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)	-0.11375	-0.17212	-0.71041
	setup	CLK_N (F)	0.13474	0.18505	0.72157
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.11632	-0.17062	-0.70964
	setup	CLK_N (F)	0.13426	0.18505	0.72059

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)	0.08235	-0.00633	-2.37155
	removal	CLK_N (F)	0.01909	0.08997	2.39448
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.07569	-0.01001	-2.37815
	removal	CLK_N (F)	0.01778	0.08983	2.40394

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)	0.08235	-0.00633	-2.37155
	removal	CLK_N (F)	0.01909	0.08997	2.39448
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.07569	-0.01001	-2.37815
	removal	CLK_N (F)	0.01778	0.08983	2.40394

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 ()	0.17402	0.63232	16.50020
	min_pulse_width	RESET_B ()	0.15502	0.63232	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	RESET_B ()	0.18589	0.63232	16.50020
	min_pulse_width	RESET_B ()	0.15977	0.63232	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)	-0.02061	-0.12199	-2.20980
	removal	CLK_N (F)	0.03021	0.13063	2.45306
	hold	RESET_B (R)	-0.04572	-0.07698	-0.36179
	setup	RESET_B (R)	0.08985	0.11753	0.58983
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.02188	-0.12241	-1.97157
	removal	CLK_N (F)	0.03421	0.13063	2.45706
	hold	RESET_B (R)	-0.06464	-0.09729	-0.48753
	setup	RESET_B (R)	0.10190	0.13798	0.68576

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)	-0.02061	-0.12199	-2.20980
	removal	CLK_N (F)	0.03021	0.13063	2.45306
	hold	RESET_B (R)	-0.04572	-0.07731	-0.36179
	hold	RESET_B (R)	-0.04654	-0.07698	-0.36693
	setup	RESET_B (R)	0.08985	0.11753	0.52334
	setup	RESET_B (R)	0.07081	0.10230	0.58983
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.02188	-0.12241	-1.97157
	removal	CLK_N (F)	0.03421	0.13063	2.45706
	hold	RESET_B (R)	-0.06606	-0.10670	-0.48753
	hold	RESET_B (R)	-0.06464	-0.09729	-0.49147
	setup	RESET_B (R)	0.10190	0.13798	0.67956
	setup	RESET_B (R)	0.07666	0.12768	0.68576

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 ()	0.12415	0.63232	16.50020
	min_pulse_width	SET_B ()	0.11228	0.63232	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	SET_B ()	0.14790	0.63232	16.50020
	min_pulse_width	SET_B ()	0.12652	0.63232	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 ()	0.14315	0.63232	16.50020
	min_pulse_width	CLK_N ()	0.12890	0.63232	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.14077	0.63232	16.50020
	min_pulse_width	CLK_N ()	0.12890	0.63232	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 ()	0.14077	0.63232	16.50020
	min_pulse_width	CLK_N ()	0.17164	0.63232	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.16214	0.63232	16.50020
	min_pulse_width	CLK_N ()	0.18114	0.63232	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	0.01606	0.01792	0.05496
	CLK_N	0.01870	0.02059	0.05759
	SET_B	0.01672	0.01989	0.08518
	SET_B	0.02160	0.02478	0.09006
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.02046	0.02186	0.05916
	CLK_N	0.02312	0.02455	0.06164
	SET_B	0.02066	0.02377	0.08933
	SET_B	0.02557	0.02865	0.09406

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.01747	0.01960	0.05543
	CLK_N	0.01989	0.02202	0.05774
	RESET_B	0.02087	0.02213	0.04464
	RESET_B	0.02228	0.02354	0.04557
	SET_B	0.02189	0.02309	0.08517
	SET_B	0.01698	0.01814	0.08017
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.02111	0.02339	0.06015
	CLK_N	0.02350	0.02579	0.06168
	RESET_B	0.02454	0.02600	0.04931
	RESET_B	0.02594	0.02740	0.05015
	SET_B	0.02552	0.02685	0.08835
	SET_B	0.02061	0.02190	0.08339

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.01750	0.01962	0.05573
	CLK_N	0.01991	0.02204	0.05815
	RESET_B	0.02088	0.02217	0.04443
	RESET_B	0.02229	0.02357	0.04583
	SET_B	0.02191	0.02313	0.08546
	SET_B	0.01700	0.01815	0.08055
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.02113	0.02341	0.05998
	CLK_N	0.02352	0.02582	0.06211
	RESET_B	0.02455	0.02607	0.04908
	RESET_B	0.02596	0.02744	0.05029
	SET_B	0.02553	0.02690	0.08922
	SET_B	0.02062	0.02192	0.08430

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.01603	0.01791	0.05536
	CLK_N	0.01867	0.02054	0.05747
	SET_B	0.01667	0.01984	0.08496
	SET_B	0.02156	0.02474	0.08948
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.02043	0.02178	0.05946
	CLK_N	0.02309	0.02454	0.06126
	SET_B	0.02061	0.02370	0.08849
	SET_B	0.02552	0.02857	0.09330

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)	0.01244	0.01318	0.03870
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00990	0.01064	0.03617
	(CLK_N * !SET_B * Q * !Q_N)	0.00809	0.00888	0.03210
	(CLK_N * !SET_B * Q * !Q_N)	0.00492	0.00572	0.02893
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00681	0.00760	0.03073
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00369	0.00447	0.02761
	!CLK_N	0.00427	0.00519	0.02957
	!CLK_N	0.00114	0.00207	0.02646
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01248	0.01323	0.03901
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00993	0.01067	0.03646
	(CLK_N * !SET_B * Q * !Q_N)	0.00811	0.00891	0.03218
	(CLK_N * !SET_B * Q * !Q_N)	0.00494	0.00574	0.02901
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00678	0.00758	0.03076
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00365	0.00444	0.02763
	!CLK_N	0.00427	0.00519	0.02963
	!CLK_N	0.00113	0.00206	0.02650

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)	0.01202	0.01285	0.03786
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01454	0.01538	0.04039
	(CLK_N * !SET_B * Q * !Q_N)	0.00322	0.00405	0.02660
	(CLK_N * !SET_B * Q * !Q_N)	0.00637	0.00723	0.02976
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00426	0.00513	0.02785
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00737	0.00825	0.03098
	!CLK_N	0.00164	0.00273	0.02662
	!CLK_N	0.00476	0.00586	0.02974
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01199	0.01282	0.03787
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01453	0.01537	0.04042
	(CLK_N * !SET_B * Q * !Q_N)	0.00313	0.00397	0.02656
	(CLK_N * !SET_B * Q * !Q_N)	0.00629	0.00713	0.02973
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00423	0.00511	0.02787
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00735	0.00824	0.03100
	!CLK_N	0.00160	0.00270	0.02664
	!CLK_N	0.00473	0.00584	0.02976

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)	0.01392	0.01503	0.05914
	(CLK_N * D * SET_B * !Q * Q_N)	0.01087	0.01197	0.05610
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00828	0.00962	0.05210
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00464	0.00597	0.04846
	(!SET_B * Q * !Q_N)	0.00828	0.00973	0.05265
	(!SET_B * Q * !Q_N)	0.00457	0.00600	0.04893
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.01397	0.01509	0.05945
	(CLK_N * D * SET_B * !Q * Q_N)	0.01087	0.01198	0.05635
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00827	0.00962	0.05236
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00458	0.00593	0.04868
	(!SET_B * Q * !Q_N)	0.00829	0.00975	0.05283
	(!SET_B * Q * !Q_N)	0.00454	0.00598	0.04907

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)	0.01218	0.01432	0.05872
	(CLK_N * D * SET_B * !Q * Q_N)	0.01523	0.01737	0.06176
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00407	0.00617	0.04852
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00771	0.00982	0.05216
	(!SET_B * Q * !Q_N)	0.00261	0.00482	0.04746
	(!SET_B * Q * !Q_N)	0.00635	0.00856	0.05119
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.01223	0.01437	0.05900
	(CLK_N * D * SET_B * !Q * Q_N)	0.01533	0.01748	0.06209
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00409	0.00622	0.04881
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00778	0.00990	0.05249
	(!SET_B * Q * !Q_N)	0.00261	0.00483	0.04760
	(!SET_B * Q * !Q_N)	0.00640	0.00862	0.05137

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)	0.00396	0.00400	0.00398
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00454	-0.00456	-0.00455
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.01283	0.01421	0.07263
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00355	0.00486	0.06331
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00393	0.00399	0.00395
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00452	-0.00455	-0.00452
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.01282	0.01421	0.07258
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00363	0.00494	0.06334

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)	-0.00389	-0.00395	-0.00396
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00464	0.00459	0.00458
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00140	0.00435	0.06434
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.01073	0.01369	0.07366
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00382	-0.00392	-0.00392
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00457	0.00457	0.00455
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00138	0.00432	0.06424
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.01056	0.01357	0.07347

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)**	0.02336	0.02615	0.09933
	(D * RESET_B * SET_B * !Q * Q_N)	0.01889	0.02167	0.09485
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01481	0.01749	0.08943
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00975	0.01241	0.08436
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01765	0.02043	0.09352
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01259	0.01536	0.08847
	(!D * SET_B * !Q * Q_N)	0.01402	0.01666	0.08890
	(!D * SET_B * !Q * Q_N)	0.00895	0.01159	0.08384
	(!D * RESET_B * SET_B * Q * !Q_N)	0.02456	0.02711	0.10020
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01891	0.02145	0.09454
	(!D * !SET_B * Q * !Q_N)	0.01559	0.01820	0.09127
	(!D * !SET_B * Q * !Q_N)	0.01056	0.01315	0.08624

sky130_fd_sc_hs__dfbbn_2	**(D * RESET_B * SET_B * !Q * Q_N)**	0.02343	0.02622	0.09939
	(D * RESET_B * SET_B * !Q * Q_N)	0.01894	0.02172	0.09490
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01480	0.01748	0.08940
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00973	0.01239	0.08433
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01766	0.02044	0.09351
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01260	0.01537	0.08847
	(!D * SET_B * !Q * Q_N)	0.01404	0.01668	0.08890
	(!D * SET_B * !Q * Q_N)	0.00897	0.01161	0.08383
	(!D * RESET_B * SET_B * Q * !Q_N)	0.02457	0.02714	0.10021
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01892	0.02147	0.09456
	(!D * !SET_B * Q * !Q_N)	0.01553	0.01814	0.09121
	(!D * !SET_B * Q * !Q_N)	0.01050	0.01308	0.08617

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)	0.01105	0.01479	0.08632
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01612	0.01986	0.09139
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01570	0.01932	0.09051
	(D * !RESET_B * SET_B * !Q * Q_N)	0.02077	0.02439	0.09558
	(!D * SET_B * !Q * Q_N)	0.01207	0.01577	0.08723
	(!D * SET_B * !Q * Q_N)	0.01714	0.02083	0.09229
	(!D * !SET_B * Q * !Q_N)	0.01540	0.01913	0.09190
	(!D * !SET_B * Q * !Q_N)	0.02044	0.02419	0.09694
sky130_fd_sc_hs__dfbbn_2	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01106	0.01480	0.08633
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01613	0.01987	0.09140
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01565	0.01927	0.09044
	(D * !RESET_B * SET_B * !Q * Q_N)	0.02072	0.02435	0.09552
	(!D * SET_B * !Q * Q_N)	0.01205	0.01575	0.08721
	(!D * SET_B * !Q * Q_N)	0.01712	0.02081	0.09227
	(!D * !SET_B * Q * !Q_N)	0.01545	0.01919	0.09195
	(!D * !SET_B * Q * !Q_N)	0.02049	0.02424	0.09698

SKY130_FD_SC_HS__DFBBP

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00154	0.00189	0.00630	0.00298	1.27382	1.15206

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfbbp_1	0.00000	1.45933	3.02992

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)	0.31838	0.76293	5.97322
	SET_B->Q (FR)	0.15128	0.79503	8.46858

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbp_1	CLK->Q (RF)	0.24815	0.47358	2.34557
	RESET_B->Q (FF)	0.20137	0.62148	4.85236
	SET_B->Q (RF)	0.12511	0.35744	2.25615

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)	0.22087	0.68712	5.91810
	RESET_B->Q_N (FR)	0.17483	0.84207	8.43453
	SET_B->Q_N (RR)	0.09897	0.58108	6.10171

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)	0.25842	0.52310	2.09937
	SET_B->Q_N (FF)	0.09886	0.55482	4.78481

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)	-0.03414	-0.06245	-0.24518
	setup	CLK (R)	0.06092	0.07944	0.26503

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)	-0.07360	-0.20020	-3.12238
	setup	CLK (R)	0.11674	0.23947	3.16029

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)	-0.03414	-0.06245	-0.24518
	setup	CLK (R)	0.06092	0.07944	0.26503

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)	-0.07360	-0.20020	-3.12238
	setup	CLK (R)	0.11674	0.23947	3.16029

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)	0.06737	0.07998	0.21568
	removal	CLK (R)	-0.03372	-0.04823	-0.13023

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)	0.06737	0.07998	0.21568
	removal	CLK (R)	-0.03372	-0.04823	-0.13023

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 ()	0.15502	0.63232	16.50020
	min_pulse_width	RESET_B ()	0.15977	0.63232	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)	0.00897	0.00327	1.21554
	removal	CLK (R)	0.04823	0.06953	0.01634
	hold	RESET_B (R)	-0.04650	-0.08016	-0.39886
	setup	RESET_B (R)	0.08348	0.11404	0.61921

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)	0.00897	0.00327	1.21554
	removal	CLK (R)	0.04823	0.06953	0.01634
	hold	RESET_B (R)	-0.04910	-0.08214	-0.40530
	hold	RESET_B (R)	-0.04650	-0.08016	-0.39886
	setup	RESET_B (R)	0.08254	0.11232	0.61921
	setup	RESET_B (R)	0.08348	0.11404	0.54383

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 ()	0.10040	0.63232	16.50020
	min_pulse_width	SET_B ()	0.10990	0.63232	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 ()	0.08378	0.63232	16.50020
	min_pulse_width	CLK ()	0.10990	0.63232	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 ()	0.13127	0.63232	16.50020
	min_pulse_width	CLK ()	0.17877	0.63232	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	0.01889	0.02049	0.05828
	CLK	0.01634	0.01792	0.05570
	SET_B	0.01650	0.01990	0.08699
	SET_B	0.02183	0.02523	0.09202

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01884	0.02059	0.05890
	CLK	0.01603	0.01780	0.05607
	RESET_B	0.01922	0.02046	0.04283
	RESET_B	0.02067	0.02191	0.04386
	SET_B	0.02088	0.02192	0.08497
	SET_B	0.01552	0.01653	0.07955

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01886	0.02072	0.05938
	CLK	0.01606	0.01783	0.05659
	RESET_B	0.01923	0.02049	0.04296
	RESET_B	0.02068	0.02193	0.04430
	SET_B	0.02090	0.02198	0.08531
	SET_B	0.01554	0.01655	0.07999

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01886	0.02043	0.05732
	CLK	0.01631	0.01789	0.05482
	SET_B	0.01644	0.01985	0.08603
	SET_B	0.02177	0.02518	0.09131

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.00285	0.00419	0.02970
	CLK	0.00011	0.00145	0.02695
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.01175	0.01261	0.03903
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00929	0.01014	0.03657
	(!CLK * !SET_B * Q * !Q_N)	0.00688	0.00784	0.03193
	(!CLK * !SET_B * Q * !Q_N)	0.00382	0.00477	0.02888
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00547	0.00641	0.03043
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00242	0.00336	0.02740

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	-0.00021	0.00125	0.02653
	CLK	0.00253	0.00400	0.02928
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00912	0.01019	0.03593
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.01158	0.01266	0.03838
	(!CLK * !SET_B * Q * !Q_N)	0.00213	0.00320	0.02660
	(!CLK * !SET_B * Q * !Q_N)	0.00519	0.00625	0.02965
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00327	0.00437	0.02798
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00630	0.00741	0.03100

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)	0.00757	0.00894	0.05178
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00414	0.00550	0.04836
	(!SET_B * Q * !Q_N)	0.00813	0.00965	0.05293
	(!SET_B * Q * !Q_N)	0.00463	0.00613	0.04941
	(!CLK * D * SET_B * !Q * Q_N)	0.01400	0.01509	0.05951
	(!CLK * D * SET_B * !Q * Q_N)	0.01116	0.01223	0.05666

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)	0.00393	0.00608	0.04867
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00737	0.00951	0.05211
	(!SET_B * Q * !Q_N)	0.00190	0.00416	0.04706
	(!SET_B * Q * !Q_N)	0.00543	0.00770	0.05058
	(!CLK * D * SET_B * !Q * Q_N)	0.01039	0.01254	0.05711
	(!CLK * D * SET_B * !Q * Q_N)	0.01323	0.01540	0.05996

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)	0.00402	0.00403	0.00401
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	-0.00571	-0.00571	-0.00570
	(!CLK * !D * RESET_B * Q * !Q_N)	0.01074	0.01215	0.07065
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00030	0.00165	0.06017

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)	-0.00390	-0.00401	-0.00399
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	0.00576	0.00577	0.00574
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00252	0.00553	0.06527
	(!CLK * !D * RESET_B * Q * !Q_N)	0.01295	0.01605	0.07575

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)	0.01701	0.01982	0.09318
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01166	0.01446	0.08783
	(D * !RESET_B * SET_B * !Q * Q_N)	0.02054	0.02324	0.09789
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01549	0.01819	0.09286
	(!D * SET_B * !Q * Q_N)	0.01730	0.02010	0.09370
	(!D * SET_B * !Q * Q_N)	0.01196	0.01475	0.08836
	(!D * !SET_B * Q * !Q_N)	0.02154	0.02444	0.09772
	(!D * !SET_B * Q * !Q_N)	0.01589	0.01878	0.09207

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)	0.01791	0.02163	0.09627
	(D * RESET_B * SET_B * !Q * Q_N)	0.02353	0.02724	0.10191
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00891	0.01273	0.08604
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01424	0.01808	0.09138
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01128	0.01508	0.08967
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01632	0.02014	0.09473
	(!D * SET_B * !Q * Q_N)	0.00883	0.01261	0.08579
	(!D * SET_B * !Q * Q_N)	0.01416	0.01795	0.09114
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01912	0.02317	0.09760
	(!D * RESET_B * SET_B * Q * !Q_N)	0.02419	0.02824	0.10268
	(!D * !SET_B * Q * !Q_N)	0.01206	0.01611	0.09040
	(!D * !SET_B * Q * !Q_N)	0.01771	0.02177	0.09606

SKY130_FD_SC_HS__DFRBPx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00182	0.00558	0.00303	1.31246	1.28226
sky130_fd_sc_hs__dfrbp_2	0.00167	0.00537	0.00303	2.51429	2.51114

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrbp_1	0.00000	0.67937	1.37686
sky130_fd_sc_hs__dfrbp_2	0.00000	0.67925	1.14465

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)	0.19701	0.64365	5.97794
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RR)	0.23067	0.59430	6.33949

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrbp_1	CLK->Q (RF)	0.18517	0.40702	2.18140
	RESET_B->Q (FF)	0.25895	0.71113	5.20611
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RF)	0.21131	0.39830	2.22127
	RESET_B->Q (FF)	0.30563	0.73101	5.31861

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)	0.15749	0.62110	5.94294
	RESET_B->Q_N (FR)	0.23062	0.92018	8.95309
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RR)	0.15376	0.52469	5.82214
	RESET_B->Q_N (FR)	0.24822	0.85492	8.91241

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)	0.14907	0.42160	2.18563
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RF)	0.15029	0.41239	2.25392

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)	-0.05071	-0.11504	-0.57500
	setup	CLK (R)	0.09125	0.14293	0.58771
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.05035	-0.11799	-0.60135
	setup	CLK (R)	0.10803	0.15370	0.62078

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)	-0.06777	-0.19651	-3.19043
	setup	CLK (R)	0.12713	0.26467	3.23411
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.07864	-0.21594	-3.23386
	setup	CLK (R)	0.14240	0.28121	3.28178

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)	-0.05071	-0.11504	-0.57500
	setup	CLK (R)	0.09125	0.14293	0.58771
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.05035	-0.11799	-0.60135
	setup	CLK (R)	0.10803	0.15370	0.62078

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)	-0.06777	-0.19651	-3.19043
	setup	CLK (R)	0.12713	0.26467	3.23411
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.07864	-0.21594	-3.23386
	setup	CLK (R)	0.14240	0.28121	3.28178

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)	0.10108	0.13884	0.88276
	removal	CLK (R)	-0.07849	-0.12641	-0.87417
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.11650	0.14970	0.89066
	removal	CLK (R)	-0.08853	-0.13484	-0.88441

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)	0.10108	0.13884	0.88276
	removal	CLK (R)	-0.07849	-0.12641	-0.87417
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.11650	0.14970	0.89066
	removal	CLK (R)	-0.08853	-0.13484	-0.88441

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 ()	0.13127	0.63232	16.50020
	min_pulse_width	RESET_B ()	0.10990	0.63232	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	RESET_B ()	0.14315	0.63232	16.50020
	min_pulse_width	RESET_B ()	0.12177	0.63232	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 ()	0.10753	0.63232	16.50020
	min_pulse_width	CLK ()	0.07191	0.63232	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.13840	0.63232	16.50020
	min_pulse_width	CLK ()	0.08378	0.63232	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 ()	0.13840	0.63232	16.50020
	min_pulse_width	CLK ()	0.16689	0.63232	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.15502	0.63232	16.50020
	min_pulse_width	CLK ()	0.17164	0.63232	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	0.01761	0.01900	0.05629
	CLK	0.01493	0.01624	0.05358
sky130_fd_sc_hs__dfrbp_2	CLK	0.02037	0.02164	0.05837
	CLK	0.01772	0.01889	0.05567

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.01773	0.01936	0.05506
	CLK	0.01499	0.01660	0.05231
	RESET_B	0.01365	0.01526	0.04651
	RESET_B	0.01899	0.02056	0.05172
sky130_fd_sc_hs__dfrbp_2	CLK	0.02016	0.02213	0.05790
	CLK	0.01751	0.01948	0.05523
	RESET_B	0.01758	0.01953	0.05144
	RESET_B	0.02253	0.02446	0.05574

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.01774	0.01938	0.05617
	CLK	0.01500	0.01661	0.05346
	RESET_B	0.01367	0.01527	0.04753
	RESET_B	0.01901	0.02058	0.05220
sky130_fd_sc_hs__dfrbp_2	CLK	0.02018	0.02219	0.05887
	CLK	0.01753	0.01951	0.05618
	RESET_B	0.01760	0.01952	0.05340
	RESET_B	0.02255	0.02450	0.05641

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.01759	0.01896	0.05508
	CLK	0.01491	0.01622	0.05240
sky130_fd_sc_hs__dfrbp_2	CLK	0.02036	0.02157	0.05741
	CLK	0.01771	0.01888	0.05475

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00452	0.00540	0.02876
	(CLK * RESET_B)	0.00096	0.00184	0.02520
	(CLK * !RESET_B)	0.00049	0.00049	0.00048
	(CLK * !RESET_B)	-0.00155	-0.00155	-0.00156
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01297	0.01394	0.04063
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00924	0.01021	0.03691
	(!CLK * !RESET_B)	0.00049	0.00049	0.00048
	(!CLK * !RESET_B)	-0.00154	-0.00155	-0.00156
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00520	0.00602	0.02909
	(CLK * RESET_B)	0.00208	0.00288	0.02597
	(CLK * !RESET_B)	0.00055	0.00055	0.00054
	(CLK * !RESET_B)	-0.00132	-0.00132	-0.00134
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01582	0.01678	0.04323
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01290	0.01386	0.04030
	(!CLK * !RESET_B)	0.00055	0.00055	0.00054
	(!CLK * !RESET_B)	-0.00132	-0.00133	-0.00134

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00058	0.00166	0.02471
	(CLK * RESET_B)	0.00415	0.00522	0.02828
	(CLK * !RESET_B)	-0.00047	-0.00046	-0.00046
	(CLK * !RESET_B)	0.00158	0.00157	0.00157
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00838	0.00975	0.03667
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01211	0.01347	0.04039
	(!CLK * !RESET_B)	-0.00047	-0.00047	-0.00046
	(!CLK * !RESET_B)	0.00159	0.00160	0.00157
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00100	0.00202	0.02475
	(CLK * RESET_B)	0.00413	0.00514	0.02787
	(CLK * !RESET_B)	-0.00054	-0.00054	-0.00053
	(CLK * !RESET_B)	0.00137	0.00138	0.00136
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00999	0.01111	0.03714
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01292	0.01405	0.04007
	(!CLK * !RESET_B)	-0.00054	-0.00053	-0.00053
	(!CLK * !RESET_B)	0.00137	0.00137	0.00136

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)	0.00855	0.00920	0.03153
	(CLK * D * !Q * Q_N)	-0.00185	-0.00126	0.02112
	(CLK * !D * !Q * Q_N)	0.00410	0.00414	0.00410
	(CLK * !D * !Q * Q_N)	-0.00460	-0.00463	-0.00460
	(!CLK * D * !Q * Q_N)	0.01740	0.01804	0.05490
	(!CLK * D * !Q * Q_N)	0.00686	0.00745	0.04434
	(!CLK * !D * !Q * Q_N)	0.00401	0.00403	0.00401
	(!CLK * !D * !Q * Q_N)	-0.00470	-0.00471	-0.00470
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	0.00953	0.01017	0.03237
	(CLK * D * !Q * Q_N)	-0.00040	0.00019	0.02247
	(CLK * !D * !Q * Q_N)	0.00445	0.00448	0.00446
	(CLK * !D * !Q * Q_N)	-0.00405	-0.00407	-0.00406
	(!CLK * D * !Q * Q_N)	0.02054	0.02109	0.05750
	(!CLK * D * !Q * Q_N)	0.01082	0.01133	0.04776
	(!CLK * !D * !Q * Q_N)	0.00439	0.00442	0.00440
	(!CLK * !D * !Q * Q_N)	-0.00411	-0.00413	-0.00412

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)	-0.00234	-0.00148	0.02098
	(CLK * D * !Q * Q_N)	0.00804	0.00897	0.03135
	(CLK * !D * !Q * Q_N)	-0.00396	-0.00412	-0.00410
	(CLK * !D * !Q * Q_N)	0.00469	0.00465	0.00462
	(!CLK * D * !Q * Q_N)	0.00619	0.00713	0.04593
	(!CLK * D * !Q * Q_N)	0.01678	0.01772	0.05647
	(!CLK * !D * !Q * Q_N)	-0.00387	-0.00399	-0.00400
	(!CLK * !D * !Q * Q_N)	0.00477	0.00473	0.00471
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	-0.00235	-0.00148	0.02095
	(CLK * D * !Q * Q_N)	0.00755	0.00850	0.03090
	(CLK * !D * !Q * Q_N)	-0.00431	-0.00448	-0.00446
	(CLK * !D * !Q * Q_N)	0.00414	0.00410	0.00408
	(!CLK * D * !Q * Q_N)	0.00761	0.00854	0.04598
	(!CLK * D * !Q * Q_N)	0.01739	0.01831	0.05569
	(!CLK * !D * !Q * Q_N)	-0.00425	-0.00442	-0.00440
	(!CLK * !D * !Q * Q_N)	0.00419	0.00417	0.00414

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)	0.01642	0.01882	0.08866
	(D * RESET_B * Q * !Q_N)	0.01098	0.01336	0.08321
	(D * !RESET_B * !Q * Q_N)	0.01683	0.01921	0.08905
	(D * !RESET_B * !Q * Q_N)	0.01139	0.01376	0.08360
	(!D * !Q * Q_N)	0.01683	0.01921	0.08905
	(!D * !Q * Q_N)	0.01139	0.01375	0.08362
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.01495	0.01742	0.08708
	(D * RESET_B * Q * !Q_N)	0.00963	0.01209	0.08177
	(D * !RESET_B * !Q * Q_N)	0.01494	0.01739	0.08702
	(D * !RESET_B * !Q * Q_N)	0.00963	0.01207	0.08171
	(!D * !Q * Q_N)	0.01493	0.01739	0.08702
	(!D * !Q * Q_N)	0.00962	0.01206	0.08171

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)	0.00897	0.01249	0.08232
	(D * RESET_B * Q * !Q_N)	0.01441	0.01793	0.08776
	(D * RESET_B * !Q * Q_N)	0.01655	0.02011	0.09186
	(D * RESET_B * !Q * Q_N)	0.02184	0.02538	0.09714
	(D * !RESET_B * !Q * Q_N)	0.00835	0.01189	0.08174
	(D * !RESET_B * !Q * Q_N)	0.01380	0.01734	0.08718
	(!D * RESET_B * Q * !Q_N)	0.01788	0.02159	0.09271
	(!D * RESET_B * Q * !Q_N)	0.02349	0.02720	0.09831
	(!D * !Q * Q_N)	0.00835	0.01188	0.08176
	(!D * !Q * Q_N)	0.01380	0.01734	0.08718
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.00906	0.01249	0.08218
	(D * RESET_B * Q * !Q_N)	0.01438	0.01781	0.08749
	(D * RESET_B * !Q * Q_N)	0.02015	0.02355	0.09477
	(D * RESET_B * !Q * Q_N)	0.02562	0.02903	0.10025
	(D * !RESET_B * !Q * Q_N)	0.00897	0.01244	0.08216
	(D * !RESET_B * !Q * Q_N)	0.01428	0.01777	0.08747
	(!D * RESET_B * Q * !Q_N)	0.01938	0.02304	0.09406
	(!D * RESET_B * Q * !Q_N)	0.02451	0.02818	0.09919
	(!D * !Q * Q_N)	0.00897	0.01244	0.08218
	(!D * !Q * Q_N)	0.01428	0.01776	0.08749

SKY130_FD_SC_HS__DFRTN

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00179	0.00537	0.00290	1.23150

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrtn_1	0.00000	0.63831	1.27227

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)	0.21081	0.84368	8.43661

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)	0.17274	0.56863	4.60164
	RESET_B->Q (FF)	0.23754	0.68119	4.99444

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)	0.01573	0.07614	2.29866
	setup	CLK_N (F)	0.05355	-0.01159	-2.24840

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)	-0.05006	-0.09939	-0.50066
	setup	CLK_N (F)	0.14918	0.18046	0.53290

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)	0.01573	0.07614	2.29866
	setup	CLK_N (F)	0.05355	-0.01159	-2.24840

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)	-0.05006	-0.09939	-0.50066
	setup	CLK_N (F)	0.14918	0.18046	0.53290

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)	0.06161	-0.01983	-2.04210
	removal	CLK_N (F)	-0.02881	0.04003	2.04681

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)	0.06161	-0.01983	-2.04210
	removal	CLK_N (F)	-0.02881	0.04003	2.04681

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 ()	0.10278	0.63232	16.50020
	min_pulse_width	RESET_B ()	0.13127	0.63232	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 ()	0.10753	0.63232	16.50020
	min_pulse_width	CLK_N ()	0.15739	0.63232	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 ()	0.11940	0.63232	16.50020
	min_pulse_width	CLK_N ()	0.10753	0.63232	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	0.02725	0.03132	0.10505
	CLK_N	0.03234	0.03645	0.11019

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtn_1	CLK_N	0.02504	0.02872	0.10295
	CLK_N	0.02999	0.03367	0.10753
	RESET_B	0.02432	0.02706	0.09026
	RESET_B	0.03420	0.03693	0.09914

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)	0.01284	0.01388	0.04044
	(CLK_N * RESET_B)	0.00958	0.01062	0.03716
	(CLK_N * !RESET_B)	0.00049	0.00049	0.00048
	(CLK_N * !RESET_B)	-0.00153	-0.00153	-0.00155
	(!CLK_N * RESET_B)	0.00440	0.00541	0.02864
	(!CLK_N * RESET_B)	0.00103	0.00202	0.02526
	(!CLK_N * !RESET_B)	0.00049	0.00049	0.00048
	(!CLK_N * !RESET_B)	-0.00153	-0.00153	-0.00155

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)	0.00955	0.01079	0.03764
	(CLK_N * RESET_B)	0.01284	0.01407	0.04090
	(CLK_N * !RESET_B)	-0.00047	-0.00047	-0.00046
	(CLK_N * !RESET_B)	0.00155	0.00158	0.00156
	(!CLK_N * RESET_B)	0.00069	0.00177	0.02482
	(!CLK_N * RESET_B)	0.00408	0.00514	0.02820
	(!CLK_N * !RESET_B)	-0.00048	-0.00047	-0.00047
	(!CLK_N * !RESET_B)	0.00157	0.00156	0.00156

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)	0.01725	0.01795	0.05472
	(CLK_N * D * !Q)	0.00745	0.00809	0.04491
	(CLK_N * !D * !Q)	0.00430	0.00435	0.00431
	(CLK_N * !D * !Q)	-0.00409	-0.00412	-0.00409
	(!CLK_N * D * !Q)	0.00818	0.00888	0.03117
	(!CLK_N * D * !Q)	-0.00175	-0.00112	0.02124
	(!CLK_N * !D * !Q)	0.00419	0.00422	0.00420
	(!CLK_N * !D * !Q)	-0.00419	-0.00420	-0.00419

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)	0.00720	0.00827	0.04686
	(CLK_N * D * !Q)	0.01706	0.01811	0.05669
	(CLK_N * !D * !Q)	-0.00417	-0.00433	-0.00431
	(CLK_N * !D * !Q)	0.00416	0.00414	0.00411
	(!CLK_N * D * !Q)	-0.00209	-0.00114	0.02127
	(!CLK_N * D * !Q)	0.00780	0.00884	0.03117
	(!CLK_N * !D * !Q)	-0.00406	-0.00419	-0.00420
	(!CLK_N * !D * !Q)	0.00426	0.00421	0.00421

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)	0.01570	0.01807	0.08942
	(D * RESET_B * Q)	0.01066	0.01302	0.08440
	(D * RESET_B * !Q)	0.02444	0.02690	0.09920
	(D * RESET_B * !Q)	0.01950	0.02196	0.09429
	(D * !RESET_B * !Q)	0.01544	0.01781	0.08918
	(D * !RESET_B * !Q)	0.01040	0.01276	0.08415
	(!D * RESET_B * Q)	0.02405	0.02626	0.09927
	(!D * RESET_B * Q)	0.01891	0.02110	0.09413
	(!D * !Q)	0.01543	0.01782	0.08911
	(!D * !Q)	0.01039	0.01277	0.08408

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)	0.01120	0.01460	0.08570
	(D * RESET_B * Q)	0.01625	0.01963	0.09074
	(D * !RESET_B * !Q)	0.01132	0.01471	0.08587
	(D * !RESET_B * !Q)	0.01636	0.01974	0.09091
	(!D * !Q)	0.01129	0.01469	0.08575
	(!D * !Q)	0.01634	0.01972	0.09079

SKY130_FD_SC_HS__DFRTPx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00180	0.00556	0.00305	1.29983
sky130_fd_sc_hs__dfrtp_2	0.00179	0.00547	0.00304	2.46935
sky130_fd_sc_hs__dfrtp_4	0.00180	0.00564	0.00304	4.94141

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dfrtp_1	0.00000	0.63831	1.27227
sky130_fd_sc_hs__dfrtp_2	0.00000	0.71114	1.28075
sky130_fd_sc_hs__dfrtp_4	0.00000	1.05110	1.89536

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)	0.17087	0.61497	5.84559
sky130_fd_sc_hs__dfrtp_2	CLK->Q (RR)	0.16934	0.51659	5.72018
sky130_fd_sc_hs__dfrtp_4	CLK->Q (RR)	0.22043	0.50479	5.90550

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrtp_1	CLK->Q (RF)	0.17694	0.39785	2.14947
	RESET_B->Q (FF)	0.24375	0.69479	5.16406
sky130_fd_sc_hs__dfrtp_2	CLK->Q (RF)	0.19571	0.38388	2.04215
	RESET_B->Q (FF)	0.26122	0.67892	5.05475
sky130_fd_sc_hs__dfrtp_4	CLK->Q (RF)	0.19704	0.36257	2.25718
	RESET_B->Q (FF)	0.26957	0.66321	5.27476

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)	-0.05315	-0.12009	-0.58472
	setup	CLK (R)	0.10768	0.15593	0.60096
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.05525	-0.11799	-0.58283
	setup	CLK (R)	0.10453	0.15497	0.59649
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.05487	-0.11799	-0.57803
	setup	CLK (R)	0.10240	0.15170	0.59846

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)	-0.05760	-0.19002	-3.19103
	setup	CLK (R)	0.12704	0.26060	3.23309
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.05828	-0.18697	-3.19148
	setup	CLK (R)	0.12256	0.25953	3.23152
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.07014	-0.20136	-3.20239
	setup	CLK (R)	0.13525	0.26942	3.24793

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)	-0.05315	-0.12009	-0.58472
	setup	CLK (R)	0.10768	0.15593	0.60096
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.05525	-0.11799	-0.58283
	setup	CLK (R)	0.10453	0.15497	0.59649
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.05487	-0.11799	-0.57803
	setup	CLK (R)	0.10240	0.15170	0.59846

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)	-0.05760	-0.19002	-3.19103
	setup	CLK (R)	0.12704	0.26060	3.23309
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.05828	-0.18697	-3.19148
	setup	CLK (R)	0.12256	0.25953	3.23152
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.07014	-0.20136	-3.20239
	setup	CLK (R)	0.13525	0.26942	3.24793

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)	0.11746	0.15082	0.89366
	removal	CLK (R)	-0.07865	-0.12852	-0.88593
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.11388	0.14899	0.89062
	removal	CLK (R)	-0.07710	-0.12852	-0.88300
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.11342	0.14786	0.88570
	removal	CLK (R)	-0.08573	-0.13063	-0.87689

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)	0.11746	0.15082	0.89366
	removal	CLK (R)	-0.07865	-0.12852	-0.88593
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.11388	0.14899	0.89062
	removal	CLK (R)	-0.07710	-0.12852	-0.88300
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.11342	0.14786	0.88570
	removal	CLK (R)	-0.08573	-0.13063	-0.87689

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 ()	0.12890	0.63232	16.50020
	min_pulse_width	RESET_B ()	0.10278	0.63232	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	RESET_B ()	0.13127	0.63232	16.50020
	min_pulse_width	RESET_B ()	0.10753	0.63232	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	RESET_B ()	0.13602	0.63232	16.50020
	min_pulse_width	RESET_B ()	0.10753	0.63232	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 ()	0.08141	0.63232	16.50020
	min_pulse_width	CLK ()	0.06716	0.63232	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.08615	0.63232	16.50020
	min_pulse_width	CLK ()	0.06953	0.63232	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.11703	0.63232	16.50020
	min_pulse_width	CLK ()	0.07428	0.63232	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 ()	0.15265	0.63232	16.50020
	min_pulse_width	CLK ()	0.16452	0.63232	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.15265	0.63232	16.50020
	min_pulse_width	CLK ()	0.16452	0.63232	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.15739	0.63232	16.50020
	min_pulse_width	CLK ()	0.17639	0.63232	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	0.03106	0.03399	0.10804
	CLK	0.02573	0.02864	0.10279
sky130_fd_sc_hs__dfrtp_2	CLK	0.03440	0.03761	0.11176
	CLK	0.02907	0.03232	0.10681
sky130_fd_sc_hs__dfrtp_4	CLK	0.04387	0.04738	0.12177
	CLK	0.03835	0.04191	0.11864

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	CLK	0.03320	0.03628	0.10806
	CLK	0.02756	0.03055	0.10203
	RESET_B	0.02458	0.02751	0.09020
	RESET_B	0.03515	0.03803	0.10055
sky130_fd_sc_hs__dfrtp_2	CLK	0.03596	0.03920	0.11088
	CLK	0.03037	0.03346	0.10497
	RESET_B	0.02755	0.03063	0.09325
	RESET_B	0.03795	0.04098	0.10349
sky130_fd_sc_hs__dfrtp_4	CLK	0.04662	0.05033	0.12241
	CLK	0.04083	0.04447	0.11600
	RESET_B	0.03755	0.04113	0.10883
	RESET_B	0.04827	0.05181	0.11452

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00448	0.00537	0.02873
	(CLK * RESET_B)	0.00094	0.00182	0.02520
	(CLK * !RESET_B)	0.00047	0.00048	0.00047
	(CLK * !RESET_B)	-0.00151	-0.00152	-0.00153
	(!CLK * RESET_B)	0.01328	0.01428	0.04107
	(!CLK * RESET_B)	0.00954	0.01054	0.03733
	(!CLK * !RESET_B)	0.00048	0.00048	0.00047
	(!CLK * !RESET_B)	-0.00151	-0.00152	-0.00153
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00436	0.00526	0.02866
	(CLK * RESET_B)	0.00087	0.00176	0.02517
	(CLK * !RESET_B)	0.00048	0.00048	0.00047
	(CLK * !RESET_B)	-0.00151	-0.00152	-0.00154
	(!CLK * RESET_B)	0.01279	0.01381	0.04073
	(!CLK * RESET_B)	0.00913	0.01015	0.03707
	(!CLK * !RESET_B)	0.00048	0.00048	0.00047
	(!CLK * !RESET_B)	-0.00152	-0.00152	-0.00154
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00451	0.00539	0.02874
	(CLK * RESET_B)	0.00098	0.00186	0.02522
	(CLK * !RESET_B)	0.00048	0.00049	0.00048
	(CLK * !RESET_B)	-0.00152	-0.00153	-0.00154
	(!CLK * RESET_B)	0.01445	0.01544	0.04182
	(!CLK * RESET_B)	0.01072	0.01171	0.03809
	(!CLK * !RESET_B)	0.00049	0.00049	0.00048
	(!CLK * !RESET_B)	-0.00152	-0.00152	-0.00154

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00056	0.00164	0.02472
	(CLK * RESET_B)	0.00411	0.00518	0.02825
	(CLK * !RESET_B)	-0.00046	-0.00045	-0.00045
	(CLK * !RESET_B)	0.00156	0.00154	0.00155
	(!CLK * RESET_B)	0.00880	0.01008	0.03724
	(!CLK * RESET_B)	0.01255	0.01383	0.04099
	(!CLK * !RESET_B)	-0.00046	-0.00046	-0.00045
	(!CLK * !RESET_B)	0.00156	0.00157	0.00155
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00056	0.00166	0.02477
	(CLK * RESET_B)	0.00406	0.00515	0.02825
	(CLK * !RESET_B)	-0.00046	-0.00045	-0.00045
	(CLK * !RESET_B)	0.00156	0.00155	0.00155
	(!CLK * RESET_B)	0.00883	0.01014	0.03739
	(!CLK * RESET_B)	0.01249	0.01381	0.04106
	(!CLK * !RESET_B)	-0.00046	-0.00046	-0.00045
	(!CLK * !RESET_B)	0.00156	0.00157	0.00155
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00058	0.00165	0.02471
	(CLK * RESET_B)	0.00412	0.00519	0.02824
	(CLK * !RESET_B)	-0.00047	-0.00046	-0.00046
	(CLK * !RESET_B)	0.00157	0.00156	0.00156
	(!CLK * RESET_B)	0.00899	0.01021	0.03749
	(!CLK * RESET_B)	0.01273	0.01395	0.04122
	(!CLK * !RESET_B)	-0.00047	-0.00047	-0.00046
	(!CLK * !RESET_B)	0.00157	0.00158	0.00156

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)	0.00853	0.00918	0.03151
	(CLK * D * !Q)	-0.00186	-0.00126	0.02113
	(CLK * !D * !Q)	0.00409	0.00411	0.00410
	(CLK * !D * !Q)	-0.00458	-0.00458	-0.00457
	(!CLK * D * !Q)	0.01779	0.01845	0.05539
	(!CLK * D * !Q)	0.00722	0.00787	0.04482
	(!CLK * !D * !Q)	0.00396	0.00400	0.00396
	(!CLK * !D * !Q)	-0.00472	-0.00474	-0.00471
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	0.00835	0.00899	0.03138
	(CLK * D * !Q)	-0.00189	-0.00125	0.02115
	(CLK * !D * !Q)	0.00406	0.00409	0.00406
	(CLK * !D * !Q)	-0.00451	-0.00453	-0.00451
	(!CLK * D * !Q)	0.01720	0.01793	0.05494
	(!CLK * D * !Q)	0.00682	0.00754	0.04456
	(!CLK * !D * !Q)	0.00393	0.00398	0.00394
	(!CLK * !D * !Q)	-0.00464	-0.00466	-0.00463
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	0.00875	0.00941	0.03173
	(CLK * D * !Q)	-0.00177	-0.00116	0.02121
	(CLK * !D * !Q)	0.00432	0.00436	0.00433
	(CLK * !D * !Q)	-0.00451	-0.00453	-0.00450
	(!CLK * D * !Q)	0.01884	0.01948	0.05600
	(!CLK * D * !Q)	0.00813	0.00874	0.04533
	(!CLK * !D * !Q)	0.00398	0.00403	0.00398
	(!CLK * !D * !Q)	-0.00484	-0.00487	-0.00485

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)	-0.00236	-0.00149	0.02097
	(CLK * D * !Q)	0.00800	0.00893	0.03132
	(CLK * !D * !Q)	-0.00395	-0.00411	-0.00409
	(CLK * !D * !Q)	0.00466	0.00462	0.00459
	(!CLK * D * !Q)	0.00644	0.00740	0.04631
	(!CLK * D * !Q)	0.01706	0.01802	0.05689
	(!CLK * !D * !Q)	-0.00382	-0.00395	-0.00395
	(!CLK * !D * !Q)	0.00479	0.00475	0.00473
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	-0.00231	-0.00142	0.02105
	(CLK * D * !Q)	0.00790	0.00886	0.03126
	(CLK * !D * !Q)	-0.00392	-0.00408	-0.00405
	(CLK * !D * !Q)	0.00460	0.00455	0.00453
	(!CLK * D * !Q)	0.00647	0.00755	0.04651
	(!CLK * D * !Q)	0.01691	0.01796	0.05691
	(!CLK * !D * !Q)	-0.00380	-0.00395	-0.00393
	(!CLK * !D * !Q)	0.00471	0.00468	0.00466
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	-0.00256	-0.00169	0.02076
	(CLK * D * !Q)	0.00793	0.00886	0.03124
	(CLK * !D * !Q)	-0.00417	-0.00434	-0.00431
	(CLK * !D * !Q)	0.00460	0.00455	0.00453
	(!CLK * D * !Q)	0.00681	0.00767	0.04636
	(!CLK * D * !Q)	0.01756	0.01841	0.05709
	(!CLK * !D * !Q)	-0.00384	-0.00397	-0.00397
	(!CLK * !D * !Q)	0.00493	0.00489	0.00487

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)	0.01697	0.01931	0.08908
	(D * RESET_B * Q)	0.01146	0.01378	0.08358
	(D * !RESET_B * !Q)	0.01758	0.01997	0.08967
	(D * !RESET_B * !Q)	0.01207	0.01444	0.08417
	(!D * !Q)	0.01758	0.01996	0.08968
	(!D * !Q)	0.01207	0.01443	0.08418
sky130_fd_sc_hs__dfrtp_2	(D * RESET_B * Q)	0.01687	0.01922	0.08898
	(D * RESET_B * Q)	0.01139	0.01372	0.08350
	(D * !RESET_B * !Q)	0.01748	0.01982	0.08957
	(D * !RESET_B * !Q)	0.01200	0.01432	0.08410
	(!D * !Q)	0.01748	0.01981	0.08957
	(!D * !Q)	0.01200	0.01431	0.08410
sky130_fd_sc_hs__dfrtp_4	(D * RESET_B * Q)	0.01780	0.02012	0.08954
	(D * RESET_B * Q)	0.01211	0.01442	0.08386
	(D * !RESET_B * !Q)	0.01828	0.02059	0.09000
	(D * !RESET_B * !Q)	0.01260	0.01490	0.08432
	(!D * !Q)	0.01828	0.02058	0.09000
	(!D * !Q)	0.01259	0.01489	0.08432

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)**	0.00903	0.01253	0.08229
	(D * RESET_B * Q)	0.01454	0.01804	0.08780
	(D * RESET_B * !Q)	0.01701	0.02055	0.09223
	(D * RESET_B * !Q)	0.02232	0.02585	0.09754
	(D * !RESET_B * !Q)	0.00831	0.01182	0.08162
	(D * !RESET_B * !Q)	0.01383	0.01735	0.08713
	(!D * RESET_B * Q)	0.01839	0.02206	0.09310
	(!D * RESET_B * Q)	0.02411	0.02780	0.09882
	(!D * !Q)	0.00831	0.01182	0.08164
	(!D * !Q)	0.01383	0.01735	0.08715
sky130_fd_sc_hs__dfrtp_2	**(D * RESET_B * Q)**	0.00905	0.01256	0.08231
	(D * RESET_B * Q)	0.01454	0.01804	0.08779
	(D * RESET_B * !Q)	0.01665	0.02019	0.09190
	(D * RESET_B * !Q)	0.02197	0.02552	0.09721
	(D * !RESET_B * !Q)	0.00834	0.01185	0.08160
	(D * !RESET_B * !Q)	0.01383	0.01735	0.08707
	(!D * RESET_B * Q)	0.01843	0.02212	0.09314
	(!D * RESET_B * Q)	0.02409	0.02778	0.09880
	(!D * !Q)	0.00834	0.01185	0.08166
	(!D * !Q)	0.01383	0.01735	0.08715
sky130_fd_sc_hs__dfrtp_4	**(D * RESET_B * Q)**	0.00940	0.01286	0.08239
	(D * RESET_B * Q)	0.01509	0.01856	0.08807
	(D * RESET_B * !Q)	0.01867	0.02213	0.09344
	(D * RESET_B * !Q)	0.02415	0.02761	0.09890
	(D * !RESET_B * !Q)	0.00881	0.01228	0.08184
	(D * !RESET_B * !Q)	0.01450	0.01798	0.08752
	(!D * RESET_B * Q)	0.01882	0.02249	0.09336
	(!D * RESET_B * Q)	0.02472	0.02837	0.09926
	(!D * !Q)	0.00881	0.01228	0.08182
	(!D * !Q)	0.01450	0.01798	0.08750

SKY130_FD_SC_HS__DFSBPx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00177	0.00330	0.00301	1.24891	1.18852
sky130_fd_sc_hs__dfsbp_2	0.00178	0.00327	0.00301	2.53864	2.43058

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfsbp_1	0.00000	0.70546	0.87192
sky130_fd_sc_hs__dfsbp_2	0.00000	0.59174	0.64297

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)	0.22744	0.67107	5.91857
	SET_B->Q (FR)	0.22838	0.93488	9.02205
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RR)	0.27033	0.60502	5.91218
	SET_B->Q (FR)	0.27839	0.88521	9.08402

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfsbp_1	CLK->Q (RF)	0.21094	0.42538	2.06503
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RF)	0.23755	0.41602	2.14792

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)	0.18299	0.65919	5.97121
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RR)	0.18351	0.55197	5.83874

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)	0.17348	0.44662	2.09506
	SET_B->Q_N (FF)	0.16949	0.71107	5.21107
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RF)	0.18927	0.43900	2.15894
	SET_B->Q_N (FF)	0.19040	0.71676	5.35168

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)	-0.04721	-0.10897	-0.48675
	setup	CLK (R)	0.07777	0.13084	0.48409
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.04831	-0.10835	-0.47755
	setup	CLK (R)	0.07009	0.12617	0.47522

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)	-0.05099	-0.18200	-3.23303
	setup	CLK (R)	0.14132	0.28052	3.34720
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.05796	-0.18801	-3.23268
	setup	CLK (R)	0.13718	0.27646	3.34406

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)	-0.04721	-0.10897	-0.48675
	setup	CLK (R)	0.07777	0.13084	0.48409
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.04831	-0.10835	-0.47755
	setup	CLK (R)	0.07009	0.12617	0.47522

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)	-0.05099	-0.18200	-3.23303
	setup	CLK (R)	0.14132	0.28052	3.34720
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.05796	-0.18801	-3.23268
	setup	CLK (R)	0.13718	0.27646	3.34406

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)	-0.08291	-0.12147	-0.37386
	removal	CLK (R)	0.10525	0.14116	0.43862
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.08492	-0.12087	-0.38913
	removal	CLK (R)	0.10530	0.14116	0.42208

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)	-0.08291	-0.12147	-0.37386
	removal	CLK (R)	0.10525	0.14116	0.43862
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.08492	-0.12087	-0.38913
	removal	CLK (R)	0.10530	0.14116	0.42208

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 ()	0.17639	0.63232	16.50020
	min_pulse_width	SET_B ()	0.17639	0.63232	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	SET_B ()	0.19064	0.63232	16.50020
	min_pulse_width	SET_B ()	0.21913	0.63232	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 ()	0.13365	0.63232	16.50020
	min_pulse_width	CLK ()	0.09090	0.63232	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.17164	0.63232	16.50020
	min_pulse_width	CLK ()	0.10278	0.63232	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 ()	0.13365	0.63232	16.50020
	min_pulse_width	CLK ()	0.19064	0.63232	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.13127	0.63232	16.50020
	min_pulse_width	CLK ()	0.18826	0.63232	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	0.01839	0.01974	0.05696
	CLK	0.01572	0.01693	0.05428
	SET_B	0.01055	0.01152	0.03536
	SET_B	0.01346	0.01446	0.03743
sky130_fd_sc_hs__dfsbp_2	CLK	0.02247	0.02315	0.06078
	CLK	0.01977	0.02039	0.05807
	SET_B	0.01511	0.01527	0.04154
	SET_B	0.01801	0.01816	0.04172

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01873	0.02025	0.05540
	CLK	0.01621	0.01766	0.05285
sky130_fd_sc_hs__dfsbp_2	CLK	0.02211	0.02380	0.05937
	CLK	0.01953	0.02121	0.05674

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01876	0.02024	0.05653
	CLK	0.01623	0.01768	0.05406
sky130_fd_sc_hs__dfsbp_2	CLK	0.02213	0.02381	0.06010
	CLK	0.01955	0.02123	0.05753

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01837	0.01959	0.05580
	CLK	0.01569	0.01690	0.05313
	SET_B	0.01054	0.01150	0.03411
	SET_B	0.01344	0.01444	0.03699
sky130_fd_sc_hs__dfsbp_2	CLK	0.02246	0.02308	0.05921
	CLK	0.01975	0.02036	0.05651
	SET_B	0.01511	0.01526	0.03824
	SET_B	0.01800	0.01816	0.04110

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00404	0.00523	0.02998
	CLK	0.00086	0.00205	0.02681
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01206	0.01278	0.03682
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00857	0.00929	0.03335
	(!CLK * !SET_B * Q * !Q_N)	0.00950	0.01022	0.03302
	(!CLK * !SET_B * Q * !Q_N)	0.00587	0.00660	0.02941
sky130_fd_sc_hs__dfsbp_2	CLK	0.00403	0.00522	0.02998
	CLK	0.00084	0.00203	0.02680
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01194	0.01268	0.03680
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00833	0.00907	0.03319
	(!CLK * !SET_B * Q * !Q_N)	0.00949	0.01021	0.03304
	(!CLK * !SET_B * Q * !Q_N)	0.00576	0.00650	0.02933

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00029	0.00150	0.02600
	CLK	0.00345	0.00468	0.02918
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00877	0.00977	0.03337
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01226	0.01325	0.03686
	(!CLK * !SET_B * Q * !Q_N)	0.00493	0.00567	0.02780
	(!CLK * !SET_B * Q * !Q_N)	0.00855	0.00930	0.03143
sky130_fd_sc_hs__dfsbp_2	CLK	0.00028	0.00150	0.02601
	CLK	0.00345	0.00469	0.02919
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00842	0.00942	0.03306
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01202	0.01303	0.03666
	(!CLK * !SET_B * Q * !Q_N)	0.00475	0.00550	0.02767
	(!CLK * !SET_B * Q * !Q_N)	0.00847	0.00922	0.03139

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)	0.00306	0.00308	0.00306
	(CLK * Q * !Q_N)	-0.00261	-0.00262	-0.00261
	(!CLK * D * Q * !Q_N)	0.00335	0.00339	0.00335
	(!CLK * D * Q * !Q_N)	-0.00232	-0.00234	-0.00232
	(!CLK * !D * Q * !Q_N)	0.00640	0.00713	0.02940
	(!CLK * !D * Q * !Q_N)	0.00050	0.00120	0.02348
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	0.00310	0.00314	0.00311
	(CLK * Q * !Q_N)	-0.00254	-0.00256	-0.00254
	(!CLK * D * Q * !Q_N)	0.00331	0.00336	0.00332
	(!CLK * D * Q * !Q_N)	-0.00232	-0.00234	-0.00232
	(!CLK * !D * Q * !Q_N)	0.00616	0.00691	0.02922
	(!CLK * !D * Q * !Q_N)	0.00031	0.00104	0.02338

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)	-0.00298	-0.00307	-0.00305
	(CLK * Q * !Q_N)	0.00265	0.00265	0.00263
	(!CLK * D * Q * !Q_N)	-0.00326	-0.00335	-0.00334
	(!CLK * D * Q * !Q_N)	0.00237	0.00236	0.00234
	(!CLK * !D * Q * !Q_N)	-0.00033	0.00076	0.02313
	(!CLK * !D * Q * !Q_N)	0.00555	0.00667	0.02905
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	-0.00302	-0.00311	-0.00310
	(CLK * Q * !Q_N)	0.00257	0.00258	0.00256
	(!CLK * D * Q * !Q_N)	-0.00326	-0.00333	-0.00331
	(!CLK * D * Q * !Q_N)	0.00240	0.00236	0.00234
	(!CLK * !D * Q * !Q_N)	-0.00029	0.00098	0.02324
	(!CLK * !D * Q * !Q_N)	0.00554	0.00684	0.02909

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)	0.01755	0.01984	0.08955
	(D * Q * !Q_N)	0.01234	0.01462	0.08434
	(!D * SET_B * !Q * Q_N)	0.01719	0.01945	0.08921
	(!D * SET_B * !Q * Q_N)	0.01198	0.01422	0.08402
	(!D * !SET_B * Q * !Q_N)	0.03222	0.03459	0.10562
	(!D * !SET_B * Q * !Q_N)	0.02656	0.02891	0.09997
sky130_fd_sc_hs__dfsbp_2	(D * Q * !Q_N)	0.01735	0.01965	0.08943
	(D * Q * !Q_N)	0.01205	0.01434	0.08413
	(!D * SET_B * !Q * Q_N)	0.01710	0.01937	0.08913
	(!D * SET_B * !Q * Q_N)	0.01181	0.01406	0.08385
	(!D * !SET_B * Q * !Q_N)	0.03178	0.03414	0.10521
	(!D * !SET_B * Q * !Q_N)	0.02595	0.02831	0.09938

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)	0.01741	0.02094	0.09301
	(D * SET_B * !Q * Q_N)	0.02232	0.02585	0.09789
	(D * Q * !Q_N)	0.00992	0.01358	0.08375
	(D * Q * !Q_N)	0.01513	0.01881	0.08897
	(!D * SET_B * Q * !Q_N)	0.02028	0.02406	0.09538
	(!D * SET_B * Q * !Q_N)	0.02581	0.02958	0.10090
	(!D * SET_B * !Q * Q_N)	0.01012	0.01368	0.08409
	(!D * SET_B * !Q * Q_N)	0.01533	0.01890	0.08931
	(!D * !SET_B * Q * !Q_N)	0.01641	0.02018	0.09146
	(!D * !SET_B * Q * !Q_N)	0.02209	0.02586	0.09712
sky130_fd_sc_hs__dfsbp_2	(D * SET_B * !Q * Q_N)	0.01713	0.02066	0.09281
	(D * SET_B * !Q * Q_N)	0.02201	0.02554	0.09769
	(D * Q * !Q_N)	0.00977	0.01331	0.08370
	(D * Q * !Q_N)	0.01507	0.01861	0.08899
	(!D * SET_B * Q * !Q_N)	0.01973	0.02351	0.09491
	(!D * SET_B * Q * !Q_N)	0.02545	0.02922	0.10063
	(!D * SET_B * !Q * Q_N)	0.00987	0.01344	0.08393
	(!D * SET_B * !Q * Q_N)	0.01517	0.01872	0.08923
	(!D * !SET_B * Q * !Q_N)	0.01603	0.01980	0.09116
	(!D * !SET_B * Q * !Q_N)	0.02188	0.02562	0.09700

SKY130_FD_SC_HS__DFSTPx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00177	0.00344	0.00299	1.28291
sky130_fd_sc_hs__dfstp_2	0.00177	0.00322	0.00302	2.53852
sky130_fd_sc_hs__dfstp_4	0.00176	0.00326	0.00302	4.78725

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfstp_1	0.00000	0.63508	0.77059
sky130_fd_sc_hs__dfstp_2	0.00000	0.45098	0.62539
sky130_fd_sc_hs__dfstp_4	0.00000	1.15301	1.39366

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)	0.18808	0.62603	5.80522
	SET_B->Q (FR)	0.18771	0.87227	8.81960
sky130_fd_sc_hs__dfstp_2	CLK->Q (RR)	0.19615	0.54118	5.85721
	SET_B->Q (FR)	0.19725	0.79372	8.88877
sky130_fd_sc_hs__dfstp_4	CLK->Q (RR)	0.23257	0.51132	5.91075
	SET_B->Q (FR)	0.23407	0.77161	8.97951

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfstp_1	CLK->Q (RF)	0.19540	0.41125	2.12920
sky130_fd_sc_hs__dfstp_2	CLK->Q (RF)	0.20697	0.38890	2.14112
sky130_fd_sc_hs__dfstp_4	CLK->Q (RF)	0.21336	0.36617	2.08919

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)	-0.04850	-0.10556	-0.47511
	setup	CLK (R)	0.07349	0.12698	0.47245
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.04808	-0.10850	-0.48302
	setup	CLK (R)	0.07425	0.13084	0.48038
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.04822	-0.10556	-0.47215
	setup	CLK (R)	0.06917	0.12423	0.46626

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)	-0.04781	-0.17876	-3.22245
	setup	CLK (R)	0.13804	0.27846	3.33306
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.05173	-0.18196	-3.23031
	setup	CLK (R)	0.13892	0.27932	3.34001
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.05313	-0.18589	-3.23023
	setup	CLK (R)	0.13417	0.27524	3.33327

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)	-0.04850	-0.10556	-0.47511
	setup	CLK (R)	0.07349	0.12698	0.47245
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.04808	-0.10850	-0.48302
	setup	CLK (R)	0.07425	0.13084	0.48038
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.04822	-0.10556	-0.47215
	setup	CLK (R)	0.06917	0.12423	0.46626

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)	-0.04781	-0.17876	-3.22245
	setup	CLK (R)	0.13804	0.27846	3.33306
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.05173	-0.18196	-3.23031
	setup	CLK (R)	0.13892	0.27932	3.34001
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.05313	-0.18589	-3.23023
	setup	CLK (R)	0.13417	0.27524	3.33327

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)	-0.08168	-0.12456	-0.37370
	removal	CLK (R)	0.10244	0.13906	0.49566
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.08695	-0.12519	-0.37959
	removal	CLK (R)	0.10225	0.13906	0.46819
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.08427	-0.12164	-0.36583
	removal	CLK (R)	0.10235	0.13695	0.43110

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)	-0.08168	-0.12456	-0.37370
	removal	CLK (R)	0.10244	0.13906	0.49566
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.08695	-0.12519	-0.37959
	removal	CLK (R)	0.10225	0.13906	0.46819
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.08427	-0.12164	-0.36583
	removal	CLK (R)	0.10235	0.13695	0.43110

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 ()	0.15977	0.63232	16.50020
	min_pulse_width	SET_B ()	0.13602	0.63232	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	SET_B ()	0.16452	0.63232	16.50020
	min_pulse_width	SET_B ()	0.14315	0.63232	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	SET_B ()	0.17164	0.63232	16.50020
	min_pulse_width	SET_B ()	0.16452	0.63232	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 ()	0.09803	0.63232	16.50020
	min_pulse_width	CLK ()	0.07666	0.63232	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.10278	0.63232	16.50020
	min_pulse_width	CLK ()	0.08141	0.63232	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.12890	0.63232	16.50020
	min_pulse_width	CLK ()	0.08378	0.63232	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 ()	0.13127	0.63232	16.50020
	min_pulse_width	CLK ()	0.18589	0.63232	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.13365	0.63232	16.50020
	min_pulse_width	CLK ()	0.18589	0.63232	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.12890	0.63232	16.50020
	min_pulse_width	CLK ()	0.18352	0.63232	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	0.03096	0.03346	0.10763
	CLK	0.02585	0.02834	0.10261
	SET_B	0.02944	0.03054	0.06769
	SET_B	0.03509	0.03616	0.07335
sky130_fd_sc_hs__dfstp_2	CLK	0.03505	0.03784	0.11209
	CLK	0.02969	0.03250	0.10682
	SET_B	0.03362	0.03508	0.07233
	SET_B	0.03878	0.04022	0.07791
sky130_fd_sc_hs__dfstp_4	CLK	0.04380	0.04680	0.12147
	CLK	0.03839	0.04148	0.11836
	SET_B	0.04165	0.04365	0.08120
	SET_B	0.04686	0.04882	0.08725

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.03354	0.03609	0.10661
	CLK	0.02820	0.03074	0.10115
sky130_fd_sc_hs__dfstp_2	CLK	0.03706	0.03991	0.11065
	CLK	0.03187	0.03470	0.10513
sky130_fd_sc_hs__dfstp_4	CLK	0.04626	0.04987	0.12083
	CLK	0.04103	0.04463	0.11529

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00405	0.00511	0.02996
	CLK	0.00088	0.00195	0.02680
	(!CLK * SET_B)	0.01192	0.01265	0.03678
	(!CLK * SET_B)	0.00845	0.00918	0.03332
	(!CLK * !SET_B * Q)	0.00944	0.01017	0.03301
	(!CLK * !SET_B * Q)	0.00580	0.00652	0.02938
sky130_fd_sc_hs__dfstp_2	CLK	0.00407	0.00526	0.02998
	CLK	0.00090	0.00208	0.02681
	(!CLK * SET_B)	0.01192	0.01264	0.03672
	(!CLK * SET_B)	0.00843	0.00916	0.03324
	(!CLK * !SET_B * Q)	0.00943	0.01014	0.03295
	(!CLK * !SET_B * Q)	0.00577	0.00650	0.02930
sky130_fd_sc_hs__dfstp_4	CLK	0.00407	0.00513	0.02997
	CLK	0.00091	0.00197	0.02682
	(!CLK * SET_B)	0.01187	0.01260	0.03674
	(!CLK * SET_B)	0.00836	0.00909	0.03324
	(!CLK * !SET_B * Q)	0.00934	0.01007	0.03295
	(!CLK * !SET_B * Q)	0.00569	0.00641	0.02931

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00038	0.00159	0.02606
	CLK	0.00354	0.00476	0.02922
	(!CLK * SET_B)	0.00842	0.00943	0.03306
	(!CLK * SET_B)	0.01190	0.01291	0.03653
	(!CLK * !SET_B * Q)	0.00476	0.00551	0.02768
	(!CLK * !SET_B * Q)	0.00840	0.00914	0.03132
sky130_fd_sc_hs__dfstp_2	CLK	0.00036	0.00157	0.02603
	CLK	0.00353	0.00475	0.02920
	(!CLK * SET_B)	0.00867	0.00966	0.03325
	(!CLK * SET_B)	0.01216	0.01314	0.03673
	(!CLK * !SET_B * Q)	0.00501	0.00575	0.02788
	(!CLK * !SET_B * Q)	0.00867	0.00941	0.03153
sky130_fd_sc_hs__dfstp_4	CLK	0.00039	0.00160	0.02606
	CLK	0.00356	0.00477	0.02922
	(!CLK * SET_B)	0.00832	0.00932	0.03295
	(!CLK * SET_B)	0.01183	0.01282	0.03644
	(!CLK * !SET_B * Q)	0.00475	0.00550	0.02769
	(!CLK * !SET_B * Q)	0.00839	0.00914	0.03133

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	0.00293	0.00296	0.00293
	(CLK * Q)	-0.00284	-0.00286	-0.00284
	(!CLK * D * Q)	0.00317	0.00319	0.00318
	(!CLK * D * Q)	-0.00261	-0.00261	-0.00260
	(!CLK * !D * Q)	0.00611	0.00683	0.02914
	(!CLK * !D * Q)	0.00008	0.00080	0.02310
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	0.00287	0.00290	0.00288
	(CLK * Q)	-0.00262	-0.00263	-0.00262
	(!CLK * D * Q)	0.00311	0.00315	0.00311
	(!CLK * D * Q)	-0.00239	-0.00241	-0.00239
	(!CLK * !D * Q)	0.00605	0.00677	0.02906
	(!CLK * !D * Q)	0.00030	0.00100	0.02332
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	0.00304	0.00306	0.00304
	(CLK * Q)	-0.00255	-0.00256	-0.00255
	(!CLK * D * Q)	0.00325	0.00329	0.00325
	(!CLK * D * Q)	-0.00234	-0.00235	-0.00234
	(!CLK * !D * Q)	0.00609	0.00684	0.02912
	(!CLK * !D * Q)	0.00029	0.00099	0.02332

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	-0.00286	-0.00295	-0.00293
	(CLK * Q)	0.00289	0.00290	0.00286
	(!CLK * D * Q)	-0.00309	-0.00319	-0.00316
	(!CLK * D * Q)	0.00266	0.00266	0.00262
	(!CLK * !D * Q)	-0.00020	0.00110	0.02329
	(!CLK * !D * Q)	0.00586	0.00717	0.02934
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	-0.00280	-0.00288	-0.00287
	(CLK * Q)	0.00265	0.00266	0.00264
	(!CLK * D * Q)	-0.00303	-0.00312	-0.00311
	(!CLK * D * Q)	0.00243	0.00242	0.00240
	(!CLK * !D * Q)	-0.00011	0.00126	0.02337
	(!CLK * !D * Q)	0.00567	0.00704	0.02915
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	-0.00295	-0.00303	-0.00302
	(CLK * Q)	0.00260	0.00260	0.00258
	(!CLK * D * Q)	-0.00315	-0.00324	-0.00323
	(!CLK * D * Q)	0.00239	0.00239	0.00237
	(!CLK * !D * Q)	-0.00016	0.00094	0.02333
	(!CLK * !D * Q)	0.00568	0.00680	0.02917

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(D * Q)	0.01735	0.01964	0.08933
	(D * Q)	0.01211	0.01439	0.08408
	(!D * SET_B * !Q)	0.01716	0.01942	0.08912
	(!D * SET_B * !Q)	0.01192	0.01416	0.08388
	(!D * !SET_B * Q)	0.03147	0.03384	0.10489
	(!D * !SET_B * Q)	0.02576	0.02811	0.09917
sky130_fd_sc_hs__dfstp_2	(D * Q)	0.01760	0.01988	0.08963
	(D * Q)	0.01231	0.01459	0.08434
	(!D * SET_B * !Q)	0.01724	0.01949	0.08922
	(!D * SET_B * !Q)	0.01195	0.01419	0.08394
	(!D * !SET_B * Q)	0.03184	0.03419	0.10517
	(!D * !SET_B * Q)	0.02608	0.02841	0.09941
sky130_fd_sc_hs__dfstp_4	(D * Q)	0.01740	0.01969	0.08946
	(D * Q)	0.01208	0.01436	0.08413
	(!D * SET_B * !Q)	0.01724	0.01950	0.08925
	(!D * SET_B * !Q)	0.01191	0.01416	0.08392
	(!D * !SET_B * Q)	0.03132	0.03369	0.10472
	(!D * !SET_B * Q)	0.02551	0.02787	0.09891

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)**	0.01733	0.02098	0.09290
	(D * SET_B * !Q)	0.02229	0.02593	0.09786
	(D * Q)	0.00997	0.01363	0.08378
	(D * Q)	0.01521	0.01885	0.08902
	(!D * SET_B * Q)	0.01976	0.02362	0.09486
	(!D * SET_B * Q)	0.02531	0.02917	0.10041
	(!D * SET_B * !Q)	0.01000	0.01368	0.08394
	(!D * SET_B * !Q)	0.01525	0.01892	0.08919
	(!D * !SET_B * Q)	0.01607	0.01982	0.09111
	(!D * !SET_B * Q)	0.02179	0.02555	0.09681
sky130_fd_sc_hs__dfstp_2	**(D * SET_B * !Q)**	0.01722	0.02074	0.09288
	(D * SET_B * !Q)	0.02222	0.02574	0.09787
	(D * Q)	0.00979	0.01333	0.08370
	(D * Q)	0.01508	0.01863	0.08898
	(!D * SET_B * Q)	0.01989	0.02365	0.09508
	(!D * SET_B * Q)	0.02548	0.02924	0.10066
	(!D * SET_B * !Q)	0.01000	0.01356	0.08404
	(!D * SET_B * !Q)	0.01529	0.01886	0.08933
	(!D * !SET_B * Q)	0.01621	0.01997	0.09133
	(!D * !SET_B * Q)	0.02199	0.02576	0.09710
sky130_fd_sc_hs__dfstp_4	**(D * SET_B * !Q)**	0.01715	0.02067	0.09285
	(D * SET_B * !Q)	0.02214	0.02566	0.09783
	(D * Q)	0.00986	0.01340	0.08379
	(D * Q)	0.01519	0.01874	0.08911
	(!D * SET_B * Q)	0.01949	0.02326	0.09470
	(!D * SET_B * Q)	0.02515	0.02893	0.10037
	(!D * SET_B * !Q)	0.00987	0.01342	0.08392
	(!D * SET_B * !Q)	0.01519	0.01875	0.08925
	(!D * !SET_B * Q)	0.01591	0.01967	0.09105
	(!D * !SET_B * Q)	0.02172	0.02549	0.09686

SKY130_FD_SC_HS__DFXBPx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00180	0.00300	1.24447	1.24379
sky130_fd_sc_hs__dfxbp_2	0.00175	0.00301	2.14482	2.45950

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxbp_1	0.00000	1.13120	1.69479
sky130_fd_sc_hs__dfxbp_2	0.00000	1.53820	2.74106

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)	0.17584	0.62564	5.87547
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RR)	0.20527	0.57215	5.70461

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxbp_1	CLK->Q (RF)	0.19115	0.42850	2.20814
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RF)	0.18652	0.36978	1.74005

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)	0.22711	0.67975	5.93843
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RR)	0.23924	0.58790	5.80132

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)	0.20563	0.42273	2.11120
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RF)	0.25316	0.43610	2.17458

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)	-0.01753	-0.05267	-0.23434
	setup	CLK (R)	0.06538	0.09036	0.27769
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.01793	-0.04425	-0.20932
	setup	CLK (R)	0.04843	0.07581	0.22373

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)	-0.04176	-0.15899	-3.03374
	setup	CLK (R)	0.10052	0.22536	3.15416
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.04406	-0.15661	-3.09753
	setup	CLK (R)	0.09711	0.21939	3.13983

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 ()	0.08141	0.63232	16.50020
	min_pulse_width	CLK ()	0.06716	0.63232	16.50020
sky130_fd_sc_hs__dfxbp_2	min_pulse_width	CLK ()	0.10753	0.63232	16.50020
	min_pulse_width	CLK ()	0.06953	0.63232	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 ()	0.12890	0.63232	16.50020
	min_pulse_width	CLK ()	0.15502	0.63232	16.50020
sky130_fd_sc_hs__dfxbp_2	min_pulse_width	CLK ()	0.11465	0.63232	16.50020
	min_pulse_width	CLK ()	0.15739	0.63232	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	0.01718	0.01828	0.05645
	CLK	0.01470	0.01580	0.05397
sky130_fd_sc_hs__dfxbp_2	CLK	0.02131	0.02276	0.06091
	CLK	0.01879	0.02024	0.05850

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01778	0.01942	0.05636
	CLK	0.01530	0.01690	0.05388
sky130_fd_sc_hs__dfxbp_2	CLK	0.02218	0.02414	0.06097
	CLK	0.01966	0.02160	0.05854

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01780	0.01952	0.05733
	CLK	0.01532	0.01692	0.05486
sky130_fd_sc_hs__dfxbp_2	CLK	0.02220	0.02423	0.06186
	CLK	0.01968	0.02164	0.05935

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01717	0.01830	0.05580
	CLK	0.01469	0.01579	0.05332
sky130_fd_sc_hs__dfxbp_2	CLK	0.02129	0.02273	0.06009
	CLK	0.01877	0.02022	0.05757

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00295	0.00426	0.02904
	CLK	-0.00027	0.00103	0.02582
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.01069	0.01184	0.03899
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00745	0.00860	0.03577
sky130_fd_sc_hs__dfxbp_2	CLK	0.00278	0.00412	0.02887
	CLK	-0.00035	0.00098	0.02574
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.01050	0.01167	0.03883
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00735	0.00852	0.03569

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	-0.00023	0.00119	0.02579
	CLK	0.00299	0.00442	0.02901
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00642	0.00781	0.03467
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00964	0.01104	0.03788
sky130_fd_sc_hs__dfxbp_2	CLK	-0.00023	0.00121	0.02579
	CLK	0.00291	0.00435	0.02892
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00599	0.00741	0.03414
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00912	0.01055	0.03726

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)	0.01556	0.01789	0.08998
	(D * Q * !Q_N)	0.01060	0.01291	0.08501
	(!D * !Q * Q_N)	0.01581	0.01844	0.09024
	(!D * !Q * Q_N)	0.01084	0.01346	0.08528
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.01567	0.01798	0.09004
	(D * Q * !Q_N)	0.01064	0.01293	0.08500
	(!D * !Q * Q_N)	0.01574	0.01805	0.09012
	(!D * !Q * Q_N)	0.01071	0.01300	0.08508

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)	0.01162	0.01519	0.08656
	(D * Q * !Q_N)	0.01656	0.02015	0.09153
	(D * !Q * Q_N)	0.01865	0.02222	0.09580
	(D * !Q * Q_N)	0.02360	0.02721	0.10077
	(!D * Q * !Q_N)	0.01995	0.02367	0.09629
	(!D * Q * !Q_N)	0.02489	0.02865	0.10126
	(!D * !Q * Q_N)	0.01117	0.01476	0.08622
	(!D * !Q * Q_N)	0.01613	0.01972	0.09118
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.01160	0.01516	0.08658
	(D * Q * !Q_N)	0.01662	0.02019	0.09161
	(D * !Q * Q_N)	0.01878	0.02235	0.09594
	(D * !Q * Q_N)	0.02380	0.02740	0.10098
	(!D * Q * !Q_N)	0.01938	0.02309	0.09581
	(!D * Q * !Q_N)	0.02441	0.02811	0.10084
	(!D * !Q * Q_N)	0.01132	0.01490	0.08638
	(!D * !Q * Q_N)	0.01634	0.01992	0.09142

SKY130_FD_SC_HS__DFXTPx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00176	0.00300	1.25178
sky130_fd_sc_hs__dfxtp_2	0.00181	0.00300	2.51377
sky130_fd_sc_hs__dfxtp_4	0.00180	0.00301	4.66295

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxtp_1	0.00000	0.94100	1.92051
sky130_fd_sc_hs__dfxtp_2	0.00000	0.82652	1.59020
sky130_fd_sc_hs__dfxtp_4	0.00000	1.40291	2.54363

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)**	0.15931	0.61139	5.87673
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RR)**	0.16976	0.52312	5.85376
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RR)**	0.20321	0.49104	5.86609

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxtp_1	**CLK->Q (RF)**	0.18165	0.41525	2.20120
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RF)**	0.18717	0.38532	2.21648
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RF)**	0.19357	0.36191	2.17864

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)	-0.01770	-0.04657	-0.22179
	setup	CLK (R)	0.06858	0.08962	0.26491
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.01824	-0.04857	-0.22111
	setup	CLK (R)	0.06783	0.08767	0.26732
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.01683	-0.04474	-0.21536
	setup	CLK (R)	0.05796	0.08293	0.25713

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)	-0.04451	-0.16378	-3.04952
	setup	CLK (R)	0.10225	0.22924	3.17018
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.03683	-0.15526	-3.02746
	setup	CLK (R)	0.09780	0.21988	3.14335
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.03711	-0.15240	-3.04298
	setup	CLK (R)	0.09573	0.21931	3.13640

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 ()	0.07428	0.63232	16.50020
	min_pulse_width	CLK ()	0.06716	0.63232	16.50020
sky130_fd_sc_hs__dfxtp_2	min_pulse_width	CLK ()	0.08141	0.63232	16.50020
	min_pulse_width	CLK ()	0.06716	0.63232	16.50020
sky130_fd_sc_hs__dfxtp_4	min_pulse_width	CLK ()	0.10753	0.63232	16.50020
	min_pulse_width	CLK ()	0.07191	0.63232	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 ()	0.13365	0.63232	16.50020
	min_pulse_width	CLK ()	0.15977	0.63232	16.50020
sky130_fd_sc_hs__dfxtp_2	min_pulse_width	CLK ()	0.12890	0.63232	16.50020
	min_pulse_width	CLK ()	0.15739	0.63232	16.50020
sky130_fd_sc_hs__dfxtp_4	min_pulse_width	CLK ()	0.12177	0.63232	16.50020
	min_pulse_width	CLK ()	0.15739	0.63232	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	0.02661	0.02878	0.10518
	CLK	0.02159	0.02378	0.10020
sky130_fd_sc_hs__dfxtp_2	CLK	0.03021	0.03261	0.10863
	CLK	0.02517	0.02759	0.10375
sky130_fd_sc_hs__dfxtp_4	CLK	0.03833	0.04097	0.11728
	CLK	0.03335	0.03599	0.11256

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.02792	0.03105	0.10502
	CLK	0.02292	0.02599	0.10001
sky130_fd_sc_hs__dfxtp_2	CLK	0.03131	0.03465	0.10863
	CLK	0.02628	0.02961	0.10346
sky130_fd_sc_hs__dfxtp_4	CLK	0.04052	0.04449	0.12020
	CLK	0.03554	0.03950	0.11331

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00274	0.00404	0.02879
	CLK	-0.00041	0.00087	0.02564
	!CLK	0.01053	0.01168	0.03887
	!CLK	0.00737	0.00851	0.03571
sky130_fd_sc_hs__dfxtp_2	CLK	0.00291	0.00423	0.02904
	CLK	-0.00032	0.00099	0.02582
	!CLK	0.01043	0.01157	0.03878
	!CLK	0.00719	0.00833	0.03555
sky130_fd_sc_hs__dfxtp_4	CLK	0.00276	0.00410	0.02891
	CLK	-0.00045	0.00088	0.02570
	!CLK	0.01044	0.01159	0.03884
	!CLK	0.00722	0.00837	0.03563

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00019	0.00155	0.02610
	CLK	0.00334	0.00470	0.02924
	!CLK	0.00684	0.00822	0.03490
	!CLK	0.00998	0.01137	0.03806
sky130_fd_sc_hs__dfxtp_2	CLK	-0.00030	0.00112	0.02578
	CLK	0.00293	0.00436	0.02900
	!CLK	0.00651	0.00789	0.03467
	!CLK	0.00974	0.01112	0.03789
sky130_fd_sc_hs__dfxtp_4	CLK	-0.00022	0.00121	0.02586
	CLK	0.00299	0.00442	0.02907
	!CLK	0.00642	0.00780	0.03455
	!CLK	0.00963	0.01102	0.03775

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.01564	0.01792	0.08992
	(D * Q)	0.01063	0.01288	0.08489
	(!D * !Q)	0.01611	0.01841	0.09041
	(!D * !Q)	0.01110	0.01336	0.08538
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.01569	0.01798	0.09002
	(D * Q)	0.01065	0.01291	0.08496
	(!D * !Q)	0.01604	0.01834	0.09039
	(!D * !Q)	0.01100	0.01327	0.08533
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.01559	0.01787	0.08979
	(D * Q)	0.01060	0.01287	0.08478
	(!D * !Q)	0.01595	0.01855	0.09016
	(!D * !Q)	0.01096	0.01353	0.08516

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.01210	0.01567	0.08699
	(D * Q)	0.01711	0.02071	0.09202
	(D * !Q)	0.01903	0.02258	0.09606
	(D * !Q)	0.02404	0.02763	0.10109
	(!D * Q)	0.02036	0.02409	0.09679
	(!D * Q)	0.02538	0.02912	0.10180
	(!D * !Q)	0.01141	0.01500	0.08640
	(!D * !Q)	0.01643	0.02004	0.09143
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.01185	0.01543	0.08680
	(D * Q)	0.01689	0.02050	0.09185
	(D * !Q)	0.01860	0.02218	0.09565
	(D * !Q)	0.02364	0.02726	0.10071
	(!D * Q)	0.02022	0.02396	0.09672
	(!D * Q)	0.02526	0.02902	0.10178
	(!D * !Q)	0.01130	0.01489	0.08632
	(!D * !Q)	0.01634	0.01993	0.09139
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.01231	0.01587	0.08701
	(D * Q)	0.01730	0.02089	0.09201
	(D * !Q)	0.01911	0.02267	0.09591
	(D * !Q)	0.02410	0.02768	0.10091
	(!D * Q)	0.02068	0.02442	0.09686
	(!D * Q)	0.02567	0.02943	0.10186
	(!D * !Q)	0.01173	0.01531	0.08652
	(!D * !Q)	0.01672	0.02032	0.09152

SKY130_FD_SC_HS__DIODE_2

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00264	0.00452	1.29952
sky130_fd_sc_hs__dlclkp_2	0.00263	0.00486	2.52311
sky130_fd_sc_hs__dlclkp_4	0.00261	0.00509	4.93589

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlclkp_1	0.00000	1.20332	2.08439
sky130_fd_sc_hs__dlclkp_2	0.00000	1.04637	1.41535
sky130_fd_sc_hs__dlclkp_4	0.00000	1.08212	1.13491

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)**	0.06013	0.48900	6.03464
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (RR)**	0.06205	0.40711	5.89741
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (RR)**	0.08605	0.40205	6.13580

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlclkp_1	**CLK->GCLK (FF)**	0.06908	0.46054	4.77703
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (FF)**	0.07537	0.45540	4.84263
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (FF)**	0.09905	0.48913	4.96852

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)	-0.02647	-0.06110	-0.49810
	setup	CLK (R)	0.11263	0.16800	0.55874
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.02568	-0.06110	-0.49916
	setup	CLK (R)	0.11969	0.16406	0.57452
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.02793	-0.05689	-0.47191
	setup	CLK (R)	0.11499	0.14129	0.58055

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)	-0.04223	-0.12608	-2.60267
	setup	CLK (R)	0.08939	0.19075	2.71510
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.03948	-0.12181	-2.58532
	setup	CLK (R)	0.08633	0.17522	2.67623
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.04061	-0.12181	-2.56181
	setup	CLK (R)	0.06708	0.14104	2.65861

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 ()	0.04341	0.63232	16.50020
sky130_fd_sc_hs__dlclkp_2	min_pulse_width	CLK ()	0.04816	0.63232	16.50020
sky130_fd_sc_hs__dlclkp_4	min_pulse_width	CLK ()	0.07191	0.63232	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 ()	0.15739	0.63232	16.50020
	min_pulse_width	CLK ()	0.13602	0.63232	16.50020
sky130_fd_sc_hs__dlclkp_2	min_pulse_width	CLK ()	0.16927	0.63232	16.50020
	min_pulse_width	CLK ()	0.14077	0.63232	16.50020
sky130_fd_sc_hs__dlclkp_4	min_pulse_width	CLK ()	0.16214	0.63232	16.50020
	min_pulse_width	CLK ()	0.13840	0.63232	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	0.01968	0.02583	0.16946
	CLK	0.01161	0.01776	0.16192
sky130_fd_sc_hs__dlclkp_2	CLK	0.02364	0.02953	0.17129
	CLK	0.01498	0.02093	0.16381
sky130_fd_sc_hs__dlclkp_4	CLK	0.03128	0.03637	0.17090
	CLK	0.02239	0.02748	0.16412

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.02182	0.03024	0.16485
	CLK	0.03004	0.03840	0.17243
sky130_fd_sc_hs__dlclkp_2	CLK	0.02588	0.03412	0.16956
	CLK	0.03466	0.04284	0.17604
sky130_fd_sc_hs__dlclkp_4	CLK	0.02374	0.03124	0.16734
	CLK	0.03255	0.03972	0.17614

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.00227	0.00197	0.00193
	CLK	-0.00186	-0.00219	-0.00222
	(!CLK * !GCLK)	0.01414	0.01541	0.06001
	(!CLK * !GCLK)	0.00970	0.01095	0.05556
sky130_fd_sc_hs__dlclkp_2	CLK	0.00169	0.00170	0.00169
	CLK	-0.00244	-0.00246	-0.00246
	(!CLK * !GCLK)	0.01429	0.01554	0.06009
	(!CLK * !GCLK)	0.00987	0.01112	0.05568
sky130_fd_sc_hs__dlclkp_4	CLK	0.00164	0.00166	0.00165
	CLK	-0.00243	-0.00245	-0.00245
	(!CLK * !GCLK)	0.01397	0.01521	0.05946
	(!CLK * !GCLK)	0.00977	0.01102	0.05525

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	-0.00187	-0.00189	-0.00189
	CLK	0.00226	0.00227	0.00226
	(!CLK * !GCLK)	0.00957	0.01090	0.05509
	(!CLK * !GCLK)	0.01403	0.01538	0.05955
sky130_fd_sc_hs__dlclkp_2	CLK	-0.00157	-0.00167	-0.00168
	CLK	0.00255	0.00250	0.00247
	(!CLK * !GCLK)	0.01001	0.01132	0.05544
	(!CLK * !GCLK)	0.01443	0.01577	0.05987
sky130_fd_sc_hs__dlclkp_4	CLK	-0.00152	-0.00162	-0.00163
	CLK	0.00255	0.00250	0.00247
	(!CLK * !GCLK)	0.01070	0.01203	0.05611
	(!CLK * !GCLK)	0.01491	0.01623	0.06032

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(!GATE * !GCLK)	0.01226	0.01575	0.09545
	(!GATE * !GCLK)	0.00455	0.00800	0.08771
sky130_fd_sc_hs__dlclkp_2	(!GATE * !GCLK)	0.01289	0.01634	0.09596
	(!GATE * !GCLK)	0.00463	0.00802	0.08766
sky130_fd_sc_hs__dlclkp_4	(!GATE * !GCLK)	0.01284	0.01609	0.09410
	(!GATE * !GCLK)	0.00430	0.00748	0.08552

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(GATE * !GCLK)	0.01659	0.02171	0.11149
	(GATE * !GCLK)	0.02432	0.02946	0.11920
	(!GATE * !GCLK)	0.00567	0.01013	0.08945
	(!GATE * !GCLK)	0.01338	0.01790	0.09720
sky130_fd_sc_hs__dlclkp_2	(GATE * !GCLK)	0.01706	0.02214	0.11201
	(GATE * !GCLK)	0.02542	0.03050	0.12034
	(!GATE * !GCLK)	0.00596	0.01041	0.08973
	(!GATE * !GCLK)	0.01421	0.01872	0.09805
sky130_fd_sc_hs__dlclkp_4	(GATE * !GCLK)	0.01657	0.02099	0.10990
	(GATE * !GCLK)	0.02530	0.02981	0.11868
	(!GATE * !GCLK)	0.00562	0.00999	0.08783
	(!GATE * !GCLK)	0.01416	0.01855	0.09639

SKY130_FD_SC_HS__DLRBNx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00236	0.00260	0.00288	1.25828	1.27258
sky130_fd_sc_hs__dlrbn_2	0.00236	0.00260	0.00298	2.13674	2.44233

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrbn_1	0.00000	1.58122	2.18572
sky130_fd_sc_hs__dlrbn_2	0.00000	1.45598	1.95677

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)	0.21867	0.65217	5.97672
	GATE_N->Q (-R)	0.25716	0.87168	8.53577
	RESET_B->Q (RR)	0.07631	0.53045	5.98396
sky130_fd_sc_hs__dlrbn_2	D->Q (RR)	0.22526	0.57801	5.72587
	GATE_N->Q (-R)	0.26651	0.80367	8.33206
	RESET_B->Q (RR)	0.08291	0.47138	5.74899

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbn_1	D->Q (FF)	0.17078	0.53964	4.42543
	GATE_N->Q (-F)	0.18450	0.58684	4.72767
	RESET_B->Q (FF)	0.07962	0.50445	4.70218
sky130_fd_sc_hs__dlrbn_2	D->Q (FF)	0.18719	0.52027	4.08896
	GATE_N->Q (-F)	0.20133	0.56775	4.38779
	RESET_B->Q (FF)	0.09209	0.49799	4.43797

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)	0.21009	0.79382	8.16479
	GATE_N->Q_N (-R)	0.22391	0.84104	8.46694
	RESET_B->Q_N (FR)	0.12086	0.74406	8.29063
sky130_fd_sc_hs__dlrbn_2	D->Q_N (FR)	0.24554	0.74270	8.36876
	GATE_N->Q_N (-R)	0.25982	0.79002	8.66143
	RESET_B->Q_N (FR)	0.15313	0.70881	8.55133

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)	0.24795	0.44782	2.23570
	GATE_N->Q_N (-F)	0.28654	0.66736	4.79483
	RESET_B->Q_N (RF)	0.10576	0.32142	2.06098
sky130_fd_sc_hs__dlrbn_2	D->Q_N (RF)	0.28259	0.46181	2.47063
	GATE_N->Q_N (-F)	0.32392	0.68758	5.07672
	RESET_B->Q_N (RF)	0.13978	0.35330	2.38007

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 ()**	0.09803	0.63232	16.50020
sky130_fd_sc_hs__dlrbn_2	**min_pulse_width**	**RESET_B ()**	0.12177	0.63232	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	0.01466	0.01615	0.05097
	D	0.01248	0.01393	0.04881
	GATE_N	0.01494	0.01715	0.05624
	GATE_N	0.01703	0.01923	0.05831
	RESET_B	0.00963	0.01050	0.03508
	RESET_B	0.00708	0.00792	0.03251
sky130_fd_sc_hs__dlrbn_2	D	0.01789	0.01969	0.05373
	D	0.01574	0.01746	0.05164
	GATE_N	0.01819	0.02066	0.06092
	GATE_N	0.02027	0.02274	0.06151
	RESET_B	0.01313	0.01417	0.03452
	RESET_B	0.01051	0.01154	0.03190

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.01144	0.01361	0.04791
	D	0.01361	0.01578	0.05005
	GATE_N	0.01383	0.01636	0.05760
	GATE_N	0.01617	0.01869	0.05937
	RESET_B	0.00616	0.00792	0.03818
	RESET_B	0.00870	0.01044	0.03982
sky130_fd_sc_hs__dlrbn_2	D	0.01503	0.01748	0.05158
	D	0.01717	0.01963	0.05342
	GATE_N	0.01741	0.02026	0.06042
	GATE_N	0.01971	0.02252	0.06241
	RESET_B	0.00944	0.01131	0.03998
	RESET_B	0.01205	0.01382	0.04227

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.01146	0.01362	0.04868
	D	0.01364	0.01579	0.05048
	GATE_N	0.01385	0.01641	0.05751
	GATE_N	0.01619	0.01872	0.05955
	RESET_B	0.00618	0.00791	0.03776
	RESET_B	0.00873	0.01045	0.04013
sky130_fd_sc_hs__dlrbn_2	D	0.01506	0.01766	0.06038
	D	0.01720	0.01967	0.05467
	GATE_N	0.01743	0.02027	0.06098
	GATE_N	0.01974	0.02255	0.06263
	RESET_B	0.00946	0.01125	0.03993
	RESET_B	0.01207	0.01384	0.04254

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.01463	0.01614	0.05038
	D	0.01245	0.01391	0.04818
	GATE_N	0.01492	0.01713	0.05654
	GATE_N	0.01701	0.01921	0.05804
	RESET_B	0.00962	0.01048	0.03489
	RESET_B	0.00707	0.00791	0.03231
sky130_fd_sc_hs__dlrbn_2	D	0.01786	0.01959	0.05323
	D	0.01571	0.01744	0.05098
	GATE_N	0.01817	0.02065	0.05923
	GATE_N	0.02025	0.02273	0.06074
	RESET_B	0.01310	0.01417	0.03409
	RESET_B	0.01048	0.01152	0.03139

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)	0.00645	0.00928	0.07583
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00235	0.00519	0.07173
	(!GATE_N * !RESET_B * !Q * Q_N)	0.01187	0.01458	0.08284
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00801	0.01072	0.07899
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)	0.00642	0.00922	0.07448
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00235	0.00513	0.07042
	(!GATE_N * !RESET_B * !Q * Q_N)	0.01124	0.01392	0.08094
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00742	0.01010	0.07712

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)	0.00177	0.00581	0.07230
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00586	0.00992	0.07640
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00878	0.01269	0.08117
	(!GATE_N * !RESET_B * !Q * Q_N)	0.01263	0.01656	0.08503
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)	0.00168	0.00563	0.07083
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00573	0.00971	0.07490
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00901	0.01284	0.08005
	(!GATE_N * !RESET_B * !Q * Q_N)	0.01282	0.01668	0.08388

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)	0.01120	0.01453	0.09315
	(D * RESET_B * Q * !Q_N)	0.00679	0.01009	0.08875
	(D * !RESET_B * !Q * Q_N)	0.01751	0.02072	0.09949
	(D * !RESET_B * !Q * Q_N)	0.01287	0.01605	0.09483
	(!D * !Q * Q_N)	0.01184	0.01508	0.09364
	(!D * !Q * Q_N)	0.00744	0.01065	0.08923
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.01123	0.01450	0.09166
	(D * RESET_B * Q * !Q_N)	0.00684	0.01009	0.08727
	(D * !RESET_B * !Q * Q_N)	0.01774	0.02087	0.09817
	(D * !RESET_B * !Q * Q_N)	0.01311	0.01623	0.09354
	(!D * !Q * Q_N)	0.01172	0.01491	0.09201
	(!D * !Q * Q_N)	0.00733	0.01051	0.08762

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)	0.00870	0.01322	0.09164
	(D * RESET_B * Q * !Q_N)	0.01312	0.01766	0.09606
	(D * !RESET_B * !Q * Q_N)	0.01242	0.01685	0.09424
	(D * !RESET_B * !Q * Q_N)	0.01709	0.02153	0.09891
	(!D * !Q * Q_N)	0.00787	0.01244	0.09100
	(!D * !Q * Q_N)	0.01229	0.01687	0.09542
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.00858	0.01301	0.08994
	(D * RESET_B * Q * !Q_N)	0.01295	0.01741	0.09432
	(D * !RESET_B * !Q * Q_N)	0.01185	0.01618	0.09200
	(D * !RESET_B * !Q * Q_N)	0.01649	0.02083	0.09665
	(!D * !Q * Q_N)	0.00786	0.01236	0.08943
	(!D * !Q * Q_N)	0.01224	0.01676	0.09382

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)	0.00192	0.00193	0.00192
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00250	-0.00251	-0.00250
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00204	0.00205	0.00204
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00253	-0.00254	-0.00253

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)	-0.00180	-0.00189	-0.00188
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00263	0.00257	0.00255
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00192	-0.00201	-0.00201
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00265	0.00259	0.00257

SKY130_FD_SC_HS__DLRBPx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00219	0.00249	0.00297	1.24432	1.25085
sky130_fd_sc_hs__dlrbp_2	0.00220	0.00249	0.00297	2.50262	2.57194

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrbp_1	0.00000	1.58122	2.18572
sky130_fd_sc_hs__dlrbp_2	0.00000	1.45598	1.95677

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)	0.21249	0.64123	5.90514
	GATE->Q (-R)	0.18899	0.61904	5.73015
	RESET_B->Q (RR)	0.07756	0.53270	5.96018
sky130_fd_sc_hs__dlrbp_2	D->Q (RR)	0.21937	0.55589	5.92313
	GATE->Q (-R)	0.19391	0.53050	5.74155
	RESET_B->Q (RR)	0.08160	0.45957	6.06441

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbp_1	D->Q (FF)	0.16956	0.53723	4.41926
	GATE->Q (-F)	0.18317	0.38943	1.92615
	RESET_B->Q (FF)	0.08084	0.50713	4.68684
sky130_fd_sc_hs__dlrbp_2	D->Q (FF)	0.18560	0.53183	4.55531
	GATE->Q (-F)	0.19867	0.38214	2.05674
	RESET_B->Q (FF)	0.08801	0.50298	4.86956

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)	0.21086	0.80026	8.23865
	GATE->Q_N (-R)	0.22452	0.65210	5.74722
	RESET_B->Q_N (FR)	0.12420	0.75517	8.35339
sky130_fd_sc_hs__dlrbp_2	D->Q_N (FR)	0.24236	0.72791	8.29590
	GATE->Q_N (-R)	0.25559	0.57809	5.79757
	RESET_B->Q_N (FR)	0.14497	0.68804	8.44302

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)	0.24309	0.43610	2.13729
	GATE->Q_N (-F)	0.21966	0.41383	1.96115
	RESET_B->Q_N (RF)	0.10830	0.32275	2.01127
sky130_fd_sc_hs__dlrbp_2	D->Q_N (RF)	0.27019	0.43134	2.29842
	GATE->Q_N (-F)	0.24482	0.40590	2.11643
	RESET_B->Q_N (RF)	0.13196	0.33199	2.26921

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 ()**	0.09565	0.63232	16.50020
sky130_fd_sc_hs__dlrbp_2	**min_pulse_width**	**RESET_B ()**	0.11465	0.63232	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	0.01387	0.01537	0.04924
	D	0.01184	0.01328	0.04720
	GATE	0.01575	0.01741	0.05846
	GATE	0.01345	0.01510	0.05618
	RESET_B	0.00969	0.01052	0.03507
	RESET_B	0.00706	0.00788	0.03244
sky130_fd_sc_hs__dlrbp_2	D	0.01755	0.01932	0.05392
	D	0.01550	0.01722	0.05190
	GATE	0.01933	0.02129	0.06207
	GATE	0.01704	0.01899	0.05975
	RESET_B	0.01322	0.01430	0.04134
	RESET_B	0.01058	0.01167	0.03862

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.01186	0.01402	0.04799
	D	0.01390	0.01606	0.04973
	GATE	0.01619	0.01818	0.05717
	GATE	0.01420	0.01620	0.05517
	RESET_B	0.00637	0.00812	0.03754
	RESET_B	0.00899	0.01071	0.03992
sky130_fd_sc_hs__dlrbp_2	D	0.01544	0.01793	0.05177
	D	0.01748	0.01987	0.05351
	GATE	0.01976	0.02201	0.06107
	GATE	0.01775	0.01998	0.05905
	RESET_B	0.00985	0.01178	0.04260
	RESET_B	0.01248	0.01440	0.04470

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.01189	0.01427	0.04841
	D	0.01393	0.01612	0.05010
	GATE	0.01621	0.01829	0.05776
	GATE	0.01423	0.01623	0.05576
	RESET_B	0.00638	0.00820	0.03773
	RESET_B	0.00901	0.01073	0.04035
sky130_fd_sc_hs__dlrbp_2	D	0.01547	0.01807	0.05197
	D	0.01751	0.01989	0.05386
	GATE	0.01978	0.02212	0.06162
	GATE	0.01777	0.02002	0.05956
	RESET_B	0.00987	0.01225	0.04277
	RESET_B	0.01250	0.01446	0.04509

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.01385	0.01533	0.04885
	D	0.01181	0.01326	0.04681
	GATE	0.01573	0.01738	0.05756
	GATE	0.01343	0.01508	0.05527
	RESET_B	0.00968	0.01053	0.03482
	RESET_B	0.00705	0.00788	0.03218
sky130_fd_sc_hs__dlrbp_2	D	0.01751	0.01923	0.05268
	D	0.01546	0.01719	0.05064
	GATE	0.01931	0.02132	0.06153
	GATE	0.01702	0.01898	0.05920
	RESET_B	0.01319	0.01433	0.04056
	RESET_B	0.01056	0.01167	0.03791

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)	0.01028	0.01303	0.08001
	(GATE * !RESET_B * !Q * Q_N)	0.00675	0.00949	0.07648
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00625	0.00913	0.07439
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00246	0.00532	0.07060
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.01037	0.01310	0.08010
	(GATE * !RESET_B * !Q * Q_N)	0.00683	0.00957	0.07656
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00626	0.00911	0.07438
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00244	0.00528	0.07057

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)	0.00917	0.01304	0.08026
	(GATE * !RESET_B * !Q * Q_N)	0.01270	0.01659	0.08380
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00136	0.00536	0.07059
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00514	0.00916	0.07439
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.00928	0.01314	0.08035
	(GATE * !RESET_B * !Q * Q_N)	0.01281	0.01669	0.08390
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00148	0.00547	0.07070
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00528	0.00930	0.07452

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)	0.01165	0.01491	0.09234
	(D * RESET_B * Q * !Q_N)	0.00736	0.01061	0.08805
	(D * !RESET_B * !Q * Q_N)	0.01357	0.01674	0.09687
	(D * !RESET_B * !Q * Q_N)	0.00954	0.01270	0.09283
	(!D * !Q * Q_N)	0.01157	0.01485	0.09211
	(!D * !Q * Q_N)	0.00728	0.01055	0.08783
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.01167	0.01494	0.09241
	(D * RESET_B * Q * !Q_N)	0.00736	0.01062	0.08809
	(D * !RESET_B * !Q * Q_N)	0.01357	0.01674	0.09687
	(D * !RESET_B * !Q * Q_N)	0.00954	0.01269	0.09284
	(!D * !Q * Q_N)	0.01155	0.01484	0.09213
	(!D * !Q * Q_N)	0.00723	0.01051	0.08783

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)	0.00718	0.01170	0.08864
	(D * RESET_B * Q * !Q_N)	0.01146	0.01599	0.09293
	(D * !RESET_B * !Q * Q_N)	0.01232	0.01692	0.09675
	(D * !RESET_B * !Q * Q_N)	0.01635	0.02097	0.10078
	(!D * !Q * Q_N)	0.00707	0.01162	0.08878
	(!D * !Q * Q_N)	0.01135	0.01590	0.09308
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.00715	0.01164	0.08862
	(D * RESET_B * Q * !Q_N)	0.01145	0.01595	0.09293
	(D * !RESET_B * !Q * Q_N)	0.01225	0.01682	0.09665
	(D * !RESET_B * !Q * Q_N)	0.01628	0.02088	0.10070
	(!D * !Q * Q_N)	0.00709	0.01161	0.08882
	(!D * !Q * Q_N)	0.01139	0.01592	0.09313

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)	0.00195	0.00197	0.00196
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00256	-0.00257	-0.00256
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00197	0.00198	0.00198
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00255	-0.00256	-0.00256

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)	-0.00183	-0.00192	-0.00192
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00269	0.00263	0.00261
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00185	-0.00195	-0.00194
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00268	0.00262	0.00260

SKY130_FD_SC_HS__DLRTNx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00217	0.00252	0.00282	1.27370
sky130_fd_sc_hs__dlrtn_2	0.00220	0.00250	0.00293	2.48594
sky130_fd_sc_hs__dlrtn_4	0.00219	0.00251	0.00476	4.67837

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrtn_1	0.00000	1.21963	1.73957
sky130_fd_sc_hs__dlrtn_2	0.00000	1.19858	1.68095
sky130_fd_sc_hs__dlrtn_4	0.00000	2.00786	3.63777

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)	0.20186	0.62779	5.89417
	GATE_N->Q (-R)	0.23226	0.83325	8.40866
	RESET_B->Q (RR)	0.06672	0.49984	5.87572
sky130_fd_sc_hs__dlrtn_2	D->Q (RR)	0.21058	0.54755	5.92209
	GATE_N->Q (-R)	0.24097	0.75289	8.41720
	RESET_B->Q (RR)	0.07119	0.42919	5.91145
sky130_fd_sc_hs__dlrtn_4	D->Q (RR)	0.23223	0.50454	5.97151
	GATE_N->Q (-R)	0.26300	0.71113	8.46245
	RESET_B->Q (RR)	0.07676	0.37273	6.09726

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtn_1	D->Q (FF)	0.15936	0.52309	4.43588
	GATE_N->Q (-F)	0.16777	0.56084	4.70488
	RESET_B->Q (FF)	0.07274	0.47885	4.67822
sky130_fd_sc_hs__dlrtn_2	D->Q (FF)	0.16554	0.49230	4.36138
	GATE_N->Q (-F)	0.17361	0.53002	4.63223
	RESET_B->Q (FF)	0.07771	0.46580	4.70082
sky130_fd_sc_hs__dlrtn_4	D->Q (FF)	0.17689	0.48052	4.43825
	GATE_N->Q (-F)	0.18827	0.52453	4.72498
	RESET_B->Q (FF)	0.08382	0.44060	4.77975

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 ()**	0.08853	0.63232	16.50020
sky130_fd_sc_hs__dlrtn_2	**min_pulse_width**	**RESET_B ()**	0.10278	0.63232	16.50020
sky130_fd_sc_hs__dlrtn_4	**min_pulse_width**	**RESET_B ()**	0.11940	0.63232	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	0.02049	0.02328	0.09188
	D	0.01645	0.01926	0.08787
	GATE_N	0.02093	0.02523	0.10345
	GATE_N	0.02496	0.02927	0.11012
	RESET_B	0.01222	0.01388	0.06780
	RESET_B	0.00719	0.00886	0.06283
sky130_fd_sc_hs__dlrtn_2	D	0.02369	0.02688	0.09562
	D	0.01968	0.02289	0.09163
	GATE_N	0.02417	0.02893	0.10733
	GATE_N	0.02822	0.03297	0.11144
	RESET_B	0.01528	0.01699	0.06411
	RESET_B	0.01009	0.01182	0.05893
sky130_fd_sc_hs__dlrtn_4	D	0.03429	0.03826	0.10776
	D	0.03003	0.03410	0.10576
	GATE_N	0.03477	0.04036	0.11929
	GATE_N	0.03856	0.04420	0.12336
	RESET_B	0.02695	0.03117	0.14708
	RESET_B	0.01849	0.02273	0.14070

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	D	0.01663	0.02076	0.08908
	D	0.02066	0.02474	0.09307
	GATE_N	0.01988	0.02474	0.10743
	GATE_N	0.02449	0.02934	0.11083
	RESET_B	0.00514	0.00880	0.06990
	RESET_B	0.01014	0.01378	0.07370
sky130_fd_sc_hs__dlrtn_2	D	0.02023	0.02489	0.09382
	D	0.02423	0.02870	0.09695
	GATE_N	0.02363	0.02898	0.11109
	GATE_N	0.02813	0.03333	0.11437
	RESET_B	0.00857	0.01218	0.07277
	RESET_B	0.01373	0.01709	0.07539
sky130_fd_sc_hs__dlrtn_4	D	0.02933	0.03432	0.10501
	D	0.03359	0.03856	0.10704
	GATE_N	0.03281	0.03882	0.12335
	GATE_N	0.03759	0.04329	0.12499
	RESET_B	0.01621	0.02329	0.15522
	RESET_B	0.02459	0.03167	0.16076

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)	0.00604	0.00890	0.07488
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00229	0.00513	0.07113
	(!GATE_N * !RESET_B * !Q)	0.01008	0.01283	0.08061
	(!GATE_N * !RESET_B * !Q)	0.00658	0.00932	0.07712
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00609	0.00893	0.07492
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00230	0.00515	0.07114
	(!GATE_N * !RESET_B * !Q)	0.01013	0.01287	0.08064
	(!GATE_N * !RESET_B * !Q)	0.00660	0.00934	0.07712
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00608	0.00894	0.07499
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00231	0.00517	0.07122
	(!GATE_N * !RESET_B * !Q)	0.01064	0.01340	0.08108
	(!GATE_N * !RESET_B * !Q)	0.00716	0.00991	0.07759

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)	0.00186	0.00590	0.07187
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00560	0.00964	0.07561
	(!GATE_N * !RESET_B * !Q)	0.00969	0.01359	0.08161
	(!GATE_N * !RESET_B * !Q)	0.01318	0.01711	0.08512
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00184	0.00587	0.07184
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00561	0.00965	0.07562
	(!GATE_N * !RESET_B * !Q)	0.00979	0.01369	0.08171
	(!GATE_N * !RESET_B * !Q)	0.01331	0.01723	0.08525
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00180	0.00584	0.07186
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00555	0.00962	0.07562
	(!GATE_N * !RESET_B * !Q)	0.01125	0.01516	0.08313
	(!GATE_N * !RESET_B * !Q)	0.01475	0.01868	0.08664

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)	0.01102	0.01441	0.09308
	(D * RESET_B * Q)	0.00670	0.01008	0.08875
	(D * !RESET_B * !Q)	0.01732	0.02061	0.09950
	(D * !RESET_B * !Q)	0.01276	0.01604	0.09492
	(!D * !Q)	0.01091	0.01433	0.09285
	(!D * !Q)	0.00661	0.00998	0.08851
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.01097	0.01437	0.09307
	(D * RESET_B * Q)	0.00670	0.01008	0.08878
	(D * !RESET_B * !Q)	0.01740	0.02071	0.09960
	(D * !RESET_B * !Q)	0.01287	0.01616	0.09506
	(!D * !Q)	0.01084	0.01426	0.09281
	(!D * !Q)	0.00658	0.00996	0.08852
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.01109	0.01445	0.09314
	(D * RESET_B * Q)	0.00680	0.01017	0.08884
	(D * !RESET_B * !Q)	0.01892	0.02223	0.10116
	(D * !RESET_B * !Q)	0.01437	0.01766	0.09659
	(!D * !Q)	0.01090	0.01428	0.09282
	(!D * !Q)	0.00662	0.00997	0.08851

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)	0.00734	0.01193	0.09034
	(D * RESET_B * Q)	0.01168	0.01628	0.09467
	(D * !RESET_B * !Q)	0.01047	0.01498	0.09234
	(D * !RESET_B * !Q)	0.01506	0.01957	0.09691
	(!D * !Q)	0.00722	0.01188	0.09038
	(!D * !Q)	0.01156	0.01622	0.09471
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.00743	0.01202	0.09046
	(D * RESET_B * Q)	0.01173	0.01632	0.09475
	(D * !RESET_B * !Q)	0.01058	0.01509	0.09250
	(D * !RESET_B * !Q)	0.01514	0.01963	0.09704
	(!D * !Q)	0.00734	0.01200	0.09052
	(!D * !Q)	0.01163	0.01629	0.09482
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.00749	0.01205	0.09049
	(D * RESET_B * Q)	0.01180	0.01637	0.09479
	(D * !RESET_B * !Q)	0.01113	0.01566	0.09308
	(D * !RESET_B * !Q)	0.01572	0.02025	0.09766
	(!D * !Q)	0.00743	0.01208	0.09061
	(!D * !Q)	0.01174	0.01639	0.09490

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)	0.00194	0.00195	0.00194
	(D * GATE_N * !Q) + (!D * !Q)	-0.00234	-0.00235	-0.00235
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	0.00197	0.00200	0.00199
	(D * GATE_N * !Q) + (!D * !Q)	-0.00251	-0.00254	-0.00253
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	0.00333	0.00336	0.00334
	(D * GATE_N * !Q) + (!D * !Q)	-0.00387	-0.00390	-0.00388

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)	-0.00183	-0.00191	-0.00191
	(D * GATE_N * !Q) + (!D * !Q)	0.00247	0.00240	0.00238
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	-0.00187	-0.00196	-0.00196
	(D * GATE_N * !Q) + (!D * !Q)	0.00265	0.00259	0.00257
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	-0.00310	-0.00332	-0.00331
	(D * GATE_N * !Q) + (!D * !Q)	0.00407	0.00396	0.00393

SKY130_FD_SC_HS__DLRTPx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00234	0.00254	0.00288	1.29773
sky130_fd_sc_hs__dlrtp_2	0.00231	0.00249	0.00298	2.50016
sky130_fd_sc_hs__dlrtp_4	0.00230	0.00248	0.00454	4.70146

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrtp_1	0.00000	1.21962	1.73956
sky130_fd_sc_hs__dlrtp_2	0.00000	1.19858	1.68095
sky130_fd_sc_hs__dlrtp_4	0.00000	2.00785	3.63775

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)	0.20047	0.62627	5.96558
	GATE->Q (-R)	0.17634	0.60320	5.78551
	RESET_B->Q (RR)	0.06723	0.50431	5.99101
sky130_fd_sc_hs__dlrtp_2	D->Q (RR)	0.20999	0.54363	5.89446
	GATE->Q (-R)	0.18522	0.51840	5.71532
	RESET_B->Q (RR)	0.07094	0.42993	5.96997
sky130_fd_sc_hs__dlrtp_4	D->Q (RR)	0.23142	0.50167	5.94027
	GATE->Q (-R)	0.20916	0.48045	5.77914
	RESET_B->Q (RR)	0.07655	0.37187	6.10714

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtp_1	D->Q (FF)	0.16617	0.54228	4.65675
	GATE->Q (-F)	0.17948	0.39581	2.17671
	RESET_B->Q (FF)	0.07327	0.48698	4.80132
sky130_fd_sc_hs__dlrtp_2	D->Q (FF)	0.17366	0.50948	4.51762
	GATE->Q (-F)	0.18507	0.35816	2.01714
	RESET_B->Q (FF)	0.07549	0.46380	4.74649
sky130_fd_sc_hs__dlrtp_4	D->Q (FF)	0.18307	0.49008	4.48930
	GATE->Q (-F)	0.19424	0.34166	2.01588
	RESET_B->Q (FF)	0.08301	0.43995	4.79007

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 ()**	0.08615	0.63232	16.50020
sky130_fd_sc_hs__dlrtp_2	**min_pulse_width**	**RESET_B ()**	0.09803	0.63232	16.50020
sky130_fd_sc_hs__dlrtp_4	**min_pulse_width**	**RESET_B ()**	0.11703	0.63232	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	0.02062	0.02332	0.09111
	D	0.01617	0.01888	0.08724
	GATE	0.02453	0.02748	0.10968
	GATE	0.01984	0.02279	0.10509
	RESET_B	0.01177	0.01321	0.06566
	RESET_B	0.00666	0.00810	0.06109
sky130_fd_sc_hs__dlrtp_2	D	0.02437	0.02754	0.09524
	D	0.01991	0.02310	0.09079
	GATE	0.02795	0.03142	0.11266
	GATE	0.02330	0.02677	0.10840
	RESET_B	0.01531	0.01695	0.06813
	RESET_B	0.01001	0.01166	0.06398
sky130_fd_sc_hs__dlrtp_4	D	0.03461	0.03872	0.10661
	D	0.03007	0.03426	0.10265
	GATE	0.03816	0.04251	0.12501
	GATE	0.03342	0.03778	0.12078
	RESET_B	0.02667	0.03122	0.15059
	RESET_B	0.01859	0.02316	0.14461

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtp_1	D	0.01618	0.02022	0.08833
	D	0.02062	0.02464	0.09209
	GATE	0.02527	0.02898	0.10746
	GATE	0.02114	0.02486	0.10313
	RESET_B	0.00546	0.00928	0.06568
	RESET_B	0.01055	0.01422	0.07076
sky130_fd_sc_hs__dlrtp_2	D	0.01953	0.02387	0.09366
	D	0.02397	0.02830	0.09567
	GATE	0.02824	0.03232	0.11028
	GATE	0.02422	0.02830	0.10624
	RESET_B	0.00849	0.01214	0.07119
	RESET_B	0.01377	0.01725	0.07477
sky130_fd_sc_hs__dlrtp_4	D	0.02903	0.03416	0.10569
	D	0.03356	0.03841	0.10560
	GATE	0.03751	0.04217	0.11989
	GATE	0.03358	0.03814	0.11577
	RESET_B	0.01662	0.02397	0.15564
	RESET_B	0.02463	0.03186	0.16225

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)	0.01070	0.01359	0.08034
	(GATE * !RESET_B * !Q)	0.00681	0.00969	0.07645
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00656	0.00936	0.07458
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00239	0.00517	0.07043
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.01083	0.01369	0.08041
	(GATE * !RESET_B * !Q)	0.00695	0.00980	0.07653
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00660	0.00938	0.07458
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00245	0.00522	0.07044
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.01118	0.01400	0.08017
	(GATE * !RESET_B * !Q)	0.00731	0.01012	0.07630
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00659	0.00934	0.07412
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00245	0.00519	0.06999

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)	0.00902	0.01286	0.08003
	(GATE * !RESET_B * !Q)	0.01290	0.01676	0.08392
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00134	0.00532	0.07050
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00550	0.00951	0.07468
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.00926	0.01309	0.08021
	(GATE * !RESET_B * !Q)	0.01314	0.01699	0.08410
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00141	0.00537	0.07054
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00554	0.00953	0.07468
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.01066	0.01447	0.08111
	(GATE * !RESET_B * !Q)	0.01454	0.01838	0.08500
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00137	0.00533	0.07007
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00549	0.00947	0.07421

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)	0.01216	0.01540	0.09290
	(D * RESET_B * Q)	0.00775	0.01098	0.08848
	(D * !RESET_B * !Q)	0.01415	0.01729	0.09754
	(D * !RESET_B * !Q)	0.01002	0.01317	0.09341
	(!D * !Q)	0.01192	0.01518	0.09251
	(!D * !Q)	0.00750	0.01074	0.08809
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.01190	0.01515	0.09257
	(D * RESET_B * Q)	0.00755	0.01080	0.08822
	(D * !RESET_B * !Q)	0.01399	0.01712	0.09724
	(D * !RESET_B * !Q)	0.00991	0.01302	0.09316
	(!D * !Q)	0.01164	0.01490	0.09215
	(!D * !Q)	0.00729	0.01054	0.08780
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.01174	0.01495	0.09188
	(D * RESET_B * Q)	0.00739	0.01060	0.08754
	(D * !RESET_B * !Q)	0.01431	0.01736	0.09679
	(D * !RESET_B * !Q)	0.01023	0.01327	0.09271
	(!D * !Q)	0.01154	0.01475	0.09149
	(!D * !Q)	0.00719	0.01039	0.08716

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)	0.00714	0.01166	0.08871
	(D * RESET_B * Q)	0.01155	0.01608	0.09313
	(D * !RESET_B * !Q)	0.01229	0.01690	0.09693
	(D * !RESET_B * !Q)	0.01642	0.02105	0.10107
	(!D * !Q)	0.00720	0.01171	0.08901
	(!D * !Q)	0.01160	0.01614	0.09344
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.00720	0.01168	0.08860
	(D * RESET_B * Q)	0.01154	0.01603	0.09295
	(D * !RESET_B * !Q)	0.01255	0.01711	0.09699
	(D * !RESET_B * !Q)	0.01664	0.02121	0.10110
	(!D * !Q)	0.00728	0.01177	0.08894
	(!D * !Q)	0.01162	0.01611	0.09329
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.00714	0.01163	0.08814
	(D * RESET_B * Q)	0.01147	0.01597	0.09248
	(D * !RESET_B * !Q)	0.01398	0.01850	0.09776
	(D * !RESET_B * !Q)	0.01808	0.02261	0.10186
	(!D * !Q)	0.00712	0.01162	0.08834
	(!D * !Q)	0.01145	0.01598	0.09268

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)	0.00194	0.00195	0.00194
	(D * !GATE * !Q) + (!D * !Q)	-0.00241	-0.00242	-0.00241
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	0.00195	0.00197	0.00195
	(D * !GATE * !Q) + (!D * !Q)	-0.00257	-0.00259	-0.00258
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	0.00324	0.00326	0.00325
	(D * !GATE * !Q) + (!D * !Q)	-0.00370	-0.00372	-0.00371

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)	-0.00181	-0.00192	-0.00191
	(D * !GATE * !Q) + (!D * !Q)	0.00252	0.00247	0.00245
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	-0.00184	-0.00193	-0.00193
	(D * !GATE * !Q) + (!D * !Q)	0.00270	0.00264	0.00262
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	-0.00301	-0.00323	-0.00322
	(D * !GATE * !Q) + (!D * !Q)	0.00389	0.00378	0.00375

SKY130_FD_SC_HS__DLXBNx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00233	0.00254	1.26092	1.26951
sky130_fd_sc_hs__dlxbn_2	0.00221	0.00252	2.12435	2.45222

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbn_1	0.00000	1.44113	2.18572
sky130_fd_sc_hs__dlxbn_2	0.00000	1.38502	1.95677

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)	0.20349	0.64362	6.02961
	GATE_N->Q (-R)	0.23493	0.85115	8.52893
sky130_fd_sc_hs__dlxbn_2	D->Q (RR)	0.21006	0.55952	5.68618
	GATE_N->Q (-R)	0.24115	0.76619	8.18033

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbn_1	D->Q (FF)	0.16881	0.54360	4.54767
	GATE_N->Q (-F)	0.17786	0.58317	4.82316
sky130_fd_sc_hs__dlxbn_2	D->Q (FF)	0.17527	0.50091	4.04789
	GATE_N->Q (-F)	0.18481	0.54076	4.32398

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)	0.21005	0.82950	8.73631
	GATE_N->Q_N (-R)	0.21920	0.86891	9.01109
sky130_fd_sc_hs__dlxbn_2	D->Q_N (FR)	0.23155	0.72718	8.37032
	GATE_N->Q_N (-R)	0.24121	0.76683	8.63803

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)	0.23394	0.44307	2.38934
	GATE_N->Q_N (-F)	0.26539	0.65054	4.88976
sky130_fd_sc_hs__dlxbn_2	D->Q_N (RF)	0.26358	0.44405	2.47986
	GATE_N->Q_N (-F)	0.29474	0.65068	4.97388

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.01389	0.01587	0.05070
	D	0.01189	0.01379	0.04867
	GATE_N	0.01403	0.01674	0.05592
	GATE_N	0.01623	0.01892	0.05810
sky130_fd_sc_hs__dlxbn_2	D	0.01732	0.01961	0.05419
	D	0.01541	0.01762	0.05238
	GATE_N	0.01748	0.02047	0.06036
	GATE_N	0.01965	0.02264	0.06206

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.01201	0.01439	0.04872
	D	0.01401	0.01638	0.05054
	GATE_N	0.01385	0.01660	0.05735
	GATE_N	0.01605	0.01878	0.05926
sky130_fd_sc_hs__dlxbn_2	D	0.01543	0.01806	0.05268
	D	0.01734	0.01997	0.05430
	GATE_N	0.01724	0.02032	0.06062
	GATE_N	0.01943	0.02240	0.06280

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.01204	0.01442	0.04952
	D	0.01404	0.01640	0.05095
	GATE_N	0.01388	0.01663	0.05783
	GATE_N	0.01607	0.01881	0.05967
sky130_fd_sc_hs__dlxbn_2	D	0.01546	0.01839	0.06379
	D	0.01737	0.02003	0.05572
	GATE_N	0.01727	0.02026	0.06111
	GATE_N	0.01945	0.02243	0.06328

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.01387	0.01585	0.04993
	D	0.01187	0.01377	0.04789
	GATE_N	0.01402	0.01670	0.05556
	GATE_N	0.01621	0.01889	0.05769
sky130_fd_sc_hs__dlxbn_2	D	0.01729	0.01951	0.05348
	D	0.01538	0.01760	0.05157
	GATE_N	0.01747	0.02046	0.05933
	GATE_N	0.01964	0.02264	0.06142

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)	0.00638	0.00920	0.07530
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00237	0.00521	0.07129
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00624	0.00909	0.07520
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00242	0.00528	0.07137

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)	0.00158	0.00562	0.07171
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00558	0.00963	0.07572
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00166	0.00570	0.07178
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00547	0.00955	0.07560

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)	0.01140	0.01476	0.09338
	(D * Q * !Q_N)	0.00704	0.01036	0.08900
	(!D * !Q * Q_N)	0.01120	0.01452	0.09304
	(!D * !Q * Q_N)	0.00684	0.01013	0.08866
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.01136	0.01474	0.09335
	(D * Q * !Q_N)	0.00702	0.01036	0.08900
	(!D * !Q * Q_N)	0.01117	0.01449	0.09302
	(!D * !Q * Q_N)	0.00683	0.01012	0.08865

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)	0.00748	0.01209	0.09045
	(D * Q * !Q_N)	0.01185	0.01649	0.09483
	(!D * !Q * Q_N)	0.00744	0.01212	0.09057
	(!D * !Q * Q_N)	0.01181	0.01651	0.09496
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.00744	0.01202	0.09039
	(D * Q * !Q_N)	0.01179	0.01640	0.09476
	(!D * !Q * Q_N)	0.00741	0.01204	0.09052
	(!D * !Q * Q_N)	0.01175	0.01642	0.09489

SKY130_FD_SC_HS__DLXBP

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00231	0.00255	1.24811	1.26973

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbp_1	0.00000	1.44113	2.18572

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)	0.19964	0.63425	5.91216
	GATE->Q (-R)	0.17559	0.60999	5.72913

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbp_1	D->Q (FF)	0.17490	0.55335	4.56367
	GATE->Q (-F)	0.18397	0.39937	2.05861

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)	0.21676	0.83881	8.78246
	GATE->Q_N (-R)	0.22590	0.68476	6.27848

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)	0.23029	0.43666	2.34312
	GATE->Q_N (-F)	0.20624	0.41240	2.15994

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.01390	0.01577	0.04986
	D	0.01191	0.01380	0.04788
	GATE	0.01563	0.01774	0.05850
	GATE	0.01343	0.01555	0.05632

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.01181	0.01414	0.04790
	D	0.01379	0.01611	0.04979
	GATE	0.01605	0.01824	0.05716
	GATE	0.01386	0.01605	0.05498

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.01184	0.01419	0.04891
	D	0.01382	0.01615	0.05021
	GATE	0.01608	0.01836	0.05780
	GATE	0.01389	0.01607	0.05563

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.01388	0.01581	0.04956
	D	0.01190	0.01378	0.04754
	GATE	0.01561	0.01772	0.05810
	GATE	0.01342	0.01553	0.05590

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)	0.00653	0.00934	0.07457
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00256	0.00535	0.07060

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)	0.00141	0.00536	0.07058
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00537	0.00935	0.07454

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)	0.01155	0.01483	0.09226
	(D * Q * !Q_N)	0.00716	0.01043	0.08787
	(!D * !Q * Q_N)	0.01154	0.01482	0.09210
	(!D * !Q * Q_N)	0.00715	0.01042	0.08771

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)	0.00703	0.01151	0.08844
	(D * Q * !Q_N)	0.01141	0.01591	0.09283
	(!D * !Q * Q_N)	0.00685	0.01138	0.08852
	(!D * !Q * Q_N)	0.01123	0.01578	0.09291

SKY130_FD_SC_HS__DLXTNx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00231	0.00257	1.27122
sky130_fd_sc_hs__dlxtn_2	0.00236	0.00257	2.37145
sky130_fd_sc_hs__dlxtn_4	0.00235	0.00256	4.70787

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtn_1	0.00000	1.16540	1.58287
sky130_fd_sc_hs__dlxtn_2	0.00000	1.13991	1.68095
sky130_fd_sc_hs__dlxtn_4	0.00000	1.80417	2.44255

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)	0.18962	0.61810	5.88637
	GATE_N->Q (-R)	0.22129	0.82560	8.40425
sky130_fd_sc_hs__dlxtn_2	D->Q (RR)	0.19270	0.52464	5.71407
	GATE_N->Q (-R)	0.22274	0.72947	8.20819
sky130_fd_sc_hs__dlxtn_4	D->Q (RR)	0.21422	0.48107	5.94503
	GATE_N->Q (-R)	0.24327	0.68495	8.42964

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtn_1	D->Q (FF)	0.15647	0.51869	4.40741
	GATE_N->Q (-F)	0.16705	0.56013	4.68398
sky130_fd_sc_hs__dlxtn_2	D->Q (FF)	0.16229	0.48601	4.25874
	GATE_N->Q (-F)	0.17170	0.52579	4.53426
sky130_fd_sc_hs__dlxtn_4	D->Q (FF)	0.17579	0.48154	4.51368
	GATE_N->Q (-F)	0.18818	0.52699	4.80462

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.01973	0.02286	0.09158
	D	0.01559	0.01874	0.08751
	GATE_N	0.01994	0.02461	0.10281
	GATE_N	0.02441	0.02911	0.10998
sky130_fd_sc_hs__dlxtn_2	D	0.02314	0.02681	0.09539
	D	0.01893	0.02262	0.09161
	GATE_N	0.02323	0.02830	0.10662
	GATE_N	0.02767	0.03280	0.11129
sky130_fd_sc_hs__dlxtn_4	D	0.03314	0.03710	0.10605
	D	0.02895	0.03321	0.10411
	GATE_N	0.03320	0.03858	0.11700
	GATE_N	0.03765	0.04308	0.12160

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.01640	0.02051	0.08954
	D	0.02052	0.02457	0.09288
	GATE_N	0.02000	0.02489	0.10584
	GATE_N	0.02448	0.02932	0.11030
sky130_fd_sc_hs__dlxtn_2	D	0.01956	0.02390	0.09234
	D	0.02376	0.02806	0.09639
	GATE_N	0.02314	0.02849	0.11039
	GATE_N	0.02758	0.03267	0.11374
sky130_fd_sc_hs__dlxtn_4	D	0.02894	0.03395	0.10445
	D	0.03313	0.03798	0.10665
	GATE_N	0.03256	0.03819	0.12013
	GATE_N	0.03701	0.04262	0.12449

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00639	0.00917	0.07505
	GATE_N	0.00227	0.00501	0.07092
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00641	0.00918	0.07507
	GATE_N	0.00220	0.00495	0.07088
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.00644	0.00920	0.07511
	GATE_N	0.00224	0.00497	0.07090

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00195	0.00594	0.07182
	GATE_N	0.00608	0.01007	0.07595
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00193	0.00592	0.07182
	GATE_N	0.00613	0.01014	0.07604
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.00197	0.00596	0.07186
	GATE_N	0.00617	0.01017	0.07607

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.01188	0.01518	0.09366
	(D * Q)	0.00739	0.01067	0.08918
	(!D * !Q)	0.01165	0.01489	0.09330
	(!D * !Q)	0.00716	0.01040	0.08882
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.01160	0.01495	0.09348
	(D * Q)	0.00717	0.01048	0.08903
	(!D * !Q)	0.01134	0.01463	0.09307
	(!D * !Q)	0.00688	0.01016	0.08861
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.01172	0.01500	0.09354
	(D * Q)	0.00725	0.01055	0.08908
	(!D * !Q)	0.01143	0.01469	0.09312
	(!D * !Q)	0.00696	0.01022	0.08866

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.00753	0.01205	0.09038
	(D * Q)	0.01201	0.01655	0.09487
	(!D * !Q)	0.00753	0.01209	0.09055
	(!D * !Q)	0.01201	0.01659	0.09504
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.00743	0.01199	0.09033
	(D * Q)	0.01187	0.01647	0.09479
	(!D * !Q)	0.00748	0.01208	0.09055
	(!D * !Q)	0.01192	0.01655	0.09500
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.00751	0.01203	0.09037
	(D * Q)	0.01197	0.01650	0.09484
	(!D * !Q)	0.00755	0.01212	0.09058
	(!D * !Q)	0.01201	0.01660	0.09505

SKY130_FD_SC_HS__DLXTP

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00227	0.00262	1.23741

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtp_1	0.00000	1.08407	1.57962

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)	0.22585	0.65598	5.94215
	GATE->Q (-R)	0.18112	0.61175	5.76494

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtp_1	D->Q (FF)	0.16934	0.53847	4.50848
	GATE->Q (-F)	0.18098	0.39532	2.09568

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.02151	0.02466	0.09328
	D	0.01725	0.02042	0.08964
	GATE	0.02537	0.02824	0.09237
	GATE	0.02070	0.02359	0.08787

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.01858	0.02276	0.09196
	D	0.02283	0.02696	0.09533
	GATE	0.02707	0.03069	0.10430
	GATE	0.02283	0.02645	0.09975

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00601	0.00899	0.07538
	!GATE	0.00196	0.00493	0.07135

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00168	0.00561	0.07183
	!GATE	0.00571	0.00967	0.07588

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.01249	0.01591	0.09461
	(D * Q)	0.00806	0.01144	0.09015
	(!D * !Q)	0.01202	0.01537	0.09392
	(!D * !Q)	0.00756	0.01090	0.08946

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.00618	0.01079	0.08915
	(D * Q)	0.01063	0.01526	0.09361
	(!D * !Q)	0.00662	0.01124	0.08974
	(!D * !Q)	0.01108	0.01570	0.09420

SKY130_FD_SC_HS__DLYGATE4SDx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00182	1.26565
sky130_fd_sc_hs__dlygate4sd2_1	0.00183	1.28083
sky130_fd_sc_hs__dlygate4sd3_1	0.00185	1.27605

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlygate4sd1_1	0.00000	0.06701	0.10816
sky130_fd_sc_hs__dlygate4sd2_1	0.00000	0.06371	0.10487
sky130_fd_sc_hs__dlygate4sd3_1	0.00000	0.06549	0.10665

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)**	0.13406	0.56075	5.61945
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (RR)**	0.16759	0.60485	5.79929
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (RR)**	0.27924	0.73508	6.02657

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlygate4sd1_1	**A->X (FF)**	0.16591	0.58676	4.99868
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (FF)**	0.20078	0.63709	5.10660
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (FF)**	0.29502	0.76891	5.29616

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.01488	0.01558	0.04165
	A	0.01164	0.01237	0.03867
sky130_fd_sc_hs__dlygate4sd2_1	A	0.01563	0.01622	0.04098
	A	0.01237	0.01297	0.03781
sky130_fd_sc_hs__dlygate4sd3_1	A	0.01800	0.01855	0.04223
	A	0.01471	0.01527	0.03954

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.01117	0.01254	0.03736
	A	0.01440	0.01575	0.04044
sky130_fd_sc_hs__dlygate4sd2_1	A	0.01196	0.01311	0.03680
	A	0.01521	0.01636	0.04005
sky130_fd_sc_hs__dlygate4sd3_1	A	0.01480	0.01539	0.03877
	A	0.01810	0.01875	0.04102

SKY130_FD_SC_HS__EBUFNx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00236	0.00439	0.65928
sky130_fd_sc_hs__ebufn_2	0.00257	0.00577	1.08380
sky130_fd_sc_hs__ebufn_4	0.00282	0.00886	2.19654
sky130_fd_sc_hs__ebufn_8	0.00544	0.01476	3.69495

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__ebufn_1	0.00000	0.72031	1.19617
sky130_fd_sc_hs__ebufn_2	0.00000	0.34996	0.51961
sky130_fd_sc_hs__ebufn_4	0.00000	0.20165	0.42228
sky130_fd_sc_hs__ebufn_8	0.00000	0.33291	0.83608

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)	0.06640	0.63002	6.12618
	TE_B->Z (RR)	0.02489	0.38658	5.24798
	TE_B->Z (FR)	0.05224	0.83303	10.00030
sky130_fd_sc_hs__ebufn_2	A->Z (RR)	0.06222	0.53892	6.02631
	TE_B->Z (RR)	0.02712	0.38738	5.24877
	TE_B->Z (FR)	0.05255	0.73175	9.90362
sky130_fd_sc_hs__ebufn_4	A->Z (RR)	0.06946	0.47366	6.23547
	TE_B->Z (RR)	0.03511	0.38940	5.25070
	TE_B->Z (FR)	0.04974	0.61938	9.95754
sky130_fd_sc_hs__ebufn_8	A->Z (RR)	0.07469	0.40414	6.05116
	TE_B->Z (RR)	0.05853	0.39383	5.25499
	TE_B->Z (FR)	0.05646	0.53241	9.52187

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ebufn_1	A->Z (FF)	0.06713	0.43556	3.95442
	TE_B->Z (RF)	0.02474	0.38656	5.24800
	TE_B->Z (FF)	0.05394	0.39922	3.83831
sky130_fd_sc_hs__ebufn_2	A->Z (FF)	0.07586	0.43617	3.96130
	TE_B->Z (RF)	0.02692	0.38734	5.24879
	TE_B->Z (FF)	0.05778	0.38067	3.80817
sky130_fd_sc_hs__ebufn_4	A->Z (FF)	0.09954	0.48343	4.33656
	TE_B->Z (RF)	0.03467	0.38934	5.25076
	TE_B->Z (FF)	0.06790	0.39773	4.11114
sky130_fd_sc_hs__ebufn_8	A->Z (FF)	0.09781	0.45504	4.38615
	TE_B->Z (RF)	0.05778	0.39369	5.25507
	TE_B->Z (FF)	0.09434	0.43761	4.30666

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.00839	0.01157	0.07759
	A	0.00408	0.00728	0.07356
	TE_B	0.00380	0.00781	0.07378
	TE_B	0.01150	0.01555	0.08153
sky130_fd_sc_hs__ebufn_2	A	0.01203	0.01567	0.08737
	A	0.00744	0.01107	0.08324
	TE_B	0.00743	0.01148	0.08275
	TE_B	0.01753	0.02160	0.09291
sky130_fd_sc_hs__ebufn_4	A	0.01935	0.02308	0.09198
	A	0.01425	0.01802	0.08776
	TE_B	0.01506	0.01866	0.08741
	TE_B	0.03068	0.03430	0.10316
sky130_fd_sc_hs__ebufn_8	A	0.03750	0.04554	0.18502
	A	0.02761	0.03568	0.17696
	TE_B	0.03094	0.03401	0.10078
	TE_B	0.05702	0.06020	0.12727

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.00405	0.00815	0.07337
	A	0.00833	0.01242	0.07752
	TE_B	0.00425	0.00872	0.07431
	TE_B	0.01183	0.01627	0.08170
sky130_fd_sc_hs__ebufn_2	A	0.00746	0.01182	0.08242
	A	0.01206	0.01638	0.08641
	TE_B	0.00841	0.01258	0.08377
	TE_B	0.01813	0.02228	0.09326
sky130_fd_sc_hs__ebufn_4	A	0.01477	0.01927	0.08649
	A	0.01985	0.02422	0.09107
	TE_B	0.01675	0.02053	0.08977
	TE_B	0.03179	0.03553	0.10387
sky130_fd_sc_hs__ebufn_8	A	0.02902	0.03802	0.17391
	A	0.03888	0.04788	0.18370
	TE_B	0.03417	0.03734	0.10560
	TE_B	0.05913	0.06228	0.12894

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00555	0.00869	0.07389
	(TE_B * Z)	0.00119	0.00432	0.06955
	(TE_B * !Z)	0.00539	0.00849	0.07364
	(TE_B * !Z)	0.00105	0.00414	0.06931
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00771	0.01083	0.08174
	(TE_B * Z)	0.00294	0.00604	0.07696
	(TE_B * !Z)	0.00718	0.01024	0.08096
	(TE_B * !Z)	0.00244	0.00549	0.07624
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.01134	0.01378	0.08165
	(TE_B * Z)	0.00604	0.00845	0.07635
	(TE_B * !Z)	0.01045	0.01280	0.08038
	(TE_B * !Z)	0.00521	0.00756	0.07516
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.02099	0.02637	0.16388
	(TE_B * Z)	0.01071	0.01602	0.15356
	(TE_B * !Z)	0.01924	0.02504	0.16134
	(TE_B * !Z)	0.00906	0.01484	0.15117

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00066	0.00483	0.06977
	(TE_B * Z)	0.00504	0.00922	0.07416
	(TE_B * !Z)	0.00075	0.00486	0.07009
	(TE_B * !Z)	0.00509	0.00920	0.07442
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00146	0.00528	0.07558
	(TE_B * Z)	0.00628	0.01014	0.08045
	(TE_B * !Z)	0.00186	0.00583	0.07642
	(TE_B * !Z)	0.00657	0.01056	0.08114
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.00284	0.00628	0.07357
	(TE_B * Z)	0.00825	0.01172	0.07904
	(TE_B * !Z)	0.00357	0.00714	0.07493
	(TE_B * !Z)	0.00876	0.01236	0.08013
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.00473	0.01179	0.14860
	(TE_B * Z)	0.01527	0.02240	0.15925
	(TE_B * !Z)	0.00620	0.01353	0.15127
	(TE_B * !Z)	0.01631	0.02369	0.16141

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00471	0.00766	0.07315
	(A * Z)	-0.00288	0.00002	0.06556
	(!A * !Z)	0.00477	0.00770	0.07318
	(!A * !Z)	-0.00281	0.00007	0.06558
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00530	0.00800	0.07899
	(A * Z)	-0.00443	-0.00180	0.06924
	(!A * !Z)	0.00551	0.00814	0.07909
	(!A * !Z)	-0.00423	-0.00165	0.06933
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00668	0.00821	0.07626
	(A * Z)	-0.00832	-0.00686	0.06118
	(!A * !Z)	0.00684	0.00832	0.07632
	(!A * !Z)	-0.00812	-0.00678	0.06126
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.00914	0.00938	0.07442
	(A * Z)	-0.01577	-0.01578	0.04934
	(!A * !Z)	0.00913	0.00957	0.07492
	(!A * !Z)	-0.01578	-0.01552	0.04994

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00106	0.00523	0.07091
	(A * Z)	0.00864	0.01286	0.07852
	(!A * !Z)	0.00104	0.00531	0.07089
	(!A * !Z)	0.00863	0.01289	0.07848
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00264	0.00704	0.07782
	(A * Z)	0.01240	0.01685	0.08758
	(!A * !Z)	0.00259	0.00691	0.07775
	(!A * !Z)	0.01232	0.01665	0.08749
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00568	0.00947	0.07795
	(A * Z)	0.02072	0.02448	0.09299
	(!A * !Z)	0.00572	0.00971	0.07794
	(!A * !Z)	0.02073	0.02482	0.09299
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.01188	0.01554	0.08170
	(A * Z)	0.03682	0.04064	0.10677
	(!A * !Z)	0.01223	0.01562	0.08228
	(!A * !Z)	0.03717	0.04061	0.10732

SKY130_FD_SC_HS__EDFXBP

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00185	0.00366	0.00296	1.29423	1.30648

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxbp_1	0.00000	0.92292	1.51342

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)	0.16614	0.61804	5.88586

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxbp_1	CLK->Q (RF)	0.15277	0.42206	2.30599

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)	0.22572	0.66560	5.97764

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)	0.22185	0.45361	2.23276

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)	-0.08293	-0.15939	-0.58530
	setup	CLK (R)	0.10105	0.17267	0.58405

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)	-0.24617	-0.38971	-3.78761
	setup	CLK (R)	0.31066	0.44209	3.84071

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)	-0.08293	-0.15939	-0.58530
	setup	CLK (R)	0.10105	0.17267	0.58405

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)	-0.24617	-0.38971	-3.78761
	setup	CLK (R)	0.31066	0.44209	3.84071

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)	-0.00059	0.00632	0.31563
	setup	CLK (R)	0.34224	0.35976	0.53931

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)	-0.13359	-0.25447	-2.86750
	setup	CLK (R)	0.28078	0.39735	3.64161

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)	-0.00059	0.00632	0.31563
	hold	CLK (R)	-0.13924	-0.16508	-0.34834
	setup	CLK (R)	0.10263	0.15404	0.53731
	setup	CLK (R)	0.34224	0.35976	0.53931

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)	-0.26396	-0.38585	-3.63269
	hold	CLK (R)	-0.13359	-0.25447	-2.86750
	setup	CLK (R)	0.28078	0.39735	3.64161
	setup	CLK (R)	0.14643	0.26132	2.86884

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 ()	0.07666	0.63232	16.50020
	min_pulse_width	CLK ()	0.11940	0.63232	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 ()	0.13127	0.63232	16.50020
	min_pulse_width	CLK ()	0.20726	0.63232	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	0.01894	0.02056	0.05724
	CLK	0.01645	0.01804	0.05478

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01871	0.01981	0.05693
	CLK	0.01603	0.01712	0.05425

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01873	0.01995	0.05831
	CLK	0.01605	0.01715	0.05555

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01891	0.02060	0.05622
	CLK	0.01642	0.01802	0.05372

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.00714	0.00774	0.02587
	(CLK * DE)	0.00368	0.00426	0.02240
	(CLK * !DE)	0.00143	0.00144	0.00143
	(CLK * !DE)	-0.00078	-0.00079	-0.00078
	(!CLK * DE * Q * !Q_N)	0.01623	0.01694	0.03875
	(!CLK * DE * Q * !Q_N)	0.01276	0.01345	0.03528
	(!CLK * DE * !Q * Q_N)	0.01542	0.01610	0.03799
	(!CLK * DE * !Q * Q_N)	0.01191	0.01259	0.03448
	(!CLK * !DE)	0.00142	0.00145	0.00143
	(!CLK * !DE)	-0.00078	-0.00080	-0.00078

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.00258	0.00317	0.02069
	(CLK * DE)	0.00610	0.00669	0.02419
	(CLK * !DE)	-0.00043	-0.00043	-0.00043
	(CLK * !DE)	0.00176	0.00178	0.00177
	(!CLK * DE * Q * !Q_N)	0.01284	0.01376	0.03560
	(!CLK * DE * Q * !Q_N)	0.01633	0.01723	0.03908
	(!CLK * DE * !Q * Q_N)	0.01355	0.01431	0.03683
	(!CLK * DE * !Q * Q_N)	0.01707	0.01782	0.04035
	(!CLK * !DE)	-0.00043	-0.00042	-0.00043
	(!CLK * !DE)	0.00177	0.00176	0.00177

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01138	0.01360	0.07439
	CLK	0.00346	0.00564	0.06648
	(!CLK * D * Q * !Q_N)	0.00636	0.00811	0.05235
	(!CLK * D * Q * !Q_N)	-0.00009	0.00162	0.04588
	(!CLK * D * !Q * Q_N)	0.02033	0.02270	0.08621
	(!CLK * D * !Q * Q_N)	0.01241	0.01474	0.07829
	(!CLK * !D * Q * !Q_N)	0.02057	0.02229	0.06721
	(!CLK * !D * Q * !Q_N)	0.01540	0.01713	0.06204
	(!CLK * !D * !Q * Q_N)	0.00634	0.00818	0.05239
	(!CLK * !D * !Q * Q_N)	-0.00008	0.00174	0.04597

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00357	0.00623	0.06678
	CLK	0.01149	0.01417	0.07470
	(!CLK * D * Q * !Q_N)	-0.00017	0.00227	0.04642
	(!CLK * D * Q * !Q_N)	0.00628	0.00874	0.05288
	(!CLK * D * !Q * Q_N)	0.01446	0.01725	0.08103
	(!CLK * D * !Q * Q_N)	0.02239	0.02516	0.08894
	(!CLK * !D * Q * !Q_N)	0.01576	0.01815	0.06238
	(!CLK * !D * Q * !Q_N)	0.02090	0.02331	0.06756
	(!CLK * !D * !Q * Q_N)	-0.00022	0.00214	0.04639
	(!CLK * !D * !Q * Q_N)	0.00618	0.00859	0.05283

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)	0.01784	0.02026	0.09151
	(D * Q * !Q_N)	0.01263	0.01505	0.08631
	(D * !DE * !Q * Q_N)	0.01743	0.02011	0.09137
	(D * !DE * !Q * Q_N)	0.01222	0.01490	0.08616
	(!D * !Q * Q_N)	0.01743	0.02011	0.09133
	(!D * !Q * Q_N)	0.01223	0.01490	0.08613
	(!D * !DE * Q * !Q_N)	0.01783	0.02026	0.09151
	(!D * !DE * Q * !Q_N)	0.01263	0.01504	0.08630

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)	0.00911	0.01256	0.08387
	(D * Q * !Q_N)	0.01430	0.01778	0.08907
	(D * DE * !Q * Q_N)	0.01835	0.02176	0.09447
	(D * DE * !Q * Q_N)	0.02355	0.02697	0.09968
	(D * !DE * !Q * Q_N)	0.00962	0.01306	0.08421
	(D * !DE * !Q * Q_N)	0.01482	0.01828	0.08941
	(!D * DE * Q * !Q_N)	0.02110	0.02464	0.09709
	(!D * DE * Q * !Q_N)	0.02629	0.02986	0.10229
	(!D * !Q * Q_N)	0.00962	0.01306	0.08421
	(!D * !Q * Q_N)	0.01482	0.01828	0.08941
	(!D * !DE * Q * !Q_N)	0.00910	0.01256	0.08387
	(!D * !DE * Q * !Q_N)	0.01430	0.01778	0.08907

SKY130_FD_SC_HS__EDFXTP

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00189	0.00352	0.00290	1.28915

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxtp_1	0.00000	0.93036	1.63911

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)	0.15754	0.60643	5.84686

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxtp_1	CLK->Q (RF)	0.14187	0.39623	2.17683

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)	-0.08072	-0.15692	-0.58701
	setup	CLK (R)	0.09981	0.17359	0.58422

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)	-0.24282	-0.38571	-3.77501
	setup	CLK (R)	0.31260	0.44258	3.83956

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)	-0.00288	0.00632	0.31670
	setup	CLK (R)	0.33821	0.35637	0.54112

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)	-0.13417	-0.25423	-2.87703
	setup	CLK (R)	0.27814	0.39611	3.63569

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)	-0.00288	0.00632	0.31670
	hold	CLK (R)	-0.13843	-0.15993	-0.33776
	setup	CLK (R)	0.09752	0.15426	0.53836
	setup	CLK (R)	0.33821	0.35637	0.54112

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)	-0.25981	-0.38435	-3.62953
	hold	CLK (R)	-0.13417	-0.25423	-2.87703
	setup	CLK (R)	0.27814	0.39611	3.63569
	setup	CLK (R)	0.14506	0.26093	2.88245

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 ()	0.07191	0.63232	16.50020
	min_pulse_width	CLK ()	0.10990	0.63232	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 ()	0.12652	0.63232	16.50020
	min_pulse_width	CLK ()	0.20964	0.63232	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	0.03182	0.03498	0.10850
	CLK	0.02688	0.03005	0.10364

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.03099	0.03382	0.10837
	CLK	0.02574	0.02852	0.10274

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.00693	0.00751	0.02571
	(CLK * DE)	0.00343	0.00400	0.02220
	(CLK * !DE)	0.00144	0.00145	0.00144
	(CLK * !DE)	-0.00080	-0.00080	-0.00080
	(!CLK * DE * Q)	0.01598	0.01668	0.03859
	(!CLK * DE * Q)	0.01248	0.01317	0.03509
	(!CLK * DE * !Q)	0.01515	0.01587	0.03781
	(!CLK * DE * !Q)	0.01162	0.01233	0.03427
	(!CLK * !DE)	0.00144	0.00146	0.00144
	(!CLK * !DE)	-0.00080	-0.00082	-0.00080

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.00248	0.00307	0.02065
	(CLK * DE)	0.00604	0.00663	0.02419
	(CLK * !DE)	-0.00042	-0.00041	-0.00041
	(CLK * !DE)	0.00182	0.00182	0.00182
	(!CLK * DE * Q)	0.01228	0.01321	0.03512
	(!CLK * DE * Q)	0.01580	0.01671	0.03863
	(!CLK * DE * !Q)	0.01306	0.01381	0.03638
	(!CLK * DE * !Q)	0.01662	0.01734	0.03993
	(!CLK * !DE)	-0.00041	-0.00042	-0.00041
	(!CLK * !DE)	0.00181	0.00183	0.00181

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.01103	0.01331	0.07416
	CLK	0.00334	0.00561	0.06648
	(!CLK * D * Q)	0.00618	0.00797	0.05226
	(!CLK * D * Q)	-0.00005	0.00172	0.04603
	(!CLK * D * !Q)	0.01988	0.02230	0.08590
	(!CLK * D * !Q)	0.01220	0.01463	0.07821
	(!CLK * !D * Q)	0.01983	0.02160	0.06649
	(!CLK * !D * Q)	0.01492	0.01668	0.06157
	(!CLK * !D * !Q)	0.00616	0.00805	0.05232
	(!CLK * !D * !Q)	0.00001	0.00187	0.04614

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.00351	0.00616	0.06673
	CLK	0.01120	0.01387	0.07441
	(!CLK * D * Q)	-0.00012	0.00231	0.04648
	(!CLK * D * Q)	0.00607	0.00855	0.05270
	(!CLK * D * !Q)	0.01399	0.01676	0.08055
	(!CLK * D * !Q)	0.02167	0.02445	0.08821
	(!CLK * !D * Q)	0.01555	0.01792	0.06223
	(!CLK * !D * Q)	0.02042	0.02284	0.06717
	(!CLK * !D * !Q)	-0.00019	0.00218	0.04643
	(!CLK * !D * !Q)	0.00596	0.00838	0.05263

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.01710	0.01982	0.09098
	(D * Q)	0.01203	0.01471	0.08589
	(D * !DE * !Q)	0.01724	0.01990	0.09142
	(D * !DE * !Q)	0.01216	0.01478	0.08631
	(!D * !Q)	0.01724	0.01990	0.09141
	(!D * !Q)	0.01216	0.01479	0.08631
	(!D * !DE * Q)	0.01709	0.01982	0.09097
	(!D * !DE * Q)	0.01202	0.01470	0.08589

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.00912	0.01273	0.08405
	(D * Q)	0.01421	0.01783	0.08915
	(D * DE * !Q)	0.01778	0.02133	0.09414
	(D * DE * !Q)	0.02286	0.02644	0.09924
	(D * !DE * !Q)	0.00908	0.01263	0.08382
	(D * !DE * !Q)	0.01417	0.01775	0.08892
	(!D * DE * Q)	0.02057	0.02428	0.09666
	(!D * DE * Q)	0.02565	0.02939	0.10176
	(!D * !Q)	0.00909	0.01263	0.08382
	(!D * !Q)	0.01417	0.01775	0.08892
	(!D * !DE * Q)	0.00912	0.01273	0.08404
	(!D * !DE * Q)	0.01421	0.01783	0.08915

SKY130_FD_SC_HS__EINVNx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00287	0.00324	0.66152
sky130_fd_sc_hs__einvn_2	0.00540	0.00490	1.18951
sky130_fd_sc_hs__einvn_4	0.01078	0.00881	2.27367
sky130_fd_sc_hs__einvn_8	0.02156	0.01470	3.92507

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__einvn_1	0.00000	0.28186	0.39445
sky130_fd_sc_hs__einvn_2	0.00000	0.30095	0.39586
sky130_fd_sc_hs__einvn_4	0.00000	0.14674	0.41380
sky130_fd_sc_hs__einvn_8	0.00000	0.22310	0.81911

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)	0.04332	0.85317	10.50370
	TE_B->Z (RR)	0.02597	0.38624	5.24764
	TE_B->Z (FR)	0.05128	0.83522	10.03160
sky130_fd_sc_hs__einvn_2	A->Z (FR)	0.02972	0.72846	10.41920
	TE_B->Z (RR)	0.03423	0.38799	5.24939
	TE_B->Z (FR)	0.04652	0.71161	9.92068
sky130_fd_sc_hs__einvn_4	A->Z (FR)	0.02782	0.63426	10.44120
	TE_B->Z (RR)	0.03566	0.38944	5.25076
	TE_B->Z (FR)	0.04461	0.59987	9.75009
sky130_fd_sc_hs__einvn_8	A->Z (FR)	0.02944	0.56172	10.22960
	TE_B->Z (RR)	0.05719	0.39591	5.25703
	TE_B->Z (FR)	0.05292	0.51471	9.32346

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvn_1	A->Z (RF)	0.01891	0.36725	4.42707
	TE_B->Z (RF)	0.02562	0.38623	5.24765
	TE_B->Z (FF)	0.05281	0.40118	3.73521
sky130_fd_sc_hs__einvn_2	A->Z (RF)	0.01588	0.31634	4.52368
	TE_B->Z (RF)	0.03387	0.38794	5.24940
	TE_B->Z (FF)	0.06043	0.39966	3.93986
sky130_fd_sc_hs__einvn_4	A->Z (RF)	0.01534	0.26521	4.57753
	TE_B->Z (RF)	0.03539	0.38941	5.25081
	TE_B->Z (FF)	0.06180	0.37737	4.04285
sky130_fd_sc_hs__einvn_8	A->Z (RF)	0.01727	0.23676	4.77265
	TE_B->Z (RF)	0.05645	0.39581	5.25715
	TE_B->Z (FF)	0.08533	0.41563	4.29423

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	-0.00064	0.00074	0.01795
	A	0.00432	0.00566	0.02293
	TE_B	0.00249	0.00514	0.05060
	TE_B	0.00996	0.01262	0.05817
sky130_fd_sc_hs__einvn_2	A	-0.00252	0.00084	0.03284
	A	0.00708	0.01043	0.04242
	TE_B	0.00386	0.00641	0.05162
	TE_B	0.01604	0.01860	0.06389
sky130_fd_sc_hs__einvn_4	A	-0.00491	0.00113	0.06261
	A	0.01421	0.02030	0.08211
	TE_B	0.00797	0.01192	0.08309
	TE_B	0.03065	0.03466	0.10579
sky130_fd_sc_hs__einvn_8	A	-0.00932	0.00458	0.11873
	A	0.02901	0.04289	0.15755
	TE_B	0.01671	0.02013	0.08966
	TE_B	0.05701	0.06065	0.13072

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	0.00456	0.00518	0.01443
	A	-0.00039	0.00023	0.00948
	TE_B	0.00479	0.00748	0.04918
	TE_B	0.00872	0.01139	0.05310
sky130_fd_sc_hs__einvn_2	A	0.00753	0.00916	0.02784
	A	-0.00204	-0.00049	0.01723
	TE_B	0.00820	0.01083	0.05620
	TE_B	0.01347	0.01606	0.06105
sky130_fd_sc_hs__einvn_4	A	0.01525	0.01858	0.05388
	A	-0.00386	-0.00063	0.03363
	TE_B	0.01692	0.02088	0.09174
	TE_B	0.02552	0.02945	0.10032
sky130_fd_sc_hs__einvn_8	A	0.03039	0.03803	0.10642
	A	-0.00790	-0.00040	0.06538
	TE_B	0.03428	0.03823	0.10678
	TE_B	0.04608	0.04991	0.11853

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	0.00099	0.00099	0.00098
	(TE_B * Z)	-0.00163	-0.00164	-0.00162
	(TE_B * !Z)	0.00109	0.00110	0.00109
	(TE_B * !Z)	-0.00144	-0.00145	-0.00144
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	0.00185	0.00186	0.00180
	(TE_B * Z)	-0.00318	-0.00317	-0.00317
	(TE_B * !Z)	0.00222	0.00223	0.00223
	(TE_B * !Z)	-0.00258	-0.00259	-0.00258
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	0.00337	0.00340	0.00329
	(TE_B * Z)	-0.00626	-0.00631	-0.00629
	(TE_B * !Z)	0.00404	0.00408	0.00406
	(TE_B * !Z)	-0.00527	-0.00532	-0.00527
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	0.00644	0.00653	0.00631
	(TE_B * Z)	-0.01244	-0.01244	-0.01239
	(TE_B * !Z)	0.00788	0.00796	0.00791
	(TE_B * !Z)	-0.01046	-0.01058	-0.01042

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	-0.00097	-0.00098	-0.00096
	(TE_B * Z)	0.00163	0.00164	0.00162
	(TE_B * !Z)	-0.00109	-0.00110	-0.00109
	(TE_B * !Z)	0.00147	0.00148	0.00146
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	-0.00178	-0.00177	-0.00177
	(TE_B * Z)	0.00318	0.00317	0.00317
	(TE_B * !Z)	-0.00222	-0.00223	-0.00223
	(TE_B * !Z)	0.00267	0.00269	0.00258
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	-0.00323	-0.00326	-0.00324
	(TE_B * Z)	0.00626	0.00631	0.00629
	(TE_B * !Z)	-0.00404	-0.00408	-0.00406
	(TE_B * !Z)	0.00540	0.00545	0.00527
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	-0.00630	-0.00630	-0.00627
	(TE_B * Z)	0.01244	0.01244	0.01239
	(TE_B * !Z)	-0.00788	-0.00796	-0.00791
	(TE_B * !Z)	0.01068	0.01079	0.01042

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00338	0.00533	0.05098
	(A * !Z)	-0.00214	-0.00033	0.04536
	(!A * Z)	0.00322	0.00529	0.05094
	(!A * Z)	-0.00216	-0.00029	0.04537
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00414	0.00553	0.05021
	(A * !Z)	-0.00437	-0.00315	0.04163
	(!A * Z)	0.00371	0.00534	0.05010
	(!A * Z)	-0.00439	-0.00310	0.04167
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00689	0.00876	0.07915
	(A * !Z)	-0.00818	-0.00672	0.06381
	(!A * Z)	0.00601	0.00848	0.07890
	(!A * Z)	-0.00829	-0.00649	0.06390
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.00843	0.00904	0.07681
	(A * !Z)	-0.01623	-0.01643	0.05148
	(!A * Z)	0.00681	0.00840	0.07640
	(!A * Z)	-0.01640	-0.01620	0.05165

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00159	0.00444	0.05008
	(A * !Z)	0.00723	0.01011	0.05574
	(!A * Z)	0.00162	0.00441	0.05016
	(!A * Z)	0.00716	0.00997	0.05569
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00276	0.00541	0.05031
	(A * !Z)	0.01142	0.01410	0.05900
	(!A * Z)	0.00291	0.00556	0.05050
	(!A * Z)	0.01128	0.01397	0.05891
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00558	0.00982	0.08048
	(A * !Z)	0.02100	0.02533	0.09593
	(!A * Z)	0.00587	0.00981	0.08085
	(!A * Z)	0.02072	0.02471	0.09576
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.01191	0.01551	0.08463
	(A * !Z)	0.03737	0.04111	0.11023
	(!A * Z)	0.01241	0.01621	0.08526
	(!A * Z)	0.03667	0.04060	0.10962

SKY130_FD_SC_HS__EINVPx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00288	0.00284	0.59690
sky130_fd_sc_hs__einvp_2	0.00533	0.00441	1.21154
sky130_fd_sc_hs__einvp_4	0.01077	0.00797	2.24729
sky130_fd_sc_hs__einvp_8	0.02158	0.01256	3.90238

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__einvp_1	0.00000	0.05119	0.27164
sky130_fd_sc_hs__einvp_2	0.00000	0.17070	0.59569
sky130_fd_sc_hs__einvp_4	0.00000	0.11579	0.50664
sky130_fd_sc_hs__einvp_8	0.00000	0.19215	0.91195

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)	0.04714	0.87490	10.43350
	TE->Z (FR)	0.08165	0.38618	5.24758
	TE->Z (RR)	0.07196	0.63808	5.69724
sky130_fd_sc_hs__einvp_2	A->Z (FR)	0.02938	0.72258	10.37600
	TE->Z (FR)	0.07709	0.38725	5.24863
	TE->Z (RR)	0.07097	0.52283	5.96983
sky130_fd_sc_hs__einvp_4	A->Z (FR)	0.02786	0.63041	10.33530
	TE->Z (FR)	0.08970	0.38920	5.25043
	TE->Z (RR)	0.06978	0.42288	5.81625
sky130_fd_sc_hs__einvp_8	A->Z (FR)	0.02961	0.56412	10.28250
	TE->Z (FR)	0.15065	0.41677	5.25596
	TE->Z (RR)	0.08834	0.40799	5.89833

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvp_1	A->Z (RF)	0.01919	0.35185	4.09479
	TE->Z (FF)	0.08281	0.38615	5.24755
	TE->Z (RF)	0.01962	0.31466	3.59573
sky130_fd_sc_hs__einvp_2	A->Z (RF)	0.01538	0.30534	4.39244
	TE->Z (FF)	0.07800	0.38714	5.24855
	TE->Z (RF)	0.01834	0.26660	3.77060
sky130_fd_sc_hs__einvp_4	A->Z (RF)	0.01561	0.26705	4.58695
	TE->Z (FF)	0.08991	0.38898	5.25022
	TE->Z (RF)	0.01956	0.21293	3.62678
sky130_fd_sc_hs__einvp_8	A->Z (RF)	0.01741	0.24518	4.92168
	TE->Z (FF)	0.15231	0.41680	5.25543
	TE->Z (RF)	0.02452	0.16950	3.40519

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	-0.00088	0.00048	0.02008
	A	0.00419	0.00554	0.02521
	TE	0.00823	0.00919	0.03219
	TE	0.00528	0.00625	0.02938
sky130_fd_sc_hs__einvp_2	A	-0.00245	0.00042	0.03364
	A	0.00701	0.00986	0.04325
	TE	0.01298	0.01487	0.05981
	TE	0.00918	0.01108	0.05607
sky130_fd_sc_hs__einvp_4	A	-0.00475	0.00245	0.06365
	A	0.01441	0.02156	0.08306
	TE	0.02468	0.02740	0.09797
	TE	0.01877	0.02148	0.09236
sky130_fd_sc_hs__einvp_8	A	-0.00919	0.00386	0.11228
	A	0.02916	0.04217	0.15094
	TE	0.04338	0.04542	0.11357
	TE	0.03757	0.03965	0.10813

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	0.00471	0.00536	0.01518
	A	-0.00034	0.00025	0.00964
	TE	0.01049	0.01150	0.03659
	TE	0.00374	0.00472	0.02963
sky130_fd_sc_hs__einvp_2	A	0.00758	0.00920	0.02784
	A	-0.00186	-0.00029	0.01777
	TE	0.01687	0.01885	0.06411
	TE	0.00591	0.00781	0.05266
sky130_fd_sc_hs__einvp_4	A	0.01499	0.01835	0.05392
	A	-0.00409	-0.00082	0.03407
	TE	0.03240	0.03522	0.10551
	TE	0.01180	0.01452	0.08487
sky130_fd_sc_hs__einvp_8	A	0.03027	0.03761	0.10556
	A	-0.00799	-0.00071	0.06217
	TE	0.05880	0.06100	0.13032
	TE	0.02340	0.02549	0.09351

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	0.00083	0.00084	0.00084
	(!TE * Z)	-0.00166	-0.00167	-0.00165
	(!TE * !Z)	0.00096	0.00096	0.00095
	(!TE * !Z)	-0.00149	-0.00149	-0.00148
sky130_fd_sc_hs__einvp_2	(!TE * Z)	0.00152	0.00154	0.00149
	(!TE * Z)	-0.00335	-0.00338	-0.00337
	(!TE * !Z)	0.00184	0.00186	0.00185
	(!TE * !Z)	-0.00273	-0.00277	-0.00274
sky130_fd_sc_hs__einvp_4	(!TE * Z)	0.00291	0.00293	0.00284
	(!TE * Z)	-0.00660	-0.00672	-0.00664
	(!TE * !Z)	0.00359	0.00359	0.00359
	(!TE * !Z)	-0.00547	-0.00548	-0.00547
sky130_fd_sc_hs__einvp_8	(!TE * Z)	0.00570	0.00569	0.00558
	(!TE * Z)	-0.01288	-0.01288	-0.01282
	(!TE * !Z)	0.00697	0.00703	0.00699
	(!TE * !Z)	-0.01054	-0.01065	-0.01053

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	-0.00083	-0.00084	-0.00083
	(!TE * Z)	0.00166	0.00167	0.00165
	(!TE * !Z)	-0.00096	-0.00096	-0.00095
	(!TE * !Z)	0.00149	0.00150	0.00148
sky130_fd_sc_hs__einvp_2	(!TE * Z)	-0.00148	-0.00150	-0.00149
	(!TE * Z)	0.00335	0.00338	0.00337
	(!TE * !Z)	-0.00184	-0.00186	-0.00185
	(!TE * !Z)	0.00286	0.00288	0.00275
sky130_fd_sc_hs__einvp_4	(!TE * Z)	-0.00283	-0.00289	-0.00284
	(!TE * Z)	0.00660	0.00672	0.00664
	(!TE * !Z)	-0.00359	-0.00359	-0.00359
	(!TE * !Z)	0.00566	0.00570	0.00547
sky130_fd_sc_hs__einvp_8	(!TE * Z)	-0.00566	-0.00564	-0.00558
	(!TE * Z)	0.01288	0.01288	0.01282
	(!TE * !Z)	-0.00697	-0.00703	-0.00699
	(!TE * !Z)	0.01085	0.01094	0.01053

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	0.00738	0.00841	0.03347
	(A * !Z)	0.00269	0.00371	0.02879
	(!A * Z)	0.00730	0.00835	0.03339
	(!A * Z)	0.00254	0.00354	0.02861
sky130_fd_sc_hs__einvp_2	(A * !Z)	0.01147	0.01345	0.05821
	(A * !Z)	0.00429	0.00622	0.05102
	(!A * Z)	0.01145	0.01342	0.05812
	(!A * Z)	0.00397	0.00588	0.05062
sky130_fd_sc_hs__einvp_4	(A * !Z)	0.02175	0.02446	0.09494
	(A * !Z)	0.00890	0.01161	0.08203
	(!A * Z)	0.02169	0.02443	0.09468
	(!A * Z)	0.00828	0.01094	0.08123
sky130_fd_sc_hs__einvp_8	(A * !Z)	0.03763	0.03986	0.10787
	(A * !Z)	0.01791	0.02003	0.08807
	(!A * Z)	0.03760	0.03979	0.10754
	(!A * Z)	0.01687	0.01894	0.08680

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	-0.00153	-0.00062	0.02381
	(A * !Z)	0.00309	0.00408	0.02849
	(!A * Z)	-0.00160	-0.00061	0.02381
	(!A * Z)	0.00316	0.00414	0.02855
sky130_fd_sc_hs__einvp_2	(A * !Z)	-0.00360	-0.00157	0.04278
	(A * !Z)	0.00349	0.00561	0.04990
	(!A * Z)	-0.00392	-0.00170	0.04269
	(!A * Z)	0.00356	0.00575	0.05001
sky130_fd_sc_hs__einvp_4	(A * !Z)	-0.00661	-0.00382	0.06569
	(A * !Z)	0.00600	0.00906	0.07845
	(!A * Z)	-0.00714	-0.00403	0.06557
	(!A * Z)	0.00622	0.00935	0.07873
sky130_fd_sc_hs__einvp_8	(A * !Z)	-0.01242	-0.01066	0.05612
	(A * !Z)	0.00679	0.00910	0.07577
	(!A * Z)	-0.01323	-0.01107	0.05586
	(!A * Z)	0.00731	0.00958	0.07625

SKY130_FD_SC_HS__FAHCIN

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00294	0.00711	0.00517	0.64846	1.27261

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcin_1	0.00000	2.89426	3.25990

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)	0.14850	0.63749	4.21432
	B->COUT (RR)	0.13262	0.56590	4.16635
	CIN->COUT (FR)	0.06359	0.72847	8.55496

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fahcin_1	A->COUT (FF)	0.16162	0.65347	4.39417
	B->COUT (FF)	0.15568	0.60872	4.37454
	CIN->COUT (RF)	0.03611	0.38012	4.25212

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)	-	0.20880	0.87034	8.68652
	B->SUM (-R)	-	0.20721	0.85926	8.69849
	CIN->SUM (RR)	(A * !B) + (!A * B)	0.08271	0.56718	6.14381
	CIN->SUM (FR)	(A * B) + (!A * !B)	0.12730	0.73016	8.27314

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)	-	0.25017	0.71582	5.03448
	B->SUM (-F)	-	0.20093	0.63912	4.90743
	CIN->SUM (FF)	(A * !B) + (!A * B)	0.10737	0.59813	5.21201
	CIN->SUM (RF)	(A * B) + (!A * !B)	0.11302	0.34719	2.16327

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.01877	0.02003	0.05677
	A	0.01631	0.01756	0.05448
	B	0.02004	0.02239	0.08999
	B	0.01371	0.01607	0.08368
	CIN	0.00795	0.01081	0.06012
	CIN	0.01254	0.01540	0.06474

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.01656	0.01821	0.05499
	A	0.01902	0.02067	0.05744
	B	0.01441	0.01834	0.09049
	B	0.02053	0.02448	0.09903
	CIN	0.01299	0.01542	0.06424
	CIN	0.00838	0.01079	0.05964

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.03693	0.03908	0.11192
	A	-	0.03200	0.03458	0.10892
	B	-	0.03756	0.04346	0.20545
	B	-	0.02490	0.03081	0.19273
	CIN	(A * B) + (!A * !B)	0.01158	0.01943	0.16128
	CIN	(A * B) + (!A * !B)	0.02080	0.02862	0.17057
	CIN	(A * !B) + (!A * B)	0.01301	0.01543	0.06434
	CIN	(A * !B) + (!A * B)	0.00839	0.01083	0.05955

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.03369	0.03756	0.11194
	A	-	0.03860	0.04249	0.11612
	B	-	0.02605	0.03697	0.19116
	B	-	0.03873	0.04962	0.20182
	CIN	(A * B) + (!A * !B)	0.02282	0.02951	0.17170
	CIN	(A * B) + (!A * !B)	0.01364	0.02025	0.16214
	CIN	(A * !B) + (!A * B)	0.00794	0.01070	0.05686
	CIN	(A * !B) + (!A * B)	0.01254	0.01530	0.06082

SKY130_FD_SC_HS__FAHCON

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00292	0.00905	0.00520	0.63984	1.24482

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcon_1	0.00000	2.89426	3.35273

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)	0.19563	0.78600	6.30872
	B->COUT_N (FR)	0.13951	0.76389	8.61757
	CI->COUT_N (FR)	0.05781	0.70577	8.35039

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)	0.14699	0.42009	1.70384
	B->COUT_N (RF)	0.09564	0.42428	4.44465
	CI->COUT_N (RF)	0.03532	0.37400	4.21340

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)	-	0.18857	0.84258	8.51404
	B->SUM (-R)	-	0.16814	0.80623	8.46171
	CI->SUM (RR)	(A * B) + (!A * !B)	0.07969	0.55992	6.08167
	CI->SUM (FR)	(A * !B) + (!A * B)	0.12583	0.73855	8.37233

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)	-	0.23139	0.68778	4.95142
	B->SUM (-F)	-	0.17416	0.58942	4.73515
	CI->SUM (FF)	(A * B) + (!A * !B)	0.10466	0.57351	5.05797
	CI->SUM (RF)	(A * !B) + (!A * B)	0.12070	0.35152	2.17466

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	0.01621	0.01741	0.05460
	A	0.01874	0.01997	0.05755
	B	0.01104	0.01620	0.11411
	B	0.01901	0.02422	0.12273
	CI	0.00767	0.01044	0.06141
	CI	0.01229	0.01509	0.06604

Internal switching power(pJ) to COUT_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcon_1	A	0.01751	0.01847	0.05502
	A	0.01500	0.01592	0.05242
	B	0.01876	0.02320	0.12262
	B	0.01080	0.01522	0.11450
	CI	0.01316	0.01537	0.06597
	CI	0.00853	0.01070	0.06129

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.03242	0.03512	0.10899
	A	-	0.02740	0.03010	0.10451
	B	-	0.03782	0.05497	0.28709
	B	-	0.02192	0.03908	0.27137
	CI	(A * B) + (!A * !B)	0.02234	0.02916	0.17468
	CI	(A * B) + (!A * !B)	0.01307	0.01988	0.16591
	CI	(A * !B) + (!A * B)	0.00767	0.01030	0.05849
	CI	(A * !B) + (!A * B)	0.01229	0.01496	0.06311

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.03130	0.03530	0.10992
	A	-	0.03635	0.04037	0.11415
	B	-	0.02360	0.04064	0.26806
	B	-	0.03955	0.05657	0.28341
	CI	(A * B) + (!A * !B)	0.01357	0.02172	0.16572
	CI	(A * B) + (!A * !B)	0.02283	0.03098	0.17493
	CI	(A * !B) + (!A * B)	0.01316	0.01536	0.06516
	CI	(A * !B) + (!A * B)	0.00853	0.01069	0.06009

SKY130_FD_SC_HS__FAHx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00491	0.00714	0.00259	1.09120	1.23318
sky130_fd_sc_hs__fah_2	0.00494	0.00809	0.00273	2.13453	2.39953
sky130_fd_sc_hs__fah_4	0.00487	0.00735	0.00261	3.94521	4.68555

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__fah_1	0.00000	2.89426	3.44554
sky130_fd_sc_hs__fah_2	0.00000	3.00407	3.55534
sky130_fd_sc_hs__fah_4	0.00000	3.22371	3.77500

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)	0.21798	0.70067	6.15515
	B->COUT (RR)	0.17575	0.70954	6.22383
	CI->COUT (RR)	0.11297	0.66631	6.63612
sky130_fd_sc_hs__fah_2	A->COUT (RR)	0.22152	0.58175	5.69473
	B->COUT (RR)	0.16218	0.57607	6.19630
	CI->COUT (RR)	0.10184	0.52419	5.94897
sky130_fd_sc_hs__fah_4	A->COUT (RR)	0.23007	0.54117	6.07346
	B->COUT (RR)	0.18719	0.54510	6.16180
	CI->COUT (RR)	0.12904	0.52080	6.60156

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fah_1	A->COUT (FF)	0.21794	0.61642	4.48323
	B->COUT (FF)	0.20464	0.65353	4.90770
	CI->COUT (FF)	0.13486	0.63158	4.99681
sky130_fd_sc_hs__fah_2	A->COUT (FF)	0.23028	0.61200	4.29370
	B->COUT (FF)	0.21893	0.64599	4.92323
	CI->COUT (FF)	0.13551	0.60197	4.71973
sky130_fd_sc_hs__fah_4	A->COUT (FF)	0.25314	0.64968	4.46724
	B->COUT (FF)	0.22957	0.66487	5.10588
	CI->COUT (FF)	0.16072	0.62835	5.00927

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)	-	0.21757	0.90336	9.00514
	B->SUM (-R)	-	0.20305	0.87056	8.94597
	CI->SUM (RR)	(A * B) + (!A * !B)	0.11013	0.61307	6.13100
	CI->SUM (FR)	(A * !B) + (!A * B)	0.21085	0.91042	9.05064
sky130_fd_sc_hs__fah_2	A->SUM (-R)	-	0.22181	0.78272	8.45669
	B->SUM (-R)	-	0.20995	0.76619	8.53111
	CI->SUM (RR)	(A * B) + (!A * !B)	0.10293	0.52011	6.12075
	CI->SUM (FR)	(A * !B) + (!A * B)	0.20644	0.77912	8.51864
sky130_fd_sc_hs__fah_4	A->SUM (-R)	-	0.23689	0.73831	8.90823
	B->SUM (-R)	-	0.22095	0.71985	8.94180
	CI->SUM (RR)	(A * B) + (!A * !B)	0.13479	0.51090	6.26380
	CI->SUM (FR)	(A * !B) + (!A * B)	0.26441	0.80996	9.11619

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)	-	0.21694	0.62981	4.69769
	B->SUM (-F)	-	0.21381	0.67337	6.57979
	CI->SUM (FF)	(A * B) + (!A * !B)	0.13390	0.63290	4.98717
	CI->SUM (RF)	(A * !B) + (!A * B)	0.18780	0.51817	2.73583
sky130_fd_sc_hs__fah_2	A->SUM (-F)	-	0.23967	0.62796	4.58302
	B->SUM (-F)	-	0.22518	0.65285	4.79960
	CI->SUM (FF)	(A * B) + (!A * !B)	0.14173	0.60940	5.02000
	CI->SUM (RF)	(A * !B) + (!A * B)	0.16607	0.44789	2.34575
sky130_fd_sc_hs__fah_4	A->SUM (-F)	-	0.25156	0.66122	4.77611
	B->SUM (-F)	-	0.23952	0.68742	6.60255
	CI->SUM (FF)	(A * B) + (!A * !B)	0.17014	0.63927	5.17551
	CI->SUM (RF)	(A * !B) + (!A * B)	0.24799	0.57169	3.00885

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.02411	0.02725	0.10184
	A	0.01985	0.02294	0.09762
	B	0.02067	0.02426	0.10516
	B	0.01458	0.01809	0.09915
	CI	0.01507	0.01630	0.05016
	CI	0.01302	0.01425	0.04812
sky130_fd_sc_hs__fah_2	A	0.02773	0.03056	0.10339
	A	0.02325	0.02591	0.09906
	B	0.02554	0.02801	0.10406
	B	0.01859	0.02096	0.09738
	CI	0.01638	0.01716	0.05134
	CI	0.01396	0.01469	0.04893
sky130_fd_sc_hs__fah_4	A	0.03537	0.03650	0.11105
	A	0.03115	0.03201	0.10702
	B	0.03307	0.03338	0.11491
	B	0.02674	0.02704	0.10878
	CI	0.02739	0.02691	0.06123
	CI	0.02526	0.02465	0.05906

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.02001	0.02377	0.09749
	A	0.02408	0.02784	0.10135
	B	0.01663	0.02083	0.09800
	B	0.02270	0.02691	0.10399
	CI	0.01269	0.01455	0.04919
	CI	0.01473	0.01659	0.05093
sky130_fd_sc_hs__fah_2	A	0.02332	0.02700	0.09980
	A	0.02781	0.03148	0.10403
	B	0.01767	0.02170	0.09608
	B	0.02460	0.02870	0.10251
	CI	0.01442	0.01570	0.04960
	CI	0.01684	0.01813	0.05171
sky130_fd_sc_hs__fah_4	A	0.03030	0.03220	0.10544
	A	0.03444	0.03634	0.10934
	B	0.02690	0.02917	0.10511
	B	0.03317	0.03554	0.11128
	CI	0.02487	0.02447	0.05863
	CI	0.02699	0.02661	0.06029

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.04236	0.04768	0.19395
	A	-	0.03368	0.03901	0.18540
	B	-	0.03835	0.04699	0.23122
	B	-	0.02603	0.03464	0.21923
	CI	(A * B) + (!A * !B)	0.02039	0.02209	0.07795
	CI	(A * B) + (!A * !B)	0.01580	0.01750	0.07386
	CI	(A * !B) + (!A * B)	0.01271	0.01458	0.04926
	CI	(A * !B) + (!A * B)	0.01475	0.01661	0.05098
sky130_fd_sc_hs__fah_2	A	-	0.04547	0.05038	0.19480
	A	-	0.03648	0.04142	0.18589
	B	-	0.04171	0.05093	0.21966
	B	-	0.02782	0.03703	0.20672
	CI	(A * B) + (!A * !B)	0.02122	0.02423	0.09558
	CI	(A * B) + (!A * !B)	0.01636	0.01939	0.09055
	CI	(A * !B) + (!A * B)	0.01444	0.01573	0.04964
	CI	(A * !B) + (!A * B)	0.01686	0.01814	0.05205
sky130_fd_sc_hs__fah_4	A	-	0.04939	0.05478	0.20194
	A	-	0.04070	0.04616	0.19376
	B	-	0.04703	0.05759	0.24124
	B	-	0.03411	0.04471	0.23021
	CI	(A * B) + (!A * !B)	0.03128	0.03323	0.09353
	CI	(A * B) + (!A * !B)	0.02662	0.02868	0.09071
	CI	(A * !B) + (!A * B)	0.02488	0.02452	0.06357
	CI	(A * !B) + (!A * B)	0.02700	0.02666	0.06083

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.03179	0.03874	0.18382
	A	-	0.04082	0.04777	0.19159
	B	-	0.02810	0.04057	0.42661
	B	-	0.04077	0.05326	0.43785
	CI	(A * B) + (!A * !B)	0.01526	0.01820	0.08023
	CI	(A * B) + (!A * !B)	0.01985	0.02280	0.08423
	CI	(A * !B) + (!A * B)	0.01505	0.01627	0.04952
	CI	(A * !B) + (!A * B)	0.01300	0.01424	0.04748
sky130_fd_sc_hs__fah_2	A	-	0.03667	0.04273	0.18607
	A	-	0.04566	0.05172	0.19403
	B	-	0.02865	0.03994	0.19361
	B	-	0.04254	0.05381	0.20492
	CI	(A * B) + (!A * !B)	0.01865	0.02119	0.09226
	CI	(A * B) + (!A * !B)	0.02350	0.02605	0.09680
	CI	(A * !B) + (!A * B)	0.01636	0.01712	0.05087
	CI	(A * !B) + (!A * B)	0.01393	0.01468	0.04839
sky130_fd_sc_hs__fah_4	A	-	0.04394	0.04744	0.19295
	A	-	0.05276	0.05625	0.19999
	B	-	0.04293	0.05625	0.43028
	B	-	0.05603	0.06928	0.43666
	CI	(A * B) + (!A * !B)	0.03013	0.02902	0.09522
	CI	(A * B) + (!A * !B)	0.03477	0.03374	0.09725
	CI	(A * !B) + (!A * B)	0.02738	0.02678	0.06005
	CI	(A * !B) + (!A * B)	0.02525	0.02464	0.05778

SKY130_FD_SC_HS__FAx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.01033	0.01004	0.00733	1.27611	1.28999
sky130_fd_sc_hs__fa_2	0.01095	0.01047	0.00779	2.14380	2.36509
sky130_fd_sc_hs__fa_4	0.01090	0.01079	0.00765	4.73880	4.67459

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__fa_1	0.00000	0.44914	0.64836
sky130_fd_sc_hs__fa_2	0.00000	0.55377	0.75264
sky130_fd_sc_hs__fa_4	0.00000	0.77340	0.97226

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)	0.09244	0.56628	5.95979
	B->COUT (RR)	0.10585	0.59080	6.04575
	CIN->COUT (RR)	0.08526	0.57391	6.11596
sky130_fd_sc_hs__fa_2	A->COUT (RR)	0.09659	0.49330	5.76740
	B->COUT (RR)	0.10343	0.51749	5.84972
	CIN->COUT (RR)	0.08984	0.51079	5.89195
sky130_fd_sc_hs__fa_4	A->COUT (RR)	0.13174	0.48390	6.12922
	B->COUT (RR)	0.11307	0.49066	6.21770
	CIN->COUT (RR)	0.11259	0.49526	6.26494

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->COUT (FF)	0.17354	0.62629	5.20240
	B->COUT (FF)	0.18741	0.65297	5.28363
	CIN->COUT (FF)	0.13373	0.62251	5.26106
sky130_fd_sc_hs__fa_2	A->COUT (FF)	0.20269	0.63346	4.98922
	B->COUT (FF)	0.21213	0.66210	5.08709
	CIN->COUT (FF)	0.18248	0.64424	5.06081
sky130_fd_sc_hs__fa_4	A->COUT (FF)	0.27812	0.71687	5.53677
	B->COUT (FF)	0.25067	0.71244	5.59147
	CIN->COUT (FF)	0.24935	0.72188	5.62592

Delay(ns) to SUM rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-R)	0.25150	0.86615	8.65164
	B->SUM (-R)	0.26336	0.88963	8.71147
	CIN->SUM (-R)	0.22685	0.85492	8.58368
sky130_fd_sc_hs__fa_2	A->SUM (-R)	0.31655	0.85216	8.81639
	B->SUM (-R)	0.32376	0.87803	8.89292
	CIN->SUM (-R)	0.29991	0.85747	8.82241
sky130_fd_sc_hs__fa_4	A->SUM (-R)	0.45873	0.91900	9.02501
	B->SUM (-R)	0.41750	0.91135	9.05584
	CIN->SUM (-R)	0.42862	0.91990	9.05464

Delay(ns) to SUM falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-F)	0.19608	0.60543	5.19621
	B->SUM (-F)	0.20039	0.64897	5.38685
	CIN->SUM (-F)	0.15939	0.62248	5.37844
sky130_fd_sc_hs__fa_2	A->SUM (-F)	0.24464	0.64528	5.13774
	B->SUM (-F)	0.25592	0.69350	5.34704
	CIN->SUM (-F)	0.21648	0.67132	5.33884
sky130_fd_sc_hs__fa_4	A->SUM (-F)	0.34253	0.74119	5.50589
	B->SUM (-F)	0.30578	0.74788	5.69609
	CIN->SUM (-F)	0.28864	0.74457	5.72301

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.01437	0.01500	0.03684
	A	0.00529	0.00575	0.02769
	B	0.01269	0.01352	0.03989
	B	0.00410	0.00479	0.03120
	CIN	0.01205	0.01294	0.04120
	CIN	0.00660	0.00736	0.03574
sky130_fd_sc_hs__fa_2	A	0.01882	0.01829	0.03970
	A	0.00887	0.00828	0.02963
	B	0.01736	0.01711	0.04317
	B	0.00827	0.00795	0.03410
	CIN	0.01668	0.01638	0.04321
	CIN	0.01058	0.01026	0.03725
sky130_fd_sc_hs__fa_4	A	0.02828	0.02641	0.04952
	A	0.01792	0.01595	0.03840
	B	0.02760	0.02552	0.05204
	B	0.01899	0.01669	0.04295
	CIN	0.02642	0.02449	0.05227
	CIN	0.02068	0.01873	0.04596

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00560	0.00609	0.02768
	A	0.01466	0.01521	0.03676
	B	0.00676	0.00758	0.03491
	B	0.01535	0.01618	0.04302
	CIN	0.00766	0.00889	0.03624
	CIN	0.01313	0.01435	0.04154
sky130_fd_sc_hs__fa_2	A	0.00979	0.00908	0.03074
	A	0.01960	0.01898	0.04008
	B	0.01088	0.01064	0.03785
	B	0.01994	0.01973	0.04643
	CIN	0.01174	0.01197	0.03904
	CIN	0.01789	0.01813	0.04483
sky130_fd_sc_hs__fa_4	A	0.02137	0.01757	0.03935
	A	0.03171	0.02792	0.04823
	B	0.02178	0.01877	0.04702
	B	0.03039	0.02739	0.05407
	CIN	0.02321	0.02034	0.04799
	CIN	0.02904	0.02612	0.05194

Internal switching power(pJ) to SUM rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.01969	0.01937	0.05758
	A	0.00060	0.00017	0.03839
	B	0.01833	0.01881	0.05651
	B	0.01539	0.01615	0.04328
	CIN	0.01443	0.01573	0.05268
	CIN	0.00222	0.00351	0.04066
sky130_fd_sc_hs__fa_2	A	0.02446	0.02486	0.06508
	A	0.00439	0.00474	0.04400
	B	0.02287	0.02389	0.06339
	B	0.00461	0.00564	0.04516
	CIN	0.02061	0.02163	0.06343
	CIN	0.00804	0.00905	0.05071
sky130_fd_sc_hs__fa_4	A	0.03137	0.03108	0.06877
	A	0.00960	0.00933	0.04884
	B	0.03123	0.03138	0.06817
	B	0.01305	0.01323	0.05200
	CIN	0.02803	0.02844	0.06848
	CIN	0.01538	0.01581	0.05738

Internal switching power(pJ) to SUM falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00108	0.00185	0.03610
	A	0.02033	0.02107	0.05527
	B	0.00166	0.00269	0.03598
	B	0.01892	0.01994	0.05305
	CIN	0.00429	0.00571	0.04913
	CIN	0.01676	0.01826	0.06088
sky130_fd_sc_hs__fa_2	A	0.00522	0.00538	0.04674
	A	0.02533	0.02552	0.06565
	B	0.00605	0.00612	0.04630
	B	0.02358	0.02364	0.06273
	CIN	0.01011	0.00973	0.05460
	CIN	0.02296	0.02278	0.06610
sky130_fd_sc_hs__fa_4	A	0.01723	0.01359	0.05144
	A	0.03906	0.03567	0.07157
	B	0.02175	0.01441	0.04928
	B	0.03993	0.03282	0.06365
	CIN	0.02355	0.01689	0.06108
	CIN	0.03648	0.02984	0.07070

SKY130_FD_SC_HS__HAx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00493	0.00449	1.23589	1.14780
sky130_fd_sc_hs__ha_2	0.00498	0.00517	2.13422	2.25372
sky130_fd_sc_hs__ha_4	0.00949	0.00854	3.99547	4.64886

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__ha_1	0.00000	0.83255	1.31678
sky130_fd_sc_hs__ha_2	0.00000	0.62342	0.74582
sky130_fd_sc_hs__ha_4	0.00000	1.93113	2.85317

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)	0.07201	0.52746	5.96490
	B->COUT (RR)	0.06766	0.53400	6.15991
sky130_fd_sc_hs__ha_2	A->COUT (RR)	0.07743	0.46531	5.85750
	B->COUT (RR)	0.07432	0.47480	5.95429
sky130_fd_sc_hs__ha_4	A->COUT (RR)	0.09472	0.41081	5.86020
	B->COUT (RR)	0.08199	0.41272	6.01184

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ha_1	A->COUT (FF)	0.08659	0.50685	4.67151
	B->COUT (FF)	0.07632	0.48195	4.57143
sky130_fd_sc_hs__ha_2	A->COUT (FF)	0.10002	0.50590	4.54039
	B->COUT (FF)	0.09240	0.48664	4.44792
sky130_fd_sc_hs__ha_4	A->COUT (FF)	0.11756	0.48551	4.51669
	B->COUT (FF)	0.09979	0.45516	4.42975

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	0.07443	0.53528	5.89640
	A->SUM (FR)	B	0.14010	0.77509	8.32209
	B->SUM (RR)	!A	0.06364	0.51270	5.83315
	B->SUM (FR)	A	0.13959	0.76142	8.17469
sky130_fd_sc_hs__ha_2	A->SUM (RR)	!B	0.07949	0.44759	5.68906
	A->SUM (FR)	B	0.18202	0.73250	8.31895
	B->SUM (RR)	!A	0.07112	0.43110	5.64918
	B->SUM (FR)	A	0.18050	0.71939	8.18876
sky130_fd_sc_hs__ha_4	A->SUM (RR)	!B	0.08890	0.40013	6.02247
	A->SUM (FR)	B	0.20531	0.67660	8.50942
	B->SUM (RR)	!A	0.07661	0.37557	5.95587
	B->SUM (FR)	A	0.19435	0.65648	8.36927

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	0.11683	0.50954	4.66960
	A->SUM (RF)	B	0.10887	0.32051	1.85661
	B->SUM (FF)	!A	0.10263	0.51492	4.74306
	B->SUM (RF)	A	0.10474	0.32623	1.99075
sky130_fd_sc_hs__ha_2	A->SUM (FF)	!B	0.15357	0.55158	4.89531
	A->SUM (RF)	B	0.13222	0.33152	2.00413
	B->SUM (FF)	!A	0.13939	0.56307	4.96669
	B->SUM (RF)	A	0.12950	0.34035	2.11184
sky130_fd_sc_hs__ha_4	A->SUM (FF)	!B	0.15701	0.52271	5.07080
	A->SUM (RF)	B	0.16254	0.34281	2.27134
	B->SUM (FF)	!A	0.13897	0.53173	5.15398
	B->SUM (RF)	A	0.15003	0.34466	2.40257

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.00972	0.01070	0.03761
	A	0.00470	0.00565	0.03256
	B	0.00915	0.01058	0.04773
	B	0.00518	0.00659	0.04387
sky130_fd_sc_hs__ha_2	A	0.01349	0.01461	0.04772
	A	0.00843	0.00951	0.04265
	B	0.01312	0.01446	0.04967
	B	0.00875	0.01008	0.04547
sky130_fd_sc_hs__ha_4	A	0.02560	0.02799	0.08518
	A	0.01633	0.01869	0.07587
	B	0.02405	0.02688	0.09822
	B	0.01702	0.01985	0.09169

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.00499	0.00708	0.03823
	A	0.01000	0.01206	0.04295
	B	0.00605	0.00814	0.04078
	B	0.00994	0.01201	0.04446
sky130_fd_sc_hs__ha_2	A	0.00956	0.01133	0.04489
	A	0.01462	0.01628	0.04987
	B	0.01010	0.01140	0.04502
	B	0.01442	0.01562	0.04908
sky130_fd_sc_hs__ha_4	A	0.01756	0.02104	0.08776
	A	0.02683	0.03029	0.09689
	B	0.01944	0.02308	0.09212
	B	0.02625	0.02981	0.09881

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	0.00500	0.00713	0.03824
	A	B	0.01001	0.01208	0.04324
	A	!B	0.01441	0.01596	0.05882
	A	!B	0.00472	0.00625	0.04914
	B	A	0.00607	0.00831	0.04116
	B	A	0.00995	0.01205	0.04481
	B	!A	0.01073	0.01277	0.06591
	B	!A	0.00330	0.00534	0.05862
sky130_fd_sc_hs__ha_2	A	B	0.00958	0.01144	0.04528
	A	B	0.01464	0.01629	0.05033
	A	!B	0.01848	0.01994	0.06130
	A	!B	0.00884	0.01031	0.05203
	B	A	0.01012	0.01141	0.04559
	B	A	0.01444	0.01567	0.04940
	B	!A	0.01535	0.01717	0.06854
	B	!A	0.00727	0.00907	0.06091
sky130_fd_sc_hs__ha_4	A	B	0.01759	0.02116	0.08801
	A	B	0.02688	0.03042	0.09727
	A	!B	0.03735	0.04006	0.12057
	A	!B	0.01741	0.02020	0.10268
	B	A	0.01949	0.02322	0.11010
	B	A	0.02628	0.02988	0.10136
	B	!A	0.02939	0.03305	0.13193
	B	!A	0.01443	0.01810	0.11904

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	0.00971	0.01070	0.03746
	A	B	0.00469	0.00564	0.03249
	A	!B	0.00291	0.00443	0.04720
	A	!B	0.01242	0.01387	0.05629
	B	A	0.00914	0.01056	0.04697
	B	A	0.00517	0.00659	0.04316
	B	!A	0.00426	0.00744	0.06121
	B	!A	0.01183	0.01490	0.06824
sky130_fd_sc_hs__ha_2	A	B	0.01348	0.01460	0.04744
	A	B	0.00842	0.00951	0.04233
	A	!B	0.00745	0.00804	0.04979
	A	!B	0.01687	0.01746	0.05844
	B	A	0.01311	0.01450	0.04868
	B	A	0.00874	0.01010	0.04439
	B	!A	0.00816	0.01059	0.06284
	B	!A	0.01640	0.01878	0.07066
sky130_fd_sc_hs__ha_4	A	B	0.02557	0.02796	0.08476
	A	B	0.01631	0.01867	0.07519
	A	!B	0.01478	0.01574	0.09843
	A	!B	0.03432	0.03515	0.11457
	B	A	0.02404	0.02699	0.09696
	B	A	0.01700	0.01992	0.08988
	B	!A	0.01767	0.02189	0.12371
	B	!A	0.03312	0.03715	0.13705

SKY130_FD_SC_HS__INVx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00838	19.18793
sky130_fd_sc_hs__bufinv_8	0.00288	7.64153
sky130_fd_sc_hs__inv_1	0.00291	1.23349
sky130_fd_sc_hs__inv_16	0.04421	18.49636
sky130_fd_sc_hs__inv_2	0.00536	2.34852
sky130_fd_sc_hs__inv_4	0.01082	4.45636
sky130_fd_sc_hs__inv_8	0.02143	8.78196

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__bufinv_16	0.00000	1.37266	1.97615
sky130_fd_sc_hs__bufinv_8	0.00000	0.65888	0.93741
sky130_fd_sc_hs__inv_1	0.00000	0.05491	0.10133
sky130_fd_sc_hs__inv_16	0.00000	0.87850	1.62126
sky130_fd_sc_hs__inv_2	0.00000	0.10981	0.20266
sky130_fd_sc_hs__inv_4	0.00000	0.21962	0.40531
sky130_fd_sc_hs__inv_8	0.00000	0.43925	0.81063

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)	0.11070	0.45623	8.30365
sky130_fd_sc_hs__bufinv_8	A->Y (FR)	0.14198	0.57135	8.25735
sky130_fd_sc_hs__inv_1	A->Y (FR)	0.02505	0.72537	10.48740
sky130_fd_sc_hs__inv_16	A->Y (FR)	0.01718	0.42822	10.43620
sky130_fd_sc_hs__inv_2	A->Y (FR)	0.01963	0.62263	10.28290
sky130_fd_sc_hs__inv_4	A->Y (FR)	0.01823	0.55295	10.33700
sky130_fd_sc_hs__inv_8	A->Y (FR)	0.01795	0.48620	10.32740

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__bufinv_16	A->Y (RF)	0.09762	0.20076	2.04286
sky130_fd_sc_hs__bufinv_8	A->Y (RF)	0.11721	0.26384	1.74736
sky130_fd_sc_hs__inv_1	A->Y (RF)	0.01447	0.37777	5.50291
sky130_fd_sc_hs__inv_16	A->Y (RF)	0.01101	0.16337	5.45820
sky130_fd_sc_hs__inv_2	A->Y (RF)	0.01203	0.30402	5.32407
sky130_fd_sc_hs__inv_4	A->Y (RF)	0.01136	0.25586	5.40706
sky130_fd_sc_hs__inv_8	A->Y (RF)	0.01142	0.20648	5.39769

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	A	0.07822	0.09448	0.32105
	A	0.09319	0.10983	0.33621
sky130_fd_sc_hs__bufinv_8	A	0.04121	0.04709	0.12855
	A	0.04632	0.05218	0.13437
sky130_fd_sc_hs__inv_1	A	-0.00105	0.00083	0.01725
	A	0.00412	0.00600	0.02271
sky130_fd_sc_hs__inv_16	A	-0.02129	0.02447	0.27198
	A	0.05718	0.10346	0.35230
sky130_fd_sc_hs__inv_2	A	-0.00255	0.00179	0.03512
	A	0.00698	0.01133	0.04509
sky130_fd_sc_hs__inv_4	A	-0.00503	0.00336	0.06633
	A	0.01418	0.02268	0.08665
sky130_fd_sc_hs__inv_8	A	-0.00996	0.01015	0.14704
	A	0.02810	0.04843	0.18670

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	A	0.09698	0.10950	0.33571
	A	0.08207	0.09452	0.31873
sky130_fd_sc_hs__bufinv_8	A	0.04694	0.05019	0.12457
	A	0.04183	0.04505	0.11908
sky130_fd_sc_hs__inv_1	A	0.00453	0.00532	0.01551
	A	-0.00064	0.00004	0.00836
sky130_fd_sc_hs__inv_16	A	0.05972	0.08114	0.23965
	A	-0.01879	0.00227	0.13102
sky130_fd_sc_hs__inv_2	A	0.00734	0.00912	0.02737
	A	-0.00219	-0.00042	0.01619
sky130_fd_sc_hs__inv_4	A	0.01486	0.01885	0.05409
	A	-0.00435	-0.00046	0.03227
sky130_fd_sc_hs__inv_8	A	0.02906	0.03996	0.12456
	A	-0.00898	0.00174	0.07446

SKY130_FD_SC_HS__MAJ3x

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00539	0.00506	0.00527	1.27185
sky130_fd_sc_hs__maj3_2	0.00572	0.00545	0.00559	2.47505
sky130_fd_sc_hs__maj3_4	0.01050	0.00993	0.01034	4.69173

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__maj3_1	0.00000	0.20140	0.53215
sky130_fd_sc_hs__maj3_2	0.00000	0.25417	0.54063
sky130_fd_sc_hs__maj3_4	0.00000	0.51262	1.08126

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)	0.08573	0.55209	5.88387
	B->X (RR)	0.07865	0.54520	5.91299
	C->X (RR)	0.08697	0.56580	5.98860
sky130_fd_sc_hs__maj3_2	A->X (RR)	0.09238	0.47193	5.79244
	B->X (RR)	0.07870	0.46590	5.82600
	C->X (RR)	0.08544	0.48173	5.88844
sky130_fd_sc_hs__maj3_4	A->X (RR)	0.08716	0.40298	5.92574
	B->X (RR)	0.08207	0.40668	5.97790
	C->X (RR)	0.08362	0.41272	5.97888

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__maj3_1	A->X (FF)	0.13457	0.57529	5.09913
	B->X (FF)	0.12522	0.57358	5.10974
	C->X (FF)	0.14474	0.59428	5.17831
sky130_fd_sc_hs__maj3_2	A->X (FF)	0.15871	0.57987	5.05559
	B->X (FF)	0.14088	0.58413	5.07153
	C->X (FF)	0.17548	0.61226	5.14988
sky130_fd_sc_hs__maj3_4	A->X (FF)	0.16655	0.54371	5.09614
	B->X (FF)	0.12599	0.52923	5.14070
	C->X (FF)	0.15958	0.56069	5.17503

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.01786	0.01828	0.05818
	A	0.00401	0.00443	0.04437
	B	0.01600	0.01662	0.06857
	B	0.00524	0.00584	0.05776
	C	0.01519	0.01641	0.06818
	C	0.00309	0.00430	0.05613
sky130_fd_sc_hs__maj3_2	A	0.02298	0.02390	0.06008
	A	0.00817	0.00912	0.04554
	B	0.01940	0.02056	0.06848
	B	0.00759	0.00878	0.05681
	C	0.01983	0.02097	0.07273
	C	0.00656	0.00771	0.05977
sky130_fd_sc_hs__maj3_4	A	0.04291	0.04462	0.12488
	A	0.01653	0.01825	0.09854
	B	0.03460	0.03741	0.14458
	B	0.01385	0.01661	0.12585
	C	0.03537	0.03762	0.12998
	C	0.01178	0.01403	0.10651

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.00275	0.00364	0.04408
	A	0.01649	0.01739	0.05768
	B	0.00460	0.00621	0.05833
	B	0.01523	0.01686	0.06896
	C	0.00512	0.00691	0.05957
	C	0.01701	0.01885	0.07088
sky130_fd_sc_hs__maj3_2	A	0.00760	0.00799	0.05023
	A	0.02224	0.02258	0.06358
	B	0.00818	0.00946	0.06193
	B	0.02046	0.02134	0.07354
	C	0.00966	0.01048	0.06298
	C	0.02268	0.02358	0.07597
sky130_fd_sc_hs__maj3_4	A	0.01434	0.01537	0.10047
	A	0.04049	0.04130	0.11943
	B	0.01532	0.01810	0.13175
	B	0.03589	0.03862	0.14286
	C	0.01843	0.02030	0.12417
	C	0.04158	0.04355	0.14393

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	0.00487	0.00428	0.00420
	(B * C * X)	-0.00335	-0.00406	-0.00406
	(!B * !C * !X)	0.00380	0.00384	0.00380
	(!B * !C * !X)	-0.00438	-0.00441	-0.00438
sky130_fd_sc_hs__maj3_2	(B * C * X)	0.00470	0.00415	0.00406
	(B * C * X)	-0.00397	-0.00464	-0.00466
	(!B * !C * !X)	0.00349	0.00352	0.00350
	(!B * !C * !X)	-0.00510	-0.00513	-0.00511
sky130_fd_sc_hs__maj3_4	(B * C * X)	0.00878	0.00765	0.00749
	(B * C * X)	-0.00686	-0.00822	-0.00826
	(!B * !C * !X)	0.00663	0.00673	0.00666
	(!B * !C * !X)	-0.00889	-0.00896	-0.00891

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	-0.00417	-0.00419	-0.00416
	(B * C * X)	0.00405	0.00409	0.00408
	(!B * !C * !X)	-0.00357	-0.00378	-0.00380
	(!B * !C * !X)	0.00455	0.00444	0.00440
sky130_fd_sc_hs__maj3_2	(B * C * X)	-0.00403	-0.00404	-0.00402
	(B * C * X)	0.00465	0.00469	0.00468
	(!B * !C * !X)	-0.00327	-0.00351	-0.00350
	(!B * !C * !X)	0.00528	0.00520	0.00513
sky130_fd_sc_hs__maj3_4	(B * C * X)	-0.00741	-0.00745	-0.00741
	(B * C * X)	0.00820	0.00829	0.00828
	(!B * !C * !X)	-0.00628	-0.00669	-0.00666
	(!B * !C * !X)	0.00914	0.00901	0.00894

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	0.00348	0.00356	0.00350
	(A * C * X)	-0.00199	-0.00203	-0.00199
	(!A * !C * !X)	0.00087	0.00089	0.00085
	(!A * !C * !X)	-0.00490	-0.00495	-0.00497
sky130_fd_sc_hs__maj3_2	(A * C * X)	0.00412	0.00418	0.00411
	(A * C * X)	-0.00194	-0.00195	-0.00191
	(!A * !C * !X)	0.00109	0.00109	0.00104
	(!A * !C * !X)	-0.00502	-0.00503	-0.00507
sky130_fd_sc_hs__maj3_4	(A * C * X)	0.00688	0.00701	0.00690
	(A * C * X)	-0.00399	-0.00407	-0.00399
	(!A * !C * !X)	0.00204	0.00207	0.00195
	(!A * !C * !X)	-0.00954	-0.00962	-0.00973

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	-0.00338	-0.00341	-0.00349
	(A * C * X)	0.00208	0.00210	0.00202
	(!A * !C * !X)	-0.00083	-0.00084	-0.00083
	(!A * !C * !X)	0.00496	0.00499	0.00498
sky130_fd_sc_hs__maj3_2	(A * C * X)	-0.00398	-0.00402	-0.00410
	(A * C * X)	0.00200	0.00203	0.00194
	(!A * !C * !X)	-0.00101	-0.00102	-0.00101
	(!A * !C * !X)	0.00506	0.00509	0.00508
sky130_fd_sc_hs__maj3_4	(A * C * X)	-0.00663	-0.00668	-0.00687
	(A * C * X)	0.00424	0.00426	0.00405
	(!A * !C * !X)	-0.00189	-0.00191	-0.00190
	(!A * !C * !X)	0.00971	0.00978	0.00975

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	0.00397	0.00367	0.00361
	(A * B * X)	-0.00273	-0.00306	-0.00306
	(!A * !B * !X)	0.00191	0.00193	0.00190
	(!A * !B * !X)	-0.00487	-0.00490	-0.00490
sky130_fd_sc_hs__maj3_2	(A * B * X)	0.00452	0.00422	0.00416
	(A * B * X)	-0.00268	-0.00301	-0.00301
	(!A * !B * !X)	0.00233	0.00235	0.00231
	(!A * !B * !X)	-0.00481	-0.00483	-0.00485
sky130_fd_sc_hs__maj3_4	(A * B * X)	0.00787	0.00729	0.00718
	(A * B * X)	-0.00537	-0.00609	-0.00608
	(!A * !B * !X)	0.00425	0.00432	0.00424
	(!A * !B * !X)	-0.00921	-0.00931	-0.00933

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	-0.00354	-0.00356	-0.00359
	(A * B * X)	0.00309	0.00313	0.00308
	(!A * !B * !X)	-0.00178	-0.00190	-0.00189
	(!A * !B * !X)	0.00499	0.00494	0.00492
sky130_fd_sc_hs__maj3_2	(A * B * X)	-0.00408	-0.00410	-0.00413
	(A * B * X)	0.00305	0.00307	0.00303
	(!A * !B * !X)	-0.00218	-0.00229	-0.00230
	(!A * !B * !X)	0.00493	0.00486	0.00486
sky130_fd_sc_hs__maj3_4	(A * B * X)	-0.00701	-0.00704	-0.00713
	(A * B * X)	0.00615	0.00619	0.00612
	(!A * !B * !X)	-0.00402	-0.00425	-0.00423
	(!A * !B * !X)	0.00944	0.00941	0.00936

SKY130_FD_SC_HS__MUX2Ix

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00291	0.00275	0.00510	0.59953
sky130_fd_sc_hs__mux2i_2	0.00546	0.00576	0.00828	0.98396
sky130_fd_sc_hs__mux2i_4	0.01080	0.01077	0.01444	1.70167

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux2i_1	0.00000	0.36950	0.74011
sky130_fd_sc_hs__mux2i_2	0.00000	0.27188	0.54384
sky130_fd_sc_hs__mux2i_4	0.00000	0.87502	1.76520

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)	-	0.07783	0.89840	10.41860
	A1->Y (FR)	-	0.06978	0.89085	10.41770
	S->Y (RR)	(A0 * !A1)	0.11060	0.68494	5.99976
	S->Y (FR)	(!A0 * A1)	0.08998	0.87870	9.94041
sky130_fd_sc_hs__mux2i_2	A0->Y (FR)	-	0.08827	0.80550	10.35710
	A1->Y (FR)	-	0.08027	0.76861	9.92112
	S->Y (RR)	(A0 * !A1)	0.11945	0.56599	5.39434
	S->Y (FR)	(!A0 * A1)	0.09735	0.76592	9.63266
sky130_fd_sc_hs__mux2i_4	A0->Y (FR)	-	0.08189	0.68929	9.95689
	A1->Y (FR)	-	0.08175	0.70495	10.22620
	S->Y (RR)	(A0 * !A1)	0.13788	0.56257	6.18272
	S->Y (FR)	(!A0 * A1)	0.09267	0.64386	9.11410

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)	-	0.02726	0.37713	4.22358
	A1->Y (RF)	-	0.02892	0.40252	4.53540
	S->Y (FF)	(A0 * !A1)	0.07744	0.42960	3.68392
	S->Y (RF)	(!A0 * A1)	0.03365	0.34889	3.82409
sky130_fd_sc_hs__mux2i_2	A0->Y (RF)	-	0.03482	0.36701	4.58168
	A1->Y (RF)	-	0.03320	0.35345	4.42833
	S->Y (FF)	(A0 * !A1)	0.09423	0.44606	3.89378
	S->Y (RF)	(!A0 * A1)	0.03571	0.27698	3.37534
sky130_fd_sc_hs__mux2i_4	A0->Y (RF)	-	0.03212	0.30109	4.30566
	A1->Y (RF)	-	0.03706	0.33569	4.79328
	S->Y (FF)	(A0 * !A1)	0.09569	0.39969	3.51280
	S->Y (RF)	(!A0 * A1)	0.03893	0.22744	3.18418

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	-	0.00143	0.00229	0.01997
	A0	-	0.00834	0.00919	0.02691
	A1	-	0.00101	0.00183	0.01860
	A1	-	0.00736	0.00819	0.02505
	S	(A0 * !A1)	0.01146	0.01435	0.08097
	S	(A0 * !A1)	0.00596	0.00880	0.07546
	S	(!A0 * A1)	0.00227	0.00623	0.08454
	S	(!A0 * A1)	0.01486	0.01882	0.09717
sky130_fd_sc_hs__mux2i_2	A0	-	0.00314	0.00449	0.03475
	A0	-	0.01657	0.01791	0.04824
	A1	-	0.00288	0.00435	0.03608
	A1	-	0.01623	0.01769	0.04941
	S	(A0 * !A1)	0.01933	0.02166	0.08443
	S	(A0 * !A1)	0.01248	0.01478	0.07757
	S	(!A0 * A1)	0.00549	0.00940	0.10382
	S	(!A0 * A1)	0.02705	0.03096	0.12538
sky130_fd_sc_hs__mux2i_4	A0	-	0.00366	0.00713	0.06706
	A0	-	0.03032	0.03341	0.09371
	A1	-	0.00384	0.00659	0.06039
	A1	-	0.02915	0.03188	0.08588
	S	(A0 * !A1)	0.03327	0.03699	0.15133
	S	(A0 * !A1)	0.02276	0.02645	0.14125
	S	(!A0 * A1)	0.00894	0.01580	0.17489
	S	(!A0 * A1)	0.04810	0.05499	0.21441

Internal switching power(pJ) to Y falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2i_1	A0	-	0.00878	0.00931	0.01883
	A0	-	0.00201	0.00248	0.01181
	A1	-	0.00851	0.00898	0.01830
	A1	-	0.00185	0.00231	0.01123
	S	(A0 * !A1)	0.00716	0.01132	0.07726
	S	(A0 * !A1)	0.01265	0.01676	0.08276
	S	(!A0 * A1)	0.01614	0.01922	0.09485
	S	(!A0 * A1)	0.00350	0.00659	0.08188
sky130_fd_sc_hs__mux2i_2	A0	-	0.01793	0.01882	0.03577
	A0	-	0.00489	0.00567	0.02223
	A1	-	0.01733	0.01818	0.03622
	A1	-	0.00355	0.00440	0.02171
	S	(A0 * !A1)	0.01525	0.01851	0.08008
	S	(A0 * !A1)	0.02194	0.02522	0.08689
	S	(!A0 * A1)	0.02875	0.03188	0.12235
	S	(!A0 * A1)	0.00709	0.01015	0.10038
sky130_fd_sc_hs__mux2i_4	A0	-	0.03326	0.03562	0.06947
	A0	-	0.00727	0.00953	0.04250
	A1	-	0.03315	0.03522	0.06669
	A1	-	0.00675	0.00872	0.03897
	S	(A0 * !A1)	0.02920	0.03502	0.15162
	S	(A0 * !A1)	0.03938	0.04519	0.16161
	S	(!A0 * A1)	0.05334	0.05798	0.21022
	S	(!A0 * A1)	0.01400	0.01856	0.17047

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	0.00226	0.00227	0.00226
	(A1 * S * !Y)	-0.00114	-0.00115	-0.00115
	(!A1 * S * Y)	0.00095	0.00093	0.00089
	(!A1 * S * Y)	-0.00265	-0.00273	-0.00276
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	0.00412	0.00413	0.00412
	(A1 * S * !Y)	-0.00213	-0.00213	-0.00212
	(!A1 * S * Y)	0.00140	0.00140	0.00132
	(!A1 * S * Y)	-0.00526	-0.00536	-0.00541
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	0.00796	0.00799	0.00800
	(A1 * S * !Y)	-0.00433	-0.00435	-0.00434
	(!A1 * S * Y)	0.00268	0.00268	0.00254
	(!A1 * S * Y)	-0.01060	-0.01081	-0.01088

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	-0.00211	-0.00216	-0.00224
	(A1 * S * !Y)	0.00126	0.00126	0.00118
	(!A1 * S * Y)	-0.00088	-0.00089	-0.00088
	(!A1 * S * Y)	0.00275	0.00276	0.00276
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	-0.00386	-0.00400	-0.00411
	(A1 * S * !Y)	0.00225	0.00226	0.00216
	(!A1 * S * Y)	-0.00128	-0.00129	-0.00128
	(!A1 * S * Y)	0.00540	0.00543	0.00541
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	-0.00754	-0.00775	-0.00799
	(A1 * S * !Y)	0.00465	0.00469	0.00444
	(!A1 * S * Y)	-0.00245	-0.00248	-0.00245
	(!A1 * S * Y)	0.01084	0.01092	0.01088

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	0.00203	0.00207	0.00204
	(A0 * !S * !Y)	-0.00116	-0.00118	-0.00116
	(!A0 * !S * Y)	0.00075	0.00075	0.00071
	(!A0 * !S * Y)	-0.00266	-0.00270	-0.00275
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	0.00422	0.00427	0.00424
	(A0 * !S * !Y)	-0.00236	-0.00239	-0.00236
	(!A0 * !S * Y)	0.00150	0.00150	0.00144
	(!A0 * !S * Y)	-0.00541	-0.00548	-0.00555
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	0.00783	0.00791	0.00786
	(A0 * !S * !Y)	-0.00437	-0.00443	-0.00438
	(!A0 * !S * Y)	0.00238	0.00240	0.00226
	(!A0 * !S * Y)	-0.01066	-0.01082	-0.01096

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	-0.00181	-0.00195	-0.00204
	(A0 * !S * !Y)	0.00130	0.00128	0.00119
	(!A0 * !S * Y)	-0.00069	-0.00069	-0.00069
	(!A0 * !S * Y)	0.00274	0.00276	0.00275
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	-0.00391	-0.00413	-0.00424
	(A0 * !S * !Y)	0.00254	0.00256	0.00241
	(!A0 * !S * Y)	-0.00141	-0.00142	-0.00140
	(!A0 * !S * Y)	0.00556	0.00557	0.00555
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	-0.00725	-0.00760	-0.00786
	(A0 * !S * !Y)	0.00471	0.00472	0.00447
	(!A0 * !S * Y)	-0.00221	-0.00222	-0.00220
	(!A0 * !S * Y)	0.01095	0.01099	0.01096

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	0.00867	0.01149	0.07760
	(A0 * A1 * !Y)	-0.00013	0.00260	0.06875
	(!A0 * !A1 * Y)	0.00871	0.01154	0.07763
	(!A0 * !A1 * Y)	-0.00016	0.00262	0.06876
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	0.01386	0.01589	0.08704
	(A0 * A1 * !Y)	0.00009	0.00204	0.07320
	(!A0 * !A1 * Y)	0.01318	0.01580	0.08694
	(!A0 * !A1 * Y)	-0.00061	0.00202	0.07322
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	0.02451	0.02690	0.14219
	(A0 * A1 * !Y)	0.00055	0.00287	0.11815
	(!A0 * !A1 * Y)	0.02328	0.02689	0.14207
	(!A0 * !A1 * Y)	-0.00056	0.00290	0.11817

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	-0.00048	0.00326	0.06948
	(A0 * A1 * !Y)	0.00836	0.01215	0.07830
	(!A0 * !A1 * Y)	-0.00067	0.00316	0.06954
	(!A0 * !A1 * Y)	0.00819	0.01206	0.07839
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	-0.00060	0.00294	0.07364
	(A0 * A1 * !Y)	0.01315	0.01674	0.08738
	(!A0 * !A1 * Y)	-0.00065	0.00265	0.07359
	(!A0 * !A1 * Y)	0.01299	0.01647	0.08740
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	-0.00014	0.00572	0.12171
	(A0 * A1 * !Y)	0.02378	0.02966	0.14562
	(!A0 * !A1 * Y)	-0.00051	0.00503	0.12165
	(!A0 * !A1 * Y)	0.02320	0.02907	0.14558

SKY130_FD_SC_HS__MUX2x

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00280	0.00326	0.00470	1.29397
sky130_fd_sc_hs__mux2_2	0.00259	0.00292	0.00552	2.15861
sky130_fd_sc_hs__mux2_4	0.00498	0.00500	0.00836	4.00976

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__mux2_1	0.00000	0.51746	0.96174
sky130_fd_sc_hs__mux2_2	0.00000	0.57236	0.97023
sky130_fd_sc_hs__mux2_4	0.00000	0.68206	1.00407

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)	-	0.06539	0.51617	5.87740
	A1->X (RR)	-	0.06530	0.51523	5.82493
	S->X (RR)	(!A0 * A1)	0.06794	0.50985	5.78243
	S->X (FR)	(A0 * !A1)	0.12529	0.71553	8.19409
sky130_fd_sc_hs__mux2_2	A0->X (RR)	-	0.07918	0.48125	5.82110
	A1->X (RR)	-	0.07570	0.46883	5.73531
	S->X (RR)	(!A0 * A1)	0.07754	0.45761	5.70580
	S->X (FR)	(A0 * !A1)	0.13528	0.64785	8.00967
sky130_fd_sc_hs__mux2_4	A0->X (RR)	-	0.10922	0.45976	5.86828
	A1->X (RR)	-	0.11046	0.46530	5.95826
	S->X (RR)	(!A0 * A1)	0.11301	0.42763	5.74550
	S->X (FR)	(A0 * !A1)	0.17794	0.65663	8.18044

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)	-	0.10422	0.56313	5.10133
	A1->X (FF)	-	0.10169	0.55925	5.24078
	S->X (FF)	(!A0 * A1)	0.13858	0.56792	5.23642
	S->X (RF)	(A0 * !A1)	0.15865	0.39349	2.38249
sky130_fd_sc_hs__mux2_2	A0->X (FF)	-	0.13179	0.56725	4.82833
	A1->X (FF)	-	0.13483	0.57737	4.89161
	S->X (FF)	(!A0 * A1)	0.16553	0.55299	4.73835
	S->X (RF)	(A0 * !A1)	0.19649	0.39485	1.91815
sky130_fd_sc_hs__mux2_4	A0->X (FF)	-	0.15883	0.56631	4.72337
	A1->X (FF)	-	0.16007	0.56991	4.68997
	S->X (FF)	(!A0 * A1)	0.18920	0.54065	4.56103
	S->X (RF)	(A0 * !A1)	0.21693	0.39610	1.72669

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	-	0.01224	0.01377	0.06572
	A0	-	0.00565	0.00777	0.05917
	A1	-	0.01279	0.01474	0.06081
	A1	-	0.00566	0.00762	0.05385
	S	(A0 * !A1)	0.01127	0.01448	0.08186
	S	(A0 * !A1)	0.01562	0.01885	0.08634
	S	(!A0 * A1)	0.02005	0.02413	0.12750
	S	(!A0 * A1)	0.00808	0.01217	0.11567
sky130_fd_sc_hs__mux2_2	A0	-	0.01449	0.01679	0.06727
	A0	-	0.00774	0.01005	0.06069
	A1	-	0.01671	0.01880	0.06926
	A1	-	0.00991	0.01204	0.06281
	S	(A0 * !A1)	0.01458	0.01909	0.08307
	S	(A0 * !A1)	0.01992	0.02441	0.08895
	S	(!A0 * A1)	0.02416	0.02752	0.10976
	S	(!A0 * A1)	0.01124	0.01460	0.09719
sky130_fd_sc_hs__mux2_4	A0	-	0.02827	0.03152	0.10888
	A0	-	0.01603	0.01933	0.09708
	A1	-	0.02722	0.03034	0.12153
	A1	-	0.01567	0.01884	0.11204
	S	(A0 * !A1)	0.02786	0.03250	0.10366
	S	(A0 * !A1)	0.03544	0.04009	0.11184
	S	(!A0 * A1)	0.04308	0.04688	0.15883
	S	(!A0 * A1)	0.02237	0.02624	0.13877

Internal switching power(pJ) to X falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2_1	A0	-	0.00452	0.00737	0.05434
	A0	-	0.01111	0.01395	0.06015
	A1	-	0.00451	0.00751	0.06091
	A1	-	0.01164	0.01465	0.06730
	S	(A0 * !A1)	0.01695	0.01928	0.08610
	S	(A0 * !A1)	0.01256	0.01484	0.08150
	S	(!A0 * A1)	0.00637	0.01116	0.11495
	S	(!A0 * A1)	0.01827	0.02305	0.12610
sky130_fd_sc_hs__mux2_2	A0	-	0.00842	0.01033	0.06117
	A0	-	0.01493	0.01680	0.06607
	A1	-	0.00851	0.01049	0.06154
	A1	-	0.01536	0.01731	0.06696
	S	(A0 * !A1)	0.02090	0.02262	0.08252
	S	(A0 * !A1)	0.01554	0.01721	0.07678
	S	(!A0 * A1)	0.00988	0.01313	0.11048
	S	(!A0 * A1)	0.02279	0.02601	0.12220
sky130_fd_sc_hs__mux2_4	A0	-	0.02031	0.02193	0.10952
	A0	-	0.03223	0.03381	0.12004
	A1	-	0.02112	0.02299	0.10994
	A1	-	0.03321	0.03497	0.12053
	S	(A0 * !A1)	0.03905	0.03950	0.10772
	S	(A0 * !A1)	0.03129	0.03169	0.09945
	S	(!A0 * A1)	0.02359	0.02558	0.15784
	S	(!A0 * A1)	0.04418	0.04571	0.17762

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	0.00212	0.00212	0.00212
	(A1 * S * X)	-0.00096	-0.00096	-0.00096
	(!A1 * S * !X)	0.00079	0.00078	0.00074
	(!A1 * S * !X)	-0.00241	-0.00245	-0.00250
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	0.00201	0.00205	0.00202
	(A1 * S * X)	-0.00103	-0.00105	-0.00103
	(!A1 * S * !X)	0.00088	0.00088	0.00082
	(!A1 * S * !X)	-0.00227	-0.00233	-0.00239
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	0.00361	0.00363	0.00362
	(A1 * S * X)	-0.00205	-0.00206	-0.00204
	(!A1 * S * !X)	0.00133	0.00132	0.00125
	(!A1 * S * !X)	-0.00478	-0.00486	-0.00491

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	-0.00198	-0.00204	-0.00211
	(A1 * S * X)	0.00105	0.00105	0.00099
	(!A1 * S * !X)	-0.00072	-0.00072	-0.00071
	(!A1 * S * !X)	0.00251	0.00252	0.00250
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	-0.00184	-0.00191	-0.00200
	(A1 * S * X)	0.00115	0.00116	0.00107
	(!A1 * S * !X)	-0.00079	-0.00079	-0.00079
	(!A1 * S * !X)	0.00240	0.00239	0.00239
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	-0.00341	-0.00347	-0.00361
	(A1 * S * X)	0.00220	0.00220	0.00209
	(!A1 * S * !X)	-0.00123	-0.00124	-0.00123
	(!A1 * S * !X)	0.00491	0.00491	0.00491

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	0.00234	0.00237	0.00235
	(A0 * !S * X)	-0.00116	-0.00117	-0.00116
	(!A0 * !S * !X)	0.00070	0.00069	0.00067
	(!A0 * !S * !X)	-0.00287	-0.00288	-0.00291
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	0.00217	0.00219	0.00218
	(A0 * !S * X)	-0.00100	-0.00101	-0.00100
	(!A0 * !S * !X)	0.00062	0.00062	0.00060
	(!A0 * !S * !X)	-0.00260	-0.00263	-0.00265
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	0.00365	0.00365	0.00365
	(A0 * !S * X)	-0.00205	-0.00204	-0.00204
	(!A0 * !S * !X)	0.00107	0.00107	0.00102
	(!A0 * !S * !X)	-0.00498	-0.00502	-0.00509

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	-0.00222	-0.00230	-0.00234
	(A0 * !S * X)	0.00122	0.00123	0.00118
	(!A0 * !S * !X)	-0.00067	-0.00067	-0.00066
	(!A0 * !S * !X)	0.00291	0.00292	0.00291
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	-0.00203	-0.00210	-0.00218
	(A0 * !S * X)	0.00110	0.00110	0.00102
	(!A0 * !S * !X)	-0.00059	-0.00060	-0.00059
	(!A0 * !S * !X)	0.00265	0.00266	0.00265
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	-0.00334	-0.00354	-0.00365
	(A0 * !S * X)	0.00220	0.00219	0.00208
	(!A0 * !S * !X)	-0.00100	-0.00099	-0.00099
	(!A0 * !S * !X)	0.00510	0.00509	0.00509

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	0.00891	0.01137	0.07651
	(A0 * A1 * X)	0.00088	0.00333	0.06846
	(!A0 * !A1 * !X)	0.00885	0.01162	0.07675
	(!A0 * !A1 * !X)	0.00087	0.00359	0.06876
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	0.00899	0.01155	0.07656
	(A0 * A1 * X)	-0.00002	0.00248	0.06752
	(!A0 * !A1 * !X)	0.00843	0.01121	0.07608
	(!A0 * !A1 * !X)	-0.00055	0.00222	0.06710
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	0.01410	0.01621	0.08645
	(A0 * A1 * X)	0.00030	0.00236	0.07264
	(!A0 * !A1 * !X)	0.01387	0.01637	0.08624
	(!A0 * !A1 * !X)	0.00007	0.00250	0.07245

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	-0.00002	0.00382	0.06883
	(A0 * A1 * X)	0.00802	0.01186	0.07684
	(!A0 * !A1 * !X)	-0.00037	0.00324	0.06859
	(!A0 * !A1 * !X)	0.00759	0.01128	0.07661
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	-0.00079	0.00309	0.06795
	(A0 * A1 * X)	0.00825	0.01213	0.07697
	(!A0 * !A1 * !X)	-0.00056	0.00310	0.06808
	(!A0 * !A1 * !X)	0.00840	0.01206	0.07709
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	-0.00040	0.00300	0.07256
	(A0 * A1 * X)	0.01340	0.01686	0.08636
	(!A0 * !A1 * !X)	-0.00088	0.00267	0.07203
	(!A0 * !A1 * !X)	0.01288	0.01647	0.08581

SKY130_FD_SC_HS__MUX4x

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00244	0.00256	0.00254	0.00281	0.00855	0.00546	1.21582
sky130_fd_sc_hs__mux4_2	0.00276	0.00261	0.00272	0.00266	0.00966	0.00565	2.43945
sky130_fd_sc_hs__mux4_4	0.00486	0.00468	0.00486	0.00487	0.01354	0.00844	4.64686

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux4_1	0.00000	0.70807	1.26642
sky130_fd_sc_hs__mux4_2	0.00000	0.75732	1.35887
sky130_fd_sc_hs__mux4_4	0.00000	1.09457	1.90274

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)	0.11613	0.60238	5.98097
	A1->X (RR)	0.11765	0.60360	5.96527
	A2->X (RR)	0.11742	0.60860	5.98513
	A3->X (RR)	0.11519	0.60253	5.95797
	S0->X (-R)	0.18371	0.81230	8.26779
	S1->X (-R)	0.10567	0.70409	8.15215
sky130_fd_sc_hs__mux4_2	A0->X (RR)	0.12366	0.52050	5.90668
	A1->X (RR)	0.11856	0.51843	5.91094
	A2->X (RR)	0.11474	0.50990	5.88204
	A3->X (RR)	0.10913	0.50482	5.87616
	S0->X (-R)	0.17156	0.70660	8.24070
	S1->X (-R)	0.11321	0.62255	8.08219
sky130_fd_sc_hs__mux4_4	A0->X (RR)	0.14215	0.47252	6.09762
	A1->X (RR)	0.14597	0.47606	6.11385
	A2->X (RR)	0.14659	0.47874	6.09025
	A3->X (RR)	0.13949	0.47440	6.08503
	S0->X (-R)	0.24347	0.74786	8.53366
	S1->X (-R)	0.13212	0.60995	8.33667

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__mux4_1	A0->X (FF)	0.17961	0.64199	4.98910
	A1->X (FF)	0.18926	0.65967	5.04711
	A2->X (FF)	0.19447	0.67092	5.07081
	A3->X (FF)	0.19429	0.66878	5.06706
	S0->X (-F)	0.17871	0.67634	5.12435
	S1->X (-F)	0.08733	0.52508	4.93139
sky130_fd_sc_hs__mux4_2	A0->X (FF)	0.22379	0.69400	5.26116
	A1->X (FF)	0.22210	0.68844	5.24608
	A2->X (FF)	0.22141	0.68767	5.25164
	A3->X (FF)	0.21445	0.67541	5.22072
	S0->X (-F)	0.20365	0.69862	5.29746
	S1->X (-F)	0.10468	0.54112	5.12068
sky130_fd_sc_hs__mux4_4	A0->X (FF)	0.22750	0.64720	5.27124
	A1->X (FF)	0.22274	0.64123	5.24988
	A2->X (FF)	0.24847	0.67164	5.31998
	A3->X (FF)	0.23654	0.65810	5.28789
	S0->X (-F)	0.22382	0.69752	5.47584
	S1->X (-F)	0.11341	0.53128	5.20722

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux4_1	A0	0.01965	0.02090	0.06172
	A0	0.01185	0.01310	0.05449
	A1	0.01787	0.01903	0.05895
	A1	0.01015	0.01130	0.05179
	A2	0.01768	0.01892	0.05874
	A2	0.01010	0.01134	0.05173
	A3	0.01636	0.01758	0.05775
	A3	0.00848	0.00971	0.05044
	S0	0.03133	0.03857	0.21882
	S0	0.01261	0.01984	0.20059
	S1	0.01467	0.01964	0.12038
	S1	0.00500	0.00997	0.11080
sky130_fd_sc_hs__mux4_2	A0	0.02417	0.02543	0.06619
	A0	0.01550	0.01678	0.05759
	A1	0.02249	0.02380	0.06490
	A1	0.01388	0.01520	0.05635
	A2	0.02116	0.02247	0.06253
	A2	0.01295	0.01432	0.05449
	A3	0.01988	0.02132	0.06230
	A3	0.01180	0.01328	0.05442
	S0	0.03731	0.04447	0.22589
	S0	0.01790	0.02510	0.20764
	S1	0.01800	0.02310	0.12583
	S1	0.00795	0.01307	0.11618

sky130_fd_sc_hs__mux4_4	**A0**	0.04497	0.04706	0.12580
	A0	0.02968	0.03181	0.11266
	A1	0.04146	0.04345	0.12301
	A1	0.02651	0.02849	0.11016
	A2	0.04150	0.04342	0.12075
	A2	0.02657	0.02848	0.10796
	A3	0.03912	0.04118	0.11982
	A3	0.02411	0.02617	0.10693
	S0	0.06359	0.07282	0.33216
	S0	0.03386	0.04320	0.30401
	S1	0.03277	0.03803	0.17278
	S1	0.01774	0.02306	0.15977

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__mux4_1	**A0**	0.00682	0.00756	0.04960
	A0	0.01462	0.01538	0.05615
	A1	0.00884	0.00955	0.04994
	A1	0.01651	0.01722	0.05680
	A2	0.01009	0.01070	0.05088
	A2	0.01767	0.01826	0.05774
	A3	0.01141	0.01201	0.05262
	A3	0.01924	0.01982	0.05966
	S0	0.01081	0.01989	0.19834
	S0	0.02936	0.03856	0.21588
	S1	0.00346	0.01036	0.11774
	S1	0.01314	0.02003	0.12644

sky130_fd_sc_hs__mux4_2	**A0**	0.01450	0.01336	0.05374
	A0	0.02315	0.02201	0.06237
	A1	0.01612	0.01491	0.05566
	A1	0.02467	0.02347	0.06403
	A2	0.01576	0.01463	0.05524
	A2	0.02395	0.02284	0.06238
	A3	0.01678	0.01574	0.05698
	A3	0.02480	0.02376	0.06425
	S0	0.01653	0.02395	0.20322
	S0	0.03600	0.04351	0.22224
	S1	0.00913	0.01475	0.12352
	S1	0.01918	0.02447	0.13206
sky130_fd_sc_hs__mux4_4	**A0**	0.02742	0.02430	0.10610
	A0	0.04271	0.03979	0.11739
	A1	0.03124	0.02845	0.11063
	A1	0.04615	0.04343	0.12188
	A2	0.03197	0.02811	0.10839
	A2	0.04692	0.04305	0.11900
	A3	0.03434	0.03108	0.11218
	A3	0.04926	0.04597	0.12346
	S0	0.03209	0.03929	0.30184
	S0	0.06137	0.06877	0.32545
	S1	0.01958	0.02441	0.16426
	S1	0.03460	0.03921	0.17645

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)**	0.01039	0.01163	0.05396
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00421	0.00543	0.04778
	(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)	0.00205	0.00176	0.00173
	(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)	-0.00172	-0.00205	-0.00207
sky130_fd_sc_hs__mux4_2	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.01154	0.01271	0.05546
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00452	0.00565	0.04842
	(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)	0.00224	0.00194	0.00190
	(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)	-0.00167	-0.00200	-0.00203
sky130_fd_sc_hs__mux4_4	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.01946	0.02193	0.10462
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00735	0.00976	0.09251
	(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)	0.00397	0.00332	0.00324
	(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)	-0.00352	-0.00421	-0.00429

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)	0.00161	0.00289	0.04530
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00780	0.00910	0.05148
	(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)	-0.00168	-0.00171	-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)	0.00207	0.00209	0.00209
sky130_fd_sc_hs__mux4_2	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00255	0.00383	0.04645
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00958	0.01087	0.05348
	(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)	-0.00184	-0.00188	-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)	0.00204	0.00207	0.00206

sky130_fd_sc_hs__mux4_4	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.00364	0.00611	0.08879
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.01576	0.01825	0.10089
	(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)	-0.00314	-0.00321	-0.00321
	(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)	0.00430	0.00434	0.00432

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)**	0.00861	0.00978	0.05115
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00255	0.00371	0.04508
	(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)	0.00192	0.00161	0.00157
	(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	-0.00226	-0.00228

sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00988	0.01110	0.05402
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00294	0.00415	0.04709
	(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	0.00172	0.00169
	(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)	-0.00186	-0.00217	-0.00219
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.01591	0.01834	0.10205
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00416	0.00656	0.09032
	(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)	0.00382	0.00318	0.00309
	(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)	-0.00347	-0.00419	-0.00425

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)**	0.00354	0.00478	0.04596
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00962	0.01088	0.05202
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00150	-0.00155	-0.00156
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00230	0.00231	0.00231
sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00417	0.00539	0.04836
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.01113	0.01234	0.05527
	(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)	-0.00164	-0.00168	-0.00169
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00220	0.00221	0.00221
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00758	0.01001	0.09365
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.01934	0.02180	0.10534
	(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)	-0.00298	-0.00308	-0.00309
	(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)	0.00423	0.00426	0.00426

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)	0.00218	0.00185	0.00182
	(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)	-0.00163	-0.00198	-0.00201
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01064	0.01180	0.05289
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00441	0.00555	0.04667
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)	0.00244	0.00212	0.00208
	(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)	-0.00165	-0.00199	-0.00203
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01094	0.01207	0.05390
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00421	0.00530	0.04719

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)**	0.00409	0.00345	0.00336
	(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)	-0.00334	-0.00403	-0.00409
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01972	0.02203	0.10317
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00738	0.00964	0.09083

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)**	-0.00177	-0.00180	-0.00180
	(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	0.00203	0.00203
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00261	0.00381	0.04483
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00882	0.01006	0.05106

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)**	-0.00202	-0.00206	-0.00205
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00203	0.00205	0.00205
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00272	0.00394	0.04568
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00945	0.01069	0.05240
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)**	-0.00328	-0.00335	-0.00334
	(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)	0.00408	0.00413	0.00411
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00351	0.00594	0.08693
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01585	0.01831	0.09927

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)**	0.00933	0.01044	0.05200
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00285	0.00396	0.04552
	(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)	0.00238	0.00206	0.00202
	(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)	-0.00185	-0.00219	-0.00222
sky130_fd_sc_hs__mux4_2	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00969	0.01090	0.05354
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00312	0.00430	0.04697
	(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	0.00184	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)	-0.00178	-0.00211	-0.00213
sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.01742	0.01971	0.10244
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00510	0.00739	0.09013
	(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)	0.00398	0.00334	0.00326
	(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)	-0.00339	-0.00407	-0.00411

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)	0.00390	0.00509	0.04650
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.01040	0.01161	0.05298
	(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	-0.00201	-0.00201
	(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)	0.00224	0.00225	0.00224
sky130_fd_sc_hs__mux4_2	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00384	0.00509	0.04780
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.01043	0.01170	0.05435
	(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)	-0.00175	-0.00180	-0.00180
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00214	0.00216	0.00215

sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00656	0.00885	0.09144
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.01887	0.02123	0.10371
	(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)	-0.00314	-0.00325	-0.00326
	(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)	0.00411	0.00415	0.00414

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)**	0.01145	0.01415	0.08583
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00138	0.00127	0.07296
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01711	0.01948	0.09389
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00618	0.00852	0.08303
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01637	0.02156	0.14784
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00144	0.00655	0.13289
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01192	0.01469	0.08637
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00112	0.00158	0.07328
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01614	0.01886	0.09338
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00512	0.00778	0.08243
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01591	0.01871	0.09341
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00467	0.00742	0.08223
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01589	0.02115	0.14634
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00097	0.00617	0.13138
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01700	0.02230	0.14751
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00190	0.00712	0.13234
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01682	0.01924	0.09377
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00562	0.00801	0.08262
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01748	0.02262	0.14891
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00228	0.00738	0.13365

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.01273	0.01555	0.08767
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00002	0.00283	0.07497
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01832	0.02029	0.09536
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00790	0.00978	0.08504
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01767	0.02283	0.15015
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00270	0.00783	0.13515
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01260	0.01547	0.08771
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00011	0.00272	0.07493
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01894	0.02051	0.09529
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00892	0.01044	0.08533
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01837	0.02000	0.09484
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00828	0.00987	0.08485
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01776	0.02297	0.15058
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00241	0.00749	0.13517
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01812	0.02346	0.15106
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00272	0.00798	0.13561
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01740	0.01944	0.09468
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00693	0.00889	0.08428
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01891	0.02409	0.15149
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00388	0.00901	0.13644

sky130_fd_sc_hs__mux4_4	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.01788	0.02042	0.08962
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00035	0.00215	0.07137
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.02800	0.02886	0.10256
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01368	0.01449	0.08841
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.02674	0.03299	0.19661
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00441	0.01061	0.17424
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01806	0.02070	0.09000
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00040	0.00217	0.07146
	(A0 * !A1 * A2 * A3 * S1 * X)	0.02827	0.02974	0.10326
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01328	0.01470	0.08848
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.02740	0.02903	0.10297
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01215	0.01374	0.08787
	(!A0 * A1 * A2 * A3 * S1 * X)	0.02563	0.03253	0.20058
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00366	0.01050	0.17862
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.02680	0.03383	0.20199
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00463	0.01160	0.17973
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.02776	0.02866	0.10277
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01301	0.01381	0.08813
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.02873	0.03504	0.19875
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00598	0.01221	0.17589

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)**	0.00072	0.00440	0.07581
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.01350	0.01727	0.08869
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00815	0.01191	0.08686
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01907	0.02285	0.09758
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00290	0.00960	0.13543
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01781	0.02458	0.15041
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00041	0.00421	0.07530
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01343	0.01731	0.08839
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00780	0.01166	0.08593
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01881	0.02275	0.09669
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00816	0.01192	0.08607
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01943	0.02326	0.09700
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00193	0.00865	0.13341
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01682	0.02360	0.14836
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00095	0.00742	0.13226
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01607	0.02256	0.14742
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00864	0.01227	0.08708
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01987	0.02352	0.09809
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00194	0.00870	0.13436
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01716	0.02400	0.14964

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	-0.00130	0.00256	0.07461
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.01133	0.01522	0.08733
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00631	0.01009	0.08543
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01676	0.02060	0.09556
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00110	0.00780	0.13476
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01604	0.02280	0.14973
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00111	0.00267	0.07462
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01162	0.01546	0.08739
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00700	0.01083	0.08627
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01701	0.02091	0.09602
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00771	0.01137	0.08664
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01781	0.02157	0.09648
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00041	0.00711	0.13450
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01580	0.02251	0.14988
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00015	0.00685	0.13402
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01558	0.02231	0.14948
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00732	0.01104	0.08615
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01786	0.02154	0.09638
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	-0.00008	0.00668	0.13343
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01496	0.02179	0.14849

sky130_fd_sc_hs__mux4_4	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	-0.00185	0.00183	0.07171
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.01630	0.01998	0.08996
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01283	0.01639	0.09181
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.02712	0.03065	0.10545
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00131	0.00975	0.17320
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.02362	0.03211	0.19558
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00175	0.00194	0.07146
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01670	0.02044	0.08999
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01141	0.01553	0.08925
	(A0 * !A1 * A2 * A3 * S1 * X)	0.02632	0.03054	0.10367
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01264	0.01657	0.08995
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.02797	0.03193	0.10468
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00083	0.01006	0.17942
	(!A0 * A1 * A2 * A3 * S1 * X)	0.02276	0.03202	0.20135
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	-0.00011	0.00915	0.17811
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.02209	0.03138	0.20036
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01358	0.01683	0.09196
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.02839	0.03170	0.10602
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	-0.00033	0.00838	0.17117
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.02245	0.03129	0.19400

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)	0.00759	0.01120	0.08397
	(A1 * A3 * S0 * X)	-0.00053	0.00304	0.07583
	(A0 * A2 * !S0 * X)	0.00758	0.01119	0.08397
	(A0 * A2 * !S0 * X)	-0.00053	0.00303	0.07583
	(!A1 * !A3 * S0 * !X)	0.00793	0.01162	0.08438
	(!A1 * !A3 * S0 * !X)	-0.00046	0.00317	0.07598
	(!A0 * !A2 * !S0 * !X)	0.00793	0.01159	0.08438
	(!A0 * !A2 * !S0 * !X)	-0.00046	0.00321	0.07598
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	0.00796	0.01156	0.08400
	(A1 * A3 * S0 * X)	-0.00048	0.00306	0.07551
	(A0 * A2 * !S0 * X)	0.00796	0.01156	0.08400
	(A0 * A2 * !S0 * X)	-0.00048	0.00306	0.07551
	(!A1 * !A3 * S0 * !X)	0.00801	0.01171	0.08417
	(!A1 * !A3 * S0 * !X)	-0.00060	0.00303	0.07554
	(!A0 * !A2 * !S0 * !X)	0.00801	0.01170	0.08417
	(!A0 * !A2 * !S0 * !X)	-0.00060	0.00303	0.07554
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	0.01157	0.01452	0.08539
	(A1 * A3 * S0 * X)	-0.00037	0.00250	0.07338
	(A0 * A2 * !S0 * X)	0.01157	0.01452	0.08539
	(A0 * A2 * !S0 * X)	-0.00037	0.00250	0.07338
	(!A1 * !A3 * S0 * !X)	0.01170	0.01474	0.08566
	(!A1 * !A3 * S0 * !X)	-0.00080	0.00214	0.07311
	(!A0 * !A2 * !S0 * !X)	0.01170	0.01474	0.08566
	(!A0 * !A2 * !S0 * !X)	-0.00080	0.00214	0.07311

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)	-0.00112	0.00333	0.07595
	(A1 * A3 * S0 * X)	0.00701	0.01148	0.08405
	(A0 * A2 * !S0 * X)	-0.00112	0.00332	0.07595
	(A0 * A2 * !S0 * X)	0.00701	0.01147	0.08405
	(!A1 * !A3 * S0 * !X)	-0.00117	0.00308	0.07560
	(!A1 * !A3 * S0 * !X)	0.00721	0.01151	0.08402
	(!A0 * !A2 * !S0 * !X)	-0.00117	0.00308	0.07559
	(!A0 * !A2 * !S0 * !X)	0.00721	0.01150	0.08402
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	-0.00122	0.00346	0.07551
	(A1 * A3 * S0 * X)	0.00725	0.01196	0.08400
	(A0 * A2 * !S0 * X)	-0.00122	0.00345	0.07551
	(A0 * A2 * !S0 * X)	0.00725	0.01191	0.08400
	(!A1 * !A3 * S0 * !X)	-0.00113	0.00309	0.07539
	(!A1 * !A3 * S0 * !X)	0.00751	0.01176	0.08405
	(!A0 * !A2 * !S0 * !X)	-0.00113	0.00309	0.07539
	(!A0 * !A2 * !S0 * !X)	0.00751	0.01176	0.08405
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	-0.00172	0.00230	0.07333
	(A1 * A3 * S0 * X)	0.01029	0.01432	0.08528
	(A0 * A2 * !S0 * X)	-0.00172	0.00230	0.07333
	(A0 * A2 * !S0 * X)	0.01029	0.01432	0.08528
	(!A1 * !A3 * S0 * !X)	-0.00129	0.00281	0.07317
	(!A1 * !A3 * S0 * !X)	0.01127	0.01545	0.08573
	(!A0 * !A2 * !S0 * !X)	-0.00129	0.00283	0.07317
	(!A0 * !A2 * !S0 * !X)	0.01127	0.01542	0.08572

SKY130_FD_SC_HS__NAND2Bx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00237	0.00284	1.16248
sky130_fd_sc_hs__nand2b_2	0.00266	0.00539	2.06868
sky130_fd_sc_hs__nand2b_4	0.00393	0.00823	2.52178

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand2b_1	0.00000	0.35598	0.60610
sky130_fd_sc_hs__nand2b_2	0.00000	0.24483	0.41705
sky130_fd_sc_hs__nand2b_4	0.00000	0.71961	1.22917

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)	0.05360	0.50414	6.08112
	B->Y (FR)	0.03437	0.72955	10.28380
sky130_fd_sc_hs__nand2b_2	A_N->Y (RR)	0.05276	0.39203	5.25427
	B->Y (FR)	0.03269	0.64536	10.20240
sky130_fd_sc_hs__nand2b_4	A_N->Y (RR)	0.06389	0.42370	6.07983
	B->Y (FR)	0.04155	0.65146	10.56730

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)	0.06617	0.49849	5.43643
	B->Y (RF)	0.02379	0.42328	5.97084
sky130_fd_sc_hs__nand2b_2	A_N->Y (FF)	0.07186	0.48112	5.62392
	B->Y (RF)	0.02408	0.35015	5.77877
sky130_fd_sc_hs__nand2b_4	A_N->Y (FF)	0.05654	0.35717	4.01056
	B->Y (RF)	0.02076	0.23111	4.06952

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	0.00871	0.01189	0.07912
	A_N	0.00440	0.00761	0.07532
	B	0.00017	0.00189	0.01669
	B	0.00503	0.00677	0.02176
sky130_fd_sc_hs__nand2b_2	A_N	0.01159	0.01477	0.07173
	A_N	0.00714	0.01036	0.06729
	B	0.00001	0.00273	0.03210
	B	0.00952	0.01231	0.04177
sky130_fd_sc_hs__nand2b_4	A_N	0.01537	0.02125	0.13083
	A_N	0.00893	0.01488	0.12559
	B	-0.00051	0.00451	0.04748
	B	0.01398	0.01909	0.06256

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	A_N	0.00443	0.00857	0.07103
	A_N	0.00873	0.01285	0.07518
	B	0.00615	0.00653	0.01378
	B	0.00127	0.00161	0.00827
sky130_fd_sc_hs__nand2b_2	A_N	0.00775	0.01175	0.08110
	A_N	0.01220	0.01609	0.08475
	B	0.01189	0.01291	0.02792
	B	0.00228	0.00306	0.01632
sky130_fd_sc_hs__nand2b_4	A_N	0.01352	0.02066	0.13897
	A_N	0.01995	0.02705	0.14375
	B	0.02081	0.02207	0.04340
	B	0.00617	0.00745	0.02741

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	0.00713	0.01040	0.07716
	(!B * Y)	0.00258	0.00583	0.07261
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.01001	0.01301	0.08457
	(!B * Y)	0.00496	0.00792	0.07952
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.01227	0.01733	0.13527
	(!B * Y)	0.00486	0.00989	0.12785

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	-0.00000	0.00410	0.07084
	(!B * Y)	0.00456	0.00868	0.07541
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.00079	0.00449	0.07558
	(!B * Y)	0.00588	0.00959	0.08066
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.00148	0.00851	0.12646
	(!B * Y)	0.00895	0.01601	0.13392

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	0.00216	0.00217	0.00216
	(A_N * Y)	-0.00229	-0.00229	-0.00228
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	0.00372	0.00375	0.00373
	(A_N * Y)	-0.00469	-0.00471	-0.00470
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	0.00751	0.00755	0.00751
	(A_N * Y)	-0.00494	-0.00495	-0.00493

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	-0.00205	-0.00215	-0.00215
	(A_N * Y)	0.00237	0.00232	0.00230
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	-0.00353	-0.00374	-0.00373
	(A_N * Y)	0.00483	0.00475	0.00471
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	-0.00699	-0.00750	-0.00749
	(A_N * Y)	0.00533	0.00502	0.00497

SKY130_FD_SC_HS__NAND2x

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00284	0.00276	1.23345
sky130_fd_sc_hs__nand2_2	0.00545	0.00541	2.38242
sky130_fd_sc_hs__nand2_4	0.00828	0.00804	2.45772
sky130_fd_sc_hs__nand2_8	0.01586	0.01589	4.40368

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand2_1	0.00000	0.05477	0.20266
sky130_fd_sc_hs__nand2_2	0.00000	0.10954	0.40531
sky130_fd_sc_hs__nand2_4	0.00000	0.11775	0.40532
sky130_fd_sc_hs__nand2_8	0.00000	0.23550	0.81063

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)	0.02672	0.72533	10.46850
	B->Y (FR)	0.03317	0.73185	10.47640
sky130_fd_sc_hs__nand2_2	A->Y (FR)	0.02326	0.63016	10.45060
	B->Y (FR)	0.03168	0.63604	10.40490
sky130_fd_sc_hs__nand2_4	A->Y (FR)	0.03238	0.64706	10.65110
	B->Y (FR)	0.04908	0.66089	10.61590
sky130_fd_sc_hs__nand2_8	A->Y (FR)	0.02629	0.55802	10.22820
	B->Y (FR)	0.04094	0.55735	9.79655

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand2_1	A->Y (RF)	0.01890	0.47217	6.85307
	B->Y (RF)	0.02203	0.43228	6.23829
sky130_fd_sc_hs__nand2_2	A->Y (RF)	0.01824	0.42865	7.39158
	B->Y (RF)	0.02353	0.38566	6.65573
sky130_fd_sc_hs__nand2_4	A->Y (RF)	0.01661	0.28653	5.04200
	B->Y (RF)	0.02110	0.23723	4.11913
sky130_fd_sc_hs__nand2_8	A->Y (RF)	0.01486	0.24781	5.22186
	B->Y (RF)	0.01930	0.17788	3.83431

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	-0.00072	0.00087	0.01513
	A	0.00441	0.00600	0.02055
	B	-0.00013	0.00137	0.01591
	B	0.00616	0.00770	0.02250
sky130_fd_sc_hs__nand2_2	A	-0.00199	0.00198	0.02706
	A	0.00794	0.01192	0.03755
	B	0.00017	0.00382	0.02950
	B	0.01268	0.01638	0.04258
sky130_fd_sc_hs__nand2_4	A	-0.00382	0.00144	0.04264
	A	0.01125	0.01656	0.05823
	B	0.00010	0.00487	0.04740
	B	0.02019	0.02501	0.06799
sky130_fd_sc_hs__nand2_8	A	-0.00831	0.00278	0.09895
	A	0.02090	0.03198	0.12905
	B	-0.00132	0.00812	0.09673
	B	0.03835	0.04784	0.13631

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	0.00473	0.00529	0.01310
	A	-0.00039	0.00015	0.00730
	B	0.00602	0.00644	0.01317
	B	-0.00034	0.00001	0.00644
sky130_fd_sc_hs__nand2_2	A	0.00928	0.01048	0.02413
	A	-0.00066	0.00052	0.01395
	B	0.01212	0.01306	0.02629
	B	-0.00055	0.00019	0.01231
sky130_fd_sc_hs__nand2_4	A	0.01714	0.01897	0.04167
	A	0.00211	0.00393	0.02454
	B	0.02265	0.02391	0.04378
	B	0.00232	0.00343	0.02325
sky130_fd_sc_hs__nand2_8	A	0.02747	0.03182	0.08322
	A	-0.00169	0.00258	0.04871
	B	0.03899	0.04238	0.08631
	B	-0.00122	0.00190	0.04481

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	0.00064	0.00064	0.00063
	(!B * Y)	-0.00277	-0.00278	-0.00281
sky130_fd_sc_hs__nand2_2	(!B * Y)	0.00120	0.00120	0.00115
	(!B * Y)	-0.00539	-0.00542	-0.00550
sky130_fd_sc_hs__nand2_4	(!B * Y)	0.00236	0.00235	0.00225
	(!B * Y)	-0.00647	-0.00648	-0.00666
sky130_fd_sc_hs__nand2_8	(!B * Y)	0.00468	0.00464	0.00446
	(!B * Y)	-0.01250	-0.01249	-0.01284

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	-0.00061	-0.00062	-0.00061
	(!B * Y)	0.00280	0.00286	0.00281
sky130_fd_sc_hs__nand2_2	(!B * Y)	-0.00111	-0.00114	-0.00112
	(!B * Y)	0.00549	0.00561	0.00551
sky130_fd_sc_hs__nand2_4	(!B * Y)	-0.00221	-0.00220	-0.00219
	(!B * Y)	0.00668	0.00668	0.00666
sky130_fd_sc_hs__nand2_8	(!B * Y)	-0.00434	-0.00437	-0.00435
	(!B * Y)	0.01280	0.01290	0.01285

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!A * Y)	0.00183	0.00184	0.00183
	(!A * Y)	-0.00240	-0.00241	-0.00240
sky130_fd_sc_hs__nand2_2	(!A * Y)	0.00353	0.00356	0.00353
	(!A * Y)	-0.00470	-0.00472	-0.00469
sky130_fd_sc_hs__nand2_4	(!A * Y)	0.00706	0.00707	0.00706
	(!A * Y)	-0.00491	-0.00491	-0.00491
sky130_fd_sc_hs__nand2_8	(!A * Y)	0.01404	0.01413	0.01410
	(!A * Y)	-0.00979	-0.00983	-0.00982

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!A * Y)	-0.00171	-0.00183	-0.00183
	(!A * Y)	0.00247	0.00243	0.00241
sky130_fd_sc_hs__nand2_2	(!A * Y)	-0.00328	-0.00356	-0.00353
	(!A * Y)	0.00486	0.00475	0.00471
sky130_fd_sc_hs__nand2_4	(!A * Y)	-0.00649	-0.00707	-0.00706
	(!A * Y)	0.00528	0.00497	0.00492
sky130_fd_sc_hs__nand2_8	(!A * Y)	-0.01304	-0.01413	-0.01410
	(!A * Y)	0.01050	0.00990	0.00985

SKY130_FD_SC_HS__NAND3Bx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00222	0.00285	0.00277	1.20373
sky130_fd_sc_hs__nand3b_2	0.00263	0.00544	0.00541	2.36236
sky130_fd_sc_hs__nand3b_4	0.00373	0.00780	0.00788	2.13772

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand3b_1	0.00000	0.34243	0.60610
sky130_fd_sc_hs__nand3b_2	0.00000	0.21774	0.61971
sky130_fd_sc_hs__nand3b_4	0.00000	0.69074	1.22916

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)	0.05505	0.48099	5.79889
	B->Y (FR)	0.03927	0.74163	10.48900
	C->Y (FR)	0.04369	0.73612	10.32580
sky130_fd_sc_hs__nand3b_2	A_N->Y (RR)	0.05553	0.39714	5.69765
	B->Y (FR)	0.03402	0.63769	10.34450
	C->Y (FR)	0.04002	0.64916	10.45570
sky130_fd_sc_hs__nand3b_4	A_N->Y (RR)	0.06933	0.43357	5.74427
	B->Y (FR)	0.04719	0.63619	9.84373
	C->Y (FR)	0.06406	0.67190	10.18100

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)	0.07246	0.58680	6.86108
	B->Y (RF)	0.03393	0.52901	7.49882
	C->Y (RF)	0.03706	0.48161	6.77998
sky130_fd_sc_hs__nand3b_2	A_N->Y (FF)	0.08345	0.59952	8.00584
	B->Y (RF)	0.03518	0.49643	8.48765
	C->Y (RF)	0.03796	0.42580	7.43768
sky130_fd_sc_hs__nand3b_4	A_N->Y (FF)	0.07126	0.49055	6.24293
	B->Y (RF)	0.03921	0.43315	7.06055
	C->Y (RF)	0.04222	0.29639	4.96074

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	0.00847	0.01173	0.07923
	A_N	0.00469	0.00797	0.07565
	B	0.00056	0.00187	0.01481
	B	0.00556	0.00689	0.02007
	C	0.00110	0.00242	0.01571
	C	0.00702	0.00837	0.02190
sky130_fd_sc_hs__nand3b_2	A_N	0.01205	0.01552	0.08694
	A_N	0.00785	0.01136	0.08338
	B	0.00081	0.00295	0.02643
	B	0.01085	0.01302	0.03702
	C	0.00189	0.00456	0.02765
	C	0.01437	0.01710	0.04064
sky130_fd_sc_hs__nand3b_4	A_N	0.01618	0.02240	0.13720
	A_N	0.00980	0.01605	0.13147
	B	0.00116	0.00402	0.03774
	B	0.01533	0.01823	0.05187
	C	0.00274	0.00529	0.04047
	C	0.02234	0.02493	0.06040

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	A_N	0.00571	0.00987	0.07451
	A_N	0.00948	0.01364	0.07771
	B	0.00734	0.00758	0.01326
	B	0.00232	0.00257	0.00825
	C	0.00854	0.00877	0.01579
	C	0.00251	0.00272	0.00904
sky130_fd_sc_hs__nand3b_2	A_N	0.01037	0.01453	0.08034
	A_N	0.01456	0.01873	0.08408
	B	0.01390	0.01443	0.02475
	B	0.00383	0.00428	0.01448
	C	0.01655	0.01704	0.02976
	C	0.00384	0.00429	0.01647
sky130_fd_sc_hs__nand3b_4	A_N	0.01437	0.02141	0.13144
	A_N	0.02073	0.02776	0.13730
	B	0.02080	0.02149	0.03526
	B	0.00650	0.00705	0.02042
	C	0.02756	0.02836	0.04848
	C	0.00742	0.00814	0.02774

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)	0.00678	0.01020	0.07738
	(B * !C * Y)	0.00251	0.00591	0.07311
	(!B * Y)	0.00675	0.00998	0.07733
	(!B * Y)	0.00252	0.00572	0.07309
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.01041	0.01338	0.08510
	(B * !C * Y)	0.00503	0.00799	0.07972
	(!B * Y)	0.01026	0.01325	0.08496
	(!B * Y)	0.00503	0.00802	0.07974
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.01237	0.01754	0.13210
	(B * !C * Y)	0.00479	0.00995	0.12450
	(!B * Y)	0.01215	0.01736	0.13224
	(!B * Y)	0.00474	0.00993	0.12479

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)	0.00019	0.00433	0.07155
	(B * !C * Y)	0.00456	0.00871	0.07591
	(!B * Y)	0.00022	0.00437	0.07155
	(!B * Y)	0.00446	0.00862	0.07580
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.00069	0.00435	0.07556
	(B * !C * Y)	0.00626	0.00994	0.08109
	(!B * Y)	0.00088	0.00455	0.07571
	(!B * Y)	0.00613	0.00982	0.08097
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.00159	0.00837	0.12316
	(B * !C * Y)	0.00958	0.01639	0.13108
	(!B * Y)	0.00184	0.00865	0.12381
	(!B * Y)	0.00931	0.01615	0.13129

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)	0.00201	0.00202	0.00201
	(A_N * C * Y)	-0.00234	-0.00235	-0.00234
	(A_N * !C * Y)	0.00123	0.00124	0.00123
	(A_N * !C * Y)	-0.00235	-0.00236	-0.00235
	(!A_N * !C * Y)	0.00069	0.00070	0.00069
	(!A_N * !C * Y)	-0.00273	-0.00274	-0.00273
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	0.00373	0.00376	0.00375
	(A_N * C * Y)	-0.00481	-0.00484	-0.00483
	(A_N * !C * Y)	0.00224	0.00224	0.00223
	(A_N * !C * Y)	-0.00486	-0.00487	-0.00485
	(!A_N * !C * Y)	0.00150	0.00151	0.00153
	(!A_N * !C * Y)	-0.00516	-0.00518	-0.00517
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	0.00756	0.00759	0.00757
	(A_N * C * Y)	-0.00470	-0.00471	-0.00469
	(A_N * !C * Y)	0.00407	0.00405	0.00405
	(A_N * !C * Y)	-0.00523	-0.00521	-0.00521
	(!A_N * !C * Y)	0.00279	0.00278	0.00287
	(!A_N * !C * Y)	-0.00562	-0.00561	-0.00563

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)	-0.00187	-0.00201	-0.00200
	(A_N * C * Y)	0.00245	0.00238	0.00236
	(A_N * !C * Y)	-0.00123	-0.00124	-0.00123
	(A_N * !C * Y)	0.00246	0.00248	0.00238
	(!A_N * !C * Y)	-0.00067	-0.00067	-0.00067
	(!A_N * !C * Y)	0.00278	0.00282	0.00275
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	-0.00343	-0.00374	-0.00374
	(A_N * C * Y)	0.00510	0.00487	0.00485
	(A_N * !C * Y)	-0.00224	-0.00224	-0.00223
	(A_N * !C * Y)	0.00505	0.00513	0.00491
	(!A_N * !C * Y)	-0.00142	-0.00144	-0.00148
	(!A_N * !C * Y)	0.00526	0.00534	0.00522
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	-0.00638	-0.00757	-0.00757
	(A_N * C * Y)	0.00584	0.00478	0.00473
	(A_N * !C * Y)	-0.00407	-0.00405	-0.00405
	(A_N * !C * Y)	0.00574	0.00576	0.00538
	(!A_N * !C * Y)	-0.00273	-0.00275	-0.00279
	(!A_N * !C * Y)	0.00580	0.00584	0.00568

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)	0.00179	0.00179	0.00178
	(A_N * B * Y)	-0.00232	-0.00232	-0.00231
	(A_N * !B * Y)	0.00176	0.00177	0.00176
	(A_N * !B * Y)	-0.00231	-0.00232	-0.00231
	(!A_N * !B * Y)	0.00170	0.00172	0.00171
	(!A_N * !B * Y)	-0.00238	-0.00239	-0.00238
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	0.00378	0.00378	0.00376
	(A_N * B * Y)	-0.00467	-0.00466	-0.00465
	(A_N * !B * Y)	0.00381	0.00380	0.00381
	(A_N * !B * Y)	-0.00466	-0.00465	-0.00466
	(!A_N * !B * Y)	0.00341	0.00339	0.00340
	(!A_N * !B * Y)	-0.00507	-0.00505	-0.00506
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	0.00726	0.00734	0.00729
	(A_N * B * Y)	-0.00475	-0.00478	-0.00475
	(A_N * !B * Y)	0.00725	0.00737	0.00730
	(A_N * !B * Y)	-0.00478	-0.00483	-0.00481
	(!A_N * !B * Y)	0.00682	0.00686	0.00680
	(!A_N * !B * Y)	-0.00535	-0.00537	-0.00534

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)	-0.00166	-0.00177	-0.00177
	(A_N * B * Y)	0.00232	0.00235	0.00233
	(A_N * !B * Y)	-0.00172	-0.00177	-0.00176
	(A_N * !B * Y)	0.00233	0.00236	0.00233
	(!A_N * !B * Y)	-0.00162	-0.00171	-0.00171
	(!A_N * !B * Y)	0.00240	0.00242	0.00239
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	-0.00361	-0.00378	-0.00376
	(A_N * B * Y)	0.00467	0.00472	0.00467
	(A_N * !B * Y)	-0.00368	-0.00380	-0.00381
	(A_N * !B * Y)	0.00466	0.00471	0.00467
	(!A_N * !B * Y)	-0.00325	-0.00339	-0.00340
	(!A_N * !B * Y)	0.00509	0.00511	0.00507
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	-0.00689	-0.00734	-0.00729
	(A_N * B * Y)	0.00483	0.00483	0.00477
	(A_N * !B * Y)	-0.00692	-0.00737	-0.00730
	(A_N * !B * Y)	0.00490	0.00485	0.00481
	(!A_N * !B * Y)	-0.00635	-0.00686	-0.00680
	(!A_N * !B * Y)	0.00548	0.00538	0.00534

SKY130_FD_SC_HS__NAND3x

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00289	0.00293	0.00284	1.24433
sky130_fd_sc_hs__nand3_2	0.00542	0.00586	0.00538	1.93288
sky130_fd_sc_hs__nand3_4	0.00802	0.00793	0.00796	2.44411

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand3_1	0.00000	0.04122	0.30399
sky130_fd_sc_hs__nand3_2	0.00000	0.08244	0.60797
sky130_fd_sc_hs__nand3_4	0.00000	0.08889	0.60797

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)	0.03209	0.73107	10.51050
	B->Y (FR)	0.03946	0.73617	10.49120
	C->Y (FR)	0.04454	0.74432	10.52200
sky130_fd_sc_hs__nand3_2	A->Y (FR)	0.03006	0.65838	10.41140
	B->Y (FR)	0.03528	0.60761	9.35074
	C->Y (FR)	0.04189	0.62097	9.40010
sky130_fd_sc_hs__nand3_4	A->Y (FR)	0.03186	0.64461	10.60620
	B->Y (FR)	0.04916	0.65563	10.50840
	C->Y (FR)	0.05959	0.66049	10.36920

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand3_1	A->Y (RF)	0.02737	0.56665	8.19296
	B->Y (RF)	0.03329	0.53705	7.70169
	C->Y (RF)	0.03585	0.48984	6.98532
sky130_fd_sc_hs__nand3_2	A->Y (RF)	0.02316	0.45837	7.44567
	B->Y (RF)	0.03132	0.43507	6.98576
	C->Y (RF)	0.03563	0.38978	6.23594
sky130_fd_sc_hs__nand3_4	A->Y (RF)	0.01839	0.35159	6.13708
	B->Y (RF)	0.02640	0.31464	5.39682
	C->Y (RF)	0.02947	0.25599	4.41594

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	-0.00055	0.00084	0.01390
	A	0.00491	0.00630	0.01963
	B	0.00028	0.00156	0.01432
	B	0.00692	0.00820	0.02122
	C	0.00072	0.00192	0.01479
	C	0.00862	0.00986	0.02296
sky130_fd_sc_hs__nand3_2	A	-0.00183	0.00162	0.02574
	A	0.00851	0.01199	0.03647
	B	0.00043	0.00360	0.02980
	B	0.01365	0.01661	0.04320
	C	0.00210	0.00433	0.03362
	C	0.01754	0.01977	0.04919
sky130_fd_sc_hs__nand3_4	A	-0.00371	0.00094	0.03877
	A	0.01149	0.01616	0.05449
	B	0.00047	0.00352	0.04272
	B	0.02066	0.02378	0.06346
	C	0.00275	0.00666	0.04666
	C	0.02827	0.03227	0.07274

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	0.00648	0.00696	0.01371
	A	0.00104	0.00149	0.00817
	B	0.00778	0.00801	0.01389
	B	0.00109	0.00132	0.00689
	C	0.00908	0.00933	0.01566
	C	0.00104	0.00123	0.00737
sky130_fd_sc_hs__nand3_2	A	0.01109	0.01218	0.02561
	A	0.00078	0.00179	0.01530
	B	0.01393	0.01457	0.02769
	B	0.00059	0.00110	0.01344
	C	0.01645	0.01701	0.03144
	C	0.00066	0.00117	0.01566
sky130_fd_sc_hs__nand3_4	A	0.01660	0.01828	0.03898
	A	0.00146	0.00302	0.02113
	B	0.02206	0.02300	0.03973
	B	0.00161	0.00245	0.01902
	C	0.02752	0.02841	0.04956
	C	0.00135	0.00215	0.02145

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	0.00060	0.00060	0.00057
	(B * !C * Y)	-0.00271	-0.00273	-0.00281
	(!B * Y)	0.00062	0.00062	0.00060
	(!B * Y)	-0.00278	-0.00277	-0.00281
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	0.00119	0.00119	0.00108
	(B * !C * Y)	-0.00508	-0.00511	-0.00529
	(!B * Y)	0.00125	0.00125	0.00119
	(!B * Y)	-0.00520	-0.00522	-0.00530
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	0.00219	0.00220	0.00203
	(B * !C * Y)	-0.00605	-0.00610	-0.00646
	(!B * Y)	0.00228	0.00229	0.00219
	(!B * Y)	-0.00628	-0.00633	-0.00650

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	-0.00058	-0.00058	-0.00057
	(B * !C * Y)	0.00282	0.00285	0.00281
	(!B * Y)	-0.00059	-0.00060	-0.00059
	(!B * Y)	0.00282	0.00286	0.00282
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	-0.00108	-0.00110	-0.00108
	(B * !C * Y)	0.00529	0.00540	0.00531
	(!B * Y)	-0.00115	-0.00118	-0.00116
	(!B * Y)	0.00529	0.00540	0.00531
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	-0.00207	-0.00206	-0.00203
	(B * !C * Y)	0.00651	0.00651	0.00650
	(!B * Y)	-0.00215	-0.00214	-0.00213
	(!B * Y)	0.00652	0.00652	0.00651

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	0.00079	0.00079	0.00079
	(A * !C * Y)	-0.00240	-0.00239	-0.00239
	(!A * C * Y)	0.00178	0.00179	0.00179
	(!A * C * Y)	-0.00239	-0.00240	-0.00240
	(!A * !C * Y)	0.00093	0.00093	0.00093
	(!A * !C * Y)	-0.00240	-0.00241	-0.00240
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	0.00158	0.00159	0.00160
	(A * !C * Y)	-0.00501	-0.00503	-0.00500
	(!A * C * Y)	0.00353	0.00358	0.00355
	(!A * C * Y)	-0.00497	-0.00502	-0.00499
	(!A * !C * Y)	0.00195	0.00195	0.00195
	(!A * !C * Y)	-0.00504	-0.00504	-0.00504
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	0.00285	0.00285	0.00287
	(A * !C * Y)	-0.00494	-0.00494	-0.00491
	(!A * C * Y)	0.00692	0.00698	0.00696
	(!A * C * Y)	-0.00492	-0.00494	-0.00493
	(!A * !C * Y)	0.00343	0.00345	0.00344
	(!A * !C * Y)	-0.00498	-0.00500	-0.00499

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	-0.00076	-0.00076	-0.00077
	(A * !C * Y)	0.00245	0.00247	0.00241
	(!A * C * Y)	-0.00163	-0.00179	-0.00179
	(!A * C * Y)	0.00251	0.00243	0.00240
	(!A * !C * Y)	-0.00093	-0.00093	-0.00093
	(!A * !C * Y)	0.00249	0.00253	0.00243
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	-0.00149	-0.00151	-0.00154
	(A * !C * Y)	0.00512	0.00518	0.00505
	(!A * C * Y)	-0.00320	-0.00354	-0.00355
	(!A * C * Y)	0.00520	0.00504	0.00501
	(!A * !C * Y)	-0.00195	-0.00195	-0.00195
	(!A * !C * Y)	0.00525	0.00532	0.00510
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	-0.00268	-0.00273	-0.00278
	(A * !C * Y)	0.00514	0.00521	0.00500
	(!A * C * Y)	-0.00624	-0.00698	-0.00696
	(!A * C * Y)	0.00556	0.00498	0.00495
	(!A * !C * Y)	-0.00343	-0.00345	-0.00344
	(!A * !C * Y)	0.00538	0.00547	0.00509

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	0.00189	0.00190	0.00189
	(A * !B * Y)	-0.00242	-0.00242	-0.00241
	(!A * B * Y)	0.00189	0.00189	0.00188
	(!A * B * Y)	-0.00241	-0.00242	-0.00241
	(!A * !B * Y)	0.00189	0.00190	0.00189
	(!A * !B * Y)	-0.00242	-0.00243	-0.00241
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	0.00352	0.00354	0.00351
	(A * !B * Y)	-0.00474	-0.00477	-0.00474
	(!A * B * Y)	0.00347	0.00348	0.00347
	(!A * B * Y)	-0.00474	-0.00475	-0.00474
	(!A * !B * Y)	0.00352	0.00353	0.00351
	(!A * !B * Y)	-0.00474	-0.00475	-0.00474
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	0.00703	0.00710	0.00707
	(A * !B * Y)	-0.00498	-0.00500	-0.00499
	(!A * B * Y)	0.00684	0.00691	0.00688
	(!A * B * Y)	-0.00497	-0.00500	-0.00499
	(!A * !B * Y)	0.00704	0.00709	0.00706
	(!A * !B * Y)	-0.00498	-0.00500	-0.00499

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	-0.00183	-0.00189	-0.00189
	(A * !B * Y)	0.00242	0.00244	0.00242
	(!A * B * Y)	-0.00174	-0.00188	-0.00188
	(!A * B * Y)	0.00241	0.00245	0.00242
	(!A * !B * Y)	-0.00184	-0.00190	-0.00189
	(!A * !B * Y)	0.00243	0.00244	0.00242
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	-0.00331	-0.00350	-0.00351
	(A * !B * Y)	0.00474	0.00479	0.00475
	(!A * B * Y)	-0.00318	-0.00346	-0.00347
	(!A * B * Y)	0.00477	0.00480	0.00475
	(!A * !B * Y)	-0.00333	-0.00351	-0.00351
	(!A * !B * Y)	0.00474	0.00479	0.00475
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	-0.00673	-0.00710	-0.00707
	(A * !B * Y)	0.00499	0.00504	0.00501
	(!A * B * Y)	-0.00644	-0.00691	-0.00688
	(!A * B * Y)	0.00503	0.00506	0.00501
	(!A * !B * Y)	-0.00679	-0.00709	-0.00706
	(!A * !B * Y)	0.00500	0.00504	0.00500

SKY130_FD_SC_HS__NAND4BBx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00225	0.00219	0.00292	0.00294	1.15567
sky130_fd_sc_hs__nand4bb_2	0.00257	0.00254	0.00550	0.00543	1.84437
sky130_fd_sc_hs__nand4bb_4	0.00361	0.00372	0.01072	0.01075	2.91750

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4bb_1	0.00000	0.63011	1.19620
sky130_fd_sc_hs__nand4bb_2	0.00000	0.32597	0.83410
sky130_fd_sc_hs__nand4bb_4	0.00000	1.31447	2.39435

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)	0.06409	0.51659	6.11170
	B_N->Y (RR)	0.07268	0.52252	6.07165
	C->Y (FR)	0.05120	0.74278	10.22910
	D->Y (FR)	0.05749	0.75191	10.25410
sky130_fd_sc_hs__nand4bb_2	A_N->Y (RR)	0.05972	0.36755	4.51317
	B_N->Y (RR)	0.06804	0.35986	4.17914
	C->Y (FR)	0.04156	0.60215	8.94894
	D->Y (FR)	0.04759	0.61226	9.02186
sky130_fd_sc_hs__nand4bb_4	A_N->Y (RR)	0.07284	0.33222	3.92904
	B_N->Y (RR)	0.08492	0.35049	4.04449
	C->Y (FR)	0.04042	0.52351	8.31850
	D->Y (FR)	0.04574	0.53651	8.39442

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)	0.08442	0.68526	8.21294
	B_N->Y (FF)	0.09356	0.69700	8.19203
	C->Y (RF)	0.05569	0.60033	8.23607
	D->Y (RF)	0.06036	0.56638	7.66540
sky130_fd_sc_hs__nand4bb_2	A_N->Y (FF)	0.09514	0.65732	8.41995
	B_N->Y (FF)	0.11384	0.68137	8.42000
	C->Y (RF)	0.05747	0.50143	7.86497
	D->Y (RF)	0.06189	0.47146	7.31778
sky130_fd_sc_hs__nand4bb_4	A_N->Y (FF)	0.09662	0.56208	7.59636
	B_N->Y (FF)	0.11048	0.57828	7.56130
	C->Y (RF)	0.06064	0.41058	7.26478
	D->Y (RF)	0.06439	0.37248	6.58260

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	0.00882	0.01205	0.07949
	A_N	0.00552	0.00877	0.07668
	B_N	0.00959	0.01266	0.07982
	B_N	0.00640	0.00948	0.07697
	C	0.00136	0.00243	0.01415
	C	0.00681	0.00788	0.01977
	D	0.00203	0.00306	0.01545
	D	0.00856	0.00962	0.02216
sky130_fd_sc_hs__nand4bb_2	A_N	0.01252	0.01598	0.08734
	A_N	0.00897	0.01246	0.08465
	B_N	0.01539	0.01848	0.08932
	B_N	0.01195	0.01506	0.08604
	C	0.00225	0.00401	0.02843
	C	0.01218	0.01400	0.03851
	D	0.00400	0.00564	0.03041
	D	0.01643	0.01757	0.04282
sky130_fd_sc_hs__nand4bb_4	A_N	0.02098	0.02643	0.14176
	A_N	0.01637	0.02184	0.13788
	B_N	0.02549	0.03041	0.14688
	B_N	0.02071	0.02572	0.14292
	C	0.00362	0.00815	0.06901
	C	0.02325	0.02802	0.08762
	D	0.00640	0.01076	0.07449
	D	0.03108	0.03557	0.09925

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4bb_1	A_N	0.00714	0.01123	0.07841
	A_N	0.01043	0.01453	0.08164
	B_N	0.00889	0.01295	0.08006
	B_N	0.01207	0.01613	0.08315
	C	0.01056	0.01067	0.01621
	C	0.00510	0.00519	0.01069
	D	0.01190	0.01200	0.01878
	D	0.00526	0.00534	0.01171
sky130_fd_sc_hs__nand4bb_2	A_N	0.01224	0.01622	0.08714
	A_N	0.01577	0.01975	0.09063
	B_N	0.01538	0.01944	0.08986
	B_N	0.01882	0.02286	0.09323
	C	0.01867	0.01891	0.03156
	C	0.00868	0.00887	0.02081
	D	0.02136	0.02158	0.03515
	D	0.00862	0.00875	0.02193
sky130_fd_sc_hs__nand4bb_4	A_N	0.02470	0.03184	0.14987
	A_N	0.02931	0.03629	0.15389
	B_N	0.03002	0.03689	0.15561
	B_N	0.03480	0.04158	0.15953
	C	0.03673	0.03747	0.07349
	C	0.01692	0.01768	0.05291
	D	0.04213	0.04297	0.08426
	D	0.01687	0.01753	0.05822

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)	0.00639	0.00964	0.07604
	(B_N * Y)	0.00230	0.00553	0.07195
	(!B_N * C * !D * Y)	0.00698	0.01022	0.07662
	(!B_N * C * !D * Y)	0.00287	0.00608	0.07251
	(!B_N * !C * Y)	0.00697	0.01021	0.07662
	(!B_N * !C * Y)	0.00288	0.00609	0.07252
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.00962	0.01262	0.08317
	(B_N * Y)	0.00513	0.00811	0.07869
	(!B_N * C * !D * Y)	0.01033	0.01331	0.08384
	(!B_N * C * !D * Y)	0.00580	0.00876	0.07933
	(!B_N * !C * Y)	0.01032	0.01330	0.08384
	(!B_N * !C * Y)	0.00581	0.00876	0.07934
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.01582	0.02040	0.13534
	(B_N * Y)	0.00935	0.01392	0.12887
	(!B_N * C * !D * Y)	0.01678	0.02135	0.13631
	(!B_N * C * !D * Y)	0.01022	0.01478	0.12977
	(!B_N * !C * Y)	0.01676	0.02133	0.13630
	(!B_N * !C * Y)	0.01025	0.01481	0.12979

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)	0.00046	0.00447	0.07087
	(B_N * Y)	0.00456	0.00858	0.07497
	(!B_N * C * !D * Y)	-0.00010	0.00393	0.07030
	(!B_N * C * !D * Y)	0.00413	0.00817	0.07451
	(!B_N * !C * Y)	-0.00012	0.00391	0.07029
	(!B_N * !C * Y)	0.00402	0.00805	0.07442
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.00140	0.00503	0.07490
	(B_N * Y)	0.00587	0.00953	0.07938
	(!B_N * C * !D * Y)	0.00073	0.00438	0.07420
	(!B_N * C * !D * Y)	0.00548	0.00912	0.07891
	(!B_N * !C * Y)	0.00069	0.00433	0.07419
	(!B_N * !C * Y)	0.00524	0.00890	0.07875
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.00290	0.00929	0.12476
	(B_N * Y)	0.00935	0.01579	0.13122
	(!B_N * C * !D * Y)	0.00205	0.00849	0.12387
	(!B_N * C * !D * Y)	0.00909	0.01556	0.13082
	(!B_N * !C * Y)	0.00199	0.00843	0.12386
	(!B_N * !C * Y)	0.00860	0.01508	0.13045

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)	0.00632	0.00920	0.07525
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00236	0.00520	0.07126
	(!C * Y)	0.00642	0.00950	0.07574
	(!C * Y)	0.00232	0.00539	0.07163
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00937	0.01185	0.08148
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00498	0.00745	0.07709
	(!C * Y)	0.00958	0.01243	0.08242
	(!C * Y)	0.00496	0.00781	0.07781
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.01566	0.01912	0.13278
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00903	0.01247	0.12613
	(!C * Y)	0.01630	0.02033	0.13465
	(!C * Y)	0.00918	0.01320	0.12750

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)	0.00150	0.00556	0.07166
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00548	0.00955	0.07565
	(!C * Y)	0.00076	0.00484	0.07108
	(!C * Y)	0.00483	0.00891	0.07517
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00352	0.00708	0.07638
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00791	0.01146	0.08077
	(!C * Y)	0.00208	0.00567	0.07526
	(!C * Y)	0.00666	0.01024	0.07984
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00657	0.01272	0.12782
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.01320	0.01937	0.13445
	(!C * Y)	0.00367	0.00989	0.12535
	(!C * Y)	0.01071	0.01694	0.13241

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)**	0.00193	0.00195	0.00194
	(A_N * B_N * D * Y)	-0.00244	-0.00246	-0.00245
	(A_N * B_N * !D * Y)	0.00127	0.00127	0.00127
	(A_N * B_N * !D * Y)	-0.00247	-0.00247	-0.00246
	(A_N * !B_N * D * Y)	0.00168	0.00168	0.00168
	(A_N * !B_N * D * Y)	-0.00273	-0.00273	-0.00272
	(A_N * !B_N * !D * Y)	0.00092	0.00093	0.00092
	(A_N * !B_N * !D * Y)	-0.00295	-0.00297	-0.00296
	(!A_N * B_N * D * Y)	0.00193	0.00193	0.00193
	(!A_N * B_N * D * Y)	-0.00245	-0.00245	-0.00245
	(!A_N * B_N * !D * Y)	0.00121	0.00122	0.00121
	(!A_N * B_N * !D * Y)	-0.00246	-0.00248	-0.00247
	(!A_N * !B_N * !D * Y)	0.00075	0.00074	0.00075
	(!A_N * !B_N * !D * Y)	-0.00275	-0.00275	-0.00275
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	0.00367	0.00370	0.00367
	(A_N * B_N * D * Y)	-0.00481	-0.00484	-0.00481
	(A_N * B_N * !D * Y)	0.00223	0.00225	0.00224
	(A_N * B_N * !D * Y)	-0.00481	-0.00483	-0.00482
	(A_N * !B_N * D * Y)	0.00359	0.00360	0.00359
	(A_N * !B_N * D * Y)	-0.00494	-0.00494	-0.00493
	(A_N * !B_N * !D * Y)	0.00203	0.00204	0.00202
	(A_N * !B_N * !D * Y)	-0.00541	-0.00543	-0.00540
	(!A_N * B_N * D * Y)	0.00366	0.00368	0.00367
	(!A_N * B_N * D * Y)	-0.00481	-0.00483	-0.00482
	(!A_N * B_N * !D * Y)	0.00212	0.00216	0.00213
	(!A_N * B_N * !D * Y)	-0.00482	-0.00486	-0.00483
	(!A_N * !B_N * !D * Y)	0.00162	0.00161	0.00163
	(!A_N * !B_N * !D * Y)	-0.00496	-0.00495	-0.00496

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * D * Y)**	0.00726	0.00732	0.00729
	(A_N * B_N * D * Y)	-0.00940	-0.00945	-0.00943
	(A_N * B_N * !D * Y)	0.00441	0.00448	0.00442
	(A_N * B_N * !D * Y)	-0.00942	-0.00950	-0.00944
	(A_N * !B_N * D * Y)	0.00709	0.00710	0.00708
	(A_N * !B_N * D * Y)	-0.00976	-0.00976	-0.00974
	(A_N * !B_N * !D * Y)	0.00387	0.00390	0.00386
	(A_N * !B_N * !D * Y)	-0.01071	-0.01077	-0.01070
	(!A_N * B_N * D * Y)	0.00725	0.00731	0.00729
	(!A_N * B_N * D * Y)	-0.00941	-0.00946	-0.00943
	(!A_N * B_N * !D * Y)	0.00420	0.00420	0.00419
	(!A_N * B_N * !D * Y)	-0.00948	-0.00948	-0.00947
	(!A_N * !B_N * !D * Y)	0.00307	0.00308	0.00312
	(!A_N * !B_N * !D * Y)	-0.00981	-0.00983	-0.00984

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)**	-0.00188	-0.00193	-0.00192
	(A_N * B_N * D * Y)	0.00247	0.00250	0.00248
	(A_N * B_N * !D * Y)	-0.00127	-0.00127	-0.00127
	(A_N * B_N * !D * Y)	0.00248	0.00251	0.00249
	(A_N * !B_N * D * Y)	-0.00153	-0.00166	-0.00168
	(A_N * !B_N * D * Y)	0.00284	0.00275	0.00272
	(A_N * !B_N * !D * Y)	-0.00092	-0.00093	-0.00092
	(A_N * !B_N * !D * Y)	0.00300	0.00307	0.00302
	(!A_N * B_N * D * Y)	-0.00186	-0.00193	-0.00192
	(!A_N * B_N * D * Y)	0.00249	0.00249	0.00247
	(!A_N * B_N * !D * Y)	-0.00121	-0.00122	-0.00121
	(!A_N * B_N * !D * Y)	0.00258	0.00260	0.00251
	(!A_N * !B_N * !D * Y)	-0.00071	-0.00071	-0.00071
	(!A_N * !B_N * !D * Y)	0.00280	0.00282	0.00278
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	-0.00357	-0.00367	-0.00366
	(A_N * B_N * D * Y)	0.00481	0.00486	0.00484
	(A_N * B_N * !D * Y)	-0.00223	-0.00225	-0.00224
	(A_N * B_N * !D * Y)	0.00483	0.00490	0.00485
	(A_N * !B_N * D * Y)	-0.00328	-0.00357	-0.00359
	(A_N * !B_N * D * Y)	0.00520	0.00499	0.00493
	(A_N * !B_N * !D * Y)	-0.00203	-0.00204	-0.00202
	(A_N * !B_N * !D * Y)	0.00547	0.00560	0.00552
	(!A_N * B_N * D * Y)	-0.00353	-0.00367	-0.00366
	(!A_N * B_N * D * Y)	0.00487	0.00486	0.00484
	(!A_N * B_N * !D * Y)	-0.00212	-0.00216	-0.00213
	(!A_N * B_N * !D * Y)	0.00501	0.00507	0.00490
	(!A_N * !B_N * !D * Y)	-0.00152	-0.00154	-0.00153
	(!A_N * !B_N * !D * Y)	0.00505	0.00511	0.00504

sky130_fd_sc_hs__nand4bb_4	(A_N * B_N * D * Y)	-0.00710	-0.00732	-0.00729
	(A_N * B_N * D * Y)	0.00944	0.00954	0.00949
	(A_N * B_N * !D * Y)	-0.00441	-0.00448	-0.00442
	(A_N * B_N * !D * Y)	0.00947	0.00962	0.00951
	(A_N * !B_N * D * Y)	-0.00639	-0.00710	-0.00708
	(A_N * !B_N * D * Y)	0.01035	0.00983	0.00974
	(A_N * !B_N * !D * Y)	-0.00387	-0.00390	-0.00386
	(A_N * !B_N * !D * Y)	0.01088	0.01106	0.01097
	(!A_N * B_N * D * Y)	-0.00697	-0.00731	-0.00729
	(!A_N * B_N * D * Y)	0.00960	0.00953	0.00948
	(!A_N * B_N * !D * Y)	-0.00420	-0.00420	-0.00419
	(!A_N * B_N * !D * Y)	0.00988	0.01002	0.00964
	(!A_N * !B_N * !D * Y)	-0.00291	-0.00295	-0.00295
	(!A_N * !B_N * !D * Y)	0.00999	0.01014	0.00998

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)	0.00170	0.00171	0.00170
	(A_N * B_N * C * Y)	-0.00258	-0.00258	-0.00258
	(A_N * !C * Y)	0.00172	0.00175	0.00173
	(A_N * !C * Y)	-0.00257	-0.00259	-0.00258
	(A_N * !B_N * C * Y)	0.00167	0.00168	0.00167
	(A_N * !B_N * C * Y)	-0.00262	-0.00264	-0.00263
	(!A_N * B_N * C * Y)	0.00171	0.00171	0.00170
	(!A_N * B_N * C * Y)	-0.00259	-0.00258	-0.00258
	(!A_N * B_N * !C * Y)	0.00172	0.00174	0.00172
	(!A_N * B_N * !C * Y)	-0.00258	-0.00260	-0.00258
	(!A_N * !B_N * !C * Y)	0.00171	0.00173	0.00172
	(!A_N * !B_N * !C * Y)	-0.00258	-0.00259	-0.00259

sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	0.00358	0.00359	0.00357
	(A_N * B_N * C * Y)	-0.00471	-0.00471	-0.00470
	(A_N * !C * Y)	0.00361	0.00364	0.00361
	(A_N * !C * Y)	-0.00471	-0.00473	-0.00470
	(A_N * !B_N * C * Y)	0.00352	0.00355	0.00353
	(A_N * !B_N * C * Y)	-0.00480	-0.00483	-0.00479
	(!A_N * B_N * C * Y)	0.00358	0.00361	0.00357
	(!A_N * B_N * C * Y)	-0.00472	-0.00474	-0.00471
	(!A_N * B_N * !C * Y)	0.00361	0.00364	0.00361
	(!A_N * B_N * !C * Y)	-0.00471	-0.00473	-0.00471
	(!A_N * !B_N * !C * Y)	0.00361	0.00362	0.00361
	(!A_N * !B_N * !C * Y)	-0.00471	-0.00472	-0.00471
sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	0.00709	0.00716	0.00713
	(A_N * B_N * C * Y)	-0.00933	-0.00938	-0.00936
	(A_N * !C * Y)	0.00715	0.00721	0.00718
	(A_N * !C * Y)	-0.00934	-0.00939	-0.00936
	(A_N * !B_N * C * Y)	0.00712	0.00713	0.00710
	(A_N * !B_N * C * Y)	-0.00956	-0.00957	-0.00954
	(!A_N * B_N * C * Y)	0.00707	0.00711	0.00705
	(!A_N * B_N * C * Y)	-0.00940	-0.00941	-0.00938
	(!A_N * B_N * !C * Y)	0.00714	0.00722	0.00717
	(!A_N * B_N * !C * Y)	-0.00935	-0.00941	-0.00937
	(!A_N * !B_N * !C * Y)	0.00713	0.00719	0.00716
	(!A_N * !B_N * !C * Y)	-0.00936	-0.00940	-0.00939

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)**	-0.00159	-0.00170	-0.00170
	(A_N * B_N * C * Y)	0.00260	0.00263	0.00260
	(A_N * !C * Y)	-0.00164	-0.00171	-0.00171
	(A_N * !C * Y)	0.00259	0.00262	0.00260
	(A_N * !B_N * C * Y)	-0.00154	-0.00168	-0.00167
	(A_N * !B_N * C * Y)	0.00269	0.00266	0.00263
	(!A_N * B_N * C * Y)	-0.00159	-0.00170	-0.00170
	(!A_N * B_N * C * Y)	0.00259	0.00263	0.00260
	(!A_N * B_N * !C * Y)	-0.00165	-0.00171	-0.00172
	(!A_N * B_N * !C * Y)	0.00259	0.00262	0.00260
	(!A_N * !B_N * !C * Y)	-0.00164	-0.00172	-0.00172
	(!A_N * !B_N * !C * Y)	0.00260	0.00261	0.00259
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	-0.00331	-0.00356	-0.00357
	(A_N * B_N * C * Y)	0.00472	0.00478	0.00473
	(A_N * !C * Y)	-0.00343	-0.00361	-0.00361
	(A_N * !C * Y)	0.00471	0.00476	0.00473
	(A_N * !B_N * C * Y)	-0.00324	-0.00354	-0.00353
	(A_N * !B_N * C * Y)	0.00496	0.00487	0.00479
	(!A_N * B_N * C * Y)	-0.00331	-0.00356	-0.00357
	(!A_N * B_N * C * Y)	0.00472	0.00478	0.00472
	(!A_N * B_N * !C * Y)	-0.00343	-0.00361	-0.00361
	(!A_N * B_N * !C * Y)	0.00471	0.00476	0.00472
	(!A_N * !B_N * !C * Y)	-0.00339	-0.00361	-0.00361
	(!A_N * !B_N * !C * Y)	0.00476	0.00476	0.00472

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	-0.00662	-0.00710	-0.00713
	(A_N * B_N * C * Y)	0.00945	0.00954	0.00943
	(A_N * !C * Y)	-0.00684	-0.00718	-0.00717
	(A_N * !C * Y)	0.00940	0.00950	0.00943
	(A_N * !B_N * C * Y)	-0.00647	-0.00705	-0.00710
	(A_N * !B_N * C * Y)	0.00987	0.00971	0.00956
	(!A_N * B_N * C * Y)	-0.00663	-0.00710	-0.00705
	(!A_N * B_N * C * Y)	0.00945	0.00953	0.00942
	(!A_N * B_N * !C * Y)	-0.00685	-0.00719	-0.00717
	(!A_N * B_N * !C * Y)	0.00939	0.00949	0.00942
	(!A_N * !B_N * !C * Y)	-0.00677	-0.00719	-0.00716
	(!A_N * !B_N * !C * Y)	0.00949	0.00949	0.00941

SKY130_FD_SC_HS__NAND4Bx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00221	0.00287	0.00287	0.00278	1.20846
sky130_fd_sc_hs__nand4b_2	0.00277	0.00565	0.00549	0.00549	1.88604
sky130_fd_sc_hs__nand4b_4	0.00387	0.00801	0.00817	0.00785	2.36793

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4b_1	0.00000	0.32890	0.60610
sky130_fd_sc_hs__nand4b_2	0.00000	0.19068	0.82237
sky130_fd_sc_hs__nand4b_4	0.00000	0.66195	1.22917

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)	0.05755	0.47632	5.65644
	B->Y (FR)	0.04120	0.74340	10.50390
	C->Y (FR)	0.04798	0.75047	10.50700
	D->Y (FR)	0.05076	0.74459	10.34060
sky130_fd_sc_hs__nand4b_2	A_N->Y (RR)	0.05842	0.34894	4.19066
	B->Y (FR)	0.03673	0.59723	9.03279
	C->Y (FR)	0.04347	0.61195	9.17956
	D->Y (FR)	0.04866	0.61717	9.13521
sky130_fd_sc_hs__nand4b_4	A_N->Y (RR)	0.07214	0.42414	5.79559
	B->Y (FR)	0.04989	0.64333	10.15230
	C->Y (FR)	0.06304	0.65715	10.17060
	D->Y (FR)	0.07589	0.68063	10.32470

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)	0.08073	0.69040	8.33112
	B->Y (RF)	0.04267	0.63535	9.01786
	C->Y (RF)	0.04888	0.59940	8.43324
	D->Y (RF)	0.05155	0.56411	7.87414
sky130_fd_sc_hs__nand4b_2	A_N->Y (FF)	0.08895	0.64476	8.42548
	B->Y (RF)	0.04781	0.56166	8.91160
	C->Y (RF)	0.05401	0.50014	7.94256
	D->Y (RF)	0.05886	0.47098	7.40891
sky130_fd_sc_hs__nand4b_4	A_N->Y (FF)	0.06981	0.47186	6.21279
	B->Y (RF)	0.04020	0.40759	6.82001
	C->Y (RF)	0.04729	0.35503	5.90832
	D->Y (RF)	0.05122	0.31731	5.21635

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	0.00855	0.01169	0.07817
	A_N	0.00506	0.00824	0.07501
	B	0.00061	0.00178	0.01330
	B	0.00588	0.00707	0.01883
	C	0.00136	0.00242	0.01404
	C	0.00759	0.00867	0.02051
	D	0.00187	0.00290	0.01491
	D	0.00919	0.01025	0.02249
sky130_fd_sc_hs__nand4b_2	A_N	0.01256	0.01575	0.07680
	A_N	0.00914	0.01237	0.07350
	B	0.00051	0.00242	0.02590
	B	0.01138	0.01334	0.03740
	C	0.00211	0.00382	0.02788
	C	0.01509	0.01676	0.04132
	D	0.00376	0.00544	0.03001
	D	0.01935	0.02104	0.04610
sky130_fd_sc_hs__nand4b_4	A_N	0.01607	0.02192	0.13067
	A_N	0.01105	0.01697	0.12635
	B	0.00057	0.00387	0.03692
	B	0.01588	0.01924	0.05264
	C	0.00321	0.00643	0.03986
	C	0.02357	0.02682	0.06054
	D	0.00608	0.00860	0.04358
	D	0.03104	0.03363	0.06891

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4b_1	A_N	0.00650	0.01054	0.07293
	A_N	0.00998	0.01402	0.07613
	B	0.00792	0.00811	0.01323
	B	0.00263	0.00279	0.00781
	C	0.00917	0.00930	0.01468
	C	0.00284	0.00296	0.00832
	D	0.01033	0.01048	0.01667
	D	0.00282	0.00292	0.00882
sky130_fd_sc_hs__nand4b_2	A_N	0.01186	0.01574	0.08652
	A_N	0.01527	0.01915	0.08988
	B	0.01592	0.01623	0.02668
	B	0.00500	0.00527	0.01560
	C	0.01844	0.01868	0.03110
	C	0.00519	0.00542	0.01727
	D	0.02118	0.02142	0.03493
	D	0.00513	0.00528	0.01847
sky130_fd_sc_hs__nand4b_4	A_N	0.01809	0.02482	0.14243
	A_N	0.02310	0.02981	0.14674
	B	0.02485	0.02555	0.04132
	B	0.00945	0.01000	0.02427
	C	0.03027	0.03069	0.04698
	C	0.00955	0.00994	0.02624
	D	0.03544	0.03599	0.05624
	D	0.00960	0.00997	0.02838

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)	0.00687	0.00997	0.07672
	(B * C * !D * Y)	0.00261	0.00568	0.07246
	(B * !C * Y)	0.00686	0.00997	0.07669
	(B * !C * Y)	0.00261	0.00570	0.07244
	(!B * Y)	0.00683	0.00994	0.07666
	(!B * Y)	0.00261	0.00570	0.07244
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.01034	0.01338	0.08570
	(B * C * !D * Y)	0.00507	0.00806	0.08042
	(B * !C * Y)	0.01033	0.01337	0.08569
	(B * !C * Y)	0.00507	0.00806	0.08042
	(!B * Y)	0.01029	0.01332	0.08565
	(!B * Y)	0.00508	0.00806	0.08043
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.01225	0.01765	0.13476
	(B * C * !D * Y)	0.00482	0.01018	0.12733
	(B * !C * Y)	0.01224	0.01763	0.13475
	(B * !C * Y)	0.00482	0.01018	0.12733
	(!B * Y)	0.01215	0.01755	0.13466
	(!B * Y)	0.00484	0.01020	0.12734

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)	0.00045	0.00450	0.07115
	(B * C * !D * Y)	0.00487	0.00894	0.07554
	(B * !C * Y)	0.00045	0.00450	0.07112
	(B * !C * Y)	0.00480	0.00888	0.07546
	(!B * Y)	0.00047	0.00452	0.07116
	(!B * Y)	0.00470	0.00878	0.07540
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.00056	0.00429	0.07601
	(B * C * !D * Y)	0.00616	0.00991	0.08155
	(B * !C * Y)	0.00052	0.00424	0.07600
	(B * !C * Y)	0.00599	0.00975	0.08145
	(!B * Y)	0.00051	0.00425	0.07605
	(!B * Y)	0.00576	0.00952	0.08131
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.00137	0.00840	0.12566
	(B * C * !D * Y)	0.00947	0.01645	0.13360
	(B * !C * Y)	0.00131	0.00833	0.12565
	(B * !C * Y)	0.00915	0.01614	0.13340
	(!B * Y)	0.00132	0.00837	0.12576
	(!B * Y)	0.00870	0.01572	0.13311

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)**	0.00199	0.00200	0.00199
	(A_N * C * D * Y)	-0.00235	-0.00236	-0.00236
	(A_N * C * !D * Y)	0.00123	0.00124	0.00123
	(A_N * C * !D * Y)	-0.00237	-0.00237	-0.00236
	(A_N * !C * Y)	0.00125	0.00124	0.00125
	(A_N * !C * Y)	-0.00235	-0.00235	-0.00236
	(!A_N * C * !D * Y)	0.00068	0.00068	0.00069
	(!A_N * C * !D * Y)	-0.00268	-0.00270	-0.00271
	(!A_N * !C * Y)	0.00072	0.00072	0.00072
	(!A_N * !C * Y)	-0.00271	-0.00270	-0.00272
sky130_fd_sc_hs__nand4b_2	**(A_N * C * D * Y)**	0.00365	0.00367	0.00366
	(A_N * C * D * Y)	-0.00497	-0.00499	-0.00498
	(A_N * C * !D * Y)	0.00220	0.00220	0.00220
	(A_N * C * !D * Y)	-0.00502	-0.00503	-0.00502
	(A_N * !C * Y)	0.00224	0.00224	0.00224
	(A_N * !C * Y)	-0.00504	-0.00504	-0.00503
	(!A_N * C * !D * Y)	0.00144	0.00145	0.00146
	(!A_N * C * !D * Y)	-0.00524	-0.00526	-0.00532
	(!A_N * !C * Y)	0.00153	0.00154	0.00154
	(!A_N * !C * Y)	-0.00531	-0.00533	-0.00534
sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	0.00699	0.00703	0.00702
	(A_N * C * D * Y)	-0.00516	-0.00518	-0.00516
	(A_N * C * !D * Y)	0.00396	0.00398	0.00397
	(A_N * C * !D * Y)	-0.00521	-0.00523	-0.00522
	(A_N * !C * Y)	0.00403	0.00403	0.00402
	(A_N * !C * Y)	-0.00526	-0.00525	-0.00524
	(!A_N * C * !D * Y)	0.00269	0.00269	0.00274
	(!A_N * C * !D * Y)	-0.00551	-0.00551	-0.00566
	(!A_N * !C * Y)	0.00286	0.00286	0.00288
	(!A_N * !C * Y)	-0.00565	-0.00565	-0.00570

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)	-0.00183	-0.00199	-0.00198
	(A_N * C * D * Y)	0.00251	0.00239	0.00237
	(A_N * C * !D * Y)	-0.00123	-0.00124	-0.00123
	(A_N * C * !D * Y)	0.00247	0.00246	0.00238
	(A_N * !C * Y)	-0.00125	-0.00124	-0.00125
	(A_N * !C * Y)	0.00249	0.00250	0.00240
	(!A_N * C * !D * Y)	-0.00068	-0.00068	-0.00069
	(!A_N * C * !D * Y)	0.00277	0.00279	0.00274
	(!A_N * !C * Y)	-0.00069	-0.00069	-0.00070
	(!A_N * !C * Y)	0.00277	0.00279	0.00274
sky130_fd_sc_hs__nand4b_2	(A_N * C * D * Y)	-0.00324	-0.00367	-0.00366
	(A_N * C * D * Y)	0.00536	0.00504	0.00500
	(A_N * C * !D * Y)	-0.00220	-0.00220	-0.00220
	(A_N * C * !D * Y)	0.00522	0.00517	0.00503
	(A_N * !C * Y)	-0.00224	-0.00224	-0.00224
	(A_N * !C * Y)	0.00524	0.00532	0.00510
	(!A_N * C * !D * Y)	-0.00140	-0.00143	-0.00145
	(!A_N * C * !D * Y)	0.00542	0.00553	0.00538
	(!A_N * !C * Y)	-0.00144	-0.00147	-0.00149
	(!A_N * !C * Y)	0.00542	0.00553	0.00539

sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	-0.00610	-0.00703	-0.00702
	(A_N * C * D * Y)	0.00601	0.00525	0.00520
	(A_N * C * !D * Y)	-0.00396	-0.00398	-0.00397
	(A_N * C * !D * Y)	0.00571	0.00549	0.00525
	(A_N * !C * Y)	-0.00403	-0.00403	-0.00402
	(A_N * !C * Y)	0.00566	0.00575	0.00537
	(!A_N * C * !D * Y)	-0.00263	-0.00267	-0.00270
	(!A_N * C * !D * Y)	0.00584	0.00592	0.00577
	(!A_N * !C * Y)	-0.00270	-0.00274	-0.00278
	(!A_N * !C * Y)	0.00585	0.00592	0.00577

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)**	0.00174	0.00175	0.00173
	(A_N * B * D * Y)	-0.00236	-0.00236	-0.00235
	(A_N * B * !D * Y)	0.00097	0.00099	0.00098
	(A_N * B * !D * Y)	-0.00235	-0.00236	-0.00235
	(A_N * !B * D * Y)	0.00176	0.00178	0.00176
	(A_N * !B * D * Y)	-0.00235	-0.00237	-0.00235
	(A_N * !B * !D * Y)	0.00096	0.00097	0.00096
	(A_N * !B * !D * Y)	-0.00235	-0.00236	-0.00235
	(!A_N * B * !D * Y)	0.00071	0.00071	0.00071
	(!A_N * B * !D * Y)	-0.00242	-0.00242	-0.00241
	(!A_N * !B * D * Y)	0.00169	0.00170	0.00169
	(!A_N * !B * D * Y)	-0.00242	-0.00243	-0.00242
	(!A_N * !B * !D * Y)	0.00084	0.00084	0.00084
	(!A_N * !B * !D * Y)	-0.00243	-0.00244	-0.00243

sky130_fd_sc_hs__nand4b_2	**(A_N * B * D * Y)**	0.00354	0.00356	0.00355
	(A_N * B * D * Y)	-0.00479	-0.00480	-0.00479
	(A_N * B * !D * Y)	0.00199	0.00200	0.00198
	(A_N * B * !D * Y)	-0.00483	-0.00484	-0.00482
	(A_N * !B * D * Y)	0.00352	0.00355	0.00353
	(A_N * !B * D * Y)	-0.00477	-0.00480	-0.00479
	(A_N * !B * !D * Y)	0.00200	0.00202	0.00201
	(A_N * !B * !D * Y)	-0.00478	-0.00480	-0.00480
	(!A_N * B * !D * Y)	0.00156	0.00158	0.00160
	(!A_N * B * !D * Y)	-0.00474	-0.00477	-0.00474
	(!A_N * !B * D * Y)	0.00356	0.00359	0.00357
	(!A_N * !B * D * Y)	-0.00478	-0.00480	-0.00479
	(!A_N * !B * !D * Y)	0.00189	0.00193	0.00191
	(!A_N * !B * !D * Y)	-0.00479	-0.00484	-0.00481
sky130_fd_sc_hs__nand4b_4	**(A_N * B * D * Y)**	0.00713	0.00714	0.00715
	(A_N * B * D * Y)	-0.00513	-0.00513	-0.00513
	(A_N * B * !D * Y)	0.00383	0.00387	0.00384
	(A_N * B * !D * Y)	-0.00517	-0.00520	-0.00518
	(A_N * !B * D * Y)	0.00722	0.00724	0.00722
	(A_N * !B * D * Y)	-0.00514	-0.00514	-0.00513
	(A_N * !B * !D * Y)	0.00384	0.00383	0.00382
	(A_N * !B * !D * Y)	-0.00514	-0.00515	-0.00514
	(!A_N * B * !D * Y)	0.00308	0.00307	0.00309
	(!A_N * B * !D * Y)	-0.00510	-0.00510	-0.00505
	(!A_N * !B * D * Y)	0.00712	0.00716	0.00714
	(!A_N * !B * D * Y)	-0.00513	-0.00515	-0.00514
	(!A_N * !B * !D * Y)	0.00364	0.00364	0.00362
	(!A_N * !B * !D * Y)	-0.00517	-0.00517	-0.00516

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)	-0.00158	-0.00172	-0.00173
	(A_N * B * D * Y)	0.00237	0.00237	0.00237
	(A_N * B * !D * Y)	-0.00097	-0.00099	-0.00098
	(A_N * B * !D * Y)	0.00237	0.00242	0.00237
	(A_N * !B * D * Y)	-0.00168	-0.00176	-0.00176
	(A_N * !B * D * Y)	0.00236	0.00239	0.00237
	(A_N * !B * !D * Y)	-0.00096	-0.00097	-0.00096
	(A_N * !B * !D * Y)	0.00237	0.00240	0.00237
	(!A_N * B * !D * Y)	-0.00068	-0.00068	-0.00068
	(!A_N * B * !D * Y)	0.00248	0.00249	0.00245
	(!A_N * !B * D * Y)	-0.00159	-0.00170	-0.00169
	(!A_N * !B * D * Y)	0.00245	0.00245	0.00243
	(!A_N * !B * !D * Y)	-0.00084	-0.00084	-0.00084
	(!A_N * !B * !D * Y)	0.00252	0.00254	0.00246
sky130_fd_sc_hs__nand4b_2	(A_N * B * D * Y)	-0.00323	-0.00352	-0.00355
	(A_N * B * D * Y)	0.00485	0.00484	0.00481
	(A_N * B * !D * Y)	-0.00199	-0.00200	-0.00198
	(A_N * B * !D * Y)	0.00485	0.00491	0.00483
	(A_N * !B * D * Y)	-0.00341	-0.00355	-0.00353
	(A_N * !B * D * Y)	0.00482	0.00483	0.00480
	(A_N * !B * !D * Y)	-0.00200	-0.00202	-0.00201
	(A_N * !B * !D * Y)	0.00480	0.00487	0.00481
	(!A_N * B * !D * Y)	-0.00149	-0.00151	-0.00151
	(!A_N * B * !D * Y)	0.00485	0.00492	0.00484
	(!A_N * !B * D * Y)	-0.00335	-0.00357	-0.00357
	(!A_N * !B * D * Y)	0.00488	0.00483	0.00480
	(!A_N * !B * !D * Y)	-0.00189	-0.00193	-0.00191
	(!A_N * !B * !D * Y)	0.00499	0.00506	0.00487

sky130_fd_sc_hs__nand4b_4	(A_N * B * D * Y)	-0.00640	-0.00714	-0.00715
	(A_N * B * D * Y)	0.00530	0.00519	0.00517
	(A_N * B * !D * Y)	-0.00383	-0.00387	-0.00384
	(A_N * B * !D * Y)	0.00525	0.00536	0.00522
	(A_N * !B * D * Y)	-0.00687	-0.00723	-0.00719
	(A_N * !B * D * Y)	0.00519	0.00519	0.00516
	(A_N * !B * !D * Y)	-0.00384	-0.00383	-0.00382
	(A_N * !B * !D * Y)	0.00517	0.00523	0.00517
	(!A_N * B * !D * Y)	-0.00290	-0.00293	-0.00293
	(!A_N * B * !D * Y)	0.00532	0.00537	0.00522
	(!A_N * !B * D * Y)	-0.00670	-0.00716	-0.00714
	(!A_N * !B * D * Y)	0.00536	0.00518	0.00515
	(!A_N * !B * !D * Y)	-0.00364	-0.00364	-0.00362
	(!A_N * !B * !D * Y)	0.00561	0.00563	0.00530

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)	0.00173	0.00173	0.00173
	(A_N * B * C * Y)	-0.00231	-0.00231	-0.00230
	(A_N * !C * Y)	0.00176	0.00177	0.00176
	(A_N * !C * Y)	-0.00230	-0.00231	-0.00230
	(A_N * !B * C * Y)	0.00175	0.00175	0.00174
	(A_N * !B * C * Y)	-0.00231	-0.00230	-0.00230
	(!A_N * B * !C * Y)	0.00169	0.00171	0.00169
	(!A_N * B * !C * Y)	-0.00237	-0.00238	-0.00237
	(!A_N * !B * C * Y)	0.00168	0.00168	0.00167
	(!A_N * !B * C * Y)	-0.00237	-0.00238	-0.00237
	(!A_N * !B * !C * Y)	0.00168	0.00170	0.00169
	(!A_N * !B * !C * Y)	-0.00237	-0.00238	-0.00237

sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	0.00355	0.00358	0.00355
	(A_N * B * C * Y)	-0.00477	-0.00478	-0.00476
	(A_N * !C * Y)	0.00355	0.00358	0.00356
	(A_N * !C * Y)	-0.00474	-0.00476	-0.00475
	(A_N * !B * C * Y)	0.00357	0.00359	0.00356
	(A_N * !B * C * Y)	-0.00476	-0.00478	-0.00475
	(!A_N * B * !C * Y)	0.00355	0.00358	0.00356
	(!A_N * B * !C * Y)	-0.00474	-0.00477	-0.00476
	(!A_N * !B * C * Y)	0.00356	0.00355	0.00355
	(!A_N * !B * C * Y)	-0.00477	-0.00476	-0.00476
	(!A_N * !B * !C * Y)	0.00354	0.00357	0.00356
	(!A_N * !B * !C * Y)	-0.00475	-0.00476	-0.00476
sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	0.00691	0.00692	0.00689
	(A_N * B * C * Y)	-0.00476	-0.00475	-0.00474
	(A_N * !C * Y)	0.00708	0.00708	0.00709
	(A_N * !C * Y)	-0.00474	-0.00473	-0.00474
	(A_N * !B * C * Y)	0.00686	0.00695	0.00689
	(A_N * !B * C * Y)	-0.00473	-0.00476	-0.00474
	(!A_N * B * !C * Y)	0.00708	0.00710	0.00708
	(!A_N * B * !C * Y)	-0.00475	-0.00476	-0.00475
	(!A_N * !B * C * Y)	0.00685	0.00693	0.00688
	(!A_N * !B * C * Y)	-0.00474	-0.00477	-0.00475
	(!A_N * !B * !C * Y)	0.00707	0.00707	0.00708
	(!A_N * !B * !C * Y)	-0.00475	-0.00475	-0.00475

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)**	-0.00160	-0.00173	-0.00173
	(A_N * B * C * Y)	0.00231	0.00234	0.00232
	(A_N * !C * Y)	-0.00170	-0.00177	-0.00176
	(A_N * !C * Y)	0.00230	0.00234	0.00232
	(A_N * !B * C * Y)	-0.00161	-0.00175	-0.00174
	(A_N * !B * C * Y)	0.00231	0.00234	0.00232
	(!A_N * B * !C * Y)	-0.00162	-0.00171	-0.00169
	(!A_N * B * !C * Y)	0.00237	0.00240	0.00238
	(!A_N * !B * C * Y)	-0.00155	-0.00168	-0.00167
	(!A_N * !B * C * Y)	0.00237	0.00241	0.00238
	(!A_N * !B * !C * Y)	-0.00164	-0.00170	-0.00169
	(!A_N * !B * !C * Y)	0.00237	0.00240	0.00238
sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	-0.00323	-0.00352	-0.00355
	(A_N * B * C * Y)	0.00479	0.00483	0.00477
	(A_N * !C * Y)	-0.00341	-0.00358	-0.00356
	(A_N * !C * Y)	0.00475	0.00481	0.00477
	(A_N * !B * C * Y)	-0.00324	-0.00353	-0.00356
	(A_N * !B * C * Y)	0.00478	0.00483	0.00477
	(!A_N * B * !C * Y)	-0.00339	-0.00358	-0.00356
	(!A_N * B * !C * Y)	0.00475	0.00481	0.00477
	(!A_N * !B * C * Y)	-0.00324	-0.00353	-0.00355
	(!A_N * !B * C * Y)	0.00478	0.00483	0.00477
	(!A_N * !B * !C * Y)	-0.00342	-0.00357	-0.00356
	(!A_N * !B * !C * Y)	0.00475	0.00481	0.00477

sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	-0.00635	-0.00692	-0.00689
	(A_N * B * C * Y)	0.00477	0.00479	0.00478
	(A_N * !C * Y)	-0.00678	-0.00708	-0.00709
	(A_N * !C * Y)	0.00478	0.00482	0.00477
	(A_N * !B * C * Y)	-0.00637	-0.00695	-0.00689
	(A_N * !B * C * Y)	0.00476	0.00479	0.00477
	(!A_N * B * !C * Y)	-0.00673	-0.00710	-0.00708
	(!A_N * B * !C * Y)	0.00477	0.00481	0.00476
	(!A_N * !B * C * Y)	-0.00637	-0.00693	-0.00688
	(!A_N * !B * C * Y)	0.00476	0.00478	0.00476
	(!A_N * !B * !C * Y)	-0.00679	-0.00707	-0.00708
	(!A_N * !B * !C * Y)	0.00477	0.00481	0.00476

SKY130_FD_SC_HS__NAND4x

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00280	0.00295	0.00291	0.00290	1.20728
sky130_fd_sc_hs__nand4_2	0.00546	0.00551	0.00557	0.00540	1.82156
sky130_fd_sc_hs__nand4_4	0.00815	0.00796	0.00797	0.00818	2.28712

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4_1	0.00000	0.02769	0.40531
sky130_fd_sc_hs__nand4_2	0.00000	0.05538	0.81063
sky130_fd_sc_hs__nand4_4	0.00000	0.06009	0.81063

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)	0.03400	0.72267	10.28240
	B->Y (FR)	0.04363	0.74524	10.50740
	C->Y (FR)	0.04991	0.75283	10.51650
	D->Y (FR)	0.05294	0.74635	10.33500
sky130_fd_sc_hs__nand4_2	A->Y (FR)	0.02875	0.58898	8.96772
	B->Y (FR)	0.03738	0.59268	8.89128
	C->Y (FR)	0.04337	0.60164	8.92258
	D->Y (FR)	0.04867	0.61225	8.99181
sky130_fd_sc_hs__nand4_4	A->Y (FR)	0.03595	0.62440	9.95846
	B->Y (FR)	0.05291	0.63758	9.92348
	C->Y (FR)	0.06859	0.66776	10.20980
	D->Y (FR)	0.08051	0.68211	10.23440

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand4_1	A->Y (RF)	0.03348	0.64462	9.24947
	B->Y (RF)	0.04282	0.62698	8.87609
	C->Y (RF)	0.04826	0.58927	8.27406
	D->Y (RF)	0.05144	0.55357	7.70250
sky130_fd_sc_hs__nand4_2	A->Y (RF)	0.03170	0.57208	9.10551
	B->Y (RF)	0.04498	0.55520	8.72968
	C->Y (RF)	0.05149	0.49464	7.77351
	D->Y (RF)	0.05582	0.46337	7.21630
sky130_fd_sc_hs__nand4_4	A->Y (RF)	0.02444	0.42410	7.17261
	B->Y (RF)	0.03708	0.40077	6.62925
	C->Y (RF)	0.04421	0.34757	5.71098
	D->Y (RF)	0.04822	0.30901	5.01798

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	-0.00028	0.00093	0.01242
	A	0.00558	0.00678	0.01847
	B	0.00063	0.00172	0.01315
	B	0.00768	0.00879	0.02045
	C	0.00140	0.00245	0.01424
	C	0.00956	0.01062	0.02263
	D	0.00188	0.00287	0.01511
	D	0.01125	0.01228	0.02475
sky130_fd_sc_hs__nand4_2	A	-0.00161	0.00078	0.02437
	A	0.00926	0.01173	0.03528
	B	0.00077	0.00261	0.02682
	B	0.01424	0.01613	0.04045
	C	0.00199	0.00374	0.02867
	C	0.01805	0.01987	0.04488
	D	0.00376	0.00544	0.03073
	D	0.02221	0.02364	0.04917
sky130_fd_sc_hs__nand4_4	A	-0.00324	0.00104	0.03523
	A	0.01268	0.01695	0.05113
	B	0.00092	0.00324	0.03916
	B	0.02178	0.02414	0.05996
	C	0.00352	0.00564	0.04141
	C	0.02932	0.03147	0.06750
	D	0.00644	0.00854	0.04558
	D	0.03760	0.03929	0.07702

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	0.00705	0.00742	0.01353
	A	0.00121	0.00156	0.00752
	B	0.00840	0.00856	0.01365
	B	0.00129	0.00144	0.00649
	C	0.00959	0.00973	0.01529
	C	0.00130	0.00142	0.00695
	D	0.01088	0.01101	0.01759
	D	0.00126	0.00136	0.00754
sky130_fd_sc_hs__nand4_2	A	0.01284	0.01373	0.02627
	A	0.00197	0.00279	0.01505
	B	0.01565	0.01597	0.02654
	B	0.00208	0.00233	0.01272
	C	0.01848	0.01874	0.03141
	C	0.00205	0.00225	0.01421
	D	0.02104	0.02125	0.03480
	D	0.00199	0.00214	0.01542
sky130_fd_sc_hs__nand4_4	A	0.02000	0.02136	0.03840
	A	0.00409	0.00531	0.02194
	B	0.02535	0.02590	0.04121
	B	0.00424	0.00473	0.01928
	C	0.03069	0.03119	0.04868
	C	0.00431	0.00466	0.02099
	D	0.03623	0.03671	0.05632
	D	0.00401	0.00434	0.02289

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)	0.00068	0.00068	0.00062
	(B * C * !D * Y)	-0.00259	-0.00261	-0.00273
	(B * !C * Y)	0.00068	0.00067	0.00063
	(B * !C * Y)	-0.00265	-0.00265	-0.00273
	(!B * Y)	0.00068	0.00067	0.00065
	(!B * Y)	-0.00270	-0.00269	-0.00274
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	0.00122	0.00123	0.00108
	(B * C * !D * Y)	-0.00511	-0.00516	-0.00545
	(B * !C * Y)	0.00116	0.00117	0.00107
	(B * !C * Y)	-0.00526	-0.00530	-0.00548
	(!B * Y)	0.00121	0.00122	0.00116
	(!B * Y)	-0.00538	-0.00541	-0.00550
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	0.00240	0.00239	0.00213
	(B * C * !D * Y)	-0.00589	-0.00590	-0.00649
	(B * !C * Y)	0.00228	0.00227	0.00211
	(B * !C * Y)	-0.00617	-0.00619	-0.00655
	(!B * Y)	0.00236	0.00236	0.00226
	(!B * Y)	-0.00641	-0.00642	-0.00659

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)	-0.00063	-0.00063	-0.00062
	(B * C * !D * Y)	0.00275	0.00277	0.00274
	(B * !C * Y)	-0.00063	-0.00064	-0.00063
	(B * !C * Y)	0.00275	0.00277	0.00274
	(!B * Y)	-0.00064	-0.00065	-0.00064
	(!B * Y)	0.00275	0.00279	0.00274
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	-0.00108	-0.00110	-0.00108
	(B * C * !D * Y)	0.00548	0.00560	0.00551
	(B * !C * Y)	-0.00108	-0.00111	-0.00107
	(B * !C * Y)	0.00548	0.00560	0.00551
	(!B * Y)	-0.00113	-0.00115	-0.00113
	(!B * Y)	0.00549	0.00561	0.00552
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	-0.00212	-0.00213	-0.00213
	(B * C * !D * Y)	0.00655	0.00659	0.00658
	(B * !C * Y)	-0.00212	-0.00213	-0.00211
	(B * !C * Y)	0.00654	0.00658	0.00658
	(!B * Y)	-0.00223	-0.00220	-0.00220
	(!B * Y)	0.00662	0.00658	0.00659

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)**	0.00070	0.00070	0.00071
	(A * C * !D * Y)	-0.00249	-0.00250	-0.00248
	(A * !C * Y)	0.00075	0.00074	0.00075
	(A * !C * Y)	-0.00249	-0.00248	-0.00248
	(!A * C * D * Y)	0.00170	0.00172	0.00171
	(!A * C * D * Y)	-0.00248	-0.00249	-0.00248
	(!A * C * !D * Y)	0.00089	0.00090	0.00090
	(!A * C * !D * Y)	-0.00248	-0.00251	-0.00249
	(!A * !C * Y)	0.00090	0.00092	0.00090
	(!A * !C * Y)	-0.00249	-0.00251	-0.00250
sky130_fd_sc_hs__nand4_2	**(A * C * !D * Y)**	0.00148	0.00149	0.00151
	(A * C * !D * Y)	-0.00477	-0.00478	-0.00475
	(A * !C * Y)	0.00151	0.00150	0.00152
	(A * !C * Y)	-0.00477	-0.00476	-0.00475
	(!A * C * D * Y)	0.00356	0.00358	0.00356
	(!A * C * D * Y)	-0.00477	-0.00478	-0.00476
	(!A * C * !D * Y)	0.00192	0.00192	0.00191
	(!A * C * !D * Y)	-0.00479	-0.00480	-0.00478
	(!A * !C * Y)	0.00183	0.00184	0.00182
	(!A * !C * Y)	-0.00480	-0.00481	-0.00479
sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	0.00283	0.00285	0.00288
	(A * C * !D * Y)	-0.00497	-0.00500	-0.00495
	(A * !C * Y)	0.00291	0.00291	0.00293
	(A * !C * Y)	-0.00498	-0.00498	-0.00496
	(!A * C * D * Y)	0.00701	0.00702	0.00703
	(!A * C * D * Y)	-0.00497	-0.00497	-0.00497
	(!A * C * !D * Y)	0.00365	0.00366	0.00363
	(!A * C * !D * Y)	-0.00502	-0.00504	-0.00501
	(!A * !C * Y)	0.00350	0.00352	0.00349
	(!A * !C * Y)	-0.00504	-0.00507	-0.00503

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)	-0.00070	-0.00070	-0.00071
	(A * C * !D * Y)	0.00254	0.00256	0.00250
	(A * !C * Y)	-0.00071	-0.00071	-0.00072
	(A * !C * Y)	0.00254	0.00256	0.00250
	(!A * C * D * Y)	-0.00153	-0.00171	-0.00171
	(!A * C * D * Y)	0.00263	0.00251	0.00249
	(!A * C * !D * Y)	-0.00089	-0.00090	-0.00090
	(!A * C * !D * Y)	0.00259	0.00258	0.00250
	(!A * !C * Y)	-0.00090	-0.00092	-0.00090
	(!A * !C * Y)	0.00262	0.00263	0.00253
sky130_fd_sc_hs__nand4_2	(A * C * !D * Y)	-0.00139	-0.00141	-0.00143
	(A * C * !D * Y)	0.00488	0.00494	0.00481
	(A * !C * Y)	-0.00142	-0.00144	-0.00147
	(A * !C * Y)	0.00488	0.00494	0.00480
	(!A * C * D * Y)	-0.00307	-0.00358	-0.00356
	(!A * C * D * Y)	0.00516	0.00481	0.00477
	(!A * C * !D * Y)	-0.00192	-0.00192	-0.00191
	(!A * C * !D * Y)	0.00501	0.00492	0.00479
	(!A * !C * Y)	-0.00183	-0.00184	-0.00182
	(!A * !C * Y)	0.00498	0.00507	0.00485

sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	-0.00273	-0.00273	-0.00277
	(A * C * !D * Y)	0.00522	0.00524	0.00504
	(A * !C * Y)	-0.00279	-0.00280	-0.00284
	(A * !C * Y)	0.00523	0.00525	0.00504
	(!A * C * D * Y)	-0.00602	-0.00702	-0.00703
	(!A * C * D * Y)	0.00584	0.00504	0.00499
	(!A * C * !D * Y)	-0.00365	-0.00366	-0.00363
	(!A * C * !D * Y)	0.00550	0.00528	0.00502
	(!A * !C * Y)	-0.00350	-0.00352	-0.00349
	(!A * !C * Y)	0.00543	0.00550	0.00513

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)**	0.00072	0.00072	0.00072
	(A * B * !D * Y)	-0.00242	-0.00242	-0.00241
	(A * !B * D * Y)	0.00169	0.00170	0.00170
	(A * !B * D * Y)	-0.00244	-0.00245	-0.00244
	(A * !B * !D * Y)	0.00085	0.00086	0.00085
	(A * !B * !D * Y)	-0.00245	-0.00246	-0.00245
	(!A * B * D * Y)	0.00165	0.00166	0.00165
	(!A * B * D * Y)	-0.00245	-0.00245	-0.00244
	(!A * B * !D * Y)	0.00085	0.00087	0.00086
	(!A * B * !D * Y)	-0.00244	-0.00246	-0.00245
	(!A * !B * D * Y)	0.00169	0.00171	0.00170
	(!A * !B * D * Y)	-0.00244	-0.00245	-0.00244
	(!A * !B * !D * Y)	0.00090	0.00090	0.00090
	(!A * !B * !D * Y)	-0.00245	-0.00246	-0.00246

sky130_fd_sc_hs__nand4_2	**(A * B * !D * Y)**	0.00160	0.00161	0.00159
	(A * B * !D * Y)	-0.00469	-0.00471	-0.00465
	(A * !B * D * Y)	0.00359	0.00360	0.00359
	(A * !B * D * Y)	-0.00475	-0.00477	-0.00476
	(A * !B * !D * Y)	0.00187	0.00188	0.00187
	(A * !B * !D * Y)	-0.00475	-0.00477	-0.00476
	(!A * B * D * Y)	0.00353	0.00358	0.00354
	(!A * B * D * Y)	-0.00476	-0.00479	-0.00476
	(!A * B * !D * Y)	0.00192	0.00192	0.00191
	(!A * B * !D * Y)	-0.00478	-0.00479	-0.00477
	(!A * !B * D * Y)	0.00359	0.00360	0.00359
	(!A * !B * D * Y)	-0.00475	-0.00477	-0.00476
	(!A * !B * !D * Y)	0.00196	0.00197	0.00196
	(!A * !B * !D * Y)	-0.00476	-0.00478	-0.00476
sky130_fd_sc_hs__nand4_4	**(A * B * !D * Y)**	0.00296	0.00298	0.00295
	(A * B * !D * Y)	-0.00477	-0.00479	-0.00472
	(A * !B * D * Y)	0.00687	0.00693	0.00690
	(A * !B * D * Y)	-0.00490	-0.00493	-0.00491
	(A * !B * !D * Y)	0.00351	0.00349	0.00349
	(A * !B * !D * Y)	-0.00492	-0.00492	-0.00492
	(!A * B * D * Y)	0.00684	0.00687	0.00685
	(!A * B * D * Y)	-0.00491	-0.00492	-0.00491
	(!A * B * !D * Y)	0.00349	0.00352	0.00351
	(!A * B * !D * Y)	-0.00493	-0.00495	-0.00494
	(!A * !B * D * Y)	0.00687	0.00692	0.00689
	(!A * !B * D * Y)	-0.00490	-0.00492	-0.00491
	(!A * !B * !D * Y)	0.00364	0.00366	0.00365
	(!A * !B * !D * Y)	-0.00491	-0.00493	-0.00492

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)	-0.00069	-0.00069	-0.00069
	(A * B * !D * Y)	0.00248	0.00251	0.00247
	(A * !B * D * Y)	-0.00160	-0.00170	-0.00170
	(A * !B * D * Y)	0.00244	0.00247	0.00245
	(A * !B * !D * Y)	-0.00085	-0.00086	-0.00085
	(A * !B * !D * Y)	0.00254	0.00256	0.00249
	(!A * B * D * Y)	-0.00149	-0.00166	-0.00165
	(!A * B * D * Y)	0.00245	0.00248	0.00245
	(!A * B * !D * Y)	-0.00085	-0.00087	-0.00086
	(!A * B * !D * Y)	0.00246	0.00250	0.00246
	(!A * !B * D * Y)	-0.00162	-0.00170	-0.00170
	(!A * !B * D * Y)	0.00244	0.00247	0.00245
	(!A * !B * !D * Y)	-0.00090	-0.00090	-0.00090
	(!A * !B * !D * Y)	0.00246	0.00249	0.00246
sky130_fd_sc_hs__nand4_2	(A * B * !D * Y)	-0.00145	-0.00147	-0.00147
	(A * B * !D * Y)	0.00484	0.00492	0.00481
	(A * !B * D * Y)	-0.00335	-0.00358	-0.00359
	(A * !B * D * Y)	0.00475	0.00483	0.00477
	(A * !B * !D * Y)	-0.00187	-0.00188	-0.00187
	(A * !B * !D * Y)	0.00499	0.00503	0.00483
	(!A * B * D * Y)	-0.00313	-0.00352	-0.00354
	(!A * B * D * Y)	0.00483	0.00479	0.00477
	(!A * B * !D * Y)	-0.00192	-0.00192	-0.00191
	(!A * B * !D * Y)	0.00481	0.00486	0.00478
	(!A * !B * D * Y)	-0.00339	-0.00358	-0.00359
	(!A * !B * D * Y)	0.00475	0.00483	0.00477
	(!A * !B * !D * Y)	-0.00196	-0.00197	-0.00196
	(!A * !B * !D * Y)	0.00476	0.00483	0.00477

sky130_fd_sc_hs__nand4_4	(A * B * !D * Y)	-0.00272	-0.00276	-0.00276
	(A * B * !D * Y)	0.00510	0.00515	0.00500
	(A * !B * D * Y)	-0.00646	-0.00693	-0.00690
	(A * !B * D * Y)	0.00496	0.00495	0.00493
	(A * !B * !D * Y)	-0.00351	-0.00349	-0.00349
	(A * !B * !D * Y)	0.00538	0.00538	0.00506
	(!A * B * D * Y)	-0.00596	-0.00687	-0.00685
	(!A * B * D * Y)	0.00506	0.00494	0.00493
	(!A * B * !D * Y)	-0.00349	-0.00352	-0.00351
	(!A * B * !D * Y)	0.00497	0.00508	0.00495
	(!A * !B * D * Y)	-0.00657	-0.00692	-0.00689
	(!A * !B * D * Y)	0.00494	0.00495	0.00493
	(!A * !B * !D * Y)	-0.00364	-0.00366	-0.00365
	(!A * !B * !D * Y)	0.00493	0.00498	0.00493

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)	0.00170	0.00172	0.00170
	(A * B * !C * Y)	-0.00253	-0.00255	-0.00254
	(A * !B * C * Y)	0.00168	0.00168	0.00167
	(A * !B * C * Y)	-0.00253	-0.00254	-0.00254
	(A * !B * !C * Y)	0.00170	0.00172	0.00170
	(A * !B * !C * Y)	-0.00253	-0.00255	-0.00254
	(!A * B * C * Y)	0.00165	0.00166	0.00165
	(!A * B * C * Y)	-0.00253	-0.00254	-0.00254
	(!A * !C * Y)	0.00170	0.00171	0.00170
	(!A * !C * Y)	-0.00253	-0.00255	-0.00254
	(!A * !B * C * Y)	0.00168	0.00168	0.00167
	(!A * !B * C * Y)	-0.00253	-0.00254	-0.00254

sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	0.00358	0.00360	0.00359
	(A * B * !C * Y)	-0.00469	-0.00471	-0.00470
	(A * !B * C * Y)	0.00356	0.00357	0.00355
	(A * !B * C * Y)	-0.00471	-0.00471	-0.00470
	(A * !B * !C * Y)	0.00357	0.00360	0.00359
	(A * !B * !C * Y)	-0.00469	-0.00471	-0.00470
	(!A * B * C * Y)	0.00349	0.00352	0.00349
	(!A * B * C * Y)	-0.00470	-0.00472	-0.00470
	(!A * !C * Y)	0.00359	0.00361	0.00360
	(!A * !C * Y)	-0.00469	-0.00471	-0.00470
	(!A * !B * C * Y)	0.00355	0.00355	0.00354
	(!A * !B * C * Y)	-0.00471	-0.00471	-0.00470
sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	0.00720	0.00725	0.00723
	(A * B * !C * Y)	-0.00500	-0.00502	-0.00501
	(A * !B * C * Y)	0.00704	0.00707	0.00704
	(A * !B * C * Y)	-0.00501	-0.00502	-0.00501
	(A * !B * !C * Y)	0.00722	0.00725	0.00722
	(A * !B * !C * Y)	-0.00500	-0.00502	-0.00501
	(!A * B * C * Y)	0.00693	0.00694	0.00694
	(!A * B * C * Y)	-0.00501	-0.00501	-0.00501
	(!A * !C * Y)	0.00722	0.00725	0.00722
	(!A * !C * Y)	-0.00500	-0.00502	-0.00501
	(!A * !B * C * Y)	0.00704	0.00709	0.00704
	(!A * !B * C * Y)	-0.00501	-0.00503	-0.00501

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)**	-0.00164	-0.00172	-0.00170
	(A * B * !C * Y)	0.00255	0.00257	0.00254
	(A * !B * C * Y)	-0.00156	-0.00168	-0.00167
	(A * !B * C * Y)	0.00253	0.00257	0.00254
	(A * !B * !C * Y)	-0.00165	-0.00172	-0.00170
	(A * !B * !C * Y)	0.00255	0.00257	0.00254
	(!A * B * C * Y)	-0.00153	-0.00166	-0.00165
	(!A * B * C * Y)	0.00253	0.00257	0.00254
	(!A * !C * Y)	-0.00165	-0.00171	-0.00170
	(!A * !C * Y)	0.00255	0.00257	0.00254
	(!A * !B * C * Y)	-0.00156	-0.00168	-0.00167
	(!A * !B * C * Y)	0.00253	0.00257	0.00254
sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	-0.00340	-0.00360	-0.00359
	(A * B * !C * Y)	0.00469	0.00475	0.00471
	(A * !B * C * Y)	-0.00323	-0.00353	-0.00355
	(A * !B * C * Y)	0.00472	0.00477	0.00471
	(A * !B * !C * Y)	-0.00344	-0.00360	-0.00359
	(A * !B * !C * Y)	0.00469	0.00475	0.00471
	(!A * B * C * Y)	-0.00318	-0.00352	-0.00349
	(!A * B * C * Y)	0.00473	0.00477	0.00471
	(!A * !C * Y)	-0.00344	-0.00361	-0.00360
	(!A * !C * Y)	0.00469	0.00475	0.00471
	(!A * !B * C * Y)	-0.00323	-0.00353	-0.00354
	(!A * !B * C * Y)	0.00472	0.00477	0.00471

sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	-0.00681	-0.00725	-0.00723
	(A * B * !C * Y)	0.00500	0.00506	0.00502
	(A * !B * C * Y)	-0.00648	-0.00707	-0.00704
	(A * !B * C * Y)	0.00502	0.00508	0.00502
	(A * !B * !C * Y)	-0.00690	-0.00725	-0.00722
	(A * !B * !C * Y)	0.00500	0.00506	0.00502
	(!A * B * C * Y)	-0.00639	-0.00694	-0.00694
	(!A * B * C * Y)	0.00505	0.00508	0.00502
	(!A * !C * Y)	-0.00690	-0.00725	-0.00722
	(!A * !C * Y)	0.00500	0.00506	0.00502
	(!A * !B * C * Y)	-0.00649	-0.00709	-0.00704
	(!A * !B * C * Y)	0.00502	0.00508	0.00502

SKY130_FD_SC_HS__NOR2Bx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00279	0.00226	0.66118
sky130_fd_sc_hs__nor2b_2	0.00551	0.00262	1.17976
sky130_fd_sc_hs__nor2b_4	0.00911	0.00378	2.29292

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor2b_1	0.00000	0.34219	0.63878
sky130_fd_sc_hs__nor2b_2	0.00000	0.21724	0.34119
sky130_fd_sc_hs__nor2b_4	0.00000	0.75727	1.35989

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)	0.05911	0.84396	10.16650
	B_N->Y (RR)	0.06908	0.63126	6.13852
sky130_fd_sc_hs__nor2b_2	A->Y (FR)	0.05767	0.72705	10.05320
	B_N->Y (RR)	0.06270	0.51610	5.99724
sky130_fd_sc_hs__nor2b_4	A->Y (FR)	0.04520	0.59984	9.75765
	B_N->Y (RR)	0.06288	0.44166	6.28290

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2b_1	A->Y (RF)	0.01785	0.29983	3.50796
	B_N->Y (FF)	0.06037	0.37415	3.27060
sky130_fd_sc_hs__nor2b_2	A->Y (RF)	0.01596	0.24297	3.30694
	B_N->Y (FF)	0.06604	0.37332	3.13615
sky130_fd_sc_hs__nor2b_4	A->Y (RF)	0.02351	0.33564	5.46194
	B_N->Y (FF)	0.06941	0.40148	4.29565

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.00108	0.00145	0.01410
	A	0.00597	0.00621	0.01920
	B_N	0.00846	0.01144	0.07398
	B_N	0.00449	0.00748	0.07028
sky130_fd_sc_hs__nor2b_2	A	0.00222	0.00302	0.02906
	A	0.01204	0.01285	0.03908
	B_N	0.01223	0.01556	0.08926
	B_N	0.00830	0.01163	0.08587
sky130_fd_sc_hs__nor2b_4	A	0.00406	0.00531	0.03339
	A	0.02018	0.02146	0.04938
	B_N	0.01863	0.02397	0.13672
	B_N	0.01280	0.01816	0.13192

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.00583	0.00641	0.01786
	A	0.00095	0.00150	0.01278
	B_N	0.00448	0.00886	0.07449
	B_N	0.00845	0.01276	0.07842
sky130_fd_sc_hs__nor2b_2	A	0.01142	0.01255	0.03593
	A	0.00167	0.00274	0.02584
	B_N	0.00802	0.01231	0.07731
	B_N	0.01197	0.01623	0.08120
sky130_fd_sc_hs__nor2b_4	A	0.01783	0.01961	0.04723
	A	0.00180	0.00345	0.03056
	B_N	0.01155	0.01890	0.13688
	B_N	0.01737	0.02464	0.14119

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	0.00218	0.00188	0.00185
	(!B_N * !Y)	-0.00229	-0.00263	-0.00262
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	0.00455	0.00384	0.00376
	(!B_N * !Y)	-0.00403	-0.00482	-0.00483
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	0.00597	0.00468	0.00456
	(!B_N * !Y)	-0.00814	-0.00964	-0.00965

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	-0.00183	-0.00184	-0.00183
	(!B_N * !Y)	0.00261	0.00264	0.00263
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	-0.00375	-0.00377	-0.00374
	(!B_N * !Y)	0.00483	0.00487	0.00483
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	-0.00454	-0.00456	-0.00452
	(!B_N * !Y)	0.00962	0.00971	0.00968

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00520	0.00826	0.07535
	(A * !Y)	0.00088	0.00395	0.07103
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00676	0.00975	0.08254
	(A * !Y)	0.00191	0.00486	0.07767
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.01042	0.01541	0.13218
	(A * !Y)	0.00314	0.00811	0.12491

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00165	0.00597	0.07303
	(A * !Y)	0.00596	0.01029	0.07734
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00357	0.00764	0.08039
	(A * !Y)	0.00841	0.01250	0.08525
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.00422	0.01117	0.12915
	(A * !Y)	0.01145	0.01844	0.13640

SKY130_FD_SC_HS__NOR2x

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00281	0.00288	0.66798
sky130_fd_sc_hs__nor2_2	0.00446	0.00425	1.16891
sky130_fd_sc_hs__nor2_4	0.00853	0.00849	2.22505
sky130_fd_sc_hs__nor2_8	0.01665	0.01674	3.98408

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor2_1	0.00000	0.04097	0.10133
sky130_fd_sc_hs__nor2_2	0.00000	0.07771	0.20266
sky130_fd_sc_hs__nor2_4	0.00000	0.15541	0.40531
sky130_fd_sc_hs__nor2_8	0.00000	0.31082	0.81062

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)	0.05742	0.84869	10.23520
	B->Y (FR)	0.04505	0.85701	10.59260
sky130_fd_sc_hs__nor2_2	A->Y (FR)	0.04713	0.71311	9.94063
	B->Y (FR)	0.02882	0.72180	10.29370
sky130_fd_sc_hs__nor2_4	A->Y (FR)	0.04673	0.61254	9.88528
	B->Y (FR)	0.02827	0.63119	10.35840
sky130_fd_sc_hs__nor2_8	A->Y (FR)	0.04683	0.52015	9.57597
	B->Y (FR)	0.03361	0.56374	10.28110

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2_1	A->Y (RF)	0.01813	0.30093	3.53219
	B->Y (RF)	0.01580	0.29285	3.51537
sky130_fd_sc_hs__nor2_2	A->Y (RF)	0.02408	0.39003	5.34930
	B->Y (RF)	0.01778	0.37594	5.33658
sky130_fd_sc_hs__nor2_4	A->Y (RF)	0.02349	0.32668	5.23964
	B->Y (RF)	0.01705	0.30711	5.16417
sky130_fd_sc_hs__nor2_8	A->Y (RF)	0.02209	0.26366	4.90935
	B->Y (RF)	0.02397	0.25408	4.89490

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	-0.00068	-0.00030	0.01234
	A	0.00591	0.00630	0.01900
	B	-0.00086	0.00040	0.01963
	B	0.00451	0.00537	0.02510
sky130_fd_sc_hs__nor2_2	A	-0.00119	-0.00075	0.01437
	A	0.00979	0.01000	0.02544
	B	-0.00102	0.00093	0.02484
	B	0.00682	0.00875	0.03280
sky130_fd_sc_hs__nor2_4	A	-0.00019	0.00086	0.03182
	A	0.02116	0.02214	0.05321
	B	-0.00090	0.00335	0.04998
	B	0.01490	0.01917	0.06607
sky130_fd_sc_hs__nor2_8	A	-0.00132	0.00159	0.06409
	A	0.04069	0.04365	0.10633
	B	-0.00299	0.00735	0.10198
	B	0.02842	0.03869	0.13376

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	0.00741	0.00795	0.01917
	A	0.00086	0.00138	0.01260
	B	0.00517	0.00597	0.01657
	B	-0.00021	0.00055	0.01109
sky130_fd_sc_hs__nor2_2	A	0.01261	0.01316	0.02874
	A	0.00172	0.00228	0.01637
	B	0.00604	0.00732	0.02153
	B	-0.00178	-0.00056	0.01298
sky130_fd_sc_hs__nor2_4	A	0.02398	0.02538	0.05552
	A	0.00283	0.00417	0.03240
	B	0.01205	0.01451	0.04219
	B	-0.00378	-0.00132	0.02592
sky130_fd_sc_hs__nor2_8	A	0.04564	0.05007	0.10773
	A	0.00403	0.00830	0.06584
	B	0.02386	0.03010	0.08955
	B	-0.00753	-0.00142	0.05429

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	0.00232	0.00202	0.00198
	(B * !Y)	-0.00196	-0.00232	-0.00232
sky130_fd_sc_hs__nor2_2	(B * !Y)	0.00326	0.00253	0.00247
	(B * !Y)	-0.00378	-0.00462	-0.00464
sky130_fd_sc_hs__nor2_4	(B * !Y)	0.00569	0.00414	0.00401
	(B * !Y)	-0.00757	-0.00930	-0.00935
sky130_fd_sc_hs__nor2_8	(B * !Y)	0.01083	0.00794	0.00774
	(B * !Y)	-0.01528	-0.01862	-0.01859

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	-0.00197	-0.00198	-0.00197
	(B * !Y)	0.00231	0.00232	0.00232
sky130_fd_sc_hs__nor2_2	(B * !Y)	-0.00247	-0.00247	-0.00245
	(B * !Y)	0.00464	0.00466	0.00464
sky130_fd_sc_hs__nor2_4	(B * !Y)	-0.00398	-0.00400	-0.00396
	(B * !Y)	0.00931	0.00942	0.00935
sky130_fd_sc_hs__nor2_8	(B * !Y)	-0.00770	-0.00771	-0.00764
	(B * !Y)	0.01853	0.01864	0.01859

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(A * !Y)	0.00224	0.00224	0.00222
	(A * !Y)	-0.00108	-0.00107	-0.00106
sky130_fd_sc_hs__nor2_2	(A * !Y)	0.00244	0.00247	0.00245
	(A * !Y)	-0.00215	-0.00218	-0.00216
sky130_fd_sc_hs__nor2_4	(A * !Y)	0.00492	0.00498	0.00494
	(A * !Y)	-0.00426	-0.00431	-0.00427
sky130_fd_sc_hs__nor2_8	(A * !Y)	0.00971	0.00981	0.00973
	(A * !Y)	-0.00845	-0.00854	-0.00846

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(A * !Y)	-0.00217	-0.00218	-0.00222
	(A * !Y)	0.00112	0.00112	0.00108
sky130_fd_sc_hs__nor2_2	(A * !Y)	-0.00225	-0.00228	-0.00243
	(A * !Y)	0.00232	0.00235	0.00220
sky130_fd_sc_hs__nor2_4	(A * !Y)	-0.00458	-0.00463	-0.00491
	(A * !Y)	0.00458	0.00460	0.00435
sky130_fd_sc_hs__nor2_8	(A * !Y)	-0.00906	-0.00918	-0.00968
	(A * !Y)	0.00898	0.00908	0.00861

SKY130_FD_SC_HS__NOR3Bx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00276	0.00287	0.00220	0.44531
sky130_fd_sc_hs__nor3b_2	0.00540	0.00538	0.00261	0.78931
sky130_fd_sc_hs__nor3b_4	0.01083	0.01077	0.00370	1.35400

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor3b_1	0.00000	0.32866	0.63878
sky130_fd_sc_hs__nor3b_2	0.00000	0.19020	0.34119
sky130_fd_sc_hs__nor3b_4	0.00000	0.71166	1.35989

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)	0.11013	0.96127	9.80116
	B->Y (FR)	0.09935	0.98887	10.40640
	C_N->Y (RR)	0.09169	0.76071	6.33309
sky130_fd_sc_hs__nor3b_2	A->Y (FR)	0.10553	0.80963	9.53867
	B->Y (FR)	0.09309	0.84478	10.33400
	C_N->Y (RR)	0.07726	0.61820	6.17498
sky130_fd_sc_hs__nor3b_4	A->Y (FR)	0.10935	0.69442	9.25144
	B->Y (FR)	0.09714	0.73556	10.10700
	C_N->Y (RR)	0.09667	0.57489	6.51188

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3b_1	A->Y (RF)	0.01897	0.26257	2.53653
	B->Y (RF)	0.02040	0.26475	2.61989
	C_N->Y (FF)	0.06249	0.34903	2.77044
sky130_fd_sc_hs__nor3b_2	A->Y (RF)	0.01568	0.20360	2.26868
	B->Y (RF)	0.01633	0.19499	2.22987
	C_N->Y (FF)	0.06742	0.35064	2.65388
sky130_fd_sc_hs__nor3b_4	A->Y (RF)	0.01536	0.16718	2.12031
	B->Y (RF)	0.01591	0.15746	2.08594
	C_N->Y (FF)	0.07425	0.33520	2.43698

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.00212	0.00214	0.01616
	A	0.00828	0.00833	0.02232
	B	0.00189	0.00208	0.01497
	B	0.00709	0.00730	0.02021
	C_N	0.00905	0.01197	0.07462
	C_N	0.00564	0.00858	0.07135
sky130_fd_sc_hs__nor3b_2	A	0.00324	0.00334	0.03196
	A	0.01623	0.01636	0.04501
	B	0.00323	0.00369	0.02980
	B	0.01348	0.01379	0.04014
	C_N	0.01315	0.01639	0.09024
	C_N	0.00993	0.01337	0.08735
sky130_fd_sc_hs__nor3b_4	A	0.00605	0.00636	0.06347
	A	0.03212	0.03246	0.08980
	B	0.00626	0.00732	0.05835
	B	0.02700	0.02805	0.07917
	C_N	0.02379	0.02879	0.14478
	C_N	0.01993	0.02494	0.14123

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.00833	0.00871	0.02180
	A	0.00221	0.00259	0.01570
	B	0.00633	0.00696	0.01887
	B	0.00115	0.00175	0.01369
	C_N	0.00487	0.00908	0.07445
	C_N	0.00826	0.01247	0.07785
sky130_fd_sc_hs__nor3b_2	A	0.01689	0.01796	0.04477
	A	0.00410	0.00514	0.03199
	B	0.01214	0.01350	0.03797
	B	0.00193	0.00322	0.02775
	C_N	0.00889	0.01315	0.07848
	C_N	0.01211	0.01638	0.08169
sky130_fd_sc_hs__nor3b_4	A	0.03322	0.03510	0.08822
	A	0.00750	0.00929	0.06256
	B	0.02392	0.02668	0.07435
	B	0.00330	0.00590	0.05368
	C_N	0.01940	0.02664	0.14378
	C_N	0.02326	0.03052	0.14763

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)	0.00199	0.00188	0.00185
	(B * C_N * !Y)	-0.00208	-0.00227	-0.00226
	(B * !C_N * !Y)	0.00178	0.00180	0.00178
	(B * !C_N * !Y)	-0.00229	-0.00234	-0.00233
	(!B * !C_N * !Y)	0.00185	0.00179	0.00178
	(!B * !C_N * !Y)	-0.00207	-0.00228	-0.00227
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	0.00394	0.00379	0.00374
	(B * C_N * !Y)	-0.00439	-0.00470	-0.00468
	(B * !C_N * !Y)	0.00375	0.00378	0.00373
	(B * !C_N * !Y)	-0.00457	-0.00467	-0.00468
	(!B * !C_N * !Y)	0.00386	0.00378	0.00374
	(!B * !C_N * !Y)	-0.00421	-0.00459	-0.00456
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	0.00847	0.00806	0.00796
	(B * C_N * !Y)	-0.00834	-0.00904	-0.00899
	(B * !C_N * !Y)	0.00746	0.00751	0.00742
	(B * !C_N * !Y)	-0.00932	-0.00955	-0.00951
	(!B * !C_N * !Y)	0.00761	0.00751	0.00742
	(!B * !C_N * !Y)	-0.00854	-0.00935	-0.00931

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)	-0.00184	-0.00184	-0.00184
	(B * C_N * !Y)	0.00226	0.00227	0.00226
	(B * !C_N * !Y)	-0.00176	-0.00178	-0.00177
	(B * !C_N * !Y)	0.00232	0.00234	0.00233
	(!B * !C_N * !Y)	-0.00177	-0.00178	-0.00177
	(!B * !C_N * !Y)	0.00227	0.00228	0.00227
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	-0.00371	-0.00373	-0.00372
	(B * C_N * !Y)	0.00466	0.00470	0.00468
	(B * !C_N * !Y)	-0.00371	-0.00372	-0.00372
	(B * !C_N * !Y)	0.00465	0.00467	0.00468
	(!B * !C_N * !Y)	-0.00374	-0.00374	-0.00372
	(!B * !C_N * !Y)	0.00458	0.00459	0.00456
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	-0.00792	-0.00797	-0.00793
	(B * C_N * !Y)	0.00894	0.00904	0.00899
	(B * !C_N * !Y)	-0.00738	-0.00743	-0.00741
	(B * !C_N * !Y)	0.00944	0.00955	0.00951
	(!B * !C_N * !Y)	-0.00736	-0.00742	-0.00739
	(!B * !C_N * !Y)	0.00924	0.00935	0.00931

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)	0.00217	0.00219	0.00216
	(A * C_N * !Y)	-0.00116	-0.00117	-0.00117
	(A * !C_N * !Y)	0.00200	0.00204	0.00192
	(A * !C_N * !Y)	-0.00175	-0.00175	-0.00174
	(!A * !C_N * !Y)	0.00232	0.00188	0.00185
	(!A * !C_N * !Y)	-0.00209	-0.00253	-0.00253
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	0.00387	0.00389	0.00384
	(A * C_N * !Y)	-0.00248	-0.00248	-0.00247
	(A * !C_N * !Y)	0.00401	0.00410	0.00389
	(A * !C_N * !Y)	-0.00315	-0.00315	-0.00314
	(!A * !C_N * !Y)	0.00472	0.00371	0.00370
	(!A * !C_N * !Y)	-0.00379	-0.00474	-0.00478
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	0.00783	0.00793	0.00780
	(A * C_N * !Y)	-0.00483	-0.00489	-0.00490
	(A * !C_N * !Y)	0.00814	0.00832	0.00780
	(A * !C_N * !Y)	-0.00623	-0.00632	-0.00628
	(!A * !C_N * !Y)	0.00956	0.00760	0.00745
	(!A * !C_N * !Y)	-0.00735	-0.00952	-0.00955

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)	-0.00212	-0.00214	-0.00213
	(A * C_N * !Y)	0.00119	0.00121	0.00121
	(A * !C_N * !Y)	-0.00185	-0.00185	-0.00185
	(A * !C_N * !Y)	0.00175	0.00175	0.00174
	(!A * !C_N * !Y)	-0.00184	-0.00185	-0.00184
	(!A * !C_N * !Y)	0.00252	0.00255	0.00254
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	-0.00377	-0.00380	-0.00378
	(A * C_N * !Y)	0.00251	0.00254	0.00256
	(A * !C_N * !Y)	-0.00373	-0.00374	-0.00373
	(A * !C_N * !Y)	0.00315	0.00315	0.00314
	(!A * !C_N * !Y)	-0.00368	-0.00371	-0.00368
	(!A * !C_N * !Y)	0.00476	0.00482	0.00479
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	-0.00770	-0.00774	-0.00767
	(A * C_N * !Y)	0.00497	0.00502	0.00506
	(A * !C_N * !Y)	-0.00744	-0.00750	-0.00747
	(A * !C_N * !Y)	0.00623	0.00632	0.00628
	(!A * !C_N * !Y)	-0.00741	-0.00743	-0.00738
	(!A * !C_N * !Y)	0.00957	0.00960	0.00959

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00510	0.00817	0.07495
	(B * !Y)	0.00097	0.00404	0.07080
	(A * !B * !Y)	0.00519	0.00827	0.07499
	(A * !B * !Y)	0.00100	0.00405	0.07079
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00671	0.00970	0.08256
	(B * !Y)	0.00193	0.00490	0.07776
	(A * !B * !Y)	0.00692	0.00992	0.08271
	(A * !B * !Y)	0.00199	0.00496	0.07779
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.01084	0.01482	0.13124
	(B * !Y)	0.00360	0.00756	0.12402
	(A * !B * !Y)	0.01121	0.01518	0.13149
	(A * !B * !Y)	0.00369	0.00764	0.12404

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00171	0.00600	0.07277
	(B * !Y)	0.00584	0.01014	0.07690
	(A * !B * !Y)	0.00171	0.00600	0.07274
	(A * !B * !Y)	0.00585	0.01015	0.07689
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00352	0.00768	0.08041
	(B * !Y)	0.00829	0.01247	0.08520
	(A * !B * !Y)	0.00352	0.00768	0.08041
	(A * !B * !Y)	0.00830	0.01248	0.08521
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.00841	0.01526	0.13298
	(B * !Y)	0.01564	0.02250	0.14019
	(A * !B * !Y)	0.00842	0.01527	0.13296
	(A * !B * !Y)	0.01568	0.02251	0.14021

SKY130_FD_SC_HS__NOR3x

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00285	0.00308	0.00293	0.43794
sky130_fd_sc_hs__nor3_2	0.00441	0.00463	0.00430	0.82033
sky130_fd_sc_hs__nor3_4	0.00966	0.00951	0.00918	1.30828

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor3_1	0.00000	0.02745	0.10133
sky130_fd_sc_hs__nor3_2	0.00000	0.05172	0.20266
sky130_fd_sc_hs__nor3_4	0.00000	0.10343	0.40531

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)	0.11154	0.94830	9.60740
	B->Y (FR)	0.10216	0.97813	10.22170
	C->Y (FR)	0.07240	0.96299	10.36760
sky130_fd_sc_hs__nor3_2	A->Y (FR)	0.08913	0.78750	9.46070
	B->Y (FR)	0.07564	0.80881	10.04770
	C->Y (FR)	0.03812	0.78595	10.19370
sky130_fd_sc_hs__nor3_4	A->Y (FR)	0.09991	0.68291	8.94573
	B->Y (FR)	0.08174	0.70064	9.59981
	C->Y (FR)	0.04505	0.69015	9.86323

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3_1	A->Y (RF)	0.01971	0.26124	2.49462
	B->Y (RF)	0.02148	0.26196	2.56006
	C->Y (RF)	0.01820	0.25449	2.55750
sky130_fd_sc_hs__nor3_2	A->Y (RF)	0.02825	0.35645	4.19203
	B->Y (RF)	0.02730	0.34270	4.14244
	C->Y (RF)	0.01954	0.32660	4.12653
sky130_fd_sc_hs__nor3_4	A->Y (RF)	0.02075	0.28250	3.59754
	B->Y (RF)	0.02376	0.27591	3.64969
	C->Y (RF)	0.02581	0.26299	3.63083

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.00002	0.00003	0.01431
	A	0.00857	0.00861	0.02290
	B	0.00008	0.00025	0.01338
	B	0.00740	0.00758	0.02071
	C	-0.00006	0.00105	0.02076
	C	0.00600	0.00711	0.02686
sky130_fd_sc_hs__nor3_2	A	-0.00014	-0.00011	0.01651
	A	0.01375	0.01382	0.03050
	B	0.00019	0.00044	0.01658
	B	0.01155	0.01182	0.02795
	C	0.00005	0.00188	0.02778
	C	0.00833	0.01018	0.03611
sky130_fd_sc_hs__nor3_4	A	-0.00068	-0.00070	0.03543
	A	0.02899	0.02904	0.06539
	B	-0.00067	-0.00001	0.03637
	B	0.02291	0.02359	0.06001
	C	-0.00156	0.00264	0.05735
	C	0.01702	0.02125	0.07602

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.01070	0.01108	0.02440
	A	0.00223	0.00259	0.01594
	B	0.00851	0.00912	0.02125
	B	0.00123	0.00181	0.01398
	C	0.00589	0.00671	0.01831
	C	-0.00015	0.00062	0.01223
sky130_fd_sc_hs__nor3_2	A	0.01801	0.01845	0.03488
	A	0.00435	0.00480	0.02107
	B	0.01328	0.01399	0.02960
	B	0.00205	0.00269	0.01837
	C	0.00661	0.00796	0.02325
	C	-0.00163	-0.00035	0.01475
sky130_fd_sc_hs__nor3_4	A	0.03815	0.03860	0.07170
	A	0.00898	0.00935	0.04217
	B	0.02718	0.02838	0.06197
	B	0.00376	0.00487	0.03819
	C	0.01509	0.01797	0.05174
	C	-0.00350	-0.00064	0.03252

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	0.00203	0.00205	0.00203
	(B * C * !Y)	-0.00224	-0.00231	-0.00229
	(B * !C * !Y)	0.00214	0.00205	0.00203
	(B * !C * !Y)	-0.00212	-0.00230	-0.00230
	(!B * C * !Y)	0.00210	0.00204	0.00203
	(!B * C * !Y)	-0.00201	-0.00223	-0.00223
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	0.00238	0.00239	0.00236
	(B * C * !Y)	-0.00437	-0.00455	-0.00451
	(B * !C * !Y)	0.00252	0.00239	0.00236
	(B * !C * !Y)	-0.00417	-0.00454	-0.00452
	(!B * C * !Y)	0.00252	0.00239	0.00236
	(!B * C * !Y)	-0.00391	-0.00438	-0.00437
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	0.00453	0.00458	0.00452
	(B * C * !Y)	-0.00933	-0.00963	-0.00960
	(B * !C * !Y)	0.00538	0.00458	0.00452
	(B * !C * !Y)	-0.00849	-0.00970	-0.00962
	(!B * C * !Y)	0.00506	0.00459	0.00452
	(!B * C * !Y)	-0.00814	-0.00945	-0.00931

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	-0.00202	-0.00203	-0.00202
	(B * C * !Y)	0.00229	0.00231	0.00229
	(B * !C * !Y)	-0.00202	-0.00203	-0.00202
	(B * !C * !Y)	0.00229	0.00230	0.00230
	(!B * C * !Y)	-0.00202	-0.00203	-0.00202
	(!B * C * !Y)	0.00222	0.00223	0.00223
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	-0.00236	-0.00237	-0.00235
	(B * C * !Y)	0.00450	0.00455	0.00451
	(B * !C * !Y)	-0.00236	-0.00236	-0.00235
	(B * !C * !Y)	0.00450	0.00454	0.00452
	(!B * C * !Y)	-0.00235	-0.00236	-0.00235
	(!B * C * !Y)	0.00434	0.00438	0.00437
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	-0.00450	-0.00452	-0.00451
	(B * C * !Y)	0.00955	0.00963	0.00960
	(B * !C * !Y)	-0.00450	-0.00454	-0.00451
	(B * !C * !Y)	0.00957	0.00970	0.00962
	(!B * C * !Y)	-0.00449	-0.00454	-0.00449
	(!B * C * !Y)	0.00927	0.00945	0.00931

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	0.00225	0.00228	0.00217
	(A * C * !Y)	-0.00140	-0.00140	-0.00139
	(A * !C * !Y)	0.00211	0.00213	0.00210
	(A * !C * !Y)	-0.00114	-0.00115	-0.00115
	(!A * C * !Y)	0.00256	0.00213	0.00209
	(!A * C * !Y)	-0.00176	-0.00222	-0.00222
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	0.00245	0.00252	0.00226
	(A * C * !Y)	-0.00305	-0.00304	-0.00304
	(A * !C * !Y)	0.00219	0.00220	0.00211
	(A * !C * !Y)	-0.00251	-0.00253	-0.00256
	(!A * C * !Y)	0.00314	0.00213	0.00207
	(!A * C * !Y)	-0.00364	-0.00474	-0.00478
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	0.00552	0.00559	0.00513
	(A * C * !Y)	-0.00576	-0.00582	-0.00579
	(A * !C * !Y)	0.00490	0.00496	0.00487
	(A * !C * !Y)	-0.00462	-0.00469	-0.00468
	(!A * C * !Y)	0.00676	0.00496	0.00486
	(!A * C * !Y)	-0.00699	-0.00899	-0.00901

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	-0.00209	-0.00210	-0.00209
	(A * C * !Y)	0.00140	0.00140	0.00139
	(A * !C * !Y)	-0.00207	-0.00209	-0.00207
	(A * !C * !Y)	0.00116	0.00118	0.00118
	(!A * C * !Y)	-0.00208	-0.00208	-0.00207
	(!A * C * !Y)	0.00221	0.00222	0.00222
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	-0.00210	-0.00210	-0.00210
	(A * C * !Y)	0.00305	0.00304	0.00304
	(A * !C * !Y)	-0.00205	-0.00207	-0.00203
	(A * !C * !Y)	0.00259	0.00263	0.00264
	(!A * C * !Y)	-0.00206	-0.00207	-0.00204
	(!A * C * !Y)	0.00477	0.00481	0.00478
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	-0.00484	-0.00488	-0.00486
	(A * C * !Y)	0.00576	0.00582	0.00579
	(A * !C * !Y)	-0.00480	-0.00482	-0.00473
	(A * !C * !Y)	0.00477	0.00480	0.00482
	(!A * C * !Y)	-0.00480	-0.00483	-0.00480
	(!A * C * !Y)	0.00892	0.00899	0.00901

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	0.00219	0.00221	0.00219
	(B * !Y)	-0.00107	-0.00108	-0.00107
	(A * !B * !Y)	0.00220	0.00221	0.00219
	(A * !B * !Y)	-0.00107	-0.00107	-0.00106
sky130_fd_sc_hs__nor3_2	(B * !Y)	0.00244	0.00245	0.00242
	(B * !Y)	-0.00216	-0.00216	-0.00214
	(A * !B * !Y)	0.00243	0.00244	0.00242
	(A * !B * !Y)	-0.00215	-0.00215	-0.00213
sky130_fd_sc_hs__nor3_4	(B * !Y)	0.00545	0.00549	0.00546
	(B * !Y)	-0.00440	-0.00443	-0.00441
	(A * !B * !Y)	0.00543	0.00549	0.00546
	(A * !B * !Y)	-0.00436	-0.00441	-0.00439

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	-0.00213	-0.00214	-0.00218
	(B * !Y)	0.00113	0.00113	0.00108
	(A * !B * !Y)	-0.00204	-0.00206	-0.00217
	(A * !B * !Y)	0.00115	0.00116	0.00108
sky130_fd_sc_hs__nor3_2	(B * !Y)	-0.00223	-0.00225	-0.00241
	(B * !Y)	0.00232	0.00232	0.00218
	(A * !B * !Y)	-0.00205	-0.00208	-0.00237
	(A * !B * !Y)	0.00238	0.00240	0.00218
sky130_fd_sc_hs__nor3_4	(B * !Y)	-0.00512	-0.00517	-0.00543
	(B * !Y)	0.00470	0.00473	0.00449
	(A * !B * !Y)	-0.00472	-0.00477	-0.00535
	(A * !B * !Y)	0.00486	0.00489	0.00446

SKY130_FD_SC_HS__NOR4BBx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00288	0.00296	0.00233	0.00230	0.33267
sky130_fd_sc_hs__nor4bb_2	0.00540	0.00565	0.00270	0.00257	0.55674
sky130_fd_sc_hs__nor4bb_4	0.01066	0.01134	0.00375	0.00365	1.04974

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor4bb_1	0.00000	0.62018	1.23252
sky130_fd_sc_hs__nor4bb_2	0.00000	0.30610	0.59229
sky130_fd_sc_hs__nor4bb_4	0.00000	1.27472	2.53961

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)	0.17948	1.08640	9.50075
	B->Y (FR)	0.16923	1.09778	9.96870
	C_N->Y (RR)	0.16825	0.92437	6.40038
	D_N->Y (RR)	0.10949	0.85540	6.32016
sky130_fd_sc_hs__nor4bb_2	A->Y (FR)	0.18395	0.94662	9.24607
	B->Y (FR)	0.16912	0.94273	9.68635
	C_N->Y (RR)	0.16633	0.78749	6.26864
	D_N->Y (RR)	0.09753	0.71174	6.20482
sky130_fd_sc_hs__nor4bb_4	A->Y (FR)	0.18551	0.81093	9.19025
	B->Y (FR)	0.17084	0.81498	9.67685
	C_N->Y (RR)	0.16790	0.69101	6.56972
	D_N->Y (RR)	0.10623	0.62622	6.52566

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4bb_1	A->Y (RF)	0.01993	0.24227	1.95317
	B->Y (RF)	0.02053	0.23391	1.90771
	C_N->Y (FF)	0.07697	0.35238	2.49389
	D_N->Y (FF)	0.06457	0.33132	2.40425
sky130_fd_sc_hs__nor4bb_2	A->Y (RF)	0.01657	0.18502	1.61491
	B->Y (RF)	0.01743	0.18099	1.62247
	C_N->Y (FF)	0.08007	0.35333	2.51664
	D_N->Y (FF)	0.06860	0.33882	2.49662
sky130_fd_sc_hs__nor4bb_4	A->Y (RF)	0.01755	0.16903	1.76740
	B->Y (RF)	0.01797	0.15646	1.64471
	C_N->Y (FF)	0.08215	0.33085	2.16220
	D_N->Y (FF)	0.07577	0.32487	2.21858

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.00411	0.00394	0.01873
	A	0.01075	0.01062	0.02542
	B	0.00404	0.00394	0.01772
	B	0.00956	0.00947	0.02325
	C_N	0.01213	0.01479	0.07823
	C_N	0.00863	0.01128	0.07480
	D_N	0.00984	0.01284	0.08075
	D_N	0.00670	0.00969	0.07772
sky130_fd_sc_hs__nor4bb_2	A	0.00761	0.00735	0.03601
	A	0.02072	0.02050	0.04923
	B	0.00753	0.00736	0.03453
	B	0.01818	0.01802	0.04518
	C_N	0.01800	0.02095	0.09500
	C_N	0.01485	0.01779	0.09206
	D_N	0.01474	0.01793	0.09257
	D_N	0.01194	0.01512	0.08998
sky130_fd_sc_hs__nor4bb_4	A	0.01571	0.01506	0.07164
	A	0.04111	0.04051	0.09724
	B	0.01537	0.01494	0.06822
	B	0.03651	0.03615	0.08941
	C_N	0.03278	0.03705	0.15292
	C_N	0.02914	0.03341	0.14945
	D_N	0.02615	0.03125	0.15094
	D_N	0.02275	0.02787	0.14775

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.01000	0.01024	0.02458
	A	0.00342	0.00365	0.01803
	B	0.00793	0.00839	0.02190
	B	0.00245	0.00287	0.01640
	C_N	0.00727	0.01116	0.07631
	C_N	0.01076	0.01465	0.07980
	D_N	0.00523	0.00946	0.07303
	D_N	0.00835	0.01260	0.07615
sky130_fd_sc_hs__nor4bb_2	A	0.02017	0.02058	0.04970
	A	0.00735	0.00768	0.03692
	B	0.01481	0.01584	0.04294
	B	0.00422	0.00520	0.03233
	C_N	0.01358	0.01742	0.09008
	C_N	0.01674	0.02058	0.09323
	D_N	0.00932	0.01399	0.08642
	D_N	0.01212	0.01680	0.08921
sky130_fd_sc_hs__nor4bb_4	A	0.03873	0.04020	0.09759
	A	0.01385	0.01522	0.07278
	B	0.02993	0.03165	0.08705
	B	0.00894	0.01063	0.06603
	C_N	0.02502	0.03187	0.13920
	C_N	0.02867	0.03552	0.14283
	D_N	0.01960	0.02721	0.14513
	D_N	0.02302	0.03063	0.14849

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)**	0.00216	0.00212	0.00210
	(B * C_N * D_N * !Y)	-0.00216	-0.00227	-0.00226
	(B * !D_N * !Y)	0.00214	0.00212	0.00209
	(B * !D_N * !Y)	-0.00218	-0.00228	-0.00227
	(B * !C_N * D_N * !Y)	0.00194	0.00196	0.00194
	(B * !C_N * D_N * !Y)	-0.00237	-0.00243	-0.00242
	(!B * C_N * !D_N * !Y)	0.00223	0.00215	0.00212
	(!B * C_N * !D_N * !Y)	-0.00200	-0.00217	-0.00217
	(!B * !C_N * D_N * !Y)	0.00194	0.00195	0.00194
	(!B * !C_N * D_N * !Y)	-0.00221	-0.00237	-0.00236
	(!B * !C_N * !D_N * !Y)	0.00193	0.00195	0.00193
	(!B * !C_N * !D_N * !Y)	-0.00220	-0.00237	-0.00235
sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	0.00384	0.00375	0.00371
	(B * C_N * D_N * !Y)	-0.00440	-0.00469	-0.00467
	(B * !D_N * !Y)	0.00382	0.00375	0.00370
	(B * !D_N * !Y)	-0.00446	-0.00469	-0.00466
	(B * !C_N * D_N * !Y)	0.00372	0.00374	0.00370
	(B * !C_N * D_N * !Y)	-0.00454	-0.00469	-0.00467
	(!B * C_N * !D_N * !Y)	0.00404	0.00384	0.00376
	(!B * C_N * !D_N * !Y)	-0.00410	-0.00447	-0.00446
	(!B * !C_N * D_N * !Y)	0.00374	0.00374	0.00370
	(!B * !C_N * D_N * !Y)	-0.00421	-0.00457	-0.00454
	(!B * !C_N * !D_N * !Y)	0.00371	0.00374	0.00370
	(!B * !C_N * !D_N * !Y)	-0.00420	-0.00457	-0.00453

sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	0.00752	0.00732	0.00723
	(B * C_N * D_N * !Y)	-0.00851	-0.00908	-0.00904
	(B * !D_N * !Y)	0.00749	0.00733	0.00724
	(B * !D_N * !Y)	-0.00862	-0.00903	-0.00901
	(B * !C_N * D_N * !Y)	0.00723	0.00729	0.00721
	(B * !C_N * D_N * !Y)	-0.00881	-0.00906	-0.00904
	(!B * C_N * !D_N * !Y)	0.00782	0.00748	0.00732
	(!B * C_N * !D_N * !Y)	-0.00780	-0.00865	-0.00861
	(!B * !C_N * D_N * !Y)	0.00726	0.00729	0.00721
	(!B * !C_N * D_N * !Y)	-0.00814	-0.00885	-0.00878
	(!B * !C_N * !D_N * !Y)	0.00721	0.00728	0.00719
	(!B * !C_N * !D_N * !Y)	-0.00813	-0.00884	-0.00876

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)**	-0.00207	-0.00208	-0.00207
	(B * C_N * D_N * !Y)	0.00227	0.00229	0.00228
	(B * !D_N * !Y)	-0.00207	-0.00208	-0.00208
	(B * !D_N * !Y)	0.00226	0.00228	0.00227
	(B * !C_N * D_N * !Y)	-0.00192	-0.00193	-0.00193
	(B * !C_N * D_N * !Y)	0.00241	0.00243	0.00242
	(!B * C_N * !D_N * !Y)	-0.00214	-0.00214	-0.00212
	(!B * C_N * !D_N * !Y)	0.00217	0.00217	0.00217
	(!B * !C_N * D_N * !Y)	-0.00192	-0.00193	-0.00193
	(!B * !C_N * D_N * !Y)	0.00236	0.00237	0.00236
	(!B * !C_N * !D_N * !Y)	-0.00193	-0.00194	-0.00193
	(!B * !C_N * !D_N * !Y)	0.00235	0.00237	0.00235

sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	-0.00369	-0.00371	-0.00369
	(B * C_N * D_N * !Y)	0.00467	0.00471	0.00467
	(B * !D_N * !Y)	-0.00370	-0.00371	-0.00369
	(B * !D_N * !Y)	0.00466	0.00469	0.00466
	(B * !C_N * D_N * !Y)	-0.00369	-0.00370	-0.00369
	(B * !C_N * D_N * !Y)	0.00467	0.00469	0.00467
	(!B * C_N * !D_N * !Y)	-0.00382	-0.00384	-0.00376
	(!B * C_N * !D_N * !Y)	0.00445	0.00447	0.00446
	(!B * !C_N * D_N * !Y)	-0.00368	-0.00371	-0.00369
	(!B * !C_N * D_N * !Y)	0.00452	0.00457	0.00454
	(!B * !C_N * !D_N * !Y)	-0.00369	-0.00371	-0.00369
	(!B * !C_N * !D_N * !Y)	0.00452	0.00457	0.00453
sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	-0.00718	-0.00721	-0.00717
	(B * C_N * D_N * !Y)	0.00903	0.00911	0.00904
	(B * !D_N * !Y)	-0.00721	-0.00722	-0.00721
	(B * !D_N * !Y)	0.00900	0.00903	0.00901
	(B * !C_N * D_N * !Y)	-0.00717	-0.00718	-0.00717
	(B * !C_N * D_N * !Y)	0.00903	0.00906	0.00904
	(!B * C_N * !D_N * !Y)	-0.00742	-0.00747	-0.00732
	(!B * C_N * !D_N * !Y)	0.00856	0.00865	0.00861
	(!B * !C_N * D_N * !Y)	-0.00718	-0.00721	-0.00717
	(!B * !C_N * D_N * !Y)	0.00878	0.00885	0.00878
	(!B * !C_N * !D_N * !Y)	-0.00719	-0.00722	-0.00718
	(!B * !C_N * !D_N * !Y)	0.00877	0.00884	0.00876

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)**	0.00224	0.00226	0.00224
	(A * C_N * D_N * !Y)	-0.00116	-0.00117	-0.00116
	(A * C_N * !D_N * !Y)	0.00252	0.00259	0.00259
	(A * C_N * !D_N * !Y)	-0.00145	-0.00144	-0.00144
	(A * !C_N * D_N * !Y)	0.00214	0.00217	0.00207
	(A * !C_N * D_N * !Y)	-0.00169	-0.00170	-0.00168
	(A * !C_N * !D_N * !Y)	0.00204	0.00204	0.00202
	(A * !C_N * !D_N * !Y)	-0.00177	-0.00178	-0.00176
	(!A * C_N * !D_N * !Y)	0.00256	0.00230	0.00225
	(!A * C_N * !D_N * !Y)	-0.00190	-0.00217	-0.00216
	(!A * !C_N * D_N * !Y)	0.00225	0.00204	0.00202
	(!A * !C_N * D_N * !Y)	-0.00222	-0.00245	-0.00244
	(!A * !C_N * !D_N * !Y)	0.00203	0.00204	0.00201
	(!A * !C_N * !D_N * !Y)	-0.00243	-0.00244	-0.00244
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	0.00402	0.00403	0.00399
	(A * C_N * D_N * !Y)	-0.00260	-0.00260	-0.00258
	(A * C_N * !D_N * !Y)	0.00448	0.00467	0.00466
	(A * C_N * !D_N * !Y)	-0.00317	-0.00318	-0.00315
	(A * !C_N * D_N * !Y)	0.00408	0.00409	0.00393
	(A * !C_N * D_N * !Y)	-0.00335	-0.00335	-0.00333
	(A * !C_N * !D_N * !Y)	0.00388	0.00391	0.00387
	(A * !C_N * !D_N * !Y)	-0.00350	-0.00350	-0.00348
	(!A * C_N * !D_N * !Y)	0.00452	0.00413	0.00401
	(!A * C_N * !D_N * !Y)	-0.00419	-0.00465	-0.00462
	(!A * !C_N * D_N * !Y)	0.00425	0.00387	0.00386
	(!A * !C_N * D_N * !Y)	-0.00452	-0.00487	-0.00488
	(!A * !C_N * !D_N * !Y)	0.00390	0.00386	0.00385
	(!A * !C_N * !D_N * !Y)	-0.00485	-0.00488	-0.00488

sky130_fd_sc_hs__nor4bb_4	**(A * C_N * D_N * !Y)**	0.00775	0.00791	0.00775
	(A * C_N * D_N * !Y)	-0.00509	-0.00518	-0.00510
	(A * C_N * !D_N * !Y)	0.00891	0.00921	0.00915
	(A * C_N * !D_N * !Y)	-0.00614	-0.00616	-0.00614
	(A * !C_N * D_N * !Y)	0.00800	0.00816	0.00765
	(A * !C_N * D_N * !Y)	-0.00653	-0.00654	-0.00655
	(A * !C_N * !D_N * !Y)	0.00743	0.00753	0.00741
	(A * !C_N * !D_N * !Y)	-0.00691	-0.00701	-0.00694
	(!A * C_N * !D_N * !Y)	0.00908	0.00801	0.00776
	(!A * C_N * !D_N * !Y)	-0.00801	-0.00912	-0.00909
	(!A * !C_N * D_N * !Y)	0.00853	0.00752	0.00743
	(!A * !C_N * D_N * !Y)	-0.00854	-0.00972	-0.00968
	(!A * !C_N * !D_N * !Y)	0.00743	0.00750	0.00741
	(!A * !C_N * !D_N * !Y)	-0.00958	-0.00972	-0.00967

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)**	-0.00217	-0.00219	-0.00218
	(A * C_N * D_N * !Y)	0.00122	0.00123	0.00123
	(A * C_N * !D_N * !Y)	-0.00246	-0.00246	-0.00246
	(A * C_N * !D_N * !Y)	0.00145	0.00144	0.00144
	(A * !C_N * D_N * !Y)	-0.00201	-0.00202	-0.00201
	(A * !C_N * D_N * !Y)	0.00169	0.00170	0.00168
	(A * !C_N * !D_N * !Y)	-0.00202	-0.00203	-0.00202
	(A * !C_N * !D_N * !Y)	0.00177	0.00178	0.00176
	(!A * C_N * !D_N * !Y)	-0.00229	-0.00230	-0.00225
	(!A * C_N * !D_N * !Y)	0.00215	0.00217	0.00216
	(!A * !C_N * D_N * !Y)	-0.00200	-0.00200	-0.00200
	(!A * !C_N * D_N * !Y)	0.00243	0.00245	0.00245
	(!A * !C_N * !D_N * !Y)	-0.00201	-0.00201	-0.00201
	(!A * !C_N * !D_N * !Y)	0.00244	0.00244	0.00244
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	-0.00383	-0.00386	-0.00385
	(A * C_N * D_N * !Y)	0.00271	0.00274	0.00275
	(A * C_N * !D_N * !Y)	-0.00443	-0.00445	-0.00443
	(A * C_N * !D_N * !Y)	0.00317	0.00318	0.00315
	(A * !C_N * D_N * !Y)	-0.00386	-0.00387	-0.00385
	(A * !C_N * D_N * !Y)	0.00335	0.00335	0.00333
	(A * !C_N * !D_N * !Y)	-0.00386	-0.00386	-0.00385
	(A * !C_N * !D_N * !Y)	0.00350	0.00350	0.00348
	(!A * C_N * !D_N * !Y)	-0.00412	-0.00413	-0.00401
	(!A * C_N * !D_N * !Y)	0.00460	0.00465	0.00462
	(!A * !C_N * D_N * !Y)	-0.00383	-0.00385	-0.00384
	(!A * !C_N * D_N * !Y)	0.00486	0.00490	0.00489
	(!A * !C_N * !D_N * !Y)	-0.00385	-0.00386	-0.00384
	(!A * !C_N * !D_N * !Y)	0.00488	0.00492	0.00488

sky130_fd_sc_hs__nor4bb_4	(A * C_N * D_N * !Y)	-0.00755	-0.00752	-0.00750
	(A * C_N * D_N * !Y)	0.00534	0.00531	0.00537
	(A * C_N * !D_N * !Y)	-0.00864	-0.00866	-0.00865
	(A * C_N * !D_N * !Y)	0.00614	0.00616	0.00614
	(A * !C_N * D_N * !Y)	-0.00740	-0.00741	-0.00741
	(A * !C_N * D_N * !Y)	0.00653	0.00654	0.00655
	(A * !C_N * !D_N * !Y)	-0.00738	-0.00744	-0.00740
	(A * !C_N * !D_N * !Y)	0.00691	0.00701	0.00694
	(!A * C_N * !D_N * !Y)	-0.00801	-0.00801	-0.00776
	(!A * C_N * !D_N * !Y)	0.00902	0.00912	0.00909
	(!A * !C_N * D_N * !Y)	-0.00737	-0.00742	-0.00739
	(!A * !C_N * D_N * !Y)	0.00963	0.00972	0.00968
	(!A * !C_N * !D_N * !Y)	-0.00737	-0.00743	-0.00740
	(!A * !C_N * !D_N * !Y)	0.00961	0.00972	0.00967

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * !Y)	0.00587	0.00868	0.07479
	(B * !Y)	0.00138	0.00417	0.07031
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00594	0.00874	0.07481
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00137	0.00415	0.07024
sky130_fd_sc_hs__nor4bb_2	(B * !Y)	0.00672	0.00962	0.08252
	(B * !Y)	0.00187	0.00475	0.07767
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00692	0.00980	0.08262
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00189	0.00476	0.07762
sky130_fd_sc_hs__nor4bb_4	(B * !Y)	0.01073	0.01475	0.13044
	(B * !Y)	0.00384	0.00783	0.12355
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.01098	0.01498	0.13060
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00377	0.00776	0.12344

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * !Y)	0.00227	0.00637	0.07248
	(B * !Y)	0.00674	0.01086	0.07697
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00228	0.00637	0.07245
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00676	0.01087	0.07695
sky130_fd_sc_hs__nor4bb_2	(B * !Y)	0.00421	0.00822	0.08106
	(B * !Y)	0.00905	0.01306	0.08591
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00422	0.00823	0.08107
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00908	0.01309	0.08593
sky130_fd_sc_hs__nor4bb_4	(B * !Y)	0.00772	0.01446	0.13125
	(B * !Y)	0.01453	0.02130	0.13808
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00775	0.01449	0.13127
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.01459	0.02135	0.13812

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)	0.00520	0.00819	0.07513
	(B * C_N * !Y)	0.00109	0.00410	0.07102
	(A * !B * C_N * !Y)	0.00531	0.00830	0.07521
	(A * !B * C_N * !Y)	0.00115	0.00416	0.07106
	(!C_N * !Y)	0.00555	0.00855	0.07550
	(!C_N * !Y)	0.00145	0.00446	0.07140
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00649	0.00949	0.08231
	(B * C_N * !Y)	0.00203	0.00499	0.07784
	(A * !B * C_N * !Y)	0.00680	0.00980	0.08254
	(A * !B * C_N * !Y)	0.00219	0.00515	0.07795
	(!C_N * !Y)	0.00689	0.00989	0.08274
	(!C_N * !Y)	0.00246	0.00542	0.07830
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.00997	0.01407	0.13007
	(B * C_N * !Y)	0.00340	0.00749	0.12351
	(A * !B * C_N * !Y)	0.01046	0.01455	0.13042
	(A * !B * C_N * !Y)	0.00368	0.00775	0.12369
	(!C_N * !Y)	0.01062	0.01473	0.13087
	(!C_N * !Y)	0.00414	0.00823	0.12438

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)	0.00201	0.00629	0.07324
	(B * C_N * !Y)	0.00610	0.01039	0.07733
	(A * !B * C_N * !Y)	0.00201	0.00629	0.07324
	(A * !B * C_N * !Y)	0.00610	0.01038	0.07733
	(!C_N * !Y)	0.00160	0.00588	0.07282
	(!C_N * !Y)	0.00568	0.00997	0.07692
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00384	0.00789	0.08079
	(B * C_N * !Y)	0.00827	0.01236	0.08525
	(A * !B * C_N * !Y)	0.00384	0.00789	0.08079
	(A * !B * C_N * !Y)	0.00828	0.01236	0.08525
	(!C_N * !Y)	0.00333	0.00739	0.08030
	(!C_N * !Y)	0.00776	0.01186	0.08475
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.00902	0.01610	0.13336
	(B * C_N * !Y)	0.01549	0.02260	0.13984
	(A * !B * C_N * !Y)	0.00902	0.01610	0.13336
	(A * !B * C_N * !Y)	0.01549	0.02261	0.13985
	(!C_N * !Y)	0.00805	0.01515	0.13246
	(!C_N * !Y)	0.01452	0.02166	0.13894

SKY130_FD_SC_HS__NOR4Bx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00279	0.00289	0.00288	0.00223	0.33497
sky130_fd_sc_hs__nor4b_2	0.00550	0.00557	0.00560	0.00261	0.55217
sky130_fd_sc_hs__nor4b_4	0.01079	0.01085	0.01101	0.00393	1.01848

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor4b_1	0.00000	0.31896	0.63878
sky130_fd_sc_hs__nor4b_2	0.00000	0.17080	0.34119
sky130_fd_sc_hs__nor4b_4	0.00000	0.67286	1.35989

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)	0.17288	1.08099	9.51527
	B->Y (FR)	0.16197	1.09239	9.98908
	C->Y (FR)	0.13420	1.09725	10.45980
	D_N->Y (RR)	0.11293	0.86364	6.39533
sky130_fd_sc_hs__nor4b_2	A->Y (FR)	0.18463	0.94344	9.18534
	B->Y (FR)	0.16984	0.94048	9.62732
	C->Y (FR)	0.13999	0.95656	10.31600
	D_N->Y (RR)	0.09820	0.70627	6.10153
sky130_fd_sc_hs__nor4b_4	A->Y (FR)	0.18413	0.80889	9.07262
	B->Y (FR)	0.16969	0.81046	9.56913
	C->Y (FR)	0.13705	0.82388	10.25550
	D_N->Y (RR)	0.10894	0.63045	6.52653

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4b_1	A->Y (RF)	0.02027	0.24921	2.03891
	B->Y (RF)	0.02151	0.24392	2.02284
	C->Y (RF)	0.02147	0.23652	2.00514
	D_N->Y (FF)	0.06527	0.33656	2.49748
sky130_fd_sc_hs__nor4b_2	A->Y (RF)	0.01653	0.18353	1.59277
	B->Y (RF)	0.01728	0.17990	1.60119
	C->Y (RF)	0.01937	0.17803	1.63229
	D_N->Y (FF)	0.07072	0.34072	2.40485
sky130_fd_sc_hs__nor4b_4	A->Y (RF)	0.01682	0.15685	1.59716
	B->Y (RF)	0.01691	0.14901	1.55591
	C->Y (RF)	0.01722	0.13335	1.44418
	D_N->Y (FF)	0.07409	0.31954	2.13952

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.00234	0.00217	0.01638
	A	0.01016	0.01003	0.02425
	B	0.00231	0.00221	0.01543
	B	0.00895	0.00886	0.02208
	C	0.00206	0.00217	0.01511
	C	0.00770	0.00781	0.02077
	D_N	0.00945	0.01233	0.07585
	D_N	0.00632	0.00920	0.07280
sky130_fd_sc_hs__nor4b_2	A	0.00423	0.00395	0.03325
	A	0.02107	0.02082	0.05019
	B	0.00428	0.00407	0.03185
	B	0.01839	0.01822	0.04599
	C	0.00413	0.00429	0.02980
	C	0.01572	0.01593	0.04143
	D_N	0.01422	0.01734	0.09145
	D_N	0.01210	0.01522	0.08958
sky130_fd_sc_hs__nor4b_4	A	0.00836	0.00778	0.06506
	A	0.04157	0.04106	0.09849
	B	0.00839	0.00801	0.06219
	B	0.03624	0.03593	0.09011
	C	0.00797	0.00859	0.05905
	C	0.03093	0.03157	0.08201
	D_N	0.02504	0.02988	0.14827
	D_N	0.02326	0.02813	0.14669

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.01127	0.01155	0.02547
	A	0.00358	0.00383	0.01778
	B	0.00916	0.00960	0.02262
	B	0.00260	0.00303	0.01605
	C	0.00690	0.00761	0.01995
	C	0.00129	0.00197	0.01432
	D_N	0.00553	0.00973	0.07513
	D_N	0.00865	0.01285	0.07824
sky130_fd_sc_hs__nor4b_2	A	0.02368	0.02403	0.05309
	A	0.00725	0.00753	0.03675
	B	0.01827	0.01922	0.04628
	B	0.00434	0.00522	0.03236
	C	0.01355	0.01482	0.03966
	C	0.00200	0.00320	0.02808
	D_N	0.01027	0.01487	0.08046
	D_N	0.01238	0.01700	0.08257
sky130_fd_sc_hs__nor4b_4	A	0.04603	0.04685	0.10329
	A	0.01352	0.01434	0.07103
	B	0.03574	0.03763	0.09021
	B	0.00824	0.00998	0.06270
	C	0.02608	0.02870	0.07786
	C	0.00319	0.00581	0.05497
	D_N	0.02087	0.02825	0.13676
	D_N	0.02264	0.03004	0.13848

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)**	0.00188	0.00190	0.00187
	(B * C * D_N * !Y)	-0.00220	-0.00227	-0.00226
	(B * !D_N * !Y)	0.00180	0.00182	0.00180
	(B * !D_N * !Y)	-0.00228	-0.00234	-0.00233
	(B * !C * D_N * !Y)	0.00190	0.00190	0.00187
	(B * !C * D_N * !Y)	-0.00215	-0.00227	-0.00226
	(!B * C * D_N * !Y)	0.00188	0.00189	0.00187
	(!B * C * D_N * !Y)	-0.00201	-0.00220	-0.00219
	(!B * C * !D_N * !Y)	0.00179	0.00181	0.00179
	(!B * C * !D_N * !Y)	-0.00209	-0.00228	-0.00226
	(!B * !C * !D_N * !Y)	0.00181	0.00181	0.00180
	(!B * !C * !D_N * !Y)	-0.00207	-0.00224	-0.00223
sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	0.00377	0.00381	0.00377
	(B * C * D_N * !Y)	-0.00455	-0.00469	-0.00471
	(B * !D_N * !Y)	0.00377	0.00381	0.00377
	(B * !D_N * !Y)	-0.00456	-0.00470	-0.00471
	(B * !C * D_N * !Y)	0.00382	0.00381	0.00377
	(B * !C * D_N * !Y)	-0.00445	-0.00474	-0.00471
	(!B * C * D_N * !Y)	0.00380	0.00381	0.00377
	(!B * C * D_N * !Y)	-0.00419	-0.00459	-0.00456
	(!B * C * !D_N * !Y)	0.00376	0.00380	0.00377
	(!B * C * !D_N * !Y)	-0.00419	-0.00459	-0.00456
	(!B * !C * !D_N * !Y)	0.00383	0.00380	0.00377
	(!B * !C * !D_N * !Y)	-0.00415	-0.00451	-0.00450

sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	0.00737	0.00746	0.00737
	(B * C * D_N * !Y)	-0.00898	-0.00931	-0.00929
	(B * !D_N * !Y)	0.00736	0.00744	0.00736
	(B * !D_N * !Y)	-0.00900	-0.00930	-0.00928
	(B * !C * D_N * !Y)	0.00746	0.00746	0.00737
	(B * !C * D_N * !Y)	-0.00879	-0.00934	-0.00930
	(!B * C * D_N * !Y)	0.00744	0.00745	0.00737
	(!B * C * D_N * !Y)	-0.00829	-0.00905	-0.00898
	(!B * C * !D_N * !Y)	0.00738	0.00744	0.00736
	(!B * C * !D_N * !Y)	-0.00831	-0.00905	-0.00899
	(!B * !C * !D_N * !Y)	0.00742	0.00744	0.00737
	(!B * !C * !D_N * !Y)	-0.00814	-0.00888	-0.00888

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)**	-0.00185	-0.00187	-0.00186
	(B * C * D_N * !Y)	0.00225	0.00228	0.00226
	(B * !D_N * !Y)	-0.00178	-0.00180	-0.00179
	(B * !D_N * !Y)	0.00231	0.00234	0.00233
	(B * !C * D_N * !Y)	-0.00185	-0.00186	-0.00186
	(B * !C * D_N * !Y)	0.00225	0.00227	0.00226
	(!B * C * D_N * !Y)	-0.00186	-0.00187	-0.00186
	(!B * C * D_N * !Y)	0.00219	0.00221	0.00219
	(!B * C * !D_N * !Y)	-0.00179	-0.00180	-0.00179
	(!B * C * !D_N * !Y)	0.00225	0.00228	0.00226
	(!B * !C * !D_N * !Y)	-0.00179	-0.00179	-0.00179
	(!B * !C * !D_N * !Y)	0.00223	0.00224	0.00223

sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	-0.00376	-0.00375	-0.00376
	(B * C * D_N * !Y)	0.00472	0.00469	0.00471
	(B * !D_N * !Y)	-0.00376	-0.00375	-0.00376
	(B * !D_N * !Y)	0.00471	0.00470	0.00471
	(B * !C * D_N * !Y)	-0.00376	-0.00377	-0.00376
	(B * !C * D_N * !Y)	0.00472	0.00474	0.00471
	(!B * C * D_N * !Y)	-0.00375	-0.00377	-0.00376
	(!B * C * D_N * !Y)	0.00455	0.00459	0.00456
	(!B * C * !D_N * !Y)	-0.00375	-0.00377	-0.00376
	(!B * C * !D_N * !Y)	0.00455	0.00459	0.00456
	(!B * !C * !D_N * !Y)	-0.00376	-0.00377	-0.00376
	(!B * !C * !D_N * !Y)	0.00449	0.00451	0.00450
sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	-0.00734	-0.00735	-0.00734
	(B * C * D_N * !Y)	0.00930	0.00931	0.00929
	(B * !D_N * !Y)	-0.00735	-0.00736	-0.00735
	(B * !D_N * !Y)	0.00929	0.00930	0.00928
	(B * !C * D_N * !Y)	-0.00730	-0.00736	-0.00733
	(B * !C * D_N * !Y)	0.00922	0.00934	0.00930
	(!B * C * D_N * !Y)	-0.00735	-0.00737	-0.00733
	(!B * C * D_N * !Y)	0.00900	0.00905	0.00898
	(!B * C * !D_N * !Y)	-0.00736	-0.00737	-0.00735
	(!B * C * !D_N * !Y)	0.00901	0.00905	0.00899
	(!B * !C * !D_N * !Y)	-0.00736	-0.00735	-0.00735
	(!B * !C * !D_N * !Y)	0.00889	0.00888	0.00888

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)**	0.00206	0.00208	0.00198
	(A * C * D_N * !Y)	-0.00144	-0.00145	-0.00144
	(A * C * !D_N * !Y)	0.00185	0.00186	0.00184
	(A * C * !D_N * !Y)	-0.00159	-0.00159	-0.00158
	(A * !C * D_N * !Y)	0.00192	0.00194	0.00192
	(A * !C * D_N * !Y)	-0.00117	-0.00118	-0.00117
	(A * !C * !D_N * !Y)	0.00184	0.00186	0.00185
	(A * !C * !D_N * !Y)	-0.00151	-0.00152	-0.00151
	(!A * C * D_N * !Y)	0.00217	0.00194	0.00192
	(!A * C * D_N * !Y)	-0.00197	-0.00224	-0.00224
	(!A * C * !D_N * !Y)	0.00185	0.00187	0.00184
	(!A * C * !D_N * !Y)	-0.00226	-0.00230	-0.00230
	(!A * !C * !D_N * !Y)	0.00198	0.00187	0.00184
	(!A * !C * !D_N * !Y)	-0.00197	-0.00225	-0.00223
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	0.00406	0.00410	0.00390
	(A * C * D_N * !Y)	-0.00315	-0.00315	-0.00313
	(A * C * !D_N * !Y)	0.00387	0.00390	0.00385
	(A * C * !D_N * !Y)	-0.00329	-0.00329	-0.00327
	(A * !C * D_N * !Y)	0.00387	0.00388	0.00384
	(A * !C * D_N * !Y)	-0.00256	-0.00256	-0.00254
	(A * !C * !D_N * !Y)	0.00386	0.00391	0.00388
	(A * !C * !D_N * !Y)	-0.00312	-0.00309	-0.00311
	(!A * C * D_N * !Y)	0.00418	0.00385	0.00384
	(!A * C * D_N * !Y)	-0.00424	-0.00472	-0.00471
	(!A * C * !D_N * !Y)	0.00389	0.00384	0.00383
	(!A * C * !D_N * !Y)	-0.00462	-0.00472	-0.00471
	(!A * !C * !D_N * !Y)	0.00403	0.00390	0.00384
	(!A * !C * !D_N * !Y)	-0.00414	-0.00462	-0.00456

sky130_fd_sc_hs__nor4b_4	**(A * C * D_N * !Y)**	0.00795	0.00807	0.00767
	(A * C * D_N * !Y)	-0.00615	-0.00614	-0.00612
	(A * C * !D_N * !Y)	0.00747	0.00760	0.00751
	(A * C * !D_N * !Y)	-0.00643	-0.00643	-0.00640
	(A * !C * D_N * !Y)	0.00755	0.00759	0.00751
	(A * !C * D_N * !Y)	-0.00502	-0.00503	-0.00498
	(A * !C * !D_N * !Y)	0.00754	0.00766	0.00757
	(A * !C * !D_N * !Y)	-0.00608	-0.00608	-0.00606
	(!A * C * D_N * !Y)	0.00839	0.00754	0.00750
	(!A * C * D_N * !Y)	-0.00823	-0.00935	-0.00935
	(!A * C * !D_N * !Y)	0.00753	0.00752	0.00748
	(!A * C * !D_N * !Y)	-0.00910	-0.00937	-0.00933
	(!A * !C * !D_N * !Y)	0.00794	0.00753	0.00749
	(!A * !C * !D_N * !Y)	-0.00810	-0.00912	-0.00902

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)**	-0.00192	-0.00192	-0.00191
	(A * C * D_N * !Y)	0.00144	0.00145	0.00144
	(A * C * !D_N * !Y)	-0.00184	-0.00185	-0.00184
	(A * C * !D_N * !Y)	0.00159	0.00159	0.00158
	(A * !C * D_N * !Y)	-0.00186	-0.00187	-0.00186
	(A * !C * D_N * !Y)	0.00122	0.00123	0.00124
	(A * !C * !D_N * !Y)	-0.00184	-0.00184	-0.00184
	(A * !C * !D_N * !Y)	0.00151	0.00152	0.00151
	(!A * C * D_N * !Y)	-0.00190	-0.00191	-0.00190
	(!A * C * D_N * !Y)	0.00223	0.00224	0.00224
	(!A * C * !D_N * !Y)	-0.00183	-0.00184	-0.00184
	(!A * C * !D_N * !Y)	0.00229	0.00230	0.00230
	(!A * !C * !D_N * !Y)	-0.00183	-0.00185	-0.00183
	(!A * !C * !D_N * !Y)	0.00222	0.00225	0.00223
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	-0.00384	-0.00384	-0.00383
	(A * C * D_N * !Y)	0.00315	0.00315	0.00313
	(A * C * !D_N * !Y)	-0.00384	-0.00385	-0.00383
	(A * C * !D_N * !Y)	0.00329	0.00329	0.00327
	(A * !C * D_N * !Y)	-0.00370	-0.00372	-0.00369
	(A * !C * D_N * !Y)	0.00267	0.00270	0.00271
	(A * !C * !D_N * !Y)	-0.00386	-0.00385	-0.00386
	(A * !C * !D_N * !Y)	0.00312	0.00309	0.00311
	(!A * C * D_N * !Y)	-0.00380	-0.00384	-0.00382
	(!A * C * D_N * !Y)	0.00468	0.00475	0.00471
	(!A * C * !D_N * !Y)	-0.00383	-0.00384	-0.00382
	(!A * C * !D_N * !Y)	0.00470	0.00472	0.00471
	(!A * !C * !D_N * !Y)	-0.00382	-0.00387	-0.00383
	(!A * !C * !D_N * !Y)	0.00454	0.00462	0.00456

sky130_fd_sc_hs__nor4b_4	(A * C * D_N * !Y)	-0.00749	-0.00749	-0.00747
	(A * C * D_N * !Y)	0.00615	0.00614	0.00612
	(A * C * !D_N * !Y)	-0.00747	-0.00750	-0.00748
	(A * C * !D_N * !Y)	0.00643	0.00643	0.00640
	(A * !C * D_N * !Y)	-0.00724	-0.00728	-0.00721
	(A * !C * D_N * !Y)	0.00523	0.00528	0.00530
	(A * !C * !D_N * !Y)	-0.00753	-0.00754	-0.00752
	(A * !C * !D_N * !Y)	0.00608	0.00608	0.00606
	(!A * C * D_N * !Y)	-0.00746	-0.00748	-0.00745
	(!A * C * D_N * !Y)	0.00934	0.00938	0.00935
	(!A * C * !D_N * !Y)	-0.00748	-0.00750	-0.00747
	(!A * C * !D_N * !Y)	0.00933	0.00938	0.00933
	(!A * !C * !D_N * !Y)	-0.00747	-0.00753	-0.00747
	(!A * !C * !D_N * !Y)	0.00898	0.00913	0.00902

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)	0.00218	0.00220	0.00217
	(B * D_N * !Y)	-0.00116	-0.00117	-0.00117
	(B * !D_N * !Y)	0.00198	0.00200	0.00189
	(B * !D_N * !Y)	-0.00176	-0.00176	-0.00176
	(A * !B * D_N * !Y)	0.00219	0.00221	0.00218
	(A * !B * D_N * !Y)	-0.00115	-0.00116	-0.00116
	(A * !B * !D_N * !Y)	0.00206	0.00194	0.00186
	(A * !B * !D_N * !Y)	-0.00177	-0.00181	-0.00179
	(!A * !B * !D_N * !Y)	0.00233	0.00189	0.00185
	(!A * !B * !D_N * !Y)	-0.00208	-0.00253	-0.00254

sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	0.00415	0.00417	0.00412
	(B * D_N * !Y)	-0.00241	-0.00241	-0.00240
	(B * !D_N * !Y)	0.00410	0.00418	0.00400
	(B * !D_N * !Y)	-0.00314	-0.00319	-0.00316
	(A * !B * D_N * !Y)	0.00413	0.00418	0.00413
	(A * !B * D_N * !Y)	-0.00236	-0.00239	-0.00238
	(A * !B * !D_N * !Y)	0.00430	0.00399	0.00393
	(A * !B * !D_N * !Y)	-0.00326	-0.00324	-0.00325
	(!A * !B * !D_N * !Y)	0.00493	0.00396	0.00389
	(!A * !B * !D_N * !Y)	-0.00364	-0.00473	-0.00475
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	0.00810	0.00821	0.00811
	(B * D_N * !Y)	-0.00472	-0.00479	-0.00476
	(B * !D_N * !Y)	0.00836	0.00852	0.00811
	(B * !D_N * !Y)	-0.00602	-0.00610	-0.00604
	(A * !B * D_N * !Y)	0.00814	0.00824	0.00812
	(A * !B * D_N * !Y)	-0.00469	-0.00474	-0.00473
	(A * !B * !D_N * !Y)	0.00879	0.00809	0.00794
	(A * !B * !D_N * !Y)	-0.00607	-0.00622	-0.00619
	(!A * !B * !D_N * !Y)	0.01006	0.00802	0.00787
	(!A * !B * !D_N * !Y)	-0.00706	-0.00921	-0.00924

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)**	-0.00213	-0.00215	-0.00214
	(B * D_N * !Y)	0.00119	0.00120	0.00121
	(B * !D_N * !Y)	-0.00185	-0.00185	-0.00184
	(B * !D_N * !Y)	0.00176	0.00176	0.00176
	(A * !B * D_N * !Y)	-0.00208	-0.00210	-0.00214
	(A * !B * D_N * !Y)	0.00119	0.00120	0.00119
	(A * !B * !D_N * !Y)	-0.00184	-0.00185	-0.00184
	(A * !B * !D_N * !Y)	0.00178	0.00181	0.00179
	(!A * !B * !D_N * !Y)	-0.00184	-0.00184	-0.00183
	(!A * !B * !D_N * !Y)	0.00255	0.00255	0.00255
sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	-0.00405	-0.00409	-0.00407
	(B * D_N * !Y)	0.00244	0.00247	0.00248
	(B * !D_N * !Y)	-0.00391	-0.00395	-0.00393
	(B * !D_N * !Y)	0.00314	0.00319	0.00316
	(A * !B * D_N * !Y)	-0.00391	-0.00394	-0.00405
	(A * !B * D_N * !Y)	0.00246	0.00249	0.00244
	(A * !B * !D_N * !Y)	-0.00393	-0.00391	-0.00392
	(A * !B * !D_N * !Y)	0.00326	0.00324	0.00325
	(!A * !B * !D_N * !Y)	-0.00387	-0.00389	-0.00386
	(!A * !B * !D_N * !Y)	0.00473	0.00476	0.00476
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	-0.00798	-0.00803	-0.00799
	(B * D_N * !Y)	0.00487	0.00492	0.00492
	(B * !D_N * !Y)	-0.00791	-0.00797	-0.00793
	(B * !D_N * !Y)	0.00602	0.00610	0.00604
	(A * !B * D_N * !Y)	-0.00771	-0.00776	-0.00796
	(A * !B * D_N * !Y)	0.00490	0.00492	0.00483
	(A * !B * !D_N * !Y)	-0.00792	-0.00793	-0.00791
	(A * !B * !D_N * !Y)	0.00620	0.00622	0.00619
	(!A * !B * !D_N * !Y)	-0.00785	-0.00787	-0.00781
	(!A * !B * !D_N * !Y)	0.00923	0.00926	0.00925

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00528	0.00830	0.07470
	(C * !Y)	0.00100	0.00399	0.07041
	(B * !C * !Y)	0.00537	0.00838	0.07475
	(B * !C * !Y)	0.00103	0.00401	0.07040
	(A * !B * !C * !Y)	0.00548	0.00848	0.07477
	(A * !B * !C * !Y)	0.00108	0.00406	0.07038
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00679	0.00977	0.08258
	(C * !Y)	0.00191	0.00485	0.07769
	(B * !C * !Y)	0.00700	0.00997	0.08274
	(B * !C * !Y)	0.00199	0.00494	0.07773
	(A * !B * !C * !Y)	0.00728	0.01026	0.08294
	(A * !B * !C * !Y)	0.00215	0.00509	0.07784
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.01039	0.01450	0.13114
	(C * !Y)	0.00317	0.00725	0.12393
	(B * !C * !Y)	0.01081	0.01492	0.13143
	(B * !C * !Y)	0.00335	0.00743	0.12403
	(A * !B * !C * !Y)	0.01136	0.01546	0.13182
	(A * !B * !C * !Y)	0.00365	0.00772	0.12423

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00170	0.00596	0.07239
	(C * !Y)	0.00597	0.01025	0.07667
	(B * !C * !Y)	0.00170	0.00597	0.07237
	(B * !C * !Y)	0.00598	0.01026	0.07667
	(A * !B * !C * !Y)	0.00170	0.00596	0.07229
	(A * !B * !C * !Y)	0.00599	0.01026	0.07659
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00352	0.00766	0.08037
	(C * !Y)	0.00839	0.01255	0.08525
	(B * !C * !Y)	0.00352	0.00766	0.08036
	(B * !C * !Y)	0.00839	0.01256	0.08526
	(A * !B * !C * !Y)	0.00352	0.00766	0.08036
	(A * !B * !C * !Y)	0.00840	0.01256	0.08525
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.00742	0.01438	0.13200
	(C * !Y)	0.01460	0.02159	0.13919
	(B * !C * !Y)	0.00742	0.01437	0.13200
	(B * !C * !Y)	0.01462	0.02160	0.13920
	(A * !B * !C * !Y)	0.00742	0.01437	0.13199
	(A * !B * !C * !Y)	0.01462	0.02161	0.13920

SKY130_FD_SC_HS__NOR4x

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00273	0.00289	0.00288	0.00292	0.33570
sky130_fd_sc_hs__nor4_2	0.00424	0.00485	0.00481	0.00450	0.58796
sky130_fd_sc_hs__nor4_4	0.00838	0.00875	0.00854	0.00868	1.03599

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor4_1	0.00000	0.01775	0.10133
sky130_fd_sc_hs__nor4_2	0.00000	0.03338	0.20265
sky130_fd_sc_hs__nor4_4	0.00000	0.06676	0.40531

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)	0.16820	1.07133	9.46506
	B->Y (FR)	0.15866	1.08312	9.93379
	C->Y (FR)	0.13112	1.08741	10.41070
	D->Y (FR)	0.08632	1.05491	10.43920
sky130_fd_sc_hs__nor4_2	A->Y (FR)	0.14563	0.89570	9.11732
	B->Y (FR)	0.13102	0.89738	9.55270
	C->Y (FR)	0.09508	0.88931	10.04260
	D->Y (FR)	0.04677	0.84569	10.01740
sky130_fd_sc_hs__nor4_4	A->Y (FR)	0.16044	0.77914	8.82438
	B->Y (FR)	0.14683	0.78297	9.35375
	C->Y (FR)	0.11420	0.79018	9.99270
	D->Y (FR)	0.05611	0.75019	10.07500

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4_1	A->Y (RF)	0.01957	0.24061	1.95414
	B->Y (RF)	0.02156	0.24410	2.02876
	C->Y (RF)	0.02186	0.23767	2.02208
	D->Y (RF)	0.01858	0.22720	1.98151
sky130_fd_sc_hs__nor4_2	A->Y (RF)	0.02657	0.32588	3.27852
	B->Y (RF)	0.03024	0.32906	3.37936
	C->Y (RF)	0.02929	0.31465	3.35034
	D->Y (RF)	0.02278	0.28930	3.19968
sky130_fd_sc_hs__nor4_4	A->Y (RF)	0.02720	0.26984	2.96734
	B->Y (RF)	0.02907	0.26353	2.97871
	C->Y (RF)	0.02984	0.25655	3.03056
	D->Y (RF)	0.02175	0.23544	2.99128

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	0.00018	0.01473
	A	0.01011	0.01001	0.02458
	B	0.00046	0.00036	0.01362
	B	0.00899	0.00889	0.02215
	C	0.00046	0.00056	0.01352
	C	0.00768	0.00779	0.02077
	D	0.00029	0.00130	0.02065
	D	0.00641	0.00744	0.02680
sky130_fd_sc_hs__nor4_2	A	0.00038	0.00026	0.01719
	A	0.01707	0.01693	0.03397
	B	-0.00002	-0.00009	0.01602
	B	0.01488	0.01479	0.03096
	C	0.00028	0.00044	0.01707
	C	0.01212	0.01227	0.02890
	D	-0.00013	0.00174	0.02806
	D	0.00908	0.01095	0.03726
sky130_fd_sc_hs__nor4_4	A	0.00399	0.00367	0.03890
	A	0.03801	0.03777	0.07304
	B	0.00411	0.00385	0.03776
	B	0.03302	0.03276	0.06679
	C	0.00425	0.00452	0.03764
	C	0.02762	0.02792	0.06101
	D	0.00375	0.00721	0.05782
	D	0.02191	0.02537	0.07594

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.01310	0.01337	0.02771
	A	0.00346	0.00372	0.01811
	B	0.01088	0.01133	0.02443
	B	0.00247	0.00289	0.01604
	C	0.00835	0.00904	0.02145
	C	0.00116	0.00184	0.01426
	D	0.00581	0.00662	0.01885
	D	-0.00030	0.00048	0.01273
sky130_fd_sc_hs__nor4_2	A	0.02319	0.02335	0.04109
	A	0.00693	0.00706	0.02484
	B	0.01909	0.01943	0.03622
	B	0.00444	0.00475	0.02155
	C	0.01311	0.01398	0.03013
	C	0.00134	0.00216	0.01823
	D	0.00749	0.00896	0.02512
	D	-0.00169	-0.00027	0.01581
sky130_fd_sc_hs__nor4_4	A	0.04659	0.04698	0.08403
	A	0.01347	0.01387	0.05085
	B	0.03653	0.03731	0.07227
	B	0.00808	0.00883	0.04383
	C	0.02639	0.02794	0.06037
	C	0.00323	0.00471	0.03711
	D	0.01486	0.01773	0.04886
	D	-0.00325	-0.00048	0.03065

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	0.00193	0.00195	0.00192
	(B * D * !Y)	-0.00226	-0.00232	-0.00231
	(B * C * !D * !Y)	0.00193	0.00195	0.00192
	(B * C * !D * !Y)	-0.00226	-0.00232	-0.00231
	(B * !C * !D * !Y)	0.00193	0.00195	0.00192
	(B * !C * !D * !Y)	-0.00222	-0.00232	-0.00231
	(!B * C * D * !Y)	0.00192	0.00194	0.00192
	(!B * C * D * !Y)	-0.00208	-0.00225	-0.00224
	(!B * C * !D * !Y)	0.00192	0.00194	0.00192
	(!B * C * !D * !Y)	-0.00208	-0.00225	-0.00224
	(!B * !C * D * !Y)	0.00194	0.00193	0.00192
	(!B * !C * D * !Y)	-0.00204	-0.00222	-0.00221
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00193	0.00194	0.00192
	(B * D * !Y)	-0.00437	-0.00453	-0.00450
	(B * C * !D * !Y)	0.00193	0.00194	0.00192
	(B * C * !D * !Y)	-0.00435	-0.00454	-0.00450
	(B * !C * !D * !Y)	0.00194	0.00194	0.00192
	(B * !C * !D * !Y)	-0.00424	-0.00453	-0.00450
	(!B * C * D * !Y)	0.00193	0.00194	0.00192
	(!B * C * D * !Y)	-0.00396	-0.00437	-0.00435
	(!B * C * !D * !Y)	0.00194	0.00194	0.00192
	(!B * C * !D * !Y)	-0.00396	-0.00437	-0.00435
	(!B * !C * D * !Y)	0.00197	0.00194	0.00192
	(!B * !C * D * !Y)	-0.00386	-0.00427	-0.00427

sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00401	0.00404	0.00399
	(B * D * !Y)	-0.00895	-0.00924	-0.00920
	(B * C * !D * !Y)	0.00401	0.00404	0.00399
	(B * C * !D * !Y)	-0.00893	-0.00924	-0.00920
	(B * !C * !D * !Y)	0.00404	0.00404	0.00400
	(B * !C * !D * !Y)	-0.00873	-0.00928	-0.00921
	(!B * C * D * !Y)	0.00401	0.00404	0.00399
	(!B * C * D * !Y)	-0.00822	-0.00898	-0.00892
	(!B * C * !D * !Y)	0.00403	0.00404	0.00400
	(!B * C * !D * !Y)	-0.00822	-0.00898	-0.00892
	(!B * !C * D * !Y)	0.00410	0.00405	0.00400
	(!B * !C * D * !Y)	-0.00805	-0.00882	-0.00879

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00192	-0.00193	-0.00192
	(B * D * !Y)	0.00230	0.00232	0.00231
	(B * C * !D * !Y)	-0.00192	-0.00193	-0.00192
	(B * C * !D * !Y)	0.00230	0.00232	0.00231
	(B * !C * !D * !Y)	-0.00191	-0.00192	-0.00192
	(B * !C * !D * !Y)	0.00229	0.00232	0.00231
	(!B * C * D * !Y)	-0.00192	-0.00192	-0.00192
	(!B * C * D * !Y)	0.00223	0.00225	0.00224
	(!B * C * !D * !Y)	-0.00192	-0.00192	-0.00192
	(!B * C * !D * !Y)	0.00224	0.00225	0.00224
	(!B * !C * D * !Y)	-0.00192	-0.00192	-0.00192
	(!B * !C * D * !Y)	0.00221	0.00222	0.00221

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00191	-0.00192	-0.00191
	(B * D * !Y)	0.00449	0.00453	0.00450
	(B * C * !D * !Y)	-0.00192	-0.00192	-0.00191
	(B * C * !D * !Y)	0.00450	0.00454	0.00450
	(B * !C * !D * !Y)	-0.00192	-0.00192	-0.00191
	(B * !C * !D * !Y)	0.00450	0.00454	0.00450
	(!B * C * D * !Y)	-0.00191	-0.00193	-0.00192
	(!B * C * D * !Y)	0.00432	0.00437	0.00435
	(!B * C * !D * !Y)	-0.00191	-0.00192	-0.00192
	(!B * C * !D * !Y)	0.00432	0.00437	0.00435
	(!B * !C * D * !Y)	-0.00191	-0.00192	-0.00191
	(!B * !C * D * !Y)	0.00425	0.00427	0.00427
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00399	-0.00400	-0.00399
	(B * D * !Y)	0.00920	0.00924	0.00920
	(B * C * !D * !Y)	-0.00399	-0.00400	-0.00399
	(B * C * !D * !Y)	0.00920	0.00924	0.00920
	(B * !C * !D * !Y)	-0.00399	-0.00400	-0.00399
	(B * !C * !D * !Y)	0.00921	0.00928	0.00921
	(!B * C * D * !Y)	-0.00399	-0.00400	-0.00399
	(!B * C * D * !Y)	0.00893	0.00898	0.00892
	(!B * C * !D * !Y)	-0.00399	-0.00400	-0.00399
	(!B * C * !D * !Y)	0.00893	0.00898	0.00892
	(!B * !C * D * !Y)	-0.00400	-0.00400	-0.00398
	(!B * !C * D * !Y)	0.00880	0.00882	0.00879

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)**	0.00186	0.00187	0.00185
	(A * C * D * !Y)	-0.00160	-0.00160	-0.00159
	(A * C * !D * !Y)	0.00198	0.00200	0.00190
	(A * C * !D * !Y)	-0.00152	-0.00153	-0.00151
	(A * !C * D * !Y)	0.00185	0.00186	0.00186
	(A * !C * D * !Y)	-0.00150	-0.00150	-0.00149
	(A * !C * !D * !Y)	0.00185	0.00187	0.00185
	(A * !C * !D * !Y)	-0.00126	-0.00127	-0.00125
	(!A * C * D * !Y)	0.00186	0.00187	0.00185
	(!A * C * D * !Y)	-0.00226	-0.00232	-0.00231
	(!A * C * !D * !Y)	0.00207	0.00187	0.00185
	(!A * C * !D * !Y)	-0.00205	-0.00232	-0.00232
	(!A * !C * D * !Y)	0.00200	0.00188	0.00185
	(!A * !C * D * !Y)	-0.00195	-0.00225	-0.00223
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	0.00244	0.00245	0.00243
	(A * C * D * !Y)	-0.00323	-0.00328	-0.00325
	(A * C * !D * !Y)	0.00269	0.00274	0.00251
	(A * C * !D * !Y)	-0.00307	-0.00310	-0.00308
	(A * !C * D * !Y)	0.00242	0.00244	0.00242
	(A * !C * D * !Y)	-0.00300	-0.00306	-0.00302
	(A * !C * !D * !Y)	0.00242	0.00242	0.00240
	(A * !C * !D * !Y)	-0.00258	-0.00257	-0.00255
	(!A * C * D * !Y)	0.00242	0.00241	0.00239
	(!A * C * D * !Y)	-0.00455	-0.00474	-0.00469
	(!A * C * !D * !Y)	0.00290	0.00241	0.00239
	(!A * C * !D * !Y)	-0.00408	-0.00473	-0.00470
	(!A * !C * D * !Y)	0.00269	0.00241	0.00239
	(!A * !C * D * !Y)	-0.00389	-0.00458	-0.00453

sky130_fd_sc_hs__nor4_4	**(A * C * D * !Y)**	0.00416	0.00418	0.00413
	(A * C * D * !Y)	-0.00645	-0.00646	-0.00645
	(A * C * !D * !Y)	0.00468	0.00469	0.00429
	(A * C * !D * !Y)	-0.00617	-0.00623	-0.00617
	(A * !C * D * !Y)	0.00417	0.00426	0.00419
	(A * !C * D * !Y)	-0.00605	-0.00606	-0.00603
	(A * !C * !D * !Y)	0.00413	0.00417	0.00413
	(A * !C * !D * !Y)	-0.00508	-0.00512	-0.00508
	(!A * C * D * !Y)	0.00419	0.00414	0.00413
	(!A * C * D * !Y)	-0.00918	-0.00947	-0.00944
	(!A * C * !D * !Y)	0.00498	0.00414	0.00413
	(!A * C * !D * !Y)	-0.00837	-0.00947	-0.00945
	(!A * !C * D * !Y)	0.00459	0.00415	0.00413
	(!A * !C * D * !Y)	-0.00795	-0.00913	-0.00908

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)**	-0.00185	-0.00185	-0.00185
	(A * C * D * !Y)	0.00160	0.00160	0.00159
	(A * C * !D * !Y)	-0.00185	-0.00186	-0.00185
	(A * C * !D * !Y)	0.00152	0.00153	0.00151
	(A * !C * D * !Y)	-0.00185	-0.00185	-0.00185
	(A * !C * D * !Y)	0.00150	0.00150	0.00149
	(A * !C * !D * !Y)	-0.00179	-0.00180	-0.00179
	(A * !C * !D * !Y)	0.00129	0.00131	0.00131
	(!A * C * D * !Y)	-0.00184	-0.00185	-0.00185
	(!A * C * D * !Y)	0.00230	0.00232	0.00231
	(!A * C * !D * !Y)	-0.00184	-0.00185	-0.00185
	(!A * C * !D * !Y)	0.00231	0.00232	0.00232
	(!A * !C * D * !Y)	-0.00184	-0.00185	-0.00184
	(!A * !C * D * !Y)	0.00222	0.00225	0.00223
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	-0.00241	-0.00243	-0.00242
	(A * C * D * !Y)	0.00323	0.00328	0.00325
	(A * C * !D * !Y)	-0.00241	-0.00242	-0.00242
	(A * C * !D * !Y)	0.00307	0.00310	0.00308
	(A * !C * D * !Y)	-0.00239	-0.00242	-0.00240
	(A * !C * D * !Y)	0.00300	0.00306	0.00302
	(A * !C * !D * !Y)	-0.00229	-0.00231	-0.00227
	(A * !C * !D * !Y)	0.00264	0.00267	0.00267
	(!A * C * D * !Y)	-0.00239	-0.00241	-0.00239
	(!A * C * D * !Y)	0.00468	0.00474	0.00469
	(!A * C * !D * !Y)	-0.00239	-0.00241	-0.00239
	(!A * C * !D * !Y)	0.00469	0.00473	0.00470
	(!A * !C * D * !Y)	-0.00238	-0.00241	-0.00238
	(!A * !C * D * !Y)	0.00451	0.00458	0.00453

sky130_fd_sc_hs__nor4_4	(A * C * D * !Y)	-0.00412	-0.00412	-0.00412
	(A * C * D * !Y)	0.00645	0.00646	0.00645
	(A * C * !D * !Y)	-0.00412	-0.00415	-0.00412
	(A * C * !D * !Y)	0.00617	0.00623	0.00617
	(A * !C * D * !Y)	-0.00416	-0.00417	-0.00415
	(A * !C * D * !Y)	0.00605	0.00606	0.00603
	(A * !C * !D * !Y)	-0.00388	-0.00389	-0.00382
	(A * !C * !D * !Y)	0.00531	0.00533	0.00536
	(!A * C * D * !Y)	-0.00411	-0.00413	-0.00412
	(!A * C * D * !Y)	0.00939	0.00947	0.00944
	(!A * C * !D * !Y)	-0.00411	-0.00413	-0.00412
	(!A * C * !D * !Y)	0.00942	0.00947	0.00945
	(!A * !C * D * !Y)	-0.00411	-0.00414	-0.00411
	(!A * !C * D * !Y)	0.00904	0.00913	0.00908

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(B * D * !Y)	0.00201	0.00202	0.00192
	(B * D * !Y)	-0.00144	-0.00144	-0.00144
	(B * !D * !Y)	0.00189	0.00191	0.00188
	(B * !D * !Y)	-0.00118	-0.00119	-0.00118
	(A * !B * D * !Y)	0.00210	0.00197	0.00188
	(A * !B * D * !Y)	-0.00144	-0.00149	-0.00147
	(A * !B * !D * !Y)	0.00190	0.00192	0.00188
	(A * !B * !D * !Y)	-0.00117	-0.00118	-0.00118
	(!A * !B * D * !Y)	0.00237	0.00192	0.00188
	(!A * !B * D * !Y)	-0.00176	-0.00224	-0.00225

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00266	0.00262	0.00246
	(B * D * !Y)	-0.00295	-0.00295	-0.00294
	(B * !D * !Y)	0.00240	0.00242	0.00238
	(B * !D * !Y)	-0.00240	-0.00241	-0.00240
	(A * !B * D * !Y)	0.00284	0.00247	0.00239
	(A * !B * D * !Y)	-0.00291	-0.00301	-0.00300
	(A * !B * !D * !Y)	0.00243	0.00244	0.00238
	(A * !B * !D * !Y)	-0.00239	-0.00239	-0.00239
	(!A * !B * D * !Y)	0.00333	0.00244	0.00236
	(!A * !B * D * !Y)	-0.00364	-0.00455	-0.00460
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00452	0.00456	0.00420
	(B * D * !Y)	-0.00588	-0.00591	-0.00586
	(B * !D * !Y)	0.00405	0.00408	0.00399
	(B * !D * !Y)	-0.00487	-0.00492	-0.00492
	(A * !B * D * !Y)	0.00502	0.00421	0.00401
	(A * !B * D * !Y)	-0.00583	-0.00610	-0.00605
	(A * !B * !D * !Y)	0.00410	0.00413	0.00401
	(A * !B * !D * !Y)	-0.00482	-0.00486	-0.00488
	(!A * !B * D * !Y)	0.00624	0.00411	0.00396
	(!A * !B * D * !Y)	-0.00699	-0.00920	-0.00928

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

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

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00187	-0.00188	-0.00187
	(B * D * !Y)	0.00144	0.00144	0.00144
	(B * !D * !Y)	-0.00187	-0.00187	-0.00185
	(B * !D * !Y)	0.00121	0.00121	0.00122
	(A * !B * D * !Y)	-0.00186	-0.00188	-0.00187
	(A * !B * D * !Y)	0.00147	0.00149	0.00147
	(A * !B * !D * !Y)	-0.00183	-0.00184	-0.00185
	(A * !B * !D * !Y)	0.00119	0.00121	0.00119
	(!A * !B * D * !Y)	-0.00186	-0.00187	-0.00186
	(!A * !B * D * !Y)	0.00224	0.00225	0.00225
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00239	-0.00239	-0.00239
	(B * D * !Y)	0.00295	0.00295	0.00294
	(B * !D * !Y)	-0.00234	-0.00236	-0.00233
	(B * !D * !Y)	0.00243	0.00246	0.00247
	(A * !B * D * !Y)	-0.00237	-0.00238	-0.00237
	(A * !B * D * !Y)	0.00299	0.00301	0.00300
	(A * !B * !D * !Y)	-0.00224	-0.00227	-0.00232
	(A * !B * !D * !Y)	0.00246	0.00248	0.00243
	(!A * !B * D * !Y)	-0.00234	-0.00235	-0.00233
	(!A * !B * D * !Y)	0.00457	0.00460	0.00460
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00401	-0.00403	-0.00400
	(B * D * !Y)	0.00588	0.00591	0.00586
	(B * !D * !Y)	-0.00390	-0.00394	-0.00387
	(B * !D * !Y)	0.00496	0.00504	0.00505
	(A * !B * D * !Y)	-0.00400	-0.00401	-0.00399
	(A * !B * D * !Y)	0.00607	0.00610	0.00605
	(A * !B * !D * !Y)	-0.00380	-0.00383	-0.00386
	(A * !B * !D * !Y)	0.00492	0.00498	0.00496
	(!A * !B * D * !Y)	-0.00392	-0.00395	-0.00390
	(!A * !B * D * !Y)	0.00921	0.00931	0.00928

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	0.00216	0.00218	0.00216
	(C * !Y)	-0.00109	-0.00109	-0.00108
	(B * !C * !Y)	0.00216	0.00218	0.00216
	(B * !C * !Y)	-0.00108	-0.00109	-0.00108
	(A * !B * !C * !Y)	0.00217	0.00218	0.00216
	(A * !B * !C * !Y)	-0.00109	-0.00109	-0.00108
sky130_fd_sc_hs__nor4_2	(C * !Y)	0.00261	0.00263	0.00262
	(C * !Y)	-0.00214	-0.00215	-0.00215
	(B * !C * !Y)	0.00261	0.00263	0.00262
	(B * !C * !Y)	-0.00213	-0.00214	-0.00213
	(A * !B * !C * !Y)	0.00262	0.00263	0.00262
	(A * !B * !C * !Y)	-0.00213	-0.00214	-0.00213
sky130_fd_sc_hs__nor4_4	(C * !Y)	0.00497	0.00499	0.00495
	(C * !Y)	-0.00433	-0.00431	-0.00428
	(B * !C * !Y)	0.00497	0.00499	0.00495
	(B * !C * !Y)	-0.00431	-0.00430	-0.00427
	(A * !B * !C * !Y)	0.00496	0.00499	0.00495
	(A * !B * !C * !Y)	-0.00430	-0.00431	-0.00426

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	-0.00210	-0.00211	-0.00215
	(C * !Y)	0.00115	0.00115	0.00110
	(B * !C * !Y)	-0.00201	-0.00202	-0.00214
	(B * !C * !Y)	0.00119	0.00119	0.00110
	(A * !B * !C * !Y)	-0.00190	-0.00192	-0.00211
	(A * !B * !C * !Y)	0.00124	0.00125	0.00111
sky130_fd_sc_hs__nor4_2	(C * !Y)	-0.00248	-0.00249	-0.00261
	(C * !Y)	0.00227	0.00227	0.00218
	(B * !C * !Y)	-0.00227	-0.00227	-0.00257
	(B * !C * !Y)	0.00238	0.00237	0.00217
	(A * !B * !C * !Y)	-0.00203	-0.00204	-0.00251
	(A * !B * !C * !Y)	0.00251	0.00251	0.00220
sky130_fd_sc_hs__nor4_4	(C * !Y)	-0.00461	-0.00466	-0.00492
	(C * !Y)	0.00455	0.00458	0.00435
	(B * !C * !Y)	-0.00424	-0.00430	-0.00484
	(B * !C * !Y)	0.00473	0.00476	0.00435
	(A * !B * !C * !Y)	-0.00371	-0.00377	-0.00470
	(A * !B * !C * !Y)	0.00504	0.00506	0.00443

SKY130_FD_SC_HS__O2111AIx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00276	0.00288	0.00279	0.00296	0.00289	0.65094
sky130_fd_sc_hs__o2111ai_2	0.00536	0.00540	0.00558	0.00545	0.00542	1.15086
sky130_fd_sc_hs__o2111ai_4	0.01068	0.01079	0.00812	0.00820	0.00811	1.93289

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2111ai_1	0.00000	0.03616	0.40531
sky130_fd_sc_hs__o2111ai_2	0.00000	0.07232	0.81063
sky130_fd_sc_hs__o2111ai_4	0.00000	0.08763	1.01329

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)	0.11855	0.90511	10.10490
	A2->Y (FR)	0.10734	0.91358	10.45350
	B1->Y (FR)	0.04758	0.61415	7.47835
	C1->Y (FR)	0.04176	0.60883	7.47992
	D1->Y (FR)	0.03462	0.60209	7.46223
sky130_fd_sc_hs__o2111ai_2	A1->Y (FR)	0.12219	0.79176	9.93795
	A2->Y (FR)	0.10493	0.79848	10.31330
	B1->Y (FR)	0.04452	0.53917	7.17007
	C1->Y (FR)	0.03810	0.52909	7.14804
	D1->Y (FR)	0.02887	0.51728	7.11716
sky130_fd_sc_hs__o2111ai_4	A1->Y (FR)	0.13023	0.70293	9.65935
	A2->Y (FR)	0.10954	0.71353	10.12030
	B1->Y (FR)	0.08169	0.67636	9.80182
	C1->Y (FR)	0.06114	0.63081	9.31126
	D1->Y (FR)	0.04509	0.63918	9.73229

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111ai_1	A1->Y (RF)	0.06586	0.45122	4.74671
	A2->Y (RF)	0.05457	0.42864	4.62443
	B1->Y (RF)	0.06074	0.49140	5.43573
	C1->Y (RF)	0.05475	0.52547	5.99027
	D1->Y (RF)	0.04618	0.54291	6.32522
sky130_fd_sc_hs__o2111ai_2	A1->Y (RF)	0.07441	0.40222	4.85634
	A2->Y (RF)	0.05850	0.37697	4.73925
	B1->Y (RF)	0.06834	0.43771	5.52506
	C1->Y (RF)	0.06089	0.49570	6.45892
	D1->Y (RF)	0.04651	0.50843	6.81161
sky130_fd_sc_hs__o2111ai_4	A1->Y (RF)	0.07012	0.31233	4.27894
	A2->Y (RF)	0.05918	0.30319	4.42293
	B1->Y (RF)	0.04997	0.34775	5.28208
	C1->Y (RF)	0.04237	0.39563	6.13012
	D1->Y (RF)	0.02762	0.41349	6.60247

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111ai_1	A1	0.00269	0.00278	0.01261
	A1	0.01348	0.01357	0.02341
	A2	0.00272	0.00357	0.01854
	A2	0.01222	0.01307	0.02810
	B1	0.00140	0.00280	0.02174
	B1	0.00929	0.01040	0.02962
	C1	0.00062	0.00208	0.02047
	C1	0.00749	0.00885	0.02732
	D1	0.00000	0.00150	0.01955
	D1	0.00566	0.00716	0.02521
sky130_fd_sc_hs__o2111ai_2	A1	0.00441	0.00445	0.02228
	A1	0.02612	0.02621	0.04401
	A2	0.00446	0.00578	0.03276
	A2	0.02338	0.02470	0.05173
	B1	0.00184	0.00411	0.04004
	B1	0.01794	0.02027	0.05691
	C1	0.00058	0.00279	0.03718
	C1	0.01408	0.01638	0.05159
	D1	-0.00190	0.00088	0.03455
	D1	0.00910	0.01196	0.04659

sky130_fd_sc_hs__o2111ai_4	**A1**	0.00772	0.00783	0.04477
	A1	0.05025	0.05036	0.08727
	A2	0.00747	0.01003	0.06053
	A2	0.04499	0.04722	0.09803
	B1	0.00315	0.00659	0.04591
	B1	0.03542	0.03867	0.07652
	C1	0.00072	0.00442	0.04412
	C1	0.02797	0.03166	0.06985
	D1	-0.00338	0.00065	0.03845
	D1	0.01866	0.02266	0.05908

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111ai_1	**A1**	0.01352	0.01353	0.02174
	A1	0.00246	0.00247	0.01048
	A2	0.01119	0.01131	0.01962
	A2	0.00141	0.00150	0.00919
	B1	0.00929	0.00952	0.01854
	B1	0.00125	0.00141	0.01019
	C1	0.00817	0.00839	0.01683
	C1	0.00124	0.00145	0.00960
	D1	0.00682	0.00727	0.01660
	D1	0.00118	0.00163	0.01092

sky130_fd_sc_hs__o2111ai_2	**A1**	0.02792	0.02784	0.04343
	A1	0.00569	0.00551	0.02122
	A2	0.02198	0.02216	0.03748
	A2	0.00249	0.00267	0.01770
	B1	0.01859	0.01895	0.03748
	B1	0.00213	0.00244	0.02029
	C1	0.01586	0.01626	0.03234
	C1	0.00223	0.00256	0.01784
	D1	0.01303	0.01412	0.03218
	D1	0.00205	0.00309	0.02034
sky130_fd_sc_hs__o2111ai_4	**A1**	0.05369	0.05335	0.08712
	A1	0.01013	0.00967	0.04214
	A2	0.04182	0.04240	0.07306
	A2	0.00315	0.00357	0.03423
	B1	0.04552	0.04586	0.06420
	B1	0.00578	0.00623	0.02563
	C1	0.04038	0.04078	0.05797
	C1	0.00583	0.00637	0.02370
	D1	0.03481	0.03584	0.05416
	D1	0.00573	0.00695	0.02588

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)**	0.00227	0.00197	0.00193
	(A2 * B1 * C1 * D1 * !Y)	-0.00196	-0.00232	-0.00232
	(A2 * B1 * C1 * !D1 * Y)	0.00192	0.00193	0.00192
	(A2 * B1 * C1 * !D1 * Y)	-0.00229	-0.00232	-0.00232
	(A2 * B1 * !C1 * Y)	0.00192	0.00193	0.00192
	(A2 * B1 * !C1 * Y)	-0.00229	-0.00232	-0.00232
	(A2 * !B1 * Y)	0.00193	0.00193	0.00192
	(A2 * !B1 * Y)	-0.00229	-0.00232	-0.00232
	(!A2 * B1 * C1 * !D1 * Y)	0.00178	0.00180	0.00178
	(!A2 * B1 * C1 * !D1 * Y)	-0.00234	-0.00235	-0.00234
	(!A2 * B1 * !C1 * D1 * Y)	0.00179	0.00181	0.00180
	(!A2 * B1 * !C1 * D1 * Y)	-0.00233	-0.00235	-0.00234
	(!A2 * B1 * !C1 * !D1 * Y)	0.00179	0.00180	0.00180
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00233	-0.00234	-0.00234
	(!A2 * !B1 * C1 * D1 * Y)	0.00183	0.00184	0.00184
	(!A2 * !B1 * C1 * D1 * Y)	-0.00234	-0.00235	-0.00234
	(!A2 * !B1 * !D1 * Y)	0.00183	0.00184	0.00183
	(!A2 * !B1 * !D1 * Y)	-0.00234	-0.00235	-0.00234
	(!A2 * !B1 * !C1 * D1 * Y)	0.00183	0.00185	0.00184
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00234	-0.00235	-0.00234

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	0.00453	0.00381	0.00374
	(A2 * B1 * C1 * D1 * !Y)	-0.00383	-0.00466	-0.00468
	(A2 * B1 * C1 * !D1 * Y)	0.00373	0.00376	0.00372
	(A2 * B1 * C1 * !D1 * Y)	-0.00458	-0.00470	-0.00467
	(A2 * B1 * !C1 * Y)	0.00373	0.00376	0.00372
	(A2 * B1 * !C1 * Y)	-0.00458	-0.00470	-0.00467
	(A2 * !B1 * Y)	0.00373	0.00377	0.00372
	(A2 * !B1 * Y)	-0.00458	-0.00469	-0.00467
	(!A2 * B1 * C1 * !D1 * Y)	0.00350	0.00351	0.00350
	(!A2 * B1 * C1 * !D1 * Y)	-0.00474	-0.00474	-0.00473
	(!A2 * B1 * !C1 * D1 * Y)	0.00352	0.00354	0.00352
	(!A2 * B1 * !C1 * D1 * Y)	-0.00474	-0.00475	-0.00473
	(!A2 * B1 * !C1 * !D1 * Y)	0.00351	0.00352	0.00351
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00474	-0.00474	-0.00473
	(!A2 * !B1 * C1 * D1 * Y)	0.00352	0.00353	0.00354
	(!A2 * !B1 * C1 * D1 * Y)	-0.00472	-0.00473	-0.00473
	(!A2 * !B1 * !D1 * Y)	0.00352	0.00353	0.00354
	(!A2 * !B1 * !D1 * Y)	-0.00472	-0.00473	-0.00473
	(!A2 * !B1 * !C1 * D1 * Y)	0.00352	0.00354	0.00354
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00472	-0.00473	-0.00473

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	0.00913	0.00771	0.00759
	(A2 * B1 * C1 * D1 * !Y)	-0.00742	-0.00909	-0.00906
	(A2 * B1 * C1 * !D1 * Y)	0.00729	0.00737	0.00729
	(A2 * B1 * C1 * !D1 * Y)	-0.00916	-0.00943	-0.00935
	(A2 * B1 * !C1 * Y)	0.00729	0.00737	0.00729
	(A2 * B1 * !C1 * Y)	-0.00916	-0.00943	-0.00935
	(A2 * !B1 * Y)	0.00730	0.00738	0.00729
	(A2 * !B1 * Y)	-0.00916	-0.00943	-0.00935
	(!A2 * B1 * C1 * !D1 * Y)	0.00676	0.00680	0.00675
	(!A2 * B1 * C1 * !D1 * Y)	-0.00945	-0.00947	-0.00943
	(!A2 * B1 * !C1 * D1 * Y)	0.00685	0.00687	0.00684
	(!A2 * B1 * !C1 * D1 * Y)	-0.00945	-0.00945	-0.00943
	(!A2 * B1 * !C1 * !D1 * Y)	0.00685	0.00688	0.00684
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00945	-0.00946	-0.00943
	(!A2 * !B1 * C1 * D1 * Y)	0.00695	0.00698	0.00697
	(!A2 * !B1 * C1 * D1 * Y)	-0.00942	-0.00944	-0.00943
	(!A2 * !B1 * !D1 * Y)	0.00695	0.00704	0.00697
	(!A2 * !B1 * !D1 * Y)	-0.00942	-0.00949	-0.00943
	(!A2 * !B1 * !C1 * D1 * Y)	0.00698	0.00707	0.00699
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00942	-0.00949	-0.00943

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)**	-0.00191	-0.00192	-0.00191
	(A2 * B1 * C1 * D1 * !Y)	0.00231	0.00234	0.00232
	(A2 * B1 * C1 * !D1 * Y)	-0.00191	-0.00192	-0.00192
	(A2 * B1 * C1 * !D1 * Y)	0.00231	0.00233	0.00232
	(A2 * B1 * !C1 * Y)	-0.00191	-0.00192	-0.00192
	(A2 * B1 * !C1 * Y)	0.00231	0.00233	0.00232
	(A2 * !B1 * Y)	-0.00191	-0.00192	-0.00192
	(A2 * !B1 * Y)	0.00230	0.00233	0.00232
	(!A2 * B1 * C1 * !D1 * Y)	-0.00164	-0.00180	-0.00178
	(!A2 * B1 * C1 * !D1 * Y)	0.00234	0.00237	0.00235
	(!A2 * B1 * !C1 * D1 * Y)	-0.00167	-0.00181	-0.00180
	(!A2 * B1 * !C1 * D1 * Y)	0.00234	0.00237	0.00235
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00167	-0.00180	-0.00180
	(!A2 * B1 * !C1 * !D1 * Y)	0.00234	0.00237	0.00235
	(!A2 * !B1 * C1 * D1 * Y)	-0.00175	-0.00184	-0.00184
	(!A2 * !B1 * C1 * D1 * Y)	0.00235	0.00236	0.00235
	(!A2 * !B1 * !D1 * Y)	-0.00175	-0.00184	-0.00183
	(!A2 * !B1 * !D1 * Y)	0.00235	0.00237	0.00235
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00175	-0.00184	-0.00184
	(!A2 * !B1 * !C1 * D1 * Y)	0.00235	0.00237	0.00235

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	-0.00372	-0.00371	-0.00371
	(A2 * B1 * C1 * D1 * !Y)	0.00467	0.00467	0.00468
	(A2 * B1 * C1 * !D1 * Y)	-0.00370	-0.00373	-0.00371
	(A2 * B1 * C1 * !D1 * Y)	0.00465	0.00470	0.00467
	(A2 * B1 * !C1 * Y)	-0.00370	-0.00373	-0.00371
	(A2 * B1 * !C1 * Y)	0.00465	0.00470	0.00467
	(A2 * !B1 * Y)	-0.00371	-0.00373	-0.00371
	(A2 * !B1 * Y)	0.00465	0.00469	0.00467
	(!A2 * B1 * C1 * !D1 * Y)	-0.00316	-0.00348	-0.00350
	(!A2 * B1 * C1 * !D1 * Y)	0.00475	0.00480	0.00474
	(!A2 * B1 * !C1 * D1 * Y)	-0.00321	-0.00353	-0.00352
	(!A2 * B1 * !C1 * D1 * Y)	0.00475	0.00478	0.00474
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00321	-0.00352	-0.00351
	(!A2 * B1 * !C1 * !D1 * Y)	0.00475	0.00478	0.00474
	(!A2 * !B1 * C1 * D1 * Y)	-0.00333	-0.00353	-0.00354
	(!A2 * !B1 * C1 * D1 * Y)	0.00472	0.00479	0.00474
	(!A2 * !B1 * !D1 * Y)	-0.00333	-0.00353	-0.00354
	(!A2 * !B1 * !D1 * Y)	0.00472	0.00478	0.00474
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00334	-0.00354	-0.00354
	(!A2 * !B1 * !C1 * D1 * Y)	0.00472	0.00479	0.00474

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	-0.00757	-0.00760	-0.00755
	(A2 * B1 * C1 * D1 * !Y)	0.00906	0.00913	0.00906
	(A2 * B1 * C1 * !D1 * Y)	-0.00728	-0.00731	-0.00727
	(A2 * B1 * C1 * !D1 * Y)	0.00935	0.00943	0.00935
	(A2 * B1 * !C1 * Y)	-0.00726	-0.00731	-0.00728
	(A2 * B1 * !C1 * Y)	0.00932	0.00943	0.00935
	(A2 * !B1 * Y)	-0.00728	-0.00731	-0.00727
	(A2 * !B1 * Y)	0.00935	0.00943	0.00935
	(!A2 * B1 * C1 * !D1 * Y)	-0.00614	-0.00680	-0.00675
	(!A2 * B1 * C1 * !D1 * Y)	0.00948	0.00957	0.00946
	(!A2 * B1 * !C1 * D1 * Y)	-0.00625	-0.00687	-0.00684
	(!A2 * B1 * !C1 * D1 * Y)	0.00947	0.00953	0.00946
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00626	-0.00688	-0.00684
	(!A2 * B1 * !C1 * !D1 * Y)	0.00947	0.00953	0.00946
	(!A2 * !B1 * C1 * D1 * Y)	-0.00651	-0.00698	-0.00697
	(!A2 * !B1 * C1 * D1 * Y)	0.00942	0.00954	0.00946
	(!A2 * !B1 * !D1 * Y)	-0.00653	-0.00698	-0.00697
	(!A2 * !B1 * !D1 * Y)	0.00942	0.00954	0.00946
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00653	-0.00698	-0.00699
	(!A2 * !B1 * !C1 * D1 * Y)	0.00942	0.00954	0.00946

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)**	0.00208	0.00210	0.00209
	(A1 * B1 * C1 * D1 * !Y)	-0.00105	-0.00107	-0.00106
	(A1 * B1 * C1 * !D1 * Y)	0.00187	0.00190	0.00188
	(A1 * B1 * C1 * !D1 * Y)	-0.00225	-0.00230	-0.00228
	(A1 * B1 * !C1 * D1 * Y)	0.00187	0.00190	0.00188
	(A1 * B1 * !C1 * D1 * Y)	-0.00225	-0.00230	-0.00228
	(A1 * B1 * !C1 * !D1 * Y)	0.00187	0.00190	0.00188
	(A1 * B1 * !C1 * !D1 * Y)	-0.00225	-0.00230	-0.00229
	(A1 * !B1 * C1 * D1 * Y)	0.00187	0.00190	0.00188
	(A1 * !B1 * C1 * D1 * Y)	-0.00225	-0.00230	-0.00228
	(A1 * !B1 * !D1 * Y)	0.00187	0.00190	0.00188
	(A1 * !B1 * !D1 * Y)	-0.00225	-0.00231	-0.00229
	(A1 * !B1 * !C1 * D1 * Y)	0.00187	0.00190	0.00188
	(A1 * !B1 * !C1 * D1 * Y)	-0.00225	-0.00231	-0.00229
	(!A1 * B1 * C1 * !D1 * Y)	0.00173	0.00174	0.00173
	(!A1 * B1 * C1 * !D1 * Y)	-0.00231	-0.00232	-0.00231
	(!A1 * B1 * !C1 * D1 * Y)	0.00175	0.00176	0.00175
	(!A1 * B1 * !C1 * D1 * Y)	-0.00231	-0.00232	-0.00231
	(!A1 * B1 * !C1 * !D1 * Y)	0.00175	0.00176	0.00175
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00231	-0.00232	-0.00231
	(!A1 * !B1 * C1 * D1 * Y)	0.00178	0.00180	0.00179
	(!A1 * !B1 * C1 * D1 * Y)	-0.00230	-0.00231	-0.00231
	(!A1 * !B1 * !D1 * Y)	0.00178	0.00180	0.00179
	(!A1 * !B1 * !D1 * Y)	-0.00230	-0.00232	-0.00231
	(!A1 * !B1 * !C1 * D1 * Y)	0.00178	0.00180	0.00179
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00230	-0.00232	-0.00231

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	0.00406	0.00410	0.00406
	(A1 * B1 * C1 * D1 * !Y)	-0.00217	-0.00218	-0.00216
	(A1 * B1 * C1 * !D1 * Y)	0.00366	0.00366	0.00364
	(A1 * B1 * C1 * !D1 * Y)	-0.00453	-0.00462	-0.00460
	(A1 * B1 * !C1 * D1 * Y)	0.00366	0.00366	0.00364
	(A1 * B1 * !C1 * D1 * Y)	-0.00453	-0.00462	-0.00460
	(A1 * B1 * !C1 * !D1 * Y)	0.00362	0.00369	0.00364
	(A1 * B1 * !C1 * !D1 * Y)	-0.00449	-0.00461	-0.00461
	(A1 * !B1 * C1 * D1 * Y)	0.00362	0.00365	0.00364
	(A1 * !B1 * C1 * D1 * Y)	-0.00449	-0.00462	-0.00460
	(A1 * !B1 * !D1 * Y)	0.00362	0.00369	0.00364
	(A1 * !B1 * !D1 * Y)	-0.00450	-0.00461	-0.00461
	(A1 * !B1 * !C1 * D1 * Y)	0.00363	0.00369	0.00364
	(A1 * !B1 * !C1 * D1 * Y)	-0.00450	-0.00461	-0.00461
	(!A1 * B1 * C1 * !D1 * Y)	0.00343	0.00347	0.00344
	(!A1 * B1 * C1 * !D1 * Y)	-0.00467	-0.00470	-0.00467
	(!A1 * B1 * !C1 * D1 * Y)	0.00346	0.00349	0.00346
	(!A1 * B1 * !C1 * D1 * Y)	-0.00467	-0.00469	-0.00467
	(!A1 * B1 * !C1 * !D1 * Y)	0.00345	0.00348	0.00346
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00467	-0.00469	-0.00467
	(!A1 * !B1 * C1 * D1 * Y)	0.00349	0.00354	0.00351
	(!A1 * !B1 * C1 * D1 * Y)	-0.00466	-0.00469	-0.00467
	(!A1 * !B1 * !D1 * Y)	0.00350	0.00355	0.00351
	(!A1 * !B1 * !D1 * Y)	-0.00466	-0.00470	-0.00467
	(!A1 * !B1 * !C1 * D1 * Y)	0.00350	0.00354	0.00351
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00466	-0.00469	-0.00467

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	0.00840	0.00844	0.00836
	(A1 * B1 * C1 * D1 * !Y)	-0.00436	-0.00436	-0.00432
	(A1 * B1 * C1 * !D1 * Y)	0.00740	0.00747	0.00741
	(A1 * B1 * C1 * !D1 * Y)	-0.00913	-0.00932	-0.00930
	(A1 * B1 * !C1 * D1 * Y)	0.00739	0.00747	0.00741
	(A1 * B1 * !C1 * D1 * Y)	-0.00912	-0.00928	-0.00930
	(A1 * B1 * !C1 * !D1 * Y)	0.00739	0.00743	0.00741
	(A1 * B1 * !C1 * !D1 * Y)	-0.00912	-0.00933	-0.00931
	(A1 * !B1 * C1 * D1 * Y)	0.00739	0.00747	0.00741
	(A1 * !B1 * C1 * D1 * Y)	-0.00912	-0.00933	-0.00930
	(A1 * !B1 * !D1 * Y)	0.00739	0.00743	0.00741
	(A1 * !B1 * !D1 * Y)	-0.00912	-0.00936	-0.00931
	(A1 * !B1 * !C1 * D1 * Y)	0.00739	0.00742	0.00741
	(A1 * !B1 * !C1 * D1 * Y)	-0.00912	-0.00935	-0.00931
	(!A1 * B1 * C1 * !D1 * Y)	0.00683	0.00689	0.00682
	(!A1 * B1 * C1 * !D1 * Y)	-0.00945	-0.00949	-0.00943
	(!A1 * B1 * !C1 * D1 * Y)	0.00692	0.00694	0.00690
	(!A1 * B1 * !C1 * D1 * Y)	-0.00943	-0.00946	-0.00943
	(!A1 * B1 * !C1 * !D1 * Y)	0.00689	0.00691	0.00687
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00945	-0.00947	-0.00943
	(!A1 * !B1 * C1 * D1 * Y)	0.00703	0.00706	0.00704
	(!A1 * !B1 * C1 * D1 * Y)	-0.00942	-0.00945	-0.00943
	(!A1 * !B1 * !D1 * Y)	0.00702	0.00710	0.00703
	(!A1 * !B1 * !D1 * Y)	-0.00942	-0.00948	-0.00943
	(!A1 * !B1 * !C1 * D1 * Y)	0.00702	0.00712	0.00703
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00942	-0.00949	-0.00943

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)**	-0.00202	-0.00203	-0.00207
	(A1 * B1 * C1 * D1 * !Y)	0.00112	0.00112	0.00108
	(A1 * B1 * C1 * !D1 * Y)	-0.00187	-0.00188	-0.00187
	(A1 * B1 * C1 * !D1 * Y)	0.00227	0.00230	0.00228
	(A1 * B1 * !C1 * D1 * Y)	-0.00187	-0.00188	-0.00187
	(A1 * B1 * !C1 * D1 * Y)	0.00227	0.00230	0.00228
	(A1 * B1 * !C1 * !D1 * Y)	-0.00187	-0.00188	-0.00187
	(A1 * B1 * !C1 * !D1 * Y)	0.00228	0.00230	0.00229
	(A1 * !B1 * C1 * D1 * Y)	-0.00187	-0.00189	-0.00187
	(A1 * !B1 * C1 * D1 * Y)	0.00228	0.00230	0.00228
	(A1 * !B1 * !D1 * Y)	-0.00187	-0.00188	-0.00187
	(A1 * !B1 * !D1 * Y)	0.00229	0.00231	0.00229
	(A1 * !B1 * !C1 * D1 * Y)	-0.00187	-0.00188	-0.00187
	(A1 * !B1 * !C1 * D1 * Y)	0.00229	0.00231	0.00229
	(!A1 * B1 * C1 * !D1 * Y)	-0.00158	-0.00174	-0.00173
	(!A1 * B1 * C1 * !D1 * Y)	0.00231	0.00234	0.00232
	(!A1 * B1 * !C1 * D1 * Y)	-0.00162	-0.00176	-0.00175
	(!A1 * B1 * !C1 * D1 * Y)	0.00231	0.00234	0.00232
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00162	-0.00176	-0.00175
	(!A1 * B1 * !C1 * !D1 * Y)	0.00231	0.00234	0.00232
	(!A1 * !B1 * C1 * D1 * Y)	-0.00170	-0.00180	-0.00179
	(!A1 * !B1 * C1 * D1 * Y)	0.00231	0.00233	0.00232
	(!A1 * !B1 * !D1 * Y)	-0.00171	-0.00180	-0.00179
	(!A1 * !B1 * !D1 * Y)	0.00231	0.00233	0.00232
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00171	-0.00180	-0.00179
	(!A1 * !B1 * !C1 * D1 * Y)	0.00231	0.00233	0.00232

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	-0.00385	-0.00389	-0.00403
	(A1 * B1 * C1 * D1 * !Y)	0.00233	0.00235	0.00221
	(A1 * B1 * C1 * !D1 * Y)	-0.00363	-0.00365	-0.00364
	(A1 * B1 * C1 * !D1 * Y)	0.00458	0.00462	0.00460
	(A1 * B1 * !C1 * D1 * Y)	-0.00362	-0.00365	-0.00364
	(A1 * B1 * !C1 * D1 * Y)	0.00458	0.00464	0.00460
	(A1 * B1 * !C1 * !D1 * Y)	-0.00362	-0.00364	-0.00364
	(A1 * B1 * !C1 * !D1 * Y)	0.00461	0.00461	0.00461
	(A1 * !B1 * C1 * D1 * Y)	-0.00362	-0.00365	-0.00363
	(A1 * !B1 * C1 * D1 * Y)	0.00459	0.00463	0.00460
	(A1 * !B1 * !D1 * Y)	-0.00362	-0.00364	-0.00363
	(A1 * !B1 * !D1 * Y)	0.00459	0.00461	0.00461
	(A1 * !B1 * !C1 * D1 * Y)	-0.00363	-0.00364	-0.00363
	(A1 * !B1 * !C1 * D1 * Y)	0.00459	0.00461	0.00461
	(!A1 * B1 * C1 * !D1 * Y)	-0.00307	-0.00341	-0.00344
	(!A1 * B1 * C1 * !D1 * Y)	0.00467	0.00473	0.00468
	(!A1 * B1 * !C1 * D1 * Y)	-0.00312	-0.00344	-0.00346
	(!A1 * B1 * !C1 * D1 * Y)	0.00467	0.00472	0.00468
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00312	-0.00344	-0.00346
	(!A1 * B1 * !C1 * !D1 * Y)	0.00467	0.00472	0.00468
	(!A1 * !B1 * C1 * D1 * Y)	-0.00325	-0.00349	-0.00351
	(!A1 * !B1 * C1 * D1 * Y)	0.00466	0.00472	0.00468
	(!A1 * !B1 * !D1 * Y)	-0.00326	-0.00349	-0.00351
	(!A1 * !B1 * !D1 * Y)	0.00466	0.00472	0.00468
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00326	-0.00349	-0.00351
	(!A1 * !B1 * !C1 * D1 * Y)	0.00466	0.00472	0.00468

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	-0.00795	-0.00801	-0.00831
	(A1 * B1 * C1 * D1 * !Y)	0.00471	0.00472	0.00442
	(A1 * B1 * C1 * !D1 * Y)	-0.00735	-0.00741	-0.00739
	(A1 * B1 * C1 * !D1 * Y)	0.00923	0.00932	0.00930
	(A1 * B1 * !C1 * D1 * Y)	-0.00739	-0.00738	-0.00739
	(A1 * B1 * !C1 * D1 * Y)	0.00932	0.00928	0.00930
	(A1 * B1 * !C1 * !D1 * Y)	-0.00739	-0.00741	-0.00739
	(A1 * B1 * !C1 * !D1 * Y)	0.00934	0.00933	0.00931
	(A1 * !B1 * C1 * D1 * Y)	-0.00737	-0.00742	-0.00739
	(A1 * !B1 * C1 * D1 * Y)	0.00926	0.00933	0.00930
	(A1 * !B1 * !D1 * Y)	-0.00737	-0.00743	-0.00739
	(A1 * !B1 * !D1 * Y)	0.00927	0.00937	0.00931
	(A1 * !B1 * !C1 * D1 * Y)	-0.00737	-0.00742	-0.00739
	(A1 * !B1 * !C1 * D1 * Y)	0.00927	0.00937	0.00931
	(!A1 * B1 * C1 * !D1 * Y)	-0.00629	-0.00689	-0.00682
	(!A1 * B1 * C1 * !D1 * Y)	0.00947	0.00955	0.00946
	(!A1 * B1 * !C1 * D1 * Y)	-0.00637	-0.00694	-0.00690
	(!A1 * B1 * !C1 * D1 * Y)	0.00943	0.00955	0.00946
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00639	-0.00691	-0.00687
	(!A1 * B1 * !C1 * !D1 * Y)	0.00946	0.00955	0.00946
	(!A1 * !B1 * C1 * D1 * Y)	-0.00665	-0.00706	-0.00704
	(!A1 * !B1 * C1 * D1 * Y)	0.00946	0.00952	0.00946
	(!A1 * !B1 * !D1 * Y)	-0.00667	-0.00708	-0.00703
	(!A1 * !B1 * !D1 * Y)	0.00946	0.00953	0.00946
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00668	-0.00708	-0.00703
	(!A1 * !B1 * !C1 * D1 * Y)	0.00946	0.00953	0.00946

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)**	0.00174	0.00174	0.00174
	(A2 * C1 * !D1 * Y)	-0.00234	-0.00234	-0.00234
	(A2 * !C1 * D1 * Y)	0.00173	0.00175	0.00174
	(A2 * !C1 * D1 * Y)	-0.00233	-0.00234	-0.00234
	(A2 * !C1 * !D1 * Y)	0.00173	0.00175	0.00174
	(A2 * !C1 * !D1 * Y)	-0.00233	-0.00235	-0.00234
	(A1 * !A2 * C1 * !D1 * Y)	0.00173	0.00174	0.00173
	(A1 * !A2 * C1 * !D1 * Y)	-0.00234	-0.00234	-0.00234
	(A1 * !A2 * !C1 * D1 * Y)	0.00174	0.00175	0.00175
	(A1 * !A2 * !C1 * D1 * Y)	-0.00233	-0.00234	-0.00234
	(A1 * !A2 * !C1 * !D1 * Y)	0.00174	0.00176	0.00174
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00233	-0.00235	-0.00234
	(!A1 * !A2 * C1 * D1 * Y)	0.00079	0.00079	0.00079
	(!A1 * !A2 * C1 * D1 * Y)	-0.00230	-0.00230	-0.00229
	(!A1 * !A2 * C1 * !D1 * Y)	0.00094	0.00095	0.00094
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00233	-0.00235	-0.00234
	(!A1 * !A2 * !C1 * D1 * Y)	0.00100	0.00100	0.00100
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00234	-0.00235	-0.00234
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00103	0.00104	0.00103
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00234	-0.00235	-0.00234

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	0.00363	0.00366	0.00365
	(A2 * C1 * !D1 * Y)	-0.00483	-0.00484	-0.00484
	(A2 * !C1 * D1 * Y)	0.00367	0.00368	0.00367
	(A2 * !C1 * D1 * Y)	-0.00483	-0.00485	-0.00484
	(A2 * !C1 * !D1 * Y)	0.00367	0.00368	0.00367
	(A2 * !C1 * !D1 * Y)	-0.00483	-0.00484	-0.00484
	(A1 * !A2 * C1 * !D1 * Y)	0.00364	0.00367	0.00366
	(A1 * !A2 * C1 * !D1 * Y)	-0.00482	-0.00485	-0.00484
	(A1 * !A2 * !C1 * D1 * Y)	0.00366	0.00367	0.00366
	(A1 * !A2 * !C1 * D1 * Y)	-0.00482	-0.00485	-0.00484
	(A1 * !A2 * !C1 * !D1 * Y)	0.00366	0.00367	0.00366
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00482	-0.00485	-0.00484
	(!A1 * !A2 * C1 * D1 * Y)	0.00167	0.00168	0.00169
	(!A1 * !A2 * C1 * D1 * Y)	-0.00475	-0.00478	-0.00473
	(!A1 * !A2 * C1 * !D1 * Y)	0.00203	0.00203	0.00201
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00486	-0.00487	-0.00485
	(!A1 * !A2 * !C1 * D1 * Y)	0.00206	0.00208	0.00206
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00484	-0.00486	-0.00484
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00215	0.00214	0.00213
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00484	-0.00485	-0.00484

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	0.00697	0.00700	0.00698
	(A2 * C1 * !D1 * Y)	-0.00505	-0.00505	-0.00504
	(A2 * !C1 * D1 * Y)	0.00707	0.00711	0.00708
	(A2 * !C1 * D1 * Y)	-0.00504	-0.00505	-0.00504
	(A2 * !C1 * !D1 * Y)	0.00707	0.00716	0.00708
	(A2 * !C1 * !D1 * Y)	-0.00504	-0.00508	-0.00504
	(A1 * !A2 * C1 * !D1 * Y)	0.00695	0.00698	0.00696
	(A1 * !A2 * C1 * !D1 * Y)	-0.00504	-0.00505	-0.00504
	(A1 * !A2 * !C1 * D1 * Y)	0.00707	0.00717	0.00708
	(A1 * !A2 * !C1 * D1 * Y)	-0.00504	-0.00507	-0.00504
	(A1 * !A2 * !C1 * !D1 * Y)	0.00707	0.00715	0.00708
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00504	-0.00507	-0.00504
	(!A1 * !A2 * C1 * D1 * Y)	0.00307	0.00308	0.00310
	(!A1 * !A2 * C1 * D1 * Y)	-0.00489	-0.00489	-0.00484
	(!A1 * !A2 * C1 * !D1 * Y)	0.00368	0.00372	0.00369
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00507	-0.00511	-0.00508
	(!A1 * !A2 * !C1 * D1 * Y)	0.00379	0.00383	0.00380
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00503	-0.00508	-0.00505
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00393	0.00395	0.00393
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00505	-0.00506	-0.00505

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)**	-0.00155	-0.00171	-0.00173
	(A2 * C1 * !D1 * Y)	0.00234	0.00237	0.00234
	(A2 * !C1 * D1 * Y)	-0.00166	-0.00175	-0.00174
	(A2 * !C1 * D1 * Y)	0.00235	0.00236	0.00234
	(A2 * !C1 * !D1 * Y)	-0.00166	-0.00175	-0.00174
	(A2 * !C1 * !D1 * Y)	0.00233	0.00236	0.00234
	(A1 * !A2 * C1 * !D1 * Y)	-0.00151	-0.00171	-0.00173
	(A1 * !A2 * C1 * !D1 * Y)	0.00236	0.00236	0.00234
	(A1 * !A2 * !C1 * D1 * Y)	-0.00164	-0.00175	-0.00175
	(A1 * !A2 * !C1 * D1 * Y)	0.00235	0.00236	0.00234
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00167	-0.00175	-0.00174
	(A1 * !A2 * !C1 * !D1 * Y)	0.00235	0.00236	0.00234
	(!A1 * !A2 * C1 * D1 * Y)	-0.00074	-0.00074	-0.00075
	(!A1 * !A2 * C1 * D1 * Y)	0.00239	0.00241	0.00236
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00094	-0.00095	-0.00094
	(!A1 * !A2 * C1 * !D1 * Y)	0.00237	0.00240	0.00235
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00100	-0.00100	-0.00100
	(!A1 * !A2 * !C1 * D1 * Y)	0.00247	0.00245	0.00236
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00103	-0.00104	-0.00103
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00234	0.00237	0.00234

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	-0.00333	-0.00361	-0.00365
	(A2 * C1 * !D1 * Y)	0.00487	0.00487	0.00485
	(A2 * !C1 * D1 * Y)	-0.00350	-0.00368	-0.00367
	(A2 * !C1 * D1 * Y)	0.00483	0.00489	0.00485
	(A2 * !C1 * !D1 * Y)	-0.00353	-0.00368	-0.00367
	(A2 * !C1 * !D1 * Y)	0.00483	0.00489	0.00485
	(A1 * !A2 * C1 * !D1 * Y)	-0.00325	-0.00366	-0.00366
	(A1 * !A2 * C1 * !D1 * Y)	0.00489	0.00488	0.00485
	(A1 * !A2 * !C1 * D1 * Y)	-0.00345	-0.00367	-0.00366
	(A1 * !A2 * !C1 * D1 * Y)	0.00482	0.00487	0.00485
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00350	-0.00367	-0.00366
	(A1 * !A2 * !C1 * !D1 * Y)	0.00482	0.00487	0.00485
	(!A1 * !A2 * C1 * D1 * Y)	-0.00157	-0.00160	-0.00159
	(!A1 * !A2 * C1 * D1 * Y)	0.00490	0.00499	0.00488
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00203	-0.00203	-0.00201
	(!A1 * !A2 * C1 * !D1 * Y)	0.00487	0.00497	0.00486
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00206	-0.00208	-0.00206
	(!A1 * !A2 * !C1 * D1 * Y)	0.00504	0.00507	0.00490
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00215	-0.00214	-0.00213
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00484	0.00491	0.00485

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	-0.00621	-0.00700	-0.00698
	(A2 * C1 * !D1 * Y)	0.00509	0.00507	0.00506
	(A2 * !C1 * D1 * Y)	-0.00669	-0.00711	-0.00708
	(A2 * !C1 * D1 * Y)	0.00505	0.00508	0.00506
	(A2 * !C1 * !D1 * Y)	-0.00678	-0.00716	-0.00708
	(A2 * !C1 * !D1 * Y)	0.00505	0.00508	0.00506
	(A1 * !A2 * C1 * !D1 * Y)	-0.00615	-0.00698	-0.00696
	(A1 * !A2 * C1 * !D1 * Y)	0.00516	0.00508	0.00506
	(A1 * !A2 * !C1 * D1 * Y)	-0.00663	-0.00717	-0.00708
	(A1 * !A2 * !C1 * D1 * Y)	0.00506	0.00507	0.00506
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00675	-0.00715	-0.00708
	(A1 * !A2 * !C1 * !D1 * Y)	0.00505	0.00507	0.00506
	(!A1 * !A2 * C1 * D1 * Y)	-0.00288	-0.00291	-0.00291
	(!A1 * !A2 * C1 * D1 * Y)	0.00519	0.00525	0.00512
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00368	-0.00372	-0.00369
	(!A1 * !A2 * C1 * !D1 * Y)	0.00515	0.00530	0.00510
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00379	-0.00383	-0.00380
	(!A1 * !A2 * !C1 * D1 * Y)	0.00554	0.00549	0.00517
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00393	-0.00395	-0.00393
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00505	0.00512	0.00506

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)**	0.00178	0.00180	0.00179
	(A2 * B1 * !D1 * Y)	-0.00241	-0.00242	-0.00241
	(A2 * !B1 * D1 * Y)	0.00080	0.00079	0.00079
	(A2 * !B1 * D1 * Y)	-0.00241	-0.00241	-0.00241
	(A2 * !B1 * !D1 * Y)	0.00093	0.00093	0.00093
	(A2 * !B1 * !D1 * Y)	-0.00241	-0.00242	-0.00242
	(A1 * !A2 * B1 * !D1 * Y)	0.00178	0.00180	0.00179
	(A1 * !A2 * B1 * !D1 * Y)	-0.00241	-0.00242	-0.00241
	(!A2 * !B1 * D1 * Y)	0.00080	0.00079	0.00079
	(!A2 * !B1 * D1 * Y)	-0.00241	-0.00241	-0.00241
	(!A2 * !B1 * !D1 * Y)	0.00093	0.00093	0.00093
	(!A2 * !B1 * !D1 * Y)	-0.00241	-0.00242	-0.00242
	(!A1 * !A2 * B1 * D1 * Y)	0.00077	0.00077	0.00076
	(!A1 * !A2 * B1 * D1 * Y)	-0.00242	-0.00243	-0.00241
	(!A1 * !A2 * B1 * !D1 * Y)	0.00099	0.00099	0.00099
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00242	-0.00242	-0.00242

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	0.00351	0.00353	0.00351
	(A2 * B1 * !D1 * Y)	-0.00473	-0.00474	-0.00472
	(A2 * !B1 * D1 * Y)	0.00160	0.00160	0.00160
	(A2 * !B1 * D1 * Y)	-0.00472	-0.00472	-0.00470
	(A2 * !B1 * !D1 * Y)	0.00192	0.00193	0.00193
	(A2 * !B1 * !D1 * Y)	-0.00473	-0.00473	-0.00474
	(A1 * !A2 * B1 * !D1 * Y)	0.00351	0.00352	0.00351
	(A1 * !A2 * B1 * !D1 * Y)	-0.00472	-0.00473	-0.00472
	(!A2 * !B1 * D1 * Y)	0.00160	0.00159	0.00160
	(!A2 * !B1 * D1 * Y)	-0.00472	-0.00471	-0.00470
	(!A2 * !B1 * !D1 * Y)	0.00193	0.00194	0.00193
	(!A2 * !B1 * !D1 * Y)	-0.00473	-0.00475	-0.00474
	(!A1 * !A2 * B1 * D1 * Y)	0.00150	0.00150	0.00152
	(!A1 * !A2 * B1 * D1 * Y)	-0.00472	-0.00472	-0.00470
	(!A1 * !A2 * B1 * !D1 * Y)	0.00198	0.00199	0.00197
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00474	-0.00476	-0.00473

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * !D1 * Y)**	0.00694	0.00695	0.00698
	(A2 * B1 * !D1 * Y)	-0.00495	-0.00496	-0.00496
	(A2 * !B1 * D1 * Y)	0.00298	0.00300	0.00297
	(A2 * !B1 * D1 * Y)	-0.00498	-0.00501	-0.00496
	(A2 * !B1 * !D1 * Y)	0.00353	0.00354	0.00354
	(A2 * !B1 * !D1 * Y)	-0.00502	-0.00503	-0.00504
	(A1 * !A2 * B1 * !D1 * Y)	0.00696	0.00698	0.00697
	(A1 * !A2 * B1 * !D1 * Y)	-0.00498	-0.00498	-0.00496
	(!A2 * !B1 * D1 * Y)	0.00298	0.00297	0.00297
	(!A2 * !B1 * D1 * Y)	-0.00498	-0.00498	-0.00496
	(!A2 * !B1 * !D1 * Y)	0.00354	0.00356	0.00354
	(!A2 * !B1 * !D1 * Y)	-0.00503	-0.00504	-0.00504
	(!A1 * !A2 * B1 * D1 * Y)	0.00285	0.00287	0.00286
	(!A1 * !A2 * B1 * D1 * Y)	-0.00497	-0.00499	-0.00496
	(!A1 * !A2 * B1 * !D1 * Y)	0.00370	0.00371	0.00372
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00500	-0.00501	-0.00501

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)**	-0.00161	-0.00178	-0.00179
	(A2 * B1 * !D1 * Y)	0.00255	0.00242	0.00242
	(A2 * !B1 * D1 * Y)	-0.00077	-0.00077	-0.00077
	(A2 * !B1 * D1 * Y)	0.00246	0.00248	0.00242
	(A2 * !B1 * !D1 * Y)	-0.00093	-0.00093	-0.00093
	(A2 * !B1 * !D1 * Y)	0.00253	0.00255	0.00245
	(A1 * !A2 * B1 * !D1 * Y)	-0.00160	-0.00180	-0.00179
	(A1 * !A2 * B1 * !D1 * Y)	0.00259	0.00244	0.00242
	(!A2 * !B1 * D1 * Y)	-0.00076	-0.00077	-0.00077
	(!A2 * !B1 * D1 * Y)	0.00245	0.00248	0.00242
	(!A2 * !B1 * !D1 * Y)	-0.00093	-0.00093	-0.00093
	(!A2 * !B1 * !D1 * Y)	0.00253	0.00255	0.00245
	(!A1 * !A2 * B1 * D1 * Y)	-0.00073	-0.00073	-0.00073
	(!A1 * !A2 * B1 * D1 * Y)	0.00246	0.00248	0.00242
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00099	-0.00099	-0.00099
	(!A1 * !A2 * B1 * !D1 * Y)	0.00256	0.00252	0.00243

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	-0.00304	-0.00353	-0.00351
	(A2 * B1 * !D1 * Y)	0.00510	0.00476	0.00473
	(A2 * !B1 * D1 * Y)	-0.00150	-0.00152	-0.00154
	(A2 * !B1 * D1 * Y)	0.00483	0.00489	0.00476
	(A2 * !B1 * !D1 * Y)	-0.00192	-0.00193	-0.00193
	(A2 * !B1 * !D1 * Y)	0.00496	0.00502	0.00480
	(A1 * !A2 * B1 * !D1 * Y)	-0.00300	-0.00352	-0.00351
	(A1 * !A2 * B1 * !D1 * Y)	0.00514	0.00477	0.00473
	(!A2 * !B1 * D1 * Y)	-0.00150	-0.00152	-0.00154
	(!A2 * !B1 * D1 * Y)	0.00482	0.00489	0.00476
	(!A2 * !B1 * !D1 * Y)	-0.00193	-0.00194	-0.00193
	(!A2 * !B1 * !D1 * Y)	0.00496	0.00502	0.00480
	(!A1 * !A2 * B1 * D1 * Y)	-0.00145	-0.00147	-0.00150
	(!A1 * !A2 * B1 * D1 * Y)	0.00483	0.00489	0.00476
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00198	-0.00199	-0.00197
	(!A1 * !A2 * B1 * !D1 * Y)	0.00505	0.00491	0.00475

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * !D1 * Y)**	-0.00597	-0.00695	-0.00698
	(A2 * B1 * !D1 * Y)	0.00586	0.00503	0.00499
	(A2 * !B1 * D1 * Y)	-0.00283	-0.00284	-0.00289
	(A2 * !B1 * D1 * Y)	0.00523	0.00526	0.00504
	(A2 * !B1 * !D1 * Y)	-0.00353	-0.00354	-0.00354
	(A2 * !B1 * !D1 * Y)	0.00547	0.00553	0.00514
	(A1 * !A2 * B1 * !D1 * Y)	-0.00592	-0.00698	-0.00697
	(A1 * !A2 * B1 * !D1 * Y)	0.00590	0.00504	0.00499
	(!A2 * !B1 * D1 * Y)	-0.00283	-0.00284	-0.00289
	(!A2 * !B1 * D1 * Y)	0.00523	0.00526	0.00504
	(!A2 * !B1 * !D1 * Y)	-0.00354	-0.00356	-0.00354
	(!A2 * !B1 * !D1 * Y)	0.00547	0.00553	0.00514
	(!A1 * !A2 * B1 * D1 * Y)	-0.00272	-0.00276	-0.00280
	(!A1 * !A2 * B1 * D1 * Y)	0.00518	0.00525	0.00504
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00370	-0.00371	-0.00372
	(!A1 * !A2 * B1 * !D1 * Y)	0.00577	0.00535	0.00505

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111ai_1	**(A2 * !C1 * Y)**	0.00059	0.00058	0.00057
	(A2 * !C1 * Y)	-0.00278	-0.00277	-0.00281
	(A2 * !B1 * C1 * Y)	0.00060	0.00059	0.00056
	(A2 * !B1 * C1 * Y)	-0.00272	-0.00273	-0.00280
	(!A2 * !C1 * Y)	0.00058	0.00058	0.00057
	(!A2 * !C1 * Y)	-0.00276	-0.00278	-0.00281
	(!A2 * !B1 * C1 * Y)	0.00059	0.00059	0.00056
	(!A2 * !B1 * C1 * Y)	-0.00270	-0.00273	-0.00280
	(!A1 * !A2 * B1 * C1 * Y)	0.00065	0.00065	0.00058
	(!A1 * !A2 * B1 * C1 * Y)	-0.00261	-0.00264	-0.00279

sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	0.00134	0.00134	0.00129
	(A2 * !C1 * Y)	-0.00530	-0.00533	-0.00542
	(A2 * !B1 * C1 * Y)	0.00134	0.00134	0.00124
	(A2 * !B1 * C1 * Y)	-0.00517	-0.00522	-0.00540
	(!A2 * !C1 * Y)	0.00134	0.00134	0.00129
	(!A2 * !C1 * Y)	-0.00530	-0.00533	-0.00542
	(!A2 * !B1 * C1 * Y)	0.00134	0.00134	0.00124
	(!A2 * !B1 * C1 * Y)	-0.00518	-0.00521	-0.00540
	(!A1 * !A2 * B1 * C1 * Y)	0.00140	0.00140	0.00123
	(!A1 * !A2 * B1 * C1 * Y)	-0.00498	-0.00501	-0.00536
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	0.00236	0.00238	0.00229
	(A2 * !C1 * Y)	-0.00627	-0.00632	-0.00649
	(A2 * !B1 * C1 * Y)	0.00236	0.00237	0.00220
	(A2 * !B1 * C1 * Y)	-0.00603	-0.00608	-0.00644
	(!A2 * !C1 * Y)	0.00238	0.00238	0.00229
	(!A2 * !C1 * Y)	-0.00630	-0.00631	-0.00649
	(!A2 * !B1 * C1 * Y)	0.00238	0.00237	0.00220
	(!A2 * !B1 * C1 * Y)	-0.00605	-0.00607	-0.00644
	(!A1 * !A2 * B1 * C1 * Y)	0.00250	0.00252	0.00221
	(!A1 * !A2 * B1 * C1 * Y)	-0.00566	-0.00572	-0.00637

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

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

sky130_fd_sc_hs__o2111ai_1	**(A2 * !C1 * Y)**	-0.00056	-0.00057	-0.00056
	(A2 * !C1 * Y)	0.00282	0.00286	0.00281
	(A2 * !B1 * C1 * Y)	-0.00055	-0.00056	-0.00055
	(A2 * !B1 * C1 * Y)	0.00282	0.00284	0.00281
	(!A2 * !C1 * Y)	-0.00056	-0.00057	-0.00056
	(!A2 * !C1 * Y)	0.00281	0.00286	0.00281
	(!A2 * !B1 * C1 * Y)	-0.00056	-0.00056	-0.00055
	(!A2 * !B1 * C1 * Y)	0.00282	0.00284	0.00281
	(!A1 * !A2 * B1 * C1 * Y)	-0.00056	-0.00056	-0.00055
	(!A1 * !A2 * B1 * C1 * Y)	0.00282	0.00284	0.00281
sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	-0.00125	-0.00128	-0.00126
	(A2 * !C1 * Y)	0.00541	0.00552	0.00543
	(A2 * !B1 * C1 * Y)	-0.00122	-0.00125	-0.00122
	(A2 * !B1 * C1 * Y)	0.00540	0.00551	0.00543
	(!A2 * !C1 * Y)	-0.00125	-0.00128	-0.00126
	(!A2 * !C1 * Y)	0.00541	0.00552	0.00543
	(!A2 * !B1 * C1 * Y)	-0.00122	-0.00125	-0.00122
	(!A2 * !B1 * C1 * Y)	0.00540	0.00551	0.00543
	(!A1 * !A2 * B1 * C1 * Y)	-0.00121	-0.00121	-0.00121
	(!A1 * !A2 * B1 * C1 * Y)	0.00540	0.00541	0.00543
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	-0.00226	-0.00228	-0.00223
	(A2 * !C1 * Y)	0.00651	0.00660	0.00649
	(A2 * !B1 * C1 * Y)	-0.00216	-0.00217	-0.00217
	(A2 * !B1 * C1 * Y)	0.00643	0.00647	0.00649
	(!A2 * !C1 * Y)	-0.00223	-0.00227	-0.00223
	(!A2 * !C1 * Y)	0.00647	0.00660	0.00649
	(!A2 * !B1 * C1 * Y)	-0.00217	-0.00222	-0.00217
	(!A2 * !B1 * C1 * Y)	0.00645	0.00659	0.00649
	(!A1 * !A2 * B1 * C1 * Y)	-0.00216	-0.00219	-0.00216
	(!A1 * !A2 * B1 * C1 * Y)	0.00646	0.00655	0.00649

SKY130_FD_SC_HS__O2111Ax

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00265	0.00271	0.00251	0.00272	0.00273	1.23702
sky130_fd_sc_hs__o2111a_2	0.00268	0.00268	0.00264	0.00274	0.00283	2.53259
sky130_fd_sc_hs__o2111a_4	0.00512	0.00551	0.00468	0.00481	0.00485	4.67260

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2111a_1	0.00000	0.27507	2.06016
sky130_fd_sc_hs__o2111a_2	0.00000	0.27242	1.05238
sky130_fd_sc_hs__o2111a_4	0.00000	0.73539	4.13725

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)	0.10954	0.56169	5.92773
	A2->X (RR)	0.09626	0.54265	5.89133
	B1->X (RR)	0.10385	0.57741	6.23945
	C1->X (RR)	0.09852	0.58409	6.32025
	D1->X (RR)	0.09044	0.57782	6.26518
sky130_fd_sc_hs__o2111a_2	A1->X (RR)	0.11978	0.48883	5.96262
	A2->X (RR)	0.10627	0.47058	5.92869
	B1->X (RR)	0.11474	0.50745	6.31307
	C1->X (RR)	0.10913	0.51794	6.40389
	D1->X (RR)	0.10038	0.51583	6.40091
sky130_fd_sc_hs__o2111a_4	A1->X (RR)	0.14238	0.43793	5.92340
	A2->X (RR)	0.12933	0.43062	5.89743
	B1->X (RR)	0.13715	0.46773	6.36105
	C1->X (RR)	0.13108	0.49706	6.55317
	D1->X (RR)	0.11731	0.48812	6.58180

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111a_1	A1->X (FF)	0.15679	0.58394	4.93982
	A2->X (FF)	0.14546	0.59796	5.01452
	B1->X (FF)	0.09210	0.52123	4.71073
	C1->X (FF)	0.08281	0.49973	4.60997
	D1->X (FF)	0.06888	0.46710	4.50382
sky130_fd_sc_hs__o2111a_2	A1->X (FF)	0.18092	0.60023	5.18172
	A2->X (FF)	0.16964	0.61728	5.27301
	B1->X (FF)	0.08829	0.48251	4.81983
	C1->X (FF)	0.08258	0.47964	4.72036
	D1->X (FF)	0.07119	0.45164	4.61863
sky130_fd_sc_hs__o2111a_4	A1->X (FF)	0.21512	0.59933	5.19752
	A2->X (FF)	0.20496	0.63872	5.41017
	B1->X (FF)	0.11461	0.49968	4.94309
	C1->X (FF)	0.10644	0.47791	4.77297
	D1->X (FF)	0.09242	0.44940	4.68005

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111a_1	A1	0.01659	0.01741	0.05846
	A1	0.00598	0.00680	0.04785
	A2	0.01444	0.01553	0.06667
	A2	0.00503	0.00612	0.05730
	B1	0.01256	0.01448	0.07818
	B1	0.00510	0.00703	0.07126
	C1	0.01142	0.01347	0.07552
	C1	0.00510	0.00714	0.06969
	D1	0.01023	0.01248	0.06476
	D1	0.00504	0.00729	0.06008
sky130_fd_sc_hs__o2111a_2	A1	0.02043	0.02123	0.06164
	A1	0.00982	0.01063	0.05221
	A2	0.01814	0.01920	0.06925
	A2	0.00882	0.01000	0.05992
	B1	0.01632	0.01795	0.07979
	B1	0.00862	0.01025	0.07319
	C1	0.01511	0.01683	0.07650
	C1	0.00860	0.01040	0.07098
	D1	0.01393	0.01610	0.07129
	D1	0.00850	0.01071	0.06688

sky130_fd_sc_hs__o2111a_4	**A1**	0.04249	0.04287	0.11094
	A1	0.02090	0.02133	0.08935
	A2	0.03852	0.03933	0.11583
	A2	0.01891	0.01985	0.09639
	B1	0.03405	0.03656	0.15358
	B1	0.01874	0.02132	0.14031
	C1	0.03162	0.03393	0.14321
	C1	0.01872	0.02109	0.13160
	D1	0.02888	0.03266	0.14685
	D1	0.01860	0.02243	0.13783

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**A1**	0.00644	0.00749	0.04942
	A1	0.01674	0.01780	0.05893
	A2	0.00651	0.00890	0.06178
	A2	0.01562	0.01799	0.07025
	B1	0.00505	0.00874	0.07439
	B1	0.01237	0.01598	0.08093
	C1	0.00444	0.00814	0.07170
	C1	0.01073	0.01439	0.07754
	D1	0.00366	0.00733	0.07032
	D1	0.00888	0.01241	0.07500

sky130_fd_sc_hs__o2111a_2	**A1**	0.01086	0.01102	0.05161
	A1	0.02117	0.02132	0.06173
	A2	0.01099	0.01237	0.06484
	A2	0.01999	0.02137	0.07298
	B1	0.00836	0.01205	0.07746
	B1	0.01717	0.02031	0.08164
	C1	0.00773	0.01163	0.07417
	C1	0.01537	0.01874	0.07791
	D1	0.00674	0.01037	0.07449
	D1	0.01332	0.01663	0.07622
sky130_fd_sc_hs__o2111a_4	**A1**	0.02285	0.02085	0.09729
	A1	0.04383	0.04182	0.11501
	A2	0.02285	0.02267	0.11043
	A2	0.04182	0.04163	0.12920
	B1	0.01747	0.02355	0.14366
	B1	0.03509	0.04004	0.15244
	C1	0.01624	0.02179	0.13455
	C1	0.03137	0.03640	0.14174
	D1	0.01353	0.01989	0.13473
	D1	0.02624	0.03192	0.13785

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)**	0.00229	0.00200	0.00195
	(A2 * B1 * C1 * D1 * X)	-0.00175	-0.00209	-0.00210
	(A2 * B1 * C1 * !D1 * !X)	0.00193	0.00193	0.00193
	(A2 * B1 * C1 * !D1 * !X)	-0.00209	-0.00212	-0.00212
	(A2 * B1 * !C1 * !X)	0.00193	0.00193	0.00193
	(A2 * B1 * !C1 * !X)	-0.00209	-0.00212	-0.00212
	(A2 * !B1 * !X)	0.00193	0.00193	0.00193
	(A2 * !B1 * !X)	-0.00209	-0.00212	-0.00212
	(!A2 * B1 * C1 * !D1 * !X)	0.00180	0.00182	0.00180
	(!A2 * B1 * C1 * !D1 * !X)	-0.00214	-0.00214	-0.00213
	(!A2 * B1 * !C1 * D1 * !X)	0.00182	0.00183	0.00182
	(!A2 * B1 * !C1 * D1 * !X)	-0.00214	-0.00214	-0.00214
	(!A2 * B1 * !C1 * !D1 * !X)	0.00182	0.00183	0.00182
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00214	-0.00214	-0.00214
	(!A2 * !B1 * C1 * D1 * !X)	0.00185	0.00187	0.00186
	(!A2 * !B1 * C1 * D1 * !X)	-0.00213	-0.00215	-0.00214
	(!A2 * !B1 * !D1 * !X)	0.00186	0.00188	0.00187
	(!A2 * !B1 * !D1 * !X)	-0.00213	-0.00214	-0.00214
	(!A2 * !B1 * !C1 * D1 * !X)	0.00185	0.00187	0.00186
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00213	-0.00214	-0.00214

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	0.00236	0.00206	0.00201
	(A2 * B1 * C1 * D1 * X)	-0.00174	-0.00208	-0.00209
	(A2 * B1 * C1 * !D1 * !X)	0.00201	0.00201	0.00200
	(A2 * B1 * C1 * !D1 * !X)	-0.00207	-0.00209	-0.00210
	(A2 * B1 * !C1 * !X)	0.00201	0.00201	0.00200
	(A2 * B1 * !C1 * !X)	-0.00207	-0.00209	-0.00210
	(A2 * !B1 * !X)	0.00201	0.00201	0.00200
	(A2 * !B1 * !X)	-0.00207	-0.00209	-0.00210
	(!A2 * B1 * C1 * !D1 * !X)	0.00190	0.00190	0.00190
	(!A2 * B1 * C1 * !D1 * !X)	-0.00211	-0.00212	-0.00211
	(!A2 * B1 * !C1 * D1 * !X)	0.00191	0.00192	0.00191
	(!A2 * B1 * !C1 * D1 * !X)	-0.00211	-0.00212	-0.00211
	(!A2 * B1 * !C1 * !D1 * !X)	0.00191	0.00192	0.00191
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00211	-0.00212	-0.00211
	(!A2 * !B1 * C1 * D1 * !X)	0.00191	0.00192	0.00192
	(!A2 * !B1 * C1 * D1 * !X)	-0.00211	-0.00212	-0.00211
	(!A2 * !B1 * !D1 * !X)	0.00191	0.00193	0.00192
	(!A2 * !B1 * !D1 * !X)	-0.00211	-0.00212	-0.00211
	(!A2 * !B1 * !C1 * D1 * !X)	0.00191	0.00193	0.00192
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00211	-0.00212	-0.00211

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	0.00462	0.00399	0.00390
	(A2 * B1 * C1 * D1 * X)	-0.00337	-0.00408	-0.00411
	(A2 * B1 * C1 * !D1 * !X)	0.00359	0.00363	0.00359
	(A2 * B1 * C1 * !D1 * !X)	-0.00435	-0.00443	-0.00441
	(A2 * B1 * !C1 * !X)	0.00359	0.00363	0.00359
	(A2 * B1 * !C1 * !X)	-0.00435	-0.00443	-0.00441
	(A2 * !B1 * !X)	0.00359	0.00363	0.00359
	(A2 * !B1 * !X)	-0.00435	-0.00443	-0.00441
	(!A2 * B1 * C1 * !D1 * !X)	0.00338	0.00338	0.00337
	(!A2 * B1 * C1 * !D1 * !X)	-0.00446	-0.00446	-0.00445
	(!A2 * B1 * !C1 * D1 * !X)	0.00339	0.00341	0.00338
	(!A2 * B1 * !C1 * D1 * !X)	-0.00446	-0.00447	-0.00445
	(!A2 * B1 * !C1 * !D1 * !X)	0.00340	0.00341	0.00339
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00446	-0.00447	-0.00445
	(!A2 * !B1 * C1 * D1 * !X)	0.00341	0.00342	0.00342
	(!A2 * !B1 * C1 * D1 * !X)	-0.00445	-0.00445	-0.00445
	(!A2 * !B1 * !D1 * !X)	0.00341	0.00342	0.00342
	(!A2 * !B1 * !D1 * !X)	-0.00445	-0.00445	-0.00445
	(!A2 * !B1 * !C1 * D1 * !X)	0.00341	0.00342	0.00342
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00445	-0.00445	-0.00445

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)**	-0.00190	-0.00191	-0.00190
	(A2 * B1 * C1 * D1 * X)	0.00212	0.00215	0.00214
	(A2 * B1 * C1 * !D1 * !X)	-0.00193	-0.00193	-0.00193
	(A2 * B1 * C1 * !D1 * !X)	0.00212	0.00213	0.00212
	(A2 * B1 * !C1 * !X)	-0.00192	-0.00193	-0.00193
	(A2 * B1 * !C1 * !X)	0.00211	0.00213	0.00212
	(A2 * !B1 * !X)	-0.00192	-0.00193	-0.00193
	(A2 * !B1 * !X)	0.00211	0.00213	0.00212
	(!A2 * B1 * C1 * !D1 * !X)	-0.00164	-0.00182	-0.00180
	(!A2 * B1 * C1 * !D1 * !X)	0.00214	0.00216	0.00214
	(!A2 * B1 * !C1 * D1 * !X)	-0.00168	-0.00183	-0.00182
	(!A2 * B1 * !C1 * D1 * !X)	0.00214	0.00217	0.00214
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00168	-0.00183	-0.00182
	(!A2 * B1 * !C1 * !D1 * !X)	0.00214	0.00217	0.00214
	(!A2 * !B1 * C1 * D1 * !X)	-0.00175	-0.00186	-0.00186
	(!A2 * !B1 * C1 * D1 * !X)	0.00213	0.00216	0.00214
	(!A2 * !B1 * !D1 * !X)	-0.00176	-0.00186	-0.00187
	(!A2 * !B1 * !D1 * !X)	0.00213	0.00216	0.00214
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00176	-0.00186	-0.00186
	(!A2 * !B1 * !C1 * D1 * !X)	0.00213	0.00216	0.00214

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	-0.00198	-0.00199	-0.00198
	(A2 * B1 * C1 * D1 * X)	0.00210	0.00213	0.00212
	(A2 * B1 * C1 * !D1 * !X)	-0.00199	-0.00201	-0.00200
	(A2 * B1 * C1 * !D1 * !X)	0.00209	0.00211	0.00210
	(A2 * B1 * !C1 * !X)	-0.00199	-0.00201	-0.00200
	(A2 * B1 * !C1 * !X)	0.00208	0.00211	0.00210
	(A2 * !B1 * !X)	-0.00199	-0.00201	-0.00200
	(A2 * !B1 * !X)	0.00209	0.00211	0.00210
	(!A2 * B1 * C1 * !D1 * !X)	-0.00172	-0.00190	-0.00190
	(!A2 * B1 * C1 * !D1 * !X)	0.00212	0.00214	0.00212
	(!A2 * B1 * !C1 * D1 * !X)	-0.00175	-0.00191	-0.00191
	(!A2 * B1 * !C1 * D1 * !X)	0.00211	0.00215	0.00212
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00175	-0.00191	-0.00191
	(!A2 * B1 * !C1 * !D1 * !X)	0.00211	0.00215	0.00212
	(!A2 * !B1 * C1 * D1 * !X)	-0.00183	-0.00192	-0.00192
	(!A2 * !B1 * C1 * D1 * !X)	0.00212	0.00214	0.00212
	(!A2 * !B1 * !D1 * !X)	-0.00184	-0.00193	-0.00192
	(!A2 * !B1 * !D1 * !X)	0.00212	0.00214	0.00212
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00184	-0.00193	-0.00192
	(!A2 * !B1 * !C1 * D1 * !X)	0.00212	0.00214	0.00212

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	-0.00380	-0.00383	-0.00380
	(A2 * B1 * C1 * D1 * X)	0.00415	0.00420	0.00418
	(A2 * B1 * C1 * !D1 * !X)	-0.00356	-0.00358	-0.00357
	(A2 * B1 * C1 * !D1 * !X)	0.00439	0.00443	0.00441
	(A2 * B1 * !C1 * !X)	-0.00356	-0.00358	-0.00357
	(A2 * B1 * !C1 * !X)	0.00439	0.00443	0.00441
	(A2 * !B1 * !X)	-0.00356	-0.00358	-0.00357
	(A2 * !B1 * !X)	0.00439	0.00443	0.00441
	(!A2 * B1 * C1 * !D1 * !X)	-0.00310	-0.00337	-0.00337
	(!A2 * B1 * C1 * !D1 * !X)	0.00446	0.00452	0.00447
	(!A2 * B1 * !C1 * D1 * !X)	-0.00313	-0.00339	-0.00338
	(!A2 * B1 * !C1 * D1 * !X)	0.00446	0.00451	0.00447
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00313	-0.00339	-0.00339
	(!A2 * B1 * !C1 * !D1 * !X)	0.00446	0.00451	0.00447
	(!A2 * !B1 * C1 * D1 * !X)	-0.00324	-0.00342	-0.00342
	(!A2 * !B1 * C1 * D1 * !X)	0.00446	0.00451	0.00447
	(!A2 * !B1 * !D1 * !X)	-0.00325	-0.00342	-0.00342
	(!A2 * !B1 * !D1 * !X)	0.00446	0.00451	0.00447
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00325	-0.00342	-0.00342
	(!A2 * !B1 * !C1 * D1 * !X)	0.00446	0.00451	0.00447

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)**	0.00202	0.00204	0.00202
	(A1 * B1 * C1 * D1 * X)	-0.00100	-0.00100	-0.00099
	(A1 * B1 * C1 * !D1 * !X)	0.00183	0.00184	0.00184
	(A1 * B1 * C1 * !D1 * !X)	-0.00205	-0.00208	-0.00208
	(A1 * B1 * !C1 * D1 * !X)	0.00183	0.00185	0.00184
	(A1 * B1 * !C1 * D1 * !X)	-0.00205	-0.00208	-0.00208
	(A1 * B1 * !C1 * !D1 * !X)	0.00183	0.00186	0.00184
	(A1 * B1 * !C1 * !D1 * !X)	-0.00205	-0.00209	-0.00208
	(A1 * !B1 * C1 * D1 * !X)	0.00183	0.00184	0.00184
	(A1 * !B1 * C1 * D1 * !X)	-0.00205	-0.00208	-0.00208
	(A1 * !B1 * !D1 * !X)	0.00183	0.00186	0.00184
	(A1 * !B1 * !D1 * !X)	-0.00205	-0.00209	-0.00208
	(A1 * !B1 * !C1 * D1 * !X)	0.00183	0.00186	0.00184
	(A1 * !B1 * !C1 * D1 * !X)	-0.00205	-0.00209	-0.00208
	(!A1 * B1 * C1 * !D1 * !X)	0.00173	0.00174	0.00173
	(!A1 * B1 * C1 * !D1 * !X)	-0.00210	-0.00210	-0.00210
	(!A1 * B1 * !C1 * D1 * !X)	0.00175	0.00177	0.00176
	(!A1 * B1 * !C1 * D1 * !X)	-0.00210	-0.00211	-0.00210
	(!A1 * B1 * !C1 * !D1 * !X)	0.00173	0.00173	0.00172
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00210	-0.00211	-0.00210
	(!A1 * !B1 * C1 * D1 * !X)	0.00176	0.00176	0.00175
	(!A1 * !B1 * C1 * D1 * !X)	-0.00210	-0.00210	-0.00210
	(!A1 * !B1 * !D1 * !X)	0.00176	0.00179	0.00177
	(!A1 * !B1 * !D1 * !X)	-0.00209	-0.00211	-0.00210
	(!A1 * !B1 * !C1 * D1 * !X)	0.00177	0.00180	0.00177
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00209	-0.00211	-0.00210

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	0.00200	0.00203	0.00201
	(A1 * B1 * C1 * D1 * X)	-0.00097	-0.00098	-0.00097
	(A1 * B1 * C1 * !D1 * !X)	0.00185	0.00187	0.00185
	(A1 * B1 * C1 * !D1 * !X)	-0.00201	-0.00205	-0.00203
	(A1 * B1 * !C1 * D1 * !X)	0.00185	0.00185	0.00185
	(A1 * B1 * !C1 * D1 * !X)	-0.00201	-0.00204	-0.00204
	(A1 * B1 * !C1 * !D1 * !X)	0.00185	0.00187	0.00185
	(A1 * B1 * !C1 * !D1 * !X)	-0.00202	-0.00205	-0.00204
	(A1 * !B1 * C1 * D1 * !X)	0.00185	0.00187	0.00185
	(A1 * !B1 * C1 * D1 * !X)	-0.00201	-0.00205	-0.00204
	(A1 * !B1 * !D1 * !X)	0.00185	0.00187	0.00185
	(A1 * !B1 * !D1 * !X)	-0.00201	-0.00205	-0.00204
	(A1 * !B1 * !C1 * D1 * !X)	0.00185	0.00187	0.00185
	(A1 * !B1 * !C1 * D1 * !X)	-0.00201	-0.00205	-0.00204
	(!A1 * B1 * C1 * !D1 * !X)	0.00172	0.00173	0.00172
	(!A1 * B1 * C1 * !D1 * !X)	-0.00206	-0.00206	-0.00206
	(!A1 * B1 * !C1 * D1 * !X)	0.00174	0.00175	0.00174
	(!A1 * B1 * !C1 * D1 * !X)	-0.00206	-0.00207	-0.00206
	(!A1 * B1 * !C1 * !D1 * !X)	0.00174	0.00175	0.00173
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00206	-0.00206	-0.00206
	(!A1 * !B1 * C1 * D1 * !X)	0.00176	0.00177	0.00177
	(!A1 * !B1 * C1 * D1 * !X)	-0.00205	-0.00206	-0.00206
	(!A1 * !B1 * !D1 * !X)	0.00176	0.00177	0.00177
	(!A1 * !B1 * !D1 * !X)	-0.00205	-0.00206	-0.00206
	(!A1 * !B1 * !C1 * D1 * !X)	0.00176	0.00176	0.00177
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00205	-0.00205	-0.00206

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	0.00442	0.00446	0.00443
	(A1 * B1 * C1 * D1 * X)	-0.00198	-0.00199	-0.00197
	(A1 * B1 * C1 * !D1 * !X)	0.00375	0.00379	0.00376
	(A1 * B1 * C1 * !D1 * !X)	-0.00436	-0.00444	-0.00443
	(A1 * B1 * !C1 * D1 * !X)	0.00375	0.00379	0.00376
	(A1 * B1 * !C1 * D1 * !X)	-0.00436	-0.00445	-0.00443
	(A1 * B1 * !C1 * !D1 * !X)	0.00375	0.00381	0.00376
	(A1 * B1 * !C1 * !D1 * !X)	-0.00436	-0.00446	-0.00444
	(A1 * !B1 * C1 * D1 * !X)	0.00375	0.00379	0.00376
	(A1 * !B1 * C1 * D1 * !X)	-0.00436	-0.00444	-0.00443
	(A1 * !B1 * !D1 * !X)	0.00375	0.00381	0.00376
	(A1 * !B1 * !D1 * !X)	-0.00436	-0.00446	-0.00443
	(A1 * !B1 * !C1 * D1 * !X)	0.00375	0.00381	0.00376
	(A1 * !B1 * !C1 * D1 * !X)	-0.00436	-0.00446	-0.00443
	(!A1 * B1 * C1 * !D1 * !X)	0.00349	0.00352	0.00348
	(!A1 * B1 * C1 * !D1 * !X)	-0.00448	-0.00451	-0.00448
	(!A1 * B1 * !C1 * D1 * !X)	0.00352	0.00353	0.00351
	(!A1 * B1 * !C1 * D1 * !X)	-0.00447	-0.00450	-0.00448
	(!A1 * B1 * !C1 * !D1 * !X)	0.00353	0.00356	0.00352
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00448	-0.00451	-0.00448
	(!A1 * !B1 * C1 * D1 * !X)	0.00358	0.00360	0.00359
	(!A1 * !B1 * C1 * D1 * !X)	-0.00447	-0.00449	-0.00448
	(!A1 * !B1 * !D1 * !X)	0.00357	0.00362	0.00358
	(!A1 * !B1 * !D1 * !X)	-0.00447	-0.00451	-0.00448
	(!A1 * !B1 * !C1 * D1 * !X)	0.00358	0.00358	0.00359
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00448	-0.00447	-0.00448

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)**	-0.00194	-0.00195	-0.00198
	(A1 * B1 * C1 * D1 * X)	0.00108	0.00108	0.00104
	(A1 * B1 * C1 * !D1 * !X)	-0.00183	-0.00184	-0.00183
	(A1 * B1 * C1 * !D1 * !X)	0.00207	0.00208	0.00208
	(A1 * B1 * !C1 * D1 * !X)	-0.00183	-0.00184	-0.00183
	(A1 * B1 * !C1 * D1 * !X)	0.00207	0.00208	0.00208
	(A1 * B1 * !C1 * !D1 * !X)	-0.00183	-0.00184	-0.00183
	(A1 * B1 * !C1 * !D1 * !X)	0.00208	0.00209	0.00208
	(A1 * !B1 * C1 * D1 * !X)	-0.00183	-0.00184	-0.00183
	(A1 * !B1 * C1 * D1 * !X)	0.00208	0.00209	0.00208
	(A1 * !B1 * !D1 * !X)	-0.00182	-0.00184	-0.00183
	(A1 * !B1 * !D1 * !X)	0.00207	0.00209	0.00208
	(A1 * !B1 * !C1 * D1 * !X)	-0.00182	-0.00184	-0.00183
	(A1 * !B1 * !C1 * D1 * !X)	0.00206	0.00209	0.00208
	(!A1 * B1 * C1 * !D1 * !X)	-0.00155	-0.00174	-0.00173
	(!A1 * B1 * C1 * !D1 * !X)	0.00210	0.00213	0.00211
	(!A1 * B1 * !C1 * D1 * !X)	-0.00159	-0.00175	-0.00176
	(!A1 * B1 * !C1 * D1 * !X)	0.00210	0.00213	0.00211
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00159	-0.00173	-0.00172
	(!A1 * B1 * !C1 * !D1 * !X)	0.00210	0.00213	0.00211
	(!A1 * !B1 * C1 * D1 * !X)	-0.00166	-0.00176	-0.00175
	(!A1 * !B1 * C1 * D1 * !X)	0.00210	0.00212	0.00211
	(!A1 * !B1 * !D1 * !X)	-0.00167	-0.00176	-0.00177
	(!A1 * !B1 * !D1 * !X)	0.00210	0.00212	0.00211
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00167	-0.00176	-0.00177
	(!A1 * !B1 * !C1 * D1 * !X)	0.00210	0.00212	0.00211

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	-0.00194	-0.00195	-0.00199
	(A1 * B1 * C1 * D1 * X)	0.00103	0.00104	0.00100
	(A1 * B1 * C1 * !D1 * !X)	-0.00183	-0.00185	-0.00184
	(A1 * B1 * C1 * !D1 * !X)	0.00202	0.00205	0.00203
	(A1 * B1 * !C1 * D1 * !X)	-0.00185	-0.00185	-0.00184
	(A1 * B1 * !C1 * D1 * !X)	0.00204	0.00205	0.00204
	(A1 * B1 * !C1 * !D1 * !X)	-0.00183	-0.00185	-0.00184
	(A1 * B1 * !C1 * !D1 * !X)	0.00202	0.00205	0.00204
	(A1 * !B1 * C1 * D1 * !X)	-0.00184	-0.00185	-0.00184
	(A1 * !B1 * C1 * D1 * !X)	0.00204	0.00205	0.00204
	(A1 * !B1 * !D1 * !X)	-0.00184	-0.00185	-0.00184
	(A1 * !B1 * !D1 * !X)	0.00204	0.00205	0.00204
	(A1 * !B1 * !C1 * D1 * !X)	-0.00184	-0.00185	-0.00184
	(A1 * !B1 * !C1 * D1 * !X)	0.00204	0.00205	0.00204
	(!A1 * B1 * C1 * !D1 * !X)	-0.00157	-0.00173	-0.00172
	(!A1 * B1 * C1 * !D1 * !X)	0.00206	0.00208	0.00207
	(!A1 * B1 * !C1 * D1 * !X)	-0.00160	-0.00175	-0.00174
	(!A1 * B1 * !C1 * D1 * !X)	0.00206	0.00209	0.00207
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00160	-0.00175	-0.00173
	(!A1 * B1 * !C1 * !D1 * !X)	0.00206	0.00209	0.00207
	(!A1 * !B1 * C1 * D1 * !X)	-0.00168	-0.00177	-0.00177
	(!A1 * !B1 * C1 * D1 * !X)	0.00206	0.00208	0.00207
	(!A1 * !B1 * !D1 * !X)	-0.00169	-0.00177	-0.00177
	(!A1 * !B1 * !D1 * !X)	0.00206	0.00208	0.00207
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00169	-0.00176	-0.00177
	(!A1 * !B1 * !C1 * D1 * !X)	0.00206	0.00208	0.00207

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	-0.00424	-0.00426	-0.00435
	(A1 * B1 * C1 * D1 * X)	0.00216	0.00216	0.00206
	(A1 * B1 * C1 * !D1 * !X)	-0.00374	-0.00377	-0.00375
	(A1 * B1 * C1 * !D1 * !X)	0.00441	0.00444	0.00443
	(A1 * B1 * !C1 * D1 * !X)	-0.00374	-0.00378	-0.00375
	(A1 * B1 * !C1 * D1 * !X)	0.00441	0.00446	0.00443
	(A1 * B1 * !C1 * !D1 * !X)	-0.00374	-0.00377	-0.00375
	(A1 * B1 * !C1 * !D1 * !X)	0.00442	0.00446	0.00444
	(A1 * !B1 * C1 * D1 * !X)	-0.00375	-0.00377	-0.00375
	(A1 * !B1 * C1 * D1 * !X)	0.00443	0.00444	0.00443
	(A1 * !B1 * !D1 * !X)	-0.00375	-0.00377	-0.00375
	(A1 * !B1 * !D1 * !X)	0.00444	0.00446	0.00443
	(A1 * !B1 * !C1 * D1 * !X)	-0.00375	-0.00377	-0.00375
	(A1 * !B1 * !C1 * D1 * !X)	0.00444	0.00446	0.00443
	(!A1 * B1 * C1 * !D1 * !X)	-0.00312	-0.00352	-0.00348
	(!A1 * B1 * C1 * !D1 * !X)	0.00448	0.00454	0.00450
	(!A1 * B1 * !C1 * D1 * !X)	-0.00317	-0.00353	-0.00351
	(!A1 * B1 * !C1 * D1 * !X)	0.00447	0.00452	0.00450
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00317	-0.00353	-0.00352
	(!A1 * B1 * !C1 * !D1 * !X)	0.00448	0.00452	0.00450
	(!A1 * !B1 * C1 * D1 * !X)	-0.00334	-0.00359	-0.00359
	(!A1 * !B1 * C1 * D1 * !X)	0.00448	0.00453	0.00450
	(!A1 * !B1 * !D1 * !X)	-0.00336	-0.00359	-0.00358
	(!A1 * !B1 * !D1 * !X)	0.00448	0.00453	0.00450
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00336	-0.00358	-0.00359
	(!A1 * !B1 * !C1 * D1 * !X)	0.00448	0.00453	0.00450

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)**	0.00168	0.00169	0.00168
	(A2 * C1 * !D1 * !X)	-0.00184	-0.00184	-0.00184
	(A2 * !C1 * D1 * !X)	0.00171	0.00173	0.00171
	(A2 * !C1 * D1 * !X)	-0.00184	-0.00185	-0.00184
	(A2 * !C1 * !D1 * !X)	0.00170	0.00171	0.00170
	(A2 * !C1 * !D1 * !X)	-0.00184	-0.00184	-0.00184
	(A1 * !A2 * C1 * !D1 * !X)	0.00170	0.00171	0.00170
	(A1 * !A2 * C1 * !D1 * !X)	-0.00184	-0.00185	-0.00184
	(A1 * !A2 * !C1 * D1 * !X)	0.00171	0.00173	0.00172
	(A1 * !A2 * !C1 * D1 * !X)	-0.00184	-0.00184	-0.00184
	(A1 * !A2 * !C1 * !D1 * !X)	0.00171	0.00173	0.00171
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00184	-0.00184	-0.00184
	(!A1 * !A2 * C1 * D1 * !X)	0.00077	0.00077	0.00076
	(!A1 * !A2 * C1 * D1 * !X)	-0.00181	-0.00181	-0.00180
	(!A1 * !A2 * C1 * !D1 * !X)	0.00090	0.00091	0.00090
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00183	-0.00185	-0.00184
	(!A1 * !A2 * !C1 * D1 * !X)	0.00096	0.00095	0.00096
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00184	-0.00184	-0.00184
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00098	0.00099	0.00098
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00184	-0.00184	-0.00184

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	0.00170	0.00170	0.00170
	(A2 * C1 * !D1 * !X)	-0.00211	-0.00211	-0.00210
	(A2 * !C1 * D1 * !X)	0.00174	0.00175	0.00174
	(A2 * !C1 * D1 * !X)	-0.00210	-0.00211	-0.00211
	(A2 * !C1 * !D1 * !X)	0.00174	0.00175	0.00174
	(A2 * !C1 * !D1 * !X)	-0.00210	-0.00211	-0.00211
	(A1 * !A2 * C1 * !D1 * !X)	0.00171	0.00171	0.00170
	(A1 * !A2 * C1 * !D1 * !X)	-0.00211	-0.00211	-0.00210
	(A1 * !A2 * !C1 * D1 * !X)	0.00174	0.00175	0.00175
	(A1 * !A2 * !C1 * D1 * !X)	-0.00210	-0.00211	-0.00211
	(A1 * !A2 * !C1 * !D1 * !X)	0.00174	0.00175	0.00174
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00210	-0.00211	-0.00211
	(!A1 * !A2 * C1 * D1 * !X)	0.00082	0.00082	0.00081
	(!A1 * !A2 * C1 * D1 * !X)	-0.00207	-0.00208	-0.00206
	(!A1 * !A2 * C1 * !D1 * !X)	0.00097	0.00099	0.00098
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00210	-0.00212	-0.00211
	(!A1 * !A2 * !C1 * D1 * !X)	0.00102	0.00102	0.00101
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00211	-0.00212	-0.00211
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00103	0.00104	0.00104
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00210	-0.00211	-0.00211

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	0.00343	0.00344	0.00343
	(A2 * C1 * !D1 * !X)	-0.00363	-0.00363	-0.00362
	(A2 * !C1 * D1 * !X)	0.00345	0.00351	0.00347
	(A2 * !C1 * D1 * !X)	-0.00362	-0.00365	-0.00362
	(A2 * !C1 * !D1 * !X)	0.00345	0.00350	0.00347
	(A2 * !C1 * !D1 * !X)	-0.00362	-0.00364	-0.00363
	(A1 * !A2 * C1 * !D1 * !X)	0.00341	0.00344	0.00343
	(A1 * !A2 * C1 * !D1 * !X)	-0.00361	-0.00363	-0.00362
	(A1 * !A2 * !C1 * D1 * !X)	0.00341	0.00344	0.00342
	(A1 * !A2 * !C1 * D1 * !X)	-0.00362	-0.00364	-0.00362
	(A1 * !A2 * !C1 * !D1 * !X)	0.00341	0.00345	0.00342
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00362	-0.00365	-0.00363
	(!A1 * !A2 * C1 * D1 * !X)	0.00149	0.00152	0.00150
	(!A1 * !A2 * C1 * D1 * !X)	-0.00354	-0.00357	-0.00352
	(!A1 * !A2 * C1 * !D1 * !X)	0.00186	0.00187	0.00185
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00365	-0.00367	-0.00365
	(!A1 * !A2 * !C1 * D1 * !X)	0.00185	0.00187	0.00185
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00364	-0.00366	-0.00364
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00192	0.00193	0.00191
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00364	-0.00366	-0.00364

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)**	-0.00152	-0.00167	-0.00168
	(A2 * C1 * !D1 * !X)	0.00185	0.00187	0.00185
	(A2 * !C1 * D1 * !X)	-0.00161	-0.00171	-0.00171
	(A2 * !C1 * D1 * !X)	0.00184	0.00187	0.00185
	(A2 * !C1 * !D1 * !X)	-0.00163	-0.00171	-0.00170
	(A2 * !C1 * !D1 * !X)	0.00184	0.00187	0.00185
	(A1 * !A2 * C1 * !D1 * !X)	-0.00147	-0.00167	-0.00169
	(A1 * !A2 * C1 * !D1 * !X)	0.00186	0.00185	0.00184
	(A1 * !A2 * !C1 * D1 * !X)	-0.00159	-0.00170	-0.00171
	(A1 * !A2 * !C1 * D1 * !X)	0.00184	0.00184	0.00185
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00162	-0.00170	-0.00171
	(A1 * !A2 * !C1 * !D1 * !X)	0.00184	0.00184	0.00185
	(!A1 * !A2 * C1 * D1 * !X)	-0.00069	-0.00071	-0.00071
	(!A1 * !A2 * C1 * D1 * !X)	0.00188	0.00190	0.00186
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00090	-0.00091	-0.00090
	(!A1 * !A2 * C1 * !D1 * !X)	0.00187	0.00190	0.00185
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00096	-0.00095	-0.00096
	(!A1 * !A2 * !C1 * D1 * !X)	0.00198	0.00195	0.00187
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00098	-0.00099	-0.00098
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00184	0.00186	0.00185

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	-0.00156	-0.00170	-0.00170
	(A2 * C1 * !D1 * !X)	0.00211	0.00214	0.00211
	(A2 * !C1 * D1 * !X)	-0.00166	-0.00175	-0.00174
	(A2 * !C1 * D1 * !X)	0.00210	0.00213	0.00212
	(A2 * !C1 * !D1 * !X)	-0.00167	-0.00175	-0.00174
	(A2 * !C1 * !D1 * !X)	0.00210	0.00213	0.00212
	(A1 * !A2 * C1 * !D1 * !X)	-0.00152	-0.00171	-0.00170
	(A1 * !A2 * C1 * !D1 * !X)	0.00213	0.00212	0.00211
	(A1 * !A2 * !C1 * D1 * !X)	-0.00166	-0.00175	-0.00175
	(A1 * !A2 * !C1 * D1 * !X)	0.00212	0.00213	0.00211
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00168	-0.00175	-0.00174
	(A1 * !A2 * !C1 * !D1 * !X)	0.00212	0.00213	0.00211
	(!A1 * !A2 * C1 * D1 * !X)	-0.00074	-0.00075	-0.00075
	(!A1 * !A2 * C1 * D1 * !X)	0.00214	0.00217	0.00213
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00097	-0.00099	-0.00098
	(!A1 * !A2 * C1 * !D1 * !X)	0.00213	0.00216	0.00212
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00102	-0.00102	-0.00101
	(!A1 * !A2 * !C1 * D1 * !X)	0.00222	0.00221	0.00213
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00103	-0.00104	-0.00104
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00211	0.00214	0.00212

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	-0.00310	-0.00338	-0.00343
	(A2 * C1 * !D1 * !X)	0.00366	0.00366	0.00364
	(A2 * !C1 * D1 * !X)	-0.00326	-0.00346	-0.00346
	(A2 * !C1 * D1 * !X)	0.00363	0.00367	0.00364
	(A2 * !C1 * !D1 * !X)	-0.00328	-0.00346	-0.00346
	(A2 * !C1 * !D1 * !X)	0.00363	0.00367	0.00364
	(A1 * !A2 * C1 * !D1 * !X)	-0.00301	-0.00342	-0.00343
	(A1 * !A2 * C1 * !D1 * !X)	0.00368	0.00366	0.00364
	(A1 * !A2 * !C1 * D1 * !X)	-0.00322	-0.00344	-0.00342
	(A1 * !A2 * !C1 * D1 * !X)	0.00362	0.00366	0.00364
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00326	-0.00345	-0.00342
	(A1 * !A2 * !C1 * !D1 * !X)	0.00362	0.00366	0.00364
	(!A1 * !A2 * C1 * D1 * !X)	-0.00136	-0.00139	-0.00138
	(!A1 * !A2 * C1 * D1 * !X)	0.00369	0.00374	0.00368
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00186	-0.00187	-0.00185
	(!A1 * !A2 * C1 * !D1 * !X)	0.00367	0.00374	0.00366
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00185	-0.00187	-0.00185
	(!A1 * !A2 * !C1 * D1 * !X)	0.00384	0.00383	0.00369
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00192	-0.00193	-0.00191
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00364	0.00369	0.00366

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)**	0.00170	0.00171	0.00170
	(A2 * B1 * !D1 * !X)	-0.00194	-0.00195	-0.00194
	(A2 * !B1 * D1 * !X)	0.00070	0.00070	0.00070
	(A2 * !B1 * D1 * !X)	-0.00194	-0.00194	-0.00194
	(A2 * !B1 * !D1 * !X)	0.00082	0.00083	0.00082
	(A2 * !B1 * !D1 * !X)	-0.00196	-0.00196	-0.00195
	(A1 * !A2 * B1 * !D1 * !X)	0.00170	0.00171	0.00170
	(A1 * !A2 * B1 * !D1 * !X)	-0.00194	-0.00195	-0.00194
	(!A2 * !B1 * D1 * !X)	0.00070	0.00070	0.00070
	(!A2 * !B1 * D1 * !X)	-0.00194	-0.00194	-0.00194
	(!A2 * !B1 * !D1 * !X)	0.00081	0.00082	0.00082
	(!A2 * !B1 * !D1 * !X)	-0.00195	-0.00195	-0.00195
	(!A1 * !A2 * B1 * D1 * !X)	0.00072	0.00072	0.00070
	(!A1 * !A2 * B1 * D1 * !X)	-0.00195	-0.00196	-0.00194
	(!A1 * !A2 * B1 * !D1 * !X)	0.00093	0.00094	0.00093
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00195	-0.00195	-0.00195

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	0.00172	0.00173	0.00173
	(A2 * B1 * !D1 * !X)	-0.00217	-0.00218	-0.00218
	(A2 * !B1 * D1 * !X)	0.00075	0.00075	0.00075
	(A2 * !B1 * D1 * !X)	-0.00217	-0.00218	-0.00216
	(A2 * !B1 * !D1 * !X)	0.00089	0.00091	0.00090
	(A2 * !B1 * !D1 * !X)	-0.00217	-0.00219	-0.00218
	(A1 * !A2 * B1 * !D1 * !X)	0.00173	0.00174	0.00173
	(A1 * !A2 * B1 * !D1 * !X)	-0.00217	-0.00218	-0.00218
	(!A2 * !B1 * D1 * !X)	0.00075	0.00075	0.00075
	(!A2 * !B1 * D1 * !X)	-0.00217	-0.00218	-0.00216
	(!A2 * !B1 * !D1 * !X)	0.00089	0.00090	0.00090
	(!A2 * !B1 * !D1 * !X)	-0.00217	-0.00218	-0.00218
	(!A1 * !A2 * B1 * D1 * !X)	0.00074	0.00075	0.00075
	(!A1 * !A2 * B1 * D1 * !X)	-0.00217	-0.00218	-0.00216
	(!A1 * !A2 * B1 * !D1 * !X)	0.00098	0.00099	0.00099
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00217	-0.00218	-0.00218

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	0.00353	0.00357	0.00354
	(A2 * B1 * !D1 * !X)	-0.00372	-0.00373	-0.00371
	(A2 * !B1 * D1 * !X)	0.00153	0.00154	0.00156
	(A2 * !B1 * D1 * !X)	-0.00369	-0.00370	-0.00370
	(A2 * !B1 * !D1 * !X)	0.00188	0.00188	0.00187
	(A2 * !B1 * !D1 * !X)	-0.00374	-0.00375	-0.00374
	(A1 * !A2 * B1 * !D1 * !X)	0.00355	0.00358	0.00357
	(A1 * !A2 * B1 * !D1 * !X)	-0.00371	-0.00372	-0.00371
	(!A2 * !B1 * D1 * !X)	0.00154	0.00154	0.00156
	(!A2 * !B1 * D1 * !X)	-0.00370	-0.00370	-0.00370
	(!A2 * !B1 * !D1 * !X)	0.00188	0.00188	0.00187
	(!A2 * !B1 * !D1 * !X)	-0.00374	-0.00375	-0.00374
	(!A1 * !A2 * B1 * D1 * !X)	0.00148	0.00148	0.00152
	(!A1 * !A2 * B1 * D1 * !X)	-0.00372	-0.00372	-0.00370
	(!A1 * !A2 * B1 * !D1 * !X)	0.00195	0.00198	0.00196
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00372	-0.00375	-0.00373

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)**	-0.00154	-0.00170	-0.00170
	(A2 * B1 * !D1 * !X)	0.00209	0.00195	0.00195
	(A2 * !B1 * D1 * !X)	-0.00067	-0.00068	-0.00068
	(A2 * !B1 * D1 * !X)	0.00199	0.00201	0.00196
	(A2 * !B1 * !D1 * !X)	-0.00082	-0.00083	-0.00082
	(A2 * !B1 * !D1 * !X)	0.00206	0.00207	0.00197
	(A1 * !A2 * B1 * !D1 * !X)	-0.00152	-0.00171	-0.00170
	(A1 * !A2 * B1 * !D1 * !X)	0.00210	0.00197	0.00195
	(!A2 * !B1 * D1 * !X)	-0.00067	-0.00068	-0.00068
	(!A2 * !B1 * D1 * !X)	0.00199	0.00201	0.00196
	(!A2 * !B1 * !D1 * !X)	-0.00081	-0.00082	-0.00082
	(!A2 * !B1 * !D1 * !X)	0.00206	0.00206	0.00197
	(!A1 * !A2 * B1 * D1 * !X)	-0.00066	-0.00067	-0.00066
	(!A1 * !A2 * B1 * D1 * !X)	0.00198	0.00201	0.00196
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00093	-0.00094	-0.00093
	(!A1 * !A2 * B1 * !D1 * !X)	0.00211	0.00205	0.00196

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	-0.00154	-0.00173	-0.00173
	(A2 * B1 * !D1 * !X)	0.00230	0.00221	0.00219
	(A2 * !B1 * D1 * !X)	-0.00071	-0.00072	-0.00072
	(A2 * !B1 * D1 * !X)	0.00222	0.00224	0.00219
	(A2 * !B1 * !D1 * !X)	-0.00089	-0.00091	-0.00090
	(A2 * !B1 * !D1 * !X)	0.00228	0.00231	0.00221
	(A1 * !A2 * B1 * !D1 * !X)	-0.00154	-0.00173	-0.00173
	(A1 * !A2 * B1 * !D1 * !X)	0.00234	0.00220	0.00219
	(!A2 * !B1 * D1 * !X)	-0.00071	-0.00072	-0.00072
	(!A2 * !B1 * D1 * !X)	0.00222	0.00224	0.00219
	(!A2 * !B1 * !D1 * !X)	-0.00089	-0.00090	-0.00090
	(!A2 * !B1 * !D1 * !X)	0.00228	0.00231	0.00221
	(!A1 * !A2 * B1 * D1 * !X)	-0.00069	-0.00071	-0.00071
	(!A1 * !A2 * B1 * D1 * !X)	0.00222	0.00224	0.00219
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00098	-0.00099	-0.00099
	(!A1 * !A2 * B1 * !D1 * !X)	0.00231	0.00227	0.00219

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	-0.00308	-0.00357	-0.00354
	(A2 * B1 * !D1 * !X)	0.00407	0.00375	0.00373
	(A2 * !B1 * D1 * !X)	-0.00146	-0.00148	-0.00150
	(A2 * !B1 * D1 * !X)	0.00384	0.00388	0.00376
	(A2 * !B1 * !D1 * !X)	-0.00188	-0.00188	-0.00187
	(A2 * !B1 * !D1 * !X)	0.00396	0.00400	0.00380
	(A1 * !A2 * B1 * !D1 * !X)	-0.00303	-0.00357	-0.00355
	(A1 * !A2 * B1 * !D1 * !X)	0.00411	0.00376	0.00373
	(!A2 * !B1 * D1 * !X)	-0.00145	-0.00147	-0.00150
	(!A2 * !B1 * D1 * !X)	0.00383	0.00388	0.00376
	(!A2 * !B1 * !D1 * !X)	-0.00188	-0.00188	-0.00187
	(!A2 * !B1 * !D1 * !X)	0.00394	0.00400	0.00380
	(!A1 * !A2 * B1 * D1 * !X)	-0.00141	-0.00143	-0.00145
	(!A1 * !A2 * B1 * D1 * !X)	0.00384	0.00388	0.00376
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00195	-0.00198	-0.00196
	(!A1 * !A2 * B1 * !D1 * !X)	0.00403	0.00389	0.00376

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	0.00060	0.00060	0.00059
	(A2 * !C1 * !X)	-0.00233	-0.00233	-0.00236
	(A2 * !B1 * C1 * !X)	0.00060	0.00060	0.00057
	(A2 * !B1 * C1 * !X)	-0.00228	-0.00228	-0.00236
	(!A2 * !C1 * !X)	0.00060	0.00060	0.00059
	(!A2 * !C1 * !X)	-0.00233	-0.00233	-0.00236
	(!A2 * !B1 * C1 * !X)	0.00060	0.00060	0.00057
	(!A2 * !B1 * C1 * !X)	-0.00228	-0.00228	-0.00236
	(!A1 * !A2 * B1 * C1 * !X)	0.00066	0.00067	0.00059
	(!A1 * !A2 * B1 * C1 * !X)	-0.00218	-0.00220	-0.00234

sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	0.00064	0.00064	0.00062
	(A2 * !C1 * !X)	-0.00261	-0.00261	-0.00265
	(A2 * !B1 * C1 * !X)	0.00063	0.00062	0.00059
	(A2 * !B1 * C1 * !X)	-0.00256	-0.00256	-0.00265
	(!A2 * !C1 * !X)	0.00064	0.00064	0.00062
	(!A2 * !C1 * !X)	-0.00261	-0.00261	-0.00265
	(!A2 * !B1 * C1 * !X)	0.00063	0.00062	0.00059
	(!A2 * !B1 * C1 * !X)	-0.00256	-0.00256	-0.00265
	(!A1 * !A2 * B1 * C1 * !X)	0.00068	0.00068	0.00060
	(!A1 * !A2 * B1 * C1 * !X)	-0.00246	-0.00247	-0.00263
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	0.00133	0.00133	0.00127
	(A2 * !C1 * !X)	-0.00433	-0.00435	-0.00444
	(A2 * !B1 * C1 * !X)	0.00128	0.00128	0.00118
	(A2 * !B1 * C1 * !X)	-0.00422	-0.00423	-0.00442
	(!A2 * !C1 * !X)	0.00133	0.00133	0.00127
	(!A2 * !C1 * !X)	-0.00433	-0.00435	-0.00444
	(!A2 * !B1 * C1 * !X)	0.00128	0.00128	0.00118
	(!A2 * !B1 * C1 * !X)	-0.00422	-0.00423	-0.00442
	(!A1 * !A2 * B1 * C1 * !X)	0.00135	0.00136	0.00119
	(!A1 * !A2 * B1 * C1 * !X)	-0.00403	-0.00405	-0.00439

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

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

sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	-0.00058	-0.00059	-0.00057
	(A2 * !C1 * !X)	0.00236	0.00241	0.00237
	(A2 * !B1 * C1 * !X)	-0.00057	-0.00057	-0.00056
	(A2 * !B1 * C1 * !X)	0.00236	0.00239	0.00237
	(!A2 * !C1 * !X)	-0.00058	-0.00059	-0.00057
	(!A2 * !C1 * !X)	0.00236	0.00241	0.00237
	(!A2 * !B1 * C1 * !X)	-0.00057	-0.00057	-0.00056
	(!A2 * !B1 * C1 * !X)	0.00236	0.00239	0.00237
	(!A1 * !A2 * B1 * C1 * !X)	-0.00057	-0.00058	-0.00056
	(!A1 * !A2 * B1 * C1 * !X)	0.00236	0.00239	0.00237
sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	-0.00060	-0.00061	-0.00060
	(A2 * !C1 * !X)	0.00265	0.00270	0.00266
	(A2 * !B1 * C1 * !X)	-0.00059	-0.00059	-0.00058
	(A2 * !B1 * C1 * !X)	0.00265	0.00268	0.00266
	(!A2 * !C1 * !X)	-0.00060	-0.00061	-0.00060
	(!A2 * !C1 * !X)	0.00265	0.00270	0.00266
	(!A2 * !B1 * C1 * !X)	-0.00059	-0.00059	-0.00058
	(!A2 * !B1 * C1 * !X)	0.00265	0.00268	0.00266
	(!A1 * !A2 * B1 * C1 * !X)	-0.00059	-0.00060	-0.00058
	(!A1 * !A2 * B1 * C1 * !X)	0.00265	0.00268	0.00266
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	-0.00123	-0.00126	-0.00123
	(A2 * !C1 * !X)	0.00444	0.00453	0.00446
	(A2 * !B1 * C1 * !X)	-0.00118	-0.00121	-0.00118
	(A2 * !B1 * C1 * !X)	0.00444	0.00452	0.00446
	(!A2 * !C1 * !X)	-0.00123	-0.00126	-0.00123
	(!A2 * !C1 * !X)	0.00444	0.00453	0.00446
	(!A2 * !B1 * C1 * !X)	-0.00118	-0.00121	-0.00118
	(!A2 * !B1 * C1 * !X)	0.00444	0.00452	0.00446
	(!A1 * !A2 * B1 * C1 * !X)	-0.00118	-0.00121	-0.00119
	(!A1 * !A2 * B1 * C1 * !X)	0.00444	0.00452	0.00446

SKY130_FD_SC_HS__O211AIx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00277	0.00288	0.00292	0.00285	0.64884
sky130_fd_sc_hs__o211ai_2	0.00539	0.00552	0.00551	0.00537	1.15553
sky130_fd_sc_hs__o211ai_4	0.01063	0.01090	0.00783	0.00804	2.08546

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o211ai_1	0.00000	0.05134	0.30399
sky130_fd_sc_hs__o211ai_2	0.00000	0.10269	0.60797
sky130_fd_sc_hs__o211ai_4	0.00000	0.12937	0.81063

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)	0.10614	0.88990	10.08580
	A2->Y (FR)	0.09472	0.90078	10.44000
	B1->Y (FR)	0.04288	0.61908	7.58679
	C1->Y (FR)	0.03478	0.60998	7.57298
sky130_fd_sc_hs__o211ai_2	A1->Y (FR)	0.10129	0.76972	9.95874
	A2->Y (FR)	0.08420	0.77838	10.33800
	B1->Y (FR)	0.03549	0.52832	7.17665
	C1->Y (FR)	0.02557	0.51187	7.10108
sky130_fd_sc_hs__o211ai_4	A1->Y (FR)	0.09676	0.65747	9.63246
	A2->Y (FR)	0.08067	0.67906	10.15290
	B1->Y (FR)	0.05406	0.64158	9.78601
	C1->Y (FR)	0.03297	0.61300	9.61568

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211ai_1	A1->Y (RF)	0.05052	0.40000	4.34120
	A2->Y (RF)	0.04169	0.38175	4.24764
	B1->Y (RF)	0.04582	0.45403	5.16240
	C1->Y (RF)	0.03854	0.47809	5.56476
sky130_fd_sc_hs__o211ai_2	A1->Y (RF)	0.04848	0.32316	4.07049
	A2->Y (RF)	0.03913	0.31087	4.07075
	B1->Y (RF)	0.04426	0.39922	5.22208
	C1->Y (RF)	0.03408	0.42043	5.65529
sky130_fd_sc_hs__o211ai_4	A1->Y (RF)	0.04976	0.28009	4.17917
	A2->Y (RF)	0.03703	0.25750	4.02739
	B1->Y (RF)	0.04126	0.34142	5.22615
	C1->Y (RF)	0.03194	0.38543	6.03032

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.00202	0.00217	0.01276
	A1	0.01140	0.01155	0.02215
	A2	0.00205	0.00282	0.01937
	A2	0.01014	0.01091	0.02754
	B1	0.00072	0.00233	0.02287
	B1	0.00733	0.00894	0.02963
	C1	-0.00007	0.00156	0.02157
	C1	0.00531	0.00683	0.02705
sky130_fd_sc_hs__o211ai_2	A1	0.00241	0.00269	0.02294
	A1	0.02138	0.02170	0.04197
	A2	0.00241	0.00407	0.03449
	A2	0.01862	0.02030	0.05078
	B1	0.00056	0.00328	0.04313
	B1	0.01369	0.01652	0.05665
	C1	-0.00195	0.00225	0.04006
	C1	0.00852	0.01272	0.05065
sky130_fd_sc_hs__o211ai_4	A1	0.00467	0.00524	0.04382
	A1	0.04169	0.04232	0.08080
	A2	0.00464	0.00806	0.06454
	A2	0.03627	0.03971	0.09624
	B1	0.00030	0.00360	0.04762
	B1	0.02082	0.02416	0.06809
	C1	-0.00388	0.00066	0.04287
	C1	0.01180	0.01577	0.05855

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.01206	0.01214	0.02050
	A1	0.00253	0.00261	0.01093
	A2	0.00974	0.00993	0.01819
	A2	0.00146	0.00162	0.00961
	B1	0.00800	0.00834	0.01768
	B1	0.00131	0.00157	0.01062
	C1	0.00666	0.00722	0.01755
	C1	0.00129	0.00183	0.01197
sky130_fd_sc_hs__o211ai_2	A1	0.02366	0.02375	0.04105
	A1	0.00442	0.00450	0.02182
	A2	0.01772	0.01828	0.03458
	A2	0.00113	0.00163	0.01800
	B1	0.01408	0.01470	0.03298
	B1	0.00079	0.00141	0.01946
	C1	0.01113	0.01240	0.03326
	C1	0.00066	0.00187	0.02198
sky130_fd_sc_hs__o211ai_4	A1	0.04350	0.04377	0.07870
	A1	0.00594	0.00608	0.03948
	A2	0.03199	0.03314	0.06589
	A2	-0.00042	0.00065	0.03244
	B1	0.02320	0.02417	0.04431
	B1	0.00239	0.00335	0.02270
	C1	0.01783	0.01953	0.04130
	C1	0.00223	0.00380	0.02426

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)**	0.00227	0.00197	0.00193
	(A2 * B1 * C1 * !Y)	-0.00195	-0.00230	-0.00231
	(A2 * B1 * !C1 * Y)	0.00193	0.00194	0.00193
	(A2 * B1 * !C1 * Y)	-0.00227	-0.00230	-0.00230
	(A2 * !B1 * Y)	0.00193	0.00194	0.00193
	(A2 * !B1 * Y)	-0.00227	-0.00230	-0.00230
	(!A2 * B1 * !C1 * Y)	0.00185	0.00185	0.00184
	(!A2 * B1 * !C1 * Y)	-0.00232	-0.00233	-0.00232
	(!A2 * !B1 * C1 * Y)	0.00185	0.00186	0.00185
	(!A2 * !B1 * C1 * Y)	-0.00232	-0.00233	-0.00232
	(!A2 * !B1 * !C1 * Y)	0.00186	0.00188	0.00187
	(!A2 * !B1 * !C1 * Y)	-0.00232	-0.00233	-0.00232
sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	0.00461	0.00387	0.00379
	(A2 * B1 * C1 * !Y)	-0.00381	-0.00468	-0.00471
	(A2 * B1 * !C1 * Y)	0.00377	0.00381	0.00377
	(A2 * B1 * !C1 * Y)	-0.00460	-0.00473	-0.00470
	(A2 * !B1 * Y)	0.00377	0.00381	0.00377
	(A2 * !B1 * Y)	-0.00460	-0.00473	-0.00470
	(!A2 * B1 * !C1 * Y)	0.00355	0.00355	0.00354
	(!A2 * B1 * !C1 * Y)	-0.00478	-0.00478	-0.00477
	(!A2 * !B1 * C1 * Y)	0.00360	0.00363	0.00362
	(!A2 * !B1 * C1 * Y)	-0.00476	-0.00478	-0.00477
	(!A2 * !B1 * !C1 * Y)	0.00360	0.00363	0.00361
	(!A2 * !B1 * !C1 * Y)	-0.00476	-0.00478	-0.00477

sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	0.00904	0.00758	0.00741
	(A2 * B1 * C1 * !Y)	-0.00761	-0.00930	-0.00935
	(A2 * B1 * !C1 * Y)	0.00739	0.00748	0.00739
	(A2 * B1 * !C1 * Y)	-0.00914	-0.00940	-0.00932
	(A2 * !B1 * Y)	0.00739	0.00748	0.00739
	(A2 * !B1 * Y)	-0.00914	-0.00940	-0.00932
	(!A2 * B1 * !C1 * Y)	0.00698	0.00701	0.00697
	(!A2 * B1 * !C1 * Y)	-0.00948	-0.00949	-0.00946
	(!A2 * !B1 * C1 * Y)	0.00703	0.00713	0.00706
	(!A2 * !B1 * C1 * Y)	-0.00944	-0.00951	-0.00946
	(!A2 * !B1 * !C1 * Y)	0.00704	0.00715	0.00707
	(!A2 * !B1 * !C1 * Y)	-0.00944	-0.00952	-0.00946

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)**	-0.00191	-0.00192	-0.00191
	(A2 * B1 * C1 * !Y)	0.00229	0.00232	0.00231
	(A2 * B1 * !C1 * Y)	-0.00193	-0.00193	-0.00193
	(A2 * B1 * !C1 * Y)	0.00230	0.00231	0.00230
	(A2 * !B1 * Y)	-0.00192	-0.00193	-0.00193
	(A2 * !B1 * Y)	0.00229	0.00231	0.00230
	(!A2 * B1 * !C1 * Y)	-0.00169	-0.00184	-0.00184
	(!A2 * B1 * !C1 * Y)	0.00233	0.00235	0.00233
	(!A2 * !B1 * C1 * Y)	-0.00175	-0.00186	-0.00185
	(!A2 * !B1 * C1 * Y)	0.00232	0.00236	0.00233
	(!A2 * !B1 * !C1 * Y)	-0.00176	-0.00186	-0.00187
	(!A2 * !B1 * !C1 * Y)	0.00232	0.00236	0.00233

sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	-0.00376	-0.00378	-0.00376
	(A2 * B1 * C1 * !Y)	0.00469	0.00472	0.00471
	(A2 * B1 * !C1 * Y)	-0.00376	-0.00378	-0.00376
	(A2 * B1 * !C1 * Y)	0.00469	0.00473	0.00470
	(A2 * !B1 * Y)	-0.00376	-0.00378	-0.00376
	(A2 * !B1 * Y)	0.00469	0.00473	0.00470
	(!A2 * B1 * !C1 * Y)	-0.00333	-0.00355	-0.00354
	(!A2 * B1 * !C1 * Y)	0.00478	0.00484	0.00479
	(!A2 * !B1 * C1 * Y)	-0.00343	-0.00361	-0.00362
	(!A2 * !B1 * C1 * Y)	0.00476	0.00482	0.00478
	(!A2 * !B1 * !C1 * Y)	-0.00343	-0.00361	-0.00361
	(!A2 * !B1 * !C1 * Y)	0.00476	0.00482	0.00478
sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	-0.00734	-0.00739	-0.00735
	(A2 * B1 * C1 * !Y)	0.00927	0.00937	0.00935
	(A2 * B1 * !C1 * Y)	-0.00739	-0.00742	-0.00738
	(A2 * B1 * !C1 * Y)	0.00933	0.00941	0.00932
	(A2 * !B1 * Y)	-0.00739	-0.00742	-0.00738
	(A2 * !B1 * Y)	0.00933	0.00940	0.00932
	(!A2 * B1 * !C1 * Y)	-0.00638	-0.00700	-0.00697
	(!A2 * B1 * !C1 * Y)	0.00952	0.00956	0.00948
	(!A2 * !B1 * C1 * Y)	-0.00661	-0.00710	-0.00706
	(!A2 * !B1 * C1 * Y)	0.00945	0.00957	0.00948
	(!A2 * !B1 * !C1 * Y)	-0.00663	-0.00709	-0.00707
	(!A2 * !B1 * !C1 * Y)	0.00945	0.00957	0.00948

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)**	0.00206	0.00209	0.00207
	(A1 * B1 * C1 * !Y)	-0.00110	-0.00111	-0.00110
	(A1 * B1 * !C1 * Y)	0.00188	0.00191	0.00188
	(A1 * B1 * !C1 * Y)	-0.00228	-0.00232	-0.00231
	(A1 * !B1 * C1 * Y)	0.00188	0.00191	0.00188
	(A1 * !B1 * C1 * Y)	-0.00228	-0.00232	-0.00231
	(A1 * !B1 * !C1 * Y)	0.00188	0.00191	0.00188
	(A1 * !B1 * !C1 * Y)	-0.00228	-0.00232	-0.00231
	(!A1 * B1 * !C1 * Y)	0.00178	0.00180	0.00178
	(!A1 * B1 * !C1 * Y)	-0.00234	-0.00235	-0.00234
	(!A1 * !B1 * C1 * Y)	0.00180	0.00183	0.00181
	(!A1 * !B1 * C1 * Y)	-0.00233	-0.00235	-0.00234
	(!A1 * !B1 * !C1 * Y)	0.00179	0.00181	0.00180
	(!A1 * !B1 * !C1 * Y)	-0.00233	-0.00234	-0.00234
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	0.00426	0.00430	0.00427
	(A1 * B1 * C1 * !Y)	-0.00214	-0.00216	-0.00214
	(A1 * B1 * !C1 * Y)	0.00376	0.00383	0.00378
	(A1 * B1 * !C1 * Y)	-0.00452	-0.00468	-0.00464
	(A1 * !B1 * C1 * Y)	0.00377	0.00383	0.00378
	(A1 * !B1 * C1 * Y)	-0.00453	-0.00468	-0.00465
	(A1 * !B1 * !C1 * Y)	0.00378	0.00383	0.00378
	(A1 * !B1 * !C1 * Y)	-0.00455	-0.00470	-0.00465
	(!A1 * B1 * !C1 * Y)	0.00351	0.00353	0.00352
	(!A1 * B1 * !C1 * Y)	-0.00471	-0.00472	-0.00472
	(!A1 * !B1 * C1 * Y)	0.00361	0.00362	0.00360
	(!A1 * !B1 * C1 * Y)	-0.00470	-0.00473	-0.00472
	(!A1 * !B1 * !C1 * Y)	0.00357	0.00363	0.00360
	(!A1 * !B1 * !C1 * Y)	-0.00469	-0.00474	-0.00472

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	0.00836	0.00847	0.00834
	(A1 * B1 * C1 * !Y)	-0.00437	-0.00441	-0.00433
	(A1 * B1 * !C1 * Y)	0.00743	0.00747	0.00739
	(A1 * B1 * !C1 * Y)	-0.00922	-0.00931	-0.00931
	(A1 * !B1 * C1 * Y)	0.00744	0.00747	0.00739
	(A1 * !B1 * C1 * Y)	-0.00922	-0.00931	-0.00931
	(A1 * !B1 * !C1 * Y)	0.00743	0.00741	0.00739
	(A1 * !B1 * !C1 * Y)	-0.00922	-0.00936	-0.00934
	(!A1 * B1 * !C1 * Y)	0.00697	0.00699	0.00696
	(!A1 * B1 * !C1 * Y)	-0.00950	-0.00951	-0.00949
	(!A1 * !B1 * C1 * Y)	0.00708	0.00718	0.00711
	(!A1 * !B1 * C1 * Y)	-0.00946	-0.00954	-0.00949
	(!A1 * !B1 * !C1 * Y)	0.00704	0.00709	0.00707
	(!A1 * !B1 * !C1 * Y)	-0.00946	-0.00950	-0.00949

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)**	-0.00200	-0.00201	-0.00206
	(A1 * B1 * C1 * !Y)	0.00116	0.00116	0.00112
	(A1 * B1 * !C1 * Y)	-0.00188	-0.00189	-0.00188
	(A1 * B1 * !C1 * Y)	0.00230	0.00232	0.00231
	(A1 * !B1 * C1 * Y)	-0.00188	-0.00189	-0.00188
	(A1 * !B1 * C1 * Y)	0.00231	0.00232	0.00231
	(A1 * !B1 * !C1 * Y)	-0.00188	-0.00189	-0.00188
	(A1 * !B1 * !C1 * Y)	0.00230	0.00232	0.00231
	(!A1 * B1 * !C1 * Y)	-0.00164	-0.00179	-0.00178
	(!A1 * B1 * !C1 * Y)	0.00234	0.00237	0.00235
	(!A1 * !B1 * C1 * Y)	-0.00170	-0.00181	-0.00181
	(!A1 * !B1 * C1 * Y)	0.00233	0.00236	0.00235
	(!A1 * !B1 * !C1 * Y)	-0.00171	-0.00181	-0.00180
	(!A1 * !B1 * !C1 * Y)	0.00234	0.00236	0.00235
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	-0.00406	-0.00409	-0.00424
	(A1 * B1 * C1 * !Y)	0.00232	0.00232	0.00219
	(A1 * B1 * !C1 * Y)	-0.00376	-0.00380	-0.00378
	(A1 * B1 * !C1 * Y)	0.00466	0.00468	0.00464
	(A1 * !B1 * C1 * Y)	-0.00377	-0.00380	-0.00378
	(A1 * !B1 * C1 * Y)	0.00465	0.00468	0.00465
	(A1 * !B1 * !C1 * Y)	-0.00376	-0.00380	-0.00378
	(A1 * !B1 * !C1 * Y)	0.00462	0.00470	0.00465
	(!A1 * B1 * !C1 * Y)	-0.00330	-0.00353	-0.00352
	(!A1 * B1 * !C1 * Y)	0.00473	0.00477	0.00473
	(!A1 * !B1 * C1 * Y)	-0.00341	-0.00361	-0.00360
	(!A1 * !B1 * C1 * Y)	0.00470	0.00476	0.00473
	(!A1 * !B1 * !C1 * Y)	-0.00341	-0.00361	-0.00360
	(!A1 * !B1 * !C1 * Y)	0.00470	0.00476	0.00473

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	-0.00798	-0.00803	-0.00829
	(A1 * B1 * C1 * !Y)	0.00466	0.00467	0.00442
	(A1 * B1 * !C1 * Y)	-0.00736	-0.00738	-0.00737
	(A1 * B1 * !C1 * Y)	0.00928	0.00931	0.00931
	(A1 * !B1 * C1 * Y)	-0.00738	-0.00738	-0.00737
	(A1 * !B1 * C1 * Y)	0.00932	0.00931	0.00931
	(A1 * !B1 * !C1 * Y)	-0.00738	-0.00739	-0.00737
	(A1 * !B1 * !C1 * Y)	0.00934	0.00936	0.00934
	(!A1 * B1 * !C1 * Y)	-0.00634	-0.00696	-0.00696
	(!A1 * B1 * !C1 * Y)	0.00954	0.00957	0.00951
	(!A1 * !B1 * C1 * Y)	-0.00659	-0.00705	-0.00710
	(!A1 * !B1 * C1 * Y)	0.00948	0.00958	0.00951
	(!A1 * !B1 * !C1 * Y)	-0.00661	-0.00705	-0.00707
	(!A1 * !B1 * !C1 * Y)	0.00947	0.00958	0.00951

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	0.00177	0.00177	0.00176
	(A2 * !C1 * Y)	-0.00245	-0.00245	-0.00245
	(A1 * !A2 * !C1 * Y)	0.00176	0.00177	0.00177
	(A1 * !A2 * !C1 * Y)	-0.00244	-0.00245	-0.00245
	(!A1 * !A2 * C1 * Y)	0.00080	0.00080	0.00080
	(!A1 * !A2 * C1 * Y)	-0.00245	-0.00244	-0.00244
	(!A1 * !A2 * !C1 * Y)	0.00102	0.00102	0.00102
	(!A1 * !A2 * !C1 * Y)	-0.00246	-0.00246	-0.00245
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	0.00352	0.00356	0.00353
	(A2 * !C1 * Y)	-0.00479	-0.00483	-0.00480
	(A1 * !A2 * !C1 * Y)	0.00354	0.00357	0.00356
	(A1 * !A2 * !C1 * Y)	-0.00479	-0.00481	-0.00480
	(!A1 * !A2 * C1 * Y)	0.00150	0.00151	0.00153
	(!A1 * !A2 * C1 * Y)	-0.00479	-0.00480	-0.00479
	(!A1 * !A2 * !C1 * Y)	0.00192	0.00195	0.00193
	(!A1 * !A2 * !C1 * Y)	-0.00482	-0.00486	-0.00483
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	0.00702	0.00710	0.00704
	(A2 * !C1 * Y)	-0.00481	-0.00484	-0.00481
	(A1 * !A2 * !C1 * Y)	0.00695	0.00700	0.00699
	(A1 * !A2 * !C1 * Y)	-0.00480	-0.00482	-0.00481
	(!A1 * !A2 * C1 * Y)	0.00293	0.00293	0.00296
	(!A1 * !A2 * C1 * Y)	-0.00481	-0.00481	-0.00478
	(!A1 * !A2 * !C1 * Y)	0.00371	0.00373	0.00373
	(!A1 * !A2 * !C1 * Y)	-0.00484	-0.00486	-0.00486

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	-0.00162	-0.00177	-0.00176
	(A2 * !C1 * Y)	0.00254	0.00247	0.00245
	(A1 * !A2 * !C1 * Y)	-0.00160	-0.00177	-0.00177
	(A1 * !A2 * !C1 * Y)	0.00259	0.00248	0.00245
	(!A1 * !A2 * C1 * Y)	-0.00076	-0.00076	-0.00077
	(!A1 * !A2 * C1 * Y)	0.00250	0.00252	0.00246
	(!A1 * !A2 * !C1 * Y)	-0.00102	-0.00102	-0.00102
	(!A1 * !A2 * !C1 * Y)	0.00262	0.00260	0.00249
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	-0.00318	-0.00355	-0.00353
	(A2 * !C1 * Y)	0.00503	0.00485	0.00481
	(A1 * !A2 * !C1 * Y)	-0.00313	-0.00356	-0.00356
	(A1 * !A2 * !C1 * Y)	0.00513	0.00484	0.00481
	(!A1 * !A2 * C1 * Y)	-0.00142	-0.00144	-0.00147
	(!A1 * !A2 * C1 * Y)	0.00492	0.00499	0.00485
	(!A1 * !A2 * !C1 * Y)	-0.00192	-0.00195	-0.00193
	(!A1 * !A2 * !C1 * Y)	0.00511	0.00514	0.00490
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	-0.00632	-0.00705	-0.00704
	(A2 * !C1 * Y)	0.00527	0.00486	0.00483
	(A1 * !A2 * !C1 * Y)	-0.00617	-0.00700	-0.00699
	(A1 * !A2 * !C1 * Y)	0.00549	0.00485	0.00483
	(!A1 * !A2 * C1 * Y)	-0.00279	-0.00280	-0.00285
	(!A1 * !A2 * C1 * Y)	0.00507	0.00509	0.00488
	(!A1 * !A2 * !C1 * Y)	-0.00371	-0.00373	-0.00373
	(!A1 * !A2 * !C1 * Y)	0.00541	0.00540	0.00499

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	0.00062	0.00062	0.00060
	(A2 * !B1 * Y)	-0.00274	-0.00275	-0.00278
	(!A2 * !B1 * Y)	0.00061	0.00062	0.00060
	(!A2 * !B1 * Y)	-0.00273	-0.00274	-0.00278
	(!A1 * !A2 * B1 * Y)	0.00065	0.00065	0.00059
	(!A1 * !A2 * B1 * Y)	-0.00265	-0.00267	-0.00277
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	0.00130	0.00130	0.00124
	(A2 * !B1 * Y)	-0.00532	-0.00534	-0.00544
	(!A2 * !B1 * Y)	0.00130	0.00130	0.00124
	(!A2 * !B1 * Y)	-0.00531	-0.00534	-0.00544
	(!A1 * !A2 * B1 * Y)	0.00128	0.00129	0.00116
	(!A1 * !A2 * B1 * Y)	-0.00515	-0.00519	-0.00541
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	0.00247	0.00248	0.00237
	(A2 * !B1 * Y)	-0.00614	-0.00618	-0.00636
	(!A2 * !B1 * Y)	0.00247	0.00248	0.00237
	(!A2 * !B1 * Y)	-0.00616	-0.00619	-0.00636
	(!A1 * !A2 * B1 * Y)	0.00245	0.00245	0.00223
	(!A1 * !A2 * B1 * Y)	-0.00581	-0.00584	-0.00630

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	-0.00059	-0.00059	-0.00058
	(A2 * !B1 * Y)	0.00279	0.00283	0.00278
	(!A2 * !B1 * Y)	-0.00058	-0.00059	-0.00058
	(!A2 * !B1 * Y)	0.00276	0.00283	0.00278
	(!A1 * !A2 * B1 * Y)	-0.00058	-0.00058	-0.00057
	(!A1 * !A2 * B1 * Y)	0.00279	0.00283	0.00278
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	-0.00120	-0.00123	-0.00121
	(A2 * !B1 * Y)	0.00542	0.00554	0.00545
	(!A2 * !B1 * Y)	-0.00120	-0.00123	-0.00121
	(!A2 * !B1 * Y)	0.00542	0.00554	0.00545
	(!A1 * !A2 * B1 * Y)	-0.00116	-0.00119	-0.00116
	(!A1 * !A2 * B1 * Y)	0.00542	0.00553	0.00545
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	-0.00231	-0.00232	-0.00231
	(A2 * !B1 * Y)	0.00635	0.00639	0.00637
	(!A2 * !B1 * Y)	-0.00231	-0.00236	-0.00231
	(!A2 * !B1 * Y)	0.00635	0.00648	0.00637
	(!A1 * !A2 * B1 * Y)	-0.00223	-0.00227	-0.00223
	(!A1 * !A2 * B1 * Y)	0.00634	0.00647	0.00636

SKY130_FD_SC_HS__O211Ax

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00266	0.00286	0.00264	0.00259	1.31879
sky130_fd_sc_hs__o211a_2	0.00282	0.00281	0.00281	0.00274	2.54284
sky130_fd_sc_hs__o211a_4	0.00512	0.00489	0.00504	0.00446	4.68818

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o211a_1	0.00000	0.20911	0.78505
sky130_fd_sc_hs__o211a_2	0.00000	0.29167	0.79353
sky130_fd_sc_hs__o211a_4	0.00000	0.84011	2.94207

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)	0.09958	0.54720	5.92778
	A2->X (RR)	0.08755	0.52824	5.88873
	B1->X (RR)	0.09353	0.56453	6.32114
	C1->X (RR)	0.08676	0.56327	6.37914
sky130_fd_sc_hs__o211a_2	A1->X (RR)	0.10108	0.46632	5.88262
	A2->X (RR)	0.08656	0.44621	5.82683
	B1->X (RR)	0.09587	0.49265	6.29178
	C1->X (RR)	0.08890	0.49379	6.34560
sky130_fd_sc_hs__o211a_4	A1->X (RR)	0.10208	0.40766	6.03690
	A2->X (RR)	0.09307	0.38853	6.01855
	B1->X (RR)	0.09527	0.42434	6.31769
	C1->X (RR)	0.08659	0.42092	6.35454

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211a_1	A1->X (FF)	0.14281	0.56666	5.03824
	A2->X (FF)	0.13190	0.57916	5.11643
	B1->X (FF)	0.06826	0.46210	4.69520
	C1->X (FF)	0.06124	0.44204	4.63261
sky130_fd_sc_hs__o211a_2	A1->X (FF)	0.16486	0.57387	5.13898
	A2->X (FF)	0.15235	0.59068	5.23005
	B1->X (FF)	0.08043	0.46571	4.80106
	C1->X (FF)	0.07273	0.44611	4.73104
sky130_fd_sc_hs__o211a_4	A1->X (FF)	0.15604	0.52445	5.02053
	A2->X (FF)	0.14044	0.53310	5.08843
	B1->X (FF)	0.08525	0.44927	4.75192
	C1->X (FF)	0.08430	0.44922	4.78605

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.01525	0.01618	0.05407
	A1	0.00618	0.00711	0.04558
	A2	0.01358	0.01475	0.06183
	A2	0.00529	0.00646	0.05356
	B1	0.01146	0.01357	0.07705
	B1	0.00504	0.00716	0.07118
	C1	0.01033	0.01306	0.07951
	C1	0.00500	0.00775	0.07470
sky130_fd_sc_hs__o211a_2	A1	0.01887	0.01993	0.05587
	A1	0.00932	0.01040	0.04647
	A2	0.01658	0.01794	0.06250
	A2	0.00824	0.00961	0.05438
	B1	0.01486	0.01703	0.08028
	B1	0.00806	0.01023	0.07461
	C1	0.01362	0.01625	0.08239
	C1	0.00801	0.01066	0.07788
sky130_fd_sc_hs__o211a_4	A1	0.03511	0.03736	0.11909
	A1	0.01779	0.02009	0.10393
	A2	0.03021	0.03301	0.13387
	A2	0.01562	0.01843	0.12146
	B1	0.02740	0.03170	0.14557
	B1	0.01557	0.01989	0.13570
	C1	0.02445	0.02972	0.15582
	C1	0.01570	0.02098	0.14893

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.00603	0.00699	0.04815
	A1	0.01493	0.01588	0.05637
	A2	0.00558	0.00797	0.05925
	A2	0.01368	0.01606	0.06731
	B1	0.00465	0.00843	0.07375
	B1	0.01102	0.01467	0.07900
	C1	0.00408	0.00805	0.07425
	C1	0.00942	0.01323	0.07900
sky130_fd_sc_hs__o211a_2	A1	0.00986	0.00997	0.05023
	A1	0.01921	0.01933	0.05955
	A2	0.00977	0.01147	0.06305
	A2	0.01792	0.01960	0.07070
	B1	0.00768	0.01165	0.07681
	B1	0.01442	0.01818	0.08309
	C1	0.00704	0.01100	0.07799
	C1	0.01263	0.01658	0.08203
sky130_fd_sc_hs__o211a_4	A1	0.01878	0.01976	0.10055
	A1	0.03578	0.03673	0.11747
	A2	0.01936	0.02322	0.12638
	A2	0.03356	0.03705	0.13922
	B1	0.01435	0.02135	0.14536
	B1	0.02832	0.03508	0.15826
	C1	0.01419	0.02122	0.14487
	C1	0.02519	0.03195	0.15335

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)**	0.00220	0.00191	0.00187
	(A2 * B1 * C1 * X)	-0.00176	-0.00209	-0.00210
	(A2 * B1 * !C1 * !X)	0.00165	0.00165	0.00165
	(A2 * B1 * !C1 * !X)	-0.00229	-0.00231	-0.00231
	(A2 * !B1 * !X)	0.00165	0.00165	0.00165
	(A2 * !B1 * !X)	-0.00229	-0.00231	-0.00231
	(!A2 * B1 * !C1 * !X)	0.00157	0.00158	0.00157
	(!A2 * B1 * !C1 * !X)	-0.00234	-0.00234	-0.00233
	(!A2 * !B1 * C1 * !X)	0.00157	0.00158	0.00157
	(!A2 * !B1 * C1 * !X)	-0.00234	-0.00234	-0.00234
	(!A2 * !B1 * !C1 * !X)	0.00157	0.00158	0.00157
	(!A2 * !B1 * !C1 * !X)	-0.00234	-0.00234	-0.00234
sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	0.00242	0.00213	0.00209
	(A2 * B1 * C1 * X)	-0.00170	-0.00203	-0.00204
	(A2 * B1 * !C1 * !X)	0.00180	0.00182	0.00180
	(A2 * B1 * !C1 * !X)	-0.00230	-0.00234	-0.00233
	(A2 * !B1 * !X)	0.00180	0.00182	0.00180
	(A2 * !B1 * !X)	-0.00230	-0.00234	-0.00233
	(!A2 * B1 * !C1 * !X)	0.00171	0.00172	0.00171
	(!A2 * B1 * !C1 * !X)	-0.00235	-0.00235	-0.00235
	(!A2 * !B1 * C1 * !X)	0.00171	0.00173	0.00172
	(!A2 * !B1 * C1 * !X)	-0.00234	-0.00236	-0.00235
	(!A2 * !B1 * !C1 * !X)	0.00173	0.00174	0.00174
	(!A2 * !B1 * !C1 * !X)	-0.00234	-0.00235	-0.00235

sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	0.00437	0.00378	0.00371
	(A2 * B1 * C1 * X)	-0.00349	-0.00418	-0.00418
	(A2 * B1 * !C1 * !X)	0.00362	0.00368	0.00364
	(A2 * B1 * !C1 * !X)	-0.00415	-0.00425	-0.00424
	(A2 * !B1 * !X)	0.00362	0.00368	0.00364
	(A2 * !B1 * !X)	-0.00415	-0.00425	-0.00424
	(!A2 * B1 * !C1 * !X)	0.00349	0.00354	0.00350
	(!A2 * B1 * !C1 * !X)	-0.00427	-0.00430	-0.00428
	(!A2 * !B1 * C1 * !X)	0.00348	0.00351	0.00349
	(!A2 * !B1 * C1 * !X)	-0.00428	-0.00429	-0.00428
	(!A2 * !B1 * !C1 * !X)	0.00348	0.00351	0.00349
	(!A2 * !B1 * !C1 * !X)	-0.00428	-0.00430	-0.00428

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)**	-0.00184	-0.00185	-0.00184
	(A2 * B1 * C1 * X)	0.00211	0.00212	0.00212
	(A2 * B1 * !C1 * !X)	-0.00164	-0.00165	-0.00164
	(A2 * B1 * !C1 * !X)	0.00230	0.00233	0.00231
	(A2 * !B1 * !X)	-0.00164	-0.00165	-0.00164
	(A2 * !B1 * !X)	0.00230	0.00233	0.00231
	(!A2 * B1 * !C1 * !X)	-0.00143	-0.00157	-0.00157
	(!A2 * B1 * !C1 * !X)	0.00235	0.00237	0.00234
	(!A2 * !B1 * C1 * !X)	-0.00149	-0.00158	-0.00157
	(!A2 * !B1 * C1 * !X)	0.00235	0.00236	0.00234
	(!A2 * !B1 * !C1 * !X)	-0.00149	-0.00158	-0.00157
	(!A2 * !B1 * !C1 * !X)	0.00235	0.00236	0.00234

sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	-0.00206	-0.00207	-0.00206
	(A2 * B1 * C1 * X)	0.00205	0.00206	0.00206
	(A2 * B1 * !C1 * !X)	-0.00180	-0.00180	-0.00179
	(A2 * B1 * !C1 * !X)	0.00233	0.00234	0.00233
	(A2 * !B1 * !X)	-0.00179	-0.00180	-0.00179
	(A2 * !B1 * !X)	0.00232	0.00234	0.00233
	(!A2 * B1 * !C1 * !X)	-0.00157	-0.00171	-0.00171
	(!A2 * B1 * !C1 * !X)	0.00236	0.00238	0.00235
	(!A2 * !B1 * C1 * !X)	-0.00163	-0.00173	-0.00172
	(!A2 * !B1 * C1 * !X)	0.00236	0.00238	0.00236
	(!A2 * !B1 * !C1 * !X)	-0.00164	-0.00173	-0.00174
	(!A2 * !B1 * !C1 * !X)	0.00236	0.00237	0.00236
sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	-0.00363	-0.00364	-0.00363
	(A2 * B1 * C1 * X)	0.00419	0.00422	0.00423
	(A2 * B1 * !C1 * !X)	-0.00362	-0.00363	-0.00362
	(A2 * B1 * !C1 * !X)	0.00423	0.00425	0.00424
	(A2 * !B1 * !X)	-0.00362	-0.00363	-0.00362
	(A2 * !B1 * !X)	0.00423	0.00425	0.00424
	(!A2 * B1 * !C1 * !X)	-0.00323	-0.00350	-0.00349
	(!A2 * B1 * !C1 * !X)	0.00431	0.00434	0.00430
	(!A2 * !B1 * C1 * !X)	-0.00335	-0.00351	-0.00349
	(!A2 * !B1 * C1 * !X)	0.00430	0.00434	0.00430
	(!A2 * !B1 * !C1 * !X)	-0.00335	-0.00351	-0.00349
	(!A2 * !B1 * !C1 * !X)	0.00430	0.00434	0.00430

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)**	0.00237	0.00240	0.00237
	(A1 * B1 * C1 * X)	-0.00098	-0.00100	-0.00098
	(A1 * B1 * !C1 * !X)	0.00215	0.00215	0.00213
	(A1 * B1 * !C1 * !X)	-0.00210	-0.00213	-0.00212
	(A1 * !B1 * C1 * !X)	0.00215	0.00214	0.00213
	(A1 * !B1 * C1 * !X)	-0.00210	-0.00212	-0.00212
	(A1 * !B1 * !C1 * !X)	0.00215	0.00216	0.00213
	(A1 * !B1 * !C1 * !X)	-0.00210	-0.00213	-0.00211
	(!A1 * B1 * !C1 * !X)	0.00201	0.00203	0.00202
	(!A1 * B1 * !C1 * !X)	-0.00214	-0.00215	-0.00214
	(!A1 * !B1 * C1 * !X)	0.00205	0.00207	0.00205
	(!A1 * !B1 * C1 * !X)	-0.00214	-0.00215	-0.00215
	(!A1 * !B1 * !C1 * !X)	0.00205	0.00207	0.00205
	(!A1 * !B1 * !C1 * !X)	-0.00215	-0.00216	-0.00215
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	0.00210	0.00212	0.00210
	(A1 * B1 * C1 * X)	-0.00098	-0.00099	-0.00098
	(A1 * B1 * !C1 * !X)	0.00177	0.00177	0.00177
	(A1 * B1 * !C1 * !X)	-0.00218	-0.00220	-0.00221
	(A1 * !B1 * C1 * !X)	0.00177	0.00180	0.00178
	(A1 * !B1 * C1 * !X)	-0.00218	-0.00221	-0.00221
	(A1 * !B1 * !C1 * !X)	0.00177	0.00180	0.00177
	(A1 * !B1 * !C1 * !X)	-0.00218	-0.00222	-0.00221
	(!A1 * B1 * !C1 * !X)	0.00169	0.00170	0.00169
	(!A1 * B1 * !C1 * !X)	-0.00223	-0.00224	-0.00223
	(!A1 * !B1 * C1 * !X)	0.00169	0.00171	0.00170
	(!A1 * !B1 * C1 * !X)	-0.00223	-0.00224	-0.00224
	(!A1 * !B1 * !C1 * !X)	0.00170	0.00173	0.00171
	(!A1 * !B1 * !C1 * !X)	-0.00223	-0.00225	-0.00223

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	0.00357	0.00360	0.00357
	(A1 * B1 * C1 * X)	-0.00200	-0.00201	-0.00199
	(A1 * B1 * !C1 * !X)	0.00312	0.00314	0.00312
	(A1 * B1 * !C1 * !X)	-0.00418	-0.00425	-0.00424
	(A1 * !B1 * C1 * !X)	0.00312	0.00314	0.00312
	(A1 * !B1 * C1 * !X)	-0.00418	-0.00425	-0.00424
	(A1 * !B1 * !C1 * !X)	0.00312	0.00316	0.00312
	(A1 * !B1 * !C1 * !X)	-0.00418	-0.00425	-0.00424
	(!A1 * B1 * !C1 * !X)	0.00299	0.00301	0.00298
	(!A1 * B1 * !C1 * !X)	-0.00432	-0.00432	-0.00430
	(!A1 * !B1 * C1 * !X)	0.00295	0.00297	0.00297
	(!A1 * !B1 * C1 * !X)	-0.00429	-0.00430	-0.00430
	(!A1 * !B1 * !C1 * !X)	0.00295	0.00301	0.00297
	(!A1 * !B1 * !C1 * !X)	-0.00428	-0.00433	-0.00430

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)**	-0.00230	-0.00232	-0.00235
	(A1 * B1 * C1 * X)	0.00104	0.00105	0.00101
	(A1 * B1 * !C1 * !X)	-0.00213	-0.00214	-0.00213
	(A1 * B1 * !C1 * !X)	0.00211	0.00213	0.00212
	(A1 * !B1 * C1 * !X)	-0.00212	-0.00214	-0.00213
	(A1 * !B1 * C1 * !X)	0.00211	0.00213	0.00212
	(A1 * !B1 * !C1 * !X)	-0.00212	-0.00214	-0.00213
	(A1 * !B1 * !C1 * !X)	0.00210	0.00213	0.00211
	(!A1 * B1 * !C1 * !X)	-0.00189	-0.00203	-0.00202
	(!A1 * B1 * !C1 * !X)	0.00215	0.00217	0.00215
	(!A1 * !B1 * C1 * !X)	-0.00196	-0.00207	-0.00205
	(!A1 * !B1 * C1 * !X)	0.00215	0.00217	0.00215
	(!A1 * !B1 * !C1 * !X)	-0.00197	-0.00207	-0.00205
	(!A1 * !B1 * !C1 * !X)	0.00215	0.00217	0.00215
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	-0.00203	-0.00204	-0.00208
	(A1 * B1 * C1 * X)	0.00104	0.00105	0.00100
	(A1 * B1 * !C1 * !X)	-0.00176	-0.00177	-0.00177
	(A1 * B1 * !C1 * !X)	0.00220	0.00221	0.00221
	(A1 * !B1 * C1 * !X)	-0.00177	-0.00177	-0.00177
	(A1 * !B1 * C1 * !X)	0.00221	0.00221	0.00221
	(A1 * !B1 * !C1 * !X)	-0.00176	-0.00177	-0.00177
	(A1 * !B1 * !C1 * !X)	0.00219	0.00222	0.00221
	(!A1 * B1 * !C1 * !X)	-0.00154	-0.00169	-0.00169
	(!A1 * B1 * !C1 * !X)	0.00224	0.00226	0.00224
	(!A1 * !B1 * C1 * !X)	-0.00161	-0.00171	-0.00170
	(!A1 * !B1 * C1 * !X)	0.00224	0.00225	0.00224
	(!A1 * !B1 * !C1 * !X)	-0.00161	-0.00170	-0.00171
	(!A1 * !B1 * !C1 * !X)	0.00224	0.00226	0.00224

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	-0.00340	-0.00341	-0.00351
	(A1 * B1 * C1 * X)	0.00216	0.00216	0.00206
	(A1 * B1 * !C1 * !X)	-0.00310	-0.00312	-0.00311
	(A1 * B1 * !C1 * !X)	0.00422	0.00425	0.00424
	(A1 * !B1 * C1 * !X)	-0.00311	-0.00312	-0.00311
	(A1 * !B1 * C1 * !X)	0.00424	0.00425	0.00424
	(A1 * !B1 * !C1 * !X)	-0.00310	-0.00312	-0.00311
	(A1 * !B1 * !C1 * !X)	0.00423	0.00425	0.00424
	(!A1 * B1 * !C1 * !X)	-0.00269	-0.00296	-0.00297
	(!A1 * B1 * !C1 * !X)	0.00432	0.00436	0.00432
	(!A1 * !B1 * C1 * !X)	-0.00282	-0.00297	-0.00297
	(!A1 * !B1 * C1 * !X)	0.00432	0.00434	0.00432
	(!A1 * !B1 * !C1 * !X)	-0.00283	-0.00298	-0.00297
	(!A1 * !B1 * !C1 * !X)	0.00432	0.00434	0.00432

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	0.00144	0.00145	0.00145
	(A2 * !C1 * !X)	-0.00238	-0.00238	-0.00238
	(A1 * !A2 * !C1 * !X)	0.00144	0.00145	0.00145
	(A1 * !A2 * !C1 * !X)	-0.00238	-0.00239	-0.00238
	(!A1 * !A2 * C1 * !X)	0.00065	0.00064	0.00064
	(!A1 * !A2 * C1 * !X)	-0.00241	-0.00241	-0.00240
	(!A1 * !A2 * !C1 * !X)	0.00086	0.00085	0.00085
	(!A1 * !A2 * !C1 * !X)	-0.00242	-0.00241	-0.00242
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	0.00168	0.00170	0.00169
	(A2 * !C1 * !X)	-0.00225	-0.00226	-0.00225
	(A1 * !A2 * !C1 * !X)	0.00169	0.00170	0.00169
	(A1 * !A2 * !C1 * !X)	-0.00225	-0.00226	-0.00225
	(!A1 * !A2 * C1 * !X)	0.00073	0.00073	0.00072
	(!A1 * !A2 * C1 * !X)	-0.00228	-0.00228	-0.00227
	(!A1 * !A2 * !C1 * !X)	0.00094	0.00094	0.00093
	(!A1 * !A2 * !C1 * !X)	-0.00230	-0.00230	-0.00229
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	0.00360	0.00365	0.00362
	(A2 * !C1 * !X)	-0.00383	-0.00386	-0.00384
	(A1 * !A2 * !C1 * !X)	0.00362	0.00363	0.00362
	(A1 * !A2 * !C1 * !X)	-0.00384	-0.00385	-0.00384
	(!A1 * !A2 * C1 * !X)	0.00193	0.00194	0.00192
	(!A1 * !A2 * C1 * !X)	-0.00384	-0.00386	-0.00385
	(!A1 * !A2 * !C1 * !X)	0.00229	0.00231	0.00230
	(!A1 * !A2 * !C1 * !X)	-0.00387	-0.00390	-0.00388

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	-0.00133	-0.00145	-0.00145
	(A2 * !C1 * !X)	0.00249	0.00241	0.00239
	(A1 * !A2 * !C1 * !X)	-0.00131	-0.00145	-0.00145
	(A1 * !A2 * !C1 * !X)	0.00252	0.00243	0.00239
	(!A1 * !A2 * C1 * !X)	-0.00059	-0.00061	-0.00061
	(!A1 * !A2 * C1 * !X)	0.00243	0.00248	0.00241
	(!A1 * !A2 * !C1 * !X)	-0.00086	-0.00085	-0.00085
	(!A1 * !A2 * !C1 * !X)	0.00256	0.00254	0.00245
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	-0.00154	-0.00169	-0.00169
	(A2 * !C1 * !X)	0.00236	0.00230	0.00226
	(A1 * !A2 * !C1 * !X)	-0.00151	-0.00169	-0.00169
	(A1 * !A2 * !C1 * !X)	0.00239	0.00229	0.00226
	(!A1 * !A2 * C1 * !X)	-0.00067	-0.00069	-0.00069
	(!A1 * !A2 * C1 * !X)	0.00231	0.00234	0.00229
	(!A1 * !A2 * !C1 * !X)	-0.00094	-0.00094	-0.00093
	(!A1 * !A2 * !C1 * !X)	0.00247	0.00244	0.00234
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	-0.00340	-0.00365	-0.00362
	(A2 * !C1 * !X)	0.00401	0.00389	0.00386
	(A1 * !A2 * !C1 * !X)	-0.00337	-0.00363	-0.00362
	(A1 * !A2 * !C1 * !X)	0.00404	0.00389	0.00386
	(!A1 * !A2 * C1 * !X)	-0.00184	-0.00185	-0.00186
	(!A1 * !A2 * C1 * !X)	0.00395	0.00397	0.00389
	(!A1 * !A2 * !C1 * !X)	-0.00229	-0.00231	-0.00230
	(!A1 * !A2 * !C1 * !X)	0.00416	0.00415	0.00396

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	0.00051	0.00051	0.00049
	(A2 * !B1 * !X)	-0.00260	-0.00260	-0.00263
	(!A2 * !B1 * !X)	0.00051	0.00050	0.00049
	(!A2 * !B1 * !X)	-0.00260	-0.00259	-0.00263
	(!A1 * !A2 * B1 * !X)	0.00056	0.00056	0.00050
	(!A1 * !A2 * B1 * !X)	-0.00251	-0.00252	-0.00262
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	0.00063	0.00063	0.00062
	(A2 * !B1 * !X)	-0.00251	-0.00251	-0.00254
	(!A2 * !B1 * !X)	0.00063	0.00063	0.00062
	(!A2 * !B1 * !X)	-0.00251	-0.00251	-0.00254
	(!A1 * !A2 * B1 * !X)	0.00068	0.00068	0.00062
	(!A1 * !A2 * B1 * !X)	-0.00243	-0.00244	-0.00254
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	0.00093	0.00094	0.00090
	(A2 * !B1 * !X)	-0.00421	-0.00424	-0.00430
	(!A2 * !B1 * !X)	0.00093	0.00094	0.00090
	(!A2 * !B1 * !X)	-0.00421	-0.00424	-0.00430
	(!A1 * !A2 * B1 * !X)	0.00101	0.00101	0.00090
	(!A1 * !A2 * B1 * !X)	-0.00405	-0.00407	-0.00427

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	-0.00048	-0.00049	-0.00048
	(A2 * !B1 * !X)	0.00263	0.00268	0.00264
	(!A2 * !B1 * !X)	-0.00048	-0.00049	-0.00048
	(!A2 * !B1 * !X)	0.00263	0.00268	0.00264
	(!A1 * !A2 * B1 * !X)	-0.00047	-0.00048	-0.00047
	(!A1 * !A2 * B1 * !X)	0.00263	0.00266	0.00263
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	-0.00060	-0.00062	-0.00060
	(A2 * !B1 * !X)	0.00254	0.00259	0.00255
	(!A2 * !B1 * !X)	-0.00060	-0.00062	-0.00060
	(!A2 * !B1 * !X)	0.00254	0.00259	0.00255
	(!A1 * !A2 * B1 * !X)	-0.00059	-0.00060	-0.00059
	(!A1 * !A2 * B1 * !X)	0.00254	0.00257	0.00255
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	-0.00086	-0.00089	-0.00087
	(A2 * !B1 * !X)	0.00429	0.00438	0.00432
	(!A2 * !B1 * !X)	-0.00088	-0.00089	-0.00087
	(!A2 * !B1 * !X)	0.00431	0.00438	0.00432
	(!A1 * !A2 * B1 * !X)	-0.00085	-0.00086	-0.00083
	(!A1 * !A2 * B1 * !X)	0.00430	0.00435	0.00431

SKY130_FD_SC_HS__O21AIx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00290	0.00297	0.00290	0.65560
sky130_fd_sc_hs__o21ai_2	0.00587	0.00544	0.00536	1.19973
sky130_fd_sc_hs__o21ai_4	0.01044	0.01075	0.00796	2.03164

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21ai_1	0.00000	0.06145	0.20266
sky130_fd_sc_hs__o21ai_2	0.00000	0.12290	0.40531
sky130_fd_sc_hs__o21ai_4	0.00000	0.16981	0.60797

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)	0.08457	0.86757	10.13410
	A2->Y (FR)	0.07254	0.88158	10.49020
	B1->Y (FR)	0.02945	0.59933	7.49745
sky130_fd_sc_hs__o21ai_2	A1->Y (FR)	0.07517	0.73159	9.87727
	A2->Y (FR)	0.05898	0.74020	10.21490
	B1->Y (FR)	0.02251	0.52339	7.35881
sky130_fd_sc_hs__o21ai_4	A1->Y (FR)	0.07579	0.63200	9.54689
	A2->Y (FR)	0.05993	0.66438	10.19200
	B1->Y (FR)	0.03105	0.64459	10.17850

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ai_1	A1->Y (RF)	0.03409	0.35624	4.03292
	A2->Y (RF)	0.02799	0.34326	3.97357
	B1->Y (RF)	0.02864	0.40832	4.78806
sky130_fd_sc_hs__o21ai_2	A1->Y (RF)	0.02807	0.28559	3.80093
	A2->Y (RF)	0.02412	0.27775	3.82609
	B1->Y (RF)	0.01773	0.32664	4.66123
sky130_fd_sc_hs__o21ai_4	A1->Y (RF)	0.02790	0.23350	3.56379
	A2->Y (RF)	0.02305	0.22145	3.55303
	B1->Y (RF)	0.01467	0.25856	4.35511

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.00076	0.00094	0.01221
	A1	0.00910	0.00910	0.02056
	A2	0.00081	0.00171	0.01932
	A2	0.00778	0.00869	0.02637
	B1	-0.00051	0.00154	0.02371
	B1	0.00501	0.00709	0.02923
sky130_fd_sc_hs__o21ai_2	A1	0.00082	0.00131	0.02401
	A1	0.01683	0.01732	0.04004
	A2	0.00079	0.00295	0.03636
	A2	0.01379	0.01594	0.04945
	B1	-0.00237	0.00226	0.04494
	B1	0.00756	0.01229	0.05537
sky130_fd_sc_hs__o21ai_4	A1	0.00116	0.00233	0.04876
	A1	0.03228	0.03352	0.07995
	A2	0.00072	0.00523	0.06906
	A2	0.02671	0.03122	0.09517
	B1	-0.00441	0.00143	0.05144
	B1	0.01051	0.01637	0.06670

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.00987	0.01008	0.01904
	A1	0.00145	0.00163	0.01040
	A2	0.00745	0.00778	0.01638
	A2	0.00036	0.00068	0.00908
	B1	0.00558	0.00626	0.01870
	B1	0.00007	0.00070	0.01242
sky130_fd_sc_hs__o21ai_2	A1	0.01845	0.01881	0.03673
	A1	0.00232	0.00265	0.02019
	A2	0.01273	0.01361	0.03034
	A2	-0.00043	0.00038	0.01716
	B1	0.00913	0.01099	0.03482
	B1	-0.00081	0.00102	0.02400
sky130_fd_sc_hs__o21ai_4	A1	0.03496	0.03605	0.07267
	A1	0.00369	0.00472	0.04111
	A2	0.02403	0.02608	0.05990
	A2	-0.00227	-0.00029	0.03357
	B1	0.01522	0.01746	0.04212
	B1	0.00036	0.00256	0.02714

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	0.00247	0.00217	0.00213
	(A2 * B1 * !Y)	-0.00192	-0.00227	-0.00228
	(A2 * !B1 * Y)	0.00197	0.00197	0.00196
	(A2 * !B1 * Y)	-0.00240	-0.00243	-0.00243
	(!A2 * !B1 * Y)	0.00187	0.00189	0.00188
	(!A2 * !B1 * Y)	-0.00246	-0.00247	-0.00246
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	0.00473	0.00406	0.00398
	(A2 * B1 * !Y)	-0.00382	-0.00459	-0.00462
	(A2 * !B1 * Y)	0.00375	0.00380	0.00375
	(A2 * !B1 * Y)	-0.00475	-0.00485	-0.00483
	(!A2 * !B1 * Y)	0.00359	0.00363	0.00360
	(!A2 * !B1 * Y)	-0.00487	-0.00490	-0.00488
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	0.00881	0.00745	0.00729
	(A2 * B1 * !Y)	-0.00759	-0.00919	-0.00922
	(A2 * !B1 * Y)	0.00726	0.00734	0.00726
	(A2 * !B1 * Y)	-0.00903	-0.00926	-0.00921
	(!A2 * !B1 * Y)	0.00694	0.00702	0.00696
	(!A2 * !B1 * Y)	-0.00934	-0.00940	-0.00935

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	-0.00211	-0.00212	-0.00211
	(A2 * B1 * !Y)	0.00227	0.00228	0.00228
	(A2 * !B1 * Y)	-0.00196	-0.00197	-0.00196
	(A2 * !B1 * Y)	0.00244	0.00245	0.00243
	(!A2 * !B1 * Y)	-0.00178	-0.00188	-0.00188
	(!A2 * !B1 * Y)	0.00250	0.00249	0.00247
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	-0.00395	-0.00394	-0.00395
	(A2 * B1 * !Y)	0.00460	0.00459	0.00462
	(A2 * !B1 * Y)	-0.00373	-0.00376	-0.00374
	(A2 * !B1 * Y)	0.00480	0.00485	0.00483
	(!A2 * !B1 * Y)	-0.00336	-0.00360	-0.00360
	(!A2 * !B1 * Y)	0.00494	0.00494	0.00490
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	-0.00724	-0.00728	-0.00724
	(A2 * B1 * !Y)	0.00914	0.00924	0.00922
	(A2 * !B1 * Y)	-0.00721	-0.00726	-0.00724
	(A2 * !B1 * Y)	0.00915	0.00926	0.00921
	(!A2 * !B1 * Y)	-0.00646	-0.00700	-0.00696
	(!A2 * !B1 * Y)	0.00951	0.00946	0.00938

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	0.00218	0.00220	0.00218
	(A1 * B1 * !Y)	-0.00106	-0.00107	-0.00106
	(A1 * !B1 * Y)	0.00177	0.00181	0.00178
	(A1 * !B1 * Y)	-0.00243	-0.00248	-0.00247
	(!A1 * !B1 * Y)	0.00172	0.00171	0.00171
	(!A1 * !B1 * Y)	-0.00251	-0.00251	-0.00251
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	0.00397	0.00399	0.00396
	(A1 * B1 * !Y)	-0.00215	-0.00215	-0.00214
	(A1 * !B1 * Y)	0.00366	0.00366	0.00364
	(A1 * !B1 * Y)	-0.00444	-0.00450	-0.00448
	(!A1 * !B1 * Y)	0.00350	0.00356	0.00352
	(!A1 * !B1 * Y)	-0.00454	-0.00458	-0.00455
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	0.00831	0.00843	0.00835
	(A1 * B1 * !Y)	-0.00430	-0.00436	-0.00432
	(A1 * !B1 * Y)	0.00736	0.00744	0.00737
	(A1 * !B1 * Y)	-0.00918	-0.00937	-0.00933
	(!A1 * !B1 * Y)	0.00702	0.00709	0.00706
	(!A1 * !B1 * Y)	-0.00947	-0.00952	-0.00951

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	-0.00211	-0.00213	-0.00217
	(A1 * B1 * !Y)	0.00111	0.00112	0.00107
	(A1 * !B1 * Y)	-0.00177	-0.00179	-0.00178
	(A1 * !B1 * Y)	0.00246	0.00248	0.00247
	(!A1 * !B1 * Y)	-0.00161	-0.00171	-0.00171
	(!A1 * !B1 * Y)	0.00252	0.00253	0.00251
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	-0.00379	-0.00383	-0.00394
	(A1 * B1 * !Y)	0.00225	0.00228	0.00217
	(A1 * !B1 * Y)	-0.00364	-0.00365	-0.00364
	(A1 * !B1 * Y)	0.00448	0.00450	0.00448
	(!A1 * !B1 * Y)	-0.00327	-0.00349	-0.00352
	(!A1 * !B1 * Y)	0.00460	0.00460	0.00457
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	-0.00797	-0.00805	-0.00831
	(A1 * B1 * !Y)	0.00461	0.00465	0.00440
	(A1 * !B1 * Y)	-0.00734	-0.00739	-0.00735
	(A1 * !B1 * Y)	0.00929	0.00937	0.00933
	(!A1 * !B1 * Y)	-0.00654	-0.00708	-0.00706
	(!A1 * !B1 * Y)	0.00967	0.00961	0.00953

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	0.00066	0.00066	0.00063
	(!A1 * !A2 * Y)	-0.00280	-0.00281	-0.00288
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	0.00135	0.00135	0.00127
	(!A1 * !A2 * Y)	-0.00519	-0.00521	-0.00534
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	0.00235	0.00235	0.00222
	(!A1 * !A2 * Y)	-0.00601	-0.00604	-0.00629

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	-0.00061	-0.00062	-0.00061
	(!A1 * !A2 * Y)	0.00287	0.00294	0.00289
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	-0.00123	-0.00124	-0.00124
	(!A1 * !A2 * Y)	0.00533	0.00535	0.00536
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	-0.00216	-0.00220	-0.00216
	(!A1 * !A2 * Y)	0.00629	0.00641	0.00631

SKY130_FD_SC_HS__O21Ax

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00248	0.00251	0.00247	1.29072
sky130_fd_sc_hs__o21a_2	0.00270	0.00267	0.00276	2.48816
sky130_fd_sc_hs__o21a_4	0.00517	0.00479	0.00459	4.79086

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21a_1	0.00000	0.34271	0.86495
sky130_fd_sc_hs__o21a_2	0.00000	0.28038	0.53467
sky130_fd_sc_hs__o21a_4	0.00000	0.81845	1.74686

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)	0.06991	0.51258	5.89327
	A2->X (RR)	0.06098	0.49143	5.84036
	B1->X (RR)	0.06449	0.51916	6.12038
sky130_fd_sc_hs__o21a_2	A1->X (RR)	0.07232	0.43483	5.82220
	A2->X (RR)	0.06423	0.41837	5.76915
	B1->X (RR)	0.06710	0.44518	6.05656
sky130_fd_sc_hs__o21a_4	A1->X (RR)	0.07689	0.37561	5.95736
	A2->X (RR)	0.06913	0.35612	5.92640
	B1->X (RR)	0.06771	0.38015	6.13851

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21a_1	A1->X (FF)	0.11496	0.51476	4.88290
	A2->X (FF)	0.10174	0.52029	4.95728
	B1->X (FF)	0.05758	0.42974	4.69701
sky130_fd_sc_hs__o21a_2	A1->X (FF)	0.14364	0.53576	4.98416
	A2->X (FF)	0.13180	0.54967	5.06239
	B1->X (FF)	0.06550	0.42570	4.66580
sky130_fd_sc_hs__o21a_4	A1->X (FF)	0.14060	0.50052	5.03150
	A2->X (FF)	0.12340	0.50566	5.09657
	B1->X (FF)	0.07345	0.42957	4.82440

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.01211	0.01358	0.05652
	A1	0.00497	0.00646	0.04939
	A2	0.00979	0.01179	0.06502
	A2	0.00387	0.00589	0.05919
	B1	0.00834	0.01150	0.07377
	B1	0.00396	0.00715	0.06997
sky130_fd_sc_hs__o21a_2	A1	0.01597	0.01767	0.06044
	A1	0.00821	0.00994	0.05291
	A2	0.01372	0.01573	0.06877
	A2	0.00729	0.00936	0.06264
	B1	0.01202	0.01497	0.07497
	B1	0.00709	0.01008	0.07017
sky130_fd_sc_hs__o21a_4	A1	0.03101	0.03415	0.11812
	A1	0.01641	0.01961	0.10574
	A2	0.02593	0.02983	0.13331
	A2	0.01411	0.01803	0.12374
	B1	0.02261	0.02860	0.14524
	B1	0.01411	0.02019	0.13896

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.00487	0.00634	0.04976
	A1	0.01192	0.01338	0.05574
	A2	0.00489	0.00798	0.06241
	A2	0.01072	0.01376	0.06706
	B1	0.00361	0.00794	0.07840
	B1	0.00800	0.01217	0.08190
sky130_fd_sc_hs__o21a_2	A1	0.00903	0.01010	0.05266
	A1	0.01667	0.01769	0.05990
	A2	0.00917	0.01169	0.06658
	A2	0.01547	0.01798	0.07155
	B1	0.00682	0.01096	0.08020
	B1	0.01297	0.01698	0.08195
sky130_fd_sc_hs__o21a_4	A1	0.01696	0.01914	0.10719
	A1	0.03140	0.03305	0.11535
	A2	0.01743	0.02210	0.13062
	A2	0.02903	0.03362	0.13772
	B1	0.01331	0.02111	0.15269
	B1	0.02429	0.03168	0.15942

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	0.00204	0.00174	0.00171
	(A2 * B1 * X)	-0.00178	-0.00212	-0.00213
	(A2 * !B1 * !X)	0.00170	0.00170	0.00170
	(A2 * !B1 * !X)	-0.00210	-0.00213	-0.00213
	(!A2 * !B1 * !X)	0.00162	0.00163	0.00162
	(!A2 * !B1 * !X)	-0.00214	-0.00215	-0.00215
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	0.00237	0.00208	0.00203
	(A2 * B1 * X)	-0.00175	-0.00209	-0.00210
	(A2 * !B1 * !X)	0.00203	0.00203	0.00203
	(A2 * !B1 * !X)	-0.00207	-0.00209	-0.00210
	(!A2 * !B1 * !X)	0.00193	0.00195	0.00194
	(!A2 * !B1 * !X)	-0.00211	-0.00212	-0.00211
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	0.00443	0.00384	0.00378
	(A2 * B1 * X)	-0.00341	-0.00409	-0.00409
	(A2 * !B1 * !X)	0.00365	0.00371	0.00367
	(A2 * !B1 * !X)	-0.00410	-0.00420	-0.00419
	(!A2 * !B1 * !X)	0.00352	0.00356	0.00353
	(!A2 * !B1 * !X)	-0.00423	-0.00426	-0.00423

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	-0.00168	-0.00168	-0.00168
	(A2 * B1 * X)	0.00215	0.00214	0.00215
	(A2 * !B1 * !X)	-0.00169	-0.00170	-0.00169
	(A2 * !B1 * !X)	0.00212	0.00214	0.00213
	(!A2 * !B1 * !X)	-0.00152	-0.00163	-0.00162
	(!A2 * !B1 * !X)	0.00218	0.00218	0.00215
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	-0.00201	-0.00202	-0.00201
	(A2 * B1 * X)	0.00210	0.00212	0.00211
	(A2 * !B1 * !X)	-0.00202	-0.00203	-0.00202
	(A2 * !B1 * !X)	0.00209	0.00211	0.00210
	(!A2 * !B1 * !X)	-0.00183	-0.00195	-0.00194
	(!A2 * !B1 * !X)	0.00216	0.00214	0.00212
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	-0.00372	-0.00373	-0.00372
	(A2 * B1 * X)	0.00408	0.00411	0.00412
	(A2 * !B1 * !X)	-0.00365	-0.00366	-0.00365
	(A2 * !B1 * !X)	0.00418	0.00420	0.00419
	(!A2 * !B1 * !X)	-0.00334	-0.00353	-0.00353
	(!A2 * !B1 * !X)	0.00431	0.00427	0.00425

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	0.00174	0.00176	0.00174
	(A1 * B1 * X)	-0.00104	-0.00105	-0.00104
	(A1 * !B1 * !X)	0.00161	0.00163	0.00161
	(A1 * !B1 * !X)	-0.00203	-0.00208	-0.00206
	(!A1 * !B1 * !X)	0.00154	0.00157	0.00156
	(!A1 * !B1 * !X)	-0.00208	-0.00210	-0.00209
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	0.00199	0.00201	0.00200
	(A1 * B1 * X)	-0.00097	-0.00098	-0.00097
	(A1 * !B1 * !X)	0.00183	0.00185	0.00183
	(A1 * !B1 * !X)	-0.00202	-0.00205	-0.00204
	(!A1 * !B1 * !X)	0.00174	0.00177	0.00175
	(!A1 * !B1 * !X)	-0.00206	-0.00208	-0.00206
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	0.00348	0.00351	0.00348
	(A1 * B1 * X)	-0.00197	-0.00199	-0.00197
	(A1 * !B1 * !X)	0.00309	0.00311	0.00309
	(A1 * !B1 * !X)	-0.00409	-0.00416	-0.00415
	(!A1 * !B1 * !X)	0.00293	0.00296	0.00295
	(!A1 * !B1 * !X)	-0.00420	-0.00422	-0.00421

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	-0.00167	-0.00168	-0.00173
	(A1 * B1 * X)	0.00111	0.00111	0.00106
	(A1 * !B1 * !X)	-0.00161	-0.00162	-0.00161
	(A1 * !B1 * !X)	0.00207	0.00208	0.00206
	(!A1 * !B1 * !X)	-0.00144	-0.00155	-0.00156
	(!A1 * !B1 * !X)	0.00212	0.00212	0.00209
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	-0.00194	-0.00195	-0.00199
	(A1 * B1 * X)	0.00103	0.00103	0.00099
	(A1 * !B1 * !X)	-0.00183	-0.00184	-0.00182
	(A1 * !B1 * !X)	0.00204	0.00205	0.00204
	(!A1 * !B1 * !X)	-0.00165	-0.00176	-0.00175
	(!A1 * !B1 * !X)	0.00209	0.00209	0.00207
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	-0.00333	-0.00334	-0.00344
	(A1 * B1 * X)	0.00211	0.00212	0.00202
	(A1 * !B1 * !X)	-0.00309	-0.00309	-0.00308
	(A1 * !B1 * !X)	0.00415	0.00416	0.00415
	(!A1 * !B1 * !X)	-0.00276	-0.00295	-0.00295
	(!A1 * !B1 * !X)	0.00429	0.00426	0.00423

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	0.00062	0.00062	0.00058
	(!A1 * !A2 * !X)	-0.00223	-0.00223	-0.00229
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	0.00068	0.00067	0.00063
	(!A1 * !A2 * !X)	-0.00253	-0.00252	-0.00260
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	0.00104	0.00103	0.00096
	(!A1 * !A2 * !X)	-0.00431	-0.00431	-0.00444

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	-0.00057	-0.00058	-0.00057
	(!A1 * !A2 * !X)	0.00229	0.00234	0.00230
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	-0.00061	-0.00063	-0.00061
	(!A1 * !A2 * !X)	0.00260	0.00265	0.00261
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	-0.00092	-0.00095	-0.00092
	(!A1 * !A2 * !X)	0.00444	0.00453	0.00447

SKY130_FD_SC_HS__O21BAIx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00276	0.00305	0.00238	0.65017
sky130_fd_sc_hs__o21bai_2	0.00583	0.00537	0.00263	1.20657
sky130_fd_sc_hs__o21bai_4	0.01055	0.01069	0.00359	2.17069

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21bai_1	0.00000	0.36267	0.60610
sky130_fd_sc_hs__o21bai_2	0.00000	0.25820	0.41705
sky130_fd_sc_hs__o21bai_4	0.00000	0.77167	1.22917

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)	0.07925	0.86418	10.08770
	A2->Y (FR)	0.06818	0.87701	10.45170
	B1_N->Y (RR)	0.05266	0.34154	2.72713
sky130_fd_sc_hs__o21bai_2	A1->Y (FR)	0.07271	0.72859	9.86049
	A2->Y (FR)	0.05740	0.73841	10.20360
	B1_N->Y (RR)	0.05262	0.29194	2.60420
sky130_fd_sc_hs__o21bai_4	A1->Y (FR)	0.07510	0.64107	9.82058
	A2->Y (FR)	0.05856	0.66476	10.35390
	B1_N->Y (RR)	0.07065	0.45256	6.19864

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21bai_1	A1->Y (RF)	0.03397	0.35649	4.04196
	A2->Y (RF)	0.02808	0.34464	3.99298
	B1_N->Y (FF)	0.07244	0.44422	4.03870
sky130_fd_sc_hs__o21bai_2	A1->Y (RF)	0.03078	0.28720	3.82321
	A2->Y (RF)	0.02633	0.27990	3.84836
	B1_N->Y (FF)	0.07234	0.43419	4.19412
sky130_fd_sc_hs__o21bai_4	A1->Y (RF)	0.03718	0.24870	3.84989
	A2->Y (RF)	0.02697	0.23214	3.76553
	B1_N->Y (FF)	0.07383	0.38291	4.09752

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.00070	0.00092	0.01235
	A1	0.00719	0.00740	0.01886
	A2	0.00064	0.00160	0.01932
	A2	0.00609	0.00705	0.02485
	B1_N	0.00827	0.01138	0.07107
	B1_N	0.00566	0.00880	0.06853
sky130_fd_sc_hs__o21bai_2	A1	0.00075	0.00131	0.02408
	A1	0.01381	0.01435	0.03716
	A2	0.00079	0.00305	0.03645
	A2	0.01062	0.01287	0.04641
	B1_N	0.01150	0.01462	0.07615
	B1_N	0.00984	0.01301	0.07478
sky130_fd_sc_hs__o21bai_4	A1	0.00137	0.00249	0.04457
	A1	0.02686	0.02802	0.07002
	A2	0.00111	0.00613	0.06893
	A2	0.02123	0.02625	0.08921
	B1_N	0.01512	0.02128	0.14047
	B1_N	0.01523	0.02162	0.14170

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.00920	0.00945	0.01823
	A1	0.00268	0.00287	0.01162
	A2	0.00689	0.00725	0.01586
	A2	0.00136	0.00170	0.00994
	B1_N	0.00695	0.01096	0.07723
	B1_N	0.00968	0.01365	0.07981
sky130_fd_sc_hs__o21bai_2	A1	0.01835	0.01874	0.03658
	A1	0.00526	0.00560	0.02310
	A2	0.01272	0.01357	0.03053
	A2	0.00275	0.00358	0.02027
	B1_N	0.01375	0.01765	0.08829
	B1_N	0.01556	0.01944	0.08966
sky130_fd_sc_hs__o21bai_4	A1	0.03666	0.03766	0.07373
	A1	0.01118	0.01202	0.04689
	A2	0.02541	0.02729	0.06030
	A2	0.00509	0.00697	0.04001
	B1_N	0.02765	0.03464	0.15474
	B1_N	0.02799	0.03494	0.15367

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)	0.00193	0.00194	0.00192
	(A2 * B1_N * Y)	-0.00226	-0.00230	-0.00231
	(A2 * !B1_N * !Y)	0.00227	0.00196	0.00192
	(A2 * !B1_N * !Y)	-0.00196	-0.00231	-0.00231
	(!A2 * B1_N * Y)	0.00187	0.00188	0.00187
	(!A2 * B1_N * Y)	-0.00232	-0.00233	-0.00232
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	0.00393	0.00398	0.00393
	(A2 * B1_N * Y)	-0.00471	-0.00481	-0.00479
	(A2 * !B1_N * !Y)	0.00473	0.00406	0.00398
	(A2 * !B1_N * !Y)	-0.00396	-0.00474	-0.00475
	(!A2 * B1_N * Y)	0.00382	0.00385	0.00383
	(!A2 * B1_N * Y)	-0.00483	-0.00485	-0.00484
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	0.00740	0.00746	0.00737
	(A2 * B1_N * Y)	-0.00915	-0.00936	-0.00931
	(A2 * !B1_N * !Y)	0.00901	0.00753	0.00738
	(A2 * !B1_N * !Y)	-0.00765	-0.00932	-0.00932
	(!A2 * B1_N * Y)	0.00714	0.00716	0.00713
	(!A2 * B1_N * Y)	-0.00945	-0.00945	-0.00943

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)	-0.00191	-0.00191	-0.00191
	(A2 * B1_N * Y)	0.00230	0.00231	0.00231
	(A2 * !B1_N * !Y)	-0.00190	-0.00191	-0.00191
	(A2 * !B1_N * !Y)	0.00229	0.00232	0.00231
	(!A2 * B1_N * Y)	-0.00176	-0.00186	-0.00187
	(!A2 * B1_N * Y)	0.00236	0.00236	0.00234
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	-0.00391	-0.00393	-0.00392
	(A2 * B1_N * Y)	0.00477	0.00481	0.00479
	(A2 * !B1_N * !Y)	-0.00395	-0.00398	-0.00396
	(A2 * !B1_N * !Y)	0.00472	0.00476	0.00475
	(!A2 * B1_N * Y)	-0.00364	-0.00383	-0.00383
	(!A2 * B1_N * Y)	0.00491	0.00490	0.00486
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	-0.00734	-0.00735	-0.00734
	(A2 * B1_N * Y)	0.00931	0.00936	0.00931
	(A2 * !B1_N * !Y)	-0.00734	-0.00736	-0.00733
	(A2 * !B1_N * !Y)	0.00927	0.00933	0.00932
	(!A2 * B1_N * Y)	-0.00673	-0.00716	-0.00713
	(!A2 * B1_N * Y)	0.00962	0.00957	0.00948

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)	0.00196	0.00199	0.00197
	(A1 * B1_N * Y)	-0.00245	-0.00251	-0.00249
	(A1 * !B1_N * !Y)	0.00222	0.00224	0.00222
	(A1 * !B1_N * !Y)	-0.00121	-0.00122	-0.00121
	(!A1 * B1_N * Y)	0.00192	0.00192	0.00191
	(!A1 * B1_N * Y)	-0.00253	-0.00253	-0.00252
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	0.00361	0.00363	0.00359
	(A1 * B1_N * Y)	-0.00444	-0.00451	-0.00448
	(A1 * !B1_N * !Y)	0.00389	0.00395	0.00392
	(A1 * !B1_N * !Y)	-0.00211	-0.00215	-0.00213
	(!A1 * B1_N * Y)	0.00349	0.00350	0.00348
	(!A1 * B1_N * Y)	-0.00456	-0.00456	-0.00455
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	0.00732	0.00739	0.00731
	(A1 * B1_N * Y)	-0.00916	-0.00937	-0.00931
	(A1 * !B1_N * !Y)	0.00817	0.00834	0.00821
	(A1 * !B1_N * !Y)	-0.00433	-0.00443	-0.00435
	(!A1 * B1_N * Y)	0.00709	0.00717	0.00708
	(!A1 * B1_N * Y)	-0.00948	-0.00952	-0.00946

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)	-0.00194	-0.00196	-0.00195
	(A1 * B1_N * Y)	0.00248	0.00251	0.00249
	(A1 * !B1_N * !Y)	-0.00215	-0.00217	-0.00221
	(A1 * !B1_N * !Y)	0.00126	0.00127	0.00123
	(!A1 * B1_N * Y)	-0.00180	-0.00190	-0.00191
	(!A1 * B1_N * Y)	0.00256	0.00256	0.00254
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	-0.00359	-0.00360	-0.00358
	(A1 * B1_N * Y)	0.00448	0.00451	0.00448
	(A1 * !B1_N * !Y)	-0.00376	-0.00379	-0.00389
	(A1 * !B1_N * !Y)	0.00225	0.00227	0.00217
	(!A1 * B1_N * Y)	-0.00333	-0.00350	-0.00348
	(!A1 * B1_N * Y)	0.00460	0.00461	0.00457
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	-0.00728	-0.00731	-0.00727
	(A1 * B1_N * Y)	0.00932	0.00937	0.00931
	(A1 * !B1_N * !Y)	-0.00787	-0.00792	-0.00817
	(A1 * !B1_N * !Y)	0.00467	0.00468	0.00443
	(!A1 * B1_N * Y)	-0.00668	-0.00711	-0.00708
	(!A1 * B1_N * Y)	0.00962	0.00958	0.00950

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)	0.00689	0.01017	0.07728
	(!A1 * !A2 * Y)	0.00246	0.00572	0.07284
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.01010	0.01313	0.08532
	(!A1 * !A2 * Y)	0.00503	0.00804	0.08026
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.01212	0.01731	0.13551
	(!A1 * !A2 * Y)	0.00518	0.01034	0.12856

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)	0.00013	0.00434	0.07142
	(!A1 * !A2 * Y)	0.00459	0.00882	0.07588
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.00078	0.00450	0.07621
	(!A1 * !A2 * Y)	0.00588	0.00963	0.08131
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.00158	0.00866	0.12682
	(!A1 * !A2 * Y)	0.00861	0.01574	0.13384

SKY130_FD_SC_HS__O21BAx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00252	0.00267	0.00218	1.15034
sky130_fd_sc_hs__o21ba_2	0.00262	0.00274	0.00232	2.22731
sky130_fd_sc_hs__o21ba_4	0.00525	0.00499	0.00282	4.09667

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21ba_1	0.00000	0.51689	0.71068
sky130_fd_sc_hs__o21ba_2	0.00000	0.58159	0.80876
sky130_fd_sc_hs__o21ba_4	0.00000	0.87336	1.75535

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)	0.07800	0.53844	5.88973
	A2->X (RR)	0.06901	0.51910	5.84037
	B1_N->X (FR)	0.12103	0.73079	8.21417
sky130_fd_sc_hs__o21ba_2	A1->X (RR)	0.07717	0.44108	5.66477
	A2->X (RR)	0.06750	0.42296	5.60372
	B1_N->X (FR)	0.12324	0.63168	7.99492
sky130_fd_sc_hs__o21ba_4	A1->X (RR)	0.08286	0.38339	5.71278
	A2->X (RR)	0.07578	0.36417	5.68373
	B1_N->X (FR)	0.13050	0.59232	8.16597

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ba_1	A1->X (FF)	0.11873	0.51322	4.59861
	A2->X (FF)	0.10759	0.52137	4.67546
	B1_N->X (RF)	0.08494	0.28329	1.82305
sky130_fd_sc_hs__o21ba_2	A1->X (FF)	0.14108	0.52931	4.79181
	A2->X (FF)	0.12943	0.54251	4.87222
	B1_N->X (RF)	0.09351	0.27141	1.97534
sky130_fd_sc_hs__o21ba_4	A1->X (FF)	0.13924	0.48932	4.60670
	A2->X (FF)	0.12226	0.49487	4.66888
	B1_N->X (RF)	0.09829	0.24490	1.65658

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.01278	0.01424	0.05684
	A1	0.00683	0.00829	0.05093
	A2	0.01074	0.01260	0.06553
	A2	0.00577	0.00764	0.06064
	B1_N	0.01126	0.01541	0.08579
	B1_N	0.01255	0.01683	0.08904
sky130_fd_sc_hs__o21ba_2	A1	0.01593	0.01758	0.06045
	A1	0.00980	0.01147	0.05473
	A2	0.01375	0.01582	0.06891
	A2	0.00863	0.01072	0.06438
	B1_N	0.01412	0.01849	0.08430
	B1_N	0.01692	0.02131	0.08765
sky130_fd_sc_hs__o21ba_4	A1	0.03096	0.03395	0.11731
	A1	0.01882	0.02183	0.10592
	A2	0.02595	0.02968	0.13281
	A2	0.01661	0.02037	0.12438
	B1_N	0.02692	0.03184	0.10798
	B1_N	0.02921	0.03427	0.11077

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.00493	0.00651	0.04869
	A1	0.01082	0.01234	0.05453
	A2	0.00493	0.00790	0.06119
	A2	0.00984	0.01276	0.06600
	B1_N	0.01223	0.01519	0.08143
	B1_N	0.00978	0.01270	0.07790
sky130_fd_sc_hs__o21ba_2	A1	0.00852	0.00960	0.05299
	A1	0.01458	0.01554	0.05784
	A2	0.00854	0.01115	0.06478
	A2	0.01358	0.01608	0.06962
	B1_N	0.01579	0.01841	0.08382
	B1_N	0.01300	0.01560	0.08064
sky130_fd_sc_hs__o21ba_4	A1	0.01653	0.01822	0.10327
	A1	0.02859	0.03016	0.11226
	A2	0.01691	0.02195	0.12887
	A2	0.02616	0.03079	0.13440
	B1_N	0.02683	0.02996	0.10125
	B1_N	0.02457	0.02771	0.09893

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)	0.00169	0.00170	0.00169
	(A2 * B1_N * !X)	-0.00211	-0.00214	-0.00214
	(A2 * !B1_N * X)	0.00203	0.00173	0.00169
	(A2 * !B1_N * X)	-0.00179	-0.00214	-0.00214
	(!A2 * B1_N * !X)	0.00163	0.00165	0.00164
	(!A2 * B1_N * !X)	-0.00215	-0.00216	-0.00216
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	0.00193	0.00193	0.00192
	(A2 * B1_N * !X)	-0.00206	-0.00209	-0.00210
	(A2 * !B1_N * X)	0.00228	0.00197	0.00193
	(A2 * !B1_N * X)	-0.00175	-0.00209	-0.00209
	(!A2 * B1_N * !X)	0.00186	0.00187	0.00186
	(!A2 * B1_N * !X)	-0.00211	-0.00211	-0.00211
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	0.00373	0.00379	0.00374
	(A2 * B1_N * !X)	-0.00417	-0.00427	-0.00425
	(A2 * !B1_N * X)	0.00442	0.00384	0.00377
	(A2 * !B1_N * X)	-0.00352	-0.00424	-0.00424
	(!A2 * B1_N * !X)	0.00363	0.00367	0.00363
	(!A2 * B1_N * !X)	-0.00431	-0.00434	-0.00431

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)	-0.00167	-0.00168	-0.00168
	(A2 * B1_N * !X)	0.00214	0.00216	0.00215
	(A2 * !B1_N * X)	-0.00167	-0.00168	-0.00167
	(A2 * !B1_N * X)	0.00215	0.00217	0.00216
	(!A2 * B1_N * !X)	-0.00155	-0.00163	-0.00164
	(!A2 * B1_N * !X)	0.00222	0.00219	0.00217
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	-0.00191	-0.00191	-0.00191
	(A2 * B1_N * !X)	0.00211	0.00211	0.00210
	(A2 * !B1_N * X)	-0.00191	-0.00191	-0.00190
	(A2 * !B1_N * X)	0.00209	0.00211	0.00211
	(!A2 * B1_N * !X)	-0.00177	-0.00186	-0.00186
	(!A2 * B1_N * !X)	0.00216	0.00215	0.00213
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	-0.00373	-0.00374	-0.00373
	(A2 * B1_N * !X)	0.00425	0.00427	0.00425
	(A2 * !B1_N * X)	-0.00372	-0.00373	-0.00372
	(A2 * !B1_N * X)	0.00423	0.00425	0.00427
	(!A2 * B1_N * !X)	-0.00349	-0.00366	-0.00363
	(!A2 * B1_N * !X)	0.00439	0.00437	0.00433

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)	0.00177	0.00180	0.00178
	(A1 * B1_N * !X)	-0.00212	-0.00217	-0.00216
	(A1 * !B1_N * X)	0.00186	0.00188	0.00186
	(A1 * !B1_N * X)	-0.00116	-0.00117	-0.00116
	(!A1 * B1_N * !X)	0.00173	0.00173	0.00172
	(!A1 * B1_N * !X)	-0.00218	-0.00217	-0.00217
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	0.00196	0.00199	0.00197
	(A1 * B1_N * !X)	-0.00208	-0.00213	-0.00212
	(A1 * !B1_N * X)	0.00209	0.00211	0.00210
	(A1 * !B1_N * X)	-0.00108	-0.00109	-0.00108
	(!A1 * B1_N * !X)	0.00190	0.00192	0.00191
	(!A1 * B1_N * !X)	-0.00212	-0.00214	-0.00213
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	0.00318	0.00321	0.00319
	(A1 * B1_N * !X)	-0.00420	-0.00428	-0.00426
	(A1 * !B1_N * X)	0.00358	0.00360	0.00357
	(A1 * !B1_N * X)	-0.00210	-0.00210	-0.00208
	(!A1 * B1_N * !X)	0.00308	0.00311	0.00309
	(!A1 * B1_N * !X)	-0.00433	-0.00435	-0.00434

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)	-0.00176	-0.00178	-0.00176
	(A1 * B1_N * !X)	0.00215	0.00217	0.00216
	(A1 * !B1_N * X)	-0.00180	-0.00182	-0.00185
	(A1 * !B1_N * X)	0.00121	0.00122	0.00118
	(!A1 * B1_N * !X)	-0.00164	-0.00172	-0.00172
	(!A1 * B1_N * !X)	0.00222	0.00220	0.00219
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	-0.00195	-0.00197	-0.00195
	(A1 * B1_N * !X)	0.00212	0.00214	0.00212
	(A1 * !B1_N * X)	-0.00203	-0.00204	-0.00208
	(A1 * !B1_N * X)	0.00114	0.00115	0.00110
	(!A1 * B1_N * !X)	-0.00182	-0.00190	-0.00191
	(!A1 * B1_N * !X)	0.00218	0.00217	0.00215
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	-0.00316	-0.00319	-0.00317
	(A1 * B1_N * !X)	0.00424	0.00428	0.00426
	(A1 * !B1_N * X)	-0.00341	-0.00343	-0.00353
	(A1 * !B1_N * X)	0.00223	0.00223	0.00213
	(!A1 * B1_N * !X)	-0.00287	-0.00307	-0.00309
	(!A1 * B1_N * !X)	0.00442	0.00439	0.00436

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)	0.00638	0.00966	0.07501
	(!A1 * !A2 * !X)	0.00224	0.00552	0.07087
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00697	0.01010	0.07520
	(!A1 * !A2 * !X)	0.00262	0.00574	0.07086
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.00978	0.01306	0.08181
	(!A1 * !A2 * !X)	0.00443	0.00766	0.07643

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	0.00432	0.06958
	(!A1 * !A2 * !X)	0.00441	0.00849	0.07373
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00019	0.00418	0.06922
	(!A1 * !A2 * !X)	0.00455	0.00859	0.07358
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.00044	0.00416	0.07274
	(!A1 * !A2 * !X)	0.00585	0.00959	0.07814

SKY130_FD_SC_HS__O221AIx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00285	0.00301	0.00296	0.00289	0.00292	0.64446
sky130_fd_sc_hs__o221ai_2	0.00584	0.00535	0.00611	0.00535	0.00539	1.17834
sky130_fd_sc_hs__o221ai_4	0.01113	0.01061	0.01125	0.01058	0.01075	2.18657

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221ai_1	0.00000	0.06137	0.30399
sky130_fd_sc_hs__o221ai_2	0.00000	0.12273	0.60797
sky130_fd_sc_hs__o221ai_4	0.00000	0.24546	1.21594

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)	0.12284	0.90836	10.07280
	A2->Y (FR)	0.11106	0.91669	10.43340
	B1->Y (FR)	0.09243	0.86686	9.95371
	B2->Y (FR)	0.07723	0.87324	10.31320
	C1->Y (FR)	0.03212	0.59431	7.37639
sky130_fd_sc_hs__o221ai_2	A1->Y (FR)	0.11232	0.76911	9.82279
	A2->Y (FR)	0.09709	0.77747	10.16200
	B1->Y (FR)	0.08467	0.73480	9.74868
	B2->Y (FR)	0.06887	0.74233	10.08440
	C1->Y (FR)	0.02520	0.51368	7.15387
sky130_fd_sc_hs__o221ai_4	A1->Y (FR)	0.10326	0.65898	9.53786
	A2->Y (FR)	0.08871	0.67748	9.99572
	B1->Y (FR)	0.08493	0.64798	9.82310
	B2->Y (FR)	0.06549	0.66238	10.25540
	C1->Y (FR)	0.02523	0.46428	7.23636

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221ai_1	A1->Y (RF)	0.06573	0.42073	4.34004
	A2->Y (RF)	0.05717	0.40831	4.30374
	B1->Y (RF)	0.05901	0.47499	5.22205
	B2->Y (RF)	0.04904	0.45426	5.09242
	C1->Y (RF)	0.04960	0.51553	5.88102
sky130_fd_sc_hs__o221ai_2	A1->Y (RF)	0.05150	0.33490	4.20292
	A2->Y (RF)	0.04391	0.32736	4.24848
	B1->Y (RF)	0.04447	0.38776	5.10188
	B2->Y (RF)	0.03717	0.39397	5.35281
	C1->Y (RF)	0.02442	0.42308	5.96304
sky130_fd_sc_hs__o221ai_4	A1->Y (RF)	0.05771	0.29650	4.39479
	A2->Y (RF)	0.04655	0.28306	4.41673
	B1->Y (RF)	0.05120	0.36128	5.49777
	B2->Y (RF)	0.03981	0.34873	5.56590
	C1->Y (RF)	0.02682	0.39253	6.45675

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221ai_1	A1	0.00284	0.00292	0.01357
	A1	0.01436	0.01445	0.02462
	A2	0.00295	0.00390	0.02020
	A2	0.01316	0.01409	0.02947
	B1	0.00093	0.00103	0.01162
	B1	0.01083	0.01089	0.02099
	B2	0.00093	0.00205	0.01832
	B2	0.00804	0.00916	0.02550
	C1	-0.00065	0.00118	0.02149
	C1	0.00525	0.00710	0.02761
sky130_fd_sc_hs__o221ai_2	A1	0.00456	0.00472	0.02621
	A1	0.02688	0.02710	0.04768
	A2	0.00461	0.00623	0.03749
	A2	0.02383	0.02548	0.05595
	B1	0.00103	0.00129	0.02257
	B1	0.02045	0.02065	0.04070
	B2	0.00124	0.00308	0.03338
	B2	0.01744	0.01917	0.04844
	C1	-0.00218	0.00205	0.04117
	C1	0.00855	0.01277	0.05291

sky130_fd_sc_hs__o221ai_4	**A1**	0.00759	0.00796	0.04590
	A1	0.05174	0.05224	0.08842
	A2	0.00783	0.01075	0.06328
	A2	0.04604	0.04914	0.09964
	B1	0.00151	0.00225	0.04672
	B1	0.03967	0.04033	0.08252
	B2	0.00149	0.00546	0.06532
	B2	0.02857	0.03258	0.09242
	C1	-0.00404	0.00418	0.09963
	C1	0.01723	0.02550	0.12115

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221ai_1	**A1**	0.01554	0.01557	0.02424
	A1	0.00356	0.00358	0.01192
	A2	0.01303	0.01314	0.02179
	A2	0.00100	0.00111	0.00918
	B1	0.01347	0.01353	0.02088
	B1	0.00215	0.00225	0.01019
	B2	0.00833	0.00856	0.01680
	B2	0.00112	0.00136	0.00920
	C1	0.00676	0.00733	0.01826
	C1	0.00087	0.00139	0.01185

sky130_fd_sc_hs__o221ai_2	**A1**	0.02945	0.02946	0.04582
	A1	0.00630	0.00626	0.02272
	A2	0.02398	0.02435	0.04058
	A2	0.00385	0.00414	0.01994
	B1	0.02579	0.02594	0.04129
	B1	0.00357	0.00375	0.01953
	B2	0.02008	0.02049	0.03476
	B2	0.00093	0.00146	0.01578
	C1	0.01121	0.01273	0.03361
	C1	0.00048	0.00196	0.02261
sky130_fd_sc_hs__o221ai_4	**A1**	0.05824	0.05842	0.09363
	A1	0.01254	0.01266	0.04738
	A2	0.04761	0.04825	0.08092
	A2	0.00185	0.00261	0.03592
	B1	0.05075	0.05137	0.08728
	B1	0.00695	0.00773	0.04472
	B2	0.02942	0.03107	0.06560
	B2	0.00195	0.00337	0.03813
	C1	0.02206	0.02578	0.08103
	C1	0.00086	0.00457	0.05957

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)**	0.00237	0.00208	0.00204
	(A2 * B2 * C1 * !Y)	-0.00199	-0.00235	-0.00235
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00204	0.00205	0.00204
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00231	-0.00234	-0.00234
	(A2 * B1 * !B2 * C1 * !Y)	0.00237	0.00208	0.00204
	(A2 * B1 * !B2 * C1 * !Y)	-0.00199	-0.00235	-0.00235
	(A2 * !B1 * !B2 * Y)	0.00204	0.00205	0.00204
	(A2 * !B1 * !B2 * Y)	-0.00231	-0.00234	-0.00234
	(!A2 * B2 * !C1 * Y)	0.00189	0.00191	0.00189
	(!A2 * B2 * !C1 * Y)	-0.00237	-0.00238	-0.00237
	(!A2 * B1 * !B2 * !C1 * Y)	0.00191	0.00191	0.00191
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00237	-0.00237	-0.00237
	(!A2 * !B1 * !B2 * C1 * Y)	0.00194	0.00195	0.00194
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00237	-0.00237	-0.00237
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00195	0.00195	0.00194
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00237	-0.00237	-0.00237

	(A2 * B2 * C1 * !Y)	0.00467	0.00398	0.00391
	(A2 * B2 * C1 * !Y)	-0.00388	-0.00467	-0.00468
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00377	0.00381	0.00377
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00473	-0.00482	-0.00480
	(A2 * B1 * !B2 * C1 * !Y)	0.00467	0.00399	0.00391
	(A2 * B1 * !B2 * C1 * !Y)	-0.00388	-0.00467	-0.00468
	(A2 * !B1 * !B2 * Y)	0.00377	0.00381	0.00377
sky130_fd_sc_hs__o221ai_2	**(A2 * !B1 * !B2 * Y)**	-0.00473	-0.00480	-0.00480
	(!A2 * B2 * !C1 * Y)	0.00354	0.00357	0.00353
	(!A2 * B2 * !C1 * Y)	-0.00485	-0.00489	-0.00486
	(!A2 * B1 * !B2 * !C1 * Y)	0.00357	0.00358	0.00356
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00486	-0.00487	-0.00486
	(!A2 * !B1 * !B2 * C1 * Y)	0.00359	0.00365	0.00360
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00484	-0.00489	-0.00486
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00359	0.00363	0.00361
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00484	-0.00487	-0.00486

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.00926	0.00786	0.00769
	(A2 * B2 * C1 * !Y)	-0.00763	-0.00918	-0.00922
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00765	0.00770	0.00762
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00914	-0.00933	-0.00925
	(A2 * B1 * !B2 * C1 * !Y)	0.00924	0.00787	0.00769
	(A2 * B1 * !B2 * C1 * !Y)	-0.00761	-0.00917	-0.00923
	(A2 * !B1 * !B2 * Y)	0.00765	0.00770	0.00762
	(A2 * !B1 * !B2 * Y)	-0.00914	-0.00933	-0.00925
	(!A2 * B2 * !C1 * Y)	0.00713	0.00718	0.00711
	(!A2 * B2 * !C1 * Y)	-0.00938	-0.00944	-0.00938
	(!A2 * B1 * !B2 * !C1 * Y)	0.00720	0.00719	0.00717
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00938	-0.00939	-0.00938
	(!A2 * !B1 * !B2 * C1 * Y)	0.00725	0.00727	0.00726
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00937	-0.00938	-0.00938
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00725	0.00733	0.00727
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00937	-0.00943	-0.00938

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)**	-0.00203	-0.00204	-0.00203
	(A2 * B2 * C1 * !Y)	0.00234	0.00237	0.00235
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00203	-0.00203	-0.00204
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00233	0.00234	0.00234
	(A2 * B1 * !B2 * C1 * !Y)	-0.00203	-0.00204	-0.00202
	(A2 * B1 * !B2 * C1 * !Y)	0.00234	0.00237	0.00235
	(A2 * !B1 * !B2 * Y)	-0.00202	-0.00203	-0.00204
	(A2 * !B1 * !B2 * Y)	0.00232	0.00234	0.00234
	(!A2 * B2 * !C1 * Y)	-0.00174	-0.00191	-0.00189
	(!A2 * B2 * !C1 * Y)	0.00237	0.00240	0.00237
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00178	-0.00191	-0.00191
	(!A2 * B1 * !B2 * !C1 * Y)	0.00237	0.00240	0.00237
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00183	-0.00195	-0.00194
	(!A2 * !B1 * !B2 * C1 * Y)	0.00237	0.00240	0.00237
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00183	-0.00195	-0.00194
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00237	0.00240	0.00237

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00388	-0.00389	-0.00388
	(A2 * B2 * C1 * !Y)	0.00466	0.00467	0.00468
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00375	-0.00377	-0.00376
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00477	0.00482	0.00480
	(A2 * B1 * !B2 * C1 * !Y)	-0.00388	-0.00389	-0.00388
	(A2 * B1 * !B2 * C1 * !Y)	0.00466	0.00467	0.00468
	(A2 * !B1 * !B2 * Y)	-0.00375	-0.00376	-0.00376
	(A2 * !B1 * !B2 * Y)	0.00477	0.00480	0.00480
	(!A2 * B2 * !C1 * Y)	-0.00317	-0.00353	-0.00353
	(!A2 * B2 * !C1 * Y)	0.00485	0.00493	0.00487
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00325	-0.00357	-0.00356
	(!A2 * B1 * !B2 * !C1 * Y)	0.00486	0.00492	0.00487
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00336	-0.00361	-0.00360
	(!A2 * !B1 * !B2 * C1 * Y)	0.00484	0.00491	0.00487
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00337	-0.00360	-0.00361
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00484	0.00491	0.00487

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	-0.00764	-0.00767	-0.00763
	(A2 * B2 * C1 * !Y)	0.00916	0.00923	0.00922
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00758	-0.00764	-0.00760
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00920	0.00933	0.00925
	(A2 * B1 * !B2 * C1 * !Y)	-0.00763	-0.00768	-0.00763
	(A2 * B1 * !B2 * C1 * !Y)	0.00916	0.00926	0.00923
	(A2 * !B1 * !B2 * Y)	-0.00758	-0.00764	-0.00760
	(A2 * !B1 * !B2 * Y)	0.00921	0.00933	0.00925
	(!A2 * B2 * !C1 * Y)	-0.00639	-0.00710	-0.00711
	(!A2 * B2 * !C1 * Y)	0.00938	0.00952	0.00941
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00653	-0.00717	-0.00717
	(!A2 * B1 * !B2 * !C1 * Y)	0.00938	0.00952	0.00941
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00678	-0.00727	-0.00726
	(!A2 * !B1 * !B2 * C1 * Y)	0.00938	0.00949	0.00941
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00681	-0.00728	-0.00727
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00938	0.00949	0.00941

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)**	0.00214	0.00216	0.00214
	(A1 * B2 * C1 * !Y)	-0.00118	-0.00119	-0.00118
	(A1 * B2 * !C1 * Y)	0.00184	0.00188	0.00185
	(A1 * B2 * !C1 * Y)	-0.00245	-0.00251	-0.00249
	(A1 * B1 * !B2 * C1 * !Y)	0.00214	0.00216	0.00214
	(A1 * B1 * !B2 * C1 * !Y)	-0.00118	-0.00119	-0.00118
	(A1 * B1 * !B2 * !C1 * Y)	0.00185	0.00188	0.00185
	(A1 * B1 * !B2 * !C1 * Y)	-0.00245	-0.00250	-0.00249
	(A1 * !B1 * !B2 * C1 * Y)	0.00184	0.00186	0.00185
	(A1 * !B1 * !B2 * C1 * Y)	-0.00245	-0.00249	-0.00248
	(A1 * !B1 * !B2 * !C1 * Y)	0.00185	0.00188	0.00185
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00246	-0.00251	-0.00249
	(!A1 * B2 * !C1 * Y)	0.00174	0.00177	0.00175
	(!A1 * B2 * !C1 * Y)	-0.00251	-0.00254	-0.00252
	(!A1 * B1 * !B2 * !C1 * Y)	0.00174	0.00177	0.00175
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00252	-0.00253	-0.00252
	(!A1 * !B1 * !B2 * C1 * Y)	0.00177	0.00179	0.00177
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00252	-0.00253	-0.00252
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00177	0.00179	0.00177
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00252	-0.00253	-0.00252

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	0.00391	0.00393	0.00390
	(A1 * B2 * C1 * !Y)	-0.00214	-0.00214	-0.00212
	(A1 * B2 * !C1 * Y)	0.00356	0.00361	0.00358
	(A1 * B2 * !C1 * Y)	-0.00440	-0.00450	-0.00447
	(A1 * B1 * !B2 * C1 * !Y)	0.00391	0.00393	0.00390
	(A1 * B1 * !B2 * C1 * !Y)	-0.00214	-0.00214	-0.00212
	(A1 * B1 * !B2 * !C1 * Y)	0.00357	0.00361	0.00358
	(A1 * B1 * !B2 * !C1 * Y)	-0.00441	-0.00449	-0.00447
	(A1 * !B1 * !B2 * C1 * Y)	0.00356	0.00361	0.00358
	(A1 * !B1 * !B2 * C1 * Y)	-0.00440	-0.00448	-0.00447
	(A1 * !B1 * !B2 * !C1 * Y)	0.00356	0.00359	0.00358
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00441	-0.00449	-0.00448
	(!A1 * B2 * !C1 * Y)	0.00335	0.00340	0.00337
	(!A1 * B2 * !C1 * Y)	-0.00454	-0.00457	-0.00455
	(!A1 * B1 * !B2 * !C1 * Y)	0.00339	0.00340	0.00340
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00454	-0.00455	-0.00455
	(!A1 * !B1 * !B2 * C1 * Y)	0.00344	0.00347	0.00343
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00453	-0.00457	-0.00455
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00345	0.00348	0.00344
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00456	-0.00458	-0.00455

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	0.00784	0.00795	0.00788
	(A1 * B2 * C1 * !Y)	-0.00421	-0.00428	-0.00424
	(A1 * B2 * !C1 * Y)	0.00697	0.00706	0.00698
	(A1 * B2 * !C1 * Y)	-0.00905	-0.00921	-0.00919
	(A1 * B1 * !B2 * C1 * !Y)	0.00784	0.00795	0.00788
	(A1 * B1 * !B2 * C1 * !Y)	-0.00421	-0.00428	-0.00423
	(A1 * B1 * !B2 * !C1 * Y)	0.00699	0.00704	0.00698
	(A1 * B1 * !B2 * !C1 * Y)	-0.00907	-0.00921	-0.00918
	(A1 * !B1 * !B2 * C1 * Y)	0.00697	0.00706	0.00698
	(A1 * !B1 * !B2 * C1 * Y)	-0.00905	-0.00920	-0.00917
	(A1 * !B1 * !B2 * !C1 * Y)	0.00699	0.00700	0.00698
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00907	-0.00924	-0.00919
	(!A1 * B2 * !C1 * Y)	0.00661	0.00667	0.00660
	(!A1 * B2 * !C1 * Y)	-0.00932	-0.00940	-0.00934
	(!A1 * B1 * !B2 * !C1 * Y)	0.00666	0.00667	0.00665
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00935	-0.00935	-0.00934
	(!A1 * !B1 * !B2 * C1 * Y)	0.00669	0.00679	0.00672
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00931	-0.00938	-0.00934
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00670	0.00682	0.00673
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00931	-0.00940	-0.00934

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)**	-0.00207	-0.00208	-0.00213
	(A1 * B2 * C1 * !Y)	0.00125	0.00125	0.00120
	(A1 * B2 * !C1 * Y)	-0.00184	-0.00186	-0.00185
	(A1 * B2 * !C1 * Y)	0.00248	0.00251	0.00249
	(A1 * B1 * !B2 * C1 * !Y)	-0.00207	-0.00208	-0.00213
	(A1 * B1 * !B2 * C1 * !Y)	0.00125	0.00125	0.00120
	(A1 * B1 * !B2 * !C1 * Y)	-0.00184	-0.00186	-0.00185
	(A1 * B1 * !B2 * !C1 * Y)	0.00248	0.00250	0.00249
	(A1 * !B1 * !B2 * C1 * Y)	-0.00184	-0.00185	-0.00185
	(A1 * !B1 * !B2 * C1 * Y)	0.00249	0.00249	0.00248
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00185	-0.00186	-0.00185
	(A1 * !B1 * !B2 * !C1 * Y)	0.00248	0.00251	0.00249
	(!A1 * B2 * !C1 * Y)	-0.00158	-0.00176	-0.00175
	(!A1 * B2 * !C1 * Y)	0.00252	0.00255	0.00253
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00161	-0.00177	-0.00175
	(!A1 * B1 * !B2 * !C1 * Y)	0.00252	0.00255	0.00253
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00166	-0.00178	-0.00177
	(!A1 * !B1 * !B2 * C1 * Y)	0.00252	0.00255	0.00252
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00166	-0.00178	-0.00177
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00252	0.00255	0.00252

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	-0.00375	-0.00378	-0.00388
	(A1 * B2 * C1 * !Y)	0.00226	0.00226	0.00216
	(A1 * B2 * !C1 * Y)	-0.00356	-0.00358	-0.00357
	(A1 * B2 * !C1 * Y)	0.00445	0.00450	0.00447
	(A1 * B1 * !B2 * C1 * !Y)	-0.00373	-0.00377	-0.00388
	(A1 * B1 * !B2 * C1 * !Y)	0.00224	0.00226	0.00216
	(A1 * B1 * !B2 * !C1 * Y)	-0.00356	-0.00358	-0.00357
	(A1 * B1 * !B2 * !C1 * Y)	0.00445	0.00449	0.00447
	(A1 * !B1 * !B2 * C1 * Y)	-0.00356	-0.00358	-0.00357
	(A1 * !B1 * !B2 * C1 * Y)	0.00446	0.00448	0.00447
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00356	-0.00358	-0.00357
	(A1 * !B1 * !B2 * !C1 * Y)	0.00447	0.00449	0.00448
	(!A1 * B2 * !C1 * Y)	-0.00303	-0.00336	-0.00337
	(!A1 * B2 * !C1 * Y)	0.00454	0.00461	0.00456
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00310	-0.00338	-0.00340
	(!A1 * B1 * !B2 * !C1 * Y)	0.00455	0.00461	0.00456
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00320	-0.00342	-0.00343
	(!A1 * !B1 * !B2 * C1 * Y)	0.00453	0.00459	0.00456
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00323	-0.00343	-0.00344
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00456	0.00459	0.00456

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	-0.00754	-0.00762	-0.00784
	(A1 * B2 * C1 * !Y)	0.00447	0.00453	0.00431
	(A1 * B2 * !C1 * Y)	-0.00695	-0.00698	-0.00696
	(A1 * B2 * !C1 * Y)	0.00915	0.00921	0.00919
	(A1 * B1 * !B2 * C1 * !Y)	-0.00755	-0.00762	-0.00784
	(A1 * B1 * !B2 * C1 * !Y)	0.00448	0.00453	0.00431
	(A1 * B1 * !B2 * !C1 * Y)	-0.00695	-0.00698	-0.00696
	(A1 * B1 * !B2 * !C1 * Y)	0.00915	0.00921	0.00918
	(A1 * !B1 * !B2 * C1 * Y)	-0.00697	-0.00699	-0.00696
	(A1 * !B1 * !B2 * C1 * Y)	0.00917	0.00920	0.00917
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00697	-0.00699	-0.00696
	(A1 * !B1 * !B2 * !C1 * Y)	0.00918	0.00924	0.00919
	(!A1 * B2 * !C1 * Y)	-0.00591	-0.00658	-0.00660
	(!A1 * B2 * !C1 * Y)	0.00932	0.00946	0.00936
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00607	-0.00662	-0.00665
	(!A1 * B1 * !B2 * !C1 * Y)	0.00937	0.00945	0.00936
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00627	-0.00670	-0.00672
	(!A1 * !B1 * !B2 * C1 * Y)	0.00936	0.00943	0.00936
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00629	-0.00669	-0.00673
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00936	0.00943	0.00936

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)**	0.00247	0.00217	0.00213
	(A2 * B2 * C1 * !Y)	-0.00194	-0.00229	-0.00229
	(A2 * !B2 * !C1 * Y)	0.00188	0.00187	0.00187
	(A2 * !B2 * !C1 * Y)	-0.00251	-0.00250	-0.00250
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00194	0.00194	0.00194
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00245	-0.00248	-0.00248
	(A1 * !A2 * B2 * C1 * !Y)	0.00247	0.00217	0.00213
	(A1 * !A2 * B2 * C1 * !Y)	-0.00194	-0.00229	-0.00229
	(A1 * !A2 * !B2 * !C1 * Y)	0.00188	0.00188	0.00187
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00251	-0.00251	-0.00250
	(!A1 * !A2 * B2 * C1 * Y)	0.00085	0.00086	0.00085
	(!A1 * !A2 * B2 * C1 * Y)	-0.00245	-0.00251	-0.00249
	(!A1 * !A2 * B2 * !C1 * Y)	0.00110	0.00111	0.00110
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00246	-0.00251	-0.00249
	(!A1 * !A2 * !B2 * C1 * Y)	0.00088	0.00088	0.00089
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00250	-0.00250	-0.00249
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00116	0.00116	0.00116
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00251	-0.00251	-0.00251

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.00490	0.00424	0.00418
	(A2 * B2 * C1 * !Y)	-0.00378	-0.00454	-0.00454
	(A2 * !B2 * !C1 * Y)	0.00363	0.00365	0.00364
	(A2 * !B2 * !C1 * Y)	-0.00496	-0.00497	-0.00496
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00379	0.00383	0.00379
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00484	-0.00493	-0.00492
	(A1 * !A2 * B2 * C1 * !Y)	0.00490	0.00424	0.00418
	(A1 * !A2 * B2 * C1 * !Y)	-0.00378	-0.00454	-0.00454
	(A1 * !A2 * !B2 * !C1 * Y)	0.00363	0.00368	0.00364
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00496	-0.00499	-0.00496
	(!A1 * !A2 * B2 * C1 * Y)	0.00155	0.00156	0.00155
	(!A1 * !A2 * B2 * C1 * Y)	-0.00484	-0.00496	-0.00494
	(!A1 * !A2 * B2 * !C1 * Y)	0.00202	0.00204	0.00201
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00485	-0.00496	-0.00493
	(!A1 * !A2 * !B2 * C1 * Y)	0.00162	0.00162	0.00162
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00495	-0.00496	-0.00493
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00213	0.00215	0.00213
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00497	-0.00500	-0.00497

	(A2 * B2 * C1 * !Y)	0.00933	0.00797	0.00784
	(A2 * B2 * C1 * !Y)	-0.00740	-0.00905	-0.00904
	(A2 * !B2 * !C1 * Y)	0.00697	0.00700	0.00699
	(A2 * !B2 * !C1 * Y)	-0.00960	-0.00961	-0.00960
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00732	0.00743	0.00735
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00931	-0.00946	-0.00948
	(A1 * !A2 * B2 * C1 * !Y)	0.00933	0.00796	0.00784
	(A1 * !A2 * B2 * C1 * !Y)	-0.00740	-0.00905	-0.00904
sky130_fd_sc_hs__o221ai_4	**(A1 * !A2 * !B2 * !C1 * Y)**	0.00694	0.00698	0.00695
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00960	-0.00962	-0.00960
	(!A1 * !A2 * B2 * C1 * Y)	0.00287	0.00291	0.00288
	(!A1 * !A2 * B2 * C1 * Y)	-0.00932	-0.00960	-0.00956
	(!A1 * !A2 * B2 * !C1 * Y)	0.00374	0.00380	0.00376
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00933	-0.00961	-0.00952
	(!A1 * !A2 * !B2 * C1 * Y)	0.00303	0.00304	0.00303
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00959	-0.00962	-0.00955
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00397	0.00402	0.00398
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00960	-0.00969	-0.00963

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)**	-0.00212	-0.00213	-0.00212
	(A2 * B2 * C1 * !Y)	0.00228	0.00230	0.00229
	(A2 * !B2 * !C1 * Y)	-0.00175	-0.00187	-0.00187
	(A2 * !B2 * !C1 * Y)	0.00256	0.00253	0.00251
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00193	-0.00194	-0.00193
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00247	0.00249	0.00248
	(A1 * !A2 * B2 * C1 * !Y)	-0.00212	-0.00212	-0.00212
	(A1 * !A2 * B2 * C1 * !Y)	0.00228	0.00230	0.00229
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00172	-0.00188	-0.00187
	(A1 * !A2 * !B2 * !C1 * Y)	0.00257	0.00253	0.00251
	(!A1 * !A2 * B2 * C1 * Y)	-0.00081	-0.00082	-0.00084
	(!A1 * !A2 * B2 * C1 * Y)	0.00255	0.00256	0.00250
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00110	-0.00111	-0.00110
	(!A1 * !A2 * B2 * !C1 * Y)	0.00250	0.00252	0.00249
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00083	-0.00084	-0.00086
	(!A1 * !A2 * !B2 * C1 * Y)	0.00257	0.00260	0.00253
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00116	-0.00116	-0.00116
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00259	0.00260	0.00253

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00415	-0.00417	-0.00415
	(A2 * B2 * C1 * !Y)	0.00452	0.00456	0.00455
	(A2 * !B2 * !C1 * Y)	-0.00331	-0.00365	-0.00364
	(A2 * !B2 * !C1 * Y)	0.00512	0.00502	0.00497
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00377	-0.00379	-0.00378
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00488	0.00493	0.00492
	(A1 * !A2 * B2 * C1 * !Y)	-0.00415	-0.00417	-0.00415
	(A1 * !A2 * B2 * C1 * !Y)	0.00452	0.00457	0.00455
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00328	-0.00365	-0.00364
	(A1 * !A2 * !B2 * !C1 * Y)	0.00515	0.00502	0.00497
	(!A1 * !A2 * B2 * C1 * Y)	-0.00146	-0.00147	-0.00153
	(!A1 * !A2 * B2 * C1 * Y)	0.00507	0.00508	0.00495
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00202	-0.00204	-0.00201
	(!A1 * !A2 * B2 * !C1 * Y)	0.00498	0.00503	0.00493
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00149	-0.00152	-0.00155
	(!A1 * !A2 * !B2 * C1 * Y)	0.00511	0.00520	0.00501
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00213	-0.00215	-0.00213
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00521	0.00521	0.00501

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	-0.00779	-0.00784	-0.00779
	(A2 * B2 * C1 * !Y)	0.00898	0.00911	0.00904
	(A2 * !B2 * !C1 * Y)	-0.00628	-0.00700	-0.00699
	(A2 * !B2 * !C1 * Y)	0.01001	0.00967	0.00963
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00732	-0.00733	-0.00734
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00944	0.00946	0.00948
	(A1 * !A2 * B2 * C1 * !Y)	-0.00779	-0.00784	-0.00779
	(A1 * !A2 * B2 * C1 * !Y)	0.00898	0.00911	0.00904
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00617	-0.00698	-0.00695
	(A1 * !A2 * !B2 * !C1 * Y)	0.01008	0.00969	0.00963
	(!A1 * !A2 * B2 * C1 * Y)	-0.00271	-0.00274	-0.00284
	(!A1 * !A2 * B2 * C1 * Y)	0.00978	0.00987	0.00956
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00374	-0.00380	-0.00376
	(!A1 * !A2 * B2 * !C1 * Y)	0.00969	0.00978	0.00952
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00280	-0.00286	-0.00290
	(!A1 * !A2 * !B2 * C1 * Y)	0.00987	0.01006	0.00969
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00397	-0.00402	-0.00398
	(!A1 * !A2 * !B2 * !C1 * Y)	0.01015	0.01017	0.00973

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)**	0.00209	0.00211	0.00209
	(A2 * B1 * C1 * !Y)	-0.00107	-0.00108	-0.00107
	(A2 * B1 * !C1 * Y)	0.00184	0.00187	0.00185
	(A2 * B1 * !C1 * Y)	-0.00230	-0.00234	-0.00233
	(A2 * !B1 * !C1 * Y)	0.00180	0.00181	0.00179
	(A2 * !B1 * !C1 * Y)	-0.00237	-0.00237	-0.00236
	(A1 * !A2 * B1 * C1 * !Y)	0.00209	0.00212	0.00209
	(A1 * !A2 * B1 * C1 * !Y)	-0.00107	-0.00109	-0.00107
	(A1 * !A2 * B1 * !C1 * Y)	0.00184	0.00187	0.00185
	(A1 * !A2 * B1 * !C1 * Y)	-0.00230	-0.00234	-0.00233
	(A1 * !A2 * !B1 * !C1 * Y)	0.00180	0.00181	0.00180
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00237	-0.00237	-0.00236
	(!A1 * !A2 * B1 * C1 * Y)	0.00078	0.00078	0.00078
	(!A1 * !A2 * B1 * C1 * Y)	-0.00231	-0.00235	-0.00234
	(!A1 * !A2 * B1 * !C1 * Y)	0.00102	0.00104	0.00103
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00231	-0.00237	-0.00234
	(!A1 * !A2 * !B1 * C1 * Y)	0.00081	0.00081	0.00082
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00236	-0.00237	-0.00235
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00108	0.00109	0.00109
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00237	-0.00238	-0.00237

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	0.00387	0.00391	0.00388
	(A2 * B1 * C1 * !Y)	-0.00212	-0.00214	-0.00211
	(A2 * B1 * !C1 * Y)	0.00353	0.00358	0.00354
	(A2 * B1 * !C1 * Y)	-0.00441	-0.00452	-0.00448
	(A2 * !B1 * !C1 * Y)	0.00342	0.00344	0.00342
	(A2 * !B1 * !C1 * Y)	-0.00455	-0.00456	-0.00454
	(A1 * !A2 * B1 * C1 * !Y)	0.00387	0.00394	0.00388
	(A1 * !A2 * B1 * C1 * !Y)	-0.00212	-0.00215	-0.00211
	(A1 * !A2 * B1 * !C1 * Y)	0.00353	0.00358	0.00354
	(A1 * !A2 * B1 * !C1 * Y)	-0.00441	-0.00449	-0.00448
	(A1 * !A2 * !B1 * !C1 * Y)	0.00338	0.00342	0.00338
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00455	-0.00457	-0.00454
	(!A1 * !A2 * B1 * C1 * Y)	0.00138	0.00140	0.00139
	(!A1 * !A2 * B1 * C1 * Y)	-0.00440	-0.00452	-0.00450
	(!A1 * !A2 * B1 * !C1 * Y)	0.00185	0.00187	0.00186
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00441	-0.00451	-0.00449
	(!A1 * !A2 * !B1 * C1 * Y)	0.00145	0.00147	0.00147
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00452	-0.00456	-0.00451
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00196	0.00199	0.00197
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00454	-0.00458	-0.00455

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	0.00789	0.00803	0.00791
	(A2 * B1 * C1 * !Y)	-0.00423	-0.00430	-0.00422
	(A2 * B1 * !C1 * Y)	0.00716	0.00724	0.00718
	(A2 * B1 * !C1 * Y)	-0.00888	-0.00909	-0.00902
	(A2 * !B1 * !C1 * Y)	0.00693	0.00696	0.00692
	(A2 * !B1 * !C1 * Y)	-0.00918	-0.00919	-0.00915
	(A1 * !A2 * B1 * C1 * !Y)	0.00789	0.00803	0.00791
	(A1 * !A2 * B1 * C1 * !Y)	-0.00423	-0.00430	-0.00422
	(A1 * !A2 * B1 * !C1 * Y)	0.00717	0.00725	0.00718
	(A1 * !A2 * B1 * !C1 * Y)	-0.00890	-0.00901	-0.00901
	(A1 * !A2 * !B1 * !C1 * Y)	0.00689	0.00699	0.00692
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00913	-0.00920	-0.00915
	(!A1 * !A2 * B1 * C1 * Y)	0.00277	0.00280	0.00278
	(!A1 * !A2 * B1 * C1 * Y)	-0.00887	-0.00909	-0.00907
	(!A1 * !A2 * B1 * !C1 * Y)	0.00365	0.00370	0.00366
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00889	-0.00914	-0.00905
	(!A1 * !A2 * !B1 * C1 * Y)	0.00293	0.00294	0.00293
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00915	-0.00919	-0.00910
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00387	0.00391	0.00387
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00917	-0.00924	-0.00918

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)**	-0.00203	-0.00205	-0.00208
	(A2 * B1 * C1 * !Y)	0.00113	0.00113	0.00109
	(A2 * B1 * !C1 * Y)	-0.00184	-0.00185	-0.00185
	(A2 * B1 * !C1 * Y)	0.00232	0.00234	0.00233
	(A2 * !B1 * !C1 * Y)	-0.00169	-0.00179	-0.00179
	(A2 * !B1 * !C1 * Y)	0.00240	0.00238	0.00237
	(A1 * !A2 * B1 * C1 * !Y)	-0.00203	-0.00205	-0.00208
	(A1 * !A2 * B1 * C1 * !Y)	0.00113	0.00113	0.00109
	(A1 * !A2 * B1 * !C1 * Y)	-0.00184	-0.00185	-0.00185
	(A1 * !A2 * B1 * !C1 * Y)	0.00232	0.00234	0.00233
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00165	-0.00180	-0.00180
	(A1 * !A2 * !B1 * !C1 * Y)	0.00241	0.00238	0.00237
	(!A1 * !A2 * B1 * C1 * Y)	-0.00074	-0.00075	-0.00077
	(!A1 * !A2 * B1 * C1 * Y)	0.00239	0.00240	0.00234
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00102	-0.00104	-0.00103
	(!A1 * !A2 * B1 * !C1 * Y)	0.00236	0.00237	0.00234
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00076	-0.00077	-0.00078
	(!A1 * !A2 * !B1 * C1 * Y)	0.00241	0.00244	0.00238
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00108	-0.00109	-0.00109
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00243	0.00245	0.00238

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	-0.00372	-0.00374	-0.00386
	(A2 * B1 * C1 * !Y)	0.00223	0.00224	0.00215
	(A2 * B1 * !C1 * Y)	-0.00353	-0.00355	-0.00353
	(A2 * B1 * !C1 * Y)	0.00446	0.00452	0.00448
	(A2 * !B1 * !C1 * Y)	-0.00307	-0.00343	-0.00342
	(A2 * !B1 * !C1 * Y)	0.00469	0.00459	0.00456
	(A1 * !A2 * B1 * C1 * !Y)	-0.00373	-0.00374	-0.00386
	(A1 * !A2 * B1 * C1 * !Y)	0.00225	0.00224	0.00215
	(A1 * !A2 * B1 * !C1 * Y)	-0.00353	-0.00354	-0.00353
	(A1 * !A2 * B1 * !C1 * Y)	0.00446	0.00449	0.00448
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00303	-0.00342	-0.00338
	(A1 * !A2 * !B1 * !C1 * Y)	0.00473	0.00457	0.00456
	(!A1 * !A2 * B1 * C1 * Y)	-0.00132	-0.00133	-0.00137
	(!A1 * !A2 * B1 * C1 * Y)	0.00461	0.00462	0.00450
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00185	-0.00187	-0.00186
	(!A1 * !A2 * B1 * !C1 * Y)	0.00452	0.00456	0.00449
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00134	-0.00136	-0.00139
	(!A1 * !A2 * !B1 * C1 * Y)	0.00467	0.00472	0.00459
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00196	-0.00199	-0.00197
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00474	0.00477	0.00458

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	-0.00758	-0.00763	-0.00787
	(A2 * B1 * C1 * !Y)	0.00445	0.00448	0.00430
	(A2 * B1 * !C1 * Y)	-0.00715	-0.00720	-0.00716
	(A2 * B1 * !C1 * Y)	0.00897	0.00909	0.00902
	(A2 * !B1 * !C1 * Y)	-0.00615	-0.00693	-0.00692
	(A2 * !B1 * !C1 * Y)	0.00955	0.00925	0.00918
	(A1 * !A2 * B1 * C1 * !Y)	-0.00761	-0.00763	-0.00787
	(A1 * !A2 * B1 * C1 * !Y)	0.00449	0.00448	0.00430
	(A1 * !A2 * B1 * !C1 * Y)	-0.00714	-0.00717	-0.00716
	(A1 * !A2 * B1 * !C1 * Y)	0.00896	0.00901	0.00901
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00605	-0.00696	-0.00692
	(A1 * !A2 * !B1 * !C1 * Y)	0.00965	0.00920	0.00918
	(!A1 * !A2 * B1 * C1 * Y)	-0.00265	-0.00266	-0.00274
	(!A1 * !A2 * B1 * C1 * Y)	0.00932	0.00933	0.00907
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00365	-0.00370	-0.00366
	(!A1 * !A2 * B1 * !C1 * Y)	0.00919	0.00927	0.00905
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00270	-0.00274	-0.00279
	(!A1 * !A2 * !B1 * C1 * Y)	0.00941	0.00951	0.00924
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00387	-0.00391	-0.00387
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00966	0.00967	0.00928

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)	0.00075	0.00075	0.00071
	(A2 * !B1 * !B2 * Y)	-0.00284	-0.00284	-0.00291
	(!A2 * !B1 * !B2 * Y)	0.00074	0.00075	0.00071
	(!A2 * !B1 * !B2 * Y)	-0.00282	-0.00284	-0.00291
	(!A1 * !A2 * B2 * Y)	0.00078	0.00077	0.00068
	(!A1 * !A2 * B2 * Y)	-0.00269	-0.00269	-0.00288
	(!A1 * !A2 * B1 * !B2 * Y)	0.00077	0.00078	0.00069
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00269	-0.00271	-0.00289
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	0.00136	0.00136	0.00128
	(A2 * !B1 * !B2 * Y)	-0.00527	-0.00529	-0.00543
	(!A2 * !B1 * !B2 * Y)	0.00136	0.00136	0.00128
	(!A2 * !B1 * !B2 * Y)	-0.00527	-0.00530	-0.00543
	(!A1 * !A2 * B2 * Y)	0.00142	0.00142	0.00124
	(!A1 * !A2 * B2 * Y)	-0.00501	-0.00504	-0.00539
	(!A1 * !A2 * B1 * !B2 * Y)	0.00142	0.00143	0.00126
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00505	-0.00509	-0.00539
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	0.00235	0.00234	0.00221
	(A2 * !B1 * !B2 * Y)	-0.01075	-0.01076	-0.01099
	(!A2 * !B1 * !B2 * Y)	0.00235	0.00234	0.00221
	(!A2 * !B1 * !B2 * Y)	-0.01075	-0.01078	-0.01099
	(!A1 * !A2 * B2 * Y)	0.00245	0.00245	0.00214
	(!A1 * !A2 * B2 * Y)	-0.01023	-0.01028	-0.01092
	(!A1 * !A2 * B1 * !B2 * Y)	0.00247	0.00247	0.00218
	(!A1 * !A2 * B1 * !B2 * Y)	-0.01032	-0.01038	-0.01093

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221ai_1	(A2 * !B1 * !B2 * Y)	-0.00068	-0.00069	-0.00069
	(A2 * !B1 * !B2 * Y)	0.00290	0.00291	0.00292
	(!A2 * !B1 * !B2 * Y)	-0.00069	-0.00070	-0.00069
	(!A2 * !B1 * !B2 * Y)	0.00290	0.00296	0.00292
	(!A1 * !A2 * B2 * Y)	-0.00066	-0.00066	-0.00066
	(!A1 * !A2 * B2 * Y)	0.00290	0.00293	0.00292
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00067	-0.00068	-0.00067
	(!A1 * !A2 * B1 * !B2 * Y)	0.00290	0.00296	0.00292
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	-0.00125	-0.00125	-0.00125
	(A2 * !B1 * !B2 * Y)	0.00543	0.00545	0.00545
	(!A2 * !B1 * !B2 * Y)	-0.00125	-0.00127	-0.00125
	(!A2 * !B1 * !B2 * Y)	0.00543	0.00554	0.00545
	(!A1 * !A2 * B2 * Y)	-0.00120	-0.00121	-0.00120
	(!A1 * !A2 * B2 * Y)	0.00543	0.00545	0.00545
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00121	-0.00124	-0.00121
	(!A1 * !A2 * B1 * !B2 * Y)	0.00543	0.00553	0.00545
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	-0.00216	-0.00215	-0.00215
	(A2 * !B1 * !B2 * Y)	0.01104	0.01100	0.01103
	(!A2 * !B1 * !B2 * Y)	-0.00214	-0.00219	-0.00215
	(!A2 * !B1 * !B2 * Y)	0.01097	0.01121	0.01103
	(!A1 * !A2 * B2 * Y)	-0.00206	-0.00208	-0.00205
	(!A1 * !A2 * B2 * Y)	0.01095	0.01103	0.01102
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00209	-0.00213	-0.00208
	(!A1 * !A2 * B1 * !B2 * Y)	0.01099	0.01120	0.01102

SKY130_FD_SC_HS__O221Ax

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00262	0.00260	0.00255	0.00271	0.00267	1.25155
sky130_fd_sc_hs__o221a_2	0.00278	0.00273	0.00273	0.00284	0.00279	2.50747
sky130_fd_sc_hs__o221a_4	0.00522	0.00474	0.00553	0.00475	0.00482	4.70290

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221a_1	0.00000	0.22292	0.78504
sky130_fd_sc_hs__o221a_2	0.00000	0.29635	0.79353
sky130_fd_sc_hs__o221a_4	0.00000	0.59627	1.58705

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)	0.11529	0.58370	5.99172
	A2->X (RR)	0.10758	0.57297	5.98563
	B1->X (RR)	0.10804	0.60432	6.23256
	B2->X (RR)	0.10105	0.58459	6.20100
	C1->X (RR)	0.09782	0.59930	6.48435
sky130_fd_sc_hs__o221a_2	A1->X (RR)	0.11296	0.49113	5.95050
	A2->X (RR)	0.10608	0.48201	5.93663
	B1->X (RR)	0.10605	0.51542	6.19665
	B2->X (RR)	0.10180	0.50038	6.16784
	C1->X (RR)	0.09651	0.51379	6.43188
sky130_fd_sc_hs__o221a_4	A1->X (RR)	0.12278	0.43532	6.03019
	A2->X (RR)	0.11474	0.42721	6.05023
	B1->X (RR)	0.11671	0.46010	6.23741
	B2->X (RR)	0.10810	0.43943	6.21382
	C1->X (RR)	0.10313	0.45912	6.50487

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221a_1	A1->X (FF)	0.15561	0.60080	4.93504
	A2->X (FF)	0.14261	0.61420	5.06808
	B1->X (FF)	0.13348	0.56095	4.76432
	B2->X (FF)	0.12161	0.57220	4.84303
	C1->X (FF)	0.06289	0.45399	4.46111
sky130_fd_sc_hs__o221a_2	A1->X (FF)	0.18150	0.61242	5.14222
	A2->X (FF)	0.16725	0.62800	5.26881
	B1->X (FF)	0.15221	0.55092	4.95911
	B2->X (FF)	0.14226	0.58422	5.04791
	C1->X (FF)	0.07206	0.45300	4.62410
sky130_fd_sc_hs__o221a_4	A1->X (FF)	0.16366	0.55102	5.06153
	A2->X (FF)	0.14755	0.56152	5.15206
	B1->X (FF)	0.14805	0.52299	4.91728
	B2->X (FF)	0.13063	0.53059	4.99428
	C1->X (FF)	0.06787	0.41228	4.57187

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221a_1	A1	0.01819	0.01834	0.04777
	A1	0.00755	0.00771	0.03768
	A2	0.01427	0.01513	0.05398
	A2	0.00528	0.00614	0.04553
	B1	0.01627	0.01679	0.05439
	B1	0.00631	0.00730	0.04789
	B2	0.01204	0.01331	0.06337
	B2	0.00523	0.00651	0.05709
	C1	0.01041	0.01315	0.07998
	C1	0.00500	0.00774	0.07500
sky130_fd_sc_hs__o221a_2	A1	0.02056	0.02103	0.05144
	A1	0.00952	0.01003	0.04155
	A2	0.01828	0.01936	0.05832
	A2	0.00846	0.00957	0.04852
	B1	0.02012	0.02075	0.05858
	B1	0.00937	0.01059	0.05203
	B2	0.01819	0.01896	0.06624
	B2	0.00843	0.00985	0.06105
	C1	0.01391	0.01652	0.08353
	C1	0.00815	0.01076	0.07876

sky130_fd_sc_hs__o221a_4	**A1**	0.03791	0.03948	0.11142
	A1	0.01800	0.01964	0.09373
	A2	0.03276	0.03491	0.12305
	A2	0.01576	0.01793	0.10825
	B1	0.03864	0.04018	0.11576
	B1	0.01784	0.02040	0.10240
	B2	0.02820	0.03108	0.13010
	B2	0.01572	0.01861	0.11979
	C1	0.02491	0.03051	0.15990
	C1	0.01503	0.02067	0.15180

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221a_1	**A1**	0.00660	0.00716	0.04302
	A1	0.01699	0.01756	0.05231
	A2	0.00659	0.00853	0.05736
	A2	0.01578	0.01772	0.06612
	B1	0.00558	0.00670	0.04531
	B1	0.01439	0.01540	0.05086
	B2	0.00533	0.00793	0.05764
	B2	0.01325	0.01586	0.06191
	C1	0.00393	0.00799	0.07033
	C1	0.00936	0.01330	0.07574

sky130_fd_sc_hs__o221a_2	**A1**	0.01081	0.01017	0.04622
	A1	0.02194	0.02144	0.05689
	A2	0.01069	0.01172	0.06085
	A2	0.02059	0.02163	0.07043
	B1	0.00935	0.00977	0.04613
	B1	0.01859	0.01898	0.05533
	B2	0.00919	0.01106	0.05975
	B2	0.01743	0.01930	0.06672
	C1	0.00671	0.01103	0.07548
	C1	0.01482	0.01846	0.07572
sky130_fd_sc_hs__o221a_4	**A1**	0.02006	0.02029	0.09861
	A1	0.04050	0.04071	0.11546
	A2	0.02061	0.02327	0.12369
	A2	0.03813	0.04075	0.13899
	B1	0.01763	0.01844	0.09203
	B1	0.03538	0.03617	0.10944
	B2	0.01826	0.02260	0.11815
	B2	0.03281	0.03671	0.13089
	C1	0.01348	0.02132	0.14758
	C1	0.02816	0.03523	0.14965

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)**	0.00215	0.00184	0.00180
	(A2 * B2 * C1 * X)	-0.00170	-0.00205	-0.00206
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00157	0.00159	0.00157
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00227	-0.00231	-0.00229
	(A2 * B1 * !B2 * C1 * X)	0.00215	0.00185	0.00180
	(A2 * B1 * !B2 * C1 * X)	-0.00170	-0.00205	-0.00206
	(A2 * !B1 * !B2 * !X)	0.00157	0.00159	0.00157
	(A2 * !B1 * !B2 * !X)	-0.00227	-0.00231	-0.00229
	(!A2 * B2 * !C1 * !X)	0.00145	0.00146	0.00145
	(!A2 * B2 * !C1 * !X)	-0.00231	-0.00232	-0.00231
	(!A2 * B1 * !B2 * !C1 * !X)	0.00148	0.00148	0.00148
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00231	-0.00232	-0.00231
	(!A2 * !B1 * !B2 * C1 * !X)	0.00149	0.00151	0.00149
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00232	-0.00233	-0.00231
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00149	0.00150	0.00149
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00232	-0.00232	-0.00231

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00242	0.00212	0.00208
	(A2 * B2 * C1 * X)	-0.00169	-0.00204	-0.00205
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00181	0.00184	0.00182
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00227	-0.00232	-0.00231
	(A2 * B1 * !B2 * C1 * X)	0.00242	0.00212	0.00208
	(A2 * B1 * !B2 * C1 * X)	-0.00169	-0.00204	-0.00205
	(A2 * !B1 * !B2 * !X)	0.00182	0.00184	0.00182
	(A2 * !B1 * !B2 * !X)	-0.00227	-0.00232	-0.00231
	(!A2 * B2 * !C1 * !X)	0.00169	0.00170	0.00169
	(!A2 * B2 * !C1 * !X)	-0.00232	-0.00233	-0.00232
	(!A2 * B1 * !B2 * !C1 * !X)	0.00170	0.00171	0.00170
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00232	-0.00233	-0.00232
	(!A2 * !B1 * !B2 * C1 * !X)	0.00174	0.00175	0.00173
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00233	-0.00233	-0.00232
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00174	0.00175	0.00173
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00233	-0.00233	-0.00232

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00443	0.00387	0.00380
	(A2 * B2 * C1 * X)	-0.00337	-0.00406	-0.00407
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00348	0.00353	0.00349
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00429	-0.00438	-0.00437
	(A2 * B1 * !B2 * C1 * X)	0.00444	0.00388	0.00381
	(A2 * B1 * !B2 * C1 * X)	-0.00337	-0.00406	-0.00407
	(A2 * !B1 * !B2 * !X)	0.00348	0.00353	0.00349
	(A2 * !B1 * !B2 * !X)	-0.00428	-0.00438	-0.00437
	(!A2 * B2 * !C1 * !X)	0.00327	0.00330	0.00328
	(!A2 * B2 * !C1 * !X)	-0.00441	-0.00443	-0.00441
	(!A2 * B1 * !B2 * !C1 * !X)	0.00331	0.00335	0.00332
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00440	-0.00443	-0.00441
	(!A2 * !B1 * !B2 * C1 * !X)	0.00339	0.00342	0.00339
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00441	-0.00443	-0.00441
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00338	0.00339	0.00338
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00441	-0.00442	-0.00441

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)**	-0.00178	-0.00179	-0.00178
	(A2 * B2 * C1 * X)	0.00206	0.00209	0.00207
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00156	-0.00157	-0.00156
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00229	0.00231	0.00229
	(A2 * B1 * !B2 * C1 * X)	-0.00178	-0.00179	-0.00178
	(A2 * B1 * !B2 * C1 * X)	0.00206	0.00209	0.00208
	(A2 * !B1 * !B2 * !X)	-0.00156	-0.00157	-0.00156
	(A2 * !B1 * !B2 * !X)	0.00228	0.00231	0.00229
	(!A2 * B2 * !C1 * !X)	-0.00134	-0.00146	-0.00145
	(!A2 * B2 * !C1 * !X)	0.00232	0.00234	0.00232
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00136	-0.00148	-0.00148
	(!A2 * B1 * !B2 * !C1 * !X)	0.00232	0.00234	0.00232
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00140	-0.00149	-0.00149
	(!A2 * !B1 * !B2 * C1 * !X)	0.00232	0.00233	0.00232
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00140	-0.00149	-0.00149
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00233	0.00233	0.00232

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	-0.00205	-0.00206	-0.00205
	(A2 * B2 * C1 * X)	0.00204	0.00205	0.00206
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00180	-0.00181	-0.00181
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00229	0.00232	0.00231
	(A2 * B1 * !B2 * C1 * X)	-0.00205	-0.00206	-0.00205
	(A2 * B1 * !B2 * C1 * X)	0.00204	0.00205	0.00206
	(A2 * !B1 * !B2 * !X)	-0.00180	-0.00181	-0.00181
	(A2 * !B1 * !B2 * !X)	0.00230	0.00232	0.00231
	(!A2 * B2 * !C1 * !X)	-0.00155	-0.00170	-0.00169
	(!A2 * B2 * !C1 * !X)	0.00233	0.00236	0.00233
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00158	-0.00171	-0.00170
	(!A2 * B1 * !B2 * !C1 * !X)	0.00233	0.00236	0.00233
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00163	-0.00173	-0.00173
	(!A2 * !B1 * !B2 * C1 * !X)	0.00233	0.00234	0.00233
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00163	-0.00173	-0.00173
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00233	0.00234	0.00233

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	-0.00376	-0.00377	-0.00376
	(A2 * B2 * C1 * X)	0.00406	0.00408	0.00409
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00346	-0.00348	-0.00348
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00434	0.00438	0.00437
	(A2 * B1 * !B2 * C1 * X)	-0.00376	-0.00377	-0.00376
	(A2 * B1 * !B2 * C1 * X)	0.00406	0.00408	0.00409
	(A2 * !B1 * !B2 * !X)	-0.00346	-0.00348	-0.00348
	(A2 * !B1 * !B2 * !X)	0.00434	0.00438	0.00437
	(!A2 * B2 * !C1 * !X)	-0.00303	-0.00330	-0.00328
	(!A2 * B2 * !C1 * !X)	0.00441	0.00447	0.00443
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00308	-0.00335	-0.00332
	(!A2 * B1 * !B2 * !C1 * !X)	0.00441	0.00447	0.00443
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00315	-0.00338	-0.00337
	(!A2 * !B1 * !B2 * C1 * !X)	0.00441	0.00447	0.00443
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00315	-0.00338	-0.00337
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00441	0.00446	0.00443

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)**	0.00184	0.00186	0.00184
	(A1 * B2 * C1 * X)	-0.00099	-0.00100	-0.00099
	(A1 * B2 * !C1 * !X)	0.00160	0.00163	0.00161
	(A1 * B2 * !C1 * !X)	-0.00210	-0.00214	-0.00213
	(A1 * B1 * !B2 * C1 * X)	0.00184	0.00186	0.00184
	(A1 * B1 * !B2 * C1 * X)	-0.00099	-0.00100	-0.00099
	(A1 * B1 * !B2 * !C1 * !X)	0.00160	0.00160	0.00161
	(A1 * B1 * !B2 * !C1 * !X)	-0.00210	-0.00213	-0.00213
	(A1 * !B1 * !B2 * C1 * !X)	0.00160	0.00162	0.00161
	(A1 * !B1 * !B2 * C1 * !X)	-0.00210	-0.00213	-0.00212
	(A1 * !B1 * !B2 * !C1 * !X)	0.00160	0.00163	0.00161
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00210	-0.00214	-0.00213
	(!A1 * B2 * !C1 * !X)	0.00148	0.00148	0.00149
	(!A1 * B2 * !C1 * !X)	-0.00215	-0.00214	-0.00215
	(!A1 * B1 * !B2 * !C1 * !X)	0.00149	0.00151	0.00150
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00215	-0.00216	-0.00215
	(!A1 * !B1 * !B2 * C1 * !X)	0.00152	0.00152	0.00152
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00216	-0.00216	-0.00215
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00152	0.00153	0.00151
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00216	-0.00216	-0.00215

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	0.00208	0.00210	0.00208
	(A1 * B2 * C1 * X)	-0.00098	-0.00099	-0.00098
	(A1 * B2 * !C1 * !X)	0.00184	0.00187	0.00185
	(A1 * B2 * !C1 * !X)	-0.00208	-0.00213	-0.00212
	(A1 * B1 * !B2 * C1 * X)	0.00208	0.00210	0.00208
	(A1 * B1 * !B2 * C1 * X)	-0.00098	-0.00099	-0.00098
	(A1 * B1 * !B2 * !C1 * !X)	0.00184	0.00187	0.00185
	(A1 * B1 * !B2 * !C1 * !X)	-0.00208	-0.00213	-0.00212
	(A1 * !B1 * !B2 * C1 * !X)	0.00184	0.00185	0.00185
	(A1 * !B1 * !B2 * C1 * !X)	-0.00208	-0.00212	-0.00211
	(A1 * !B1 * !B2 * !C1 * !X)	0.00184	0.00187	0.00184
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00208	-0.00213	-0.00212
	(!A1 * B2 * !C1 * !X)	0.00170	0.00172	0.00171
	(!A1 * B2 * !C1 * !X)	-0.00213	-0.00215	-0.00214
	(!A1 * B1 * !B2 * !C1 * !X)	0.00174	0.00176	0.00175
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00213	-0.00214	-0.00214
	(!A1 * !B1 * !B2 * C1 * !X)	0.00176	0.00176	0.00175
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00214	-0.00214	-0.00214
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00176	0.00176	0.00176
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00214	-0.00214	-0.00214

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	0.00340	0.00342	0.00340
	(A1 * B2 * C1 * X)	-0.00197	-0.00198	-0.00196
	(A1 * B2 * !C1 * !X)	0.00300	0.00303	0.00301
	(A1 * B2 * !C1 * !X)	-0.00408	-0.00416	-0.00415
	(A1 * B1 * !B2 * C1 * X)	0.00340	0.00343	0.00340
	(A1 * B1 * !B2 * C1 * X)	-0.00197	-0.00198	-0.00196
	(A1 * B1 * !B2 * !C1 * !X)	0.00300	0.00303	0.00301
	(A1 * B1 * !B2 * !C1 * !X)	-0.00408	-0.00416	-0.00415
	(A1 * !B1 * !B2 * C1 * !X)	0.00300	0.00303	0.00301
	(A1 * !B1 * !B2 * C1 * !X)	-0.00408	-0.00416	-0.00414
	(A1 * !B1 * !B2 * !C1 * !X)	0.00300	0.00305	0.00301
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00408	-0.00416	-0.00415
	(!A1 * B2 * !C1 * !X)	0.00283	0.00285	0.00283
	(!A1 * B2 * !C1 * !X)	-0.00420	-0.00421	-0.00420
	(!A1 * B1 * !B2 * !C1 * !X)	0.00285	0.00287	0.00285
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00420	-0.00422	-0.00420
	(!A1 * !B1 * !B2 * C1 * !X)	0.00289	0.00292	0.00288
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00421	-0.00423	-0.00420
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00289	0.00290	0.00288
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00421	-0.00421	-0.00420

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)**	-0.00178	-0.00179	-0.00183
	(A1 * B2 * C1 * X)	0.00105	0.00105	0.00101
	(A1 * B2 * !C1 * !X)	-0.00160	-0.00161	-0.00160
	(A1 * B2 * !C1 * !X)	0.00212	0.00214	0.00213
	(A1 * B1 * !B2 * C1 * X)	-0.00178	-0.00179	-0.00183
	(A1 * B1 * !B2 * C1 * X)	0.00105	0.00105	0.00101
	(A1 * B1 * !B2 * !C1 * !X)	-0.00160	-0.00160	-0.00160
	(A1 * B1 * !B2 * !C1 * !X)	0.00212	0.00214	0.00213
	(A1 * !B1 * !B2 * C1 * !X)	-0.00160	-0.00161	-0.00160
	(A1 * !B1 * !B2 * C1 * !X)	0.00212	0.00214	0.00212
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00160	-0.00161	-0.00160
	(A1 * !B1 * !B2 * !C1 * !X)	0.00213	0.00214	0.00213
	(!A1 * B2 * !C1 * !X)	-0.00135	-0.00148	-0.00149
	(!A1 * B2 * !C1 * !X)	0.00215	0.00218	0.00216
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00139	-0.00151	-0.00150
	(!A1 * B1 * !B2 * !C1 * !X)	0.00215	0.00218	0.00216
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00143	-0.00152	-0.00152
	(!A1 * !B1 * !B2 * C1 * !X)	0.00216	0.00217	0.00216
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00143	-0.00153	-0.00151
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00216	0.00217	0.00216

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	-0.00201	-0.00202	-0.00207
	(A1 * B2 * C1 * X)	0.00104	0.00105	0.00100
	(A1 * B2 * !C1 * !X)	-0.00183	-0.00185	-0.00184
	(A1 * B2 * !C1 * !X)	0.00211	0.00213	0.00212
	(A1 * B1 * !B2 * C1 * X)	-0.00201	-0.00202	-0.00207
	(A1 * B1 * !B2 * C1 * X)	0.00105	0.00105	0.00100
	(A1 * B1 * !B2 * !C1 * !X)	-0.00184	-0.00185	-0.00184
	(A1 * B1 * !B2 * !C1 * !X)	0.00211	0.00213	0.00212
	(A1 * !B1 * !B2 * C1 * !X)	-0.00183	-0.00185	-0.00184
	(A1 * !B1 * !B2 * C1 * !X)	0.00211	0.00212	0.00211
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00184	-0.00185	-0.00184
	(A1 * !B1 * !B2 * !C1 * !X)	0.00212	0.00213	0.00212
	(!A1 * B2 * !C1 * !X)	-0.00155	-0.00172	-0.00171
	(!A1 * B2 * !C1 * !X)	0.00214	0.00216	0.00215
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00159	-0.00176	-0.00175
	(!A1 * B1 * !B2 * !C1 * !X)	0.00214	0.00216	0.00215
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00164	-0.00176	-0.00175
	(!A1 * !B1 * !B2 * C1 * !X)	0.00214	0.00215	0.00214
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00165	-0.00176	-0.00176
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00214	0.00216	0.00214

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	-0.00326	-0.00327	-0.00337
	(A1 * B2 * C1 * X)	0.00210	0.00210	0.00201
	(A1 * B2 * !C1 * !X)	-0.00299	-0.00302	-0.00300
	(A1 * B2 * !C1 * !X)	0.00413	0.00417	0.00415
	(A1 * B1 * !B2 * C1 * X)	-0.00325	-0.00327	-0.00337
	(A1 * B1 * !B2 * C1 * X)	0.00210	0.00210	0.00201
	(A1 * B1 * !B2 * !C1 * !X)	-0.00299	-0.00302	-0.00300
	(A1 * B1 * !B2 * !C1 * !X)	0.00413	0.00416	0.00415
	(A1 * !B1 * !B2 * C1 * !X)	-0.00299	-0.00302	-0.00300
	(A1 * !B1 * !B2 * C1 * !X)	0.00412	0.00416	0.00414
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00298	-0.00302	-0.00300
	(A1 * !B1 * !B2 * !C1 * !X)	0.00412	0.00416	0.00415
	(!A1 * B2 * !C1 * !X)	-0.00251	-0.00284	-0.00283
	(!A1 * B2 * !C1 * !X)	0.00421	0.00426	0.00422
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00256	-0.00285	-0.00285
	(!A1 * B1 * !B2 * !C1 * !X)	0.00422	0.00426	0.00422
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00266	-0.00286	-0.00288
	(!A1 * !B1 * !B2 * C1 * !X)	0.00423	0.00424	0.00422
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00266	-0.00286	-0.00288
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00423	0.00425	0.00422

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)**	0.00202	0.00173	0.00169
	(A2 * B2 * C1 * X)	-0.00175	-0.00209	-0.00210
	(A2 * !B2 * !C1 * !X)	0.00156	0.00157	0.00155
	(A2 * !B2 * !C1 * !X)	-0.00220	-0.00221	-0.00219
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00160	0.00161	0.00160
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00215	-0.00218	-0.00218
	(A1 * !A2 * B2 * C1 * X)	0.00202	0.00173	0.00169
	(A1 * !A2 * B2 * C1 * X)	-0.00175	-0.00209	-0.00209
	(A1 * !A2 * !B2 * !C1 * !X)	0.00156	0.00157	0.00156
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00220	-0.00220	-0.00220
	(!A1 * !A2 * B2 * C1 * !X)	0.00067	0.00068	0.00067
	(!A1 * !A2 * B2 * C1 * !X)	-0.00215	-0.00220	-0.00219
	(!A1 * !A2 * B2 * !C1 * !X)	0.00087	0.00088	0.00087
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00215	-0.00220	-0.00219
	(!A1 * !A2 * !B2 * C1 * !X)	0.00068	0.00068	0.00070
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00219	-0.00220	-0.00218
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00091	0.00092	0.00092
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00220	-0.00221	-0.00220

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00230	0.00201	0.00197
	(A2 * B2 * C1 * X)	-0.00171	-0.00205	-0.00206
	(A2 * !B2 * !C1 * !X)	0.00175	0.00178	0.00176
	(A2 * !B2 * !C1 * !X)	-0.00221	-0.00223	-0.00221
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00183	0.00184	0.00183
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00217	-0.00220	-0.00219
	(A1 * !A2 * B2 * C1 * X)	0.00230	0.00201	0.00197
	(A1 * !A2 * B2 * C1 * X)	-0.00171	-0.00205	-0.00206
	(A1 * !A2 * !B2 * !C1 * !X)	0.00177	0.00178	0.00178
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00221	-0.00222	-0.00221
	(!A1 * !A2 * B2 * C1 * !X)	0.00075	0.00075	0.00075
	(!A1 * !A2 * B2 * C1 * !X)	-0.00218	-0.00222	-0.00221
	(!A1 * !A2 * B2 * !C1 * !X)	0.00097	0.00098	0.00097
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00219	-0.00222	-0.00221
	(!A1 * !A2 * !B2 * C1 * !X)	0.00076	0.00077	0.00078
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00221	-0.00222	-0.00220
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00102	0.00104	0.00102
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00223	-0.00225	-0.00223

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00482	0.00425	0.00419
	(A2 * B2 * C1 * X)	-0.00340	-0.00409	-0.00409
	(A2 * !B2 * !C1 * !X)	0.00378	0.00379	0.00378
	(A2 * !B2 * !C1 * !X)	-0.00440	-0.00441	-0.00440
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00390	0.00395	0.00391
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00427	-0.00437	-0.00435
	(A1 * !A2 * B2 * C1 * X)	0.00482	0.00425	0.00419
	(A1 * !A2 * B2 * C1 * X)	-0.00340	-0.00409	-0.00409
	(A1 * !A2 * !B2 * !C1 * !X)	0.00378	0.00380	0.00378
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00440	-0.00441	-0.00440
	(!A1 * !A2 * B2 * C1 * !X)	0.00192	0.00194	0.00192
	(!A1 * !A2 * B2 * C1 * !X)	-0.00430	-0.00442	-0.00440
	(!A1 * !A2 * B2 * !C1 * !X)	0.00230	0.00233	0.00230
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00431	-0.00443	-0.00441
	(!A1 * !A2 * !B2 * C1 * !X)	0.00195	0.00198	0.00199
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00440	-0.00443	-0.00439
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00239	0.00242	0.00240
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00443	-0.00447	-0.00444

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)**	-0.00168	-0.00168	-0.00167
	(A2 * B2 * C1 * X)	0.00211	0.00212	0.00211
	(A2 * !B2 * !C1 * !X)	-0.00144	-0.00154	-0.00155
	(A2 * !B2 * !C1 * !X)	0.00225	0.00222	0.00220
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00160	-0.00160	-0.00160
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00219	0.00219	0.00218
	(A1 * !A2 * B2 * C1 * X)	-0.00166	-0.00167	-0.00167
	(A1 * !A2 * B2 * C1 * X)	0.00209	0.00211	0.00211
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00141	-0.00154	-0.00156
	(A1 * !A2 * !B2 * !C1 * !X)	0.00226	0.00221	0.00220
	(!A1 * !A2 * B2 * C1 * !X)	-0.00063	-0.00064	-0.00066
	(!A1 * !A2 * B2 * C1 * !X)	0.00225	0.00226	0.00220
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00087	-0.00088	-0.00087
	(!A1 * !A2 * B2 * !C1 * !X)	0.00221	0.00222	0.00219
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00065	-0.00066	-0.00067
	(!A1 * !A2 * !B2 * C1 * !X)	0.00225	0.00228	0.00222
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00091	-0.00092	-0.00092
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00228	0.00230	0.00222

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	-0.00194	-0.00196	-0.00195
	(A2 * B2 * C1 * X)	0.00205	0.00208	0.00207
	(A2 * !B2 * !C1 * !X)	-0.00163	-0.00177	-0.00176
	(A2 * !B2 * !C1 * !X)	0.00228	0.00224	0.00222
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00182	-0.00183	-0.00182
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00218	0.00221	0.00219
	(A1 * !A2 * B2 * C1 * X)	-0.00194	-0.00196	-0.00195
	(A1 * !A2 * B2 * C1 * X)	0.00205	0.00208	0.00207
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00160	-0.00177	-0.00177
	(A1 * !A2 * !B2 * !C1 * !X)	0.00229	0.00224	0.00222
	(!A1 * !A2 * B2 * C1 * !X)	-0.00070	-0.00071	-0.00073
	(!A1 * !A2 * B2 * C1 * !X)	0.00227	0.00229	0.00222
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00097	-0.00098	-0.00097
	(!A1 * !A2 * B2 * !C1 * !X)	0.00224	0.00226	0.00221
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00072	-0.00073	-0.00075
	(!A1 * !A2 * !B2 * C1 * !X)	0.00229	0.00231	0.00225
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00102	-0.00104	-0.00102
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00233	0.00234	0.00225

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	-0.00416	-0.00416	-0.00415
	(A2 * B2 * C1 * X)	0.00409	0.00410	0.00411
	(A2 * !B2 * !C1 * !X)	-0.00355	-0.00379	-0.00378
	(A2 * !B2 * !C1 * !X)	0.00451	0.00445	0.00442
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00390	-0.00391	-0.00390
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00435	0.00437	0.00435
	(A1 * !A2 * B2 * C1 * X)	-0.00416	-0.00416	-0.00414
	(A1 * !A2 * B2 * C1 * X)	0.00409	0.00411	0.00411
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00351	-0.00380	-0.00378
	(A1 * !A2 * !B2 * !C1 * !X)	0.00455	0.00445	0.00442
	(!A1 * !A2 * B2 * C1 * !X)	-0.00179	-0.00183	-0.00188
	(!A1 * !A2 * B2 * C1 * !X)	0.00459	0.00466	0.00444
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00230	-0.00233	-0.00230
	(!A1 * !A2 * B2 * !C1 * !X)	0.00452	0.00455	0.00441
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00187	-0.00189	-0.00192
	(!A1 * !A2 * !B2 * C1 * !X)	0.00454	0.00458	0.00447
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00239	-0.00242	-0.00240
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00464	0.00468	0.00450

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)**	0.00205	0.00207	0.00206
	(A2 * B1 * C1 * X)	-0.00101	-0.00102	-0.00101
	(A2 * B1 * !C1 * !X)	0.00177	0.00180	0.00178
	(A2 * B1 * !C1 * !X)	-0.00215	-0.00218	-0.00218
	(A2 * !B1 * !C1 * !X)	0.00173	0.00174	0.00172
	(A2 * !B1 * !C1 * !X)	-0.00221	-0.00222	-0.00220
	(A1 * !A2 * B1 * C1 * X)	0.00205	0.00207	0.00206
	(A1 * !A2 * B1 * C1 * X)	-0.00101	-0.00102	-0.00101
	(A1 * !A2 * B1 * !C1 * !X)	0.00177	0.00180	0.00178
	(A1 * !A2 * B1 * !C1 * !X)	-0.00215	-0.00219	-0.00218
	(A1 * !A2 * !B1 * !C1 * !X)	0.00174	0.00175	0.00173
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00221	-0.00222	-0.00220
	(!A1 * !A2 * B1 * C1 * !X)	0.00078	0.00079	0.00078
	(!A1 * !A2 * B1 * C1 * !X)	-0.00215	-0.00219	-0.00220
	(!A1 * !A2 * B1 * !C1 * !X)	0.00098	0.00099	0.00098
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00216	-0.00221	-0.00220
	(!A1 * !A2 * !B1 * C1 * !X)	0.00080	0.00080	0.00082
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00221	-0.00221	-0.00219
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00104	0.00104	0.00103
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00222	-0.00222	-0.00221

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	0.00222	0.00224	0.00222
	(A2 * B1 * C1 * X)	-0.00099	-0.00100	-0.00098
	(A2 * B1 * !C1 * !X)	0.00196	0.00195	0.00196
	(A2 * B1 * !C1 * !X)	-0.00212	-0.00214	-0.00215
	(A2 * !B1 * !C1 * !X)	0.00190	0.00190	0.00189
	(A2 * !B1 * !C1 * !X)	-0.00218	-0.00218	-0.00217
	(A1 * !A2 * B1 * C1 * X)	0.00222	0.00224	0.00222
	(A1 * !A2 * B1 * C1 * X)	-0.00098	-0.00100	-0.00098
	(A1 * !A2 * B1 * !C1 * !X)	0.00196	0.00196	0.00196
	(A1 * !A2 * B1 * !C1 * !X)	-0.00212	-0.00215	-0.00215
	(A1 * !A2 * !B1 * !C1 * !X)	0.00192	0.00193	0.00191
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00218	-0.00218	-0.00217
	(!A1 * !A2 * B1 * C1 * !X)	0.00082	0.00082	0.00082
	(!A1 * !A2 * B1 * C1 * !X)	-0.00213	-0.00216	-0.00217
	(!A1 * !A2 * B1 * !C1 * !X)	0.00104	0.00105	0.00104
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00214	-0.00218	-0.00217
	(!A1 * !A2 * !B1 * C1 * !X)	0.00084	0.00085	0.00086
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00217	-0.00218	-0.00216
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00110	0.00110	0.00110
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00219	-0.00220	-0.00219

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	0.00351	0.00354	0.00351
	(A2 * B1 * C1 * X)	-0.00198	-0.00200	-0.00197
	(A2 * B1 * !C1 * !X)	0.00307	0.00309	0.00308
	(A2 * B1 * !C1 * !X)	-0.00415	-0.00422	-0.00421
	(A2 * !B1 * !C1 * !X)	0.00297	0.00301	0.00299
	(A2 * !B1 * !C1 * !X)	-0.00425	-0.00428	-0.00427
	(A1 * !A2 * B1 * C1 * X)	0.00351	0.00354	0.00352
	(A1 * !A2 * B1 * C1 * X)	-0.00198	-0.00200	-0.00197
	(A1 * !A2 * B1 * !C1 * !X)	0.00308	0.00309	0.00308
	(A1 * !A2 * B1 * !C1 * !X)	-0.00416	-0.00422	-0.00421
	(A1 * !A2 * !B1 * !C1 * !X)	0.00298	0.00302	0.00300
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00425	-0.00429	-0.00427
	(!A1 * !A2 * B1 * C1 * !X)	0.00118	0.00119	0.00118
	(!A1 * !A2 * B1 * C1 * !X)	-0.00417	-0.00425	-0.00426
	(!A1 * !A2 * B1 * !C1 * !X)	0.00157	0.00159	0.00157
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00419	-0.00428	-0.00426
	(!A1 * !A2 * !B1 * C1 * !X)	0.00121	0.00122	0.00125
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00427	-0.00430	-0.00425
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00165	0.00167	0.00166
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00430	-0.00432	-0.00430

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)**	-0.00199	-0.00200	-0.00204
	(A2 * B1 * C1 * X)	0.00108	0.00108	0.00103
	(A2 * B1 * !C1 * !X)	-0.00177	-0.00178	-0.00177
	(A2 * B1 * !C1 * !X)	0.00218	0.00218	0.00218
	(A2 * !B1 * !C1 * !X)	-0.00161	-0.00172	-0.00172
	(A2 * !B1 * !C1 * !X)	0.00226	0.00222	0.00221
	(A1 * !A2 * B1 * C1 * X)	-0.00199	-0.00200	-0.00204
	(A1 * !A2 * B1 * C1 * X)	0.00108	0.00108	0.00103
	(A1 * !A2 * B1 * !C1 * !X)	-0.00177	-0.00178	-0.00177
	(A1 * !A2 * B1 * !C1 * !X)	0.00219	0.00219	0.00218
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00158	-0.00172	-0.00173
	(A1 * !A2 * !B1 * !C1 * !X)	0.00227	0.00222	0.00221
	(!A1 * !A2 * B1 * C1 * !X)	-0.00072	-0.00073	-0.00076
	(!A1 * !A2 * B1 * C1 * !X)	0.00230	0.00230	0.00221
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00098	-0.00099	-0.00098
	(!A1 * !A2 * B1 * !C1 * !X)	0.00225	0.00226	0.00220
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00075	-0.00077	-0.00078
	(!A1 * !A2 * !B1 * C1 * !X)	0.00225	0.00229	0.00223
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00104	-0.00104	-0.00103
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00231	0.00233	0.00224

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	-0.00217	-0.00218	-0.00221
	(A2 * B1 * C1 * X)	0.00104	0.00104	0.00100
	(A2 * B1 * !C1 * !X)	-0.00195	-0.00195	-0.00195
	(A2 * B1 * !C1 * !X)	0.00214	0.00216	0.00215
	(A2 * !B1 * !C1 * !X)	-0.00176	-0.00190	-0.00189
	(A2 * !B1 * !C1 * !X)	0.00223	0.00220	0.00218
	(A1 * !A2 * B1 * C1 * X)	-0.00216	-0.00218	-0.00221
	(A1 * !A2 * B1 * C1 * X)	0.00104	0.00105	0.00100
	(A1 * !A2 * B1 * !C1 * !X)	-0.00194	-0.00196	-0.00195
	(A1 * !A2 * B1 * !C1 * !X)	0.00213	0.00215	0.00215
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00173	-0.00191	-0.00190
	(A1 * !A2 * !B1 * !C1 * !X)	0.00225	0.00220	0.00218
	(!A1 * !A2 * B1 * C1 * !X)	-0.00075	-0.00077	-0.00080
	(!A1 * !A2 * B1 * C1 * !X)	0.00227	0.00228	0.00218
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00104	-0.00105	-0.00104
	(!A1 * !A2 * B1 * !C1 * !X)	0.00221	0.00223	0.00217
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00079	-0.00081	-0.00082
	(!A1 * !A2 * !B1 * C1 * !X)	0.00224	0.00226	0.00220
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00110	-0.00110	-0.00110
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00230	0.00232	0.00222

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	-0.00336	-0.00340	-0.00349
	(A2 * B1 * C1 * X)	0.00209	0.00211	0.00201
	(A2 * B1 * !C1 * !X)	-0.00306	-0.00308	-0.00306
	(A2 * B1 * !C1 * !X)	0.00419	0.00422	0.00421
	(A2 * !B1 * !C1 * !X)	-0.00274	-0.00299	-0.00298
	(A2 * !B1 * !C1 * !X)	0.00438	0.00432	0.00429
	(A1 * !A2 * B1 * C1 * X)	-0.00336	-0.00340	-0.00349
	(A1 * !A2 * B1 * C1 * X)	0.00209	0.00212	0.00202
	(A1 * !A2 * B1 * !C1 * !X)	-0.00306	-0.00308	-0.00306
	(A1 * !A2 * B1 * !C1 * !X)	0.00419	0.00422	0.00421
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00270	-0.00299	-0.00298
	(A1 * !A2 * !B1 * !C1 * !X)	0.00441	0.00432	0.00429
	(!A1 * !A2 * B1 * C1 * !X)	-0.00109	-0.00111	-0.00115
	(!A1 * !A2 * B1 * C1 * !X)	0.00437	0.00440	0.00426
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00157	-0.00159	-0.00157
	(!A1 * !A2 * B1 * !C1 * !X)	0.00432	0.00435	0.00426
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00114	-0.00117	-0.00118
	(!A1 * !A2 * !B1 * C1 * !X)	0.00438	0.00442	0.00433
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00165	-0.00167	-0.00166
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00446	0.00452	0.00435

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)	0.00067	0.00066	0.00062
	(A2 * !B1 * !B2 * !X)	-0.00256	-0.00256	-0.00263
	(!A2 * !B1 * !B2 * !X)	0.00067	0.00066	0.00062
	(!A2 * !B1 * !B2 * !X)	-0.00256	-0.00256	-0.00263
	(!A1 * !A2 * B2 * !X)	0.00065	0.00065	0.00057
	(!A1 * !A2 * B2 * !X)	-0.00245	-0.00245	-0.00261
	(!A1 * !A2 * B1 * !B2 * !X)	0.00066	0.00066	0.00058
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00247	-0.00247	-0.00262
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	0.00077	0.00076	0.00073
	(A2 * !B1 * !B2 * !X)	-0.00257	-0.00256	-0.00264
	(!A2 * !B1 * !B2 * !X)	0.00077	0.00077	0.00073
	(!A2 * !B1 * !B2 * !X)	-0.00257	-0.00258	-0.00264
	(!A1 * !A2 * B2 * !X)	0.00078	0.00077	0.00069
	(!A1 * !A2 * B2 * !X)	-0.00244	-0.00244	-0.00262
	(!A1 * !A2 * B1 * !B2 * !X)	0.00078	0.00078	0.00070
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00246	-0.00247	-0.00262
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	0.00113	0.00112	0.00104
	(A2 * !B1 * !B2 * !X)	-0.00485	-0.00485	-0.00498
	(!A2 * !B1 * !B2 * !X)	0.00113	0.00112	0.00104
	(!A2 * !B1 * !B2 * !X)	-0.00485	-0.00485	-0.00498
	(!A1 * !A2 * B2 * !X)	0.00111	0.00110	0.00096
	(!A1 * !A2 * B2 * !X)	-0.00464	-0.00464	-0.00494
	(!A1 * !A2 * B1 * !B2 * !X)	0.00112	0.00111	0.00098
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00468	-0.00468	-0.00495

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)	-0.00061	-0.00062	-0.00060
	(A2 * !B1 * !B2 * !X)	0.00263	0.00268	0.00264
	(!A2 * !B1 * !B2 * !X)	-0.00061	-0.00062	-0.00060
	(!A2 * !B1 * !B2 * !X)	0.00263	0.00268	0.00264
	(!A1 * !A2 * B2 * !X)	-0.00057	-0.00057	-0.00057
	(!A1 * !A2 * B2 * !X)	0.00263	0.00263	0.00264
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00058	-0.00059	-0.00058
	(!A1 * !A2 * B1 * !B2 * !X)	0.00263	0.00268	0.00264
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	-0.00071	-0.00072	-0.00071
	(A2 * !B1 * !B2 * !X)	0.00265	0.00270	0.00265
	(!A2 * !B1 * !B2 * !X)	-0.00071	-0.00072	-0.00071
	(!A2 * !B1 * !B2 * !X)	0.00265	0.00269	0.00265
	(!A1 * !A2 * B2 * !X)	-0.00068	-0.00070	-0.00068
	(!A1 * !A2 * B2 * !X)	0.00265	0.00269	0.00265
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00069	-0.00070	-0.00069
	(!A1 * !A2 * B1 * !B2 * !X)	0.00264	0.00269	0.00265
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	-0.00100	-0.00103	-0.00100
	(A2 * !B1 * !B2 * !X)	0.00497	0.00508	0.00500
	(!A2 * !B1 * !B2 * !X)	-0.00100	-0.00102	-0.00100
	(!A2 * !B1 * !B2 * !X)	0.00497	0.00504	0.00500
	(!A1 * !A2 * B2 * !X)	-0.00095	-0.00097	-0.00095
	(!A1 * !A2 * B2 * !X)	0.00498	0.00508	0.00500
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00096	-0.00098	-0.00097
	(!A1 * !A2 * B1 * !B2 * !X)	0.00497	0.00504	0.00500

SKY130_FD_SC_HS__O22AIx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00285	0.00281	0.00289	0.00296	0.64904
sky130_fd_sc_hs__o22ai_2	0.00539	0.00554	0.00553	0.00544	1.15304
sky130_fd_sc_hs__o22ai_4	0.01109	0.01058	0.01147	0.01077	1.96549

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o22ai_1	0.00000	0.06097	0.20266
sky130_fd_sc_hs__o22ai_2	0.00000	0.12194	0.40531
sky130_fd_sc_hs__o22ai_4	0.00000	0.24388	0.81063

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)	0.10212	0.88454	10.09030
	A2->Y (FR)	0.08877	0.89471	10.45200
	B1->Y (FR)	0.06443	0.84677	10.05920
	B2->Y (FR)	0.05176	0.85472	10.41350
sky130_fd_sc_hs__o22ai_2	A1->Y (FR)	0.10317	0.76933	9.97079
	A2->Y (FR)	0.08569	0.77836	10.35230
	B1->Y (FR)	0.06177	0.72457	9.88548
	B2->Y (FR)	0.04271	0.73482	10.27040
sky130_fd_sc_hs__o22ai_4	A1->Y (FR)	0.10043	0.64537	9.26613
	A2->Y (FR)	0.08458	0.67107	9.81985
	B1->Y (FR)	0.05939	0.60797	9.28281
	B2->Y (FR)	0.04264	0.62886	9.74856

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22ai_1	A1->Y (RF)	0.04361	0.37410	4.08940
	A2->Y (RF)	0.03714	0.36432	4.06418
	B1->Y (RF)	0.03530	0.42105	4.81142
	B2->Y (RF)	0.02928	0.40760	4.74035
sky130_fd_sc_hs__o22ai_2	A1->Y (RF)	0.04474	0.32036	3.96654
	A2->Y (RF)	0.03610	0.30711	3.92567
	B1->Y (RF)	0.03575	0.36954	4.78771
	B2->Y (RF)	0.02681	0.34935	4.67084
sky130_fd_sc_hs__o22ai_4	A1->Y (RF)	0.03257	0.23585	3.46266
	A2->Y (RF)	0.02759	0.22175	3.43025
	B1->Y (RF)	0.02470	0.28473	4.36158
	B2->Y (RF)	0.02511	0.30234	4.59020

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.00197	0.00211	0.01378
	A1	0.01179	0.01194	0.02314
	A2	0.00207	0.00296	0.02114
	A2	0.01037	0.01122	0.02818
	B1	-0.00029	-0.00005	0.01154
	B1	0.00662	0.00688	0.01850
	B2	-0.00031	0.00111	0.01878
	B2	0.00521	0.00643	0.02435
sky130_fd_sc_hs__o22ai_2	A1	0.00357	0.00378	0.02672
	A1	0.02314	0.02338	0.04478
	A2	0.00346	0.00532	0.04002
	A2	0.02036	0.02217	0.05466
	B1	-0.00091	-0.00040	0.02212
	B1	0.01282	0.01330	0.03590
	B2	-0.00115	0.00153	0.03588
	B2	0.00966	0.01232	0.04679
sky130_fd_sc_hs__o22ai_4	A1	0.00529	0.00656	0.06009
	A1	0.04397	0.04525	0.09655
	A2	0.00520	0.01009	0.08454
	A2	0.03803	0.04280	0.11336
	B1	-0.00218	-0.00045	0.05150
	B1	0.02512	0.02686	0.07920
	B2	-0.00211	0.00370	0.07642
	B2	0.01937	0.02517	0.09798

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.01280	0.01300	0.02177
	A1	0.00135	0.00149	0.01034
	A2	0.01019	0.01046	0.01885
	A2	0.00017	0.00045	0.00886
	B1	0.01077	0.01120	0.02049
	B1	0.00121	0.00161	0.01161
	B2	0.00567	0.00632	0.01641
	B2	0.00016	0.00079	0.01047
sky130_fd_sc_hs__o22ai_2	A1	0.02638	0.02662	0.04385
	A1	0.00624	0.00641	0.02345
	A2	0.02077	0.02135	0.03874
	A2	-0.00046	0.00022	0.01678
	B1	0.01645	0.01731	0.03737
	B1	0.00284	0.00366	0.02338
	B2	0.01023	0.01166	0.03134
	B2	-0.00055	0.00085	0.01996
sky130_fd_sc_hs__o22ai_4	A1	0.04964	0.05026	0.08882
	A1	0.00440	0.00515	0.04462
	A2	0.03905	0.04029	0.07673
	A2	-0.00070	0.00088	0.03803
	B1	0.04220	0.04381	0.08306
	B1	0.00440	0.00628	0.04828
	B2	0.02074	0.02413	0.06377
	B2	-0.00073	0.00263	0.04196

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00235	0.00205	0.00202
	(A2 * B2 * !Y)	-0.00201	-0.00236	-0.00236
	(A2 * B1 * !B2 * !Y)	0.00235	0.00205	0.00202
	(A2 * B1 * !B2 * !Y)	-0.00201	-0.00236	-0.00236
	(A2 * !B1 * !B2 * Y)	0.00202	0.00203	0.00202
	(A2 * !B1 * !B2 * Y)	-0.00232	-0.00236	-0.00235
	(!A2 * !B1 * !B2 * Y)	0.00191	0.00192	0.00192
	(!A2 * !B1 * !B2 * Y)	-0.00236	-0.00238	-0.00237
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00454	0.00383	0.00376
	(A2 * B2 * !Y)	-0.00382	-0.00466	-0.00467
	(A2 * B1 * !B2 * !Y)	0.00455	0.00383	0.00376
	(A2 * B1 * !B2 * !Y)	-0.00382	-0.00466	-0.00467
	(A2 * !B1 * !B2 * Y)	0.00374	0.00379	0.00374
	(A2 * !B1 * !B2 * Y)	-0.00457	-0.00469	-0.00467
	(!A2 * !B1 * !B2 * Y)	0.00357	0.00363	0.00360
	(!A2 * !B1 * !B2 * Y)	-0.00472	-0.00476	-0.00474
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.00913	0.00771	0.00755
	(A2 * B2 * !Y)	-0.00762	-0.00922	-0.00923
	(A2 * B1 * !B2 * !Y)	0.00913	0.00771	0.00755
	(A2 * B1 * !B2 * !Y)	-0.00762	-0.00922	-0.00924
	(A2 * !B1 * !B2 * Y)	0.00735	0.00742	0.00733
	(A2 * !B1 * !B2 * Y)	-0.00929	-0.00947	-0.00940
	(!A2 * !B1 * !B2 * Y)	0.00694	0.00697	0.00697
	(!A2 * !B1 * !B2 * Y)	-0.00954	-0.00956	-0.00955

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00201	-0.00202	-0.00201
	(A2 * B2 * !Y)	0.00235	0.00238	0.00236
	(A2 * B1 * !B2 * !Y)	-0.00201	-0.00202	-0.00201
	(A2 * B1 * !B2 * !Y)	0.00237	0.00238	0.00236
	(A2 * !B1 * !B2 * Y)	-0.00201	-0.00202	-0.00202
	(A2 * !B1 * !B2 * Y)	0.00234	0.00236	0.00235
	(!A2 * !B1 * !B2 * Y)	-0.00181	-0.00192	-0.00192
	(!A2 * !B1 * !B2 * Y)	0.00241	0.00240	0.00238
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00375	-0.00376	-0.00374
	(A2 * B2 * !Y)	0.00467	0.00471	0.00467
	(A2 * B1 * !B2 * !Y)	-0.00375	-0.00376	-0.00374
	(A2 * B1 * !B2 * !Y)	0.00467	0.00471	0.00467
	(A2 * !B1 * !B2 * Y)	-0.00374	-0.00374	-0.00374
	(A2 * !B1 * !B2 * Y)	0.00468	0.00469	0.00467
	(!A2 * !B1 * !B2 * Y)	-0.00333	-0.00360	-0.00360
	(!A2 * !B1 * !B2 * Y)	0.00482	0.00479	0.00475
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00752	-0.00754	-0.00749
	(A2 * B2 * !Y)	0.00921	0.00927	0.00923
	(A2 * B1 * !B2 * !Y)	-0.00752	-0.00754	-0.00749
	(A2 * B1 * !B2 * !Y)	0.00921	0.00927	0.00924
	(A2 * !B1 * !B2 * Y)	-0.00732	-0.00735	-0.00732
	(A2 * !B1 * !B2 * Y)	0.00939	0.00947	0.00940
	(!A2 * !B1 * !B2 * Y)	-0.00648	-0.00697	-0.00697
	(!A2 * !B1 * !B2 * Y)	0.00968	0.00966	0.00958

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	0.00199	0.00201	0.00199
	(A1 * B2 * !Y)	-0.00109	-0.00110	-0.00109
	(A1 * B1 * !B2 * !Y)	0.00199	0.00201	0.00199
	(A1 * B1 * !B2 * !Y)	-0.00109	-0.00110	-0.00109
	(A1 * !B1 * !B2 * Y)	0.00183	0.00185	0.00184
	(A1 * !B1 * !B2 * Y)	-0.00222	-0.00226	-0.00226
	(!A1 * !B1 * !B2 * Y)	0.00179	0.00179	0.00178
	(!A1 * !B1 * !B2 * Y)	-0.00229	-0.00229	-0.00229
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	0.00425	0.00429	0.00426
	(A1 * B2 * !Y)	-0.00216	-0.00218	-0.00216
	(A1 * B1 * !B2 * !Y)	0.00425	0.00429	0.00426
	(A1 * B1 * !B2 * !Y)	-0.00216	-0.00218	-0.00216
	(A1 * !B1 * !B2 * Y)	0.00376	0.00377	0.00374
	(A1 * !B1 * !B2 * Y)	-0.00464	-0.00473	-0.00470
	(!A1 * !B1 * !B2 * Y)	0.00357	0.00361	0.00358
	(!A1 * !B1 * !B2 * Y)	-0.00478	-0.00481	-0.00479
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	0.00789	0.00792	0.00785
	(A1 * B2 * !Y)	-0.00425	-0.00425	-0.00421
	(A1 * B1 * !B2 * !Y)	0.00789	0.00793	0.00785
	(A1 * B1 * !B2 * !Y)	-0.00425	-0.00425	-0.00421
	(A1 * !B1 * !B2 * Y)	0.00720	0.00730	0.00722
	(A1 * !B1 * !B2 * Y)	-0.00877	-0.00889	-0.00889
	(!A1 * !B1 * !B2 * Y)	0.00691	0.00696	0.00688
	(!A1 * !B1 * !B2 * Y)	-0.00909	-0.00913	-0.00907

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	-0.00192	-0.00193	-0.00198
	(A1 * B2 * !Y)	0.00116	0.00116	0.00111
	(A1 * B1 * !B2 * !Y)	-0.00192	-0.00193	-0.00198
	(A1 * B1 * !B2 * !Y)	0.00116	0.00116	0.00111
	(A1 * !B1 * !B2 * Y)	-0.00183	-0.00184	-0.00183
	(A1 * !B1 * !B2 * Y)	0.00225	0.00226	0.00226
	(!A1 * !B1 * !B2 * Y)	-0.00165	-0.00176	-0.00178
	(!A1 * !B1 * !B2 * Y)	0.00231	0.00231	0.00229
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	-0.00406	-0.00409	-0.00423
	(A1 * B2 * !Y)	0.00234	0.00234	0.00220
	(A1 * B1 * !B2 * !Y)	-0.00406	-0.00409	-0.00423
	(A1 * B1 * !B2 * !Y)	0.00234	0.00234	0.00220
	(A1 * !B1 * !B2 * Y)	-0.00372	-0.00375	-0.00373
	(A1 * !B1 * !B2 * Y)	0.00468	0.00473	0.00470
	(!A1 * !B1 * !B2 * Y)	-0.00331	-0.00359	-0.00358
	(!A1 * !B1 * !B2 * Y)	0.00484	0.00483	0.00480
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	-0.00756	-0.00761	-0.00782
	(A1 * B2 * !Y)	0.00446	0.00447	0.00428
	(A1 * B1 * !B2 * !Y)	-0.00756	-0.00761	-0.00782
	(A1 * B1 * !B2 * !Y)	0.00446	0.00448	0.00428
	(A1 * !B1 * !B2 * Y)	-0.00719	-0.00722	-0.00720
	(A1 * !B1 * !B2 * Y)	0.00885	0.00889	0.00889
	(!A1 * !B1 * !B2 * Y)	-0.00642	-0.00690	-0.00688
	(!A1 * !B1 * !B2 * Y)	0.00919	0.00916	0.00910

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00243	0.00213	0.00209
	(A2 * B2 * !Y)	-0.00196	-0.00231	-0.00231
	(A1 * !A2 * B2 * !Y)	0.00243	0.00213	0.00209
	(A1 * !A2 * B2 * !Y)	-0.00196	-0.00231	-0.00231
	(!A1 * !A2 * B2 * Y)	0.00071	0.00072	0.00071
	(!A1 * !A2 * B2 * Y)	-0.00275	-0.00280	-0.00278
	(!A1 * !A2 * !B2 * Y)	0.00080	0.00080	0.00074
	(!A1 * !A2 * !B2 * Y)	-0.00269	-0.00270	-0.00280
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00455	0.00381	0.00373
	(A2 * B2 * !Y)	-0.00386	-0.00472	-0.00474
	(A1 * !A2 * B2 * !Y)	0.00455	0.00381	0.00373
	(A1 * !A2 * B2 * !Y)	-0.00386	-0.00472	-0.00474
	(!A1 * !A2 * B2 * Y)	0.00118	0.00119	0.00118
	(!A1 * !A2 * B2 * Y)	-0.00540	-0.00553	-0.00550
	(!A1 * !A2 * !B2 * Y)	0.00135	0.00135	0.00124
	(!A1 * !A2 * !B2 * Y)	-0.00535	-0.00538	-0.00557
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.00951	0.00810	0.00796
	(A2 * B2 * !Y)	-0.00739	-0.00901	-0.00901
	(A1 * !A2 * B2 * !Y)	0.00950	0.00810	0.00796
	(A1 * !A2 * B2 * !Y)	-0.00742	-0.00901	-0.00901
	(!A1 * !A2 * B2 * Y)	0.00224	0.00225	0.00222
	(!A1 * !A2 * B2 * Y)	-0.01103	-0.01126	-0.01116
	(!A1 * !A2 * !B2 * Y)	0.00252	0.00252	0.00233
	(!A1 * !A2 * !B2 * Y)	-0.01092	-0.01098	-0.01127

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00208	-0.00209	-0.00208
	(A2 * B2 * !Y)	0.00230	0.00233	0.00232
	(A1 * !A2 * B2 * !Y)	-0.00208	-0.00208	-0.00208
	(A1 * !A2 * B2 * !Y)	0.00230	0.00232	0.00232
	(!A1 * !A2 * B2 * Y)	-0.00070	-0.00070	-0.00071
	(!A1 * !A2 * B2 * Y)	0.00279	0.00282	0.00278
	(!A1 * !A2 * !B2 * Y)	-0.00072	-0.00073	-0.00072
	(!A1 * !A2 * !B2 * Y)	0.00282	0.00286	0.00281
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00372	-0.00373	-0.00371
	(A2 * B2 * !Y)	0.00474	0.00476	0.00474
	(A1 * !A2 * B2 * !Y)	-0.00372	-0.00373	-0.00371
	(A1 * !A2 * B2 * !Y)	0.00474	0.00476	0.00474
	(!A1 * !A2 * B2 * Y)	-0.00116	-0.00117	-0.00118
	(!A1 * !A2 * B2 * Y)	0.00552	0.00553	0.00550
	(!A1 * !A2 * !B2 * Y)	-0.00119	-0.00122	-0.00119
	(!A1 * !A2 * !B2 * Y)	0.00557	0.00568	0.00559
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00791	-0.00797	-0.00792
	(A2 * B2 * !Y)	0.00893	0.00905	0.00901
	(A1 * !A2 * B2 * !Y)	-0.00791	-0.00797	-0.00792
	(A1 * !A2 * B2 * !Y)	0.00894	0.00906	0.00901
	(!A1 * !A2 * B2 * Y)	-0.00220	-0.00220	-0.00222
	(!A1 * !A2 * B2 * Y)	0.01122	0.01128	0.01116
	(!A1 * !A2 * !B2 * Y)	-0.00227	-0.00226	-0.00225
	(!A1 * !A2 * !B2 * Y)	0.01131	0.01133	0.01131

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	0.00214	0.00216	0.00214
	(A2 * B1 * !Y)	-0.00106	-0.00106	-0.00105
	(A1 * !A2 * B1 * !Y)	0.00214	0.00218	0.00214
	(A1 * !A2 * B1 * !Y)	-0.00105	-0.00107	-0.00105
	(!A1 * !A2 * B1 * Y)	0.00059	0.00059	0.00058
	(!A1 * !A2 * B1 * Y)	-0.00274	-0.00276	-0.00275
	(!A1 * !A2 * !B1 * Y)	0.00067	0.00067	0.00061
	(!A1 * !A2 * !B1 * Y)	-0.00268	-0.00269	-0.00278
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	0.00405	0.00414	0.00408
	(A2 * B1 * !Y)	-0.00215	-0.00221	-0.00217
	(A1 * !A2 * B1 * !Y)	0.00408	0.00414	0.00408
	(A1 * !A2 * B1 * !Y)	-0.00218	-0.00221	-0.00217
	(!A1 * !A2 * B1 * Y)	0.00113	0.00113	0.00112
	(!A1 * !A2 * B1 * Y)	-0.00533	-0.00543	-0.00539
	(!A1 * !A2 * !B1 * Y)	0.00127	0.00129	0.00117
	(!A1 * !A2 * !B1 * Y)	-0.00524	-0.00531	-0.00548
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	0.00794	0.00808	0.00795
	(A2 * B1 * !Y)	-0.00426	-0.00432	-0.00424
	(A1 * !A2 * B1 * !Y)	0.00794	0.00808	0.00795
	(A1 * !A2 * B1 * !Y)	-0.00426	-0.00432	-0.00424
	(!A1 * !A2 * B1 * Y)	0.00212	0.00212	0.00210
	(!A1 * !A2 * B1 * Y)	-0.01053	-0.01069	-0.01059
	(!A1 * !A2 * !B1 * Y)	0.00237	0.00239	0.00220
	(!A1 * !A2 * !B1 * Y)	-0.01037	-0.01047	-0.01074

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	-0.00208	-0.00210	-0.00213
	(A2 * B1 * !Y)	0.00110	0.00111	0.00107
	(A1 * !A2 * B1 * !Y)	-0.00208	-0.00210	-0.00213
	(A1 * !A2 * B1 * !Y)	0.00111	0.00111	0.00107
	(!A1 * !A2 * B1 * Y)	-0.00057	-0.00058	-0.00058
	(!A1 * !A2 * B1 * Y)	0.00274	0.00276	0.00275
	(!A1 * !A2 * !B1 * Y)	-0.00058	-0.00060	-0.00059
	(!A1 * !A2 * !B1 * Y)	0.00277	0.00283	0.00279
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	-0.00387	-0.00392	-0.00406
	(A2 * B1 * !Y)	0.00233	0.00235	0.00221
	(A1 * !A2 * B1 * !Y)	-0.00387	-0.00390	-0.00406
	(A1 * !A2 * B1 * !Y)	0.00232	0.00234	0.00221
	(!A1 * !A2 * B1 * Y)	-0.00111	-0.00112	-0.00112
	(!A1 * !A2 * B1 * Y)	0.00541	0.00543	0.00539
	(!A1 * !A2 * !B1 * Y)	-0.00113	-0.00113	-0.00113
	(!A1 * !A2 * !B1 * Y)	0.00547	0.00549	0.00550
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	-0.00764	-0.00768	-0.00792
	(A2 * B1 * !Y)	0.00447	0.00449	0.00431
	(A1 * !A2 * B1 * !Y)	-0.00763	-0.00769	-0.00792
	(A1 * !A2 * B1 * !Y)	0.00447	0.00450	0.00431
	(!A1 * !A2 * B1 * Y)	-0.00207	-0.00209	-0.00209
	(!A1 * !A2 * B1 * Y)	0.01064	0.01069	0.01059
	(!A1 * !A2 * !B1 * Y)	-0.00212	-0.00213	-0.00212
	(!A1 * !A2 * !B1 * Y)	0.01074	0.01079	0.01078

SKY130_FD_SC_HS__O22Ax

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00246	0.00256	0.00264	0.00282	1.32133
sky130_fd_sc_hs__o22a_2	0.00264	0.00269	0.00280	0.00277	2.54539
sky130_fd_sc_hs__o22a_4	0.00514	0.00478	0.00527	0.00499	4.70927

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o22a_1	0.00000	0.19268	0.52619
sky130_fd_sc_hs__o22a_2	0.00000	0.23968	0.53467
sky130_fd_sc_hs__o22a_4	0.00000	0.48356	1.06934

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)	0.08217	0.53286	5.88187
	A2->X (RR)	0.07511	0.51531	5.84535
	B1->X (RR)	0.07488	0.53702	5.95648
	B2->X (RR)	0.06746	0.51423	5.90411
sky130_fd_sc_hs__o22a_2	A1->X (RR)	0.08376	0.45855	5.93742
	A2->X (RR)	0.07648	0.44386	5.89505
	B1->X (RR)	0.07656	0.46896	6.01638
	B2->X (RR)	0.06809	0.44463	5.92852
sky130_fd_sc_hs__o22a_4	A1->X (RR)	0.08898	0.40344	5.99157
	A2->X (RR)	0.08378	0.38657	5.96842
	B1->X (RR)	0.08058	0.40818	6.05192
	B2->X (RR)	0.07658	0.40067	6.07249

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22a_1	A1->X (FF)	0.12558	0.55521	5.04234
	A2->X (FF)	0.11355	0.56632	5.13123
	B1->X (FF)	0.09925	0.50731	4.89751
	B2->X (FF)	0.08759	0.51580	4.99250
sky130_fd_sc_hs__o22a_2	A1->X (FF)	0.15222	0.57097	5.17333
	A2->X (FF)	0.13960	0.58642	5.26170
	B1->X (FF)	0.12431	0.52229	5.01822
	B2->X (FF)	0.11089	0.53521	5.11987
sky130_fd_sc_hs__o22a_4	A1->X (FF)	0.14749	0.52852	5.07658
	A2->X (FF)	0.13068	0.53716	5.15777
	B1->X (FF)	0.12435	0.48849	4.95752
	B2->X (FF)	0.10896	0.49462	5.00597

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.01340	0.01473	0.05753
	A1	0.00484	0.00628	0.04907
	A2	0.01124	0.01298	0.06605
	A2	0.00383	0.00556	0.05877
	B1	0.01088	0.01293	0.05685
	B1	0.00464	0.00670	0.05075
	B2	0.00928	0.01184	0.06563
	B2	0.00383	0.00640	0.06038
sky130_fd_sc_hs__o22a_2	A1	0.01721	0.01880	0.06168
	A1	0.00810	0.00973	0.05260
	A2	0.01492	0.01685	0.06966
	A2	0.00702	0.00900	0.06194
	B1	0.01447	0.01659	0.05777
	B1	0.00805	0.01021	0.05147
	B2	0.01222	0.01497	0.06526
	B2	0.00703	0.00988	0.06039
sky130_fd_sc_hs__o22a_4	A1	0.03367	0.03677	0.12180
	A1	0.01661	0.01973	0.10700
	A2	0.02850	0.03232	0.13658
	A2	0.01420	0.01805	0.12452
	B1	0.03418	0.03800	0.12128
	B1	0.01657	0.02098	0.10966
	B2	0.02391	0.02885	0.12990
	B2	0.01419	0.01918	0.12244

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.00535	0.00663	0.04864
	A1	0.01424	0.01551	0.05747
	A2	0.00532	0.00804	0.06094
	A2	0.01308	0.01577	0.06863
	B1	0.00390	0.00537	0.05132
	B1	0.01132	0.01268	0.05603
	B2	0.00324	0.00654	0.06280
	B2	0.00870	0.01199	0.06767
sky130_fd_sc_hs__o22a_2	A1	0.00964	0.01028	0.05244
	A1	0.01895	0.01955	0.06146
	A2	0.00968	0.01184	0.06491
	A2	0.01777	0.01991	0.07295
	B1	0.00755	0.00843	0.05022
	B1	0.01506	0.01583	0.05766
	B2	0.00745	0.01004	0.06263
	B2	0.01373	0.01630	0.06860
sky130_fd_sc_hs__o22a_4	A1	0.01835	0.01975	0.10283
	A1	0.03616	0.03726	0.11964
	A2	0.01877	0.02281	0.13388
	A2	0.03379	0.03776	0.14191
	B1	0.01521	0.01700	0.10215
	B1	0.02997	0.03149	0.11578
	B2	0.01586	0.02093	0.12472
	B2	0.02785	0.03251	0.13474

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00198	0.00168	0.00164
	(A2 * B2 * X)	-0.00180	-0.00214	-0.00215
	(A2 * B1 * !B2 * X)	0.00198	0.00168	0.00165
	(A2 * B1 * !B2 * X)	-0.00180	-0.00214	-0.00215
	(A2 * !B1 * !B2 * !X)	0.00164	0.00164	0.00164
	(A2 * !B1 * !B2 * !X)	-0.00212	-0.00215	-0.00215
	(!A2 * !B1 * !B2 * !X)	0.00156	0.00156	0.00155
	(!A2 * !B1 * !B2 * !X)	-0.00218	-0.00218	-0.00217
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00227	0.00197	0.00193
	(A2 * B2 * X)	-0.00178	-0.00212	-0.00213
	(A2 * B1 * !B2 * X)	0.00227	0.00197	0.00193
	(A2 * B1 * !B2 * X)	-0.00178	-0.00212	-0.00213
	(A2 * !B1 * !B2 * !X)	0.00193	0.00193	0.00193
	(A2 * !B1 * !B2 * !X)	-0.00209	-0.00212	-0.00212
	(!A2 * !B1 * !B2 * !X)	0.00186	0.00187	0.00186
	(!A2 * !B1 * !B2 * !X)	-0.00215	-0.00215	-0.00214
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00431	0.00374	0.00368
	(A2 * B2 * X)	-0.00341	-0.00411	-0.00412
	(A2 * B1 * !B2 * X)	0.00431	0.00375	0.00368
	(A2 * B1 * !B2 * X)	-0.00341	-0.00411	-0.00412
	(A2 * !B1 * !B2 * !X)	0.00356	0.00362	0.00358
	(A2 * !B1 * !B2 * !X)	-0.00412	-0.00422	-0.00421
	(!A2 * !B1 * !B2 * !X)	0.00347	0.00350	0.00347
	(!A2 * !B1 * !B2 * !X)	-0.00426	-0.00428	-0.00426

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00163	-0.00163	-0.00163
	(A2 * B2 * X)	0.00215	0.00216	0.00216
	(A2 * B1 * !B2 * X)	-0.00163	-0.00163	-0.00162
	(A2 * B1 * !B2 * X)	0.00215	0.00216	0.00216
	(A2 * !B1 * !B2 * !X)	-0.00162	-0.00164	-0.00163
	(A2 * !B1 * !B2 * !X)	0.00214	0.00216	0.00215
	(!A2 * !B1 * !B2 * !X)	-0.00143	-0.00156	-0.00155
	(!A2 * !B1 * !B2 * !X)	0.00222	0.00220	0.00218
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00192	-0.00192	-0.00191
	(A2 * B2 * X)	0.00214	0.00214	0.00214
	(A2 * B1 * !B2 * X)	-0.00191	-0.00192	-0.00191
	(A2 * B1 * !B2 * X)	0.00212	0.00214	0.00214
	(A2 * !B1 * !B2 * !X)	-0.00192	-0.00193	-0.00192
	(A2 * !B1 * !B2 * !X)	0.00211	0.00213	0.00212
	(!A2 * !B1 * !B2 * !X)	-0.00173	-0.00185	-0.00186
	(!A2 * !B1 * !B2 * !X)	0.00217	0.00216	0.00215
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00364	-0.00365	-0.00364
	(A2 * B2 * X)	0.00410	0.00412	0.00413
	(A2 * B1 * !B2 * X)	-0.00364	-0.00365	-0.00364
	(A2 * B1 * !B2 * X)	0.00410	0.00412	0.00413
	(A2 * !B1 * !B2 * !X)	-0.00356	-0.00357	-0.00356
	(A2 * !B1 * !B2 * !X)	0.00420	0.00422	0.00421
	(!A2 * !B1 * !B2 * !X)	-0.00321	-0.00346	-0.00345
	(!A2 * !B1 * !B2 * !X)	0.00434	0.00431	0.00428

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	0.00181	0.00183	0.00182
	(A1 * B2 * X)	-0.00101	-0.00102	-0.00102
	(A1 * B1 * !B2 * X)	0.00181	0.00183	0.00182
	(A1 * B1 * !B2 * X)	-0.00101	-0.00102	-0.00101
	(A1 * !B1 * !B2 * !X)	0.00158	0.00159	0.00159
	(A1 * !B1 * !B2 * !X)	-0.00211	-0.00215	-0.00214
	(!A1 * !B1 * !B2 * !X)	0.00153	0.00153	0.00153
	(!A1 * !B1 * !B2 * !X)	-0.00217	-0.00217	-0.00217
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	0.00198	0.00200	0.00198
	(A1 * B2 * X)	-0.00103	-0.00104	-0.00103
	(A1 * B1 * !B2 * X)	0.00198	0.00200	0.00198
	(A1 * B1 * !B2 * X)	-0.00103	-0.00104	-0.00103
	(A1 * !B1 * !B2 * !X)	0.00184	0.00186	0.00185
	(A1 * !B1 * !B2 * !X)	-0.00203	-0.00206	-0.00205
	(!A1 * !B1 * !B2 * !X)	0.00178	0.00179	0.00177
	(!A1 * !B1 * !B2 * !X)	-0.00208	-0.00209	-0.00208
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	0.00343	0.00346	0.00343
	(A1 * B2 * X)	-0.00203	-0.00204	-0.00202
	(A1 * B1 * !B2 * X)	0.00343	0.00346	0.00343
	(A1 * B1 * !B2 * X)	-0.00203	-0.00204	-0.00202
	(A1 * !B1 * !B2 * !X)	0.00306	0.00309	0.00307
	(A1 * !B1 * !B2 * !X)	-0.00412	-0.00420	-0.00419
	(!A1 * !B1 * !B2 * !X)	0.00291	0.00293	0.00290
	(!A1 * !B1 * !B2 * !X)	-0.00427	-0.00428	-0.00426

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	-0.00175	-0.00177	-0.00181
	(A1 * B2 * X)	0.00107	0.00107	0.00103
	(A1 * B1 * !B2 * X)	-0.00176	-0.00176	-0.00181
	(A1 * B1 * !B2 * X)	0.00107	0.00107	0.00103
	(A1 * !B1 * !B2 * !X)	-0.00158	-0.00159	-0.00158
	(A1 * !B1 * !B2 * !X)	0.00213	0.00215	0.00214
	(!A1 * !B1 * !B2 * !X)	-0.00139	-0.00151	-0.00152
	(!A1 * !B1 * !B2 * !X)	0.00220	0.00219	0.00217
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	-0.00192	-0.00193	-0.00197
	(A1 * B2 * X)	0.00108	0.00109	0.00104
	(A1 * B1 * !B2 * X)	-0.00192	-0.00193	-0.00197
	(A1 * B1 * !B2 * X)	0.00109	0.00109	0.00104
	(A1 * !B1 * !B2 * !X)	-0.00184	-0.00185	-0.00184
	(A1 * !B1 * !B2 * !X)	0.00206	0.00206	0.00205
	(!A1 * !B1 * !B2 * !X)	-0.00166	-0.00178	-0.00177
	(!A1 * !B1 * !B2 * !X)	0.00211	0.00210	0.00209
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	-0.00329	-0.00331	-0.00341
	(A1 * B2 * X)	0.00215	0.00215	0.00206
	(A1 * B1 * !B2 * X)	-0.00329	-0.00331	-0.00341
	(A1 * B1 * !B2 * X)	0.00216	0.00216	0.00206
	(A1 * !B1 * !B2 * !X)	-0.00304	-0.00307	-0.00305
	(A1 * !B1 * !B2 * !X)	0.00417	0.00420	0.00419
	(!A1 * !B1 * !B2 * !X)	-0.00269	-0.00291	-0.00290
	(!A1 * !B1 * !B2 * !X)	0.00434	0.00430	0.00428

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00207	0.00179	0.00175
	(A2 * B2 * X)	-0.00185	-0.00218	-0.00219
	(A1 * !A2 * B2 * X)	0.00207	0.00179	0.00175
	(A1 * !A2 * B2 * X)	-0.00185	-0.00218	-0.00219
	(!A1 * !A2 * B2 * !X)	0.00049	0.00049	0.00049
	(!A1 * !A2 * B2 * !X)	-0.00266	-0.00270	-0.00268
	(!A1 * !A2 * !B2 * !X)	0.00055	0.00055	0.00051
	(!A1 * !A2 * !B2 * !X)	-0.00262	-0.00262	-0.00270
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00236	0.00207	0.00202
	(A2 * B2 * X)	-0.00171	-0.00205	-0.00206
	(A1 * !A2 * B2 * X)	0.00236	0.00206	0.00203
	(A1 * !A2 * B2 * X)	-0.00171	-0.00205	-0.00206
	(!A1 * !A2 * B2 * !X)	0.00059	0.00060	0.00059
	(!A1 * !A2 * B2 * !X)	-0.00259	-0.00263	-0.00262
	(!A1 * !A2 * !B2 * !X)	0.00067	0.00067	0.00062
	(!A1 * !A2 * !B2 * !X)	-0.00252	-0.00254	-0.00263
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00453	0.00392	0.00386
	(A2 * B2 * X)	-0.00338	-0.00410	-0.00410
	(A1 * !A2 * B2 * X)	0.00453	0.00392	0.00386
	(A1 * !A2 * B2 * X)	-0.00337	-0.00410	-0.00410
	(!A1 * !A2 * B2 * !X)	0.00153	0.00155	0.00153
	(!A1 * !A2 * B2 * !X)	-0.00478	-0.00490	-0.00487
	(!A1 * !A2 * !B2 * !X)	0.00164	0.00166	0.00157
	(!A1 * !A2 * !B2 * !X)	-0.00474	-0.00479	-0.00491

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00173	-0.00174	-0.00173
	(A2 * B2 * X)	0.00219	0.00221	0.00220
	(A1 * !A2 * B2 * X)	-0.00173	-0.00173	-0.00173
	(A1 * !A2 * B2 * X)	0.00219	0.00220	0.00220
	(!A1 * !A2 * B2 * !X)	-0.00048	-0.00048	-0.00048
	(!A1 * !A2 * B2 * !X)	0.00269	0.00271	0.00268
	(!A1 * !A2 * !B2 * !X)	-0.00049	-0.00050	-0.00049
	(!A1 * !A2 * !B2 * !X)	0.00271	0.00276	0.00271
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00200	-0.00202	-0.00201
	(A2 * B2 * X)	0.00205	0.00208	0.00207
	(A1 * !A2 * B2 * X)	-0.00200	-0.00202	-0.00200
	(A1 * !A2 * B2 * X)	0.00205	0.00208	0.00207
	(!A1 * !A2 * B2 * !X)	-0.00058	-0.00058	-0.00058
	(!A1 * !A2 * B2 * !X)	0.00262	0.00264	0.00262
	(!A1 * !A2 * !B2 * !X)	-0.00059	-0.00060	-0.00059
	(!A1 * !A2 * !B2 * !X)	0.00264	0.00269	0.00265
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00382	-0.00384	-0.00382
	(A2 * B2 * X)	0.00408	0.00412	0.00411
	(A1 * !A2 * B2 * X)	-0.00382	-0.00384	-0.00382
	(A1 * !A2 * B2 * X)	0.00408	0.00412	0.00411
	(!A1 * !A2 * B2 * !X)	-0.00149	-0.00151	-0.00152
	(!A1 * !A2 * B2 * !X)	0.00488	0.00492	0.00487
	(!A1 * !A2 * !B2 * !X)	-0.00153	-0.00155	-0.00153
	(!A1 * !A2 * !B2 * !X)	0.00490	0.00496	0.00493

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	0.00233	0.00238	0.00234
	(A2 * B1 * X)	-0.00098	-0.00100	-0.00099
	(A1 * !A2 * B1 * X)	0.00234	0.00238	0.00234
	(A1 * !A2 * B1 * X)	-0.00099	-0.00100	-0.00098
	(!A1 * !A2 * B1 * !X)	0.00100	0.00100	0.00099
	(!A1 * !A2 * B1 * !X)	-0.00238	-0.00241	-0.00241
	(!A1 * !A2 * !B1 * !X)	0.00107	0.00107	0.00102
	(!A1 * !A2 * !B1 * !X)	-0.00234	-0.00236	-0.00243
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	0.00203	0.00205	0.00203
	(A2 * B1 * X)	-0.00100	-0.00101	-0.00100
	(A1 * !A2 * B1 * X)	0.00203	0.00205	0.00203
	(A1 * !A2 * B1 * X)	-0.00100	-0.00101	-0.00099
	(!A1 * !A2 * B1 * !X)	0.00057	0.00058	0.00057
	(!A1 * !A2 * B1 * !X)	-0.00245	-0.00248	-0.00248
	(!A1 * !A2 * !B1 * !X)	0.00066	0.00066	0.00060
	(!A1 * !A2 * !B1 * !X)	-0.00240	-0.00241	-0.00250
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	0.00361	0.00365	0.00362
	(A2 * B1 * X)	-0.00201	-0.00203	-0.00201
	(A1 * !A2 * B1 * X)	0.00361	0.00365	0.00362
	(A1 * !A2 * B1 * X)	-0.00201	-0.00203	-0.00201
	(!A1 * !A2 * B1 * !X)	0.00090	0.00091	0.00090
	(!A1 * !A2 * B1 * !X)	-0.00486	-0.00496	-0.00495
	(!A1 * !A2 * !B1 * !X)	0.00102	0.00103	0.00095
	(!A1 * !A2 * !B1 * !X)	-0.00483	-0.00488	-0.00500

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	-0.00228	-0.00230	-0.00233
	(A2 * B1 * X)	0.00103	0.00104	0.00100
	(A1 * !A2 * B1 * X)	-0.00228	-0.00229	-0.00233
	(A1 * !A2 * B1 * X)	0.00103	0.00104	0.00100
	(!A1 * !A2 * B1 * !X)	-0.00097	-0.00098	-0.00099
	(!A1 * !A2 * B1 * !X)	0.00245	0.00246	0.00241
	(!A1 * !A2 * !B1 * !X)	-0.00100	-0.00101	-0.00100
	(!A1 * !A2 * !B1 * !X)	0.00243	0.00244	0.00244
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	-0.00198	-0.00199	-0.00203
	(A2 * B1 * X)	0.00105	0.00105	0.00101
	(A1 * !A2 * B1 * X)	-0.00198	-0.00199	-0.00203
	(A1 * !A2 * B1 * X)	0.00105	0.00105	0.00101
	(!A1 * !A2 * B1 * !X)	-0.00056	-0.00057	-0.00057
	(!A1 * !A2 * B1 * !X)	0.00248	0.00249	0.00248
	(!A1 * !A2 * !B1 * !X)	-0.00057	-0.00059	-0.00057
	(!A1 * !A2 * !B1 * !X)	0.00250	0.00255	0.00251
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	-0.00349	-0.00351	-0.00361
	(A2 * B1 * X)	0.00213	0.00214	0.00204
	(A1 * !A2 * B1 * X)	-0.00349	-0.00351	-0.00361
	(A1 * !A2 * B1 * X)	0.00214	0.00214	0.00204
	(!A1 * !A2 * B1 * !X)	-0.00087	-0.00087	-0.00089
	(!A1 * !A2 * B1 * !X)	0.00501	0.00500	0.00495
	(!A1 * !A2 * !B1 * !X)	-0.00091	-0.00094	-0.00091
	(!A1 * !A2 * !B1 * !X)	0.00501	0.00509	0.00503

SKY130_FD_SC_HS__O2BB2AIx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00230	0.00249	0.00279	0.00295	0.65508
sky130_fd_sc_hs__o2bb2ai_2	0.00520	0.00459	0.00568	0.00529	1.27131
sky130_fd_sc_hs__o2bb2ai_4	0.01079	0.01087	0.01062	0.01089	2.16780

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2bb2ai_1	0.00000	0.39311	1.20371
sky130_fd_sc_hs__o2bb2ai_2	0.00000	0.78622	2.40741
sky130_fd_sc_hs__o2bb2ai_4	0.00000	0.57420	0.84457

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)	0.06052	0.34928	2.73484
	A2_N->Y (RR)	0.05778	0.34895	2.76073
	B1->Y (FR)	0.07872	0.86277	10.12000
	B2->Y (FR)	0.06700	0.87569	10.47990
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (RR)	0.05461	0.27690	2.67031
	A2_N->Y (RR)	0.05044	0.27463	2.71957
	B1->Y (FR)	0.06999	0.72649	10.00530
	B2->Y (FR)	0.05535	0.73735	10.34840
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (RR)	0.06011	0.22912	2.43749
	A2_N->Y (RR)	0.05579	0.23843	2.56981
	B1->Y (FR)	0.07665	0.64136	9.81948
	B2->Y (FR)	0.06048	0.66513	10.34620

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)	0.08560	0.48391	4.27160
	A2_N->Y (FF)	0.07590	0.45819	4.19101
	B1->Y (RF)	0.03464	0.36137	4.10672
	B2->Y (RF)	0.02791	0.34824	4.04855
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (FF)	0.07162	0.42424	4.25445
	A2_N->Y (FF)	0.06718	0.41158	4.26114
	B1->Y (RF)	0.03006	0.29235	3.97378
	B2->Y (RF)	0.02524	0.28443	3.99204
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (FF)	0.08005	0.40952	4.37543
	A2_N->Y (FF)	0.06908	0.37856	4.21422
	B1->Y (RF)	0.03494	0.24880	3.85536
	B2->Y (RF)	0.02580	0.23131	3.75575

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	0.00959	0.01257	0.08072
	A1_N	0.00571	0.00871	0.07687
	A2_N	0.00861	0.01163	0.07290
	A2_N	0.00571	0.00877	0.07006
	B1	0.00063	0.00084	0.01210
	B1	0.00704	0.00713	0.01854
	B2	0.00059	0.00188	0.01912
	B2	0.00587	0.00715	0.02447
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.01786	0.02318	0.14709
	A1_N	0.00921	0.01457	0.13880
	A2_N	0.01521	0.02199	0.15492
	A2_N	0.00964	0.01647	0.14988
	B1	0.00085	0.00140	0.02383
	B1	0.01371	0.01424	0.03671
	B2	0.00083	0.00308	0.03629
	B2	0.01055	0.01280	0.04612
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.03908	0.04856	0.29679
	A1_N	0.02013	0.02970	0.27770
	A2_N	0.03348	0.04455	0.28123
	A2_N	0.02004	0.03120	0.26793
	B1	0.00114	0.00219	0.04464
	B1	0.02683	0.02791	0.07029
	B2	0.00084	0.00545	0.06822
	B2	0.02130	0.02590	0.08864

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	A1_N	0.00747	0.01160	0.08014
	A1_N	0.01143	0.01552	0.08409
	A2_N	0.00694	0.01096	0.07977
	A2_N	0.00996	0.01394	0.08277
	B1	0.00923	0.00948	0.01870
	B1	0.00277	0.00296	0.01167
	B2	0.00687	0.00720	0.01576
	B2	0.00152	0.00186	0.01013
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.01364	0.02161	0.15500
	A1_N	0.02233	0.03026	0.16335
	A2_N	0.01285	0.02104	0.15317
	A2_N	0.01858	0.02670	0.15830
	B1	0.01803	0.01849	0.03580
	B1	0.00514	0.00554	0.02292
	B2	0.01245	0.01335	0.03034
	B2	0.00262	0.00347	0.02008
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.02981	0.04340	0.29563
	A1_N	0.04897	0.06252	0.31380
	A2_N	0.02661	0.04006	0.28760
	A2_N	0.04054	0.05398	0.30055
	B1	0.03734	0.03835	0.07332
	B1	0.01166	0.01251	0.04740
	B2	0.02615	0.02797	0.06238
	B2	0.00547	0.00731	0.04050

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)	0.00833	0.01113	0.07919
	(A2_N * !B1 * !B2 * Y)	0.00282	0.00562	0.07366
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00161	0.00162	0.00161
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00183	-0.00184	-0.00183
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.01626	0.02177	0.15596
	(A2_N * !B1 * !B2 * Y)	0.00444	0.00990	0.14411
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00315	0.00318	0.00316
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00437	-0.00439	-0.00438
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.03568	0.04461	0.29272
	(A2_N * !B1 * !B2 * Y)	0.00994	0.01878	0.26693
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00709	0.00711	0.00708
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00944	-0.00945	-0.00943

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)	0.00054	0.00463	0.07286
	(A2_N * !B1 * !B2 * Y)	0.00610	0.01020	0.07838
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00151	-0.00160	-0.00161
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00193	0.00186	0.00184
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.00082	0.00859	0.14316
	(A2_N * !B1 * !B2 * Y)	0.01274	0.02053	0.15499
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00294	-0.00315	-0.00316
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00454	0.00444	0.00440
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.00226	0.01555	0.26539
	(A2_N * !B1 * !B2 * Y)	0.02812	0.04152	0.29113
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00654	-0.00711	-0.00708
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00982	0.00955	0.00947

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)	0.00740	0.01067	0.08112
	(A1_N * !B1 * !B2 * Y)	0.00281	0.00606	0.07653
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00055	0.00054	0.00053
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00225	-0.00225	-0.00228
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	0.01380	0.02025	0.15209
	(A1_N * !B1 * !B2 * Y)	0.00489	0.01130	0.14315
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00102	0.00103	0.00099
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00422	-0.00424	-0.00431
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	0.03043	0.04121	0.28715
	(A1_N * !B1 * !B2 * Y)	0.00985	0.02054	0.26653
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00235	0.00235	0.00224
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.01086	-0.01089	-0.01105

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)	0.00010	0.00411	0.07450
	(A1_N * !B1 * !B2 * Y)	0.00471	0.00874	0.07911
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00052	-0.00053	-0.00052
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00228	0.00232	0.00228
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	-0.00015	0.00745	0.13895
	(A1_N * !B1 * !B2 * Y)	0.00883	0.01647	0.14792
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00096	-0.00099	-0.00097
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00430	0.00439	0.00432
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	-0.00097	0.01238	0.25948
	(A1_N * !B1 * !B2 * Y)	0.01973	0.03317	0.28016
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00217	-0.00222	-0.00217
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.01103	0.01126	0.01108

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)	0.00193	0.00194	0.00193
	(A1_N * A2_N * B2 * Y)	-0.00230	-0.00234	-0.00234
	(A1_N * A2_N * !B2 * Y)	0.00187	0.00189	0.00188
	(A1_N * A2_N * !B2 * Y)	-0.00234	-0.00236	-0.00235
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00227	0.00197	0.00193
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00198	-0.00234	-0.00234
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	0.00384	0.00389	0.00384
	(A1_N * A2_N * B2 * Y)	-0.00468	-0.00480	-0.00478
	(A1_N * A2_N * !B2 * Y)	0.00374	0.00377	0.00376
	(A1_N * A2_N * !B2 * Y)	-0.00480	-0.00482	-0.00481
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00460	0.00395	0.00388
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00398	-0.00473	-0.00474
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	0.00741	0.00750	0.00741
	(A1_N * A2_N * B2 * Y)	-0.00914	-0.00938	-0.00931
	(A1_N * A2_N * !B2 * Y)	0.00719	0.00729	0.00721
	(A1_N * A2_N * !B2 * Y)	-0.00943	-0.00950	-0.00944
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00904	0.00758	0.00741
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00761	-0.00930	-0.00935

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)	-0.00191	-0.00191	-0.00191
	(A1_N * A2_N * B2 * Y)	0.00234	0.00236	0.00235
	(A1_N * A2_N * !B2 * Y)	-0.00176	-0.00186	-0.00187
	(A1_N * A2_N * !B2 * Y)	0.00240	0.00241	0.00238
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00191	-0.00193	-0.00192
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00232	0.00235	0.00234
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	-0.00378	-0.00380	-0.00379
	(A1_N * A2_N * B2 * Y)	0.00478	0.00481	0.00480
	(A1_N * A2_N * !B2 * Y)	-0.00354	-0.00371	-0.00372
	(A1_N * A2_N * !B2 * Y)	0.00491	0.00490	0.00486
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00385	-0.00387	-0.00385
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00471	0.00477	0.00474
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	-0.00734	-0.00741	-0.00738
	(A1_N * A2_N * B2 * Y)	0.00924	0.00938	0.00931
	(A1_N * A2_N * !B2 * Y)	-0.00675	-0.00720	-0.00721
	(A1_N * A2_N * !B2 * Y)	0.00964	0.00957	0.00948
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00735	-0.00739	-0.00735
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00929	0.00939	0.00935

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)	0.00199	0.00203	0.00201
	(A1_N * A2_N * B1 * Y)	-0.00230	-0.00237	-0.00236
	(A1_N * A2_N * !B1 * Y)	0.00196	0.00197	0.00195
	(A1_N * A2_N * !B1 * Y)	-0.00238	-0.00238	-0.00237
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00214	0.00216	0.00214
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00120	-0.00121	-0.00120
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	0.00361	0.00363	0.00359
	(A1_N * A2_N * B1 * Y)	-0.00439	-0.00448	-0.00448
	(A1_N * A2_N * !B1 * Y)	0.00351	0.00352	0.00352
	(A1_N * A2_N * !B1 * Y)	-0.00450	-0.00451	-0.00451
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00389	0.00391	0.00388
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00213	-0.00214	-0.00212
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	0.00746	0.00743	0.00741
	(A1_N * A2_N * B1 * Y)	-0.00926	-0.00941	-0.00937
	(A1_N * A2_N * !B1 * Y)	0.00717	0.00722	0.00720
	(A1_N * A2_N * !B1 * Y)	-0.00949	-0.00953	-0.00951
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00840	0.00851	0.00837
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00440	-0.00443	-0.00435

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)	-0.00198	-0.00200	-0.00198
	(A1_N * A2_N * B1 * Y)	0.00235	0.00238	0.00236
	(A1_N * A2_N * !B1 * Y)	-0.00183	-0.00194	-0.00194
	(A1_N * A2_N * !B1 * Y)	0.00242	0.00242	0.00240
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00207	-0.00209	-0.00213
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00125	0.00126	0.00121
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	-0.00355	-0.00356	-0.00354
	(A1_N * A2_N * B1 * Y)	0.00447	0.00451	0.00448
	(A1_N * A2_N * !B1 * Y)	-0.00330	-0.00346	-0.00347
	(A1_N * A2_N * !B1 * Y)	0.00458	0.00459	0.00456
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00371	-0.00375	-0.00386
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00224	0.00226	0.00215
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	-0.00739	-0.00742	-0.00738
	(A1_N * A2_N * B1 * Y)	0.00938	0.00943	0.00937
	(A1_N * A2_N * !B1 * Y)	-0.00675	-0.00719	-0.00720
	(A1_N * A2_N * !B1 * Y)	0.00970	0.00963	0.00955
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00800	-0.00808	-0.00832
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00463	0.00467	0.00443

SKY130_FD_SC_HS__O2BB2Ax

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00229	0.00243	0.00247	0.00267	1.27429
sky130_fd_sc_hs__o2bb2a_2	0.00230	0.00252	0.00264	0.00273	2.36228
sky130_fd_sc_hs__o2bb2a_4	0.00229	0.00245	0.00495	0.00487	4.73812

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2bb2a_1	0.00000	0.76311	1.30830
sky130_fd_sc_hs__o2bb2a_2	0.00000	0.62018	1.40637
sky130_fd_sc_hs__o2bb2a_4	0.00000	1.32009	1.75860

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)	0.12133	0.72276	8.24986
	A2_N->X (FR)	0.11194	0.69696	8.08966
	B1->X (RR)	0.07476	0.51736	5.85951
	B2->X (RR)	0.06611	0.49820	5.81042
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (FR)	0.13252	0.65679	8.32469
	A2_N->X (FR)	0.12122	0.62936	8.16357
	B1->X (RR)	0.07770	0.44285	5.81829
	B2->X (RR)	0.06839	0.42614	5.76479
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (FR)	0.15513	0.62089	8.41633
	A2_N->X (FR)	0.14465	0.59666	8.24598
	B1->X (RR)	0.08903	0.38918	5.95353
	B2->X (RR)	0.07657	0.36601	5.89214

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)	0.09501	0.29922	2.02969
	A2_N->X (RF)	0.09245	0.30094	2.13295
	B1->X (FF)	0.11880	0.52405	4.88970
	B2->X (FF)	0.10793	0.53235	4.96812
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (RF)	0.10727	0.27829	1.86687
	A2_N->X (RF)	0.10491	0.27829	1.93804
	B1->X (FF)	0.14602	0.54050	4.88694
	B2->X (FF)	0.13441	0.55507	4.96892
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (RF)	0.12039	0.29473	2.17124
	A2_N->X (RF)	0.11796	0.29783	2.23747
	B1->X (FF)	0.15034	0.51417	5.02306
	B2->X (FF)	0.13193	0.52270	5.11018

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	0.01085	0.01524	0.08714
	A1_N	0.01346	0.01795	0.09113
	A2_N	0.01030	0.01479	0.08791
	A2_N	0.01306	0.01757	0.09085
	B1	0.01233	0.01379	0.05658
	B1	0.00636	0.00842	0.05070
	B2	0.01034	0.01222	0.06524
	B2	0.00530	0.00717	0.06029
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.01489	0.01939	0.09096
	A1_N	0.01754	0.02221	0.09549
	A2_N	0.01404	0.01869	0.08947
	A2_N	0.01699	0.02165	0.09267
	B1	0.01646	0.01805	0.06089
	B1	0.01009	0.01170	0.05479
	B2	0.01434	0.01633	0.06938
	B2	0.00896	0.01098	0.06428
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.02916	0.03412	0.10903
	A1_N	0.03146	0.03641	0.12192
	A2_N	0.02845	0.03347	0.10574
	A2_N	0.02969	0.03483	0.10744
	B1	0.03255	0.03515	0.11588
	B1	0.02052	0.02312	0.10610
	B2	0.02675	0.03030	0.12932
	B2	0.01722	0.02086	0.11981

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	A1_N	0.01361	0.01648	0.08620
	A1_N	0.00983	0.01261	0.08161
	A2_N	0.01248	0.01595	0.09039
	A2_N	0.00981	0.01315	0.08651
	B1	0.00518	0.00667	0.04936
	B1	0.01109	0.01257	0.05482
	B2	0.00514	0.00801	0.06213
	B2	0.01013	0.01299	0.06631
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.01752	0.02027	0.08557
	A1_N	0.01357	0.01625	0.08142
	A2_N	0.01631	0.01935	0.09005
	A2_N	0.01357	0.01638	0.08575
	B1	0.00916	0.01029	0.05451
	B1	0.01546	0.01639	0.05883
	B2	0.00913	0.01164	0.06652
	B2	0.01444	0.01692	0.07060
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.02737	0.03017	0.09833
	A1_N	0.02510	0.02782	0.09515
	A2_N	0.02631	0.02936	0.10283
	A2_N	0.02512	0.02809	0.10099
	B1	0.01788	0.01873	0.09891
	B1	0.02990	0.03065	0.11005
	B2	0.01806	0.02178	0.12151
	B2	0.02750	0.03116	0.13048

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)	0.00749	0.01045	0.07897
	(A2_N * !B1 * !B2 * !X)	0.00202	0.00495	0.07349
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00169	0.00170	0.00169
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00178	-0.00178	-0.00178
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00793	0.01073	0.07734
	(A2_N * !B1 * !B2 * !X)	0.00232	0.00508	0.07170
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00178	0.00179	0.00178
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00174	-0.00175	-0.00174
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.00947	0.01192	0.07752
	(A2_N * !B1 * !B2 * !X)	0.00384	0.00627	0.07188
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00176	0.00178	0.00177
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00170	-0.00171	-0.00170

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)	0.00054	0.00478	0.07340
	(A2_N * !B1 * !B2 * !X)	0.00606	0.01029	0.07886
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00159	-0.00168	-0.00169
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00189	0.00181	0.00179
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00055	0.00464	0.07132
	(A2_N * !B1 * !B2 * !X)	0.00623	0.01032	0.07693
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00166	-0.00177	-0.00178
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00183	0.00177	0.00175
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.00121	0.00499	0.07096
	(A2_N * !B1 * !B2 * !X)	0.00691	0.01068	0.07659
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00164	-0.00175	-0.00176
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00181	0.00175	0.00173

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)	0.00661	0.01004	0.08068
	(A1_N * !B1 * !B2 * !X)	0.00218	0.00558	0.07623
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00051	0.00051	0.00050
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00222	-0.00221	-0.00225
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	0.00716	0.01049	0.07907
	(A1_N * !B1 * !B2 * !X)	0.00248	0.00580	0.07439
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00060	0.00060	0.00059
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00226	-0.00226	-0.00228
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.00864	0.01147	0.07924
	(A1_N * !B1 * !B2 * !X)	0.00404	0.00685	0.07464
	(!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)	-0.00219	-0.00219	-0.00222

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)	-0.00001	0.00419	0.07476
	(A1_N * !B1 * !B2 * !X)	0.00447	0.00867	0.07922
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00048	-0.00049	-0.00048
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00225	0.00230	0.00226
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	-0.00005	0.00392	0.07252
	(A1_N * !B1 * !B2 * !X)	0.00465	0.00864	0.07722
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00057	-0.00058	-0.00057
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00229	0.00233	0.00229
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.00073	0.00433	0.07203
	(A1_N * !B1 * !B2 * !X)	0.00537	0.00900	0.07667
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00050	-0.00052	-0.00050
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00224	0.00228	0.00225

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)	0.00169	0.00168	0.00169
	(A1_N * A2_N * B2 * !X)	-0.00206	-0.00207	-0.00209
	(A1_N * A2_N * !B2 * !X)	0.00164	0.00165	0.00164
	(A1_N * A2_N * !B2 * !X)	-0.00209	-0.00210	-0.00210
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00203	0.00173	0.00169
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00174	-0.00208	-0.00209
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	0.00191	0.00191	0.00191
	(A1_N * A2_N * B2 * !X)	-0.00211	-0.00214	-0.00214
	(A1_N * A2_N * !B2 * !X)	0.00186	0.00187	0.00187
	(A1_N * A2_N * !B2 * !X)	-0.00215	-0.00216	-0.00215
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00225	0.00195	0.00190
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00181	-0.00214	-0.00215
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	0.00339	0.00343	0.00340
	(A1_N * A2_N * B2 * !X)	-0.00418	-0.00430	-0.00429
	(A1_N * A2_N * !B2 * !X)	0.00327	0.00331	0.00329
	(A1_N * A2_N * !B2 * !X)	-0.00431	-0.00434	-0.00433
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00425	0.00351	0.00341
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00339	-0.00423	-0.00428

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)	-0.00166	-0.00167	-0.00166
	(A1_N * A2_N * B2 * !X)	0.00209	0.00212	0.00210
	(A1_N * A2_N * !B2 * !X)	-0.00153	-0.00162	-0.00163
	(A1_N * A2_N * !B2 * !X)	0.00215	0.00215	0.00213
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00167	-0.00167	-0.00166
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00211	0.00212	0.00211
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	-0.00188	-0.00189	-0.00188
	(A1_N * A2_N * B2 * !X)	0.00215	0.00217	0.00216
	(A1_N * A2_N * !B2 * !X)	-0.00175	-0.00184	-0.00184
	(A1_N * A2_N * !B2 * !X)	0.00220	0.00221	0.00218
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00188	-0.00189	-0.00188
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00215	0.00217	0.00216
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	-0.00336	-0.00338	-0.00336
	(A1_N * A2_N * B2 * !X)	0.00429	0.00433	0.00430
	(A1_N * A2_N * !B2 * !X)	-0.00307	-0.00327	-0.00329
	(A1_N * A2_N * !B2 * !X)	0.00448	0.00441	0.00437
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00336	-0.00338	-0.00335
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00428	0.00433	0.00431

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)	0.00180	0.00183	0.00180
	(A1_N * A2_N * B1 * !X)	-0.00209	-0.00214	-0.00213
	(A1_N * A2_N * !B1 * !X)	0.00174	0.00176	0.00175
	(A1_N * A2_N * !B1 * !X)	-0.00214	-0.00215	-0.00214
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00191	0.00193	0.00192
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00111	-0.00112	-0.00111
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	0.00204	0.00207	0.00204
	(A1_N * A2_N * B1 * !X)	-0.00205	-0.00209	-0.00208
	(A1_N * A2_N * !B1 * !X)	0.00198	0.00201	0.00199
	(A1_N * A2_N * !B1 * !X)	-0.00209	-0.00210	-0.00209
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00203	0.00205	0.00203
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00119	-0.00120	-0.00119
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	0.00329	0.00331	0.00329
	(A1_N * A2_N * B1 * !X)	-0.00415	-0.00426	-0.00426
	(A1_N * A2_N * !B1 * !X)	0.00319	0.00325	0.00321
	(A1_N * A2_N * !B1 * !X)	-0.00429	-0.00433	-0.00430
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00359	0.00362	0.00359
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00215	-0.00217	-0.00214

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)	-0.00177	-0.00179	-0.00178
	(A1_N * A2_N * B1 * !X)	0.00213	0.00215	0.00214
	(A1_N * A2_N * !B1 * !X)	-0.00164	-0.00173	-0.00174
	(A1_N * A2_N * !B1 * !X)	0.00222	0.00219	0.00217
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00185	-0.00186	-0.00190
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00117	0.00117	0.00113
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	-0.00202	-0.00203	-0.00202
	(A1_N * A2_N * B1 * !X)	0.00210	0.00211	0.00209
	(A1_N * A2_N * !B1 * !X)	-0.00188	-0.00198	-0.00198
	(A1_N * A2_N * !B1 * !X)	0.00214	0.00214	0.00212
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00197	-0.00198	-0.00202
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00124	0.00125	0.00120
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	-0.00324	-0.00328	-0.00326
	(A1_N * A2_N * B1 * !X)	0.00423	0.00428	0.00426
	(A1_N * A2_N * !B1 * !X)	-0.00298	-0.00318	-0.00318
	(A1_N * A2_N * !B1 * !X)	0.00440	0.00437	0.00434
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00339	-0.00341	-0.00355
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00233	0.00234	0.00220

SKY130_FD_SC_HS__O311AIx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00272	0.00286	0.00279	0.00288	0.00295	0.44236
sky130_fd_sc_hs__o311ai_2	0.00532	0.00545	0.00552	0.00551	0.00559	0.74436
sky130_fd_sc_hs__o311ai_4	0.01047	0.01051	0.01099	0.00833	0.00788	1.41889

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311ai_1	0.00000	0.05477	0.30399
sky130_fd_sc_hs__o311ai_2	0.00000	0.10953	0.60797
sky130_fd_sc_hs__o311ai_4	0.00000	0.13040	0.81063

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)	0.16896	1.01150	9.69268
	A2->Y (FR)	0.15958	1.04013	10.30720
	A3->Y (FR)	0.13056	1.02169	10.44490
	B1->Y (FR)	0.03912	0.54824	6.21799
	C1->Y (FR)	0.03218	0.53996	6.20023
sky130_fd_sc_hs__o311ai_2	A1->Y (FR)	0.18843	0.89601	9.40362
	A2->Y (FR)	0.17218	0.91154	10.00410
	A3->Y (FR)	0.14136	0.90651	10.33630
	B1->Y (FR)	0.03917	0.48750	5.98975
	C1->Y (FR)	0.03089	0.47856	5.99103
sky130_fd_sc_hs__o311ai_4	A1->Y (FR)	0.16773	0.75227	9.23647
	A2->Y (FR)	0.15616	0.78789	10.04160
	A3->Y (FR)	0.11986	0.77228	10.26250
	B1->Y (FR)	0.05544	0.57606	7.92116
	C1->Y (FR)	0.03821	0.56553	8.00552

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311ai_1	A1->Y (RF)	0.05127	0.34182	3.09144
	A2->Y (RF)	0.05112	0.34277	3.16419
	A3->Y (RF)	0.04070	0.32607	3.11218
	B1->Y (RF)	0.04399	0.39063	3.89077
	C1->Y (RF)	0.03782	0.41328	4.20717
sky130_fd_sc_hs__o311ai_2	A1->Y (RF)	0.06016	0.30683	3.00608
	A2->Y (RF)	0.05570	0.29235	2.96647
	A3->Y (RF)	0.04527	0.27631	2.91816
	B1->Y (RF)	0.05289	0.35481	3.78927
	C1->Y (RF)	0.04486	0.40652	4.50237
sky130_fd_sc_hs__o311ai_4	A1->Y (RF)	0.06218	0.25546	2.95208
	A2->Y (RF)	0.05588	0.24259	2.92395
	A3->Y (RF)	0.04158	0.22244	2.85847
	B1->Y (RF)	0.05499	0.35151	4.40387
	C1->Y (RF)	0.04313	0.37585	4.89525

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	A1	0.00158	0.00150	0.01345
	A1	0.01255	0.01251	0.02442
	A2	0.00170	0.00172	0.01279
	A2	0.01140	0.01143	0.02249
	A3	0.00167	0.00235	0.01957
	A3	0.01001	0.01072	0.02794
	B1	0.00011	0.00202	0.02815
	B1	0.00684	0.00871	0.03486
	C1	-0.00063	0.00128	0.02660
	C1	0.00504	0.00697	0.03226
sky130_fd_sc_hs__o311ai_2	A1	0.00378	0.00346	0.02577
	A1	0.02605	0.02576	0.04811
	A2	0.00381	0.00381	0.02517
	A2	0.02341	0.02340	0.04474
	A3	0.00376	0.00508	0.03558
	A3	0.02075	0.02204	0.05257
	B1	0.00038	0.00466	0.05363
	B1	0.01373	0.01799	0.06796
	C1	-0.00125	0.00194	0.04906
	C1	0.00972	0.01294	0.06096

sky130_fd_sc_hs__o311ai_4	**A1**	0.00527	0.00503	0.04542
	A1	0.04893	0.04871	0.08923
	A2	0.00558	0.00562	0.04182
	A2	0.04377	0.04385	0.07992
	A3	0.00555	0.00819	0.06131
	A3	0.03886	0.04152	0.09463
	B1	0.00049	0.00350	0.05543
	B1	0.02762	0.03042	0.08048
	C1	-0.00320	0.00065	0.05074
	C1	0.01326	0.01705	0.06812

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311ai_1	**A1**	0.01467	0.01474	0.02469
	A1	0.00358	0.00359	0.01352
	A2	0.01245	0.01252	0.02181
	A2	0.00259	0.00265	0.01189
	A3	0.00979	0.01006	0.01907
	A3	0.00124	0.00150	0.01034
	B1	0.00781	0.00821	0.02051
	B1	0.00104	0.00138	0.01359
	C1	0.00665	0.00725	0.02081
	C1	0.00098	0.00156	0.01504

sky130_fd_sc_hs__o311ai_2	**A1**	0.03019	0.02998	0.04977
	A1	0.00770	0.00749	0.02695
	A2	0.02458	0.02478	0.04339
	A2	0.00459	0.00475	0.02323
	A3	0.01953	0.02001	0.03767
	A3	0.00210	0.00255	0.01993
	B1	0.01519	0.01598	0.04125
	B1	0.00172	0.00248	0.02764
	C1	0.01255	0.01374	0.03915
	C1	0.00162	0.00275	0.02815
sky130_fd_sc_hs__o311ai_4	**A1**	0.05536	0.05542	0.09688
	A1	0.01132	0.01135	0.05217
	A2	0.04584	0.04610	0.08383
	A2	0.00695	0.00713	0.04446
	A3	0.03420	0.03556	0.07114
	A3	0.00009	0.00144	0.03672
	B1	0.03627	0.03698	0.06026
	B1	0.00256	0.00348	0.02752
	C1	0.03065	0.03203	0.05626
	C1	0.00254	0.00421	0.02970

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)**	0.00190	0.00190	0.00190
	(A2 * B1 * !C1 * Y)	-0.00229	-0.00234	-0.00234
	(A2 * A3 * B1 * C1 * !Y)	0.00190	0.00192	0.00190
	(A2 * A3 * B1 * C1 * !Y)	-0.00228	-0.00235	-0.00234
	(A2 * !B1 * Y)	0.00190	0.00190	0.00190
	(A2 * !B1 * Y)	-0.00229	-0.00234	-0.00234
	(A2 * !A3 * B1 * C1 * !Y)	0.00200	0.00192	0.00190
	(A2 * !A3 * B1 * C1 * !Y)	-0.00217	-0.00235	-0.00234
	(!A2 * A3 * B1 * C1 * !Y)	0.00197	0.00191	0.00190
	(!A2 * A3 * B1 * C1 * !Y)	-0.00205	-0.00228	-0.00227
	(!A2 * A3 * B1 * !C1 * Y)	0.00190	0.00191	0.00190
	(!A2 * A3 * B1 * !C1 * Y)	-0.00210	-0.00228	-0.00226
	(!A2 * A3 * !B1 * Y)	0.00190	0.00191	0.00190
	(!A2 * A3 * !B1 * Y)	-0.00210	-0.00228	-0.00226
	(!A2 * !A3 * B1 * !C1 * Y)	0.00181	0.00182	0.00181
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00236	-0.00237	-0.00236
	(!A2 * !A3 * !B1 * C1 * Y)	0.00181	0.00183	0.00182
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00235	-0.00237	-0.00236
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00183	0.00185	0.00184
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00235	-0.00237	-0.00236

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	0.00371	0.00375	0.00370
	(A2 * B1 * !C1 * Y)	-0.00451	-0.00466	-0.00464
	(A2 * A3 * B1 * C1 * !Y)	0.00374	0.00375	0.00371
	(A2 * A3 * B1 * C1 * !Y)	-0.00447	-0.00466	-0.00464
	(A2 * !B1 * Y)	0.00371	0.00375	0.00370
	(A2 * !B1 * Y)	-0.00451	-0.00466	-0.00464
	(A2 * !A3 * B1 * C1 * !Y)	0.00394	0.00376	0.00371
	(A2 * !A3 * B1 * C1 * !Y)	-0.00424	-0.00464	-0.00464
	(!A2 * A3 * B1 * C1 * !Y)	0.00389	0.00376	0.00371
	(!A2 * A3 * B1 * C1 * !Y)	-0.00401	-0.00454	-0.00450
	(!A2 * A3 * B1 * !C1 * Y)	0.00370	0.00374	0.00370
	(!A2 * A3 * B1 * !C1 * Y)	-0.00415	-0.00454	-0.00450
	(!A2 * A3 * !B1 * Y)	0.00371	0.00374	0.00370
	(!A2 * A3 * !B1 * Y)	-0.00415	-0.00454	-0.00450
	(!A2 * !A3 * B1 * !C1 * Y)	0.00350	0.00351	0.00349
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00473	-0.00473	-0.00472
	(!A2 * !A3 * !B1 * C1 * Y)	0.00351	0.00357	0.00353
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00471	-0.00475	-0.00472
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00351	0.00357	0.00353
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00471	-0.00475	-0.00472

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	0.00745	0.00750	0.00741
	(A2 * B1 * !C1 * Y)	-0.00906	-0.00930	-0.00925
	(A2 * A3 * B1 * C1 * !Y)	0.00747	0.00750	0.00742
	(A2 * A3 * B1 * C1 * !Y)	-0.00902	-0.00930	-0.00925
	(A2 * !B1 * Y)	0.00745	0.00750	0.00741
	(A2 * !B1 * Y)	-0.00906	-0.00930	-0.00925
	(A2 * !A3 * B1 * C1 * !Y)	0.00781	0.00750	0.00742
	(A2 * !A3 * B1 * C1 * !Y)	-0.00862	-0.00931	-0.00927
	(!A2 * A3 * B1 * C1 * !Y)	0.00767	0.00751	0.00742
	(!A2 * A3 * B1 * C1 * !Y)	-0.00813	-0.00909	-0.00900
	(!A2 * A3 * B1 * !C1 * Y)	0.00739	0.00748	0.00741
	(!A2 * A3 * B1 * !C1 * Y)	-0.00834	-0.00909	-0.00900
	(!A2 * A3 * !B1 * Y)	0.00739	0.00748	0.00741
	(!A2 * A3 * !B1 * Y)	-0.00834	-0.00909	-0.00900
	(!A2 * !A3 * B1 * !C1 * Y)	0.00693	0.00700	0.00696
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00941	-0.00946	-0.00944
	(!A2 * !A3 * !B1 * C1 * Y)	0.00701	0.00700	0.00703
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00943	-0.00942	-0.00944
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00700	0.00709	0.00701
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00943	-0.00949	-0.00944

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)**	-0.00188	-0.00190	-0.00189
	(A2 * B1 * !C1 * Y)	0.00232	0.00235	0.00234
	(A2 * A3 * B1 * C1 * !Y)	-0.00188	-0.00190	-0.00189
	(A2 * A3 * B1 * C1 * !Y)	0.00232	0.00235	0.00234
	(A2 * !B1 * Y)	-0.00188	-0.00190	-0.00189
	(A2 * !B1 * Y)	0.00232	0.00235	0.00234
	(A2 * !A3 * B1 * C1 * !Y)	-0.00188	-0.00190	-0.00189
	(A2 * !A3 * B1 * C1 * !Y)	0.00232	0.00235	0.00234
	(!A2 * A3 * B1 * C1 * !Y)	-0.00189	-0.00190	-0.00189
	(!A2 * A3 * B1 * C1 * !Y)	0.00226	0.00228	0.00227
	(!A2 * A3 * B1 * !C1 * Y)	-0.00189	-0.00190	-0.00189
	(!A2 * A3 * B1 * !C1 * Y)	0.00226	0.00228	0.00226
	(!A2 * A3 * !B1 * Y)	-0.00189	-0.00190	-0.00189
	(!A2 * A3 * !B1 * Y)	0.00226	0.00228	0.00226
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00166	-0.00182	-0.00181
	(!A2 * !A3 * B1 * !C1 * Y)	0.00236	0.00239	0.00237
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00172	-0.00182	-0.00182
	(!A2 * !A3 * !B1 * C1 * Y)	0.00237	0.00238	0.00237
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00173	-0.00182	-0.00184
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00237	0.00238	0.00237

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	-0.00370	-0.00370	-0.00370
	(A2 * B1 * !C1 * Y)	0.00464	0.00466	0.00464
	(A2 * A3 * B1 * C1 * !Y)	-0.00370	-0.00371	-0.00370
	(A2 * A3 * B1 * C1 * !Y)	0.00464	0.00466	0.00464
	(A2 * !B1 * Y)	-0.00370	-0.00370	-0.00370
	(A2 * !B1 * Y)	0.00464	0.00466	0.00464
	(A2 * !A3 * B1 * C1 * !Y)	-0.00370	-0.00370	-0.00370
	(A2 * !A3 * B1 * C1 * !Y)	0.00464	0.00464	0.00464
	(!A2 * A3 * B1 * C1 * !Y)	-0.00369	-0.00372	-0.00370
	(!A2 * A3 * B1 * C1 * !Y)	0.00449	0.00454	0.00450
	(!A2 * A3 * B1 * !C1 * Y)	-0.00369	-0.00371	-0.00370
	(!A2 * A3 * B1 * !C1 * Y)	0.00449	0.00454	0.00450
	(!A2 * A3 * !B1 * Y)	-0.00369	-0.00371	-0.00370
	(!A2 * A3 * !B1 * Y)	0.00449	0.00454	0.00450
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00317	-0.00346	-0.00349
	(!A2 * !A3 * B1 * !C1 * Y)	0.00475	0.00473	0.00473
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00326	-0.00355	-0.00353
	(!A2 * !A3 * !B1 * C1 * Y)	0.00471	0.00477	0.00473
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00327	-0.00355	-0.00353
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00471	0.00477	0.00473

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	-0.00738	-0.00742	-0.00740
	(A2 * B1 * !C1 * Y)	0.00921	0.00930	0.00925
	(A2 * A3 * B1 * C1 * !Y)	-0.00738	-0.00742	-0.00740
	(A2 * A3 * B1 * C1 * !Y)	0.00921	0.00930	0.00925
	(A2 * !B1 * Y)	-0.00738	-0.00742	-0.00740
	(A2 * !B1 * Y)	0.00921	0.00930	0.00925
	(A2 * !A3 * B1 * C1 * !Y)	-0.00737	-0.00741	-0.00739
	(A2 * !A3 * B1 * C1 * !Y)	0.00922	0.00931	0.00927
	(!A2 * A3 * B1 * C1 * !Y)	-0.00737	-0.00743	-0.00739
	(!A2 * A3 * B1 * C1 * !Y)	0.00896	0.00909	0.00900
	(!A2 * A3 * B1 * !C1 * Y)	-0.00738	-0.00743	-0.00740
	(!A2 * A3 * B1 * !C1 * Y)	0.00896	0.00909	0.00900
	(!A2 * A3 * !B1 * Y)	-0.00738	-0.00743	-0.00740
	(!A2 * A3 * !B1 * Y)	0.00896	0.00909	0.00900
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00648	-0.00696	-0.00696
	(!A2 * !A3 * B1 * !C1 * Y)	0.00950	0.00957	0.00946
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00662	-0.00700	-0.00703
	(!A2 * !A3 * !B1 * C1 * Y)	0.00944	0.00954	0.00946
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00663	-0.00709	-0.00701
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00944	0.00954	0.00946

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)**	0.00205	0.00207	0.00196
	(A1 * A3 * B1 * C1 * !Y)	-0.00147	-0.00147	-0.00146
	(A1 * A3 * B1 * !C1 * Y)	0.00181	0.00183	0.00181
	(A1 * A3 * B1 * !C1 * Y)	-0.00168	-0.00168	-0.00167
	(A1 * A3 * !B1 * Y)	0.00181	0.00183	0.00181
	(A1 * A3 * !B1 * Y)	-0.00168	-0.00168	-0.00167
	(A1 * !A3 * B1 * C1 * !Y)	0.00192	0.00193	0.00190
	(A1 * !A3 * B1 * C1 * !Y)	-0.00120	-0.00121	-0.00122
	(A1 * !A3 * B1 * !C1 * Y)	0.00182	0.00183	0.00181
	(A1 * !A3 * B1 * !C1 * Y)	-0.00235	-0.00238	-0.00236
	(A1 * !A3 * !B1 * C1 * Y)	0.00182	0.00183	0.00181
	(A1 * !A3 * !B1 * C1 * Y)	-0.00235	-0.00237	-0.00236
	(A1 * !A3 * !B1 * !C1 * Y)	0.00182	0.00181	0.00181
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00235	-0.00237	-0.00236
	(!A1 * A3 * B1 * C1 * !Y)	0.00237	0.00193	0.00189
	(!A1 * A3 * B1 * C1 * !Y)	-0.00180	-0.00229	-0.00229
	(!A1 * A3 * B1 * !C1 * Y)	0.00182	0.00183	0.00181
	(!A1 * A3 * B1 * !C1 * Y)	-0.00235	-0.00239	-0.00237
	(!A1 * A3 * !B1 * Y)	0.00182	0.00183	0.00181
	(!A1 * A3 * !B1 * Y)	-0.00235	-0.00239	-0.00236
	(!A1 * !A3 * B1 * !C1 * Y)	0.00170	0.00172	0.00170
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00239	-0.00241	-0.00240
	(!A1 * !A3 * !B1 * C1 * Y)	0.00172	0.00172	0.00172
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00240	-0.00240	-0.00240
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00175	0.00176	0.00174
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00240	-0.00241	-0.00240

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00417	0.00418	0.00397
	(A1 * A3 * B1 * C1 * !Y)	-0.00309	-0.00309	-0.00307
	(A1 * A3 * B1 * !C1 * Y)	0.00374	0.00377	0.00374
	(A1 * A3 * B1 * !C1 * Y)	-0.00337	-0.00339	-0.00338
	(A1 * A3 * !B1 * Y)	0.00374	0.00377	0.00374
	(A1 * A3 * !B1 * Y)	-0.00337	-0.00339	-0.00338
	(A1 * !A3 * B1 * C1 * !Y)	0.00381	0.00384	0.00378
	(A1 * !A3 * B1 * C1 * !Y)	-0.00251	-0.00252	-0.00252
	(A1 * !A3 * B1 * !C1 * Y)	0.00376	0.00377	0.00374
	(A1 * !A3 * B1 * !C1 * Y)	-0.00464	-0.00471	-0.00469
	(A1 * !A3 * !B1 * C1 * Y)	0.00376	0.00377	0.00374
	(A1 * !A3 * !B1 * C1 * Y)	-0.00464	-0.00471	-0.00469
	(A1 * !A3 * !B1 * !C1 * Y)	0.00376	0.00377	0.00374
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00464	-0.00472	-0.00469
	(!A1 * A3 * B1 * C1 * !Y)	0.00472	0.00377	0.00375
	(!A1 * A3 * B1 * C1 * !Y)	-0.00378	-0.00470	-0.00475
	(!A1 * A3 * B1 * !C1 * Y)	0.00376	0.00373	0.00373
	(!A1 * A3 * B1 * !C1 * Y)	-0.00470	-0.00474	-0.00473
	(!A1 * A3 * !B1 * Y)	0.00376	0.00373	0.00373
	(!A1 * A3 * !B1 * Y)	-0.00470	-0.00475	-0.00473
	(!A1 * !A3 * B1 * !C1 * Y)	0.00351	0.00354	0.00351
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00481	-0.00482	-0.00480
	(!A1 * !A3 * !B1 * C1 * Y)	0.00356	0.00359	0.00356
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00481	-0.00483	-0.00480
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00358	0.00360	0.00357
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00481	-0.00482	-0.00480

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	0.00806	0.00830	0.00779
	(A1 * A3 * B1 * C1 * !Y)	-0.00590	-0.00590	-0.00589
	(A1 * A3 * B1 * !C1 * Y)	0.00730	0.00742	0.00734
	(A1 * A3 * B1 * !C1 * Y)	-0.00656	-0.00662	-0.00657
	(A1 * A3 * !B1 * Y)	0.00729	0.00742	0.00734
	(A1 * A3 * !B1 * Y)	-0.00656	-0.00662	-0.00657
	(A1 * !A3 * B1 * C1 * !Y)	0.00755	0.00757	0.00746
	(A1 * !A3 * B1 * C1 * !Y)	-0.00487	-0.00488	-0.00487
	(A1 * !A3 * B1 * !C1 * Y)	0.00730	0.00740	0.00733
	(A1 * !A3 * B1 * !C1 * Y)	-0.00909	-0.00925	-0.00921
	(A1 * !A3 * !B1 * C1 * Y)	0.00730	0.00740	0.00733
	(A1 * !A3 * !B1 * C1 * Y)	-0.00910	-0.00926	-0.00922
	(A1 * !A3 * !B1 * !C1 * Y)	0.00730	0.00740	0.00733
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00910	-0.00925	-0.00922
	(!A1 * A3 * B1 * C1 * !Y)	0.00949	0.00754	0.00743
	(!A1 * A3 * B1 * C1 * !Y)	-0.00704	-0.00917	-0.00925
	(!A1 * A3 * B1 * !C1 * Y)	0.00730	0.00735	0.00732
	(!A1 * A3 * B1 * !C1 * Y)	-0.00914	-0.00936	-0.00931
	(!A1 * A3 * !B1 * Y)	0.00730	0.00735	0.00732
	(!A1 * A3 * !B1 * Y)	-0.00914	-0.00935	-0.00931
	(!A1 * !A3 * B1 * !C1 * Y)	0.00690	0.00686	0.00689
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00947	-0.00943	-0.00945
	(!A1 * !A3 * !B1 * C1 * Y)	0.00695	0.00706	0.00699
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00942	-0.00950	-0.00945
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00694	0.00706	0.00698
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00942	-0.00952	-0.00945

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)**	-0.00188	-0.00189	-0.00188
	(A1 * A3 * B1 * C1 * !Y)	0.00147	0.00147	0.00146
	(A1 * A3 * B1 * !C1 * Y)	-0.00181	-0.00181	-0.00180
	(A1 * A3 * B1 * !C1 * Y)	0.00168	0.00168	0.00167
	(A1 * A3 * !B1 * Y)	-0.00181	-0.00181	-0.00180
	(A1 * A3 * !B1 * Y)	0.00168	0.00168	0.00167
	(A1 * !A3 * B1 * C1 * !Y)	-0.00188	-0.00188	-0.00186
	(A1 * !A3 * B1 * C1 * !Y)	0.00124	0.00125	0.00125
	(A1 * !A3 * B1 * !C1 * Y)	-0.00180	-0.00181	-0.00180
	(A1 * !A3 * B1 * !C1 * Y)	0.00235	0.00238	0.00236
	(A1 * !A3 * !B1 * C1 * Y)	-0.00181	-0.00181	-0.00180
	(A1 * !A3 * !B1 * C1 * Y)	0.00236	0.00237	0.00236
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00180	-0.00181	-0.00180
	(A1 * !A3 * !B1 * !C1 * Y)	0.00235	0.00237	0.00236
	(!A1 * A3 * B1 * C1 * !Y)	-0.00187	-0.00188	-0.00187
	(!A1 * A3 * B1 * C1 * !Y)	0.00229	0.00230	0.00230
	(!A1 * A3 * B1 * !C1 * Y)	-0.00180	-0.00181	-0.00180
	(!A1 * A3 * B1 * !C1 * Y)	0.00236	0.00239	0.00237
	(!A1 * A3 * !B1 * Y)	-0.00180	-0.00181	-0.00180
	(!A1 * A3 * !B1 * Y)	0.00236	0.00239	0.00236
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00156	-0.00172	-0.00170
	(!A1 * !A3 * B1 * !C1 * Y)	0.00240	0.00242	0.00240
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00163	-0.00172	-0.00172
	(!A1 * !A3 * !B1 * C1 * Y)	0.00241	0.00242	0.00240
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00163	-0.00173	-0.00174
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00241	0.00242	0.00240

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00380	-0.00380	-0.00379
	(A1 * A3 * B1 * C1 * !Y)	0.00309	0.00309	0.00307
	(A1 * A3 * B1 * !C1 * Y)	-0.00372	-0.00374	-0.00373
	(A1 * A3 * B1 * !C1 * Y)	0.00337	0.00339	0.00338
	(A1 * A3 * !B1 * Y)	-0.00372	-0.00374	-0.00373
	(A1 * A3 * !B1 * Y)	0.00337	0.00339	0.00338
	(A1 * !A3 * B1 * C1 * !Y)	-0.00373	-0.00374	-0.00371
	(A1 * !A3 * B1 * C1 * !Y)	0.00260	0.00261	0.00261
	(A1 * !A3 * B1 * !C1 * Y)	-0.00372	-0.00375	-0.00373
	(A1 * !A3 * B1 * !C1 * Y)	0.00467	0.00471	0.00469
	(A1 * !A3 * !B1 * C1 * Y)	-0.00373	-0.00374	-0.00373
	(A1 * !A3 * !B1 * C1 * Y)	0.00469	0.00471	0.00469
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00373	-0.00374	-0.00373
	(A1 * !A3 * !B1 * !C1 * Y)	0.00469	0.00472	0.00469
	(!A1 * A3 * B1 * C1 * !Y)	-0.00373	-0.00375	-0.00371
	(!A1 * A3 * B1 * C1 * !Y)	0.00474	0.00478	0.00475
	(!A1 * A3 * B1 * !C1 * Y)	-0.00373	-0.00373	-0.00373
	(!A1 * A3 * B1 * !C1 * Y)	0.00473	0.00476	0.00473
	(!A1 * A3 * !B1 * Y)	-0.00373	-0.00373	-0.00373
	(!A1 * A3 * !B1 * Y)	0.00473	0.00476	0.00473
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00317	-0.00352	-0.00351
	(!A1 * !A3 * B1 * !C1 * Y)	0.00481	0.00486	0.00481
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00330	-0.00356	-0.00356
	(!A1 * !A3 * !B1 * C1 * Y)	0.00482	0.00484	0.00481
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00331	-0.00356	-0.00357
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00482	0.00485	0.00481

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00747	-0.00748	-0.00746
	(A1 * A3 * B1 * C1 * !Y)	0.00590	0.00590	0.00589
	(A1 * A3 * B1 * !C1 * Y)	-0.00730	-0.00735	-0.00732
	(A1 * A3 * B1 * !C1 * Y)	0.00656	0.00662	0.00657
	(A1 * A3 * !B1 * Y)	-0.00729	-0.00735	-0.00732
	(A1 * A3 * !B1 * Y)	0.00656	0.00662	0.00657
	(A1 * !A3 * B1 * C1 * !Y)	-0.00737	-0.00739	-0.00731
	(A1 * !A3 * B1 * C1 * !Y)	0.00496	0.00499	0.00503
	(A1 * !A3 * B1 * !C1 * Y)	-0.00729	-0.00734	-0.00731
	(A1 * !A3 * B1 * !C1 * Y)	0.00918	0.00925	0.00921
	(A1 * !A3 * !B1 * C1 * Y)	-0.00730	-0.00734	-0.00731
	(A1 * !A3 * !B1 * C1 * Y)	0.00922	0.00926	0.00922
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00730	-0.00733	-0.00731
	(A1 * !A3 * !B1 * !C1 * Y)	0.00922	0.00925	0.00922
	(!A1 * A3 * B1 * C1 * !Y)	-0.00739	-0.00741	-0.00736
	(!A1 * A3 * B1 * C1 * !Y)	0.00922	0.00927	0.00925
	(!A1 * A3 * B1 * !C1 * Y)	-0.00730	-0.00734	-0.00730
	(!A1 * A3 * B1 * !C1 * Y)	0.00930	0.00938	0.00931
	(!A1 * A3 * !B1 * Y)	-0.00730	-0.00734	-0.00730
	(!A1 * A3 * !B1 * Y)	0.00931	0.00938	0.00931
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00633	-0.00686	-0.00689
	(!A1 * !A3 * B1 * !C1 * Y)	0.00951	0.00957	0.00947
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00653	-0.00699	-0.00699
	(!A1 * !A3 * !B1 * C1 * Y)	0.00950	0.00954	0.00948
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00654	-0.00698	-0.00698
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00950	0.00954	0.00948

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)**	0.00201	0.00204	0.00202
	(A2 * B1 * C1 * !Y)	-0.00105	-0.00107	-0.00106
	(A2 * B1 * !C1 * Y)	0.00184	0.00187	0.00184
	(A2 * B1 * !C1 * Y)	-0.00219	-0.00226	-0.00226
	(A2 * !B1 * C1 * Y)	0.00184	0.00187	0.00184
	(A2 * !B1 * C1 * Y)	-0.00219	-0.00226	-0.00226
	(A2 * !B1 * !C1 * Y)	0.00184	0.00187	0.00184
	(A2 * !B1 * !C1 * Y)	-0.00220	-0.00226	-0.00226
	(A1 * !A2 * B1 * C1 * !Y)	0.00202	0.00204	0.00202
	(A1 * !A2 * B1 * C1 * !Y)	-0.00105	-0.00107	-0.00106
	(A1 * !A2 * B1 * !C1 * Y)	0.00184	0.00186	0.00184
	(A1 * !A2 * B1 * !C1 * Y)	-0.00198	-0.00219	-0.00217
	(A1 * !A2 * !B1 * C1 * Y)	0.00184	0.00186	0.00184
	(A1 * !A2 * !B1 * C1 * Y)	-0.00199	-0.00219	-0.00217
	(A1 * !A2 * !B1 * !C1 * Y)	0.00185	0.00186	0.00184
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00200	-0.00220	-0.00218
	(!A1 * !A2 * B1 * !C1 * Y)	0.00172	0.00174	0.00172
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00228	-0.00230	-0.00229
	(!A1 * !A2 * !B1 * C1 * Y)	0.00176	0.00177	0.00175
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00229	-0.00230	-0.00229
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00176	0.00177	0.00175
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00229	-0.00230	-0.00229

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	0.00414	0.00420	0.00416
	(A2 * B1 * C1 * !Y)	-0.00217	-0.00220	-0.00218
	(A2 * B1 * !C1 * Y)	0.00367	0.00372	0.00368
	(A2 * B1 * !C1 * Y)	-0.00456	-0.00470	-0.00469
	(A2 * !B1 * C1 * Y)	0.00367	0.00370	0.00368
	(A2 * !B1 * C1 * Y)	-0.00456	-0.00470	-0.00469
	(A2 * !B1 * !C1 * Y)	0.00369	0.00373	0.00368
	(A2 * !B1 * !C1 * Y)	-0.00458	-0.00470	-0.00469
	(A1 * !A2 * B1 * C1 * !Y)	0.00414	0.00423	0.00416
	(A1 * !A2 * B1 * C1 * !Y)	-0.00216	-0.00221	-0.00217
	(A1 * !A2 * B1 * !C1 * Y)	0.00369	0.00368	0.00368
	(A1 * !A2 * B1 * !C1 * Y)	-0.00419	-0.00450	-0.00450
	(A1 * !A2 * !B1 * C1 * Y)	0.00369	0.00368	0.00368
	(A1 * !A2 * !B1 * C1 * Y)	-0.00420	-0.00450	-0.00450
	(A1 * !A2 * !B1 * !C1 * Y)	0.00369	0.00373	0.00368
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00422	-0.00460	-0.00453
	(!A1 * !A2 * B1 * !C1 * Y)	0.00350	0.00353	0.00349
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00476	-0.00478	-0.00476
	(!A1 * !A2 * !B1 * C1 * Y)	0.00351	0.00355	0.00352
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00475	-0.00478	-0.00476
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00350	0.00355	0.00351
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00475	-0.00479	-0.00476

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	0.00848	0.00860	0.00845
	(A2 * B1 * C1 * !Y)	-0.00439	-0.00442	-0.00434
	(A2 * B1 * !C1 * Y)	0.00711	0.00714	0.00708
	(A2 * B1 * !C1 * Y)	-0.00949	-0.00981	-0.00976
	(A2 * !B1 * C1 * Y)	0.00711	0.00714	0.00708
	(A2 * !B1 * C1 * Y)	-0.00949	-0.00981	-0.00976
	(A2 * !B1 * !C1 * Y)	0.00713	0.00710	0.00708
	(A2 * !B1 * !C1 * Y)	-0.00953	-0.00982	-0.00978
	(A1 * !A2 * B1 * C1 * !Y)	0.00840	0.00860	0.00845
	(A1 * !A2 * B1 * C1 * !Y)	-0.00429	-0.00441	-0.00433
	(A1 * !A2 * B1 * !C1 * Y)	0.00706	0.00711	0.00708
	(A1 * !A2 * B1 * !C1 * Y)	-0.00853	-0.00929	-0.00926
	(A1 * !A2 * !B1 * C1 * Y)	0.00710	0.00711	0.00708
	(A1 * !A2 * !B1 * C1 * Y)	-0.00858	-0.00930	-0.00927
	(A1 * !A2 * !B1 * !C1 * Y)	0.00710	0.00707	0.00708
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00862	-0.00934	-0.00936
	(!A1 * !A2 * B1 * !C1 * Y)	0.00666	0.00672	0.00665
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00994	-0.00998	-0.00993
	(!A1 * !A2 * !B1 * C1 * Y)	0.00677	0.00683	0.00675
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00995	-0.00999	-0.00993
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00678	0.00684	0.00676
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00995	-0.00999	-0.00993

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)**	-0.00195	-0.00196	-0.00201
	(A2 * B1 * C1 * !Y)	0.00112	0.00113	0.00108
	(A2 * B1 * !C1 * Y)	-0.00184	-0.00184	-0.00184
	(A2 * B1 * !C1 * Y)	0.00225	0.00226	0.00226
	(A2 * !B1 * C1 * Y)	-0.00184	-0.00184	-0.00184
	(A2 * !B1 * C1 * Y)	0.00225	0.00226	0.00226
	(A2 * !B1 * !C1 * Y)	-0.00184	-0.00184	-0.00184
	(A2 * !B1 * !C1 * Y)	0.00225	0.00226	0.00226
	(A1 * !A2 * B1 * C1 * !Y)	-0.00187	-0.00189	-0.00200
	(A1 * !A2 * B1 * C1 * !Y)	0.00116	0.00116	0.00107
	(A1 * !A2 * B1 * !C1 * Y)	-0.00184	-0.00185	-0.00184
	(A1 * !A2 * B1 * !C1 * Y)	0.00217	0.00219	0.00217
	(A1 * !A2 * !B1 * C1 * Y)	-0.00183	-0.00185	-0.00184
	(A1 * !A2 * !B1 * C1 * Y)	0.00216	0.00219	0.00217
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00183	-0.00185	-0.00184
	(A1 * !A2 * !B1 * !C1 * Y)	0.00217	0.00220	0.00218
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00158	-0.00174	-0.00172
	(!A1 * !A2 * B1 * !C1 * Y)	0.00229	0.00231	0.00229
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00166	-0.00176	-0.00175
	(!A1 * !A2 * !B1 * C1 * Y)	0.00229	0.00231	0.00229
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00166	-0.00176	-0.00175
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00229	0.00231	0.00229

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	-0.00401	-0.00403	-0.00414
	(A2 * B1 * C1 * !Y)	0.00233	0.00234	0.00222
	(A2 * B1 * !C1 * Y)	-0.00367	-0.00369	-0.00368
	(A2 * B1 * !C1 * Y)	0.00468	0.00470	0.00469
	(A2 * !B1 * C1 * Y)	-0.00366	-0.00369	-0.00368
	(A2 * !B1 * C1 * Y)	0.00466	0.00470	0.00469
	(A2 * !B1 * !C1 * Y)	-0.00366	-0.00369	-0.00368
	(A2 * !B1 * !C1 * Y)	0.00466	0.00470	0.00469
	(A1 * !A2 * B1 * C1 * !Y)	-0.00376	-0.00381	-0.00409
	(A1 * !A2 * B1 * C1 * !Y)	0.00243	0.00246	0.00223
	(A1 * !A2 * B1 * !C1 * Y)	-0.00368	-0.00368	-0.00367
	(A1 * !A2 * B1 * !C1 * Y)	0.00450	0.00450	0.00450
	(A1 * !A2 * !B1 * C1 * Y)	-0.00367	-0.00368	-0.00367
	(A1 * !A2 * !B1 * C1 * Y)	0.00449	0.00450	0.00450
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00366	-0.00371	-0.00367
	(A1 * !A2 * !B1 * !C1 * Y)	0.00451	0.00460	0.00453
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00313	-0.00347	-0.00349
	(!A1 * !A2 * B1 * !C1 * Y)	0.00476	0.00482	0.00477
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00324	-0.00352	-0.00352
	(!A1 * !A2 * !B1 * C1 * Y)	0.00475	0.00480	0.00477
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00325	-0.00352	-0.00351
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00475	0.00480	0.00477

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	-0.00810	-0.00816	-0.00841
	(A2 * B1 * C1 * !Y)	0.00468	0.00469	0.00443
	(A2 * B1 * !C1 * Y)	-0.00704	-0.00710	-0.00706
	(A2 * B1 * !C1 * Y)	0.00971	0.00981	0.00976
	(A2 * !B1 * C1 * Y)	-0.00707	-0.00710	-0.00706
	(A2 * !B1 * C1 * Y)	0.00976	0.00981	0.00976
	(A2 * !B1 * !C1 * Y)	-0.00707	-0.00710	-0.00706
	(A2 * !B1 * !C1 * Y)	0.00977	0.00984	0.00978
	(A1 * !A2 * B1 * C1 * !Y)	-0.00770	-0.00780	-0.00834
	(A1 * !A2 * B1 * C1 * !Y)	0.00478	0.00484	0.00440
	(A1 * !A2 * B1 * !C1 * Y)	-0.00704	-0.00709	-0.00706
	(A1 * !A2 * B1 * !C1 * Y)	0.00921	0.00929	0.00926
	(A1 * !A2 * !B1 * C1 * Y)	-0.00705	-0.00708	-0.00706
	(A1 * !A2 * !B1 * C1 * Y)	0.00924	0.00930	0.00927
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00705	-0.00706	-0.00706
	(A1 * !A2 * !B1 * !C1 * Y)	0.00933	0.00934	0.00936
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00614	-0.00667	-0.00665
	(!A1 * !A2 * B1 * !C1 * Y)	0.00995	0.01004	0.00994
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00635	-0.00680	-0.00675
	(!A1 * !A2 * !B1 * C1 * Y)	0.00997	0.01001	0.00995
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00636	-0.00676	-0.00676
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00997	0.01001	0.00995

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

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

sky130_fd_sc_hs__o311ai_1	**(A3 * !C1 * Y)**	0.00174	0.00175	0.00174
	(A3 * !C1 * Y)	-0.00243	-0.00244	-0.00243
	(A2 * !A3 * !C1 * Y)	0.00173	0.00175	0.00174
	(A2 * !A3 * !C1 * Y)	-0.00243	-0.00244	-0.00243
	(A1 * !A2 * !A3 * !C1 * Y)	0.00174	0.00175	0.00175
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00242	-0.00244	-0.00243
	(!A1 * !A2 * !A3 * C1 * Y)	0.00076	0.00075	0.00075
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00245	-0.00244	-0.00244
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00098	0.00098	0.00098
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00246	-0.00245	-0.00245
sky130_fd_sc_hs__o311ai_2	**(A3 * !C1 * Y)**	0.00359	0.00362	0.00361
	(A3 * !C1 * Y)	-0.00478	-0.00480	-0.00479
	(A2 * !A3 * !C1 * Y)	0.00359	0.00362	0.00361
	(A2 * !A3 * !C1 * Y)	-0.00478	-0.00480	-0.00479
	(A1 * !A2 * !A3 * !C1 * Y)	0.00360	0.00362	0.00361
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00478	-0.00480	-0.00479
	(!A1 * !A2 * !A3 * C1 * Y)	0.00157	0.00158	0.00159
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00479	-0.00481	-0.00479
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00204	0.00207	0.00205
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00481	-0.00486	-0.00483
sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	0.00679	0.00681	0.00679
	(A3 * !C1 * Y)	-0.00545	-0.00545	-0.00544
	(A2 * !A3 * !C1 * Y)	0.00672	0.00677	0.00675
	(A2 * !A3 * !C1 * Y)	-0.00543	-0.00545	-0.00544
	(A1 * !A2 * !A3 * !C1 * Y)	0.00674	0.00676	0.00675
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00545	-0.00545	-0.00544
	(!A1 * !A2 * !A3 * C1 * Y)	0.00283	0.00283	0.00285
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00549	-0.00549	-0.00549
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00371	0.00375	0.00372
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00558	-0.00561	-0.00559

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !C1 * Y)	-0.00162	-0.00175	-0.00174
	(A3 * !C1 * Y)	0.00252	0.00246	0.00244
	(A2 * !A3 * !C1 * Y)	-0.00160	-0.00175	-0.00174
	(A2 * !A3 * !C1 * Y)	0.00254	0.00248	0.00244
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00159	-0.00175	-0.00175
	(A1 * !A2 * !A3 * !C1 * Y)	0.00257	0.00247	0.00244
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00072	-0.00072	-0.00072
	(!A1 * !A2 * !A3 * C1 * Y)	0.00250	0.00251	0.00245
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00098	-0.00098	-0.00098
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00263	0.00260	0.00249
sky130_fd_sc_hs__o311ai_2	(A3 * !C1 * Y)	-0.00335	-0.00362	-0.00361
	(A3 * !C1 * Y)	0.00496	0.00485	0.00480
	(A2 * !A3 * !C1 * Y)	-0.00331	-0.00362	-0.00361
	(A2 * !A3 * !C1 * Y)	0.00500	0.00483	0.00480
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00324	-0.00362	-0.00361
	(A1 * !A2 * !A3 * !C1 * Y)	0.00505	0.00482	0.00480
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00149	-0.00151	-0.00153
	(!A1 * !A2 * !A3 * C1 * Y)	0.00490	0.00496	0.00484
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00204	-0.00207	-0.00205
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00515	0.00512	0.00491

sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	-0.00605	-0.00681	-0.00679
	(A3 * !C1 * Y)	0.00599	0.00548	0.00545
	(A2 * !A3 * !C1 * Y)	-0.00593	-0.00677	-0.00675
	(A2 * !A3 * !C1 * Y)	0.00609	0.00548	0.00545
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00581	-0.00676	-0.00675
	(A1 * !A2 * !A3 * !C1 * Y)	0.00625	0.00549	0.00545
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00267	-0.00271	-0.00274
	(!A1 * !A2 * !A3 * C1 * Y)	0.00571	0.00577	0.00557
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00371	-0.00375	-0.00372
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00629	0.00611	0.00572

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	0.00067	0.00067	0.00065
	(A3 * !B1 * Y)	-0.00283	-0.00283	-0.00286
	(A2 * !A3 * !B1 * Y)	0.00066	0.00067	0.00065
	(A2 * !A3 * !B1 * Y)	-0.00281	-0.00283	-0.00286
	(!A2 * !A3 * !B1 * Y)	0.00066	0.00067	0.00065
	(!A2 * !A3 * !B1 * Y)	-0.00281	-0.00284	-0.00286
	(!A1 * !A2 * !A3 * B1 * Y)	0.00070	0.00071	0.00065
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00271	-0.00274	-0.00285
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	0.00129	0.00130	0.00125
	(A3 * !B1 * Y)	-0.00553	-0.00556	-0.00564
	(A2 * !A3 * !B1 * Y)	0.00129	0.00130	0.00125
	(A2 * !A3 * !B1 * Y)	-0.00553	-0.00556	-0.00564
	(!A2 * !A3 * !B1 * Y)	0.00129	0.00130	0.00125
	(!A2 * !A3 * !B1 * Y)	-0.00553	-0.00557	-0.00564
	(!A1 * !A2 * !A3 * B1 * Y)	0.00133	0.00134	0.00120
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00530	-0.00535	-0.00560
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	0.00238	0.00240	0.00231
	(A3 * !B1 * Y)	-0.00609	-0.00615	-0.00631
	(A2 * !A3 * !B1 * Y)	0.00239	0.00240	0.00231
	(A2 * !A3 * !B1 * Y)	-0.00611	-0.00615	-0.00631
	(!A2 * !A3 * !B1 * Y)	0.00240	0.00240	0.00231
	(!A2 * !A3 * !B1 * Y)	-0.00612	-0.00614	-0.00631
	(!A1 * !A2 * !A3 * B1 * Y)	0.00248	0.00250	0.00225
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00567	-0.00573	-0.00623

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	-0.00064	-0.00065	-0.00064
	(A3 * !B1 * Y)	0.00287	0.00292	0.00287
	(A2 * !A3 * !B1 * Y)	-0.00063	-0.00065	-0.00064
	(A2 * !A3 * !B1 * Y)	0.00285	0.00291	0.00287
	(!A2 * !A3 * !B1 * Y)	-0.00063	-0.00065	-0.00064
	(!A2 * !A3 * !B1 * Y)	0.00285	0.00291	0.00287
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00063	-0.00063	-0.00062
	(!A1 * !A2 * !A3 * B1 * Y)	0.00287	0.00290	0.00287
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	-0.00122	-0.00124	-0.00122
	(A3 * !B1 * Y)	0.00562	0.00574	0.00565
	(A2 * !A3 * !B1 * Y)	-0.00122	-0.00124	-0.00122
	(A2 * !A3 * !B1 * Y)	0.00562	0.00574	0.00565
	(!A2 * !A3 * !B1 * Y)	-0.00122	-0.00124	-0.00122
	(!A2 * !A3 * !B1 * Y)	0.00562	0.00574	0.00565
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00118	-0.00121	-0.00118
	(!A1 * !A2 * !A3 * B1 * Y)	0.00562	0.00573	0.00564
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	-0.00225	-0.00226	-0.00226
	(A3 * !B1 * Y)	0.00629	0.00630	0.00631
	(A2 * !A3 * !B1 * Y)	-0.00226	-0.00230	-0.00226
	(A2 * !A3 * !B1 * Y)	0.00629	0.00641	0.00631
	(!A2 * !A3 * !B1 * Y)	-0.00226	-0.00230	-0.00226
	(!A2 * !A3 * !B1 * Y)	0.00629	0.00641	0.00631
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00219	-0.00223	-0.00218
	(!A1 * !A2 * !A3 * B1 * Y)	0.00628	0.00640	0.00630

SKY130_FD_SC_HS__O311Ax

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00260	0.00308	0.00266	0.00261	0.00267	1.28892
sky130_fd_sc_hs__o311a_2	0.00289	0.00289	0.00288	0.00284	0.00282	2.54136
sky130_fd_sc_hs__o311a_4	0.00479	0.00523	0.00484	0.00584	0.00506	4.83548

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311a_1	0.00000	0.21449	0.78504
sky130_fd_sc_hs__o311a_2	0.00000	0.28572	0.63601
sky130_fd_sc_hs__o311a_4	0.00000	0.59103	1.58704

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)	0.10783	0.57201	5.91791
	A2->X (RR)	0.10480	0.56787	5.84601
	A3->X (RR)	0.09354	0.54468	5.80914
	B1->X (RR)	0.09929	0.58938	6.38157
	C1->X (RR)	0.09388	0.59054	6.43548
sky130_fd_sc_hs__o311a_2	A1->X (RR)	0.11075	0.48676	5.94875
	A2->X (RR)	0.10484	0.47523	5.84562
	A3->X (RR)	0.08905	0.45361	5.79118
	B1->X (RR)	0.10505	0.51733	6.40084
	C1->X (RR)	0.09835	0.51934	6.45358
sky130_fd_sc_hs__o311a_4	A1->X (RR)	0.12060	0.43293	5.92084
	A2->X (RR)	0.11151	0.41652	5.80873
	A3->X (RR)	0.09886	0.40084	5.80605
	B1->X (RR)	0.11505	0.46667	6.43476
	C1->X (RR)	0.10509	0.46312	6.50896

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311a_1	A1->X (FF)	0.23598	0.66080	5.09826
	A2->X (FF)	0.22659	0.68549	5.31002
	A3->X (FF)	0.18557	0.67136	5.32144
	B1->X (FF)	0.07039	0.48491	4.66315
	C1->X (FF)	0.06416	0.46777	4.59212
sky130_fd_sc_hs__o311a_2	A1->X (FF)	0.23942	0.64708	5.24999
	A2->X (FF)	0.22501	0.67207	5.51957
	A3->X (FF)	0.19991	0.67110	5.54418
	B1->X (FF)	0.08411	0.48815	4.87582
	C1->X (FF)	0.07613	0.46919	4.80746
sky130_fd_sc_hs__o311a_4	A1->X (FF)	0.28807	0.67313	5.39770
	A2->X (FF)	0.27316	0.68830	5.56806
	A3->X (FF)	0.22990	0.67361	5.57585
	B1->X (FF)	0.07673	0.43813	4.76330
	C1->X (FF)	0.06845	0.41935	4.70456

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	A1	0.01867	0.01872	0.04818
	A1	0.00814	0.00821	0.03823
	A2	0.01667	0.01706	0.04459
	A2	0.00706	0.00746	0.03510
	A3	0.01344	0.01428	0.04940
	A3	0.00525	0.00609	0.04131
	B1	0.01467	0.01624	0.07770
	B1	0.00512	0.00720	0.07107
	C1	0.01367	0.01602	0.08032
	C1	0.00507	0.00792	0.07450
sky130_fd_sc_hs__o311a_2	A1	0.02210	0.02204	0.05100
	A1	0.01069	0.01067	0.04076
	A2	0.01957	0.02041	0.04875
	A2	0.00946	0.01034	0.03881
	A3	0.01708	0.01821	0.05282
	A3	0.00824	0.00938	0.04420
	B1	0.01506	0.01712	0.08048
	B1	0.00812	0.01020	0.07462
	C1	0.01386	0.01639	0.08218
	C1	0.00808	0.01062	0.07742

sky130_fd_sc_hs__o311a_4	**A1**	0.04262	0.04345	0.11111
	A1	0.02276	0.02373	0.09129
	A2	0.03823	0.03961	0.10247
	A2	0.02011	0.02159	0.08485
	A3	0.03166	0.03386	0.11188
	A3	0.01610	0.01831	0.09681
	B1	0.02867	0.03256	0.14603
	B1	0.01564	0.01960	0.13513
	C1	0.02562	0.03122	0.16055
	C1	0.01565	0.02133	0.15251

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311a_1	**A1**	0.00666	0.00618	0.03944
	A1	0.01705	0.01658	0.04874
	A2	0.00676	0.00656	0.03803
	A2	0.01620	0.01604	0.04730
	A3	0.00671	0.00814	0.04908
	A3	0.01472	0.01615	0.05684
	B1	0.00421	0.00791	0.06948
	B1	0.01192	0.01562	0.07639
	C1	0.00369	0.00760	0.06906
	C1	0.01052	0.01431	0.07540

sky130_fd_sc_hs__o311a_2	**A1**	0.01086	0.00931	0.04258
	A1	0.02212	0.02057	0.05218
	A2	0.01086	0.00984	0.04383
	A2	0.02078	0.01981	0.05212
	A3	0.01088	0.01104	0.05578
	A3	0.01948	0.01972	0.06097
	B1	0.00780	0.01174	0.07497
	B1	0.01605	0.01961	0.07864
	C1	0.00709	0.01107	0.07492
	C1	0.01421	0.01785	0.07628
sky130_fd_sc_hs__o311a_4	**A1**	0.02504	0.02017	0.09241
	A1	0.04459	0.03993	0.10609
	A2	0.02478	0.02087	0.08961
	A2	0.04250	0.03858	0.09986
	A3	0.02504	0.02333	0.10471
	A3	0.04019	0.03863	0.11755
	B1	0.01541	0.02224	0.14462
	B1	0.03072	0.03737	0.15832
	C1	0.01394	0.02140	0.14662
	C1	0.02631	0.03369	0.15867

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)**	0.00167	0.00169	0.00167
	(A2 * B1 * !C1 * !X)	-0.00225	-0.00231	-0.00229
	(A2 * A3 * B1 * C1 * X)	0.00194	0.00196	0.00193
	(A2 * A3 * B1 * C1 * X)	-0.00198	-0.00204	-0.00203
	(A2 * !B1 * !X)	0.00167	0.00169	0.00167
	(A2 * !B1 * !X)	-0.00225	-0.00231	-0.00229
	(A2 * !A3 * B1 * C1 * X)	0.00200	0.00196	0.00194
	(A2 * !A3 * B1 * C1 * X)	-0.00190	-0.00203	-0.00203
	(!A2 * A3 * B1 * C1 * X)	0.00201	0.00195	0.00194
	(!A2 * A3 * B1 * C1 * X)	-0.00179	-0.00198	-0.00198
	(!A2 * A3 * B1 * !C1 * !X)	0.00167	0.00168	0.00167
	(!A2 * A3 * B1 * !C1 * !X)	-0.00211	-0.00224	-0.00224
	(!A2 * A3 * !B1 * !X)	0.00167	0.00168	0.00167
	(!A2 * A3 * !B1 * !X)	-0.00211	-0.00224	-0.00224
	(!A2 * !A3 * B1 * !C1 * !X)	0.00159	0.00160	0.00158
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00231	-0.00232	-0.00231
	(!A2 * !A3 * !B1 * C1 * !X)	0.00160	0.00162	0.00161
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00230	-0.00232	-0.00231
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00163	0.00164	0.00162
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00231	-0.00233	-0.00231

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	0.00178	0.00178	0.00178
	(A2 * B1 * !C1 * !X)	-0.00247	-0.00253	-0.00253
	(A2 * A3 * B1 * C1 * X)	0.00201	0.00203	0.00201
	(A2 * A3 * B1 * C1 * X)	-0.00224	-0.00232	-0.00231
	(A2 * !B1 * !X)	0.00178	0.00178	0.00178
	(A2 * !B1 * !X)	-0.00247	-0.00253	-0.00253
	(A2 * !A3 * B1 * C1 * X)	0.00212	0.00203	0.00201
	(A2 * !A3 * B1 * C1 * X)	-0.00212	-0.00231	-0.00230
	(!A2 * A3 * B1 * C1 * X)	0.00208	0.00202	0.00201
	(!A2 * A3 * B1 * C1 * X)	-0.00201	-0.00224	-0.00224
	(!A2 * A3 * B1 * !C1 * !X)	0.00178	0.00179	0.00178
	(!A2 * A3 * B1 * !C1 * !X)	-0.00229	-0.00247	-0.00246
	(!A2 * A3 * !B1 * !X)	0.00178	0.00179	0.00178
	(!A2 * A3 * !B1 * !X)	-0.00229	-0.00247	-0.00246
	(!A2 * !A3 * B1 * !C1 * !X)	0.00168	0.00169	0.00167
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00256	-0.00257	-0.00255
	(!A2 * !A3 * !B1 * C1 * !X)	0.00169	0.00171	0.00170
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00255	-0.00257	-0.00256
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00170	0.00173	0.00171
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00255	-0.00256	-0.00256

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	0.00305	0.00308	0.00304
	(A2 * B1 * !C1 * !X)	-0.00414	-0.00427	-0.00424
	(A2 * A3 * B1 * C1 * X)	0.00305	0.00308	0.00305
	(A2 * A3 * B1 * C1 * X)	-0.00412	-0.00426	-0.00424
	(A2 * !B1 * !X)	0.00305	0.00308	0.00304
	(A2 * !B1 * !X)	-0.00414	-0.00426	-0.00424
	(A2 * !A3 * B1 * C1 * X)	0.00332	0.00308	0.00305
	(A2 * !A3 * B1 * C1 * X)	-0.00383	-0.00424	-0.00424
	(!A2 * A3 * B1 * C1 * X)	0.00330	0.00309	0.00305
	(!A2 * A3 * B1 * C1 * X)	-0.00359	-0.00415	-0.00413
	(!A2 * A3 * B1 * !C1 * !X)	0.00304	0.00307	0.00304
	(!A2 * A3 * B1 * !C1 * !X)	-0.00378	-0.00413	-0.00411
	(!A2 * A3 * !B1 * !X)	0.00304	0.00307	0.00304
	(!A2 * A3 * !B1 * !X)	-0.00378	-0.00413	-0.00411
	(!A2 * !A3 * B1 * !C1 * !X)	0.00289	0.00292	0.00289
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00429	-0.00431	-0.00428
	(!A2 * !A3 * !B1 * C1 * !X)	0.00293	0.00295	0.00292
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00429	-0.00431	-0.00428
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00293	0.00295	0.00292
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00429	-0.00431	-0.00428

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)**	-0.00166	-0.00167	-0.00166
	(A2 * B1 * !C1 * !X)	0.00229	0.00231	0.00229
	(A2 * A3 * B1 * C1 * X)	-0.00192	-0.00193	-0.00192
	(A2 * A3 * B1 * C1 * X)	0.00203	0.00204	0.00203
	(A2 * !B1 * !X)	-0.00166	-0.00167	-0.00166
	(A2 * !B1 * !X)	0.00229	0.00231	0.00229
	(A2 * !A3 * B1 * C1 * X)	-0.00192	-0.00192	-0.00192
	(A2 * !A3 * B1 * C1 * X)	0.00203	0.00203	0.00203
	(!A2 * A3 * B1 * C1 * X)	-0.00192	-0.00192	-0.00192
	(!A2 * A3 * B1 * C1 * X)	0.00197	0.00198	0.00198
	(!A2 * A3 * B1 * !C1 * !X)	-0.00166	-0.00166	-0.00166
	(!A2 * A3 * B1 * !C1 * !X)	0.00223	0.00224	0.00224
	(!A2 * A3 * !B1 * !X)	-0.00166	-0.00167	-0.00166
	(!A2 * A3 * !B1 * !X)	0.00223	0.00224	0.00224
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00149	-0.00160	-0.00158
	(!A2 * !A3 * B1 * !C1 * !X)	0.00231	0.00234	0.00232
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00155	-0.00162	-0.00161
	(!A2 * !A3 * !B1 * C1 * !X)	0.00231	0.00234	0.00232
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00155	-0.00163	-0.00162
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00231	0.00234	0.00232

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	-0.00176	-0.00178	-0.00177
	(A2 * B1 * !C1 * !X)	0.00251	0.00255	0.00253
	(A2 * A3 * B1 * C1 * X)	-0.00198	-0.00200	-0.00199
	(A2 * A3 * B1 * C1 * X)	0.00229	0.00233	0.00231
	(A2 * !B1 * !X)	-0.00176	-0.00178	-0.00177
	(A2 * !B1 * !X)	0.00251	0.00255	0.00253
	(A2 * !A3 * B1 * C1 * X)	-0.00198	-0.00200	-0.00199
	(A2 * !A3 * B1 * C1 * X)	0.00229	0.00233	0.00231
	(!A2 * A3 * B1 * C1 * X)	-0.00199	-0.00200	-0.00199
	(!A2 * A3 * B1 * C1 * X)	0.00223	0.00225	0.00224
	(!A2 * A3 * B1 * !C1 * !X)	-0.00177	-0.00178	-0.00177
	(!A2 * A3 * B1 * !C1 * !X)	0.00245	0.00247	0.00246
	(!A2 * A3 * !B1 * !X)	-0.00177	-0.00178	-0.00177
	(!A2 * A3 * !B1 * !X)	0.00245	0.00247	0.00246
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00154	-0.00169	-0.00167
	(!A2 * !A3 * B1 * !C1 * !X)	0.00257	0.00259	0.00256
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00160	-0.00170	-0.00170
	(!A2 * !A3 * !B1 * C1 * !X)	0.00258	0.00258	0.00257
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00160	-0.00170	-0.00171
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00258	0.00258	0.00257

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	-0.00303	-0.00304	-0.00303
	(A2 * B1 * !C1 * !X)	0.00424	0.00427	0.00424
	(A2 * A3 * B1 * C1 * X)	-0.00302	-0.00304	-0.00302
	(A2 * A3 * B1 * C1 * X)	0.00424	0.00427	0.00424
	(A2 * !B1 * !X)	-0.00303	-0.00304	-0.00303
	(A2 * !B1 * !X)	0.00424	0.00426	0.00424
	(A2 * !A3 * B1 * C1 * X)	-0.00302	-0.00302	-0.00302
	(A2 * !A3 * B1 * C1 * X)	0.00425	0.00424	0.00424
	(!A2 * A3 * B1 * C1 * X)	-0.00301	-0.00302	-0.00301
	(!A2 * A3 * B1 * C1 * X)	0.00411	0.00415	0.00413
	(!A2 * A3 * B1 * !C1 * !X)	-0.00302	-0.00304	-0.00303
	(!A2 * A3 * B1 * !C1 * !X)	0.00409	0.00413	0.00411
	(!A2 * A3 * !B1 * !X)	-0.00302	-0.00304	-0.00303
	(!A2 * A3 * !B1 * !X)	0.00409	0.00413	0.00411
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00266	-0.00291	-0.00289
	(!A2 * !A3 * B1 * !C1 * !X)	0.00430	0.00435	0.00430
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00275	-0.00292	-0.00292
	(!A2 * !A3 * !B1 * C1 * !X)	0.00430	0.00433	0.00430
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00275	-0.00292	-0.00292
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00430	0.00433	0.00430

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)**	0.00215	0.00219	0.00208
	(A1 * A3 * B1 * C1 * X)	-0.00142	-0.00144	-0.00143
	(A1 * A3 * B1 * !C1 * !X)	0.00168	0.00168	0.00167
	(A1 * A3 * B1 * !C1 * !X)	-0.00188	-0.00190	-0.00189
	(A1 * A3 * !B1 * !X)	0.00168	0.00168	0.00167
	(A1 * A3 * !B1 * !X)	-0.00188	-0.00190	-0.00189
	(A1 * !A3 * B1 * C1 * X)	0.00201	0.00203	0.00200
	(A1 * !A3 * B1 * C1 * X)	-0.00114	-0.00115	-0.00116
	(A1 * !A3 * B1 * !C1 * !X)	0.00168	0.00168	0.00167
	(A1 * !A3 * B1 * !C1 * !X)	-0.00242	-0.00243	-0.00242
	(A1 * !A3 * !B1 * C1 * !X)	0.00169	0.00168	0.00167
	(A1 * !A3 * !B1 * C1 * !X)	-0.00241	-0.00243	-0.00242
	(A1 * !A3 * !B1 * !C1 * !X)	0.00169	0.00167	0.00167
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00241	-0.00243	-0.00242
	(!A1 * A3 * B1 * C1 * X)	0.00249	0.00203	0.00199
	(!A1 * A3 * B1 * C1 * X)	-0.00162	-0.00211	-0.00211
	(!A1 * A3 * B1 * !C1 * !X)	0.00168	0.00169	0.00167
	(!A1 * A3 * B1 * !C1 * !X)	-0.00240	-0.00244	-0.00242
	(!A1 * A3 * !B1 * !X)	0.00168	0.00169	0.00167
	(!A1 * A3 * !B1 * !X)	-0.00240	-0.00245	-0.00243
	(!A1 * !A3 * B1 * !C1 * !X)	0.00158	0.00160	0.00159
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00245	-0.00246	-0.00245
	(!A1 * !A3 * !B1 * C1 * !X)	0.00161	0.00163	0.00161
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00245	-0.00246	-0.00245
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00161	0.00162	0.00161
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00245	-0.00246	-0.00245

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	0.00203	0.00204	0.00193
	(A1 * A3 * B1 * C1 * X)	-0.00154	-0.00154	-0.00154
	(A1 * A3 * B1 * !C1 * !X)	0.00178	0.00180	0.00178
	(A1 * A3 * B1 * !C1 * !X)	-0.00172	-0.00172	-0.00172
	(A1 * A3 * !B1 * !X)	0.00178	0.00180	0.00178
	(A1 * A3 * !B1 * !X)	-0.00172	-0.00172	-0.00172
	(A1 * !A3 * B1 * C1 * X)	0.00188	0.00189	0.00186
	(A1 * !A3 * B1 * C1 * X)	-0.00126	-0.00127	-0.00127
	(A1 * !A3 * B1 * !C1 * !X)	0.00180	0.00180	0.00178
	(A1 * !A3 * B1 * !C1 * !X)	-0.00239	-0.00241	-0.00241
	(A1 * !A3 * !B1 * C1 * !X)	0.00180	0.00180	0.00178
	(A1 * !A3 * !B1 * C1 * !X)	-0.00239	-0.00241	-0.00241
	(A1 * !A3 * !B1 * !C1 * !X)	0.00180	0.00180	0.00178
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00239	-0.00242	-0.00241
	(!A1 * A3 * B1 * C1 * X)	0.00233	0.00189	0.00186
	(!A1 * A3 * B1 * C1 * X)	-0.00189	-0.00235	-0.00235
	(!A1 * A3 * B1 * !C1 * !X)	0.00179	0.00180	0.00178
	(!A1 * A3 * B1 * !C1 * !X)	-0.00240	-0.00243	-0.00241
	(!A1 * A3 * !B1 * !X)	0.00179	0.00180	0.00178
	(!A1 * A3 * !B1 * !X)	-0.00240	-0.00243	-0.00241
	(!A1 * !A3 * B1 * !C1 * !X)	0.00167	0.00169	0.00168
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00244	-0.00245	-0.00244
	(!A1 * !A3 * !B1 * C1 * !X)	0.00173	0.00174	0.00173
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00245	-0.00246	-0.00245
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00170	0.00171	0.00170
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00246	-0.00246	-0.00245

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	0.00376	0.00389	0.00365
	(A1 * A3 * B1 * C1 * X)	-0.00289	-0.00290	-0.00289
	(A1 * A3 * B1 * !C1 * !X)	0.00346	0.00352	0.00348
	(A1 * A3 * B1 * !C1 * !X)	-0.00313	-0.00317	-0.00314
	(A1 * A3 * !B1 * !X)	0.00350	0.00352	0.00348
	(A1 * A3 * !B1 * !X)	-0.00313	-0.00317	-0.00314
	(A1 * !A3 * B1 * C1 * X)	0.00353	0.00355	0.00350
	(A1 * !A3 * B1 * C1 * X)	-0.00232	-0.00233	-0.00233
	(A1 * !A3 * B1 * !C1 * !X)	0.00348	0.00352	0.00348
	(A1 * !A3 * B1 * !C1 * !X)	-0.00414	-0.00421	-0.00420
	(A1 * !A3 * !B1 * C1 * !X)	0.00348	0.00352	0.00348
	(A1 * !A3 * !B1 * C1 * !X)	-0.00414	-0.00420	-0.00420
	(A1 * !A3 * !B1 * !C1 * !X)	0.00348	0.00352	0.00348
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00414	-0.00421	-0.00420
	(!A1 * A3 * B1 * C1 * X)	0.00445	0.00354	0.00349
	(!A1 * A3 * B1 * C1 * X)	-0.00326	-0.00416	-0.00421
	(!A1 * A3 * B1 * !C1 * !X)	0.00346	0.00349	0.00348
	(!A1 * A3 * B1 * !C1 * !X)	-0.00410	-0.00421	-0.00421
	(!A1 * A3 * !B1 * !X)	0.00351	0.00349	0.00348
	(!A1 * A3 * !B1 * !X)	-0.00414	-0.00421	-0.00421
	(!A1 * !A3 * B1 * !C1 * !X)	0.00327	0.00331	0.00327
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00425	-0.00428	-0.00426
	(!A1 * !A3 * !B1 * C1 * !X)	0.00335	0.00337	0.00333
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00427	-0.00428	-0.00426
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00336	0.00338	0.00335
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00427	-0.00428	-0.00426

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)**	-0.00198	-0.00199	-0.00199
	(A1 * A3 * B1 * C1 * X)	0.00142	0.00144	0.00143
	(A1 * A3 * B1 * !C1 * !X)	-0.00166	-0.00167	-0.00166
	(A1 * A3 * B1 * !C1 * !X)	0.00188	0.00190	0.00189
	(A1 * A3 * !B1 * !X)	-0.00166	-0.00167	-0.00166
	(A1 * A3 * !B1 * !X)	0.00188	0.00190	0.00189
	(A1 * !A3 * B1 * C1 * X)	-0.00197	-0.00198	-0.00195
	(A1 * !A3 * B1 * C1 * X)	0.00119	0.00120	0.00120
	(A1 * !A3 * B1 * !C1 * !X)	-0.00166	-0.00167	-0.00166
	(A1 * !A3 * B1 * !C1 * !X)	0.00242	0.00243	0.00242
	(A1 * !A3 * !B1 * C1 * !X)	-0.00165	-0.00167	-0.00166
	(A1 * !A3 * !B1 * C1 * !X)	0.00241	0.00243	0.00242
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00166	-0.00167	-0.00166
	(A1 * !A3 * !B1 * !C1 * !X)	0.00241	0.00243	0.00242
	(!A1 * A3 * B1 * C1 * X)	-0.00196	-0.00198	-0.00196
	(!A1 * A3 * B1 * C1 * X)	0.00210	0.00213	0.00212
	(!A1 * A3 * B1 * !C1 * !X)	-0.00167	-0.00167	-0.00166
	(!A1 * A3 * B1 * !C1 * !X)	0.00243	0.00244	0.00242
	(!A1 * A3 * !B1 * !X)	-0.00165	-0.00167	-0.00166
	(!A1 * A3 * !B1 * !X)	0.00241	0.00245	0.00243
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00147	-0.00160	-0.00159
	(!A1 * !A3 * B1 * !C1 * !X)	0.00245	0.00248	0.00246
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00153	-0.00162	-0.00161
	(!A1 * !A3 * !B1 * C1 * !X)	0.00245	0.00247	0.00246
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00153	-0.00162	-0.00161
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00245	0.00248	0.00246

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	-0.00184	-0.00185	-0.00184
	(A1 * A3 * B1 * C1 * X)	0.00154	0.00154	0.00154
	(A1 * A3 * B1 * !C1 * !X)	-0.00178	-0.00178	-0.00177
	(A1 * A3 * B1 * !C1 * !X)	0.00172	0.00172	0.00172
	(A1 * A3 * !B1 * !X)	-0.00178	-0.00178	-0.00177
	(A1 * A3 * !B1 * !X)	0.00172	0.00172	0.00172
	(A1 * !A3 * B1 * C1 * X)	-0.00183	-0.00184	-0.00182
	(A1 * !A3 * B1 * C1 * X)	0.00131	0.00132	0.00132
	(A1 * !A3 * B1 * !C1 * !X)	-0.00177	-0.00178	-0.00177
	(A1 * !A3 * B1 * !C1 * !X)	0.00240	0.00241	0.00241
	(A1 * !A3 * !B1 * C1 * !X)	-0.00178	-0.00178	-0.00177
	(A1 * !A3 * !B1 * C1 * !X)	0.00241	0.00241	0.00241
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00178	-0.00178	-0.00177
	(A1 * !A3 * !B1 * !C1 * !X)	0.00241	0.00242	0.00241
	(!A1 * A3 * B1 * C1 * X)	-0.00184	-0.00184	-0.00183
	(!A1 * A3 * B1 * C1 * X)	0.00236	0.00236	0.00236
	(!A1 * A3 * B1 * !C1 * !X)	-0.00177	-0.00178	-0.00177
	(!A1 * A3 * B1 * !C1 * !X)	0.00241	0.00243	0.00241
	(!A1 * A3 * !B1 * !X)	-0.00177	-0.00178	-0.00177
	(!A1 * A3 * !B1 * !X)	0.00241	0.00243	0.00241
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00153	-0.00169	-0.00168
	(!A1 * !A3 * B1 * !C1 * !X)	0.00246	0.00247	0.00245
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00160	-0.00170	-0.00171
	(!A1 * !A3 * !B1 * C1 * !X)	0.00247	0.00247	0.00246
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00160	-0.00170	-0.00170
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00247	0.00247	0.00246

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	-0.00347	-0.00347	-0.00347
	(A1 * A3 * B1 * C1 * X)	0.00289	0.00290	0.00289
	(A1 * A3 * B1 * !C1 * !X)	-0.00346	-0.00349	-0.00347
	(A1 * A3 * B1 * !C1 * !X)	0.00313	0.00317	0.00314
	(A1 * A3 * !B1 * !X)	-0.00346	-0.00349	-0.00347
	(A1 * A3 * !B1 * !X)	0.00313	0.00317	0.00314
	(A1 * !A3 * B1 * C1 * X)	-0.00344	-0.00345	-0.00340
	(A1 * !A3 * B1 * C1 * X)	0.00240	0.00241	0.00243
	(A1 * !A3 * B1 * !C1 * !X)	-0.00348	-0.00348	-0.00347
	(A1 * !A3 * B1 * !C1 * !X)	0.00421	0.00421	0.00420
	(A1 * !A3 * !B1 * C1 * !X)	-0.00346	-0.00348	-0.00347
	(A1 * !A3 * !B1 * C1 * !X)	0.00419	0.00420	0.00420
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00346	-0.00348	-0.00347
	(A1 * !A3 * !B1 * !C1 * !X)	0.00419	0.00421	0.00420
	(!A1 * A3 * B1 * C1 * X)	-0.00345	-0.00346	-0.00343
	(!A1 * A3 * B1 * C1 * X)	0.00422	0.00424	0.00424
	(!A1 * A3 * B1 * !C1 * !X)	-0.00346	-0.00348	-0.00347
	(!A1 * A3 * B1 * !C1 * !X)	0.00421	0.00423	0.00421
	(!A1 * A3 * !B1 * !X)	-0.00347	-0.00348	-0.00347
	(!A1 * A3 * !B1 * !X)	0.00421	0.00423	0.00421
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00302	-0.00331	-0.00327
	(!A1 * !A3 * B1 * !C1 * !X)	0.00427	0.00431	0.00428
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00313	-0.00333	-0.00333
	(!A1 * !A3 * !B1 * C1 * !X)	0.00427	0.00430	0.00428
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00313	-0.00333	-0.00335
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00427	0.00430	0.00428

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)**	0.00185	0.00186	0.00185
	(A2 * B1 * C1 * X)	-0.00106	-0.00107	-0.00106
	(A2 * B1 * !C1 * !X)	0.00165	0.00167	0.00165
	(A2 * B1 * !C1 * !X)	-0.00210	-0.00217	-0.00216
	(A2 * !B1 * C1 * !X)	0.00165	0.00167	0.00165
	(A2 * !B1 * C1 * !X)	-0.00210	-0.00217	-0.00216
	(A2 * !B1 * !C1 * !X)	0.00165	0.00167	0.00165
	(A2 * !B1 * !C1 * !X)	-0.00210	-0.00216	-0.00216
	(A1 * !A2 * B1 * C1 * X)	0.00185	0.00186	0.00185
	(A1 * !A2 * B1 * C1 * X)	-0.00106	-0.00107	-0.00106
	(A1 * !A2 * B1 * !C1 * !X)	0.00165	0.00167	0.00165
	(A1 * !A2 * B1 * !C1 * !X)	-0.00194	-0.00209	-0.00208
	(A1 * !A2 * !B1 * C1 * !X)	0.00165	0.00167	0.00165
	(A1 * !A2 * !B1 * C1 * !X)	-0.00195	-0.00210	-0.00208
	(A1 * !A2 * !B1 * !C1 * !X)	0.00165	0.00167	0.00165
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00195	-0.00211	-0.00209
	(!A1 * !A2 * B1 * !C1 * !X)	0.00159	0.00158	0.00158
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00218	-0.00219	-0.00218
	(!A1 * !A2 * !B1 * C1 * !X)	0.00162	0.00162	0.00160
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00218	-0.00219	-0.00218
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00162	0.00162	0.00160
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00218	-0.00219	-0.00218

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	0.00204	0.00206	0.00205
	(A2 * B1 * C1 * X)	-0.00107	-0.00108	-0.00107
	(A2 * B1 * !C1 * !X)	0.00178	0.00179	0.00178
	(A2 * B1 * !C1 * !X)	-0.00229	-0.00236	-0.00235
	(A2 * !B1 * C1 * !X)	0.00178	0.00179	0.00178
	(A2 * !B1 * C1 * !X)	-0.00229	-0.00235	-0.00235
	(A2 * !B1 * !C1 * !X)	0.00178	0.00181	0.00178
	(A2 * !B1 * !C1 * !X)	-0.00230	-0.00236	-0.00235
	(A1 * !A2 * B1 * C1 * X)	0.00204	0.00206	0.00205
	(A1 * !A2 * B1 * C1 * X)	-0.00106	-0.00107	-0.00106
	(A1 * !A2 * B1 * !C1 * !X)	0.00178	0.00180	0.00178
	(A1 * !A2 * B1 * !C1 * !X)	-0.00208	-0.00226	-0.00226
	(A1 * !A2 * !B1 * C1 * !X)	0.00179	0.00180	0.00178
	(A1 * !A2 * !B1 * C1 * !X)	-0.00210	-0.00226	-0.00226
	(A1 * !A2 * !B1 * !C1 * !X)	0.00179	0.00180	0.00178
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00210	-0.00229	-0.00227
	(!A1 * !A2 * B1 * !C1 * !X)	0.00168	0.00170	0.00168
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00238	-0.00239	-0.00238
	(!A1 * !A2 * !B1 * C1 * !X)	0.00172	0.00173	0.00171
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00239	-0.00240	-0.00238
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00173	0.00173	0.00172
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00239	-0.00239	-0.00238

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	0.00353	0.00355	0.00353
	(A2 * B1 * C1 * X)	-0.00210	-0.00212	-0.00210
	(A2 * B1 * !C1 * !X)	0.00308	0.00311	0.00309
	(A2 * B1 * !C1 * !X)	-0.00418	-0.00433	-0.00432
	(A2 * !B1 * C1 * !X)	0.00308	0.00311	0.00309
	(A2 * !B1 * C1 * !X)	-0.00418	-0.00433	-0.00432
	(A2 * !B1 * !C1 * !X)	0.00308	0.00313	0.00309
	(A2 * !B1 * !C1 * !X)	-0.00419	-0.00436	-0.00432
	(A1 * !A2 * B1 * C1 * X)	0.00353	0.00355	0.00353
	(A1 * !A2 * B1 * C1 * X)	-0.00210	-0.00211	-0.00209
	(A1 * !A2 * B1 * !C1 * !X)	0.00308	0.00313	0.00309
	(A1 * !A2 * B1 * !C1 * !X)	-0.00385	-0.00415	-0.00416
	(A1 * !A2 * !B1 * C1 * !X)	0.00308	0.00313	0.00309
	(A1 * !A2 * !B1 * C1 * !X)	-0.00385	-0.00415	-0.00416
	(A1 * !A2 * !B1 * !C1 * !X)	0.00308	0.00313	0.00309
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00385	-0.00421	-0.00418
	(!A1 * !A2 * B1 * !C1 * !X)	0.00296	0.00298	0.00296
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00438	-0.00439	-0.00437
	(!A1 * !A2 * !B1 * C1 * !X)	0.00299	0.00302	0.00299
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00438	-0.00440	-0.00437
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00299	0.00299	0.00298
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00438	-0.00438	-0.00437

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)**	-0.00175	-0.00176	-0.00183
	(A2 * B1 * C1 * X)	0.00116	0.00116	0.00109
	(A2 * B1 * !C1 * !X)	-0.00164	-0.00165	-0.00165
	(A2 * B1 * !C1 * !X)	0.00215	0.00217	0.00216
	(A2 * !B1 * C1 * !X)	-0.00165	-0.00165	-0.00164
	(A2 * !B1 * C1 * !X)	0.00216	0.00217	0.00216
	(A2 * !B1 * !C1 * !X)	-0.00165	-0.00165	-0.00164
	(A2 * !B1 * !C1 * !X)	0.00216	0.00216	0.00216
	(A1 * !A2 * B1 * C1 * X)	-0.00167	-0.00168	-0.00182
	(A1 * !A2 * B1 * C1 * X)	0.00120	0.00120	0.00109
	(A1 * !A2 * B1 * !C1 * !X)	-0.00164	-0.00166	-0.00164
	(A1 * !A2 * B1 * !C1 * !X)	0.00207	0.00209	0.00208
	(A1 * !A2 * !B1 * C1 * !X)	-0.00164	-0.00166	-0.00164
	(A1 * !A2 * !B1 * C1 * !X)	0.00208	0.00210	0.00208
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00164	-0.00165	-0.00164
	(A1 * !A2 * !B1 * !C1 * !X)	0.00209	0.00211	0.00209
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00146	-0.00158	-0.00158
	(!A1 * !A2 * B1 * !C1 * !X)	0.00218	0.00221	0.00219
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00152	-0.00161	-0.00160
	(!A1 * !A2 * !B1 * C1 * !X)	0.00218	0.00221	0.00219
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00153	-0.00161	-0.00160
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00218	0.00221	0.00219

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	-0.00198	-0.00199	-0.00203
	(A2 * B1 * C1 * X)	0.00113	0.00113	0.00109
	(A2 * B1 * !C1 * !X)	-0.00177	-0.00179	-0.00178
	(A2 * B1 * !C1 * !X)	0.00234	0.00236	0.00235
	(A2 * !B1 * C1 * !X)	-0.00178	-0.00179	-0.00178
	(A2 * !B1 * C1 * !X)	0.00235	0.00236	0.00235
	(A2 * !B1 * !C1 * !X)	-0.00178	-0.00179	-0.00178
	(A2 * !B1 * !C1 * !X)	0.00235	0.00236	0.00235
	(A1 * !A2 * B1 * C1 * X)	-0.00189	-0.00190	-0.00202
	(A1 * !A2 * B1 * C1 * X)	0.00117	0.00118	0.00109
	(A1 * !A2 * B1 * !C1 * !X)	-0.00177	-0.00178	-0.00178
	(A1 * !A2 * B1 * !C1 * !X)	0.00225	0.00226	0.00226
	(A1 * !A2 * !B1 * C1 * !X)	-0.00177	-0.00178	-0.00178
	(A1 * !A2 * !B1 * C1 * !X)	0.00225	0.00226	0.00226
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00177	-0.00179	-0.00178
	(A1 * !A2 * !B1 * !C1 * !X)	0.00226	0.00229	0.00227
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00153	-0.00170	-0.00168
	(!A1 * !A2 * B1 * !C1 * !X)	0.00239	0.00241	0.00239
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00160	-0.00171	-0.00171
	(!A1 * !A2 * !B1 * C1 * !X)	0.00241	0.00241	0.00239
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00160	-0.00170	-0.00172
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00241	0.00241	0.00239

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	-0.00331	-0.00333	-0.00349
	(A2 * B1 * C1 * X)	0.00231	0.00231	0.00216
	(A2 * B1 * !C1 * !X)	-0.00308	-0.00310	-0.00308
	(A2 * B1 * !C1 * !X)	0.00432	0.00433	0.00432
	(A2 * !B1 * C1 * !X)	-0.00308	-0.00309	-0.00308
	(A2 * !B1 * C1 * !X)	0.00432	0.00433	0.00432
	(A2 * !B1 * !C1 * !X)	-0.00308	-0.00310	-0.00308
	(A2 * !B1 * !C1 * !X)	0.00433	0.00437	0.00432
	(A1 * !A2 * B1 * C1 * X)	-0.00314	-0.00318	-0.00346
	(A1 * !A2 * B1 * C1 * X)	0.00236	0.00239	0.00215
	(A1 * !A2 * B1 * !C1 * !X)	-0.00307	-0.00308	-0.00308
	(A1 * !A2 * B1 * !C1 * !X)	0.00414	0.00415	0.00416
	(A1 * !A2 * !B1 * C1 * !X)	-0.00307	-0.00308	-0.00308
	(A1 * !A2 * !B1 * C1 * !X)	0.00414	0.00415	0.00416
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00307	-0.00310	-0.00308
	(A1 * !A2 * !B1 * !C1 * !X)	0.00417	0.00421	0.00418
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00266	-0.00294	-0.00296
	(!A1 * !A2 * B1 * !C1 * !X)	0.00439	0.00443	0.00439
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00277	-0.00297	-0.00298
	(!A1 * !A2 * !B1 * C1 * !X)	0.00440	0.00441	0.00439
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00278	-0.00297	-0.00298
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00440	0.00442	0.00439

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

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

sky130_fd_sc_hs__o311a_1	**(A3 * !C1 * !X)**	0.00151	0.00153	0.00152
	(A3 * !C1 * !X)	-0.00221	-0.00223	-0.00222
	(A2 * !A3 * !C1 * !X)	0.00151	0.00153	0.00152
	(A2 * !A3 * !C1 * !X)	-0.00221	-0.00223	-0.00222
	(A1 * !A2 * !A3 * !C1 * !X)	0.00152	0.00153	0.00152
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00221	-0.00222	-0.00222
	(!A1 * !A2 * !A3 * C1 * !X)	0.00076	0.00075	0.00073
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00222	-0.00221	-0.00221
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00099	0.00100	0.00099
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00222	-0.00223	-0.00222
sky130_fd_sc_hs__o311a_2	**(A3 * !C1 * !X)**	0.00169	0.00171	0.00170
	(A3 * !C1 * !X)	-0.00229	-0.00230	-0.00230
	(A2 * !A3 * !C1 * !X)	0.00169	0.00171	0.00170
	(A2 * !A3 * !C1 * !X)	-0.00229	-0.00230	-0.00230
	(A1 * !A2 * !A3 * !C1 * !X)	0.00169	0.00170	0.00170
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00229	-0.00229	-0.00230
	(!A1 * !A2 * !A3 * C1 * !X)	0.00071	0.00071	0.00071
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00233	-0.00233	-0.00232
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00094	0.00093	0.00093
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00235	-0.00234	-0.00235
sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	0.00330	0.00334	0.00331
	(A3 * !C1 * !X)	-0.00491	-0.00494	-0.00492
	(A2 * !A3 * !C1 * !X)	0.00329	0.00332	0.00331
	(A2 * !A3 * !C1 * !X)	-0.00491	-0.00493	-0.00492
	(A1 * !A2 * !A3 * !C1 * !X)	0.00330	0.00333	0.00330
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00492	-0.00494	-0.00492
	(!A1 * !A2 * !A3 * C1 * !X)	0.00161	0.00163	0.00161
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00491	-0.00494	-0.00492
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00207	0.00209	0.00206
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00495	-0.00499	-0.00495

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !C1 * !X)	-0.00140	-0.00152	-0.00152
	(A3 * !C1 * !X)	0.00232	0.00225	0.00223
	(A2 * !A3 * !C1 * !X)	-0.00139	-0.00152	-0.00152
	(A2 * !A3 * !C1 * !X)	0.00232	0.00225	0.00223
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00138	-0.00152	-0.00152
	(A1 * !A2 * !A3 * !C1 * !X)	0.00235	0.00225	0.00223
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00068	-0.00069	-0.00069
	(!A1 * !A2 * !A3 * C1 * !X)	0.00226	0.00228	0.00223
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00099	-0.00100	-0.00099
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00240	0.00235	0.00226
sky130_fd_sc_hs__o311a_2	(A3 * !C1 * !X)	-0.00155	-0.00169	-0.00170
	(A3 * !C1 * !X)	0.00240	0.00234	0.00231
	(A2 * !A3 * !C1 * !X)	-0.00154	-0.00170	-0.00170
	(A2 * !A3 * !C1 * !X)	0.00241	0.00233	0.00231
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00151	-0.00170	-0.00170
	(A1 * !A2 * !A3 * !C1 * !X)	0.00243	0.00233	0.00231
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00066	-0.00068	-0.00068
	(!A1 * !A2 * !A3 * C1 * !X)	0.00236	0.00239	0.00234
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00094	-0.00093	-0.00093
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00253	0.00249	0.00239

sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	-0.00304	-0.00332	-0.00331
	(A3 * !C1 * !X)	0.00511	0.00498	0.00494
	(A2 * !A3 * !C1 * !X)	-0.00301	-0.00332	-0.00331
	(A2 * !A3 * !C1 * !X)	0.00515	0.00498	0.00494
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00298	-0.00333	-0.00330
	(A1 * !A2 * !A3 * !C1 * !X)	0.00522	0.00496	0.00494
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00151	-0.00154	-0.00155
	(!A1 * !A2 * !A3 * C1 * !X)	0.00503	0.00509	0.00497
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00207	-0.00209	-0.00206
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00527	0.00523	0.00503

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	0.00059	0.00059	0.00057
	(A3 * !B1 * !X)	-0.00257	-0.00257	-0.00260
	(A2 * !A3 * !B1 * !X)	0.00059	0.00059	0.00057
	(A2 * !A3 * !B1 * !X)	-0.00257	-0.00257	-0.00260
	(!A2 * !A3 * !B1 * !X)	0.00059	0.00059	0.00057
	(!A2 * !A3 * !B1 * !X)	-0.00257	-0.00257	-0.00260
	(!A1 * !A2 * !A3 * B1 * !X)	0.00069	0.00069	0.00062
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00244	-0.00245	-0.00258
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	0.00066	0.00066	0.00064
	(A3 * !B1 * !X)	-0.00260	-0.00260	-0.00263
	(A2 * !A3 * !B1 * !X)	0.00066	0.00066	0.00064
	(A2 * !A3 * !B1 * !X)	-0.00260	-0.00260	-0.00263
	(!A2 * !A3 * !B1 * !X)	0.00066	0.00066	0.00064
	(!A2 * !A3 * !B1 * !X)	-0.00260	-0.00260	-0.00263
	(!A1 * !A2 * !A3 * B1 * !X)	0.00070	0.00070	0.00064
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00250	-0.00252	-0.00263
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	0.00120	0.00121	0.00116
	(A3 * !B1 * !X)	-0.00485	-0.00489	-0.00496
	(A2 * !A3 * !B1 * !X)	0.00120	0.00121	0.00116
	(A2 * !A3 * !B1 * !X)	-0.00486	-0.00488	-0.00496
	(!A2 * !A3 * !B1 * !X)	0.00120	0.00121	0.00116
	(!A2 * !A3 * !B1 * !X)	-0.00486	-0.00488	-0.00496
	(!A1 * !A2 * !A3 * B1 * !X)	0.00126	0.00127	0.00113
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00464	-0.00468	-0.00492

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	-0.00057	-0.00057	-0.00056
	(A3 * !B1 * !X)	0.00261	0.00264	0.00260
	(A2 * !A3 * !B1 * !X)	-0.00056	-0.00057	-0.00056
	(A2 * !A3 * !B1 * !X)	0.00258	0.00264	0.00260
	(!A2 * !A3 * !B1 * !X)	-0.00056	-0.00057	-0.00056
	(!A2 * !A3 * !B1 * !X)	0.00258	0.00264	0.00260
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00057	-0.00057	-0.00055
	(!A1 * !A2 * !A3 * B1 * !X)	0.00261	0.00263	0.00260
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	-0.00064	-0.00064	-0.00063
	(A3 * !B1 * !X)	0.00264	0.00268	0.00264
	(A2 * !A3 * !B1 * !X)	-0.00063	-0.00064	-0.00063
	(A2 * !A3 * !B1 * !X)	0.00263	0.00268	0.00264
	(!A2 * !A3 * !B1 * !X)	-0.00063	-0.00064	-0.00063
	(!A2 * !A3 * !B1 * !X)	0.00263	0.00268	0.00264
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00062	-0.00063	-0.00062
	(!A1 * !A2 * !A3 * B1 * !X)	0.00263	0.00266	0.00264
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	-0.00112	-0.00115	-0.00113
	(A3 * !B1 * !X)	0.00495	0.00505	0.00498
	(A2 * !A3 * !B1 * !X)	-0.00112	-0.00115	-0.00113
	(A2 * !A3 * !B1 * !X)	0.00495	0.00505	0.00498
	(!A2 * !A3 * !B1 * !X)	-0.00112	-0.00115	-0.00113
	(!A2 * !A3 * !B1 * !X)	0.00495	0.00505	0.00497
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00107	-0.00110	-0.00107
	(!A1 * !A2 * !A3 * B1 * !X)	0.00495	0.00504	0.00497

SKY130_FD_SC_HS__O31AIx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00268	0.00314	0.00308	0.00279	0.44295
sky130_fd_sc_hs__o31ai_2	0.00550	0.00538	0.00565	0.00556	0.75345
sky130_fd_sc_hs__o31ai_4	0.01057	0.01057	0.01100	0.00814	1.39967

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o31ai_1	0.00000	0.06157	0.20266
sky130_fd_sc_hs__o31ai_2	0.00000	0.12314	0.40531
sky130_fd_sc_hs__o31ai_4	0.00000	0.15762	0.60797

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)	0.14152	0.98261	9.67819
	A2->Y (FR)	0.13492	1.01374	10.29980
	A3->Y (FR)	0.10611	0.99699	10.44330
	B1->Y (FR)	0.02930	0.53678	6.19919
sky130_fd_sc_hs__o31ai_2	A1->Y (FR)	0.15374	0.86197	9.46150
	A2->Y (FR)	0.13694	0.87853	10.05900
	A3->Y (FR)	0.10654	0.87592	10.40330
	B1->Y (FR)	0.02623	0.47854	6.08095
sky130_fd_sc_hs__o31ai_4	A1->Y (FR)	0.14404	0.73523	9.34558
	A2->Y (FR)	0.12897	0.75887	10.04230
	A3->Y (FR)	0.09531	0.76006	10.43410
	B1->Y (FR)	0.03311	0.56376	8.03276

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31ai_1	A1->Y (RF)	0.03538	0.30932	2.91655
	A2->Y (RF)	0.03628	0.30295	2.89823
	A3->Y (RF)	0.02904	0.28982	2.85372
	B1->Y (RF)	0.03000	0.35866	3.55358
sky130_fd_sc_hs__o31ai_2	A1->Y (RF)	0.03679	0.26959	2.81836
	A2->Y (RF)	0.03583	0.25854	2.78580
	A3->Y (RF)	0.02950	0.24592	2.75528
	B1->Y (RF)	0.02838	0.31647	3.52080
sky130_fd_sc_hs__o31ai_4	A1->Y (RF)	0.03842	0.22532	2.73648
	A2->Y (RF)	0.03581	0.21120	2.67860
	A3->Y (RF)	0.02632	0.18942	2.54776
	B1->Y (RF)	0.02938	0.30652	3.99017

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.00085	0.00082	0.01335
	A1	0.01060	0.01059	0.02311
	A2	0.00089	0.00093	0.01268
	A2	0.00975	0.00980	0.02156
	A3	0.00084	0.00164	0.02006
	A3	0.00833	0.00915	0.02758
	B1	-0.00055	0.00176	0.02973
	B1	0.00498	0.00734	0.03534
sky130_fd_sc_hs__o31ai_2	A1	0.00174	0.00147	0.02585
	A1	0.02145	0.02120	0.04563
	A2	0.00182	0.00195	0.02504
	A2	0.01861	0.01873	0.04179
	A3	0.00167	0.00341	0.03703
	A3	0.01601	0.01773	0.05141
	B1	-0.00216	0.00273	0.05605
	B1	0.00831	0.01326	0.06712
sky130_fd_sc_hs__o31ai_4	A1	0.00248	0.00223	0.04751
	A1	0.04080	0.04050	0.08599
	A2	0.00260	0.00298	0.04556
	A2	0.03544	0.03588	0.07839
	A3	0.00226	0.00653	0.06817
	A3	0.03010	0.03436	0.09603
	B1	-0.00402	0.00219	0.06125
	B1	0.01175	0.01791	0.07778

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.01269	0.01281	0.02333
	A1	0.00290	0.00302	0.01347
	A2	0.01070	0.01087	0.02080
	A2	0.00178	0.00194	0.01184
	A3	0.00806	0.00846	0.01797
	A3	0.00044	0.00083	0.01033
	B1	0.00575	0.00651	0.02204
	B1	0.00021	0.00096	0.01644
sky130_fd_sc_hs__o31ai_2	A1	0.02615	0.02620	0.04696
	A1	0.00641	0.00642	0.02706
	A2	0.02043	0.02089	0.04063
	A2	0.00342	0.00385	0.02352
	A3	0.01539	0.01621	0.03472
	A3	0.00077	0.00158	0.02000
	B1	0.01082	0.01271	0.04409
	B1	0.00035	0.00217	0.03351
sky130_fd_sc_hs__o31ai_4	A1	0.04868	0.04898	0.09072
	A1	0.01034	0.01058	0.05200
	A2	0.03792	0.03885	0.07767
	A2	0.00470	0.00562	0.04452
	A3	0.02737	0.02946	0.06681
	A3	-0.00094	0.00110	0.03810
	B1	0.01719	0.01940	0.05199
	B1	0.00150	0.00363	0.03612

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)**	0.00191	0.00192	0.00190
	(A2 * A3 * B1 * !Y)	-0.00222	-0.00229	-0.00228
	(A2 * !B1 * Y)	0.00190	0.00190	0.00190
	(A2 * !B1 * Y)	-0.00223	-0.00227	-0.00228
	(A2 * !A3 * B1 * !Y)	0.00200	0.00192	0.00190
	(A2 * !A3 * B1 * !Y)	-0.00211	-0.00229	-0.00228
	(!A2 * A3 * B1 * !Y)	0.00197	0.00191	0.00190
	(!A2 * A3 * B1 * !Y)	-0.00199	-0.00222	-0.00221
	(!A2 * A3 * !B1 * Y)	0.00190	0.00191	0.00190
	(!A2 * A3 * !B1 * Y)	-0.00204	-0.00221	-0.00221
	(!A2 * !A3 * !B1 * Y)	0.00181	0.00183	0.00181
	(!A2 * !A3 * !B1 * Y)	-0.00230	-0.00232	-0.00230
sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	0.00386	0.00388	0.00383
	(A2 * A3 * B1 * !Y)	-0.00453	-0.00474	-0.00470
	(A2 * !B1 * Y)	0.00383	0.00387	0.00382
	(A2 * !B1 * Y)	-0.00457	-0.00474	-0.00470
	(A2 * !A3 * B1 * !Y)	0.00410	0.00388	0.00383
	(A2 * !A3 * B1 * !Y)	-0.00426	-0.00473	-0.00470
	(!A2 * A3 * B1 * !Y)	0.00403	0.00388	0.00383
	(!A2 * A3 * B1 * !Y)	-0.00405	-0.00459	-0.00456
	(!A2 * A3 * !B1 * Y)	0.00383	0.00386	0.00382
	(!A2 * A3 * !B1 * Y)	-0.00419	-0.00459	-0.00456
	(!A2 * !A3 * !B1 * Y)	0.00363	0.00366	0.00365
	(!A2 * !A3 * !B1 * Y)	-0.00478	-0.00480	-0.00479

sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	0.00744	0.00748	0.00739
	(A2 * A3 * B1 * !Y)	-0.00901	-0.00934	-0.00928
	(A2 * !B1 * Y)	0.00741	0.00747	0.00738
	(A2 * !B1 * Y)	-0.00907	-0.00935	-0.00930
	(A2 * !A3 * B1 * !Y)	0.00789	0.00748	0.00739
	(A2 * !A3 * B1 * !Y)	-0.00851	-0.00932	-0.00929
	(!A2 * A3 * B1 * !Y)	0.00771	0.00749	0.00739
	(!A2 * A3 * B1 * !Y)	-0.00806	-0.00897	-0.00901
	(!A2 * A3 * !B1 * Y)	0.00736	0.00746	0.00738
	(!A2 * A3 * !B1 * Y)	-0.00831	-0.00899	-0.00901
	(!A2 * !A3 * !B1 * Y)	0.00696	0.00699	0.00698
	(!A2 * !A3 * !B1 * Y)	-0.00947	-0.00948	-0.00947

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)**	-0.00189	-0.00190	-0.00189
	(A2 * A3 * B1 * !Y)	0.00227	0.00229	0.00228
	(A2 * !B1 * Y)	-0.00189	-0.00190	-0.00189
	(A2 * !B1 * Y)	0.00227	0.00229	0.00228
	(A2 * !A3 * B1 * !Y)	-0.00189	-0.00190	-0.00189
	(A2 * !A3 * B1 * !Y)	0.00227	0.00229	0.00228
	(!A2 * A3 * B1 * !Y)	-0.00189	-0.00189	-0.00189
	(!A2 * A3 * B1 * !Y)	0.00220	0.00222	0.00221
	(!A2 * A3 * !B1 * Y)	-0.00189	-0.00190	-0.00189
	(!A2 * A3 * !B1 * Y)	0.00220	0.00221	0.00221
	(!A2 * !A3 * !B1 * Y)	-0.00172	-0.00182	-0.00181
	(!A2 * !A3 * !B1 * Y)	0.00232	0.00232	0.00231

sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	-0.00382	-0.00384	-0.00382
	(A2 * A3 * B1 * !Y)	0.00469	0.00474	0.00470
	(A2 * !B1 * Y)	-0.00382	-0.00383	-0.00382
	(A2 * !B1 * Y)	0.00470	0.00474	0.00470
	(A2 * !A3 * B1 * !Y)	-0.00382	-0.00384	-0.00382
	(A2 * !A3 * B1 * !Y)	0.00470	0.00473	0.00470
	(!A2 * A3 * B1 * !Y)	-0.00381	-0.00384	-0.00381
	(!A2 * A3 * B1 * !Y)	0.00454	0.00459	0.00456
	(!A2 * A3 * !B1 * Y)	-0.00381	-0.00384	-0.00382
	(!A2 * A3 * !B1 * Y)	0.00454	0.00459	0.00456
	(!A2 * !A3 * !B1 * Y)	-0.00337	-0.00366	-0.00365
	(!A2 * !A3 * !B1 * Y)	0.00486	0.00484	0.00480
sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	-0.00738	-0.00740	-0.00738
	(A2 * A3 * B1 * !Y)	0.00928	0.00934	0.00928
	(A2 * !B1 * Y)	-0.00737	-0.00739	-0.00737
	(A2 * !B1 * Y)	0.00930	0.00935	0.00930
	(A2 * !A3 * B1 * !Y)	-0.00738	-0.00739	-0.00737
	(A2 * !A3 * B1 * !Y)	0.00929	0.00932	0.00929
	(!A2 * A3 * B1 * !Y)	-0.00736	-0.00735	-0.00736
	(!A2 * A3 * B1 * !Y)	0.00898	0.00897	0.00901
	(!A2 * A3 * !B1 * Y)	-0.00735	-0.00736	-0.00737
	(!A2 * A3 * !B1 * Y)	0.00897	0.00899	0.00901
	(!A2 * !A3 * !B1 * Y)	-0.00649	-0.00699	-0.00698
	(!A2 * !A3 * !B1 * Y)	0.00957	0.00958	0.00950

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)**	0.00231	0.00234	0.00223
	(A1 * A3 * B1 * !Y)	-0.00154	-0.00154	-0.00153
	(A1 * A3 * !B1 * Y)	0.00189	0.00190	0.00188
	(A1 * A3 * !B1 * Y)	-0.00193	-0.00194	-0.00193
	(A1 * !A3 * B1 * !Y)	0.00217	0.00220	0.00216
	(A1 * !A3 * B1 * !Y)	-0.00127	-0.00128	-0.00128
	(A1 * !A3 * !B1 * Y)	0.00190	0.00190	0.00188
	(A1 * !A3 * !B1 * Y)	-0.00261	-0.00262	-0.00262
	(!A1 * A3 * B1 * !Y)	0.00264	0.00219	0.00215
	(!A1 * A3 * B1 * !Y)	-0.00188	-0.00236	-0.00236
	(!A1 * A3 * !B1 * Y)	0.00190	0.00190	0.00188
	(!A1 * A3 * !B1 * Y)	-0.00261	-0.00263	-0.00262
	(!A1 * !A3 * !B1 * Y)	0.00179	0.00180	0.00179
	(!A1 * !A3 * !B1 * Y)	-0.00266	-0.00267	-0.00265
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	0.00417	0.00421	0.00396
	(A1 * A3 * B1 * !Y)	-0.00303	-0.00304	-0.00302
	(A1 * A3 * !B1 * Y)	0.00371	0.00376	0.00371
	(A1 * A3 * !B1 * Y)	-0.00335	-0.00337	-0.00334
	(A1 * !A3 * B1 * !Y)	0.00382	0.00385	0.00379
	(A1 * !A3 * B1 * !Y)	-0.00245	-0.00247	-0.00247
	(A1 * !A3 * !B1 * Y)	0.00370	0.00375	0.00371
	(A1 * !A3 * !B1 * Y)	-0.00457	-0.00467	-0.00465
	(!A1 * A3 * B1 * !Y)	0.00470	0.00382	0.00376
	(!A1 * A3 * B1 * !Y)	-0.00373	-0.00462	-0.00467
	(!A1 * A3 * !B1 * Y)	0.00373	0.00373	0.00371
	(!A1 * A3 * !B1 * Y)	-0.00465	-0.00471	-0.00469
	(!A1 * !A3 * !B1 * Y)	0.00356	0.00358	0.00355
	(!A1 * !A3 * !B1 * Y)	-0.00477	-0.00478	-0.00476

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	0.00824	0.00836	0.00785
	(A1 * A3 * B1 * !Y)	-0.00597	-0.00604	-0.00599
	(A1 * A3 * !B1 * Y)	0.00733	0.00744	0.00735
	(A1 * A3 * !B1 * Y)	-0.00669	-0.00672	-0.00666
	(A1 * !A3 * B1 * !Y)	0.00755	0.00770	0.00751
	(A1 * !A3 * B1 * !Y)	-0.00485	-0.00496	-0.00492
	(A1 * !A3 * !B1 * Y)	0.00735	0.00742	0.00734
	(A1 * !A3 * !B1 * Y)	-0.00919	-0.00935	-0.00930
	(!A1 * A3 * B1 * !Y)	0.00944	0.00761	0.00746
	(!A1 * A3 * B1 * !Y)	-0.00723	-0.00929	-0.00931
	(!A1 * A3 * !B1 * Y)	0.00733	0.00742	0.00734
	(!A1 * A3 * !B1 * Y)	-0.00925	-0.00939	-0.00938
	(!A1 * !A3 * !B1 * Y)	0.00691	0.00702	0.00694
	(!A1 * !A3 * !B1 * Y)	-0.00951	-0.00958	-0.00953

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)**	-0.00215	-0.00216	-0.00215
	(A1 * A3 * B1 * !Y)	0.00154	0.00154	0.00153
	(A1 * A3 * !B1 * Y)	-0.00188	-0.00189	-0.00188
	(A1 * A3 * !B1 * Y)	0.00193	0.00194	0.00193
	(A1 * !A3 * B1 * !Y)	-0.00214	-0.00215	-0.00213
	(A1 * !A3 * B1 * !Y)	0.00131	0.00131	0.00132
	(A1 * !A3 * !B1 * Y)	-0.00187	-0.00188	-0.00188
	(A1 * !A3 * !B1 * Y)	0.00261	0.00262	0.00262
	(!A1 * A3 * B1 * !Y)	-0.00214	-0.00215	-0.00214
	(!A1 * A3 * B1 * !Y)	0.00235	0.00236	0.00236
	(!A1 * A3 * !B1 * Y)	-0.00187	-0.00188	-0.00188
	(!A1 * A3 * !B1 * Y)	0.00261	0.00263	0.00262
	(!A1 * !A3 * !B1 * Y)	-0.00168	-0.00179	-0.00179
	(!A1 * !A3 * !B1 * Y)	0.00269	0.00268	0.00266
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	-0.00380	-0.00381	-0.00379
	(A1 * A3 * B1 * !Y)	0.00303	0.00304	0.00302
	(A1 * A3 * !B1 * Y)	-0.00371	-0.00372	-0.00370
	(A1 * A3 * !B1 * Y)	0.00335	0.00337	0.00334
	(A1 * !A3 * B1 * !Y)	-0.00373	-0.00376	-0.00372
	(A1 * !A3 * B1 * !Y)	0.00251	0.00255	0.00254
	(A1 * !A3 * !B1 * Y)	-0.00370	-0.00372	-0.00370
	(A1 * !A3 * !B1 * Y)	0.00465	0.00467	0.00465
	(!A1 * A3 * B1 * !Y)	-0.00373	-0.00374	-0.00373
	(!A1 * A3 * B1 * !Y)	0.00463	0.00466	0.00467
	(!A1 * A3 * !B1 * Y)	-0.00370	-0.00371	-0.00370
	(!A1 * A3 * !B1 * Y)	0.00469	0.00471	0.00469
	(!A1 * !A3 * !B1 * Y)	-0.00325	-0.00355	-0.00355
	(!A1 * !A3 * !B1 * Y)	0.00479	0.00481	0.00477

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	-0.00750	-0.00755	-0.00752
	(A1 * A3 * B1 * !Y)	0.00597	0.00604	0.00599
	(A1 * A3 * !B1 * Y)	-0.00733	-0.00736	-0.00733
	(A1 * A3 * !B1 * Y)	0.00669	0.00672	0.00666
	(A1 * !A3 * B1 * !Y)	-0.00740	-0.00745	-0.00738
	(A1 * !A3 * B1 * !Y)	0.00502	0.00508	0.00507
	(A1 * !A3 * !B1 * Y)	-0.00733	-0.00736	-0.00732
	(A1 * !A3 * !B1 * Y)	0.00931	0.00935	0.00930
	(!A1 * A3 * B1 * !Y)	-0.00741	-0.00744	-0.00740
	(!A1 * A3 * B1 * !Y)	0.00925	0.00932	0.00931
	(!A1 * A3 * !B1 * Y)	-0.00730	-0.00733	-0.00732
	(!A1 * A3 * !B1 * Y)	0.00934	0.00939	0.00938
	(!A1 * !A3 * !B1 * Y)	-0.00643	-0.00702	-0.00694
	(!A1 * !A3 * !B1 * Y)	0.00962	0.00962	0.00955

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	0.00230	0.00232	0.00230
	(A2 * B1 * !Y)	-0.00108	-0.00109	-0.00108
	(A2 * !B1 * Y)	0.00182	0.00183	0.00181
	(A2 * !B1 * Y)	-0.00255	-0.00260	-0.00259
	(A1 * !A2 * B1 * !Y)	0.00230	0.00232	0.00230
	(A1 * !A2 * B1 * !Y)	-0.00108	-0.00109	-0.00108
	(A1 * !A2 * !B1 * Y)	0.00180	0.00183	0.00181
	(A1 * !A2 * !B1 * Y)	-0.00231	-0.00254	-0.00251
	(!A1 * !A2 * !B1 * Y)	0.00172	0.00174	0.00172
	(!A1 * !A2 * !B1 * Y)	-0.00263	-0.00264	-0.00263

sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	0.00429	0.00438	0.00431
	(A2 * B1 * !Y)	-0.00215	-0.00219	-0.00215
	(A2 * !B1 * Y)	0.00361	0.00366	0.00362
	(A2 * !B1 * Y)	-0.00474	-0.00491	-0.00487
	(A1 * !A2 * B1 * !Y)	0.00429	0.00438	0.00431
	(A1 * !A2 * B1 * !Y)	-0.00214	-0.00219	-0.00215
	(A1 * !A2 * !B1 * Y)	0.00362	0.00362	0.00362
	(A1 * !A2 * !B1 * Y)	-0.00436	-0.00469	-0.00468
	(!A1 * !A2 * !B1 * Y)	0.00344	0.00347	0.00344
	(!A1 * !A2 * !B1 * Y)	-0.00496	-0.00498	-0.00495
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	0.00841	0.00858	0.00844
	(A2 * B1 * !Y)	-0.00428	-0.00436	-0.00428
	(A2 * !B1 * Y)	0.00714	0.00719	0.00712
	(A2 * !B1 * Y)	-0.00942	-0.00974	-0.00967
	(A1 * !A2 * B1 * !Y)	0.00844	0.00859	0.00844
	(A1 * !A2 * B1 * !Y)	-0.00429	-0.00435	-0.00427
	(A1 * !A2 * !B1 * Y)	0.00714	0.00718	0.00712
	(A1 * !A2 * !B1 * Y)	-0.00856	-0.00923	-0.00919
	(!A1 * !A2 * !B1 * Y)	0.00674	0.00679	0.00677
	(!A1 * !A2 * !B1 * Y)	-0.00980	-0.00984	-0.00982

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

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

sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	-0.00222	-0.00225	-0.00229
	(A2 * B1 * !Y)	0.00114	0.00115	0.00110
	(A2 * !B1 * Y)	-0.00180	-0.00181	-0.00180
	(A2 * !B1 * Y)	0.00258	0.00260	0.00259
	(A1 * !A2 * B1 * !Y)	-0.00215	-0.00217	-0.00228
	(A1 * !A2 * B1 * !Y)	0.00118	0.00118	0.00110
	(A1 * !A2 * !B1 * Y)	-0.00180	-0.00182	-0.00180
	(A1 * !A2 * !B1 * Y)	0.00251	0.00254	0.00251
	(!A1 * !A2 * !B1 * Y)	-0.00163	-0.00173	-0.00172
	(!A1 * !A2 * !B1 * Y)	0.00265	0.00264	0.00263
sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	-0.00415	-0.00419	-0.00429
	(A2 * B1 * !Y)	0.00229	0.00231	0.00219
	(A2 * !B1 * Y)	-0.00360	-0.00363	-0.00362
	(A2 * !B1 * Y)	0.00484	0.00491	0.00487
	(A1 * !A2 * B1 * !Y)	-0.00393	-0.00397	-0.00425
	(A1 * !A2 * B1 * !Y)	0.00240	0.00242	0.00220
	(A1 * !A2 * !B1 * Y)	-0.00361	-0.00362	-0.00362
	(A1 * !A2 * !B1 * Y)	0.00467	0.00469	0.00468
	(!A1 * !A2 * !B1 * Y)	-0.00319	-0.00347	-0.00344
	(!A1 * !A2 * !B1 * Y)	0.00497	0.00500	0.00496
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	-0.00814	-0.00820	-0.00840
	(A2 * B1 * !Y)	0.00457	0.00458	0.00436
	(A2 * !B1 * Y)	-0.00711	-0.00714	-0.00710
	(A2 * !B1 * Y)	0.00967	0.00974	0.00967
	(A1 * !A2 * B1 * !Y)	-0.00772	-0.00769	-0.00832
	(A1 * !A2 * B1 * !Y)	0.00478	0.00473	0.00436
	(A1 * !A2 * !B1 * Y)	-0.00711	-0.00713	-0.00710
	(A1 * !A2 * !B1 * Y)	0.00920	0.00923	0.00919
	(!A1 * !A2 * !B1 * Y)	-0.00631	-0.00679	-0.00677
	(!A1 * !A2 * !B1 * Y)	0.00987	0.00991	0.00984

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)	0.00068	0.00068	0.00064
	(!A1 * !A2 * !A3 * Y)	-0.00268	-0.00268	-0.00276
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	0.00134	0.00134	0.00124
	(!A1 * !A2 * !A3 * Y)	-0.00531	-0.00534	-0.00551
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	0.00239	0.00238	0.00221
	(!A1 * !A2 * !A3 * Y)	-0.00613	-0.00616	-0.00649

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)	-0.00063	-0.00064	-0.00062
	(!A1 * !A2 * !A3 * Y)	0.00278	0.00281	0.00277
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	-0.00120	-0.00123	-0.00120
	(!A1 * !A2 * !A3 * Y)	0.00551	0.00563	0.00554
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	-0.00214	-0.00219	-0.00215
	(!A1 * !A2 * !A3 * Y)	0.00649	0.00662	0.00652

SKY130_FD_SC_HS__O31Ax

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00263	0.00258	0.00258	0.00238	1.23588
sky130_fd_sc_hs__o31a_2	0.00279	0.00272	0.00274	0.00285	2.16133
sky130_fd_sc_hs__o31a_4	0.00479	0.00510	0.00506	0.00502	4.68030

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o31a_1	0.00000	0.35794	0.86495
sky130_fd_sc_hs__o31a_2	0.00000	0.26858	0.53467
sky130_fd_sc_hs__o31a_4	0.00000	0.54088	1.06934

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)	0.07732	0.53398	5.75005
	A2->X (RR)	0.07556	0.52441	5.65826
	A3->X (RR)	0.06579	0.50341	5.61261
	B1->X (RR)	0.06998	0.54345	6.14080
sky130_fd_sc_hs__o31a_2	A1->X (RR)	0.08079	0.46163	5.57678
	A2->X (RR)	0.07922	0.45453	5.49939
	A3->X (RR)	0.06907	0.43610	5.44559
	B1->X (RR)	0.07412	0.47834	6.04387
sky130_fd_sc_hs__o31a_4	A1->X (RR)	0.08581	0.39400	5.82108
	A2->X (RR)	0.08270	0.38165	5.70902
	A3->X (RR)	0.07164	0.36455	5.69302
	B1->X (RR)	0.07822	0.41469	6.24140

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31a_1	A1->X (FF)	0.18728	0.58585	4.87489
	A2->X (FF)	0.17378	0.60754	5.10119
	A3->X (FF)	0.14621	0.60042	5.12017
	B1->X (FF)	0.06653	0.46511	4.64096
sky130_fd_sc_hs__o31a_2	A1->X (FF)	0.23597	0.62047	4.77975
	A2->X (FF)	0.22193	0.64495	4.99914
	A3->X (FF)	0.19379	0.64091	5.02171
	B1->X (FF)	0.06926	0.43939	4.31710
sky130_fd_sc_hs__o31a_4	A1->X (FF)	0.24087	0.60332	5.19223
	A2->X (FF)	0.22682	0.62187	5.35374
	A3->X (FF)	0.18820	0.61006	5.35878
	B1->X (FF)	0.06501	0.41066	4.68526

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.01507	0.01555	0.04401
	A1	0.00629	0.00676	0.03538
	A2	0.01297	0.01390	0.04098
	A2	0.00540	0.00632	0.03366
	A3	0.01070	0.01198	0.04643
	A3	0.00417	0.00546	0.04021
	B1	0.00882	0.01225	0.08390
	B1	0.00422	0.00766	0.07930
sky130_fd_sc_hs__o31a_2	A1	0.01904	0.01965	0.04351
	A1	0.00972	0.01037	0.03482
	A2	0.01683	0.01793	0.04052
	A2	0.00878	0.00988	0.03311
	A3	0.01456	0.01594	0.04413
	A3	0.00749	0.00888	0.03769
	B1	0.01254	0.01600	0.08768
	B1	0.00712	0.01061	0.08244
sky130_fd_sc_hs__o31a_4	A1	0.03676	0.03869	0.11050
	A1	0.01962	0.02158	0.09384
	A2	0.03275	0.03509	0.10140
	A2	0.01726	0.01965	0.08669
	A3	0.02669	0.02990	0.11186
	A3	0.01388	0.01718	0.09985
	B1	0.02275	0.02911	0.15622
	B1	0.01361	0.02002	0.14932

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.00524	0.00529	0.03859
	A1	0.01395	0.01399	0.04628
	A2	0.00526	0.00587	0.03917
	A2	0.01275	0.01335	0.04602
	A3	0.00524	0.00718	0.05018
	A3	0.01164	0.01358	0.05576
	B1	0.00372	0.00796	0.07638
	B1	0.00948	0.01358	0.07879
sky130_fd_sc_hs__o31a_2	A1	0.01009	0.00841	0.04064
	A1	0.01931	0.01762	0.04913
	A2	0.01015	0.00901	0.04151
	A2	0.01807	0.01701	0.04795
	A3	0.01010	0.01034	0.05282
	A3	0.01702	0.01730	0.05753
	B1	0.00652	0.01088	0.07978
	B1	0.01316	0.01760	0.08254
sky130_fd_sc_hs__o31a_4	A1	0.02119	0.01818	0.08794
	A1	0.03823	0.03524	0.10492
	A2	0.02055	0.01850	0.08495
	A2	0.03588	0.03381	0.09819
	A3	0.02102	0.02156	0.10481
	A3	0.03359	0.03408	0.11621
	B1	0.01330	0.02130	0.15380
	B1	0.02519	0.03312	0.16292

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)**	0.00183	0.00184	0.00182
	(A2 * A3 * B1 * X)	-0.00197	-0.00204	-0.00203
	(A2 * !B1 * !X)	0.00156	0.00158	0.00156
	(A2 * !B1 * !X)	-0.00223	-0.00229	-0.00228
	(A2 * !A3 * B1 * X)	0.00197	0.00184	0.00182
	(A2 * !A3 * B1 * X)	-0.00182	-0.00203	-0.00203
	(!A2 * A3 * B1 * X)	0.00193	0.00184	0.00182
	(!A2 * A3 * B1 * X)	-0.00173	-0.00197	-0.00197
	(!A2 * A3 * !B1 * !X)	0.00156	0.00157	0.00156
	(!A2 * A3 * !B1 * !X)	-0.00207	-0.00222	-0.00222
	(!A2 * !A3 * !B1 * !X)	0.00150	0.00150	0.00149
	(!A2 * !A3 * !B1 * !X)	-0.00230	-0.00231	-0.00230
sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	0.00201	0.00203	0.00201
	(A2 * A3 * B1 * X)	-0.00206	-0.00212	-0.00211
	(A2 * !B1 * !X)	0.00187	0.00189	0.00187
	(A2 * !B1 * !X)	-0.00220	-0.00226	-0.00225
	(A2 * !A3 * B1 * X)	0.00216	0.00203	0.00201
	(A2 * !A3 * B1 * X)	-0.00190	-0.00212	-0.00211
	(!A2 * A3 * B1 * X)	0.00212	0.00203	0.00201
	(!A2 * A3 * B1 * X)	-0.00181	-0.00206	-0.00206
	(!A2 * A3 * !B1 * !X)	0.00186	0.00188	0.00187
	(!A2 * A3 * !B1 * !X)	-0.00203	-0.00220	-0.00219
	(!A2 * !A3 * !B1 * !X)	0.00182	0.00183	0.00182
	(!A2 * !A3 * !B1 * !X)	-0.00227	-0.00228	-0.00226

sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	0.00309	0.00311	0.00307
	(A2 * A3 * B1 * X)	-0.00407	-0.00424	-0.00422
	(A2 * !B1 * !X)	0.00308	0.00311	0.00307
	(A2 * !B1 * !X)	-0.00410	-0.00424	-0.00423
	(A2 * !A3 * B1 * X)	0.00345	0.00312	0.00308
	(A2 * !A3 * B1 * X)	-0.00370	-0.00422	-0.00422
	(!A2 * A3 * B1 * X)	0.00338	0.00312	0.00308
	(!A2 * A3 * B1 * X)	-0.00352	-0.00413	-0.00410
	(!A2 * A3 * !B1 * !X)	0.00308	0.00310	0.00307
	(!A2 * A3 * !B1 * !X)	-0.00373	-0.00412	-0.00409
	(!A2 * !A3 * !B1 * !X)	0.00293	0.00297	0.00294
	(!A2 * !A3 * !B1 * !X)	-0.00429	-0.00433	-0.00430

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)**	-0.00180	-0.00181	-0.00181
	(A2 * A3 * B1 * X)	0.00202	0.00204	0.00203
	(A2 * !B1 * !X)	-0.00155	-0.00156	-0.00156
	(A2 * !B1 * !X)	0.00227	0.00229	0.00228
	(A2 * !A3 * B1 * X)	-0.00180	-0.00181	-0.00181
	(A2 * !A3 * B1 * X)	0.00203	0.00204	0.00203
	(!A2 * A3 * B1 * X)	-0.00180	-0.00181	-0.00180
	(!A2 * A3 * B1 * X)	0.00197	0.00198	0.00197
	(!A2 * A3 * !B1 * !X)	-0.00156	-0.00156	-0.00156
	(!A2 * A3 * !B1 * !X)	0.00221	0.00222	0.00222
	(!A2 * !A3 * !B1 * !X)	-0.00140	-0.00149	-0.00149
	(!A2 * !A3 * !B1 * !X)	0.00232	0.00232	0.00231

sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	-0.00199	-0.00201	-0.00200
	(A2 * A3 * B1 * X)	0.00209	0.00213	0.00211
	(A2 * !B1 * !X)	-0.00185	-0.00187	-0.00186
	(A2 * !B1 * !X)	0.00223	0.00227	0.00225
	(A2 * !A3 * B1 * X)	-0.00199	-0.00200	-0.00200
	(A2 * !A3 * B1 * X)	0.00210	0.00212	0.00211
	(!A2 * A3 * B1 * X)	-0.00199	-0.00200	-0.00199
	(!A2 * A3 * B1 * X)	0.00205	0.00206	0.00206
	(!A2 * A3 * !B1 * !X)	-0.00186	-0.00187	-0.00186
	(!A2 * A3 * !B1 * !X)	0.00218	0.00220	0.00219
	(!A2 * !A3 * !B1 * !X)	-0.00170	-0.00180	-0.00181
	(!A2 * !A3 * !B1 * !X)	0.00228	0.00229	0.00227
sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	-0.00306	-0.00307	-0.00306
	(A2 * A3 * B1 * X)	0.00422	0.00424	0.00422
	(A2 * !B1 * !X)	-0.00306	-0.00306	-0.00306
	(A2 * !B1 * !X)	0.00422	0.00424	0.00423
	(A2 * !A3 * B1 * X)	-0.00306	-0.00307	-0.00306
	(A2 * !A3 * B1 * X)	0.00422	0.00424	0.00422
	(!A2 * A3 * B1 * X)	-0.00305	-0.00306	-0.00304
	(!A2 * A3 * B1 * X)	0.00408	0.00413	0.00410
	(!A2 * A3 * !B1 * !X)	-0.00305	-0.00307	-0.00306
	(!A2 * A3 * !B1 * !X)	0.00407	0.00412	0.00409
	(!A2 * !A3 * !B1 * !X)	-0.00274	-0.00293	-0.00294
	(!A2 * !A3 * !B1 * !X)	0.00436	0.00435	0.00432

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)**	0.00186	0.00187	0.00178
	(A1 * A3 * B1 * X)	-0.00129	-0.00129	-0.00128
	(A1 * A3 * !B1 * !X)	0.00162	0.00163	0.00161
	(A1 * A3 * !B1 * !X)	-0.00146	-0.00147	-0.00146
	(A1 * !A3 * B1 * X)	0.00171	0.00173	0.00170
	(A1 * !A3 * B1 * X)	-0.00104	-0.00105	-0.00105
	(A1 * !A3 * !B1 * !X)	0.00163	0.00163	0.00161
	(A1 * !A3 * !B1 * !X)	-0.00206	-0.00208	-0.00206
	(!A1 * A3 * B1 * X)	0.00215	0.00173	0.00169
	(!A1 * A3 * B1 * X)	-0.00153	-0.00199	-0.00200
	(!A1 * A3 * !B1 * !X)	0.00162	0.00163	0.00161
	(!A1 * A3 * !B1 * !X)	-0.00206	-0.00208	-0.00207
	(!A1 * !A3 * !B1 * !X)	0.00154	0.00155	0.00153
	(!A1 * !A3 * !B1 * !X)	-0.00210	-0.00210	-0.00209
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	0.00203	0.00206	0.00196
	(A1 * A3 * B1 * X)	-0.00133	-0.00133	-0.00132
	(A1 * A3 * !B1 * !X)	0.00181	0.00182	0.00180
	(A1 * A3 * !B1 * !X)	-0.00151	-0.00151	-0.00150
	(A1 * !A3 * B1 * X)	0.00190	0.00191	0.00188
	(A1 * !A3 * B1 * X)	-0.00108	-0.00109	-0.00109
	(A1 * !A3 * !B1 * !X)	0.00182	0.00182	0.00180
	(A1 * !A3 * !B1 * !X)	-0.00208	-0.00210	-0.00209
	(!A1 * A3 * B1 * X)	0.00235	0.00191	0.00187
	(!A1 * A3 * B1 * X)	-0.00157	-0.00203	-0.00203
	(!A1 * A3 * !B1 * !X)	0.00181	0.00182	0.00180
	(!A1 * A3 * !B1 * !X)	-0.00208	-0.00210	-0.00210
	(!A1 * !A3 * !B1 * !X)	0.00174	0.00175	0.00173
	(!A1 * !A3 * !B1 * !X)	-0.00212	-0.00213	-0.00212

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	0.00395	0.00404	0.00382
	(A1 * A3 * B1 * X)	-0.00272	-0.00272	-0.00271
	(A1 * A3 * !B1 * !X)	0.00361	0.00366	0.00363
	(A1 * A3 * !B1 * !X)	-0.00296	-0.00298	-0.00296
	(A1 * !A3 * B1 * X)	0.00368	0.00371	0.00365
	(A1 * !A3 * B1 * X)	-0.00222	-0.00225	-0.00226
	(A1 * !A3 * !B1 * !X)	0.00361	0.00367	0.00363
	(A1 * !A3 * !B1 * !X)	-0.00413	-0.00421	-0.00420
	(!A1 * A3 * B1 * X)	0.00456	0.00372	0.00364
	(!A1 * A3 * B1 * X)	-0.00318	-0.00416	-0.00420
	(!A1 * A3 * !B1 * !X)	0.00361	0.00366	0.00362
	(!A1 * A3 * !B1 * !X)	-0.00405	-0.00419	-0.00417
	(!A1 * !A3 * !B1 * !X)	0.00347	0.00350	0.00349
	(!A1 * !A3 * !B1 * !X)	-0.00425	-0.00427	-0.00426

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)**	-0.00169	-0.00169	-0.00169
	(A1 * A3 * B1 * X)	0.00129	0.00129	0.00128
	(A1 * A3 * !B1 * !X)	-0.00160	-0.00161	-0.00160
	(A1 * A3 * !B1 * !X)	0.00146	0.00147	0.00146
	(A1 * !A3 * B1 * X)	-0.00167	-0.00168	-0.00166
	(A1 * !A3 * B1 * X)	0.00108	0.00109	0.00109
	(A1 * !A3 * !B1 * !X)	-0.00160	-0.00162	-0.00161
	(A1 * !A3 * !B1 * !X)	0.00206	0.00208	0.00206
	(!A1 * A3 * B1 * X)	-0.00167	-0.00167	-0.00166
	(!A1 * A3 * B1 * X)	0.00201	0.00201	0.00201
	(!A1 * A3 * !B1 * !X)	-0.00160	-0.00161	-0.00160
	(!A1 * A3 * !B1 * !X)	0.00206	0.00208	0.00207
	(!A1 * !A3 * !B1 * !X)	-0.00143	-0.00154	-0.00153
	(!A1 * !A3 * !B1 * !X)	0.00212	0.00211	0.00210
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	-0.00187	-0.00188	-0.00187
	(A1 * A3 * B1 * X)	0.00133	0.00133	0.00132
	(A1 * A3 * !B1 * !X)	-0.00180	-0.00180	-0.00179
	(A1 * A3 * !B1 * !X)	0.00151	0.00151	0.00150
	(A1 * !A3 * B1 * X)	-0.00186	-0.00186	-0.00185
	(A1 * !A3 * B1 * X)	0.00112	0.00112	0.00112
	(A1 * !A3 * !B1 * !X)	-0.00180	-0.00180	-0.00180
	(A1 * !A3 * !B1 * !X)	0.00210	0.00210	0.00209
	(!A1 * A3 * B1 * X)	-0.00185	-0.00186	-0.00185
	(!A1 * A3 * B1 * X)	0.00203	0.00205	0.00204
	(!A1 * A3 * !B1 * !X)	-0.00179	-0.00180	-0.00179
	(!A1 * A3 * !B1 * !X)	0.00209	0.00210	0.00210
	(!A1 * !A3 * !B1 * !X)	-0.00163	-0.00173	-0.00173
	(!A1 * !A3 * !B1 * !X)	0.00214	0.00214	0.00213

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	-0.00364	-0.00364	-0.00364
	(A1 * A3 * B1 * X)	0.00272	0.00272	0.00271
	(A1 * A3 * !B1 * !X)	-0.00361	-0.00363	-0.00361
	(A1 * A3 * !B1 * !X)	0.00296	0.00298	0.00296
	(A1 * !A3 * B1 * X)	-0.00359	-0.00361	-0.00357
	(A1 * !A3 * B1 * X)	0.00232	0.00234	0.00234
	(A1 * !A3 * !B1 * !X)	-0.00360	-0.00363	-0.00361
	(A1 * !A3 * !B1 * !X)	0.00419	0.00421	0.00420
	(!A1 * A3 * B1 * X)	-0.00360	-0.00362	-0.00359
	(!A1 * A3 * B1 * X)	0.00418	0.00422	0.00420
	(!A1 * A3 * !B1 * !X)	-0.00361	-0.00363	-0.00361
	(!A1 * A3 * !B1 * !X)	0.00416	0.00419	0.00417
	(!A1 * !A3 * !B1 * !X)	-0.00329	-0.00350	-0.00349
	(!A1 * !A3 * !B1 * !X)	0.00430	0.00430	0.00428

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	0.00181	0.00183	0.00182
	(A2 * B1 * X)	-0.00098	-0.00099	-0.00098
	(A2 * !B1 * !X)	0.00159	0.00161	0.00159
	(A2 * !B1 * !X)	-0.00205	-0.00211	-0.00210
	(A1 * !A2 * B1 * X)	0.00181	0.00183	0.00182
	(A1 * !A2 * B1 * X)	-0.00097	-0.00099	-0.00098
	(A1 * !A2 * !B1 * !X)	0.00160	0.00161	0.00159
	(A1 * !A2 * !B1 * !X)	-0.00188	-0.00204	-0.00202
	(!A1 * !A2 * !B1 * !X)	0.00152	0.00151	0.00152
	(!A1 * !A2 * !B1 * !X)	-0.00213	-0.00212	-0.00213

sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	0.00210	0.00212	0.00211
	(A2 * B1 * X)	-0.00098	-0.00099	-0.00098
	(A2 * !B1 * !X)	0.00185	0.00188	0.00185
	(A2 * !B1 * !X)	-0.00208	-0.00214	-0.00214
	(A1 * !A2 * B1 * X)	0.00210	0.00212	0.00211
	(A1 * !A2 * B1 * X)	-0.00098	-0.00099	-0.00098
	(A1 * !A2 * !B1 * !X)	0.00186	0.00187	0.00185
	(A1 * !A2 * !B1 * !X)	-0.00191	-0.00207	-0.00206
	(!A1 * !A2 * !B1 * !X)	0.00178	0.00179	0.00177
	(!A1 * !A2 * !B1 * !X)	-0.00216	-0.00217	-0.00215
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	0.00360	0.00364	0.00361
	(A2 * B1 * X)	-0.00218	-0.00220	-0.00218
	(A2 * !B1 * !X)	0.00327	0.00330	0.00328
	(A2 * !B1 * !X)	-0.00421	-0.00435	-0.00435
	(A1 * !A2 * B1 * X)	0.00360	0.00364	0.00361
	(A1 * !A2 * B1 * X)	-0.00218	-0.00220	-0.00217
	(A1 * !A2 * !B1 * !X)	0.00327	0.00332	0.00328
	(A1 * !A2 * !B1 * !X)	-0.00384	-0.00421	-0.00419
	(!A1 * !A2 * !B1 * !X)	0.00311	0.00312	0.00310
	(!A1 * !A2 * !B1 * !X)	-0.00448	-0.00449	-0.00447

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

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

sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	-0.00175	-0.00176	-0.00180
	(A2 * B1 * X)	0.00105	0.00105	0.00101
	(A2 * !B1 * !X)	-0.00159	-0.00160	-0.00159
	(A2 * !B1 * !X)	0.00210	0.00211	0.00210
	(A1 * !A2 * B1 * X)	-0.00168	-0.00169	-0.00179
	(A1 * !A2 * B1 * X)	0.00108	0.00108	0.00100
	(A1 * !A2 * !B1 * !X)	-0.00158	-0.00160	-0.00159
	(A1 * !A2 * !B1 * !X)	0.00201	0.00204	0.00202
	(!A1 * !A2 * !B1 * !X)	-0.00142	-0.00151	-0.00152
	(!A1 * !A2 * !B1 * !X)	0.00215	0.00214	0.00213
sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	-0.00204	-0.00205	-0.00209
	(A2 * B1 * X)	0.00104	0.00105	0.00100
	(A2 * !B1 * !X)	-0.00184	-0.00185	-0.00185
	(A2 * !B1 * !X)	0.00213	0.00214	0.00214
	(A1 * !A2 * B1 * X)	-0.00197	-0.00198	-0.00208
	(A1 * !A2 * B1 * X)	0.00108	0.00108	0.00100
	(A1 * !A2 * !B1 * !X)	-0.00184	-0.00186	-0.00185
	(A1 * !A2 * !B1 * !X)	0.00205	0.00207	0.00206
	(!A1 * !A2 * !B1 * !X)	-0.00167	-0.00178	-0.00177
	(!A1 * !A2 * !B1 * !X)	0.00217	0.00217	0.00216
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	-0.00342	-0.00345	-0.00358
	(A2 * B1 * X)	0.00234	0.00235	0.00223
	(A2 * !B1 * !X)	-0.00326	-0.00327	-0.00327
	(A2 * !B1 * !X)	0.00433	0.00435	0.00435
	(A1 * !A2 * B1 * X)	-0.00328	-0.00330	-0.00355
	(A1 * !A2 * B1 * X)	0.00241	0.00242	0.00222
	(A1 * !A2 * !B1 * !X)	-0.00326	-0.00329	-0.00327
	(A1 * !A2 * !B1 * !X)	0.00417	0.00421	0.00419
	(!A1 * !A2 * !B1 * !X)	-0.00286	-0.00312	-0.00310
	(!A1 * !A2 * !B1 * !X)	0.00455	0.00452	0.00449

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)	0.00057	0.00057	0.00053
	(!A1 * !A2 * !A3 * !X)	-0.00212	-0.00213	-0.00220
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	0.00074	0.00074	0.00069
	(!A1 * !A2 * !A3 * !X)	-0.00263	-0.00264	-0.00272
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	0.00109	0.00110	0.00100
	(!A1 * !A2 * !A3 * !X)	-0.00496	-0.00500	-0.00515

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)	-0.00052	-0.00053	-0.00052
	(!A1 * !A2 * !A3 * !X)	0.00220	0.00225	0.00221
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	-0.00066	-0.00069	-0.00067
	(!A1 * !A2 * !A3 * !X)	0.00272	0.00278	0.00274
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	-0.00096	-0.00099	-0.00096
	(!A1 * !A2 * !A3 * !X)	0.00516	0.00526	0.00518

SKY130_FD_SC_HS__O32AIx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00269	0.00296	0.00288	0.00284	0.00294	0.43961
sky130_fd_sc_hs__o32ai_2	0.00569	0.00533	0.00576	0.00546	0.00554	0.76690
sky130_fd_sc_hs__o32ai_4	0.01075	0.01079	0.01090	0.01114	0.01081	1.39671

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32ai_1	0.00000	0.05603	0.20266
sky130_fd_sc_hs__o32ai_2	0.00000	0.11207	0.40531
sky130_fd_sc_hs__o32ai_4	0.00000	0.22413	0.81062

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)	0.16843	1.00793	9.67675
	A2->Y (FR)	0.15770	1.03529	10.29420
	A3->Y (FR)	0.12856	1.01827	10.43780
	B1->Y (FR)	0.06550	0.73195	7.91715
	B2->Y (FR)	0.05322	0.74527	8.32393
sky130_fd_sc_hs__o32ai_2	A1->Y (FR)	0.17896	0.87434	9.40784
	A2->Y (FR)	0.16682	0.91010	10.19680
	A3->Y (FR)	0.13013	0.88916	10.34670
	B1->Y (FR)	0.06725	0.66333	8.08480
	B2->Y (FR)	0.04652	0.67065	8.45693
sky130_fd_sc_hs__o32ai_4	A1->Y (FR)	0.17974	0.76299	9.26559
	A2->Y (FR)	0.16708	0.79929	10.07100
	A3->Y (FR)	0.12947	0.78598	10.31750
	B1->Y (FR)	0.06404	0.56653	7.80405
	B2->Y (FR)	0.04487	0.58592	8.29726

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32ai_1	A1->Y (RF)	0.04456	0.32208	2.91699
	A2->Y (RF)	0.04517	0.32534	3.00516
	A3->Y (RF)	0.03779	0.31405	2.97715
	B1->Y (RF)	0.03522	0.36567	3.60255
	B2->Y (RF)	0.02926	0.35138	3.54229
sky130_fd_sc_hs__o32ai_2	A1->Y (RF)	0.04618	0.27098	2.68902
	A2->Y (RF)	0.04722	0.27990	2.86165
	A3->Y (RF)	0.03262	0.25380	2.82568
	B1->Y (RF)	0.03634	0.31693	3.50192
	B2->Y (RF)	0.02870	0.30790	3.53891
sky130_fd_sc_hs__o32ai_4	A1->Y (RF)	0.05011	0.24612	2.86628
	A2->Y (RF)	0.04530	0.23044	2.79047
	A3->Y (RF)	0.03385	0.21052	2.69978
	B1->Y (RF)	0.05049	0.33494	4.03236
	B2->Y (RF)	0.04097	0.33847	4.27159

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	A1	0.00204	0.00194	0.01510
	A1	0.01324	0.01318	0.02572
	A2	0.00219	0.00222	0.01434
	A2	0.01218	0.01222	0.02383
	A3	0.00216	0.00297	0.02167
	A3	0.01073	0.01149	0.02943
	B1	-0.00030	0.00003	0.01519
	B1	0.00785	0.00815	0.02302
	B2	-0.00034	0.00093	0.02350
	B2	0.00518	0.00645	0.02882
sky130_fd_sc_hs__o32ai_2	A1	0.00363	0.00337	0.02955
	A1	0.02716	0.02690	0.05192
	A2	0.00396	0.00387	0.02685
	A2	0.02419	0.02416	0.04639
	A3	0.00376	0.00550	0.04061
	A3	0.02176	0.02339	0.05716
	B1	-0.00094	-0.00031	0.02870
	B1	0.01280	0.01348	0.04265
	B2	-0.00123	0.00142	0.04196
	B2	0.01009	0.01277	0.05335

sky130_fd_sc_hs__o32ai_4	**A1**	0.00725	0.00692	0.06079
	A1	0.05350	0.05324	0.10567
	A2	0.00741	0.00766	0.05642
	A2	0.04812	0.04842	0.09618
	A3	0.00739	0.01119	0.08111
	A3	0.04276	0.04653	0.11577
	B1	-0.00203	-0.00071	0.05114
	B1	0.02591	0.02725	0.07957
	B2	-0.00218	0.00241	0.06860
	B2	0.02028	0.02492	0.09106

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**A1**	0.01553	0.01559	0.02593
	A1	0.00404	0.00409	0.01446
	A2	0.01310	0.01326	0.02287
	A2	0.00276	0.00289	0.01245
	A3	0.01047	0.01077	0.01996
	A3	0.00151	0.00181	0.01096
	B1	0.01331	0.01378	0.02585
	B1	0.00124	0.00173	0.01516
	B2	0.00840	0.00903	0.02122
	B2	0.00016	0.00078	0.01364

sky130_fd_sc_hs__o32ai_2	**A1**	0.03254	0.03266	0.05369
	A1	0.00852	0.00864	0.02967
	A2	0.02751	0.02772	0.04658
	A2	0.00659	0.00678	0.02549
	A3	0.02183	0.02257	0.04050
	A3	0.00311	0.00380	0.02175
	B1	0.02768	0.02854	0.05111
	B1	0.00297	0.00417	0.03011
	B2	0.01708	0.01833	0.04124
	B2	-0.00035	0.00111	0.02501
sky130_fd_sc_hs__o32ai_4	**A1**	0.06344	0.06397	0.11446
	A1	0.01626	0.01675	0.06697
	A2	0.05371	0.05454	0.10121
	A2	0.01169	0.01251	0.05888
	A3	0.04225	0.04417	0.08838
	A3	0.00549	0.00733	0.05141
	B1	0.04409	0.04568	0.09184
	B1	0.00496	0.00688	0.05729
	B2	0.02150	0.02439	0.06853
	B2	-0.00088	0.00193	0.04567

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)**	0.00193	0.00195	0.00193
	(A2 * A3 * B2 * !Y)	-0.00225	-0.00230	-0.00231
	(A2 * A3 * B1 * !B2 * !Y)	0.00193	0.00195	0.00193
	(A2 * A3 * B1 * !B2 * !Y)	-0.00225	-0.00230	-0.00231
	(A2 * !B1 * !B2 * Y)	0.00193	0.00194	0.00193
	(A2 * !B1 * !B2 * Y)	-0.00226	-0.00231	-0.00231
	(A2 * !A3 * B2 * !Y)	0.00202	0.00195	0.00193
	(A2 * !A3 * B2 * !Y)	-0.00215	-0.00233	-0.00231
	(A2 * !A3 * B1 * !B2 * !Y)	0.00202	0.00195	0.00193
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00215	-0.00233	-0.00231
	(!A2 * A3 * B2 * !Y)	0.00199	0.00194	0.00193
	(!A2 * A3 * B2 * !Y)	-0.00203	-0.00225	-0.00224
	(!A2 * A3 * B1 * !B2 * !Y)	0.00199	0.00194	0.00193
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00203	-0.00225	-0.00224
	(!A2 * A3 * !B1 * !B2 * Y)	0.00193	0.00194	0.00193
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00208	-0.00225	-0.00224
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00183	0.00186	0.00184
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00232	-0.00234	-0.00233

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	0.00400	0.00403	0.00398
	(A2 * A3 * B2 * !Y)	-0.00467	-0.00484	-0.00481
	(A2 * A3 * B1 * !B2 * !Y)	0.00400	0.00403	0.00398
	(A2 * A3 * B1 * !B2 * !Y)	-0.00467	-0.00484	-0.00481
	(A2 * !B1 * !B2 * Y)	0.00399	0.00403	0.00398
	(A2 * !B1 * !B2 * Y)	-0.00470	-0.00484	-0.00481
	(A2 * !A3 * B2 * !Y)	0.00416	0.00403	0.00398
	(A2 * !A3 * B2 * !Y)	-0.00448	-0.00483	-0.00481
	(A2 * !A3 * B1 * !B2 * !Y)	0.00416	0.00404	0.00398
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00448	-0.00483	-0.00481
	(!A2 * A3 * B2 * !Y)	0.00413	0.00403	0.00399
	(!A2 * A3 * B2 * !Y)	-0.00426	-0.00468	-0.00467
	(!A2 * A3 * B1 * !B2 * !Y)	0.00413	0.00403	0.00399
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00426	-0.00468	-0.00467
	(!A2 * A3 * !B1 * !B2 * Y)	0.00398	0.00402	0.00398
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00437	-0.00468	-0.00467
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00375	0.00380	0.00377
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00489	-0.00493	-0.00490

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	0.00756	0.00760	0.00751
	(A2 * A3 * B2 * !Y)	-0.00912	-0.00943	-0.00935
	(A2 * A3 * B1 * !B2 * !Y)	0.00756	0.00760	0.00751
	(A2 * A3 * B1 * !B2 * !Y)	-0.00911	-0.00943	-0.00935
	(A2 * !B1 * !B2 * Y)	0.00754	0.00760	0.00751
	(A2 * !B1 * !B2 * Y)	-0.00915	-0.00943	-0.00935
	(A2 * !A3 * B2 * !Y)	0.00793	0.00760	0.00751
	(A2 * !A3 * B2 * !Y)	-0.00869	-0.00944	-0.00937
	(A2 * !A3 * B1 * !B2 * !Y)	0.00793	0.00760	0.00751
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00869	-0.00943	-0.00937
	(!A2 * A3 * B2 * !Y)	0.00775	0.00761	0.00752
	(!A2 * A3 * B2 * !Y)	-0.00819	-0.00915	-0.00910
	(!A2 * A3 * B1 * !B2 * !Y)	0.00776	0.00761	0.00752
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00820	-0.00915	-0.00910
	(!A2 * A3 * !B1 * !B2 * Y)	0.00747	0.00759	0.00751
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00842	-0.00916	-0.00910
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00712	0.00722	0.00715
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00953	-0.00960	-0.00955

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)**	-0.00192	-0.00192	-0.00193
	(A2 * A3 * B2 * !Y)	0.00229	0.00230	0.00231
	(A2 * A3 * B1 * !B2 * !Y)	-0.00192	-0.00192	-0.00193
	(A2 * A3 * B1 * !B2 * !Y)	0.00230	0.00230	0.00231
	(A2 * !B1 * !B2 * Y)	-0.00192	-0.00192	-0.00193
	(A2 * !B1 * !B2 * Y)	0.00230	0.00231	0.00231
	(A2 * !A3 * B2 * !Y)	-0.00192	-0.00194	-0.00193
	(A2 * !A3 * B2 * !Y)	0.00230	0.00233	0.00231
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00192	-0.00194	-0.00193
	(A2 * !A3 * B1 * !B2 * !Y)	0.00230	0.00233	0.00231
	(!A2 * A3 * B2 * !Y)	-0.00192	-0.00193	-0.00192
	(!A2 * A3 * B2 * !Y)	0.00223	0.00225	0.00224
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00192	-0.00193	-0.00192
	(!A2 * A3 * B1 * !B2 * !Y)	0.00223	0.00225	0.00224
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00192	-0.00193	-0.00193
	(!A2 * A3 * !B1 * !B2 * Y)	0.00223	0.00225	0.00224
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00174	-0.00186	-0.00184
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00234	0.00236	0.00234

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	-0.00398	-0.00399	-0.00398
	(A2 * A3 * B2 * !Y)	0.00482	0.00484	0.00481
	(A2 * A3 * B1 * !B2 * !Y)	-0.00398	-0.00399	-0.00397
	(A2 * A3 * B1 * !B2 * !Y)	0.00482	0.00484	0.00481
	(A2 * !B1 * !B2 * Y)	-0.00398	-0.00399	-0.00397
	(A2 * !B1 * !B2 * Y)	0.00482	0.00484	0.00481
	(A2 * !A3 * B2 * !Y)	-0.00398	-0.00398	-0.00397
	(A2 * !A3 * B2 * !Y)	0.00482	0.00483	0.00481
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00398	-0.00398	-0.00397
	(A2 * !A3 * B1 * !B2 * !Y)	0.00482	0.00483	0.00481
	(!A2 * A3 * B2 * !Y)	-0.00398	-0.00398	-0.00398
	(!A2 * A3 * B2 * !Y)	0.00466	0.00468	0.00467
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00398	-0.00398	-0.00397
	(!A2 * A3 * B1 * !B2 * !Y)	0.00466	0.00468	0.00467
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00397	-0.00398	-0.00397
	(!A2 * A3 * !B1 * !B2 * Y)	0.00467	0.00468	0.00467
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00349	-0.00379	-0.00377
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00493	0.00496	0.00492

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	-0.00747	-0.00753	-0.00749
	(A2 * A3 * B2 * !Y)	0.00930	0.00943	0.00935
	(A2 * A3 * B1 * !B2 * !Y)	-0.00747	-0.00753	-0.00749
	(A2 * A3 * B1 * !B2 * !Y)	0.00930	0.00943	0.00935
	(A2 * !B1 * !B2 * Y)	-0.00747	-0.00753	-0.00749
	(A2 * !B1 * !B2 * Y)	0.00930	0.00943	0.00935
	(A2 * !A3 * B2 * !Y)	-0.00748	-0.00753	-0.00749
	(A2 * !A3 * B2 * !Y)	0.00933	0.00945	0.00937
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00748	-0.00753	-0.00749
	(A2 * !A3 * B1 * !B2 * !Y)	0.00933	0.00946	0.00937
	(!A2 * A3 * B2 * !Y)	-0.00747	-0.00752	-0.00749
	(!A2 * A3 * B2 * !Y)	0.00904	0.00915	0.00910
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00747	-0.00752	-0.00749
	(!A2 * A3 * B1 * !B2 * !Y)	0.00904	0.00915	0.00910
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00746	-0.00752	-0.00749
	(!A2 * A3 * !B1 * !B2 * Y)	0.00904	0.00916	0.00910
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00660	-0.00716	-0.00715
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00961	0.00965	0.00957

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)**	0.00205	0.00207	0.00196
	(A1 * A3 * B2 * !Y)	-0.00159	-0.00159	-0.00158
	(A1 * A3 * B1 * !B2 * !Y)	0.00206	0.00207	0.00196
	(A1 * A3 * B1 * !B2 * !Y)	-0.00158	-0.00159	-0.00158
	(A1 * A3 * !B1 * !B2 * Y)	0.00187	0.00188	0.00186
	(A1 * A3 * !B1 * !B2 * Y)	-0.00173	-0.00173	-0.00173
	(A1 * !A3 * B2 * !Y)	0.00191	0.00192	0.00189
	(A1 * !A3 * B2 * !Y)	-0.00131	-0.00132	-0.00132
	(A1 * !A3 * B1 * !B2 * !Y)	0.00191	0.00192	0.00189
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00131	-0.00132	-0.00132
	(A1 * !A3 * !B1 * !B2 * Y)	0.00188	0.00188	0.00186
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00239	-0.00240	-0.00240
	(!A1 * A3 * B2 * !Y)	0.00236	0.00192	0.00188
	(!A1 * A3 * B2 * !Y)	-0.00191	-0.00240	-0.00240
	(!A1 * A3 * B1 * !B2 * !Y)	0.00236	0.00192	0.00188
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00191	-0.00240	-0.00240
	(!A1 * A3 * !B1 * !B2 * Y)	0.00188	0.00189	0.00186
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00239	-0.00243	-0.00241
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00177	0.00178	0.00178
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00243	-0.00244	-0.00244

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	0.00402	0.00413	0.00388
	(A1 * A3 * B2 * !Y)	-0.00293	-0.00297	-0.00295
	(A1 * A3 * B1 * !B2 * !Y)	0.00402	0.00413	0.00388
	(A1 * A3 * B1 * !B2 * !Y)	-0.00293	-0.00296	-0.00295
	(A1 * A3 * !B1 * !B2 * Y)	0.00365	0.00369	0.00365
	(A1 * A3 * !B1 * !B2 * Y)	-0.00333	-0.00335	-0.00332
	(A1 * !A3 * B2 * !Y)	0.00371	0.00376	0.00371
	(A1 * !A3 * B2 * !Y)	-0.00240	-0.00244	-0.00244
	(A1 * !A3 * B1 * !B2 * !Y)	0.00371	0.00376	0.00371
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00240	-0.00244	-0.00244
	(A1 * !A3 * !B1 * !B2 * Y)	0.00362	0.00368	0.00365
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00452	-0.00461	-0.00459
	(!A1 * A3 * B2 * !Y)	0.00468	0.00374	0.00369
	(!A1 * A3 * B2 * !Y)	-0.00353	-0.00458	-0.00462
	(!A1 * A3 * B1 * !B2 * !Y)	0.00469	0.00375	0.00369
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00353	-0.00458	-0.00462
	(!A1 * A3 * !B1 * !B2 * Y)	0.00363	0.00366	0.00365
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00455	-0.00467	-0.00465
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00350	0.00349	0.00349
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00472	-0.00471	-0.00471

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	0.00823	0.00837	0.00793
	(A1 * A3 * B2 * !Y)	-0.00597	-0.00601	-0.00598
	(A1 * A3 * B1 * !B2 * !Y)	0.00824	0.00838	0.00793
	(A1 * A3 * B1 * !B2 * !Y)	-0.00597	-0.00601	-0.00598
	(A1 * A3 * !B1 * !B2 * Y)	0.00753	0.00759	0.00752
	(A1 * A3 * !B1 * !B2 * Y)	-0.00662	-0.00667	-0.00663
	(A1 * !A3 * B2 * !Y)	0.00768	0.00771	0.00760
	(A1 * !A3 * B2 * !Y)	-0.00499	-0.00499	-0.00499
	(A1 * !A3 * B1 * !B2 * !Y)	0.00768	0.00771	0.00760
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00499	-0.00499	-0.00498
	(A1 * !A3 * !B1 * !B2 * Y)	0.00746	0.00759	0.00752
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00915	-0.00932	-0.00929
	(!A1 * A3 * B2 * !Y)	0.00963	0.00767	0.00757
	(!A1 * A3 * B2 * !Y)	-0.00718	-0.00933	-0.00941
	(!A1 * A3 * B1 * !B2 * !Y)	0.00964	0.00767	0.00757
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00718	-0.00933	-0.00941
	(!A1 * A3 * !B1 * !B2 * Y)	0.00749	0.00754	0.00751
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00926	-0.00946	-0.00942
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00717	0.00720	0.00716
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00958	-0.00959	-0.00956

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)**	-0.00188	-0.00188	-0.00188
	(A1 * A3 * B2 * !Y)	0.00159	0.00159	0.00158
	(A1 * A3 * B1 * !B2 * !Y)	-0.00188	-0.00188	-0.00188
	(A1 * A3 * B1 * !B2 * !Y)	0.00158	0.00159	0.00158
	(A1 * A3 * !B1 * !B2 * Y)	-0.00186	-0.00186	-0.00186
	(A1 * A3 * !B1 * !B2 * Y)	0.00173	0.00173	0.00173
	(A1 * !A3 * B2 * !Y)	-0.00187	-0.00188	-0.00186
	(A1 * !A3 * B2 * !Y)	0.00135	0.00135	0.00136
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00187	-0.00188	-0.00186
	(A1 * !A3 * B1 * !B2 * !Y)	0.00135	0.00136	0.00136
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00186	-0.00186	-0.00186
	(A1 * !A3 * !B1 * !B2 * Y)	0.00240	0.00240	0.00240
	(!A1 * A3 * B2 * !Y)	-0.00187	-0.00188	-0.00187
	(!A1 * A3 * B2 * !Y)	0.00239	0.00241	0.00240
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00187	-0.00188	-0.00187
	(!A1 * A3 * B1 * !B2 * !Y)	0.00239	0.00241	0.00240
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00186	-0.00187	-0.00186
	(!A1 * A3 * !B1 * !B2 * Y)	0.00240	0.00243	0.00241
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00165	-0.00178	-0.00178
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00245	0.00246	0.00244

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	-0.00370	-0.00373	-0.00372
	(A1 * A3 * B2 * !Y)	0.00293	0.00297	0.00295
	(A1 * A3 * B1 * !B2 * !Y)	-0.00370	-0.00373	-0.00372
	(A1 * A3 * B1 * !B2 * !Y)	0.00293	0.00296	0.00295
	(A1 * A3 * !B1 * !B2 * Y)	-0.00364	-0.00366	-0.00364
	(A1 * A3 * !B1 * !B2 * Y)	0.00333	0.00335	0.00332
	(A1 * !A3 * B2 * !Y)	-0.00364	-0.00368	-0.00363
	(A1 * !A3 * B2 * !Y)	0.00245	0.00250	0.00251
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00365	-0.00368	-0.00363
	(A1 * !A3 * B1 * !B2 * !Y)	0.00246	0.00250	0.00251
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00362	-0.00366	-0.00364
	(A1 * !A3 * !B1 * !B2 * Y)	0.00459	0.00461	0.00459
	(!A1 * A3 * B2 * !Y)	-0.00367	-0.00369	-0.00367
	(!A1 * A3 * B2 * !Y)	0.00458	0.00462	0.00462
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00367	-0.00369	-0.00367
	(!A1 * A3 * B1 * !B2 * !Y)	0.00458	0.00462	0.00462
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00363	-0.00366	-0.00364
	(!A1 * A3 * !B1 * !B2 * Y)	0.00463	0.00469	0.00465
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00319	-0.00349	-0.00349
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00477	0.00475	0.00472

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	-0.00759	-0.00762	-0.00760
	(A1 * A3 * B2 * !Y)	0.00597	0.00601	0.00598
	(A1 * A3 * B1 * !B2 * !Y)	-0.00759	-0.00762	-0.00760
	(A1 * A3 * B1 * !B2 * !Y)	0.00597	0.00601	0.00598
	(A1 * A3 * !B1 * !B2 * Y)	-0.00748	-0.00753	-0.00750
	(A1 * A3 * !B1 * !B2 * Y)	0.00662	0.00667	0.00663
	(A1 * !A3 * B2 * !Y)	-0.00751	-0.00753	-0.00745
	(A1 * !A3 * B2 * !Y)	0.00507	0.00510	0.00513
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00751	-0.00753	-0.00745
	(A1 * !A3 * B1 * !B2 * !Y)	0.00508	0.00510	0.00513
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00746	-0.00753	-0.00750
	(A1 * !A3 * !B1 * !B2 * Y)	0.00925	0.00932	0.00929
	(!A1 * A3 * B2 * !Y)	-0.00755	-0.00756	-0.00751
	(!A1 * A3 * B2 * !Y)	0.00938	0.00942	0.00941
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00754	-0.00756	-0.00751
	(!A1 * A3 * B1 * !B2 * !Y)	0.00938	0.00942	0.00941
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00749	-0.00752	-0.00750
	(!A1 * A3 * !B1 * !B2 * Y)	0.00943	0.00947	0.00942
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00660	-0.00717	-0.00716
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00968	0.00964	0.00958

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

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

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	0.00201	0.00203	0.00201
	(A2 * B2 * !Y)	-0.00110	-0.00110	-0.00109
	(A2 * B1 * !B2 * !Y)	0.00201	0.00203	0.00201
	(A2 * B1 * !B2 * !Y)	-0.00110	-0.00110	-0.00109
	(A2 * !B1 * !B2 * Y)	0.00184	0.00186	0.00185
	(A2 * !B1 * !B2 * Y)	-0.00220	-0.00227	-0.00227
	(A1 * !A2 * B2 * !Y)	0.00201	0.00203	0.00201
	(A1 * !A2 * B2 * !Y)	-0.00109	-0.00110	-0.00109
	(A1 * !A2 * B1 * !B2 * !Y)	0.00201	0.00203	0.00201
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00109	-0.00110	-0.00109
	(A1 * !A2 * !B1 * !B2 * Y)	0.00186	0.00187	0.00185
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00201	-0.00216	-0.00217
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00176	0.00178	0.00177
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00230	-0.00231	-0.00230
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	0.00438	0.00448	0.00440
	(A2 * B2 * !Y)	-0.00216	-0.00221	-0.00217
	(A2 * B1 * !B2 * !Y)	0.00439	0.00448	0.00441
	(A2 * B1 * !B2 * !Y)	-0.00216	-0.00221	-0.00217
	(A2 * !B1 * !B2 * Y)	0.00361	0.00367	0.00363
	(A2 * !B1 * !B2 * Y)	-0.00480	-0.00498	-0.00496
	(A1 * !A2 * B2 * !Y)	0.00438	0.00448	0.00440
	(A1 * !A2 * B2 * !Y)	-0.00215	-0.00220	-0.00216
	(A1 * !A2 * B1 * !B2 * !Y)	0.00438	0.00448	0.00441
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00215	-0.00220	-0.00216
	(A1 * !A2 * !B1 * !B2 * Y)	0.00363	0.00363	0.00363
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00438	-0.00472	-0.00470
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00345	0.00342	0.00344
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00504	-0.00502	-0.00504

sky130_fd_sc_hs__o32ai_4	**(A2 * B2 * !Y)**	0.00831	0.00843	0.00836
	(A2 * B2 * !Y)	-0.00426	-0.00433	-0.00429
	(A2 * B1 * !B2 * !Y)	0.00831	0.00843	0.00836
	(A2 * B1 * !B2 * !Y)	-0.00426	-0.00433	-0.00428
	(A2 * !B1 * !B2 * Y)	0.00712	0.00715	0.00708
	(A2 * !B1 * !B2 * Y)	-0.00934	-0.00963	-0.00959
	(A1 * !A2 * B2 * !Y)	0.00831	0.00849	0.00836
	(A1 * !A2 * B2 * !Y)	-0.00425	-0.00435	-0.00427
	(A1 * !A2 * B1 * !B2 * !Y)	0.00832	0.00850	0.00836
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00426	-0.00435	-0.00427
	(A1 * !A2 * !B1 * !B2 * Y)	0.00708	0.00717	0.00708
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00844	-0.00909	-0.00906
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00683	0.00682	0.00682
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00976	-0.00975	-0.00975

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

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

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	-0.00194	-0.00195	-0.00200
	(A2 * B2 * !Y)	0.00116	0.00116	0.00111
	(A2 * B1 * !B2 * !Y)	-0.00194	-0.00195	-0.00200
	(A2 * B1 * !B2 * !Y)	0.00116	0.00116	0.00111
	(A2 * !B1 * !B2 * Y)	-0.00184	-0.00185	-0.00185
	(A2 * !B1 * !B2 * Y)	0.00226	0.00227	0.00227
	(A1 * !A2 * B2 * !Y)	-0.00186	-0.00187	-0.00199
	(A1 * !A2 * B2 * !Y)	0.00120	0.00120	0.00111
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00186	-0.00187	-0.00199
	(A1 * !A2 * B1 * !B2 * !Y)	0.00120	0.00120	0.00111
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00184	-0.00184	-0.00185
	(A1 * !A2 * !B1 * !B2 * Y)	0.00216	0.00216	0.00217
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00164	-0.00177	-0.00177
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00232	0.00232	0.00231
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	-0.00420	-0.00425	-0.00438
	(A2 * B2 * !Y)	0.00234	0.00236	0.00221
	(A2 * B1 * !B2 * !Y)	-0.00420	-0.00425	-0.00438
	(A2 * B1 * !B2 * !Y)	0.00234	0.00236	0.00221
	(A2 * !B1 * !B2 * Y)	-0.00361	-0.00364	-0.00362
	(A2 * !B1 * !B2 * Y)	0.00494	0.00498	0.00496
	(A1 * !A2 * B2 * !Y)	-0.00401	-0.00406	-0.00434
	(A1 * !A2 * B2 * !Y)	0.00241	0.00244	0.00220
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00402	-0.00406	-0.00434
	(A1 * !A2 * B1 * !B2 * !Y)	0.00242	0.00244	0.00220
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00361	-0.00363	-0.00362
	(A1 * !A2 * !B1 * !B2 * Y)	0.00469	0.00472	0.00470
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00319	-0.00342	-0.00344
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00508	0.00505	0.00505

sky130_fd_sc_hs__o32ai_4	**(A2 * B2 * !Y)**	-0.00798	-0.00807	-0.00832
	(A2 * B2 * !Y)	0.00458	0.00463	0.00437
	(A2 * B1 * !B2 * !Y)	-0.00798	-0.00807	-0.00832
	(A2 * B1 * !B2 * !Y)	0.00458	0.00463	0.00437
	(A2 * !B1 * !B2 * Y)	-0.00707	-0.00710	-0.00706
	(A2 * !B1 * !B2 * Y)	0.00959	0.00963	0.00959
	(A1 * !A2 * B2 * !Y)	-0.00760	-0.00769	-0.00824
	(A1 * !A2 * B2 * !Y)	0.00473	0.00478	0.00434
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00760	-0.00769	-0.00824
	(A1 * !A2 * B1 * !B2 * !Y)	0.00474	0.00479	0.00435
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00705	-0.00709	-0.00706
	(A1 * !A2 * !B1 * !B2 * Y)	0.00904	0.00909	0.00906
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00627	-0.00682	-0.00682
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00983	0.00983	0.00977

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**(A3 * B2 * !Y)**	0.00240	0.00209	0.00206
	(A3 * B2 * !Y)	-0.00193	-0.00228	-0.00228
	(A2 * !A3 * B2 * !Y)	0.00239	0.00209	0.00205
	(A2 * !A3 * B2 * !Y)	-0.00193	-0.00228	-0.00228
	(A1 * !A2 * !A3 * B2 * !Y)	0.00239	0.00209	0.00206
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00193	-0.00228	-0.00228
	(!A1 * !A2 * !A3 * B2 * Y)	0.00069	0.00069	0.00068
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00269	-0.00274	-0.00272
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00077	0.00077	0.00071
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00262	-0.00263	-0.00274

sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	0.00452	0.00379	0.00373
	(A3 * B2 * !Y)	-0.00368	-0.00452	-0.00452
	(A2 * !A3 * B2 * !Y)	0.00452	0.00379	0.00373
	(A2 * !A3 * B2 * !Y)	-0.00368	-0.00451	-0.00452
	(A1 * !A2 * !A3 * B2 * !Y)	0.00452	0.00379	0.00373
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00368	-0.00453	-0.00452
	(!A1 * !A2 * !A3 * B2 * Y)	0.00108	0.00109	0.00108
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00531	-0.00544	-0.00541
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00126	0.00126	0.00113
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00519	-0.00523	-0.00544
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	0.00946	0.00795	0.00782
	(A3 * B2 * !Y)	-0.00739	-0.00910	-0.00909
	(A2 * !A3 * B2 * !Y)	0.00945	0.00794	0.00782
	(A2 * !A3 * B2 * !Y)	-0.00739	-0.00911	-0.00909
	(A1 * !A2 * !A3 * B2 * !Y)	0.00945	0.00794	0.00782
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00739	-0.00911	-0.00909
	(!A1 * !A2 * !A3 * B2 * Y)	0.00218	0.00219	0.00216
	(!A1 * !A2 * !A3 * B2 * Y)	-0.01102	-0.01123	-0.01118
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00253	0.00253	0.00227
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.01081	-0.01088	-0.01127

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

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

sky130_fd_sc_hs__o32ai_1	**(A3 * B2 * !Y)**	-0.00204	-0.00205	-0.00204
	(A3 * B2 * !Y)	0.00227	0.00229	0.00228
	(A2 * !A3 * B2 * !Y)	-0.00204	-0.00204	-0.00204
	(A2 * !A3 * B2 * !Y)	0.00227	0.00228	0.00228
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00204	-0.00204	-0.00204
	(A1 * !A2 * !A3 * B2 * !Y)	0.00227	0.00228	0.00228
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00067	-0.00068	-0.00068
	(!A1 * !A2 * !A3 * B2 * Y)	0.00273	0.00275	0.00272
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00069	-0.00070	-0.00069
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00274	0.00280	0.00275
sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	-0.00371	-0.00372	-0.00371
	(A3 * B2 * !Y)	0.00449	0.00452	0.00452
	(A2 * !A3 * B2 * !Y)	-0.00371	-0.00372	-0.00371
	(A2 * !A3 * B2 * !Y)	0.00449	0.00451	0.00452
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00371	-0.00373	-0.00371
	(A1 * !A2 * !A3 * B2 * !Y)	0.00449	0.00454	0.00452
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00107	-0.00109	-0.00108
	(!A1 * !A2 * !A3 * B2 * Y)	0.00539	0.00549	0.00541
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00109	-0.00111	-0.00109
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00544	0.00555	0.00547
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	-0.00781	-0.00781	-0.00778
	(A3 * B2 * !Y)	0.00908	0.00910	0.00909
	(A2 * !A3 * B2 * !Y)	-0.00781	-0.00782	-0.00778
	(A2 * !A3 * B2 * !Y)	0.00908	0.00912	0.00909
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00780	-0.00783	-0.00778
	(A1 * !A2 * !A3 * B2 * !Y)	0.00908	0.00915	0.00909
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00215	-0.00216	-0.00216
	(!A1 * !A2 * !A3 * B2 * Y)	0.01118	0.01123	0.01118
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00219	-0.00223	-0.00219
	(!A1 * !A2 * !A3 * !B2 * Y)	0.01129	0.01150	0.01132

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	(A3 * B1 * !Y)	0.00214	0.00216	0.00214
	(A3 * B1 * !Y)	-0.00106	-0.00107	-0.00106
	(A2 * !A3 * B1 * !Y)	0.00214	0.00216	0.00214
	(A2 * !A3 * B1 * !Y)	-0.00106	-0.00107	-0.00106
	(A1 * !A2 * !A3 * B1 * !Y)	0.00214	0.00217	0.00214
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00106	-0.00108	-0.00106
	(!A1 * !A2 * !A3 * B1 * Y)	0.00058	0.00058	0.00058
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00274	-0.00276	-0.00274
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00066	0.00066	0.00060
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00266	-0.00268	-0.00278
sky130_fd_sc_hs__o32ai_2	(A3 * B1 * !Y)	0.00420	0.00423	0.00419
	(A3 * B1 * !Y)	-0.00221	-0.00221	-0.00219
	(A2 * !A3 * B1 * !Y)	0.00420	0.00426	0.00419
	(A2 * !A3 * B1 * !Y)	-0.00221	-0.00222	-0.00219
	(A1 * !A2 * !A3 * B1 * !Y)	0.00420	0.00426	0.00419
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00221	-0.00223	-0.00218
	(!A1 * !A2 * !A3 * B1 * Y)	0.00115	0.00115	0.00114
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00542	-0.00549	-0.00547
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00133	0.00133	0.00119
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00530	-0.00534	-0.00554

sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	0.00818	0.00836	0.00822
	(A3 * B1 * !Y)	-0.00430	-0.00441	-0.00433
	(A2 * !A3 * B1 * !Y)	0.00823	0.00835	0.00822
	(A2 * !A3 * B1 * !Y)	-0.00438	-0.00441	-0.00433
	(A1 * !A2 * !A3 * B1 * !Y)	0.00823	0.00820	0.00822
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00438	-0.00432	-0.00433
	(!A1 * !A2 * !A3 * B1 * Y)	0.00221	0.00220	0.00218
	(!A1 * !A2 * !A3 * B1 * Y)	-0.01078	-0.01088	-0.01083
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00253	0.00255	0.00229
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.01050	-0.01061	-0.01100

Passive power(pJ) for B2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**(A3 * B1 * !Y)**	-0.00207	-0.00209	-0.00213
	(A3 * B1 * !Y)	0.00111	0.00112	0.00107
	(A2 * !A3 * B1 * !Y)	-0.00208	-0.00210	-0.00213
	(A2 * !A3 * B1 * !Y)	0.00111	0.00112	0.00107
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00208	-0.00210	-0.00213
	(A1 * !A2 * !A3 * B1 * !Y)	0.00112	0.00112	0.00107
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00058	-0.00058	-0.00058
	(!A1 * !A2 * !A3 * B1 * Y)	0.00275	0.00276	0.00274
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00058	-0.00059	-0.00058
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00277	0.00283	0.00279

sky130_fd_sc_hs__o32ai_2	**(A3 * B1 * !Y)**	-0.00400	-0.00404	-0.00417
	(A3 * B1 * !Y)	0.00234	0.00236	0.00223
	(A2 * !A3 * B1 * !Y)	-0.00399	-0.00404	-0.00417
	(A2 * !A3 * B1 * !Y)	0.00234	0.00236	0.00223
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00401	-0.00402	-0.00417
	(A1 * !A2 * !A3 * B1 * !Y)	0.00236	0.00235	0.00223
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00114	-0.00114	-0.00114
	(!A1 * !A2 * !A3 * B1 * Y)	0.00549	0.00549	0.00547
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00115	-0.00117	-0.00115
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00554	0.00564	0.00557
sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	-0.00787	-0.00793	-0.00819
	(A3 * B1 * !Y)	0.00460	0.00462	0.00440
	(A2 * !A3 * B1 * !Y)	-0.00787	-0.00792	-0.00819
	(A2 * !A3 * B1 * !Y)	0.00459	0.00462	0.00440
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00790	-0.00793	-0.00819
	(A1 * !A2 * !A3 * B1 * !Y)	0.00463	0.00463	0.00440
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00216	-0.00219	-0.00218
	(!A1 * !A2 * !A3 * B1 * Y)	0.01080	0.01088	0.01083
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00221	-0.00225	-0.00221
	(!A1 * !A2 * !A3 * !B1 * Y)	0.01101	0.01121	0.01105

SKY130_FD_SC_HS__O32Ax

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00266	0.00260	0.00258	0.00260	0.00264	1.25676
sky130_fd_sc_hs__o32a_2	0.00279	0.00275	0.00279	0.00299	0.00280	2.41044
sky130_fd_sc_hs__o32a_4	0.00479	0.00512	0.00479	0.00639	0.00506	4.70735

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32a_1	0.00000	0.17048	0.52618
sky130_fd_sc_hs__o32a_2	0.00000	0.20880	0.53467
sky130_fd_sc_hs__o32a_4	0.00000	0.42175	1.06933

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)	0.09039	0.56201	5.86674
	A2->X (RR)	0.08799	0.55522	5.78391
	A3->X (RR)	0.07910	0.53660	5.74497
	B1->X (RR)	0.08115	0.56767	6.06874
	B2->X (RR)	0.07284	0.54576	6.01617
sky130_fd_sc_hs__o32a_2	A1->X (RR)	0.09212	0.47630	5.71374
	A2->X (RR)	0.09056	0.47138	5.64115
	A3->X (RR)	0.08246	0.45578	5.60080
	B1->X (RR)	0.08343	0.48806	5.92555
	B2->X (RR)	0.07522	0.46735	5.85687
sky130_fd_sc_hs__o32a_4	A1->X (RR)	0.10589	0.43341	5.94179
	A2->X (RR)	0.09908	0.41863	5.83295
	A3->X (RR)	0.08681	0.39698	5.78386
	B1->X (RR)	0.09810	0.45164	6.16133
	B2->X (RR)	0.08433	0.42443	6.07935

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32a_1	A1->X (FF)	0.20364	0.63542	5.02493
	A2->X (FF)	0.19002	0.65909	5.25586
	A3->X (FF)	0.16191	0.65380	5.28134
	B1->X (FF)	0.10687	0.51706	4.80663
	B2->X (FF)	0.09306	0.52345	4.90079
sky130_fd_sc_hs__o32a_2	A1->X (FF)	0.25327	0.67369	5.15264
	A2->X (FF)	0.24011	0.70054	5.39469
	A3->X (FF)	0.21296	0.69734	5.42709
	B1->X (FF)	0.13729	0.54093	4.90647
	B2->X (FF)	0.12309	0.55156	4.99777
sky130_fd_sc_hs__o32a_4	A1->X (FF)	0.25924	0.65014	5.30372
	A2->X (FF)	0.24350	0.66543	5.47655
	A3->X (FF)	0.20204	0.65535	5.50511
	B1->X (FF)	0.12915	0.49746	4.97923
	B2->X (FF)	0.11079	0.50349	5.07291

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	A1	0.01824	0.01848	0.04613
	A1	0.00623	0.00662	0.03530
	A2	0.01610	0.01689	0.04322
	A2	0.00536	0.00624	0.03357
	A3	0.01206	0.01323	0.04764
	A3	0.00414	0.00590	0.03996
	B1	0.01409	0.01573	0.06150
	B1	0.00515	0.00716	0.05456
	B2	0.00944	0.01209	0.06956
	B2	0.00409	0.00673	0.06432
sky130_fd_sc_hs__o32a_2	A1	0.02048	0.02111	0.04968
	A1	0.00942	0.01005	0.03918
	A2	0.01836	0.01947	0.04646
	A2	0.00852	0.00964	0.03731
	A3	0.01611	0.01749	0.05153
	A3	0.00729	0.00869	0.04341
	B1	0.02012	0.02162	0.06384
	B1	0.00810	0.01020	0.05705
	B2	0.01304	0.01583	0.07242
	B2	0.00721	0.01004	0.06724

sky130_fd_sc_hs__o32a_4	**A1**	0.04393	0.04531	0.11421
	A1	0.02295	0.02448	0.09554
	A2	0.03524	0.03740	0.10318
	A2	0.01726	0.01946	0.08590
	A3	0.02907	0.03227	0.11393
	A3	0.01397	0.01723	0.09964
	B1	0.03575	0.03942	0.12187
	B1	0.01584	0.02008	0.10636
	B2	0.02397	0.02912	0.13202
	B2	0.01382	0.01913	0.12255

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**A1**	0.00597	0.00573	0.03865
	A1	0.01652	0.01631	0.04862
	A2	0.00601	0.00622	0.03946
	A2	0.01530	0.01563	0.04783
	A3	0.00600	0.00769	0.04974
	A3	0.01421	0.01589	0.05756
	B1	0.00378	0.00543	0.04892
	B1	0.01157	0.01302	0.05422
	B2	0.00381	0.00695	0.06203
	B2	0.01038	0.01343	0.06538

sky130_fd_sc_hs__o32a_2	**A1**	0.01210	0.00995	0.04334
	A1	0.02336	0.02131	0.05424
	A2	0.01216	0.01063	0.04344
	A2	0.02217	0.02062	0.05242
	A3	0.01213	0.01190	0.05778
	A3	0.02108	0.02085	0.06254
	B1	0.00831	0.00905	0.05115
	B1	0.01794	0.01861	0.05635
	B2	0.00847	0.01116	0.06309
	B2	0.01654	0.01893	0.06784
sky130_fd_sc_hs__o32a_4	**A1**	0.02370	0.01943	0.09179
	A1	0.04459	0.04031	0.10868
	A2	0.02364	0.02012	0.08819
	A2	0.04248	0.03906	0.10212
	A3	0.02371	0.02294	0.10788
	A3	0.03955	0.03879	0.12044
	B1	0.01555	0.01706	0.10092
	B1	0.03435	0.03529	0.11546
	B2	0.01552	0.02079	0.12411
	B2	0.03066	0.03504	0.13522

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)**	0.00185	0.00186	0.00184
	(A2 * A3 * B2 * X)	-0.00199	-0.00205	-0.00204
	(A2 * A3 * B1 * !B2 * X)	0.00185	0.00186	0.00184
	(A2 * A3 * B1 * !B2 * X)	-0.00199	-0.00205	-0.00204
	(A2 * !B1 * !B2 * !X)	0.00158	0.00160	0.00158
	(A2 * !B1 * !B2 * !X)	-0.00226	-0.00232	-0.00230
	(A2 * !A3 * B2 * X)	0.00199	0.00186	0.00184
	(A2 * !A3 * B2 * X)	-0.00185	-0.00205	-0.00205
	(A2 * !A3 * B1 * !B2 * X)	0.00199	0.00187	0.00184
	(A2 * !A3 * B1 * !B2 * X)	-0.00184	-0.00205	-0.00205
	(!A2 * A3 * B2 * X)	0.00195	0.00186	0.00184
	(!A2 * A3 * B2 * X)	-0.00175	-0.00199	-0.00199
	(!A2 * A3 * B1 * !B2 * X)	0.00195	0.00186	0.00184
	(!A2 * A3 * B1 * !B2 * X)	-0.00175	-0.00199	-0.00199
	(!A2 * A3 * !B1 * !B2 * !X)	0.00158	0.00159	0.00158
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00209	-0.00225	-0.00224
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00151	0.00152	0.00150
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00232	-0.00233	-0.00232

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	0.00206	0.00208	0.00206
	(A2 * A3 * B2 * X)	-0.00200	-0.00206	-0.00204
	(A2 * A3 * B1 * !B2 * X)	0.00207	0.00209	0.00206
	(A2 * A3 * B1 * !B2 * X)	-0.00199	-0.00206	-0.00204
	(A2 * !B1 * !B2 * !X)	0.00182	0.00184	0.00181
	(A2 * !B1 * !B2 * !X)	-0.00225	-0.00231	-0.00229
	(A2 * !A3 * B2 * X)	0.00221	0.00209	0.00206
	(A2 * !A3 * B2 * X)	-0.00185	-0.00206	-0.00205
	(A2 * !A3 * B1 * !B2 * X)	0.00221	0.00209	0.00206
	(A2 * !A3 * B1 * !B2 * X)	-0.00185	-0.00206	-0.00205
	(!A2 * A3 * B2 * X)	0.00216	0.00208	0.00206
	(!A2 * A3 * B2 * X)	-0.00176	-0.00199	-0.00199
	(!A2 * A3 * B1 * !B2 * X)	0.00216	0.00208	0.00206
	(!A2 * A3 * B1 * !B2 * X)	-0.00176	-0.00199	-0.00199
	(!A2 * A3 * !B1 * !B2 * !X)	0.00181	0.00183	0.00181
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00208	-0.00224	-0.00223
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00174	0.00174	0.00173
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00231	-0.00232	-0.00231

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	0.00319	0.00322	0.00318
	(A2 * A3 * B2 * X)	-0.00400	-0.00415	-0.00413
	(A2 * A3 * B1 * !B2 * X)	0.00319	0.00322	0.00319
	(A2 * A3 * B1 * !B2 * X)	-0.00400	-0.00416	-0.00413
	(A2 * !B1 * !B2 * !X)	0.00319	0.00322	0.00319
	(A2 * !B1 * !B2 * !X)	-0.00400	-0.00416	-0.00413
	(A2 * !A3 * B2 * X)	0.00348	0.00322	0.00319
	(A2 * !A3 * B2 * X)	-0.00369	-0.00414	-0.00413
	(A2 * !A3 * B1 * !B2 * X)	0.00348	0.00323	0.00319
	(A2 * !A3 * B1 * !B2 * X)	-0.00368	-0.00415	-0.00413
	(!A2 * A3 * B2 * X)	0.00345	0.00323	0.00319
	(!A2 * A3 * B2 * X)	-0.00349	-0.00405	-0.00402
	(!A2 * A3 * B1 * !B2 * X)	0.00345	0.00323	0.00319
	(!A2 * A3 * B1 * !B2 * X)	-0.00349	-0.00405	-0.00402
	(!A2 * A3 * !B1 * !B2 * !X)	0.00319	0.00322	0.00319
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00366	-0.00404	-0.00401
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00304	0.00308	0.00305
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00419	-0.00422	-0.00420

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)**	-0.00184	-0.00184	-0.00184
	(A2 * A3 * B2 * X)	0.00205	0.00205	0.00204
	(A2 * A3 * B1 * !B2 * X)	-0.00184	-0.00184	-0.00184
	(A2 * A3 * B1 * !B2 * X)	0.00205	0.00205	0.00204
	(A2 * !B1 * !B2 * !X)	-0.00158	-0.00158	-0.00158
	(A2 * !B1 * !B2 * !X)	0.00230	0.00232	0.00230
	(A2 * !A3 * B2 * X)	-0.00183	-0.00184	-0.00184
	(A2 * !A3 * B2 * X)	0.00203	0.00205	0.00205
	(A2 * !A3 * B1 * !B2 * X)	-0.00184	-0.00184	-0.00184
	(A2 * !A3 * B1 * !B2 * X)	0.00205	0.00205	0.00205
	(!A2 * A3 * B2 * X)	-0.00183	-0.00184	-0.00183
	(!A2 * A3 * B2 * X)	0.00198	0.00199	0.00199
	(!A2 * A3 * B1 * !B2 * X)	-0.00183	-0.00184	-0.00183
	(!A2 * A3 * B1 * !B2 * X)	0.00198	0.00200	0.00199
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00157	-0.00158	-0.00158
	(!A2 * A3 * !B1 * !B2 * !X)	0.00224	0.00225	0.00224
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00141	-0.00152	-0.00150
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00234	0.00235	0.00233

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	-0.00205	-0.00207	-0.00206
	(A2 * A3 * B2 * X)	0.00203	0.00206	0.00204
	(A2 * A3 * B1 * !B2 * X)	-0.00205	-0.00206	-0.00206
	(A2 * A3 * B1 * !B2 * X)	0.00203	0.00206	0.00204
	(A2 * !B1 * !B2 * !X)	-0.00180	-0.00181	-0.00181
	(A2 * !B1 * !B2 * !X)	0.00228	0.00231	0.00229
	(A2 * !A3 * B2 * X)	-0.00205	-0.00206	-0.00206
	(A2 * !A3 * B2 * X)	0.00203	0.00206	0.00205
	(A2 * !A3 * B1 * !B2 * X)	-0.00205	-0.00206	-0.00206
	(A2 * !A3 * B1 * !B2 * X)	0.00203	0.00206	0.00205
	(!A2 * A3 * B2 * X)	-0.00205	-0.00206	-0.00205
	(!A2 * A3 * B2 * X)	0.00198	0.00200	0.00199
	(!A2 * A3 * B1 * !B2 * X)	-0.00205	-0.00206	-0.00205
	(!A2 * A3 * B1 * !B2 * X)	0.00198	0.00200	0.00199
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00180	-0.00181	-0.00181
	(!A2 * A3 * !B1 * !B2 * !X)	0.00223	0.00224	0.00223
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00162	-0.00174	-0.00173
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00233	0.00234	0.00232

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	-0.00317	-0.00319	-0.00318
	(A2 * A3 * B2 * X)	0.00411	0.00415	0.00413
	(A2 * A3 * B1 * !B2 * X)	-0.00317	-0.00319	-0.00317
	(A2 * A3 * B1 * !B2 * X)	0.00411	0.00416	0.00413
	(A2 * !B1 * !B2 * !X)	-0.00317	-0.00318	-0.00317
	(A2 * !B1 * !B2 * !X)	0.00412	0.00416	0.00413
	(A2 * !A3 * B2 * X)	-0.00318	-0.00318	-0.00318
	(A2 * !A3 * B2 * X)	0.00412	0.00414	0.00413
	(A2 * !A3 * B1 * !B2 * X)	-0.00318	-0.00319	-0.00317
	(A2 * !A3 * B1 * !B2 * X)	0.00412	0.00415	0.00413
	(!A2 * A3 * B2 * X)	-0.00316	-0.00318	-0.00316
	(!A2 * A3 * B2 * X)	0.00399	0.00405	0.00402
	(!A2 * A3 * B1 * !B2 * X)	-0.00316	-0.00318	-0.00316
	(!A2 * A3 * B1 * !B2 * X)	0.00400	0.00405	0.00402
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00317	-0.00319	-0.00317
	(!A2 * A3 * !B1 * !B2 * !X)	0.00399	0.00404	0.00401
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00281	-0.00305	-0.00305
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00426	0.00425	0.00422

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)**	0.00185	0.00187	0.00178
	(A1 * A3 * B2 * X)	-0.00130	-0.00130	-0.00129
	(A1 * A3 * B1 * !B2 * X)	0.00185	0.00187	0.00178
	(A1 * A3 * B1 * !B2 * X)	-0.00130	-0.00130	-0.00129
	(A1 * A3 * !B1 * !B2 * !X)	0.00162	0.00163	0.00162
	(A1 * A3 * !B1 * !B2 * !X)	-0.00148	-0.00149	-0.00147
	(A1 * !A3 * B2 * X)	0.00171	0.00172	0.00170
	(A1 * !A3 * B2 * X)	-0.00105	-0.00106	-0.00107
	(A1 * !A3 * B1 * !B2 * X)	0.00171	0.00173	0.00170
	(A1 * !A3 * B1 * !B2 * X)	-0.00105	-0.00106	-0.00106
	(A1 * !A3 * !B1 * !B2 * !X)	0.00163	0.00163	0.00162
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00206	-0.00208	-0.00207
	(!A1 * A3 * B2 * X)	0.00215	0.00172	0.00169
	(!A1 * A3 * B2 * X)	-0.00154	-0.00201	-0.00201
	(!A1 * A3 * B1 * !B2 * X)	0.00215	0.00172	0.00169
	(!A1 * A3 * B1 * !B2 * X)	-0.00154	-0.00201	-0.00201
	(!A1 * A3 * !B1 * !B2 * !X)	0.00162	0.00164	0.00162
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00205	-0.00209	-0.00208
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00153	0.00155	0.00153
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00209	-0.00211	-0.00210

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	0.00209	0.00211	0.00201
	(A1 * A3 * B2 * X)	-0.00130	-0.00131	-0.00130
	(A1 * A3 * B1 * !B2 * X)	0.00208	0.00212	0.00201
	(A1 * A3 * B1 * !B2 * X)	-0.00130	-0.00131	-0.00130
	(A1 * A3 * !B1 * !B2 * !X)	0.00185	0.00186	0.00185
	(A1 * A3 * !B1 * !B2 * !X)	-0.00150	-0.00150	-0.00149
	(A1 * !A3 * B2 * X)	0.00194	0.00196	0.00193
	(A1 * !A3 * B2 * X)	-0.00106	-0.00107	-0.00107
	(A1 * !A3 * B1 * !B2 * X)	0.00194	0.00196	0.00193
	(A1 * !A3 * B1 * !B2 * X)	-0.00106	-0.00107	-0.00107
	(A1 * !A3 * !B1 * !B2 * !X)	0.00185	0.00186	0.00184
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00206	-0.00209	-0.00208
	(!A1 * A3 * B2 * X)	0.00239	0.00196	0.00192
	(!A1 * A3 * B2 * X)	-0.00155	-0.00201	-0.00202
	(!A1 * A3 * B1 * !B2 * X)	0.00239	0.00196	0.00192
	(!A1 * A3 * B1 * !B2 * X)	-0.00155	-0.00201	-0.00202
	(!A1 * A3 * !B1 * !B2 * !X)	0.00186	0.00187	0.00184
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00207	-0.00210	-0.00209
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00174	0.00177	0.00175
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00210	-0.00212	-0.00211

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	0.00356	0.00364	0.00342
	(A1 * A3 * B2 * X)	-0.00287	-0.00288	-0.00288
	(A1 * A3 * B1 * !B2 * X)	0.00356	0.00365	0.00342
	(A1 * A3 * B1 * !B2 * X)	-0.00288	-0.00289	-0.00288
	(A1 * A3 * !B1 * !B2 * !X)	0.00327	0.00329	0.00326
	(A1 * A3 * !B1 * !B2 * !X)	-0.00309	-0.00313	-0.00311
	(A1 * !A3 * B2 * X)	0.00330	0.00334	0.00327
	(A1 * !A3 * B2 * X)	-0.00237	-0.00241	-0.00242
	(A1 * !A3 * B1 * !B2 * X)	0.00331	0.00334	0.00327
	(A1 * !A3 * B1 * !B2 * X)	-0.00238	-0.00241	-0.00242
	(A1 * !A3 * !B1 * !B2 * !X)	0.00329	0.00329	0.00326
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00433	-0.00436	-0.00435
	(!A1 * A3 * B2 * X)	0.00427	0.00335	0.00326
	(!A1 * A3 * B2 * X)	-0.00336	-0.00437	-0.00440
	(!A1 * A3 * B1 * !B2 * X)	0.00427	0.00335	0.00326
	(!A1 * A3 * B1 * !B2 * X)	-0.00336	-0.00437	-0.00440
	(!A1 * A3 * !B1 * !B2 * !X)	0.00329	0.00330	0.00326
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00431	-0.00437	-0.00437
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00308	0.00311	0.00309
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00444	-0.00446	-0.00444

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)**	-0.00170	-0.00170	-0.00169
	(A1 * A3 * B2 * X)	0.00130	0.00130	0.00129
	(A1 * A3 * B1 * !B2 * X)	-0.00169	-0.00170	-0.00169
	(A1 * A3 * B1 * !B2 * X)	0.00130	0.00130	0.00129
	(A1 * A3 * !B1 * !B2 * !X)	-0.00161	-0.00162	-0.00161
	(A1 * A3 * !B1 * !B2 * !X)	0.00148	0.00149	0.00147
	(A1 * !A3 * B2 * X)	-0.00168	-0.00168	-0.00167
	(A1 * !A3 * B2 * X)	0.00109	0.00109	0.00110
	(A1 * !A3 * B1 * !B2 * X)	-0.00168	-0.00168	-0.00167
	(A1 * !A3 * B1 * !B2 * X)	0.00109	0.00109	0.00110
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00161	-0.00162	-0.00161
	(A1 * !A3 * !B1 * !B2 * !X)	0.00206	0.00208	0.00207
	(!A1 * A3 * B2 * X)	-0.00167	-0.00167	-0.00167
	(!A1 * A3 * B2 * X)	0.00201	0.00201	0.00202
	(!A1 * A3 * B1 * !B2 * X)	-0.00167	-0.00167	-0.00167
	(!A1 * A3 * B1 * !B2 * X)	0.00201	0.00201	0.00202
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00161	-0.00162	-0.00161
	(!A1 * A3 * !B1 * !B2 * !X)	0.00207	0.00209	0.00208
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00143	-0.00154	-0.00153
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00212	0.00211	0.00210

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	-0.00193	-0.00194	-0.00193
	(A1 * A3 * B2 * X)	0.00130	0.00131	0.00130
	(A1 * A3 * B1 * !B2 * X)	-0.00193	-0.00193	-0.00193
	(A1 * A3 * B1 * !B2 * X)	0.00130	0.00131	0.00130
	(A1 * A3 * !B1 * !B2 * !X)	-0.00184	-0.00184	-0.00184
	(A1 * A3 * !B1 * !B2 * !X)	0.00150	0.00150	0.00149
	(A1 * !A3 * B2 * X)	-0.00191	-0.00192	-0.00190
	(A1 * !A3 * B2 * X)	0.00109	0.00110	0.00110
	(A1 * !A3 * B1 * !B2 * X)	-0.00191	-0.00192	-0.00190
	(A1 * !A3 * B1 * !B2 * X)	0.00110	0.00110	0.00110
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00183	-0.00185	-0.00184
	(A1 * !A3 * !B1 * !B2 * !X)	0.00207	0.00209	0.00208
	(!A1 * A3 * B2 * X)	-0.00191	-0.00192	-0.00190
	(!A1 * A3 * B2 * X)	0.00201	0.00204	0.00202
	(!A1 * A3 * B1 * !B2 * X)	-0.00190	-0.00192	-0.00190
	(!A1 * A3 * B1 * !B2 * X)	0.00201	0.00204	0.00202
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00183	-0.00184	-0.00184
	(!A1 * A3 * !B1 * !B2 * !X)	0.00208	0.00210	0.00209
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00163	-0.00176	-0.00175
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00213	0.00213	0.00212

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	-0.00324	-0.00325	-0.00325
	(A1 * A3 * B2 * X)	0.00287	0.00288	0.00288
	(A1 * A3 * B1 * !B2 * X)	-0.00324	-0.00325	-0.00325
	(A1 * A3 * B1 * !B2 * X)	0.00288	0.00289	0.00288
	(A1 * A3 * !B1 * !B2 * !X)	-0.00323	-0.00326	-0.00324
	(A1 * A3 * !B1 * !B2 * !X)	0.00309	0.00313	0.00311
	(A1 * !A3 * B2 * X)	-0.00323	-0.00324	-0.00319
	(A1 * !A3 * B2 * X)	0.00247	0.00248	0.00250
	(A1 * !A3 * B1 * !B2 * X)	-0.00323	-0.00324	-0.00319
	(A1 * !A3 * B1 * !B2 * X)	0.00247	0.00248	0.00250
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00323	-0.00326	-0.00325
	(A1 * !A3 * !B1 * !B2 * !X)	0.00434	0.00436	0.00435
	(!A1 * A3 * B2 * X)	-0.00322	-0.00325	-0.00322
	(!A1 * A3 * B2 * X)	0.00437	0.00443	0.00441
	(!A1 * A3 * B1 * !B2 * X)	-0.00323	-0.00325	-0.00321
	(!A1 * A3 * B1 * !B2 * X)	0.00438	0.00443	0.00441
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00323	-0.00324	-0.00324
	(!A1 * A3 * !B1 * !B2 * !X)	0.00435	0.00437	0.00437
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00285	-0.00311	-0.00309
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00450	0.00449	0.00446

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	0.00181	0.00183	0.00182
	(A2 * B2 * X)	-0.00098	-0.00099	-0.00098
	(A2 * B1 * !B2 * X)	0.00181	0.00183	0.00182
	(A2 * B1 * !B2 * X)	-0.00098	-0.00099	-0.00098
	(A2 * !B1 * !B2 * !X)	0.00162	0.00163	0.00162
	(A2 * !B1 * !B2 * !X)	-0.00202	-0.00208	-0.00207
	(A1 * !A2 * B2 * X)	0.00181	0.00183	0.00182
	(A1 * !A2 * B2 * X)	-0.00098	-0.00099	-0.00098
	(A1 * !A2 * B1 * !B2 * X)	0.00181	0.00183	0.00182
	(A1 * !A2 * B1 * !B2 * X)	-0.00098	-0.00099	-0.00098
	(A1 * !A2 * !B1 * !B2 * !X)	0.00162	0.00164	0.00162
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00184	-0.00198	-0.00198
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00154	0.00155	0.00154
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00210	-0.00211	-0.00210
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	0.00209	0.00211	0.00209
	(A2 * B2 * X)	-0.00098	-0.00099	-0.00098
	(A2 * B1 * !B2 * X)	0.00209	0.00211	0.00210
	(A2 * B1 * !B2 * X)	-0.00098	-0.00099	-0.00098
	(A2 * !B1 * !B2 * !X)	0.00184	0.00186	0.00185
	(A2 * !B1 * !B2 * !X)	-0.00207	-0.00213	-0.00212
	(A1 * !A2 * B2 * X)	0.00209	0.00211	0.00209
	(A1 * !A2 * B2 * X)	-0.00098	-0.00099	-0.00098
	(A1 * !A2 * B1 * !B2 * X)	0.00209	0.00211	0.00210
	(A1 * !A2 * B1 * !B2 * X)	-0.00098	-0.00099	-0.00098
	(A1 * !A2 * !B1 * !B2 * !X)	0.00184	0.00187	0.00185
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00189	-0.00202	-0.00203
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00175	0.00177	0.00176
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00215	-0.00216	-0.00215

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	0.00341	0.00344	0.00341
	(A2 * B2 * X)	-0.00197	-0.00199	-0.00197
	(A2 * B1 * !B2 * X)	0.00341	0.00344	0.00342
	(A2 * B1 * !B2 * X)	-0.00197	-0.00199	-0.00197
	(A2 * !B1 * !B2 * !X)	0.00315	0.00318	0.00315
	(A2 * !B1 * !B2 * !X)	-0.00386	-0.00399	-0.00401
	(A1 * !A2 * B2 * X)	0.00341	0.00344	0.00341
	(A1 * !A2 * B2 * X)	-0.00197	-0.00199	-0.00197
	(A1 * !A2 * B1 * !B2 * X)	0.00341	0.00344	0.00342
	(A1 * !A2 * B1 * !B2 * X)	-0.00197	-0.00198	-0.00196
	(A1 * !A2 * !B1 * !B2 * !X)	0.00315	0.00319	0.00315
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00352	-0.00386	-0.00382
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00302	0.00303	0.00301
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00410	-0.00411	-0.00409

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	-0.00176	-0.00177	-0.00181
	(A2 * B2 * X)	0.00104	0.00104	0.00100
	(A2 * B1 * !B2 * X)	-0.00176	-0.00177	-0.00181
	(A2 * B1 * !B2 * X)	0.00104	0.00104	0.00100
	(A2 * !B1 * !B2 * !X)	-0.00161	-0.00162	-0.00162
	(A2 * !B1 * !B2 * !X)	0.00207	0.00208	0.00207
	(A1 * !A2 * B2 * X)	-0.00169	-0.00170	-0.00180
	(A1 * !A2 * B2 * X)	0.00107	0.00107	0.00099
	(A1 * !A2 * B1 * !B2 * X)	-0.00169	-0.00170	-0.00180
	(A1 * !A2 * B1 * !B2 * X)	0.00107	0.00107	0.00099
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00161	-0.00162	-0.00162
	(A1 * !A2 * !B1 * !B2 * !X)	0.00197	0.00198	0.00198
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00143	-0.00155	-0.00154
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00212	0.00212	0.00211
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	-0.00203	-0.00205	-0.00209
	(A2 * B2 * X)	0.00104	0.00104	0.00100
	(A2 * B1 * !B2 * X)	-0.00203	-0.00204	-0.00209
	(A2 * B1 * !B2 * X)	0.00104	0.00104	0.00100
	(A2 * !B1 * !B2 * !X)	-0.00184	-0.00185	-0.00184
	(A2 * !B1 * !B2 * !X)	0.00212	0.00213	0.00212
	(A1 * !A2 * B2 * X)	-0.00197	-0.00198	-0.00207
	(A1 * !A2 * B2 * X)	0.00107	0.00107	0.00099
	(A1 * !A2 * B1 * !B2 * X)	-0.00197	-0.00198	-0.00207
	(A1 * !A2 * B1 * !B2 * X)	0.00107	0.00107	0.00099
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00184	-0.00184	-0.00184
	(A1 * !A2 * !B1 * !B2 * !X)	0.00202	0.00202	0.00203
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00164	-0.00177	-0.00176
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00217	0.00216	0.00216

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	-0.00323	-0.00325	-0.00339
	(A2 * B2 * X)	0.00213	0.00213	0.00201
	(A2 * B1 * !B2 * X)	-0.00323	-0.00325	-0.00339
	(A2 * B1 * !B2 * X)	0.00213	0.00214	0.00201
	(A2 * !B1 * !B2 * !X)	-0.00314	-0.00313	-0.00314
	(A2 * !B1 * !B2 * !X)	0.00401	0.00399	0.00401
	(A1 * !A2 * B2 * X)	-0.00307	-0.00309	-0.00336
	(A1 * !A2 * B2 * X)	0.00220	0.00221	0.00201
	(A1 * !A2 * B1 * !B2 * X)	-0.00307	-0.00309	-0.00336
	(A1 * !A2 * B1 * !B2 * X)	0.00221	0.00221	0.00201
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00313	-0.00318	-0.00314
	(A1 * !A2 * !B1 * !B2 * !X)	0.00380	0.00386	0.00382
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00277	-0.00302	-0.00301
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00414	0.00413	0.00411

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	0.00219	0.00189	0.00185
	(A3 * B2 * X)	-0.00174	-0.00209	-0.00210
	(A2 * !A3 * B2 * X)	0.00219	0.00189	0.00185
	(A2 * !A3 * B2 * X)	-0.00174	-0.00209	-0.00210
	(A1 * !A2 * !A3 * B2 * X)	0.00219	0.00189	0.00185
	(A1 * !A2 * !A3 * B2 * X)	-0.00174	-0.00209	-0.00210
	(!A1 * !A2 * !A3 * B2 * !X)	0.00063	0.00063	0.00063
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00251	-0.00256	-0.00255
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00070	0.00070	0.00065
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00245	-0.00246	-0.00256

sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	0.00260	0.00230	0.00225
	(A3 * B2 * X)	-0.00193	-0.00226	-0.00228
	(A2 * !A3 * B2 * X)	0.00259	0.00230	0.00225
	(A2 * !A3 * B2 * X)	-0.00193	-0.00227	-0.00228
	(A1 * !A2 * !A3 * B2 * X)	0.00259	0.00230	0.00225
	(A1 * !A2 * !A3 * B2 * X)	-0.00193	-0.00226	-0.00228
	(!A1 * !A2 * !A3 * B2 * !X)	0.00076	0.00076	0.00075
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00284	-0.00288	-0.00287
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00085	0.00085	0.00078
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00276	-0.00278	-0.00288
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	0.00473	0.00404	0.00394
	(A3 * B2 * X)	-0.00401	-0.00482	-0.00484
	(A2 * !A3 * B2 * X)	0.00473	0.00404	0.00394
	(A2 * !A3 * B2 * X)	-0.00400	-0.00481	-0.00484
	(A1 * !A2 * !A3 * B2 * X)	0.00474	0.00404	0.00395
	(A1 * !A2 * !A3 * B2 * X)	-0.00399	-0.00481	-0.00483
	(!A1 * !A2 * !A3 * B2 * !X)	0.00110	0.00111	0.00110
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00610	-0.00623	-0.00618
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00125	0.00126	0.00115
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00602	-0.00605	-0.00624

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

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

sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	-0.00184	-0.00185	-0.00184
	(A3 * B2 * X)	0.00210	0.00212	0.00211
	(A2 * !A3 * B2 * X)	-0.00184	-0.00185	-0.00184
	(A2 * !A3 * B2 * X)	0.00210	0.00211	0.00211
	(A1 * !A2 * !A3 * B2 * X)	-0.00184	-0.00185	-0.00184
	(A1 * !A2 * !A3 * B2 * X)	0.00210	0.00213	0.00211
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00061	-0.00062	-0.00062
	(!A1 * !A2 * !A3 * B2 * !X)	0.00255	0.00257	0.00255
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00063	-0.00064	-0.00063
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00256	0.00261	0.00257
sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	-0.00223	-0.00225	-0.00223
	(A3 * B2 * X)	0.00227	0.00230	0.00229
	(A2 * !A3 * B2 * X)	-0.00223	-0.00224	-0.00223
	(A2 * !A3 * B2 * X)	0.00227	0.00230	0.00229
	(A1 * !A2 * !A3 * B2 * X)	-0.00223	-0.00224	-0.00223
	(A1 * !A2 * !A3 * B2 * X)	0.00227	0.00230	0.00229
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00074	-0.00075	-0.00075
	(!A1 * !A2 * !A3 * B2 * !X)	0.00287	0.00290	0.00287
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00076	-0.00077	-0.00076
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00289	0.00292	0.00290
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	-0.00390	-0.00392	-0.00390
	(A3 * B2 * X)	0.00481	0.00488	0.00486
	(A2 * !A3 * B2 * X)	-0.00389	-0.00392	-0.00390
	(A2 * !A3 * B2 * X)	0.00480	0.00487	0.00485
	(A1 * !A2 * !A3 * B2 * X)	-0.00389	-0.00392	-0.00390
	(A1 * !A2 * !A3 * B2 * X)	0.00480	0.00486	0.00485
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00108	-0.00109	-0.00109
	(!A1 * !A2 * !A3 * B2 * !X)	0.00620	0.00624	0.00618
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00111	-0.00111	-0.00110
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00628	0.00630	0.00627

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	(A3 * B1 * X)	0.00189	0.00191	0.00190
	(A3 * B1 * X)	-0.00099	-0.00100	-0.00099
	(A2 * !A3 * B1 * X)	0.00189	0.00191	0.00190
	(A2 * !A3 * B1 * X)	-0.00099	-0.00100	-0.00099
	(A1 * !A2 * !A3 * B1 * X)	0.00189	0.00191	0.00190
	(A1 * !A2 * !A3 * B1 * X)	-0.00099	-0.00100	-0.00099
	(!A1 * !A2 * !A3 * B1 * !X)	0.00052	0.00052	0.00051
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00249	-0.00251	-0.00250
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00059	0.00060	0.00054
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00242	-0.00244	-0.00252
sky130_fd_sc_hs__o32a_2	(A3 * B1 * X)	0.00212	0.00215	0.00213
	(A3 * B1 * X)	-0.00099	-0.00100	-0.00099
	(A2 * !A3 * B1 * X)	0.00212	0.00215	0.00213
	(A2 * !A3 * B1 * X)	-0.00100	-0.00101	-0.00099
	(A1 * !A2 * !A3 * B1 * X)	0.00212	0.00215	0.00213
	(A1 * !A2 * !A3 * B1 * X)	-0.00099	-0.00101	-0.00099
	(!A1 * !A2 * !A3 * B1 * !X)	0.00058	0.00058	0.00058
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00252	-0.00255	-0.00255
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00068	0.00068	0.00061
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00245	-0.00247	-0.00257

sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	0.00365	0.00372	0.00366
	(A3 * B1 * X)	-0.00200	-0.00205	-0.00201
	(A2 * !A3 * B1 * X)	0.00365	0.00372	0.00366
	(A2 * !A3 * B1 * X)	-0.00200	-0.00205	-0.00201
	(A1 * !A2 * !A3 * B1 * X)	0.00365	0.00371	0.00366
	(A1 * !A2 * !A3 * B1 * X)	-0.00199	-0.00205	-0.00200
	(!A1 * !A2 * !A3 * B1 * !X)	0.00106	0.00107	0.00106
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00483	-0.00490	-0.00488
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00121	0.00122	0.00110
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00475	-0.00479	-0.00496

Passive power(pJ) for B2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**(A3 * B1 * X)**	-0.00183	-0.00184	-0.00189
	(A3 * B1 * X)	0.00105	0.00105	0.00101
	(A2 * !A3 * B1 * X)	-0.00183	-0.00185	-0.00189
	(A2 * !A3 * B1 * X)	0.00105	0.00105	0.00101
	(A1 * !A2 * !A3 * B1 * X)	-0.00183	-0.00185	-0.00189
	(A1 * !A2 * !A3 * B1 * X)	0.00105	0.00106	0.00101
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00050	-0.00052	-0.00051
	(!A1 * !A2 * !A3 * B1 * !X)	0.00250	0.00252	0.00250
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00052	-0.00053	-0.00052
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00252	0.00257	0.00254

sky130_fd_sc_hs__o32a_2	**(A3 * B1 * X)**	-0.00207	-0.00208	-0.00212
	(A3 * B1 * X)	0.00105	0.00106	0.00101
	(A2 * !A3 * B1 * X)	-0.00207	-0.00208	-0.00212
	(A2 * !A3 * B1 * X)	0.00105	0.00106	0.00101
	(A1 * !A2 * !A3 * B1 * X)	-0.00207	-0.00208	-0.00212
	(A1 * !A2 * !A3 * B1 * X)	0.00105	0.00106	0.00101
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00058	-0.00058	-0.00058
	(!A1 * !A2 * !A3 * B1 * !X)	0.00255	0.00256	0.00255
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00059	-0.00060	-0.00059
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00257	0.00262	0.00258
sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	-0.00351	-0.00355	-0.00364
	(A3 * B1 * X)	0.00212	0.00214	0.00204
	(A2 * !A3 * B1 * X)	-0.00351	-0.00352	-0.00364
	(A2 * !A3 * B1 * X)	0.00211	0.00211	0.00204
	(A1 * !A2 * !A3 * B1 * X)	-0.00351	-0.00353	-0.00364
	(A1 * !A2 * !A3 * B1 * X)	0.00211	0.00213	0.00204
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00103	-0.00106	-0.00105
	(!A1 * !A2 * !A3 * B1 * !X)	0.00488	0.00490	0.00488
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00107	-0.00106	-0.00106
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00498	0.00497	0.00499

SKY130_FD_SC_HS__O41AIx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00275	0.00281	0.00291	0.00289	0.00293	0.32888
sky130_fd_sc_hs__o41ai_2	0.00542	0.00551	0.00530	0.00541	0.00569	0.56220
sky130_fd_sc_hs__o41ai_4	0.01053	0.01048	0.01063	0.01083	0.00788	1.06324

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41ai_1	0.00000	0.06020	0.20266
sky130_fd_sc_hs__o41ai_2	0.00000	0.12041	0.40531
sky130_fd_sc_hs__o41ai_4	0.00000	0.14581	0.60796

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)	0.21707	1.11366	9.36060
	A2->Y (FR)	0.20504	1.12270	9.83363
	A3->Y (FR)	0.17805	1.12666	10.31210
	A4->Y (FR)	0.13426	1.09232	10.34180
	B1->Y (FR)	0.02757	0.49455	5.39793
sky130_fd_sc_hs__o41ai_2	A1->Y (FR)	0.23392	0.98556	9.16504
	A2->Y (FR)	0.21879	0.98368	9.61852
	A3->Y (FR)	0.18734	0.99474	10.24990
	A4->Y (FR)	0.12361	0.94492	10.27010
	B1->Y (FR)	0.02157	0.41870	5.04017
sky130_fd_sc_hs__o41ai_4	A1->Y (FR)	0.22255	0.84791	9.13248
	A2->Y (FR)	0.20771	0.85193	9.67664
	A3->Y (FR)	0.17638	0.85977	10.30480
	A4->Y (FR)	0.11391	0.82108	10.39700
	B1->Y (FR)	0.02846	0.51311	6.94521

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41ai_1	A1->Y (RF)	0.03592	0.29220	2.34205
	A2->Y (RF)	0.03689	0.28580	2.32217
	A3->Y (RF)	0.03621	0.27788	2.30667
	A4->Y (RF)	0.02952	0.26502	2.27135
	B1->Y (RF)	0.02777	0.33275	2.87528
sky130_fd_sc_hs__o41ai_2	A1->Y (RF)	0.03463	0.24751	2.17187
	A2->Y (RF)	0.03553	0.24085	2.15300
	A3->Y (RF)	0.03531	0.23067	2.11859
	A4->Y (RF)	0.02806	0.21505	2.08837
	B1->Y (RF)	0.02507	0.29272	2.81597
sky130_fd_sc_hs__o41ai_4	A1->Y (RF)	0.03896	0.21253	2.14636
	A2->Y (RF)	0.03798	0.20166	2.09308
	A3->Y (RF)	0.03550	0.18861	2.04513
	A4->Y (RF)	0.02555	0.16658	1.94490
	B1->Y (RF)	0.02852	0.30298	3.40288

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41ai_1	A1	0.00159	0.00136	0.01467
	A1	0.01280	0.01259	0.02590
	A2	0.00165	0.00148	0.01385
	A2	0.01153	0.01136	0.02358
	A3	0.00164	0.00163	0.01370
	A3	0.01032	0.01031	0.02238
	A4	0.00158	0.00237	0.02084
	A4	0.00900	0.00980	0.02826
	B1	-0.00077	0.00190	0.03430
	B1	0.00465	0.00731	0.04017
sky130_fd_sc_hs__o41ai_2	A1	0.00237	0.00181	0.02698
	A1	0.02497	0.02448	0.04966
	A2	0.00245	0.00196	0.02587
	A2	0.02234	0.02189	0.04575
	A3	0.00255	0.00237	0.02489
	A3	0.01960	0.01945	0.04195
	A4	0.00236	0.00430	0.03791
	A4	0.01683	0.01876	0.05234
	B1	-0.00285	0.00207	0.06810
	B1	0.00766	0.01268	0.07920

sky130_fd_sc_hs__o41ai_4	**A1**	0.00392	0.00307	0.04891
	A1	0.04839	0.04756	0.09335
	A2	0.00407	0.00336	0.04716
	A2	0.04303	0.04227	0.08603
	A3	0.00408	0.00397	0.04621
	A3	0.03782	0.03769	0.07994
	A4	0.00371	0.00745	0.07141
	A4	0.03219	0.03586	0.09985
	B1	-0.00442	0.00222	0.07517
	B1	0.01055	0.01716	0.09070

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41ai_1	**A1**	0.01487	0.01486	0.02600
	A1	0.00366	0.00362	0.01482
	A2	0.01252	0.01260	0.02319
	A2	0.00257	0.00260	0.01326
	A3	0.01004	0.01029	0.02043
	A3	0.00122	0.00145	0.01163
	A4	0.00746	0.00790	0.01781
	A4	-0.00013	0.00031	0.01022
	B1	0.00500	0.00584	0.02449
	B1	-0.00041	0.00042	0.01906

sky130_fd_sc_hs__o41ai_2	**A1**	0.03126	0.03104	0.05298
	A1	0.00880	0.00854	0.03058
	A2	0.02583	0.02595	0.04691
	A2	0.00583	0.00594	0.02694
	A3	0.02086	0.02125	0.04090
	A3	0.00356	0.00393	0.02360
	A4	0.01443	0.01554	0.03491
	A4	-0.00037	0.00070	0.02009
	B1	0.00969	0.01200	0.05097
	B1	-0.00081	0.00143	0.04045
sky130_fd_sc_hs__o41ai_4	**A1**	0.05906	0.05881	0.10264
	A1	0.01488	0.01459	0.05870
	A2	0.04866	0.04895	0.09059
	A2	0.00958	0.00979	0.05153
	A3	0.03883	0.03981	0.07881
	A3	0.00464	0.00555	0.04467
	A4	0.02685	0.02938	0.06810
	A4	-0.00224	0.00021	0.03898
	B1	0.03724	0.03912	0.07342
	B1	0.00033	0.00301	0.04297

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)**	0.00192	0.00194	0.00192
	(A2 * A4 * B1 * !Y)	-0.00229	-0.00236	-0.00234
	(A2 * A3 * !A4 * B1 * !Y)	0.00192	0.00194	0.00192
	(A2 * A3 * !A4 * B1 * !Y)	-0.00229	-0.00236	-0.00234
	(A2 * !B1 * Y)	0.00192	0.00193	0.00192
	(A2 * !B1 * Y)	-0.00229	-0.00234	-0.00234
	(A2 * !A3 * !A4 * B1 * !Y)	0.00192	0.00194	0.00192
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00225	-0.00236	-0.00234
	(!A2 * A3 * A4 * B1 * !Y)	0.00191	0.00193	0.00192
	(!A2 * A3 * A4 * B1 * !Y)	-0.00211	-0.00229	-0.00227
	(!A2 * A3 * !B1 * Y)	0.00191	0.00193	0.00192
	(!A2 * A3 * !B1 * Y)	-0.00211	-0.00228	-0.00227
	(!A2 * A3 * !A4 * B1 * !Y)	0.00192	0.00193	0.00192
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00211	-0.00229	-0.00227
	(!A2 * !A3 * A4 * B1 * !Y)	0.00193	0.00193	0.00192
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00207	-0.00224	-0.00224
	(!A2 * !A3 * A4 * !B1 * Y)	0.00192	0.00193	0.00192
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00208	-0.00224	-0.00223
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00184	0.00186	0.00184
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00237	-0.00238	-0.00236

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00381	0.00385	0.00381
	(A2 * A4 * B1 * !Y)	-0.00450	-0.00467	-0.00466
	(A2 * A3 * !A4 * B1 * !Y)	0.00381	0.00385	0.00381
	(A2 * A3 * !A4 * B1 * !Y)	-0.00449	-0.00467	-0.00466
	(A2 * !B1 * Y)	0.00380	0.00385	0.00381
	(A2 * !B1 * Y)	-0.00451	-0.00469	-0.00466
	(A2 * !A3 * !A4 * B1 * !Y)	0.00382	0.00385	0.00381
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00441	-0.00469	-0.00466
	(!A2 * A3 * A4 * B1 * !Y)	0.00381	0.00385	0.00381
	(!A2 * A3 * A4 * B1 * !Y)	-0.00415	-0.00455	-0.00451
	(!A2 * A3 * !B1 * Y)	0.00381	0.00384	0.00381
	(!A2 * A3 * !B1 * Y)	-0.00415	-0.00455	-0.00451
	(!A2 * A3 * !A4 * B1 * !Y)	0.00382	0.00385	0.00381
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00415	-0.00455	-0.00451
	(!A2 * !A3 * A4 * B1 * !Y)	0.00386	0.00384	0.00381
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00407	-0.00445	-0.00444
	(!A2 * !A3 * A4 * !B1 * Y)	0.00381	0.00383	0.00381
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00410	-0.00445	-0.00444
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00364	0.00366	0.00363
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00475	-0.00476	-0.00474

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00737	0.00743	0.00734
	(A2 * A4 * B1 * !Y)	-0.00901	-0.00934	-0.00929
	(A2 * A3 * !A4 * B1 * !Y)	0.00737	0.00743	0.00734
	(A2 * A3 * !A4 * B1 * !Y)	-0.00899	-0.00933	-0.00929
	(A2 * !B1 * Y)	0.00737	0.00743	0.00734
	(A2 * !B1 * Y)	-0.00903	-0.00926	-0.00929
	(A2 * !A3 * !A4 * B1 * !Y)	0.00739	0.00743	0.00734
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00878	-0.00937	-0.00930
	(!A2 * A3 * A4 * B1 * !Y)	0.00737	0.00742	0.00734
	(!A2 * A3 * A4 * B1 * !Y)	-0.00826	-0.00903	-0.00898
	(!A2 * A3 * !B1 * Y)	0.00737	0.00742	0.00734
	(!A2 * A3 * !B1 * Y)	-0.00826	-0.00903	-0.00898
	(!A2 * A3 * !A4 * B1 * !Y)	0.00738	0.00742	0.00734
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00827	-0.00903	-0.00898
	(!A2 * !A3 * A4 * B1 * !Y)	0.00739	0.00742	0.00735
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00805	-0.00885	-0.00885
	(!A2 * !A3 * A4 * !B1 * Y)	0.00731	0.00740	0.00734
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00812	-0.00885	-0.00884
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00694	0.00703	0.00696
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00944	-0.00950	-0.00946

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)**	-0.00192	-0.00192	-0.00191
	(A2 * A4 * B1 * !Y)	0.00235	0.00237	0.00234
	(A2 * A3 * !A4 * B1 * !Y)	-0.00192	-0.00192	-0.00191
	(A2 * A3 * !A4 * B1 * !Y)	0.00235	0.00237	0.00234
	(A2 * !B1 * Y)	-0.00191	-0.00193	-0.00192
	(A2 * !B1 * Y)	0.00233	0.00237	0.00234
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00192	-0.00192	-0.00191
	(A2 * !A3 * !A4 * B1 * !Y)	0.00235	0.00237	0.00234
	(!A2 * A3 * A4 * B1 * !Y)	-0.00191	-0.00192	-0.00191
	(!A2 * A3 * A4 * B1 * !Y)	0.00227	0.00229	0.00227
	(!A2 * A3 * !B1 * Y)	-0.00191	-0.00192	-0.00192
	(!A2 * A3 * !B1 * Y)	0.00226	0.00228	0.00227
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00191	-0.00192	-0.00191
	(!A2 * A3 * !A4 * B1 * !Y)	0.00227	0.00229	0.00227
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00191	-0.00191	-0.00191
	(!A2 * !A3 * A4 * B1 * !Y)	0.00223	0.00224	0.00224
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00191	-0.00192	-0.00192
	(!A2 * !A3 * A4 * !B1 * Y)	0.00223	0.00224	0.00223
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00170	-0.00183	-0.00184
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00238	0.00239	0.00237

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00380	-0.00380	-0.00380
	(A2 * A4 * B1 * !Y)	0.00466	0.00467	0.00466
	(A2 * A3 * !A4 * B1 * !Y)	-0.00380	-0.00380	-0.00380
	(A2 * A3 * !A4 * B1 * !Y)	0.00466	0.00467	0.00466
	(A2 * !B1 * Y)	-0.00380	-0.00381	-0.00380
	(A2 * !B1 * Y)	0.00466	0.00469	0.00466
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00380	-0.00382	-0.00380
	(A2 * !A3 * !A4 * B1 * !Y)	0.00466	0.00471	0.00466
	(!A2 * A3 * A4 * B1 * !Y)	-0.00379	-0.00381	-0.00380
	(!A2 * A3 * A4 * B1 * !Y)	0.00450	0.00455	0.00451
	(!A2 * A3 * !B1 * Y)	-0.00379	-0.00382	-0.00380
	(!A2 * A3 * !B1 * Y)	0.00450	0.00455	0.00451
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00379	-0.00381	-0.00380
	(!A2 * A3 * !A4 * B1 * !Y)	0.00450	0.00455	0.00451
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00379	-0.00380	-0.00380
	(!A2 * !A3 * A4 * B1 * !Y)	0.00443	0.00445	0.00444
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00379	-0.00381	-0.00380
	(!A2 * !A3 * A4 * !B1 * Y)	0.00443	0.00445	0.00444
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00336	-0.00364	-0.00363
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00478	0.00479	0.00475

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00733	-0.00734	-0.00732
	(A2 * A4 * B1 * !Y)	0.00930	0.00934	0.00929
	(A2 * A3 * !A4 * B1 * !Y)	-0.00733	-0.00734	-0.00732
	(A2 * A3 * !A4 * B1 * !Y)	0.00930	0.00933	0.00929
	(A2 * !B1 * Y)	-0.00734	-0.00731	-0.00733
	(A2 * !B1 * Y)	0.00930	0.00926	0.00929
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00729	-0.00736	-0.00732
	(A2 * !A3 * !A4 * B1 * !Y)	0.00923	0.00939	0.00930
	(!A2 * A3 * A4 * B1 * !Y)	-0.00734	-0.00735	-0.00733
	(!A2 * A3 * A4 * B1 * !Y)	0.00900	0.00903	0.00898
	(!A2 * A3 * !B1 * Y)	-0.00734	-0.00735	-0.00733
	(!A2 * A3 * !B1 * Y)	0.00900	0.00903	0.00898
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00734	-0.00735	-0.00732
	(!A2 * A3 * !A4 * B1 * !Y)	0.00900	0.00903	0.00898
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00728	-0.00732	-0.00732
	(!A2 * !A3 * A4 * B1 * !Y)	0.00878	0.00885	0.00885
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00731	-0.00734	-0.00733
	(!A2 * !A3 * A4 * !B1 * Y)	0.00886	0.00885	0.00884
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00649	-0.00700	-0.00696
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00953	0.00955	0.00949

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)**	0.00186	0.00188	0.00186
	(A1 * A3 * A4 * B1 * !Y)	-0.00159	-0.00159	-0.00158
	(A1 * A3 * !B1 * Y)	0.00187	0.00188	0.00186
	(A1 * A3 * !B1 * Y)	-0.00161	-0.00162	-0.00161
	(A1 * A3 * !A4 * B1 * !Y)	0.00199	0.00200	0.00190
	(A1 * A3 * !A4 * B1 * !Y)	-0.00152	-0.00152	-0.00151
	(A1 * !A3 * A4 * B1 * !Y)	0.00186	0.00191	0.00186
	(A1 * !A3 * A4 * B1 * !Y)	-0.00148	-0.00148	-0.00147
	(A1 * !A3 * A4 * !B1 * Y)	0.00185	0.00188	0.00186
	(A1 * !A3 * A4 * !B1 * Y)	-0.00157	-0.00158	-0.00158
	(A1 * !A3 * !A4 * B1 * !Y)	0.00186	0.00188	0.00186
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00123	-0.00123	-0.00122
	(A1 * !A3 * !A4 * !B1 * Y)	0.00187	0.00188	0.00186
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00226	-0.00228	-0.00228
	(!A1 * A3 * A4 * B1 * !Y)	0.00186	0.00188	0.00186
	(!A1 * A3 * A4 * B1 * !Y)	-0.00222	-0.00228	-0.00228
	(!A1 * A3 * !B1 * Y)	0.00186	0.00188	0.00186
	(!A1 * A3 * !B1 * Y)	-0.00223	-0.00228	-0.00228
	(!A1 * A3 * !A4 * B1 * !Y)	0.00209	0.00188	0.00186
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00201	-0.00229	-0.00228
	(!A1 * !A3 * A4 * B1 * !Y)	0.00199	0.00188	0.00186
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00188	-0.00223	-0.00220
	(!A1 * !A3 * A4 * !B1 * Y)	0.00185	0.00188	0.00186
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00198	-0.00222	-0.00219
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00178	0.00180	0.00178
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00231	-0.00232	-0.00231

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00383	0.00387	0.00382
	(A1 * A3 * A4 * B1 * !Y)	-0.00331	-0.00331	-0.00329
	(A1 * A3 * !B1 * Y)	0.00382	0.00386	0.00381
	(A1 * A3 * !B1 * Y)	-0.00335	-0.00337	-0.00335
	(A1 * A3 * !A4 * B1 * !Y)	0.00398	0.00401	0.00385
	(A1 * A3 * !A4 * B1 * !Y)	-0.00317	-0.00317	-0.00315
	(A1 * !A3 * A4 * B1 * !Y)	0.00382	0.00388	0.00384
	(A1 * !A3 * A4 * B1 * !Y)	-0.00310	-0.00311	-0.00309
	(A1 * !A3 * A4 * !B1 * Y)	0.00381	0.00382	0.00381
	(A1 * !A3 * A4 * !B1 * Y)	-0.00332	-0.00333	-0.00332
	(A1 * !A3 * !A4 * B1 * !Y)	0.00382	0.00385	0.00382
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00257	-0.00258	-0.00256
	(A1 * !A3 * !A4 * !B1 * Y)	0.00380	0.00385	0.00381
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00461	-0.00469	-0.00468
	(!A1 * A3 * A4 * B1 * !Y)	0.00385	0.00383	0.00381
	(!A1 * A3 * A4 * B1 * !Y)	-0.00462	-0.00473	-0.00474
	(!A1 * A3 * !B1 * Y)	0.00384	0.00383	0.00381
	(!A1 * A3 * !B1 * Y)	-0.00465	-0.00473	-0.00474
	(!A1 * A3 * !A4 * B1 * !Y)	0.00408	0.00383	0.00382
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00434	-0.00475	-0.00474
	(!A1 * !A3 * A4 * B1 * !Y)	0.00398	0.00381	0.00382
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00409	-0.00461	-0.00457
	(!A1 * !A3 * A4 * !B1 * Y)	0.00380	0.00379	0.00381
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00423	-0.00462	-0.00456
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00364	0.00365	0.00363
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00481	-0.00482	-0.00480

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00731	0.00736	0.00728
	(A1 * A3 * A4 * B1 * !Y)	-0.00621	-0.00624	-0.00622
	(A1 * A3 * !B1 * Y)	0.00729	0.00735	0.00728
	(A1 * A3 * !B1 * Y)	-0.00631	-0.00637	-0.00633
	(A1 * A3 * !A4 * B1 * !Y)	0.00785	0.00784	0.00742
	(A1 * A3 * !A4 * B1 * !Y)	-0.00595	-0.00600	-0.00596
	(A1 * !A3 * A4 * B1 * !Y)	0.00728	0.00739	0.00731
	(A1 * !A3 * A4 * B1 * !Y)	-0.00590	-0.00590	-0.00588
	(A1 * !A3 * A4 * !B1 * Y)	0.00726	0.00728	0.00728
	(A1 * !A3 * A4 * !B1 * Y)	-0.00634	-0.00629	-0.00632
	(A1 * !A3 * !A4 * B1 * !Y)	0.00727	0.00735	0.00728
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00489	-0.00493	-0.00488
	(A1 * !A3 * !A4 * !B1 * Y)	0.00725	0.00734	0.00727
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00907	-0.00924	-0.00918
	(!A1 * A3 * A4 * B1 * !Y)	0.00734	0.00730	0.00727
	(!A1 * A3 * A4 * B1 * !Y)	-0.00897	-0.00926	-0.00922
	(!A1 * A3 * !B1 * Y)	0.00732	0.00730	0.00727
	(!A1 * A3 * !B1 * Y)	-0.00901	-0.00926	-0.00922
	(!A1 * A3 * !A4 * B1 * !Y)	0.00808	0.00731	0.00727
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00805	-0.00926	-0.00925
	(!A1 * !A3 * A4 * B1 * !Y)	0.00776	0.00731	0.00728
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00774	-0.00882	-0.00888
	(!A1 * !A3 * A4 * !B1 * Y)	0.00725	0.00729	0.00727
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00810	-0.00885	-0.00886
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00688	0.00692	0.00686
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00944	-0.00946	-0.00942

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)**	-0.00186	-0.00186	-0.00185
	(A1 * A3 * A4 * B1 * !Y)	0.00159	0.00159	0.00158
	(A1 * A3 * !B1 * Y)	-0.00185	-0.00186	-0.00185
	(A1 * A3 * !B1 * Y)	0.00161	0.00162	0.00161
	(A1 * A3 * !A4 * B1 * !Y)	-0.00185	-0.00186	-0.00185
	(A1 * A3 * !A4 * B1 * !Y)	0.00152	0.00152	0.00151
	(A1 * !A3 * A4 * B1 * !Y)	-0.00185	-0.00186	-0.00185
	(A1 * !A3 * A4 * B1 * !Y)	0.00148	0.00148	0.00147
	(A1 * !A3 * A4 * !B1 * Y)	-0.00185	-0.00186	-0.00185
	(A1 * !A3 * A4 * !B1 * Y)	0.00157	0.00158	0.00158
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00179	-0.00180	-0.00178
	(A1 * !A3 * !A4 * B1 * !Y)	0.00128	0.00129	0.00129
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00185	-0.00186	-0.00185
	(A1 * !A3 * !A4 * !B1 * Y)	0.00227	0.00228	0.00228
	(!A1 * A3 * A4 * B1 * !Y)	-0.00185	-0.00186	-0.00185
	(!A1 * A3 * A4 * B1 * !Y)	0.00227	0.00228	0.00228
	(!A1 * A3 * !B1 * Y)	-0.00185	-0.00186	-0.00185
	(!A1 * A3 * !B1 * Y)	0.00227	0.00228	0.00228
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00185	-0.00186	-0.00185
	(!A1 * A3 * !A4 * B1 * !Y)	0.00227	0.00229	0.00228
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00184	-0.00187	-0.00185
	(!A1 * !A3 * A4 * B1 * !Y)	0.00218	0.00223	0.00220
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00185	-0.00187	-0.00185
	(!A1 * !A3 * A4 * !B1 * Y)	0.00218	0.00222	0.00219
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00164	-0.00177	-0.00178
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00232	0.00233	0.00232

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00381	-0.00382	-0.00381
	(A1 * A3 * A4 * B1 * !Y)	0.00331	0.00331	0.00329
	(A1 * A3 * !B1 * Y)	-0.00380	-0.00382	-0.00380
	(A1 * A3 * !B1 * Y)	0.00335	0.00337	0.00335
	(A1 * A3 * !A4 * B1 * !Y)	-0.00381	-0.00382	-0.00381
	(A1 * A3 * !A4 * B1 * !Y)	0.00317	0.00317	0.00315
	(A1 * !A3 * A4 * B1 * !Y)	-0.00382	-0.00384	-0.00382
	(A1 * !A3 * A4 * B1 * !Y)	0.00310	0.00311	0.00309
	(A1 * !A3 * A4 * !B1 * Y)	-0.00380	-0.00380	-0.00380
	(A1 * !A3 * A4 * !B1 * Y)	0.00332	0.00333	0.00332
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00364	-0.00367	-0.00363
	(A1 * !A3 * !A4 * B1 * !Y)	0.00268	0.00272	0.00273
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00380	-0.00382	-0.00380
	(A1 * !A3 * !A4 * !B1 * Y)	0.00467	0.00469	0.00468
	(!A1 * A3 * A4 * B1 * !Y)	-0.00380	-0.00380	-0.00380
	(!A1 * A3 * A4 * B1 * !Y)	0.00472	0.00473	0.00474
	(!A1 * A3 * !B1 * Y)	-0.00380	-0.00380	-0.00380
	(!A1 * A3 * !B1 * Y)	0.00472	0.00473	0.00474
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00381	-0.00382	-0.00380
	(!A1 * A3 * !A4 * B1 * !Y)	0.00474	0.00477	0.00474
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00379	-0.00381	-0.00380
	(!A1 * !A3 * A4 * B1 * !Y)	0.00454	0.00463	0.00457
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00380	-0.00379	-0.00380
	(!A1 * !A3 * A4 * !B1 * Y)	0.00455	0.00463	0.00456
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00333	-0.00363	-0.00363
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00484	0.00485	0.00482

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00725	-0.00727	-0.00726
	(A1 * A3 * A4 * B1 * !Y)	0.00621	0.00624	0.00622
	(A1 * A3 * !B1 * Y)	-0.00724	-0.00729	-0.00726
	(A1 * A3 * !B1 * Y)	0.00631	0.00637	0.00633
	(A1 * A3 * !A4 * B1 * !Y)	-0.00725	-0.00729	-0.00726
	(A1 * A3 * !A4 * B1 * !Y)	0.00595	0.00600	0.00596
	(A1 * !A3 * A4 * B1 * !Y)	-0.00728	-0.00729	-0.00727
	(A1 * !A3 * A4 * B1 * !Y)	0.00590	0.00590	0.00588
	(A1 * !A3 * A4 * !B1 * Y)	-0.00726	-0.00724	-0.00726
	(A1 * !A3 * A4 * !B1 * Y)	0.00634	0.00629	0.00632
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00696	-0.00701	-0.00692
	(A1 * !A3 * !A4 * B1 * !Y)	0.00515	0.00522	0.00520
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00723	-0.00729	-0.00725
	(A1 * !A3 * !A4 * !B1 * Y)	0.00915	0.00924	0.00918
	(!A1 * A3 * A4 * B1 * !Y)	-0.00726	-0.00728	-0.00725
	(!A1 * A3 * A4 * B1 * !Y)	0.00921	0.00926	0.00922
	(!A1 * A3 * !B1 * Y)	-0.00726	-0.00728	-0.00725
	(!A1 * A3 * !B1 * Y)	0.00921	0.00926	0.00922
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00723	-0.00727	-0.00725
	(!A1 * A3 * !A4 * B1 * !Y)	0.00920	0.00927	0.00925
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00723	-0.00722	-0.00723
	(!A1 * !A3 * A4 * B1 * !Y)	0.00884	0.00882	0.00888
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00724	-0.00725	-0.00725
	(!A1 * !A3 * A4 * !B1 * Y)	0.00883	0.00885	0.00886
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00638	-0.00692	-0.00686
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00947	0.00951	0.00945

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)**	0.00208	0.00208	0.00198
	(A2 * A4 * B1 * !Y)	-0.00146	-0.00146	-0.00145
	(A2 * A4 * !B1 * Y)	0.00186	0.00188	0.00186
	(A2 * A4 * !B1 * Y)	-0.00166	-0.00166	-0.00165
	(A2 * !A4 * B1 * !Y)	0.00195	0.00196	0.00193
	(A2 * !A4 * B1 * !Y)	-0.00119	-0.00120	-0.00120
	(A2 * !A4 * !B1 * Y)	0.00187	0.00188	0.00186
	(A2 * !A4 * !B1 * Y)	-0.00229	-0.00235	-0.00233
	(A1 * !A2 * A4 * B1 * !Y)	0.00217	0.00199	0.00194
	(A1 * !A2 * A4 * B1 * !Y)	-0.00145	-0.00151	-0.00151
	(A1 * !A2 * A4 * !B1 * Y)	0.00186	0.00189	0.00186
	(A1 * !A2 * A4 * !B1 * Y)	-0.00163	-0.00164	-0.00163
	(A1 * !A2 * !A4 * B1 * !Y)	0.00196	0.00197	0.00194
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00118	-0.00119	-0.00119
	(A1 * !A2 * !A4 * !B1 * Y)	0.00187	0.00188	0.00186
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00206	-0.00223	-0.00223
	(!A1 * !A2 * A4 * B1 * !Y)	0.00243	0.00197	0.00193
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00178	-0.00226	-0.00228
	(!A1 * !A2 * A4 * !B1 * Y)	0.00187	0.00188	0.00186
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00232	-0.00234	-0.00233
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00177	0.00179	0.00178
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00236	-0.00238	-0.00237

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00380	0.00390	0.00371
	(A2 * A4 * B1 * !Y)	-0.00299	-0.00300	-0.00298
	(A2 * A4 * !B1 * Y)	0.00361	0.00365	0.00361
	(A2 * A4 * !B1 * Y)	-0.00334	-0.00336	-0.00333
	(A2 * !A4 * B1 * !Y)	0.00362	0.00368	0.00363
	(A2 * !A4 * B1 * !Y)	-0.00244	-0.00248	-0.00247
	(A2 * !A4 * !B1 * Y)	0.00359	0.00364	0.00361
	(A2 * !A4 * !B1 * Y)	-0.00448	-0.00464	-0.00462
	(A1 * !A2 * A4 * B1 * !Y)	0.00405	0.00373	0.00364
	(A1 * !A2 * A4 * B1 * !Y)	-0.00306	-0.00310	-0.00308
	(A1 * !A2 * A4 * !B1 * Y)	0.00359	0.00361	0.00361
	(A1 * !A2 * A4 * !B1 * Y)	-0.00324	-0.00325	-0.00325
	(A1 * !A2 * !A4 * B1 * !Y)	0.00364	0.00370	0.00363
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00241	-0.00245	-0.00245
	(A1 * !A2 * !A4 * !B1 * Y)	0.00359	0.00365	0.00361
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00409	-0.00440	-0.00439
	(!A1 * !A2 * A4 * B1 * !Y)	0.00469	0.00369	0.00362
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00346	-0.00460	-0.00463
	(!A1 * !A2 * A4 * !B1 * Y)	0.00359	0.00364	0.00361
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00450	-0.00462	-0.00461
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00346	0.00345	0.00346
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00470	-0.00469	-0.00470

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00786	0.00809	0.00763
	(A2 * A4 * B1 * !Y)	-0.00585	-0.00591	-0.00590
	(A2 * A4 * !B1 * Y)	0.00743	0.00750	0.00740
	(A2 * A4 * !B1 * Y)	-0.00650	-0.00654	-0.00650
	(A2 * !A4 * B1 * !Y)	0.00751	0.00752	0.00742
	(A2 * !A4 * B1 * !Y)	-0.00501	-0.00501	-0.00500
	(A2 * !A4 * !B1 * Y)	0.00738	0.00747	0.00739
	(A2 * !A4 * !B1 * Y)	-0.00905	-0.00935	-0.00931
	(A1 * !A2 * A4 * B1 * !Y)	0.00840	0.00762	0.00744
	(A1 * !A2 * A4 * B1 * !Y)	-0.00596	-0.00618	-0.00615
	(A1 * !A2 * A4 * !B1 * Y)	0.00739	0.00744	0.00740
	(A1 * !A2 * A4 * !B1 * Y)	-0.00644	-0.00644	-0.00643
	(A1 * !A2 * !A4 * B1 * !Y)	0.00748	0.00757	0.00743
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00490	-0.00496	-0.00495
	(A1 * !A2 * !A4 * !B1 * Y)	0.00742	0.00748	0.00739
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00818	-0.00879	-0.00876
	(!A1 * !A2 * A4 * B1 * !Y)	0.00968	0.00756	0.00740
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00713	-0.00941	-0.00946
	(!A1 * !A2 * A4 * !B1 * Y)	0.00742	0.00747	0.00739
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00929	-0.00943	-0.00940
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00704	0.00714	0.00708
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00952	-0.00960	-0.00956

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)**	-0.00193	-0.00193	-0.00192
	(A2 * A4 * B1 * !Y)	0.00146	0.00146	0.00145
	(A2 * A4 * !B1 * Y)	-0.00186	-0.00186	-0.00186
	(A2 * A4 * !B1 * Y)	0.00166	0.00166	0.00165
	(A2 * !A4 * B1 * !Y)	-0.00192	-0.00192	-0.00190
	(A2 * !A4 * B1 * !Y)	0.00123	0.00123	0.00124
	(A2 * !A4 * !B1 * Y)	-0.00185	-0.00187	-0.00186
	(A2 * !A4 * !B1 * Y)	0.00232	0.00235	0.00233
	(A1 * !A2 * A4 * B1 * !Y)	-0.00191	-0.00193	-0.00192
	(A1 * !A2 * A4 * B1 * !Y)	0.00149	0.00151	0.00151
	(A1 * !A2 * A4 * !B1 * Y)	-0.00185	-0.00186	-0.00186
	(A1 * !A2 * A4 * !B1 * Y)	0.00163	0.00164	0.00163
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00188	-0.00189	-0.00190
	(A1 * !A2 * !A4 * B1 * !Y)	0.00123	0.00124	0.00122
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00185	-0.00185	-0.00186
	(A1 * !A2 * !A4 * !B1 * Y)	0.00222	0.00223	0.00223
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00191	-0.00192	-0.00191
	(!A1 * !A2 * A4 * B1 * !Y)	0.00226	0.00228	0.00228
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00185	-0.00186	-0.00186
	(!A1 * !A2 * A4 * !B1 * Y)	0.00232	0.00234	0.00233
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00164	-0.00177	-0.00178
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00238	0.00238	0.00237

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00363	-0.00365	-0.00363
	(A2 * A4 * B1 * !Y)	0.00299	0.00300	0.00298
	(A2 * A4 * !B1 * Y)	-0.00360	-0.00362	-0.00360
	(A2 * A4 * !B1 * Y)	0.00334	0.00336	0.00333
	(A2 * !A4 * B1 * !Y)	-0.00358	-0.00360	-0.00355
	(A2 * !A4 * B1 * !Y)	0.00250	0.00254	0.00255
	(A2 * !A4 * !B1 * Y)	-0.00359	-0.00361	-0.00360
	(A2 * !A4 * !B1 * Y)	0.00462	0.00464	0.00462
	(A1 * !A2 * A4 * B1 * !Y)	-0.00363	-0.00364	-0.00362
	(A1 * !A2 * A4 * B1 * !Y)	0.00309	0.00310	0.00308
	(A1 * !A2 * A4 * !B1 * Y)	-0.00359	-0.00359	-0.00360
	(A1 * !A2 * A4 * !B1 * Y)	0.00324	0.00325	0.00325
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00351	-0.00354	-0.00354
	(A1 * !A2 * !A4 * B1 * !Y)	0.00248	0.00252	0.00251
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00359	-0.00361	-0.00360
	(A1 * !A2 * !A4 * !B1 * Y)	0.00438	0.00440	0.00439
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00359	-0.00360	-0.00358
	(!A1 * !A2 * A4 * B1 * !Y)	0.00459	0.00462	0.00463
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00359	-0.00361	-0.00360
	(!A1 * !A2 * A4 * !B1 * Y)	0.00459	0.00462	0.00461
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00317	-0.00345	-0.00346
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00473	0.00473	0.00471

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00738	-0.00742	-0.00741
	(A2 * A4 * B1 * !Y)	0.00585	0.00591	0.00590
	(A2 * A4 * !B1 * Y)	-0.00738	-0.00742	-0.00739
	(A2 * A4 * !B1 * Y)	0.00650	0.00654	0.00650
	(A2 * !A4 * B1 * !Y)	-0.00736	-0.00738	-0.00729
	(A2 * !A4 * B1 * !Y)	0.00507	0.00510	0.00513
	(A2 * !A4 * !B1 * Y)	-0.00738	-0.00741	-0.00738
	(A2 * !A4 * !B1 * Y)	0.00931	0.00935	0.00931
	(A1 * !A2 * A4 * B1 * !Y)	-0.00741	-0.00743	-0.00740
	(A1 * !A2 * A4 * B1 * !Y)	0.00617	0.00618	0.00615
	(A1 * !A2 * A4 * !B1 * Y)	-0.00739	-0.00739	-0.00738
	(A1 * !A2 * A4 * !B1 * Y)	0.00644	0.00644	0.00643
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00718	-0.00725	-0.00728
	(A1 * !A2 * !A4 * B1 * !Y)	0.00501	0.00507	0.00505
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00736	-0.00740	-0.00737
	(A1 * !A2 * !A4 * !B1 * Y)	0.00873	0.00879	0.00876
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00737	-0.00739	-0.00732
	(!A1 * !A2 * A4 * B1 * !Y)	0.00943	0.00949	0.00946
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00738	-0.00740	-0.00737
	(!A1 * !A2 * A4 * !B1 * Y)	0.00940	0.00943	0.00940
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00643	-0.00706	-0.00708
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00956	0.00964	0.00958

Passive power(pJ) for A4 rising (conditional):

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

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	0.00210	0.00212	0.00210
	(A3 * B1 * !Y)	-0.00107	-0.00108	-0.00107
	(A3 * !B1 * Y)	0.00186	0.00187	0.00185
	(A3 * !B1 * Y)	-0.00229	-0.00235	-0.00234
	(A2 * !A3 * B1 * !Y)	0.00210	0.00212	0.00210
	(A2 * !A3 * B1 * !Y)	-0.00107	-0.00108	-0.00107
	(A2 * !A3 * !B1 * Y)	0.00186	0.00187	0.00185
	(A2 * !A3 * !B1 * Y)	-0.00208	-0.00225	-0.00226
	(A1 * !A2 * !A3 * B1 * !Y)	0.00210	0.00212	0.00210
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00107	-0.00108	-0.00107
	(A1 * !A2 * !A3 * !B1 * Y)	0.00186	0.00187	0.00185
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00204	-0.00221	-0.00221
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00177	0.00178	0.00177
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00237	-0.00238	-0.00237
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	0.00406	0.00412	0.00408
	(A3 * B1 * !Y)	-0.00219	-0.00222	-0.00220
	(A3 * !B1 * Y)	0.00363	0.00367	0.00365
	(A3 * !B1 * Y)	-0.00449	-0.00469	-0.00467
	(A2 * !A3 * B1 * !Y)	0.00406	0.00412	0.00408
	(A2 * !A3 * B1 * !Y)	-0.00219	-0.00222	-0.00220
	(A2 * !A3 * !B1 * Y)	0.00364	0.00370	0.00365
	(A2 * !A3 * !B1 * Y)	-0.00408	-0.00449	-0.00448
	(A1 * !A2 * !A3 * B1 * !Y)	0.00406	0.00412	0.00408
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00219	-0.00222	-0.00220
	(A1 * !A2 * !A3 * !B1 * Y)	0.00364	0.00370	0.00365
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00400	-0.00440	-0.00437
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00349	0.00351	0.00349
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00476	-0.00476	-0.00475

sky130_fd_sc_hs__o41ai_4	**(A3 * B1 * !Y)**	0.00833	0.00845	0.00838
	(A3 * B1 * !Y)	-0.00424	-0.00431	-0.00427
	(A3 * !B1 * Y)	0.00745	0.00749	0.00741
	(A3 * !B1 * Y)	-0.00900	-0.00933	-0.00929
	(A2 * !A3 * B1 * !Y)	0.00835	0.00852	0.00838
	(A2 * !A3 * B1 * !Y)	-0.00424	-0.00433	-0.00426
	(A2 * !A3 * !B1 * Y)	0.00740	0.00745	0.00740
	(A2 * !A3 * !B1 * Y)	-0.00802	-0.00883	-0.00880
	(A1 * !A2 * !A3 * B1 * !Y)	0.00835	0.00852	0.00838
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00424	-0.00433	-0.00426
	(A1 * !A2 * !A3 * !B1 * Y)	0.00741	0.00750	0.00740
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00788	-0.00859	-0.00854
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00709	0.00714	0.00708
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00945	-0.00949	-0.00944

Passive power(pJ) for A4 falling (conditional):

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

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	-0.00203	-0.00205	-0.00209
	(A3 * B1 * !Y)	0.00112	0.00113	0.00109
	(A3 * !B1 * Y)	-0.00184	-0.00185	-0.00185
	(A3 * !B1 * Y)	0.00233	0.00235	0.00234
	(A2 * !A3 * B1 * !Y)	-0.00194	-0.00196	-0.00208
	(A2 * !A3 * B1 * !Y)	0.00116	0.00118	0.00109
	(A2 * !A3 * !B1 * Y)	-0.00184	-0.00184	-0.00185
	(A2 * !A3 * !B1 * Y)	0.00224	0.00225	0.00226
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00182	-0.00185	-0.00205
	(A1 * !A2 * !A3 * B1 * !Y)	0.00124	0.00125	0.00110
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00184	-0.00185	-0.00185
	(A1 * !A2 * !A3 * !B1 * Y)	0.00220	0.00221	0.00221
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00164	-0.00177	-0.00177
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00238	0.00239	0.00238
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	-0.00387	-0.00391	-0.00406
	(A3 * B1 * !Y)	0.00238	0.00240	0.00225
	(A3 * !B1 * Y)	-0.00363	-0.00367	-0.00365
	(A3 * !B1 * Y)	0.00465	0.00471	0.00467
	(A2 * !A3 * B1 * !Y)	-0.00369	-0.00373	-0.00402
	(A2 * !A3 * B1 * !Y)	0.00246	0.00248	0.00224
	(A2 * !A3 * !B1 * Y)	-0.00364	-0.00365	-0.00365
	(A2 * !A3 * !B1 * Y)	0.00446	0.00449	0.00448
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00340	-0.00345	-0.00394
	(A1 * !A2 * !A3 * B1 * !Y)	0.00262	0.00264	0.00228
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00364	-0.00367	-0.00365
	(A1 * !A2 * !A3 * !B1 * Y)	0.00436	0.00440	0.00437
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00322	-0.00350	-0.00349
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00478	0.00479	0.00476

sky130_fd_sc_hs__o41ai_4	(A3 * B1 * !Y)	-0.00801	-0.00809	-0.00834
	(A3 * B1 * !Y)	0.00456	0.00460	0.00435
	(A3 * !B1 * Y)	-0.00739	-0.00742	-0.00739
	(A3 * !B1 * Y)	0.00928	0.00933	0.00929
	(A2 * !A3 * B1 * !Y)	-0.00766	-0.00774	-0.00827
	(A2 * !A3 * B1 * !Y)	0.00470	0.00474	0.00432
	(A2 * !A3 * !B1 * Y)	-0.00740	-0.00741	-0.00739
	(A2 * !A3 * !B1 * Y)	0.00881	0.00883	0.00880
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00710	-0.00719	-0.00813
	(A1 * !A2 * !A3 * B1 * !Y)	0.00503	0.00506	0.00441
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00740	-0.00743	-0.00739
	(A1 * !A2 * !A3 * !B1 * Y)	0.00855	0.00859	0.00854
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00647	-0.00706	-0.00708
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00945	0.00952	0.00947

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)	0.00076	0.00075	0.00069
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00275	-0.00276	-0.00287
sky130_fd_sc_hs__o41ai_2	(!A1 * !A2 * !A3 * !A4 * Y)	0.00176	0.00176	0.00164
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00526	-0.00528	-0.00550
sky130_fd_sc_hs__o41ai_4	(!A1 * !A2 * !A3 * !A4 * Y)	0.00254	0.00254	0.00233
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00577	-0.00581	-0.00623

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)	-0.00067	-0.00069	-0.00067
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00287	0.00293	0.00289
sky130_fd_sc_hs__o41ai_2	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00160	-0.00163	-0.00160
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00552	0.00562	0.00553
sky130_fd_sc_hs__o41ai_4	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00225	-0.00230	-0.00225
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00626	0.00637	0.00628

SKY130_FD_SC_HS__O41Ax

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00262	0.00271	0.00272	0.00275	0.00250	1.26720
sky130_fd_sc_hs__o41a_2	0.00277	0.00291	0.00297	0.00284	0.00285	2.56560
sky130_fd_sc_hs__o41a_4	0.00503	0.00541	0.00545	0.00510	0.00468	4.57274

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41a_1	0.00000	0.35246	0.70743
sky130_fd_sc_hs__o41a_2	0.00000	0.24966	0.37715
sky130_fd_sc_hs__o41a_4	0.00000	0.82053	1.43182

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)	0.08362	0.56412	5.97148
	A2->X (RR)	0.08186	0.55013	5.84604
	A3->X (RR)	0.07690	0.53208	5.73742
	A4->X (RR)	0.06690	0.50976	5.69005
	B1->X (RR)	0.07477	0.57218	6.24242
sky130_fd_sc_hs__o41a_2	A1->X (RR)	0.08367	0.46784	5.82399
	A2->X (RR)	0.08239	0.45721	5.71913
	A3->X (RR)	0.07851	0.44310	5.62736
	A4->X (RR)	0.06767	0.42262	5.57568
	B1->X (RR)	0.07535	0.48202	6.17959
sky130_fd_sc_hs__o41a_4	A1->X (RR)	0.09281	0.41672	5.87479
	A2->X (RR)	0.09165	0.40610	5.77283
	A3->X (RR)	0.08230	0.38705	5.65981
	A4->X (RR)	0.07359	0.36495	5.62183
	B1->X (RR)	0.08376	0.44235	6.28866

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41a_1	A1->X (FF)	0.25272	0.66433	5.06882
	A2->X (FF)	0.23960	0.66907	5.23687
	A3->X (FF)	0.21125	0.67227	5.34919
	A4->X (FF)	0.17017	0.65510	5.33356
	B1->X (FF)	0.06240	0.47916	4.77230
sky130_fd_sc_hs__o41a_2	A1->X (FF)	0.30444	0.70824	5.35078
	A2->X (FF)	0.29324	0.71833	5.54001
	A3->X (FF)	0.26685	0.72460	5.67163
	A4->X (FF)	0.22068	0.70731	5.66245
	B1->X (FF)	0.06635	0.46223	4.89472
sky130_fd_sc_hs__o41a_4	A1->X (FF)	0.31743	0.68834	5.25698
	A2->X (FF)	0.30232	0.68791	5.41603
	A3->X (FF)	0.26452	0.68229	5.54406
	A4->X (FF)	0.21120	0.65741	5.51870
	B1->X (FF)	0.07376	0.43943	4.82117

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41a_1	A1	0.01833	0.01901	0.05500
	A1	0.00779	0.00849	0.04503
	A2	0.01589	0.01660	0.04894
	A2	0.00664	0.00737	0.03977
	A3	0.01328	0.01418	0.04464
	A3	0.00530	0.00621	0.03682
	A4	0.01088	0.01216	0.04990
	A4	0.00406	0.00545	0.04327
	B1	0.00869	0.01168	0.07078
	B1	0.00419	0.00721	0.06683
sky130_fd_sc_hs__o41a_2	A1	0.02236	0.02327	0.05925
	A1	0.01106	0.01200	0.04820
	A2	0.02008	0.02101	0.05333
	A2	0.01003	0.01097	0.04371
	A3	0.01752	0.01862	0.04888
	A3	0.00862	0.00974	0.04063
	A4	0.01476	0.01630	0.05377
	A4	0.00718	0.00874	0.04688
	B1	0.01223	0.01547	0.08249
	B1	0.00706	0.01035	0.07754

sky130_fd_sc_hs__o41a_4	**A1**	0.04387	0.04513	0.11220
	A1	0.02290	0.02421	0.09150
	A2	0.03971	0.04134	0.10255
	A2	0.02048	0.02215	0.08389
	A3	0.03358	0.03574	0.09317
	A3	0.01705	0.01923	0.07768
	A4	0.02748	0.03040	0.10159
	A4	0.01402	0.01705	0.08932
	B1	0.02294	0.02958	0.15505
	B1	0.01432	0.02100	0.14644

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41a_1	**A1**	0.00619	0.00585	0.04154
	A1	0.01669	0.01635	0.05144
	A2	0.00623	0.00610	0.03790
	A2	0.01539	0.01525	0.04701
	A3	0.00625	0.00661	0.03682
	A3	0.01410	0.01446	0.04417
	A4	0.00620	0.00780	0.04562
	A4	0.01286	0.01446	0.05221
	B1	0.00359	0.00780	0.07735
	B1	0.01065	0.01451	0.08131

sky130_fd_sc_hs__o41a_2	**A1**	0.01173	0.00929	0.04465
	A1	0.02295	0.02057	0.05566
	A2	0.01179	0.00939	0.04123
	A2	0.02171	0.01948	0.05099
	A3	0.01177	0.00983	0.04156
	A3	0.02050	0.01868	0.04805
	A4	0.01180	0.01114	0.05081
	A4	0.01917	0.01861	0.05635
	B1	0.00673	0.01087	0.08249
	B1	0.01448	0.01857	0.08694
sky130_fd_sc_hs__o41a_4	**A1**	0.02365	0.01865	0.08765
	A1	0.04463	0.03961	0.10362
	A2	0.02288	0.01815	0.08299
	A2	0.04199	0.03724	0.09625
	A3	0.02320	0.01866	0.07988
	A3	0.03946	0.03527	0.09059
	A4	0.02359	0.02199	0.09787
	A4	0.03671	0.03510	0.10598
	B1	0.01378	0.02201	0.15662
	B1	0.02789	0.03568	0.16577

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)**	0.00168	0.00170	0.00168
	(A2 * A4 * B1 * X)	-0.00231	-0.00237	-0.00237
	(A2 * A3 * !A4 * B1 * X)	0.00168	0.00170	0.00168
	(A2 * A3 * !A4 * B1 * X)	-0.00231	-0.00237	-0.00237
	(A2 * !B1 * !X)	0.00168	0.00170	0.00168
	(A2 * !B1 * !X)	-0.00232	-0.00237	-0.00237
	(A2 * !A3 * !A4 * B1 * X)	0.00169	0.00170	0.00168
	(A2 * !A3 * !A4 * B1 * X)	-0.00227	-0.00238	-0.00237
	(!A2 * A3 * A4 * B1 * X)	0.00168	0.00169	0.00168
	(!A2 * A3 * A4 * B1 * X)	-0.00213	-0.00231	-0.00231
	(!A2 * A3 * !B1 * !X)	0.00167	0.00169	0.00168
	(!A2 * A3 * !B1 * !X)	-0.00213	-0.00231	-0.00230
	(!A2 * A3 * !A4 * B1 * X)	0.00168	0.00169	0.00168
	(!A2 * A3 * !A4 * B1 * X)	-0.00213	-0.00231	-0.00231
	(!A2 * !A3 * A4 * B1 * X)	0.00170	0.00169	0.00169
	(!A2 * !A3 * A4 * B1 * X)	-0.00208	-0.00227	-0.00227
	(!A2 * !A3 * A4 * !B1 * !X)	0.00168	0.00169	0.00168
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00210	-0.00226	-0.00226
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00160	0.00161	0.00160
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00240	-0.00240	-0.00239

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00192	0.00194	0.00192
	(A2 * A4 * B1 * X)	-0.00227	-0.00234	-0.00233
	(A2 * A3 * !A4 * B1 * X)	0.00192	0.00194	0.00192
	(A2 * A3 * !A4 * B1 * X)	-0.00227	-0.00234	-0.00233
	(A2 * !B1 * !X)	0.00192	0.00193	0.00192
	(A2 * !B1 * !X)	-0.00228	-0.00232	-0.00233
	(A2 * !A3 * !A4 * B1 * X)	0.00192	0.00194	0.00192
	(A2 * !A3 * !A4 * B1 * X)	-0.00223	-0.00234	-0.00233
	(!A2 * A3 * A4 * B1 * X)	0.00192	0.00193	0.00192
	(!A2 * A3 * A4 * B1 * X)	-0.00209	-0.00227	-0.00226
	(!A2 * A3 * !B1 * !X)	0.00192	0.00193	0.00192
	(!A2 * A3 * !B1 * !X)	-0.00209	-0.00227	-0.00226
	(!A2 * A3 * !A4 * B1 * X)	0.00192	0.00193	0.00192
	(!A2 * A3 * !A4 * B1 * X)	-0.00209	-0.00227	-0.00226
	(!A2 * !A3 * A4 * B1 * X)	0.00193	0.00193	0.00192
	(!A2 * !A3 * A4 * B1 * X)	-0.00205	-0.00223	-0.00223
	(!A2 * !A3 * A4 * !B1 * !X)	0.00192	0.00193	0.00192
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00206	-0.00223	-0.00222
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00184	0.00185	0.00184
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00236	-0.00236	-0.00235

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00312	0.00314	0.00311
	(A2 * A4 * B1 * X)	-0.00449	-0.00467	-0.00465
	(A2 * A3 * !A4 * B1 * X)	0.00313	0.00314	0.00311
	(A2 * A3 * !A4 * B1 * X)	-0.00448	-0.00467	-0.00464
	(A2 * !B1 * !X)	0.00310	0.00313	0.00310
	(A2 * !B1 * !X)	-0.00452	-0.00467	-0.00465
	(A2 * !A3 * !A4 * B1 * X)	0.00314	0.00314	0.00311
	(A2 * !A3 * !A4 * B1 * X)	-0.00436	-0.00465	-0.00463
	(!A2 * A3 * A4 * B1 * X)	0.00313	0.00314	0.00311
	(!A2 * A3 * A4 * B1 * X)	-0.00408	-0.00452	-0.00449
	(!A2 * A3 * !B1 * !X)	0.00311	0.00313	0.00310
	(!A2 * A3 * !B1 * !X)	-0.00411	-0.00452	-0.00449
	(!A2 * A3 * !A4 * B1 * X)	0.00313	0.00314	0.00311
	(!A2 * A3 * !A4 * B1 * X)	-0.00408	-0.00452	-0.00449
	(!A2 * !A3 * A4 * B1 * X)	0.00317	0.00314	0.00311
	(!A2 * !A3 * A4 * B1 * X)	-0.00397	-0.00442	-0.00441
	(!A2 * !A3 * A4 * !B1 * !X)	0.00311	0.00313	0.00310
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00402	-0.00441	-0.00440
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00293	0.00297	0.00295
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00471	-0.00474	-0.00472

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)**	-0.00167	-0.00167	-0.00167
	(A2 * A4 * B1 * X)	0.00238	0.00237	0.00238
	(A2 * A3 * !A4 * B1 * X)	-0.00167	-0.00167	-0.00167
	(A2 * A3 * !A4 * B1 * X)	0.00238	0.00237	0.00238
	(A2 * !B1 * !X)	-0.00168	-0.00168	-0.00167
	(A2 * !B1 * !X)	0.00238	0.00237	0.00237
	(A2 * !A3 * !A4 * B1 * X)	-0.00167	-0.00168	-0.00167
	(A2 * !A3 * !A4 * B1 * X)	0.00238	0.00240	0.00238
	(!A2 * A3 * A4 * B1 * X)	-0.00167	-0.00167	-0.00167
	(!A2 * A3 * A4 * B1 * X)	0.00230	0.00231	0.00231
	(!A2 * A3 * !B1 * !X)	-0.00167	-0.00168	-0.00167
	(!A2 * A3 * !B1 * !X)	0.00229	0.00231	0.00230
	(!A2 * A3 * !A4 * B1 * X)	-0.00167	-0.00167	-0.00167
	(!A2 * A3 * !A4 * B1 * X)	0.00230	0.00231	0.00231
	(!A2 * !A3 * A4 * B1 * X)	-0.00167	-0.00167	-0.00167
	(!A2 * !A3 * A4 * B1 * X)	0.00227	0.00227	0.00227
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00167	-0.00167	-0.00167
	(!A2 * !A3 * A4 * !B1 * !X)	0.00226	0.00226	0.00226
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00150	-0.00161	-0.00160
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00241	0.00242	0.00240

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00192	-0.00192	-0.00191
	(A2 * A4 * B1 * X)	0.00233	0.00234	0.00233
	(A2 * A3 * !A4 * B1 * X)	-0.00192	-0.00192	-0.00191
	(A2 * A3 * !A4 * B1 * X)	0.00233	0.00234	0.00233
	(A2 * !B1 * !X)	-0.00190	-0.00192	-0.00191
	(A2 * !B1 * !X)	0.00231	0.00234	0.00233
	(A2 * !A3 * !A4 * B1 * X)	-0.00191	-0.00192	-0.00191
	(A2 * !A3 * !A4 * B1 * X)	0.00232	0.00234	0.00233
	(!A2 * A3 * A4 * B1 * X)	-0.00191	-0.00192	-0.00191
	(!A2 * A3 * A4 * B1 * X)	0.00225	0.00227	0.00226
	(!A2 * A3 * !B1 * !X)	-0.00191	-0.00192	-0.00191
	(!A2 * A3 * !B1 * !X)	0.00225	0.00227	0.00226
	(!A2 * A3 * !A4 * B1 * X)	-0.00191	-0.00192	-0.00191
	(!A2 * A3 * !A4 * B1 * X)	0.00225	0.00227	0.00226
	(!A2 * !A3 * A4 * B1 * X)	-0.00191	-0.00191	-0.00191
	(!A2 * !A3 * A4 * B1 * X)	0.00222	0.00223	0.00223
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00191	-0.00192	-0.00191
	(!A2 * !A3 * A4 * !B1 * !X)	0.00222	0.00223	0.00222
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00169	-0.00183	-0.00184
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00236	0.00237	0.00236

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	-0.00308	-0.00309	-0.00308
	(A2 * A4 * B1 * X)	0.00464	0.00467	0.00465
	(A2 * A3 * !A4 * B1 * X)	-0.00308	-0.00309	-0.00308
	(A2 * A3 * !A4 * B1 * X)	0.00464	0.00467	0.00464
	(A2 * !B1 * !X)	-0.00308	-0.00309	-0.00308
	(A2 * !B1 * !X)	0.00464	0.00467	0.00465
	(A2 * !A3 * !A4 * B1 * X)	-0.00308	-0.00309	-0.00308
	(A2 * !A3 * !A4 * B1 * X)	0.00464	0.00467	0.00464
	(!A2 * A3 * A4 * B1 * X)	-0.00308	-0.00310	-0.00308
	(!A2 * A3 * A4 * B1 * X)	0.00447	0.00452	0.00449
	(!A2 * A3 * !B1 * !X)	-0.00308	-0.00310	-0.00308
	(!A2 * A3 * !B1 * !X)	0.00447	0.00452	0.00449
	(!A2 * A3 * !A4 * B1 * X)	-0.00308	-0.00309	-0.00308
	(!A2 * A3 * !A4 * B1 * X)	0.00447	0.00452	0.00449
	(!A2 * !A3 * A4 * B1 * X)	-0.00308	-0.00308	-0.00307
	(!A2 * !A3 * A4 * B1 * X)	0.00441	0.00442	0.00441
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00309	-0.00309	-0.00308
	(!A2 * !A3 * A4 * !B1 * !X)	0.00440	0.00441	0.00440
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00272	-0.00294	-0.00295
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00475	0.00477	0.00474

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)**	0.00164	0.00165	0.00163
	(A1 * A3 * A4 * B1 * X)	-0.00162	-0.00163	-0.00162
	(A1 * A3 * !B1 * !X)	0.00162	0.00164	0.00162
	(A1 * A3 * !B1 * !X)	-0.00165	-0.00165	-0.00165
	(A1 * A3 * !A4 * B1 * X)	0.00175	0.00177	0.00166
	(A1 * A3 * !A4 * B1 * X)	-0.00155	-0.00156	-0.00155
	(A1 * !A3 * A4 * B1 * X)	0.00163	0.00167	0.00163
	(A1 * !A3 * A4 * B1 * X)	-0.00151	-0.00151	-0.00151
	(A1 * !A3 * A4 * !B1 * !X)	0.00162	0.00164	0.00162
	(A1 * !A3 * A4 * !B1 * !X)	-0.00161	-0.00162	-0.00161
	(A1 * !A3 * !A4 * B1 * X)	0.00162	0.00164	0.00162
	(A1 * !A3 * !A4 * B1 * X)	-0.00125	-0.00126	-0.00125
	(A1 * !A3 * !A4 * !B1 * !X)	0.00163	0.00164	0.00162
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00229	-0.00231	-0.00231
	(!A1 * A3 * A4 * B1 * X)	0.00163	0.00164	0.00162
	(!A1 * A3 * A4 * B1 * X)	-0.00225	-0.00233	-0.00232
	(!A1 * A3 * !B1 * !X)	0.00163	0.00164	0.00162
	(!A1 * A3 * !B1 * !X)	-0.00226	-0.00233	-0.00232
	(!A1 * A3 * !A4 * B1 * X)	0.00186	0.00164	0.00163
	(!A1 * A3 * !A4 * B1 * X)	-0.00204	-0.00233	-0.00232
	(!A1 * !A3 * A4 * B1 * X)	0.00175	0.00165	0.00163
	(!A1 * !A3 * A4 * B1 * X)	-0.00192	-0.00225	-0.00224
	(!A1 * !A3 * A4 * !B1 * !X)	0.00163	0.00164	0.00162
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00204	-0.00225	-0.00223
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00153	0.00154	0.00154
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00234	-0.00234	-0.00234

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	0.00185	0.00187	0.00185
	(A1 * A3 * A4 * B1 * X)	-0.00159	-0.00159	-0.00158
	(A1 * A3 * !B1 * !X)	0.00185	0.00186	0.00185
	(A1 * A3 * !B1 * !X)	-0.00162	-0.00162	-0.00161
	(A1 * A3 * !A4 * B1 * X)	0.00198	0.00199	0.00189
	(A1 * A3 * !A4 * B1 * X)	-0.00151	-0.00151	-0.00151
	(A1 * !A3 * A4 * B1 * X)	0.00185	0.00186	0.00185
	(A1 * !A3 * A4 * B1 * X)	-0.00149	-0.00149	-0.00148
	(A1 * !A3 * A4 * !B1 * !X)	0.00184	0.00187	0.00185
	(A1 * !A3 * A4 * !B1 * !X)	-0.00158	-0.00160	-0.00159
	(A1 * !A3 * !A4 * B1 * X)	0.00185	0.00186	0.00185
	(A1 * !A3 * !A4 * B1 * X)	-0.00125	-0.00126	-0.00125
	(A1 * !A3 * !A4 * !B1 * !X)	0.00186	0.00186	0.00185
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00230	-0.00232	-0.00231
	(!A1 * A3 * A4 * B1 * X)	0.00185	0.00187	0.00185
	(!A1 * A3 * A4 * B1 * X)	-0.00225	-0.00233	-0.00232
	(!A1 * A3 * !B1 * !X)	0.00185	0.00187	0.00185
	(!A1 * A3 * !B1 * !X)	-0.00226	-0.00232	-0.00231
	(!A1 * A3 * !A4 * B1 * X)	0.00207	0.00187	0.00185
	(!A1 * A3 * !A4 * B1 * X)	-0.00203	-0.00233	-0.00232
	(!A1 * !A3 * A4 * B1 * X)	0.00198	0.00187	0.00185
	(!A1 * !A3 * A4 * B1 * X)	-0.00191	-0.00223	-0.00223
	(!A1 * !A3 * A4 * !B1 * !X)	0.00183	0.00187	0.00185
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00201	-0.00222	-0.00223
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00174	0.00176	0.00175
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00234	-0.00235	-0.00234

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	0.00387	0.00391	0.00390
	(A1 * A3 * A4 * B1 * X)	-0.00315	-0.00317	-0.00315
	(A1 * A3 * !B1 * !X)	0.00386	0.00387	0.00385
	(A1 * A3 * !B1 * !X)	-0.00324	-0.00327	-0.00325
	(A1 * A3 * !A4 * B1 * X)	0.00407	0.00414	0.00396
	(A1 * A3 * !A4 * B1 * X)	-0.00298	-0.00300	-0.00298
	(A1 * !A3 * A4 * B1 * X)	0.00386	0.00393	0.00388
	(A1 * !A3 * A4 * B1 * X)	-0.00292	-0.00294	-0.00292
	(A1 * !A3 * A4 * !B1 * !X)	0.00383	0.00386	0.00384
	(A1 * !A3 * A4 * !B1 * !X)	-0.00316	-0.00317	-0.00316
	(A1 * !A3 * !A4 * B1 * X)	0.00385	0.00387	0.00386
	(A1 * !A3 * !A4 * B1 * X)	-0.00240	-0.00242	-0.00241
	(A1 * !A3 * !A4 * !B1 * !X)	0.00382	0.00388	0.00384
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00448	-0.00455	-0.00456
	(!A1 * A3 * A4 * B1 * X)	0.00389	0.00389	0.00385
	(!A1 * A3 * A4 * B1 * X)	-0.00436	-0.00458	-0.00456
	(!A1 * A3 * !B1 * !X)	0.00386	0.00388	0.00384
	(!A1 * A3 * !B1 * !X)	-0.00440	-0.00458	-0.00456
	(!A1 * A3 * !A4 * B1 * X)	0.00425	0.00390	0.00385
	(!A1 * A3 * !A4 * B1 * X)	-0.00399	-0.00457	-0.00456
	(!A1 * !A3 * A4 * B1 * X)	0.00411	0.00389	0.00385
	(!A1 * !A3 * A4 * B1 * X)	-0.00382	-0.00440	-0.00439
	(!A1 * !A3 * A4 * !B1 * !X)	0.00382	0.00387	0.00384
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00398	-0.00439	-0.00438
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00368	0.00371	0.00369
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00462	-0.00464	-0.00463

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)**	-0.00161	-0.00161	-0.00161
	(A1 * A3 * A4 * B1 * X)	0.00162	0.00163	0.00162
	(A1 * A3 * !B1 * !X)	-0.00161	-0.00162	-0.00161
	(A1 * A3 * !B1 * !X)	0.00165	0.00165	0.00165
	(A1 * A3 * !A4 * B1 * X)	-0.00161	-0.00162	-0.00161
	(A1 * A3 * !A4 * B1 * X)	0.00155	0.00156	0.00155
	(A1 * !A3 * A4 * B1 * X)	-0.00161	-0.00161	-0.00161
	(A1 * !A3 * A4 * B1 * X)	0.00151	0.00151	0.00151
	(A1 * !A3 * A4 * !B1 * !X)	-0.00161	-0.00162	-0.00161
	(A1 * !A3 * A4 * !B1 * !X)	0.00161	0.00162	0.00161
	(A1 * !A3 * !A4 * B1 * X)	-0.00155	-0.00155	-0.00154
	(A1 * !A3 * !A4 * B1 * X)	0.00132	0.00133	0.00133
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00161	-0.00162	-0.00162
	(A1 * !A3 * !A4 * !B1 * !X)	0.00230	0.00231	0.00231
	(!A1 * A3 * A4 * B1 * X)	-0.00161	-0.00161	-0.00161
	(!A1 * A3 * A4 * B1 * X)	0.00231	0.00233	0.00232
	(!A1 * A3 * !B1 * !X)	-0.00161	-0.00162	-0.00161
	(!A1 * A3 * !B1 * !X)	0.00231	0.00233	0.00232
	(!A1 * A3 * !A4 * B1 * X)	-0.00161	-0.00161	-0.00161
	(!A1 * A3 * !A4 * B1 * X)	0.00231	0.00233	0.00232
	(!A1 * !A3 * A4 * B1 * X)	-0.00160	-0.00161	-0.00161
	(!A1 * !A3 * A4 * B1 * X)	0.00222	0.00225	0.00224
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00161	-0.00162	-0.00161
	(!A1 * !A3 * A4 * !B1 * !X)	0.00222	0.00225	0.00223
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00144	-0.00154	-0.00154
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00235	0.00237	0.00235

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	-0.00184	-0.00184	-0.00184
	(A1 * A3 * A4 * B1 * X)	0.00159	0.00159	0.00158
	(A1 * A3 * !B1 * !X)	-0.00184	-0.00184	-0.00184
	(A1 * A3 * !B1 * !X)	0.00162	0.00162	0.00161
	(A1 * A3 * !A4 * B1 * X)	-0.00184	-0.00184	-0.00184
	(A1 * A3 * !A4 * B1 * X)	0.00151	0.00151	0.00151
	(A1 * !A3 * A4 * B1 * X)	-0.00184	-0.00184	-0.00184
	(A1 * !A3 * A4 * B1 * X)	0.00149	0.00149	0.00148
	(A1 * !A3 * A4 * !B1 * !X)	-0.00183	-0.00184	-0.00184
	(A1 * !A3 * A4 * !B1 * !X)	0.00158	0.00160	0.00159
	(A1 * !A3 * !A4 * B1 * X)	-0.00179	-0.00179	-0.00178
	(A1 * !A3 * !A4 * B1 * X)	0.00130	0.00131	0.00131
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00184	-0.00185	-0.00184
	(A1 * !A3 * !A4 * !B1 * !X)	0.00231	0.00232	0.00231
	(!A1 * A3 * A4 * B1 * X)	-0.00183	-0.00184	-0.00184
	(!A1 * A3 * A4 * B1 * X)	0.00231	0.00233	0.00232
	(!A1 * A3 * !B1 * !X)	-0.00184	-0.00184	-0.00184
	(!A1 * A3 * !B1 * !X)	0.00230	0.00232	0.00231
	(!A1 * A3 * !A4 * B1 * X)	-0.00183	-0.00184	-0.00184
	(!A1 * A3 * !A4 * B1 * X)	0.00231	0.00233	0.00232
	(!A1 * !A3 * A4 * B1 * X)	-0.00183	-0.00183	-0.00183
	(!A1 * !A3 * A4 * B1 * X)	0.00222	0.00223	0.00223
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00183	-0.00184	-0.00184
	(!A1 * !A3 * A4 * !B1 * !X)	0.00222	0.00222	0.00223
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00162	-0.00176	-0.00175
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00236	0.00237	0.00235

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	-0.00387	-0.00387	-0.00386
	(A1 * A3 * A4 * B1 * X)	0.00315	0.00317	0.00315
	(A1 * A3 * !B1 * !X)	-0.00383	-0.00385	-0.00383
	(A1 * A3 * !B1 * !X)	0.00324	0.00327	0.00325
	(A1 * A3 * !A4 * B1 * X)	-0.00386	-0.00387	-0.00385
	(A1 * A3 * !A4 * B1 * X)	0.00298	0.00300	0.00298
	(A1 * !A3 * A4 * B1 * X)	-0.00384	-0.00385	-0.00384
	(A1 * !A3 * A4 * B1 * X)	0.00292	0.00294	0.00292
	(A1 * !A3 * A4 * !B1 * !X)	-0.00383	-0.00384	-0.00383
	(A1 * !A3 * A4 * !B1 * !X)	0.00316	0.00317	0.00316
	(A1 * !A3 * !A4 * B1 * X)	-0.00372	-0.00373	-0.00370
	(A1 * !A3 * !A4 * B1 * X)	0.00252	0.00253	0.00255
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00382	-0.00382	-0.00383
	(A1 * !A3 * !A4 * !B1 * !X)	0.00454	0.00455	0.00456
	(!A1 * A3 * A4 * B1 * X)	-0.00382	-0.00385	-0.00383
	(!A1 * A3 * A4 * B1 * X)	0.00453	0.00458	0.00456
	(!A1 * A3 * !B1 * !X)	-0.00382	-0.00384	-0.00383
	(!A1 * A3 * !B1 * !X)	0.00454	0.00458	0.00456
	(!A1 * A3 * !A4 * B1 * X)	-0.00382	-0.00384	-0.00383
	(!A1 * A3 * !A4 * B1 * X)	0.00453	0.00458	0.00456
	(!A1 * !A3 * A4 * B1 * X)	-0.00381	-0.00383	-0.00381
	(!A1 * !A3 * A4 * B1 * X)	0.00436	0.00440	0.00439
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00382	-0.00384	-0.00382
	(!A1 * !A3 * A4 * !B1 * !X)	0.00436	0.00439	0.00438
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00348	-0.00371	-0.00369
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00466	0.00467	0.00465

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)**	0.00177	0.00176	0.00167
	(A2 * A4 * B1 * X)	-0.00145	-0.00145	-0.00145
	(A2 * A4 * !B1 * !X)	0.00161	0.00163	0.00161
	(A2 * A4 * !B1 * !X)	-0.00157	-0.00158	-0.00157
	(A2 * !A4 * B1 * X)	0.00162	0.00164	0.00162
	(A2 * !A4 * B1 * X)	-0.00118	-0.00119	-0.00119
	(A2 * !A4 * !B1 * !X)	0.00162	0.00162	0.00161
	(A2 * !A4 * !B1 * !X)	-0.00221	-0.00226	-0.00225
	(A1 * !A2 * A4 * B1 * X)	0.00186	0.00167	0.00162
	(A1 * !A2 * A4 * B1 * X)	-0.00143	-0.00150	-0.00150
	(A1 * !A2 * A4 * !B1 * !X)	0.00161	0.00163	0.00161
	(A1 * !A2 * A4 * !B1 * !X)	-0.00155	-0.00156	-0.00155
	(A1 * !A2 * !A4 * B1 * X)	0.00163	0.00165	0.00162
	(A1 * !A2 * !A4 * B1 * X)	-0.00117	-0.00118	-0.00118
	(A1 * !A2 * !A4 * !B1 * !X)	0.00160	0.00163	0.00161
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00196	-0.00217	-0.00215
	(!A1 * !A2 * A4 * B1 * X)	0.00210	0.00165	0.00162
	(!A1 * !A2 * A4 * B1 * X)	-0.00178	-0.00225	-0.00226
	(!A1 * !A2 * A4 * !B1 * !X)	0.00162	0.00163	0.00161
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00224	-0.00227	-0.00225
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00152	0.00153	0.00152
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00228	-0.00230	-0.00229

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00209	0.00209	0.00199
	(A2 * A4 * B1 * X)	-0.00147	-0.00147	-0.00147
	(A2 * A4 * !B1 * !X)	0.00187	0.00189	0.00187
	(A2 * A4 * !B1 * !X)	-0.00169	-0.00169	-0.00169
	(A2 * !A4 * B1 * X)	0.00196	0.00198	0.00195
	(A2 * !A4 * B1 * X)	-0.00121	-0.00122	-0.00121
	(A2 * !A4 * !B1 * !X)	0.00188	0.00188	0.00187
	(A2 * !A4 * !B1 * !X)	-0.00231	-0.00236	-0.00236
	(A1 * !A2 * A4 * B1 * X)	0.00218	0.00204	0.00195
	(A1 * !A2 * A4 * B1 * X)	-0.00146	-0.00152	-0.00151
	(A1 * !A2 * A4 * !B1 * !X)	0.00186	0.00189	0.00187
	(A1 * !A2 * A4 * !B1 * !X)	-0.00166	-0.00166	-0.00165
	(A1 * !A2 * !A4 * B1 * X)	0.00197	0.00199	0.00195
	(A1 * !A2 * !A4 * B1 * X)	-0.00119	-0.00120	-0.00121
	(A1 * !A2 * !A4 * !B1 * !X)	0.00188	0.00189	0.00187
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00208	-0.00225	-0.00225
	(!A1 * !A2 * A4 * B1 * X)	0.00245	0.00199	0.00195
	(!A1 * !A2 * A4 * B1 * X)	-0.00179	-0.00227	-0.00229
	(!A1 * !A2 * A4 * !B1 * !X)	0.00188	0.00189	0.00187
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00234	-0.00236	-0.00236
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00177	0.00179	0.00177
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00238	-0.00240	-0.00239

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00411	0.00406	0.00391
	(A2 * A4 * B1 * X)	-0.00293	-0.00297	-0.00295
	(A2 * A4 * !B1 * !X)	0.00379	0.00381	0.00378
	(A2 * A4 * !B1 * !X)	-0.00325	-0.00327	-0.00325
	(A2 * !A4 * B1 * X)	0.00385	0.00386	0.00383
	(A2 * !A4 * B1 * X)	-0.00235	-0.00236	-0.00237
	(A2 * !A4 * !B1 * !X)	0.00380	0.00382	0.00378
	(A2 * !A4 * !B1 * !X)	-0.00437	-0.00453	-0.00452
	(A1 * !A2 * A4 * B1 * X)	0.00428	0.00393	0.00385
	(A1 * !A2 * A4 * B1 * X)	-0.00287	-0.00302	-0.00299
	(A1 * !A2 * A4 * !B1 * !X)	0.00376	0.00380	0.00378
	(A1 * !A2 * A4 * !B1 * !X)	-0.00315	-0.00318	-0.00316
	(A1 * !A2 * !A4 * B1 * X)	0.00386	0.00388	0.00384
	(A1 * !A2 * !A4 * B1 * X)	-0.00232	-0.00234	-0.00235
	(A1 * !A2 * !A4 * !B1 * !X)	0.00376	0.00381	0.00378
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00396	-0.00429	-0.00429
	(!A1 * !A2 * A4 * B1 * X)	0.00478	0.00388	0.00381
	(!A1 * !A2 * A4 * B1 * X)	-0.00355	-0.00453	-0.00454
	(!A1 * !A2 * A4 * !B1 * !X)	0.00376	0.00382	0.00378
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00447	-0.00456	-0.00455
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00363	0.00366	0.00364
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00460	-0.00463	-0.00461

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)**	-0.00160	-0.00160	-0.00160
	(A2 * A4 * B1 * X)	0.00145	0.00145	0.00145
	(A2 * A4 * !B1 * !X)	-0.00160	-0.00161	-0.00160
	(A2 * A4 * !B1 * !X)	0.00157	0.00158	0.00157
	(A2 * !A4 * B1 * X)	-0.00159	-0.00160	-0.00158
	(A2 * !A4 * B1 * X)	0.00123	0.00123	0.00123
	(A2 * !A4 * !B1 * !X)	-0.00160	-0.00161	-0.00160
	(A2 * !A4 * !B1 * !X)	0.00225	0.00226	0.00225
	(A1 * !A2 * A4 * B1 * X)	-0.00160	-0.00160	-0.00160
	(A1 * !A2 * A4 * B1 * X)	0.00150	0.00150	0.00150
	(A1 * !A2 * A4 * !B1 * !X)	-0.00160	-0.00161	-0.00160
	(A1 * !A2 * A4 * !B1 * !X)	0.00155	0.00156	0.00155
	(A1 * !A2 * !A4 * B1 * X)	-0.00155	-0.00156	-0.00158
	(A1 * !A2 * !A4 * B1 * X)	0.00123	0.00124	0.00121
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00159	-0.00162	-0.00160
	(A1 * !A2 * !A4 * !B1 * !X)	0.00213	0.00217	0.00215
	(!A1 * !A2 * A4 * B1 * X)	-0.00159	-0.00160	-0.00159
	(!A1 * !A2 * A4 * B1 * X)	0.00226	0.00228	0.00228
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00160	-0.00161	-0.00160
	(!A1 * !A2 * A4 * !B1 * !X)	0.00224	0.00227	0.00225
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00143	-0.00153	-0.00152
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00230	0.00231	0.00229

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00193	-0.00194	-0.00194
	(A2 * A4 * B1 * X)	0.00147	0.00147	0.00147
	(A2 * A4 * !B1 * !X)	-0.00186	-0.00186	-0.00186
	(A2 * A4 * !B1 * !X)	0.00169	0.00169	0.00169
	(A2 * !A4 * B1 * X)	-0.00193	-0.00194	-0.00192
	(A2 * !A4 * B1 * X)	0.00124	0.00125	0.00125
	(A2 * !A4 * !B1 * !X)	-0.00186	-0.00187	-0.00186
	(A2 * !A4 * !B1 * !X)	0.00235	0.00236	0.00236
	(A1 * !A2 * A4 * B1 * X)	-0.00193	-0.00195	-0.00194
	(A1 * !A2 * A4 * B1 * X)	0.00150	0.00152	0.00151
	(A1 * !A2 * A4 * !B1 * !X)	-0.00186	-0.00186	-0.00186
	(A1 * !A2 * A4 * !B1 * !X)	0.00166	0.00166	0.00165
	(A1 * !A2 * !A4 * B1 * X)	-0.00190	-0.00191	-0.00192
	(A1 * !A2 * !A4 * B1 * X)	0.00123	0.00124	0.00123
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00185	-0.00186	-0.00186
	(A1 * !A2 * !A4 * !B1 * !X)	0.00224	0.00225	0.00225
	(!A1 * !A2 * A4 * B1 * X)	-0.00193	-0.00194	-0.00192
	(!A1 * !A2 * A4 * B1 * X)	0.00228	0.00229	0.00229
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00186	-0.00186	-0.00186
	(!A1 * !A2 * A4 * !B1 * !X)	0.00236	0.00236	0.00236
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00164	-0.00178	-0.00177
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00240	0.00241	0.00240

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	-0.00380	-0.00384	-0.00382
	(A2 * A4 * B1 * X)	0.00293	0.00297	0.00295
	(A2 * A4 * !B1 * !X)	-0.00377	-0.00379	-0.00377
	(A2 * A4 * !B1 * !X)	0.00325	0.00327	0.00325
	(A2 * !A4 * B1 * X)	-0.00377	-0.00379	-0.00376
	(A2 * !A4 * B1 * X)	0.00243	0.00245	0.00246
	(A2 * !A4 * !B1 * !X)	-0.00376	-0.00378	-0.00377
	(A2 * !A4 * !B1 * !X)	0.00450	0.00453	0.00452
	(A1 * !A2 * A4 * B1 * X)	-0.00381	-0.00383	-0.00381
	(A1 * !A2 * A4 * B1 * X)	0.00299	0.00302	0.00299
	(A1 * !A2 * A4 * !B1 * !X)	-0.00376	-0.00378	-0.00377
	(A1 * !A2 * A4 * !B1 * !X)	0.00315	0.00318	0.00316
	(A1 * !A2 * !A4 * B1 * X)	-0.00366	-0.00369	-0.00375
	(A1 * !A2 * !A4 * B1 * X)	0.00245	0.00247	0.00242
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00375	-0.00377	-0.00376
	(A1 * !A2 * !A4 * !B1 * !X)	0.00427	0.00429	0.00429
	(!A1 * !A2 * A4 * B1 * X)	-0.00377	-0.00379	-0.00376
	(!A1 * !A2 * A4 * B1 * X)	0.00453	0.00457	0.00456
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00375	-0.00377	-0.00376
	(!A1 * !A2 * A4 * !B1 * !X)	0.00453	0.00456	0.00455
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00339	-0.00366	-0.00364
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00465	0.00464	0.00463

Passive power(pJ) for A4 rising (conditional):

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

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	0.00184	0.00186	0.00184
	(A3 * B1 * X)	-0.00106	-0.00107	-0.00106
	(A3 * !B1 * !X)	0.00163	0.00164	0.00163
	(A3 * !B1 * !X)	-0.00224	-0.00230	-0.00229
	(A2 * !A3 * B1 * X)	0.00184	0.00186	0.00184
	(A2 * !A3 * B1 * X)	-0.00106	-0.00107	-0.00106
	(A2 * !A3 * !B1 * !X)	0.00163	0.00165	0.00163
	(A2 * !A3 * !B1 * !X)	-0.00202	-0.00220	-0.00220
	(A1 * !A2 * !A3 * B1 * X)	0.00184	0.00186	0.00184
	(A1 * !A2 * !A3 * B1 * X)	-0.00106	-0.00107	-0.00106
	(A1 * !A2 * !A3 * !B1 * !X)	0.00163	0.00165	0.00163
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00199	-0.00216	-0.00215
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00155	0.00155	0.00155
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00233	-0.00233	-0.00232
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	0.00205	0.00207	0.00205
	(A3 * B1 * X)	-0.00108	-0.00108	-0.00107
	(A3 * !B1 * !X)	0.00186	0.00189	0.00186
	(A3 * !B1 * !X)	-0.00222	-0.00229	-0.00229
	(A2 * !A3 * B1 * X)	0.00205	0.00207	0.00205
	(A2 * !A3 * B1 * X)	-0.00107	-0.00108	-0.00107
	(A2 * !A3 * !B1 * !X)	0.00185	0.00188	0.00186
	(A2 * !A3 * !B1 * !X)	-0.00203	-0.00223	-0.00220
	(A1 * !A2 * !A3 * B1 * X)	0.00205	0.00207	0.00205
	(A1 * !A2 * !A3 * B1 * X)	-0.00107	-0.00108	-0.00107
	(A1 * !A2 * !A3 * !B1 * !X)	0.00185	0.00188	0.00186
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00199	-0.00215	-0.00215
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00179	0.00180	0.00178
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00232	-0.00232	-0.00231

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	0.00348	0.00352	0.00349
	(A3 * B1 * X)	-0.00217	-0.00218	-0.00216
	(A3 * !B1 * !X)	0.00312	0.00314	0.00311
	(A3 * !B1 * !X)	-0.00446	-0.00459	-0.00458
	(A2 * !A3 * B1 * X)	0.00349	0.00352	0.00349
	(A2 * !A3 * B1 * X)	-0.00216	-0.00217	-0.00215
	(A2 * !A3 * !B1 * !X)	0.00310	0.00315	0.00311
	(A2 * !A3 * !B1 * !X)	-0.00401	-0.00442	-0.00437
	(A1 * !A2 * !A3 * B1 * X)	0.00349	0.00352	0.00349
	(A1 * !A2 * !A3 * B1 * X)	-0.00216	-0.00217	-0.00215
	(A1 * !A2 * !A3 * !B1 * !X)	0.00310	0.00315	0.00311
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00392	-0.00426	-0.00424
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00293	0.00294	0.00292
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00467	-0.00468	-0.00466

Passive power(pJ) for A4 falling (conditional):

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

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	-0.00177	-0.00178	-0.00183
	(A3 * B1 * X)	0.00113	0.00113	0.00109
	(A3 * !B1 * !X)	-0.00163	-0.00164	-0.00163
	(A3 * !B1 * !X)	0.00228	0.00231	0.00229
	(A2 * !A3 * B1 * X)	-0.00169	-0.00170	-0.00181
	(A2 * !A3 * B1 * X)	0.00117	0.00118	0.00109
	(A2 * !A3 * !B1 * !X)	-0.00162	-0.00163	-0.00163
	(A2 * !A3 * !B1 * !X)	0.00219	0.00220	0.00220
	(A1 * !A2 * !A3 * B1 * X)	-0.00157	-0.00158	-0.00178
	(A1 * !A2 * !A3 * B1 * X)	0.00124	0.00125	0.00111
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00163	-0.00164	-0.00163
	(A1 * !A2 * !A3 * !B1 * !X)	0.00214	0.00216	0.00215
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00145	-0.00155	-0.00155
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00233	0.00235	0.00233
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	-0.00198	-0.00199	-0.00204
	(A3 * B1 * X)	0.00114	0.00115	0.00110
	(A3 * !B1 * !X)	-0.00185	-0.00186	-0.00185
	(A3 * !B1 * !X)	0.00228	0.00229	0.00229
	(A2 * !A3 * B1 * X)	-0.00189	-0.00190	-0.00203
	(A2 * !A3 * B1 * X)	0.00119	0.00119	0.00109
	(A2 * !A3 * !B1 * !X)	-0.00185	-0.00188	-0.00185
	(A2 * !A3 * !B1 * !X)	0.00219	0.00223	0.00220
	(A1 * !A2 * !A3 * B1 * X)	-0.00178	-0.00180	-0.00200
	(A1 * !A2 * !A3 * B1 * X)	0.00125	0.00125	0.00111
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00185	-0.00186	-0.00185
	(A1 * !A2 * !A3 * !B1 * !X)	0.00214	0.00215	0.00215
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00164	-0.00177	-0.00178
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00232	0.00233	0.00232

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	-0.00332	-0.00334	-0.00345
	(A3 * B1 * X)	0.00232	0.00232	0.00222
	(A3 * !B1 * !X)	-0.00309	-0.00311	-0.00309
	(A3 * !B1 * !X)	0.00456	0.00459	0.00458
	(A2 * !A3 * B1 * X)	-0.00310	-0.00312	-0.00341
	(A2 * !A3 * B1 * X)	0.00243	0.00243	0.00222
	(A2 * !A3 * !B1 * !X)	-0.00309	-0.00313	-0.00310
	(A2 * !A3 * !B1 * !X)	0.00436	0.00442	0.00437
	(A1 * !A2 * !A3 * B1 * X)	-0.00287	-0.00289	-0.00335
	(A1 * !A2 * !A3 * B1 * X)	0.00256	0.00256	0.00224
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00309	-0.00311	-0.00309
	(A1 * !A2 * !A3 * !B1 * !X)	0.00423	0.00426	0.00424
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00272	-0.00294	-0.00292
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00469	0.00470	0.00468

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)**	0.00061	0.00061	0.00056
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00224	-0.00224	-0.00234
sky130_fd_sc_hs__o41a_2	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.00068	0.00067	0.00062
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00257	-0.00257	-0.00269
sky130_fd_sc_hs__o41a_4	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.00114	0.00113	0.00103
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00426	-0.00426	-0.00446

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)	-0.00054	-0.00055	-0.00053
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00235	0.00239	0.00236
sky130_fd_sc_hs__o41a_2	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00060	-0.00061	-0.00059
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00270	0.00274	0.00270
sky130_fd_sc_hs__o41a_4	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00098	-0.00100	-0.00098
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00447	0.00452	0.00449

SKY130_FD_SC_HS__OR2Bx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00255	0.00238	1.29689
sky130_fd_sc_hs__or2b_2	0.00265	0.00230	2.12360
sky130_fd_sc_hs__or2b_4	0.00504	0.00286	4.67177

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2b_1	0.00000	0.42571	0.70856
sky130_fd_sc_hs__or2b_2	0.00000	0.46087	0.82375
sky130_fd_sc_hs__or2b_4	0.00000	0.45461	0.71112

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)	0.05531	0.50048	5.88446
	B_N->X (FR)	0.09735	0.68116	8.11201
sky130_fd_sc_hs__or2b_2	A->X (RR)	0.05505	0.41712	5.42015
	B_N->X (FR)	0.10673	0.61289	7.90072
sky130_fd_sc_hs__or2b_4	A->X (RR)	0.05088	0.33145	5.65647
	B_N->X (FR)	0.11070	0.55489	8.13364

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2b_1	A->X (FF)	0.09722	0.48847	4.78416
	B_N->X (RF)	0.10272	0.32206	2.30733
sky130_fd_sc_hs__or2b_2	A->X (FF)	0.12712	0.49776	4.51499
	B_N->X (RF)	0.13795	0.31703	1.82317
sky130_fd_sc_hs__or2b_4	A->X (FF)	0.12610	0.46622	4.91522
	B_N->X (RF)	0.13260	0.30283	2.12617

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.00916	0.01060	0.04406
	A	0.00464	0.00608	0.03957
	B_N	0.00821	0.01251	0.08268
	B_N	0.01207	0.01641	0.08670
sky130_fd_sc_hs__or2b_2	A	0.01285	0.01477	0.04649
	A	0.00806	0.00999	0.04219
	B_N	0.01184	0.01633	0.08144
	B_N	0.01569	0.02015	0.08600
sky130_fd_sc_hs__or2b_4	A	0.02460	0.02907	0.11787
	A	0.01567	0.02021	0.11002
	B_N	0.02254	0.02795	0.10701
	B_N	0.02684	0.03226	0.11190

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.00530	0.00669	0.03855
	A	0.00982	0.01120	0.04299
	B_N	0.01196	0.01546	0.08548
	B_N	0.00810	0.01159	0.08143
sky130_fd_sc_hs__or2b_2	A	0.00888	0.00993	0.04665
	A	0.01368	0.01449	0.05079
	B_N	0.01651	0.01865	0.08115
	B_N	0.01268	0.01474	0.07721
sky130_fd_sc_hs__or2b_4	A	0.01821	0.02032	0.10582
	A	0.02718	0.02910	0.11344
	B_N	0.02800	0.03106	0.11110
	B_N	0.02370	0.02672	0.10624

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	0.00198	0.00168	0.00164
	(!B_N * X)	-0.00191	-0.00224	-0.00225
sky130_fd_sc_hs__or2b_2	(!B_N * X)	0.00212	0.00181	0.00177
	(!B_N * X)	-0.00201	-0.00236	-0.00236
sky130_fd_sc_hs__or2b_4	(!B_N * X)	0.00414	0.00350	0.00341
	(!B_N * X)	-0.00360	-0.00433	-0.00435

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	-0.00162	-0.00163	-0.00162
	(!B_N * X)	0.00225	0.00228	0.00226
sky130_fd_sc_hs__or2b_2	(!B_N * X)	-0.00175	-0.00176	-0.00175
	(!B_N * X)	0.00236	0.00238	0.00238
sky130_fd_sc_hs__or2b_4	(!B_N * X)	-0.00339	-0.00340	-0.00338
	(!B_N * X)	0.00435	0.00437	0.00438

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00515	0.00845	0.07531
	(A * X)	0.00071	0.00399	0.07087
sky130_fd_sc_hs__or2b_2	(A * X)	0.00547	0.00863	0.07371
	(A * X)	0.00102	0.00417	0.06927
sky130_fd_sc_hs__or2b_4	(A * X)	0.00697	0.00989	0.08265
	(A * X)	0.00176	0.00465	0.07742

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00141	0.00573	0.07270
	(A * X)	0.00583	0.01017	0.07713
sky130_fd_sc_hs__or2b_2	(A * X)	0.00142	0.00563	0.07091
	(A * X)	0.00586	0.01007	0.07535
sky130_fd_sc_hs__or2b_4	(A * X)	0.00384	0.00786	0.08047
	(A * X)	0.00903	0.01308	0.08569

SKY130_FD_SC_HS__OR2x

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00232	0.00222	1.29481
sky130_fd_sc_hs__or2_2	0.00286	0.00251	2.15872
sky130_fd_sc_hs__or2_4	0.00457	0.00397	4.62527

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2_1	0.00000	0.23218	0.60608
sky130_fd_sc_hs__or2_2	0.00000	0.15966	0.27582
sky130_fd_sc_hs__or2_4	0.00000	0.31182	0.55164

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)	0.05303	0.49278	5.82729
	B->X (RR)	0.04898	0.47805	5.81567
sky130_fd_sc_hs__or2_2	A->X (RR)	0.05603	0.42025	5.49765
	B->X (RR)	0.05105	0.40456	5.44430
sky130_fd_sc_hs__or2_4	A->X (RR)	0.07326	0.40843	6.20073
	B->X (RR)	0.06143	0.37758	6.10026

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2_1	A->X (FF)	0.10434	0.50246	4.84598
	B->X (FF)	0.09022	0.50364	5.04421
sky130_fd_sc_hs__or2_2	A->X (FF)	0.12561	0.49580	4.49665
	B->X (FF)	0.10884	0.50290	4.69244
sky130_fd_sc_hs__or2_4	A->X (FF)	0.11664	0.45264	4.54964
	B->X (FF)	0.09947	0.45426	4.73840

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.00984	0.01141	0.04530
	A	0.00458	0.00617	0.04014
	B	0.00825	0.01053	0.05671
	B	0.00394	0.00625	0.05257
sky130_fd_sc_hs__or2_2	A	0.01419	0.01578	0.04645
	A	0.00788	0.00950	0.04081
	B	0.01198	0.01452	0.05244
	B	0.00701	0.00959	0.04793
sky130_fd_sc_hs__or2_4	A	0.02593	0.02870	0.09204
	A	0.01558	0.01842	0.08368
	B	0.02066	0.02479	0.10735
	B	0.01315	0.01733	0.10195

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.00392	0.00546	0.03847
	A	0.00918	0.01067	0.04300
	B	0.00374	0.00682	0.05826
	B	0.00802	0.01105	0.06241
sky130_fd_sc_hs__or2_2	A	0.00709	0.00804	0.04173
	A	0.01341	0.01419	0.04734
	B	0.00698	0.00956	0.06062
	B	0.01196	0.01431	0.06557
sky130_fd_sc_hs__or2_4	A	0.01569	0.01728	0.07541
	A	0.02608	0.02761	0.08423
	B	0.01560	0.02018	0.11045
	B	0.02313	0.02766	0.11755

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	0.00194	0.00167	0.00162
	(B * X)	-0.00139	-0.00170	-0.00171
sky130_fd_sc_hs__or2_2	(B * X)	0.00234	0.00203	0.00199
	(B * X)	-0.00166	-0.00202	-0.00203
sky130_fd_sc_hs__or2_4	(B * X)	0.00314	0.00246	0.00239
	(B * X)	-0.00338	-0.00415	-0.00417

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	-0.00160	-0.00161	-0.00160
	(B * X)	0.00172	0.00174	0.00173
sky130_fd_sc_hs__or2_2	(B * X)	-0.00197	-0.00198	-0.00197
	(B * X)	0.00203	0.00205	0.00204
sky130_fd_sc_hs__or2_4	(B * X)	-0.00236	-0.00237	-0.00236
	(B * X)	0.00415	0.00416	0.00418

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	0.00173	0.00175	0.00174
	(A * X)	-0.00079	-0.00080	-0.00079
sky130_fd_sc_hs__or2_2	(A * X)	0.00186	0.00188	0.00187
	(A * X)	-0.00097	-0.00099	-0.00098
sky130_fd_sc_hs__or2_4	(A * X)	0.00219	0.00220	0.00218
	(A * X)	-0.00199	-0.00199	-0.00197

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	-0.00169	-0.00170	-0.00173
	(A * X)	0.00083	0.00084	0.00081
sky130_fd_sc_hs__or2_2	(A * X)	-0.00181	-0.00182	-0.00186
	(A * X)	0.00102	0.00103	0.00099
sky130_fd_sc_hs__or2_4	(A * X)	-0.00204	-0.00206	-0.00217
	(A * X)	0.00209	0.00210	0.00200

SKY130_FD_SC_HS__OR3Bx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00250	0.00272	0.00231	1.29207
sky130_fd_sc_hs__or3b_2	0.00266	0.00258	0.00230	2.14698
sky130_fd_sc_hs__or3b_4	0.00469	0.00429	0.00268	4.65907

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or3b_1	0.00000	0.38072	0.71337
sky130_fd_sc_hs__or3b_2	0.00000	0.40341	0.83548
sky130_fd_sc_hs__or3b_4	0.00000	0.33407	0.68962

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)	0.06092	0.52390	5.88464
	B->X (RR)	0.05948	0.51130	5.76592
	C_N->X (FR)	0.10052	0.68554	8.11195
sky130_fd_sc_hs__or3b_2	A->X (RR)	0.05975	0.43724	5.48436
	B->X (RR)	0.05810	0.42738	5.38025
	C_N->X (FR)	0.10769	0.61581	7.93295
sky130_fd_sc_hs__or3b_4	A->X (RR)	0.07864	0.42793	6.20969
	B->X (RR)	0.07417	0.41001	6.07234
	C_N->X (FR)	0.12391	0.56853	8.18619

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3b_1	A->X (FF)	0.15657	0.55437	4.92146
	B->X (FF)	0.14630	0.57508	5.19434
	C_N->X (RF)	0.14061	0.37680	2.36247
sky130_fd_sc_hs__or3b_2	A->X (FF)	0.20012	0.57476	4.72617
	B->X (FF)	0.18540	0.59655	5.00256
	C_N->X (RF)	0.18167	0.38908	2.00785
sky130_fd_sc_hs__or3b_4	A->X (FF)	0.17600	0.51027	4.69185
	B->X (FF)	0.16169	0.52707	4.95837
	C_N->X (RF)	0.15777	0.33722	2.22757

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.01142	0.01222	0.04295
	A	0.00563	0.00644	0.03718
	B	0.00977	0.01121	0.04121
	B	0.00473	0.00622	0.03633
	C_N	0.00849	0.01290	0.08234
	C_N	0.01180	0.01623	0.08582
sky130_fd_sc_hs__or3b_2	A	0.01514	0.01635	0.04446
	A	0.00916	0.01039	0.03914
	B	0.01315	0.01501	0.04257
	B	0.00826	0.01013	0.03814
	C_N	0.01186	0.01644	0.08062
	C_N	0.01540	0.02016	0.08482
sky130_fd_sc_hs__or3b_4	A	0.02841	0.03022	0.08979
	A	0.01795	0.01983	0.08131
	B	0.02382	0.02683	0.08460
	B	0.01586	0.01893	0.07882
	C_N	0.02069	0.02608	0.10231
	C_N	0.02473	0.03010	0.10677

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.00639	0.00679	0.03693
	A	0.01221	0.01259	0.04226
	B	0.00619	0.00706	0.03988
	B	0.01124	0.01209	0.04491
	C_N	0.01304	0.01630	0.08529
	C_N	0.00973	0.01295	0.08174
sky130_fd_sc_hs__or3b_2	A	0.01044	0.00940	0.04061
	A	0.01643	0.01539	0.04595
	B	0.01024	0.00986	0.04429
	B	0.01515	0.01477	0.04785
	C_N	0.01782	0.01907	0.08007
	C_N	0.01427	0.01554	0.07620
sky130_fd_sc_hs__or3b_4	A	0.01989	0.01918	0.07169
	A	0.03044	0.02927	0.08183
	B	0.01993	0.01997	0.08065
	B	0.02791	0.02759	0.08671
	C_N	0.02913	0.03065	0.10706
	C_N	0.02509	0.02658	0.10233

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)	0.00175	0.00159	0.00157
	(B * C_N * X)	-0.00186	-0.00208	-0.00207
	(B * !C_N * X)	0.00156	0.00158	0.00156
	(B * !C_N * X)	-0.00203	-0.00208	-0.00207
	(!B * !C_N * X)	0.00167	0.00158	0.00156
	(!B * !C_N * X)	-0.00180	-0.00202	-0.00202
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	0.00201	0.00185	0.00183
	(B * C_N * X)	-0.00187	-0.00209	-0.00208
	(B * !C_N * X)	0.00175	0.00177	0.00175
	(B * !C_N * X)	-0.00212	-0.00216	-0.00215
	(!B * !C_N * X)	0.00186	0.00177	0.00176
	(!B * !C_N * X)	-0.00187	-0.00211	-0.00210
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	0.00299	0.00268	0.00265
	(B * C_N * X)	-0.00370	-0.00413	-0.00411
	(B * !C_N * X)	0.00239	0.00240	0.00237
	(B * !C_N * X)	-0.00428	-0.00438	-0.00438
	(!B * !C_N * X)	0.00258	0.00240	0.00237
	(!B * !C_N * X)	-0.00385	-0.00430	-0.00429

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)	-0.00155	-0.00156	-0.00155
	(B * C_N * X)	0.00207	0.00208	0.00208
	(B * !C_N * X)	-0.00155	-0.00156	-0.00156
	(B * !C_N * X)	0.00206	0.00208	0.00207
	(!B * !C_N * X)	-0.00155	-0.00156	-0.00155
	(!B * !C_N * X)	0.00201	0.00202	0.00202
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	-0.00181	-0.00182	-0.00181
	(B * C_N * X)	0.00208	0.00210	0.00209
	(B * !C_N * X)	-0.00174	-0.00176	-0.00175
	(B * !C_N * X)	0.00214	0.00216	0.00215
	(!B * !C_N * X)	-0.00174	-0.00175	-0.00174
	(!B * !C_N * X)	0.00209	0.00211	0.00210
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	-0.00264	-0.00266	-0.00264
	(B * C_N * X)	0.00410	0.00415	0.00411
	(B * !C_N * X)	-0.00237	-0.00237	-0.00237
	(B * !C_N * X)	0.00436	0.00438	0.00438
	(!B * !C_N * X)	-0.00235	-0.00236	-0.00235
	(!B * !C_N * X)	0.00427	0.00430	0.00429

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)	0.00188	0.00190	0.00187
	(A * C_N * X)	-0.00112	-0.00114	-0.00114
	(A * !C_N * X)	0.00181	0.00182	0.00173
	(A * !C_N * X)	-0.00157	-0.00159	-0.00157
	(!A * !C_N * X)	0.00213	0.00170	0.00166
	(!A * !C_N * X)	-0.00185	-0.00228	-0.00228
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	0.00193	0.00195	0.00192
	(A * C_N * X)	-0.00105	-0.00106	-0.00106
	(A * !C_N * X)	0.00176	0.00179	0.00168
	(A * !C_N * X)	-0.00162	-0.00163	-0.00162
	(!A * !C_N * X)	0.00207	0.00164	0.00161
	(!A * !C_N * X)	-0.00185	-0.00230	-0.00230
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	0.00244	0.00244	0.00240
	(A * C_N * X)	-0.00224	-0.00223	-0.00223
	(A * !C_N * X)	0.00235	0.00238	0.00218
	(A * !C_N * X)	-0.00314	-0.00314	-0.00312
	(!A * !C_N * X)	0.00287	0.00202	0.00197
	(!A * !C_N * X)	-0.00369	-0.00454	-0.00454

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)	-0.00183	-0.00184	-0.00183
	(A * C_N * X)	0.00118	0.00118	0.00118
	(A * !C_N * X)	-0.00165	-0.00166	-0.00165
	(A * !C_N * X)	0.00157	0.00159	0.00157
	(!A * !C_N * X)	-0.00165	-0.00165	-0.00164
	(!A * !C_N * X)	0.00230	0.00231	0.00230
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	-0.00189	-0.00190	-0.00189
	(A * C_N * X)	0.00109	0.00110	0.00110
	(A * !C_N * X)	-0.00160	-0.00161	-0.00160
	(A * !C_N * X)	0.00162	0.00163	0.00162
	(!A * !C_N * X)	-0.00159	-0.00160	-0.00159
	(!A * !C_N * X)	0.00231	0.00232	0.00232
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	-0.00235	-0.00236	-0.00235
	(A * C_N * X)	0.00228	0.00229	0.00230
	(A * !C_N * X)	-0.00200	-0.00200	-0.00200
	(A * !C_N * X)	0.00314	0.00314	0.00312
	(!A * !C_N * X)	-0.00194	-0.00194	-0.00193
	(!A * !C_N * X)	0.00454	0.00456	0.00457

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00501	0.00840	0.07478
	(B * X)	0.00070	0.00407	0.07046
	(A * !B * X)	0.00508	0.00847	0.07483
	(A * !B * X)	0.00073	0.00410	0.07047
sky130_fd_sc_hs__or3b_2	(B * X)	0.00562	0.00857	0.07384
	(B * X)	0.00114	0.00408	0.06937
	(A * !B * X)	0.00569	0.00864	0.07389
	(A * !B * X)	0.00116	0.00410	0.06937
sky130_fd_sc_hs__or3b_4	(B * X)	0.00710	0.01034	0.08206
	(B * X)	0.00175	0.00496	0.07670
	(A * !B * X)	0.00725	0.01050	0.08217
	(A * !B * X)	0.00180	0.00501	0.07672

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00116	0.00554	0.07207
	(B * X)	0.00547	0.00986	0.07639
	(A * !B * X)	0.00116	0.00554	0.07207
	(A * !B * X)	0.00548	0.00987	0.07640
sky130_fd_sc_hs__or3b_2	(B * X)	0.00125	0.00546	0.07072
	(B * X)	0.00572	0.00993	0.07519
	(A * !B * X)	0.00125	0.00547	0.07072
	(A * !B * X)	0.00573	0.00994	0.07520
sky130_fd_sc_hs__or3b_4	(B * X)	0.00164	0.00583	0.07752
	(B * X)	0.00700	0.01120	0.08287
	(A * !B * X)	0.00165	0.00585	0.07752
	(A * !B * X)	0.00701	0.01120	0.08289

SKY130_FD_SC_HS__OR3x

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00258	0.00256	0.00251	1.32743
sky130_fd_sc_hs__or3_2	0.00263	0.00266	0.00273	2.48330
sky130_fd_sc_hs__or3_4	0.00490	0.00436	0.00427	4.69612

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or3_1	0.00000	0.07951	0.26733
sky130_fd_sc_hs__or3_2	0.00000	0.10220	0.27582
sky130_fd_sc_hs__or3_4	0.00000	0.19877	0.55163

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)	0.06075	0.52331	5.93664
	B->X (RR)	0.05917	0.51047	5.81800
	C->X (RR)	0.05403	0.49071	5.78550
sky130_fd_sc_hs__or3_2	A->X (RR)	0.05868	0.42837	5.72404
	B->X (RR)	0.05678	0.41681	5.61571
	C->X (RR)	0.05275	0.40181	5.57788
sky130_fd_sc_hs__or3_4	A->X (RR)	0.07910	0.42964	6.26308
	B->X (RR)	0.07454	0.41196	6.12588
	C->X (RR)	0.06593	0.38893	6.08750

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3_1	A->X (FF)	0.15953	0.56196	4.99791
	B->X (FF)	0.14622	0.58010	5.27285
	C->X (FF)	0.11977	0.57176	5.28268
sky130_fd_sc_hs__or3_2	A->X (FF)	0.19394	0.57818	5.08434
	B->X (FF)	0.17931	0.60130	5.35749
	C->X (FF)	0.15508	0.59799	5.38385
sky130_fd_sc_hs__or3_4	A->X (FF)	0.17579	0.51204	4.71864
	B->X (FF)	0.16108	0.52831	4.98011
	C->X (FF)	0.13217	0.51653	4.98158

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.01337	0.01413	0.04640
	A	0.00592	0.00669	0.03954
	B	0.01121	0.01272	0.04410
	B	0.00498	0.00649	0.03802
	C	0.00909	0.01110	0.05043
	C	0.00386	0.00588	0.04531
sky130_fd_sc_hs__or3_2	A	0.01668	0.01800	0.05350
	A	0.00918	0.01054	0.04640
	B	0.01438	0.01637	0.05021
	B	0.00804	0.01004	0.04450
	C	0.01240	0.01472	0.05615
	C	0.00703	0.00937	0.05143
sky130_fd_sc_hs__or3_4	A	0.03134	0.03328	0.09280
	A	0.01799	0.02008	0.08120
	B	0.02619	0.02917	0.08698
	B	0.01584	0.01890	0.07870
	C	0.02140	0.02515	0.09685
	C	0.01309	0.01686	0.09065

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.00481	0.00518	0.03506
	A	0.01232	0.01267	0.04255
	B	0.00487	0.00579	0.04132
	B	0.01112	0.01204	0.04520
	C	0.00476	0.00700	0.05208
	C	0.00997	0.01222	0.05491
sky130_fd_sc_hs__or3_2	A	0.00924	0.00877	0.04140
	A	0.01679	0.01623	0.04895
	B	0.00930	0.00928	0.04658
	B	0.01565	0.01564	0.05098
	C	0.00918	0.01052	0.05668
	C	0.01458	0.01590	0.06088
sky130_fd_sc_hs__or3_4	A	0.01714	0.01613	0.06862
	A	0.03061	0.02939	0.08200
	B	0.01771	0.01777	0.07689
	B	0.02809	0.02773	0.08676
	C	0.01734	0.01961	0.09661
	C	0.02568	0.02791	0.10446

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	0.00169	0.00171	0.00169
	(B * C * X)	-0.00200	-0.00206	-0.00205
	(B * !C * X)	0.00183	0.00171	0.00169
	(B * !C * X)	-0.00186	-0.00206	-0.00206
	(!B * C * X)	0.00179	0.00170	0.00169
	(!B * C * X)	-0.00178	-0.00200	-0.00200
sky130_fd_sc_hs__or3_2	(B * C * X)	0.00178	0.00180	0.00178
	(B * C * X)	-0.00203	-0.00209	-0.00208
	(B * !C * X)	0.00193	0.00180	0.00178
	(B * !C * X)	-0.00189	-0.00208	-0.00208
	(!B * C * X)	0.00188	0.00180	0.00178
	(!B * C * X)	-0.00179	-0.00202	-0.00202
sky130_fd_sc_hs__or3_4	(B * C * X)	0.00281	0.00282	0.00279
	(B * C * X)	-0.00400	-0.00413	-0.00410
	(B * !C * X)	0.00307	0.00282	0.00279
	(B * !C * X)	-0.00374	-0.00412	-0.00411
	(!B * C * X)	0.00301	0.00282	0.00279
	(!B * C * X)	-0.00356	-0.00403	-0.00401

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	-0.00168	-0.00169	-0.00169
	(B * C * X)	0.00205	0.00206	0.00205
	(B * !C * X)	-0.00168	-0.00169	-0.00169
	(B * !C * X)	0.00205	0.00206	0.00206
	(!B * C * X)	-0.00168	-0.00169	-0.00168
	(!B * C * X)	0.00199	0.00201	0.00200
sky130_fd_sc_hs__or3_2	(B * C * X)	-0.00177	-0.00178	-0.00177
	(B * C * X)	0.00207	0.00209	0.00208
	(B * !C * X)	-0.00177	-0.00177	-0.00177
	(B * !C * X)	0.00207	0.00208	0.00208
	(!B * C * X)	-0.00177	-0.00177	-0.00177
	(!B * C * X)	0.00201	0.00203	0.00202
sky130_fd_sc_hs__or3_4	(B * C * X)	-0.00278	-0.00280	-0.00279
	(B * C * X)	0.00408	0.00414	0.00410
	(B * !C * X)	-0.00278	-0.00280	-0.00279
	(B * !C * X)	0.00409	0.00413	0.00411
	(!B * C * X)	-0.00277	-0.00279	-0.00277
	(!B * C * X)	0.00400	0.00404	0.00401

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	0.00175	0.00175	0.00166
	(A * C * X)	-0.00132	-0.00133	-0.00131
	(A * !C * X)	0.00158	0.00160	0.00157
	(A * !C * X)	-0.00106	-0.00107	-0.00107
	(!A * C * X)	0.00202	0.00160	0.00156
	(!A * C * X)	-0.00156	-0.00201	-0.00202
sky130_fd_sc_hs__or3_2	(A * C * X)	0.00177	0.00178	0.00169
	(A * C * X)	-0.00145	-0.00145	-0.00144
	(A * !C * X)	0.00164	0.00164	0.00161
	(A * !C * X)	-0.00120	-0.00120	-0.00120
	(!A * C * X)	0.00208	0.00165	0.00161
	(!A * C * X)	-0.00170	-0.00215	-0.00215
sky130_fd_sc_hs__or3_4	(A * C * X)	0.00235	0.00236	0.00218
	(A * C * X)	-0.00274	-0.00273	-0.00272
	(A * !C * X)	0.00203	0.00205	0.00200
	(A * !C * X)	-0.00224	-0.00225	-0.00225
	(!A * C * X)	0.00289	0.00202	0.00197
	(!A * C * X)	-0.00330	-0.00419	-0.00419

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	-0.00157	-0.00158	-0.00157
	(A * C * X)	0.00132	0.00133	0.00131
	(A * !C * X)	-0.00155	-0.00156	-0.00154
	(A * !C * X)	0.00110	0.00111	0.00111
	(!A * C * X)	-0.00155	-0.00155	-0.00154
	(!A * C * X)	0.00202	0.00203	0.00203
sky130_fd_sc_hs__or3_2	(A * C * X)	-0.00160	-0.00161	-0.00160
	(A * C * X)	0.00145	0.00145	0.00144
	(A * !C * X)	-0.00159	-0.00160	-0.00159
	(A * !C * X)	0.00122	0.00124	0.00124
	(!A * C * X)	-0.00159	-0.00160	-0.00159
	(!A * C * X)	0.00215	0.00217	0.00216
sky130_fd_sc_hs__or3_4	(A * C * X)	-0.00200	-0.00200	-0.00200
	(A * C * X)	0.00274	0.00273	0.00272
	(A * !C * X)	-0.00197	-0.00197	-0.00194
	(A * !C * X)	0.00230	0.00231	0.00232
	(!A * C * X)	-0.00194	-0.00195	-0.00193
	(!A * C * X)	0.00417	0.00422	0.00421

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	0.00173	0.00175	0.00174
	(B * X)	-0.00100	-0.00101	-0.00100
	(A * !B * X)	0.00173	0.00175	0.00174
	(A * !B * X)	-0.00099	-0.00100	-0.00099
sky130_fd_sc_hs__or3_2	(B * X)	0.00195	0.00197	0.00195
	(B * X)	-0.00101	-0.00102	-0.00101
	(A * !B * X)	0.00195	0.00197	0.00195
	(A * !B * X)	-0.00101	-0.00102	-0.00101
sky130_fd_sc_hs__or3_4	(B * X)	0.00247	0.00249	0.00247
	(B * X)	-0.00201	-0.00203	-0.00201
	(A * !B * X)	0.00247	0.00249	0.00247
	(A * !B * X)	-0.00200	-0.00202	-0.00200

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	-0.00169	-0.00169	-0.00173
	(B * X)	0.00105	0.00105	0.00101
	(A * !B * X)	-0.00161	-0.00162	-0.00172
	(A * !B * X)	0.00109	0.00109	0.00101
sky130_fd_sc_hs__or3_2	(B * X)	-0.00190	-0.00191	-0.00195
	(B * X)	0.00106	0.00107	0.00103
	(A * !B * X)	-0.00182	-0.00184	-0.00193
	(A * !B * X)	0.00110	0.00111	0.00103
sky130_fd_sc_hs__or3_4	(B * X)	-0.00234	-0.00236	-0.00246
	(B * X)	0.00213	0.00214	0.00204
	(A * !B * X)	-0.00217	-0.00221	-0.00243
	(A * !B * X)	0.00217	0.00221	0.00203

SKY130_FD_SC_HS__OR4BBx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00254	0.00251	0.00236	0.00239	1.28735
sky130_fd_sc_hs__or4bb_2	0.00253	0.00267	0.00232	0.00230	2.12658
sky130_fd_sc_hs__or4bb_4	0.00401	0.00408	0.00258	0.00255	4.00355

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4bb_1	0.00000	0.65350	1.31579
sky130_fd_sc_hs__or4bb_2	0.00000	0.66952	1.44484
sky130_fd_sc_hs__or4bb_4	0.00000	0.40104	0.95697

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)	0.06182	0.53675	5.86653
	B->X (RR)	0.06203	0.52768	5.76139
	C_N->X (FR)	0.11644	0.71010	8.16013
	D_N->X (FR)	0.10440	0.69073	8.12430
sky130_fd_sc_hs__or4bb_2	A->X (RR)	0.06063	0.45014	5.54320
	B->X (RR)	0.06171	0.44349	5.44156
	C_N->X (FR)	0.10721	0.61015	7.85810
	D_N->X (FR)	0.10725	0.61286	7.90568
sky130_fd_sc_hs__or4bb_4	A->X (RR)	0.08528	0.46119	6.03657
	B->X (RR)	0.08746	0.45266	5.93197
	C_N->X (FR)	0.14998	0.61393	8.15994
	D_N->X (FR)	0.14805	0.61615	8.17618

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4bb_1	A->X (FF)	0.22419	0.63056	5.03077
	B->X (FF)	0.20794	0.63511	5.30649
	C_N->X (RF)	0.20974	0.47201	2.44132
	D_N->X (RF)	0.16238	0.42088	2.39294
sky130_fd_sc_hs__or4bb_2	A->X (FF)	0.27174	0.65030	4.91140
	B->X (FF)	0.26164	0.66183	5.06496
	C_N->X (RF)	0.25744	0.48039	2.02857
	D_N->X (RF)	0.22048	0.44498	2.03435
sky130_fd_sc_hs__or4bb_4	A->X (FF)	0.30121	0.64859	4.62466
	B->X (FF)	0.28795	0.64650	4.79111
	C_N->X (RF)	0.28624	0.48066	1.94228
	D_N->X (RF)	0.22712	0.42763	1.90920

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.01246	0.01284	0.04098
	A	0.00684	0.00723	0.03544
	B	0.01056	0.01168	0.03913
	B	0.00582	0.00697	0.03456
	C_N	0.00962	0.01380	0.08107
	C_N	0.01337	0.01756	0.08499
	D_N	0.00832	0.01266	0.08034
	D_N	0.01166	0.01601	0.08384
sky130_fd_sc_hs__or4bb_2	A	0.01563	0.01730	0.05828
	A	0.00996	0.01165	0.05324
	B	0.01399	0.01572	0.05235
	B	0.00904	0.01077	0.04783
	C_N	0.01239	0.01726	0.08641
	C_N	0.01602	0.02089	0.09085
	D_N	0.01192	0.01587	0.08082
	D_N	0.01526	0.01920	0.08487
sky130_fd_sc_hs__or4bb_4	A	0.03206	0.03393	0.09724
	A	0.02196	0.02387	0.08920
	B	0.02702	0.02931	0.08635
	B	0.01917	0.02158	0.07856
	C_N	0.02604	0.03084	0.09971
	C_N	0.02945	0.03454	0.10365
	D_N	0.02279	0.02757	0.09935
	D_N	0.02625	0.03104	0.10328

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.00824	0.00782	0.03520
	A	0.01389	0.01349	0.04076
	B	0.00798	0.00797	0.03958
	B	0.01271	0.01271	0.04253
	C_N	0.01556	0.01810	0.08410
	C_N	0.01179	0.01435	0.08019
	D_N	0.01366	0.01670	0.08392
	D_N	0.01033	0.01329	0.08038
sky130_fd_sc_hs__or4bb_2	A	0.01325	0.01128	0.04924
	A	0.01896	0.01699	0.05395
	B	0.01279	0.01117	0.04414
	B	0.01776	0.01613	0.04898
	C_N	0.02023	0.02118	0.08804
	C_N	0.01659	0.01733	0.08418
	D_N	0.01915	0.01989	0.08059
	D_N	0.01582	0.01637	0.07724
sky130_fd_sc_hs__or4bb_4	A	0.02839	0.02400	0.08167
	A	0.03865	0.03423	0.09055
	B	0.02861	0.02335	0.07791
	B	0.03646	0.03221	0.08348
	C_N	0.03725	0.03569	0.10053
	C_N	0.03383	0.03199	0.09647
	D_N	0.03583	0.03375	0.10276
	D_N	0.03237	0.03022	0.09866

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)**	0.00169	0.00164	0.00162
	(B * C_N * D_N * X)	-0.00195	-0.00207	-0.00207
	(B * !D_N * X)	0.00165	0.00163	0.00161
	(B * !D_N * X)	-0.00199	-0.00208	-0.00207
	(B * !C_N * D_N * X)	0.00161	0.00163	0.00161
	(B * !C_N * D_N * X)	-0.00203	-0.00208	-0.00207
	(!B * C_N * !D_N * X)	0.00175	0.00166	0.00163
	(!B * C_N * !D_N * X)	-0.00181	-0.00200	-0.00199
	(!B * !C_N * D_N * X)	0.00162	0.00162	0.00161
	(!B * !C_N * D_N * X)	-0.00188	-0.00202	-0.00202
	(!B * !C_N * !D_N * X)	0.00160	0.00161	0.00161
	(!B * !C_N * !D_N * X)	-0.00188	-0.00202	-0.00201
sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	0.00181	0.00174	0.00172
	(B * C_N * D_N * X)	-0.00195	-0.00206	-0.00205
	(B * !D_N * X)	0.00177	0.00174	0.00172
	(B * !D_N * X)	-0.00199	-0.00207	-0.00206
	(B * !C_N * D_N * X)	0.00154	0.00156	0.00154
	(B * !C_N * D_N * X)	-0.00220	-0.00225	-0.00223
	(!B * C_N * !D_N * X)	0.00186	0.00177	0.00174
	(!B * C_N * !D_N * X)	-0.00180	-0.00198	-0.00198
	(!B * !C_N * D_N * X)	0.00155	0.00155	0.00154
	(!B * !C_N * D_N * X)	-0.00204	-0.00219	-0.00218
	(!B * !C_N * !D_N * X)	0.00153	0.00154	0.00153
	(!B * !C_N * !D_N * X)	-0.00204	-0.00218	-0.00218

sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	0.00226	0.00213	0.00210
	(B * C_N * D_N * X)	-0.00397	-0.00425	-0.00424
	(B * !D_N * X)	0.00219	0.00212	0.00210
	(B * !D_N * X)	-0.00404	-0.00426	-0.00423
	(B * !C_N * D_N * X)	0.00210	0.00212	0.00209
	(B * !C_N * D_N * X)	-0.00411	-0.00426	-0.00424
	(!B * C_N * !D_N * X)	0.00240	0.00221	0.00215
	(!B * C_N * !D_N * X)	-0.00370	-0.00408	-0.00405
	(!B * !C_N * D_N * X)	0.00213	0.00212	0.00210
	(!B * !C_N * D_N * X)	-0.00382	-0.00412	-0.00411
	(!B * !C_N * !D_N * X)	0.00210	0.00211	0.00209
	(!B * !C_N * !D_N * X)	-0.00381	-0.00412	-0.00411

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)**	-0.00159	-0.00159	-0.00159
	(B * C_N * D_N * X)	0.00208	0.00209	0.00208
	(B * !D_N * X)	-0.00159	-0.00160	-0.00160
	(B * !D_N * X)	0.00207	0.00208	0.00208
	(B * !C_N * D_N * X)	-0.00159	-0.00160	-0.00160
	(B * !C_N * D_N * X)	0.00207	0.00208	0.00207
	(!B * C_N * !D_N * X)	-0.00165	-0.00166	-0.00163
	(!B * C_N * !D_N * X)	0.00198	0.00201	0.00199
	(!B * !C_N * D_N * X)	-0.00159	-0.00160	-0.00160
	(!B * !C_N * D_N * X)	0.00201	0.00202	0.00202
	(!B * !C_N * !D_N * X)	-0.00160	-0.00161	-0.00160
	(!B * !C_N * !D_N * X)	0.00201	0.00202	0.00201

sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	-0.00169	-0.00170	-0.00170
	(B * C_N * D_N * X)	0.00206	0.00208	0.00207
	(B * !D_N * X)	-0.00170	-0.00171	-0.00170
	(B * !D_N * X)	0.00205	0.00207	0.00206
	(B * !C_N * D_N * X)	-0.00152	-0.00153	-0.00152
	(B * !C_N * D_N * X)	0.00223	0.00225	0.00224
	(!B * C_N * !D_N * X)	-0.00175	-0.00176	-0.00174
	(!B * C_N * !D_N * X)	0.00197	0.00199	0.00198
	(!B * !C_N * D_N * X)	-0.00152	-0.00153	-0.00152
	(!B * !C_N * D_N * X)	0.00218	0.00219	0.00218
	(!B * !C_N * !D_N * X)	-0.00153	-0.00153	-0.00153
	(!B * !C_N * !D_N * X)	0.00217	0.00218	0.00218
sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	-0.00208	-0.00209	-0.00208
	(B * C_N * D_N * X)	0.00422	0.00427	0.00424
	(B * !D_N * X)	-0.00209	-0.00210	-0.00209
	(B * !D_N * X)	0.00422	0.00427	0.00423
	(B * !C_N * D_N * X)	-0.00208	-0.00209	-0.00208
	(B * !C_N * D_N * X)	0.00422	0.00427	0.00424
	(!B * C_N * !D_N * X)	-0.00220	-0.00221	-0.00215
	(!B * C_N * !D_N * X)	0.00403	0.00408	0.00405
	(!B * !C_N * D_N * X)	-0.00208	-0.00209	-0.00209
	(!B * !C_N * D_N * X)	0.00410	0.00412	0.00411
	(!B * !C_N * !D_N * X)	-0.00209	-0.00210	-0.00209
	(!B * !C_N * !D_N * X)	0.00409	0.00412	0.00411

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)**	0.00173	0.00175	0.00174
	(A * C_N * D_N * X)	-0.00119	-0.00120	-0.00119
	(A * C_N * !D_N * X)	0.00200	0.00210	0.00206
	(A * C_N * !D_N * X)	-0.00144	-0.00144	-0.00143
	(A * !C_N * D_N * X)	0.00153	0.00155	0.00144
	(A * !C_N * D_N * X)	-0.00181	-0.00181	-0.00180
	(A * !C_N * !D_N * X)	0.00142	0.00144	0.00140
	(A * !C_N * !D_N * X)	-0.00185	-0.00186	-0.00185
	(!A * C_N * !D_N * X)	0.00208	0.00179	0.00174
	(!A * C_N * !D_N * X)	-0.00179	-0.00209	-0.00209
	(!A * !C_N * D_N * X)	0.00168	0.00141	0.00140
	(!A * !C_N * D_N * X)	-0.00218	-0.00248	-0.00246
	(!A * !C_N * !D_N * X)	0.00139	0.00141	0.00139
	(!A * !C_N * !D_N * X)	-0.00246	-0.00248	-0.00246
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	0.00212	0.00215	0.00211
	(A * C_N * D_N * X)	-0.00107	-0.00109	-0.00107
	(A * C_N * !D_N * X)	0.00240	0.00247	0.00244
	(A * C_N * !D_N * X)	-0.00130	-0.00131	-0.00131
	(A * !C_N * D_N * X)	0.00200	0.00200	0.00193
	(A * !C_N * D_N * X)	-0.00155	-0.00157	-0.00156
	(A * !C_N * !D_N * X)	0.00191	0.00194	0.00189
	(A * !C_N * !D_N * X)	-0.00161	-0.00163	-0.00162
	(!A * C_N * !D_N * X)	0.00245	0.00218	0.00211
	(!A * C_N * !D_N * X)	-0.00166	-0.00196	-0.00196
	(!A * !C_N * D_N * X)	0.00217	0.00191	0.00188
	(!A * !C_N * D_N * X)	-0.00193	-0.00223	-0.00223
	(!A * !C_N * !D_N * X)	0.00188	0.00190	0.00188
	(!A * !C_N * !D_N * X)	-0.00221	-0.00224	-0.00223

sky130_fd_sc_hs__or4bb_4	**(A * C_N * D_N * X)**	0.00217	0.00218	0.00216
	(A * C_N * D_N * X)	-0.00233	-0.00233	-0.00230
	(A * C_N * !D_N * X)	0.00260	0.00274	0.00273
	(A * C_N * !D_N * X)	-0.00285	-0.00286	-0.00283
	(A * !C_N * D_N * X)	0.00238	0.00235	0.00215
	(A * !C_N * D_N * X)	-0.00298	-0.00299	-0.00297
	(A * !C_N * !D_N * X)	0.00206	0.00208	0.00206
	(A * !C_N * !D_N * X)	-0.00310	-0.00311	-0.00309
	(!A * C_N * !D_N * X)	0.00273	0.00225	0.00215
	(!A * C_N * !D_N * X)	-0.00359	-0.00415	-0.00410
	(!A * !C_N * D_N * X)	0.00253	0.00205	0.00203
	(!A * !C_N * D_N * X)	-0.00383	-0.00431	-0.00431
	(!A * !C_N * !D_N * X)	0.00206	0.00204	0.00203
	(!A * !C_N * !D_N * X)	-0.00428	-0.00431	-0.00429

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)**	-0.00166	-0.00167	-0.00166
	(A * C_N * D_N * X)	0.00127	0.00127	0.00127
	(A * C_N * !D_N * X)	-0.00193	-0.00194	-0.00193
	(A * C_N * !D_N * X)	0.00144	0.00144	0.00143
	(A * !C_N * D_N * X)	-0.00138	-0.00139	-0.00138
	(A * !C_N * D_N * X)	0.00181	0.00181	0.00180
	(A * !C_N * !D_N * X)	-0.00138	-0.00139	-0.00139
	(A * !C_N * !D_N * X)	0.00185	0.00186	0.00185
	(!A * C_N * !D_N * X)	-0.00177	-0.00178	-0.00174
	(!A * C_N * !D_N * X)	0.00207	0.00209	0.00209
	(!A * !C_N * D_N * X)	-0.00138	-0.00139	-0.00138
	(!A * !C_N * D_N * X)	0.00247	0.00248	0.00247
	(!A * !C_N * !D_N * X)	-0.00138	-0.00139	-0.00139
	(!A * !C_N * !D_N * X)	0.00246	0.00248	0.00246
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	-0.00205	-0.00204	-0.00204
	(A * C_N * D_N * X)	0.00114	0.00114	0.00115
	(A * C_N * !D_N * X)	-0.00230	-0.00231	-0.00230
	(A * C_N * !D_N * X)	0.00130	0.00131	0.00131
	(A * !C_N * D_N * X)	-0.00186	-0.00188	-0.00187
	(A * !C_N * D_N * X)	0.00155	0.00157	0.00156
	(A * !C_N * !D_N * X)	-0.00187	-0.00189	-0.00187
	(A * !C_N * !D_N * X)	0.00161	0.00163	0.00162
	(!A * C_N * !D_N * X)	-0.00216	-0.00216	-0.00211
	(!A * C_N * !D_N * X)	0.00196	0.00196	0.00196
	(!A * !C_N * D_N * X)	-0.00186	-0.00187	-0.00187
	(!A * !C_N * D_N * X)	0.00223	0.00225	0.00224
	(!A * !C_N * !D_N * X)	-0.00186	-0.00188	-0.00187
	(!A * !C_N * !D_N * X)	0.00221	0.00224	0.00223

sky130_fd_sc_hs__or4bb_4	(A * C_N * D_N * X)	-0.00200	-0.00201	-0.00201
	(A * C_N * D_N * X)	0.00247	0.00249	0.00247
	(A * C_N * !D_N * X)	-0.00254	-0.00255	-0.00254
	(A * C_N * !D_N * X)	0.00285	0.00286	0.00283
	(A * !C_N * D_N * X)	-0.00205	-0.00206	-0.00205
	(A * !C_N * D_N * X)	0.00298	0.00299	0.00297
	(A * !C_N * !D_N * X)	-0.00205	-0.00206	-0.00205
	(A * !C_N * !D_N * X)	0.00310	0.00311	0.00309
	(!A * C_N * !D_N * X)	-0.00225	-0.00225	-0.00215
	(!A * C_N * !D_N * X)	0.00408	0.00416	0.00410
	(!A * !C_N * D_N * X)	-0.00202	-0.00202	-0.00202
	(!A * !C_N * D_N * X)	0.00431	0.00431	0.00431
	(!A * !C_N * !D_N * X)	-0.00203	-0.00204	-0.00203
	(!A * !C_N * !D_N * X)	0.00429	0.00432	0.00429

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * X)	0.00577	0.00883	0.07383
	(B * X)	0.00119	0.00424	0.06925
	(A * !B * X) + (!A * !B * !D_N * X)	0.00584	0.00890	0.07387
	(A * !B * X) + (!A * !B * !D_N * X)	0.00119	0.00423	0.06923
sky130_fd_sc_hs__or4bb_2	(B * X)	0.00525	0.00858	0.07503
	(B * X)	0.00084	0.00414	0.07060
	(A * !B * X) + (!A * !B * !D_N * X)	0.00532	0.00864	0.07501
	(A * !B * X) + (!A * !B * !D_N * X)	0.00083	0.00413	0.07052
sky130_fd_sc_hs__or4bb_4	(B * X)	0.00638	0.00948	0.08010
	(B * X)	0.00167	0.00476	0.07539
	(A * !B * X) + (!A * !B * !D_N * X)	0.00655	0.00964	0.08019
	(A * !B * X) + (!A * !B * !D_N * X)	0.00169	0.00477	0.07536

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * X)	0.00140	0.00554	0.07061
	(B * X)	0.00596	0.01013	0.07519
	(A * !B * X) + (!A * !B * !D_N * X)	0.00141	0.00556	0.07062
	(A * !B * X) + (!A * !B * !D_N * X)	0.00598	0.01015	0.07520
sky130_fd_sc_hs__or4bb_2	(B * X)	0.00123	0.00559	0.07216
	(B * X)	0.00564	0.01001	0.07658
	(A * !B * X) + (!A * !B * !D_N * X)	0.00124	0.00559	0.07211
	(A * !B * X) + (!A * !B * !D_N * X)	0.00566	0.01002	0.07654
sky130_fd_sc_hs__or4bb_4	(B * X)	0.00231	0.00638	0.07672
	(B * X)	0.00702	0.01109	0.08142
	(A * !B * X) + (!A * !B * !D_N * X)	0.00234	0.00640	0.07673
	(A * !B * X) + (!A * !B * !D_N * X)	0.00705	0.01112	0.08144

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)	0.00503	0.00824	0.07332
	(B * C_N * X)	0.00088	0.00409	0.06919
	(A * !B * C_N * X)	0.00513	0.00835	0.07340
	(A * !B * C_N * X)	0.00094	0.00416	0.06923
	(!C_N * X)	0.00515	0.00837	0.07346
	(!C_N * X)	0.00103	0.00424	0.06933
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00512	0.00810	0.07345
	(B * C_N * X)	0.00100	0.00397	0.06933
	(A * !B * C_N * X)	0.00522	0.00820	0.07352
	(A * !B * C_N * X)	0.00105	0.00402	0.06937
	(!C_N * X)	0.00526	0.00824	0.07361
	(!C_N * X)	0.00116	0.00412	0.06950
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00726	0.01025	0.08114
	(B * C_N * X)	0.00256	0.00552	0.07644
	(A * !B * C_N * X)	0.00752	0.01050	0.08133
	(A * !B * C_N * X)	0.00271	0.00568	0.07655
	(!C_N * X)	0.00771	0.01070	0.08162
	(!C_N * X)	0.00303	0.00600	0.07694

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)	0.00139	0.00563	0.07084
	(B * C_N * X)	0.00551	0.00977	0.07497
	(A * !B * C_N * X)	0.00139	0.00563	0.07084
	(A * !B * C_N * X)	0.00551	0.00977	0.07497
	(!C_N * X)	0.00120	0.00531	0.07067
	(!C_N * X)	0.00532	0.00945	0.07480
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00169	0.00590	0.07125
	(B * C_N * X)	0.00578	0.01000	0.07535
	(A * !B * C_N * X)	0.00169	0.00590	0.07125
	(A * !B * C_N * X)	0.00578	0.01001	0.07536
	(!C_N * X)	0.00149	0.00570	0.07106
	(!C_N * X)	0.00559	0.00981	0.07516
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00278	0.00673	0.07747
	(B * C_N * X)	0.00746	0.01142	0.08216
	(A * !B * C_N * X)	0.00279	0.00673	0.07747
	(A * !B * C_N * X)	0.00746	0.01142	0.08216
	(!C_N * X)	0.00225	0.00620	0.07694
	(!C_N * X)	0.00693	0.01089	0.08162

SKY130_FD_SC_HS__OR4Bx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00259	0.00247	0.00256	0.00241	1.23934
sky130_fd_sc_hs__or4b_2	0.00268	0.00258	0.00259	0.00230	2.17378
sky130_fd_sc_hs__or4b_4	0.00396	0.00448	0.00451	0.00252	4.83539

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4b_1	0.00000	0.35229	0.71818
sky130_fd_sc_hs__or4b_2	0.00000	0.36831	0.84722
sky130_fd_sc_hs__or4b_4	0.00000	0.26574	0.69811

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)	0.06494	0.54724	5.83916
	B->X (RR)	0.06499	0.53817	5.73876
	C->X (RR)	0.06245	0.52331	5.63603
	D_N->X (FR)	0.10469	0.69338	8.05005
sky130_fd_sc_hs__or4b_2	A->X (RR)	0.06131	0.45289	5.56360
	B->X (RR)	0.06171	0.44628	5.47456
	C->X (RR)	0.05956	0.43403	5.38804
	D_N->X (FR)	0.11194	0.62471	8.02641
sky130_fd_sc_hs__or4b_4	A->X (RR)	0.08699	0.46052	6.36302
	B->X (RR)	0.08681	0.44866	6.25724
	C->X (RR)	0.07947	0.42463	6.12840
	D_N->X (FR)	0.13100	0.58320	8.38041

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4b_1	A->X (FF)	0.23413	0.64232	4.96075
	B->X (FF)	0.21762	0.64709	5.23134
	C->X (FF)	0.19394	0.65409	5.33293
	D_N->X (RF)	0.16743	0.43074	2.33507
sky130_fd_sc_hs__or4b_2	A->X (FF)	0.28556	0.66882	4.88852
	B->X (FF)	0.26951	0.67569	5.15844
	C->X (FF)	0.24088	0.68171	5.26978
	D_N->X (RF)	0.22538	0.45949	2.11072
sky130_fd_sc_hs__or4b_4	A->X (FF)	0.28894	0.65407	5.12913
	B->X (FF)	0.27632	0.65365	5.27858
	C->X (FF)	0.23672	0.64430	5.39307
	D_N->X (RF)	0.21137	0.42148	2.42392

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.01427	0.01459	0.04084
	A	0.00703	0.00736	0.03377
	B	0.01211	0.01334	0.03879
	B	0.00617	0.00740	0.03303
	C	0.01020	0.01141	0.03560
	C	0.00506	0.00628	0.03074
	D_N	0.00893	0.01332	0.08156
	D_N	0.01201	0.01641	0.08487
sky130_fd_sc_hs__or4b_2	A	0.01778	0.01859	0.04456
	A	0.01044	0.01127	0.03786
	B	0.01564	0.01719	0.04217
	B	0.00956	0.01113	0.03672
	C	0.01361	0.01534	0.03927
	C	0.00834	0.01008	0.03448
	D_N	0.01254	0.01708	0.08078
	D_N	0.01581	0.02034	0.08455
sky130_fd_sc_hs__or4b_4	A	0.03385	0.03563	0.09728
	A	0.02122	0.02314	0.08594
	B	0.03002	0.03221	0.08891
	B	0.01901	0.02128	0.07964
	C	0.02475	0.02757	0.08139
	C	0.01574	0.01868	0.07441
	D_N	0.02216	0.02741	0.09891
	D_N	0.02519	0.03055	0.10961

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.00703	0.00642	0.03395
	A	0.01434	0.01376	0.04052
	B	0.00704	0.00689	0.03658
	B	0.01302	0.01288	0.04198
	C	0.00693	0.00726	0.03503
	C	0.01209	0.01242	0.03967
	D_N	0.01351	0.01669	0.08530
	D_N	0.01042	0.01346	0.08189
sky130_fd_sc_hs__or4b_2	A	0.01174	0.00909	0.03885
	A	0.01915	0.01651	0.04473
	B	0.01173	0.00947	0.04119
	B	0.01783	0.01567	0.04552
	C	0.01146	0.00985	0.03868
	C	0.01673	0.01519	0.04293
	D_N	0.01936	0.01965	0.08046
	D_N	0.01608	0.01626	0.07674
sky130_fd_sc_hs__or4b_4	A	0.02619	0.02148	0.08696
	A	0.03902	0.03430	0.08945
	B	0.02588	0.02141	0.07800
	B	0.03698	0.03249	0.08367
	C	0.02528	0.02147	0.07675
	C	0.03429	0.03049	0.07959
	D_N	0.03473	0.03304	0.10520
	D_N	0.03171	0.02997	0.10068

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)**	0.00168	0.00169	0.00168
	(B * C * D_N * X)	-0.00199	-0.00206	-0.00205
	(B * !D_N * X)	0.00167	0.00169	0.00167
	(B * !D_N * X)	-0.00199	-0.00205	-0.00204
	(B * !C * D_N * X)	0.00172	0.00170	0.00168
	(B * !C * D_N * X)	-0.00193	-0.00205	-0.00205
	(!B * C * D_N * X)	0.00169	0.00169	0.00168
	(!B * C * D_N * X)	-0.00182	-0.00199	-0.00199
	(!B * C * !D_N * X)	0.00167	0.00168	0.00167
	(!B * C * !D_N * X)	-0.00182	-0.00199	-0.00198
	(!B * !C * !D_N * X)	0.00170	0.00168	0.00167
	(!B * !C * !D_N * X)	-0.00179	-0.00197	-0.00196
sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	0.00184	0.00186	0.00183
	(B * C * D_N * X)	-0.00201	-0.00208	-0.00207
	(B * !D_N * X)	0.00177	0.00179	0.00177
	(B * !D_N * X)	-0.00209	-0.00214	-0.00213
	(B * !C * D_N * X)	0.00187	0.00186	0.00183
	(B * !C * D_N * X)	-0.00196	-0.00208	-0.00207
	(!B * C * D_N * X)	0.00185	0.00185	0.00183
	(!B * C * D_N * X)	-0.00185	-0.00202	-0.00201
	(!B * C * !D_N * X)	0.00177	0.00178	0.00177
	(!B * C * !D_N * X)	-0.00191	-0.00207	-0.00207
	(!B * !C * !D_N * X)	0.00179	0.00178	0.00177
	(!B * !C * !D_N * X)	-0.00187	-0.00206	-0.00205

sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	0.00184	0.00184	0.00182
	(B * C * D_N * X)	-0.00406	-0.00422	-0.00419
	(B * !D_N * X)	0.00182	0.00183	0.00181
	(B * !D_N * X)	-0.00409	-0.00422	-0.00420
	(B * !C * D_N * X)	0.00192	0.00184	0.00182
	(B * !C * D_N * X)	-0.00392	-0.00421	-0.00419
	(!B * C * D_N * X)	0.00187	0.00184	0.00182
	(!B * C * D_N * X)	-0.00370	-0.00409	-0.00406
	(!B * C * !D_N * X)	0.00182	0.00183	0.00181
	(!B * C * !D_N * X)	-0.00373	-0.00409	-0.00406
	(!B * !C * !D_N * X)	0.00190	0.00184	0.00182
	(!B * !C * !D_N * X)	-0.00364	-0.00403	-0.00401

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)**	-0.00166	-0.00167	-0.00166
	(B * C * D_N * X)	0.00205	0.00206	0.00205
	(B * !D_N * X)	-0.00167	-0.00167	-0.00167
	(B * !D_N * X)	0.00204	0.00205	0.00204
	(B * !C * D_N * X)	-0.00166	-0.00167	-0.00166
	(B * !C * D_N * X)	0.00205	0.00206	0.00205
	(!B * C * D_N * X)	-0.00166	-0.00166	-0.00166
	(!B * C * D_N * X)	0.00198	0.00199	0.00199
	(!B * C * !D_N * X)	-0.00166	-0.00167	-0.00167
	(!B * C * !D_N * X)	0.00197	0.00199	0.00198
	(!B * !C * !D_N * X)	-0.00166	-0.00167	-0.00166
	(!B * !C * !D_N * X)	0.00195	0.00197	0.00196

sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	-0.00182	-0.00183	-0.00182
	(B * C * D_N * X)	0.00206	0.00209	0.00207
	(B * !D_N * X)	-0.00176	-0.00177	-0.00177
	(B * !D_N * X)	0.00212	0.00214	0.00213
	(B * !C * D_N * X)	-0.00182	-0.00182	-0.00182
	(B * !C * D_N * X)	0.00207	0.00208	0.00208
	(!B * C * D_N * X)	-0.00182	-0.00182	-0.00182
	(!B * C * D_N * X)	0.00200	0.00202	0.00201
	(!B * C * !D_N * X)	-0.00176	-0.00177	-0.00177
	(!B * C * !D_N * X)	0.00206	0.00207	0.00207
	(!B * !C * !D_N * X)	-0.00176	-0.00177	-0.00176
	(!B * !C * !D_N * X)	0.00204	0.00206	0.00205
sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	-0.00181	-0.00182	-0.00181
	(B * C * D_N * X)	0.00419	0.00422	0.00419
	(B * !D_N * X)	-0.00181	-0.00181	-0.00181
	(B * !D_N * X)	0.00420	0.00422	0.00420
	(B * !C * D_N * X)	-0.00181	-0.00182	-0.00181
	(B * !C * D_N * X)	0.00419	0.00423	0.00419
	(!B * C * D_N * X)	-0.00181	-0.00182	-0.00182
	(!B * C * D_N * X)	0.00404	0.00409	0.00406
	(!B * C * !D_N * X)	-0.00181	-0.00182	-0.00181
	(!B * C * !D_N * X)	0.00405	0.00409	0.00406
	(!B * !C * !D_N * X)	-0.00180	-0.00181	-0.00180
	(!B * !C * !D_N * X)	0.00401	0.00403	0.00401

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)**	0.00162	0.00162	0.00152
	(A * C * D_N * X)	-0.00131	-0.00132	-0.00131
	(A * C * !D_N * X)	0.00151	0.00152	0.00149
	(A * C * !D_N * X)	-0.00136	-0.00136	-0.00136
	(A * !C * D_N * X)	0.00147	0.00149	0.00147
	(A * !C * D_N * X)	-0.00105	-0.00107	-0.00106
	(A * !C * !D_N * X)	0.00148	0.00154	0.00148
	(A * !C * !D_N * X)	-0.00129	-0.00130	-0.00129
	(!A * C * D_N * X)	0.00176	0.00148	0.00146
	(!A * C * D_N * X)	-0.00170	-0.00200	-0.00200
	(!A * C * !D_N * X)	0.00147	0.00148	0.00146
	(!A * C * !D_N * X)	-0.00197	-0.00201	-0.00199
	(!A * !C * !D_N * X)	0.00165	0.00148	0.00146
	(!A * !C * !D_N * X)	-0.00162	-0.00194	-0.00194
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	0.00179	0.00180	0.00171
	(A * C * D_N * X)	-0.00133	-0.00133	-0.00132
	(A * C * !D_N * X)	0.00162	0.00163	0.00160
	(A * C * !D_N * X)	-0.00143	-0.00144	-0.00143
	(A * !C * D_N * X)	0.00165	0.00167	0.00165
	(A * !C * D_N * X)	-0.00108	-0.00109	-0.00108
	(A * !C * !D_N * X)	0.00160	0.00166	0.00161
	(A * !C * !D_N * X)	-0.00137	-0.00138	-0.00137
	(!A * C * D_N * X)	0.00193	0.00167	0.00165
	(!A * C * D_N * X)	-0.00172	-0.00203	-0.00202
	(!A * C * !D_N * X)	0.00159	0.00161	0.00159
	(!A * C * !D_N * X)	-0.00203	-0.00208	-0.00206
	(!A * !C * !D_N * X)	0.00178	0.00162	0.00160
	(!A * !C * !D_N * X)	-0.00173	-0.00202	-0.00201

sky130_fd_sc_hs__or4b_4	**(A * C * D_N * X)**	0.00259	0.00264	0.00244
	(A * C * D_N * X)	-0.00279	-0.00282	-0.00279
	(A * C * !D_N * X)	0.00228	0.00229	0.00226
	(A * C * !D_N * X)	-0.00298	-0.00300	-0.00299
	(A * !C * D_N * X)	0.00228	0.00230	0.00228
	(A * !C * D_N * X)	-0.00230	-0.00233	-0.00231
	(A * !C * !D_N * X)	0.00227	0.00235	0.00227
	(A * !C * !D_N * X)	-0.00282	-0.00282	-0.00281
	(!A * C * D_N * X)	0.00286	0.00230	0.00226
	(!A * C * D_N * X)	-0.00357	-0.00424	-0.00421
	(!A * C * !D_N * X)	0.00227	0.00227	0.00225
	(!A * C * !D_N * X)	-0.00413	-0.00425	-0.00421
	(!A * !C * !D_N * X)	0.00260	0.00229	0.00225
	(!A * !C * !D_N * X)	-0.00349	-0.00411	-0.00410

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)**	-0.00146	-0.00147	-0.00146
	(A * C * D_N * X)	0.00131	0.00132	0.00131
	(A * C * !D_N * X)	-0.00147	-0.00147	-0.00147
	(A * C * !D_N * X)	0.00136	0.00136	0.00136
	(A * !C * D_N * X)	-0.00141	-0.00142	-0.00140
	(A * !C * D_N * X)	0.00112	0.00113	0.00113
	(A * !C * !D_N * X)	-0.00147	-0.00147	-0.00146
	(A * !C * !D_N * X)	0.00129	0.00130	0.00129
	(!A * C * D_N * X)	-0.00145	-0.00146	-0.00145
	(!A * C * D_N * X)	0.00199	0.00201	0.00200
	(!A * C * !D_N * X)	-0.00145	-0.00146	-0.00146
	(!A * C * !D_N * X)	0.00198	0.00201	0.00199
	(!A * !C * !D_N * X)	-0.00145	-0.00146	-0.00145
	(!A * !C * !D_N * X)	0.00193	0.00194	0.00194
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	-0.00165	-0.00165	-0.00164
	(A * C * D_N * X)	0.00133	0.00133	0.00132
	(A * C * !D_N * X)	-0.00159	-0.00159	-0.00159
	(A * C * !D_N * X)	0.00143	0.00144	0.00143
	(A * !C * D_N * X)	-0.00160	-0.00160	-0.00159
	(A * !C * D_N * X)	0.00114	0.00114	0.00115
	(A * !C * !D_N * X)	-0.00159	-0.00160	-0.00159
	(A * !C * !D_N * X)	0.00137	0.00138	0.00137
	(!A * C * D_N * X)	-0.00163	-0.00164	-0.00163
	(!A * C * D_N * X)	0.00202	0.00203	0.00203
	(!A * C * !D_N * X)	-0.00159	-0.00160	-0.00159
	(!A * C * !D_N * X)	0.00206	0.00208	0.00206
	(!A * !C * !D_N * X)	-0.00158	-0.00159	-0.00158
	(!A * !C * !D_N * X)	0.00200	0.00202	0.00201

sky130_fd_sc_hs__or4b_4	(A * C * D_N * X)	-0.00230	-0.00231	-0.00230
	(A * C * D_N * X)	0.00279	0.00282	0.00279
	(A * C * !D_N * X)	-0.00225	-0.00226	-0.00225
	(A * C * !D_N * X)	0.00298	0.00300	0.00299
	(A * !C * D_N * X)	-0.00218	-0.00219	-0.00216
	(A * !C * D_N * X)	0.00241	0.00242	0.00243
	(A * !C * !D_N * X)	-0.00225	-0.00225	-0.00224
	(A * !C * !D_N * X)	0.00282	0.00282	0.00281
	(!A * C * D_N * X)	-0.00225	-0.00227	-0.00226
	(!A * C * D_N * X)	0.00417	0.00424	0.00421
	(!A * C * !D_N * X)	-0.00224	-0.00226	-0.00224
	(!A * C * !D_N * X)	0.00421	0.00425	0.00421
	(!A * !C * !D_N * X)	-0.00223	-0.00224	-0.00222
	(!A * !C * !D_N * X)	0.00409	0.00411	0.00410

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)	0.00175	0.00177	0.00174
	(B * D_N * X)	-0.00104	-0.00105	-0.00105
	(B * !D_N * X)	0.00175	0.00176	0.00167
	(B * !D_N * X)	-0.00141	-0.00141	-0.00141
	(A * !B * D_N * X)	0.00176	0.00178	0.00175
	(A * !B * D_N * X)	-0.00103	-0.00104	-0.00104
	(A * !B * !D_N * X)	0.00187	0.00168	0.00162
	(A * !B * !D_N * X)	-0.00139	-0.00146	-0.00146
	(!A * !B * !D_N * X)	0.00206	0.00164	0.00160
	(!A * !B * !D_N * X)	-0.00165	-0.00211	-0.00213

sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	0.00193	0.00195	0.00193
	(B * D_N * X)	-0.00108	-0.00109	-0.00108
	(B * !D_N * X)	0.00172	0.00174	0.00164
	(B * !D_N * X)	-0.00167	-0.00167	-0.00166
	(A * !B * D_N * X)	0.00194	0.00196	0.00193
	(A * !B * D_N * X)	-0.00106	-0.00107	-0.00107
	(A * !B * !D_N * X)	0.00182	0.00169	0.00159
	(A * !B * !D_N * X)	-0.00163	-0.00171	-0.00170
	(!A * !B * !D_N * X)	0.00206	0.00163	0.00158
	(!A * !B * !D_N * X)	-0.00190	-0.00234	-0.00236
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	0.00282	0.00285	0.00282
	(B * D_N * X)	-0.00222	-0.00224	-0.00223
	(B * !D_N * X)	0.00261	0.00256	0.00238
	(B * !D_N * X)	-0.00332	-0.00332	-0.00331
	(A * !B * D_N * X)	0.00285	0.00287	0.00283
	(A * !B * D_N * X)	-0.00219	-0.00222	-0.00222
	(A * !B * !D_N * X)	0.00276	0.00246	0.00231
	(A * !B * !D_N * X)	-0.00319	-0.00334	-0.00333
	(!A * !B * !D_N * X)	0.00319	0.00238	0.00229
	(!A * !B * !D_N * X)	-0.00370	-0.00459	-0.00465

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)**	-0.00172	-0.00173	-0.00172
	(B * D_N * X)	0.00108	0.00108	0.00109
	(B * !D_N * X)	-0.00160	-0.00160	-0.00160
	(B * !D_N * X)	0.00141	0.00141	0.00141
	(A * !B * D_N * X)	-0.00167	-0.00168	-0.00171
	(A * !B * D_N * X)	0.00109	0.00109	0.00107
	(A * !B * !D_N * X)	-0.00160	-0.00160	-0.00160
	(A * !B * !D_N * X)	0.00146	0.00146	0.00146
	(!A * !B * !D_N * X)	-0.00158	-0.00159	-0.00158
	(!A * !B * !D_N * X)	0.00213	0.00215	0.00215
sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	-0.00190	-0.00191	-0.00190
	(B * D_N * X)	0.00112	0.00112	0.00112
	(B * !D_N * X)	-0.00158	-0.00158	-0.00157
	(B * !D_N * X)	0.00167	0.00167	0.00166
	(A * !B * D_N * X)	-0.00185	-0.00187	-0.00189
	(A * !B * D_N * X)	0.00111	0.00111	0.00110
	(A * !B * !D_N * X)	-0.00158	-0.00158	-0.00157
	(A * !B * !D_N * X)	0.00170	0.00171	0.00170
	(!A * !B * !D_N * X)	-0.00156	-0.00157	-0.00156
	(!A * !B * !D_N * X)	0.00236	0.00238	0.00238
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	-0.00277	-0.00278	-0.00278
	(B * D_N * X)	0.00228	0.00229	0.00230
	(B * !D_N * X)	-0.00229	-0.00230	-0.00229
	(B * !D_N * X)	0.00332	0.00332	0.00331
	(A * !B * D_N * X)	-0.00263	-0.00266	-0.00276
	(A * !B * D_N * X)	0.00231	0.00232	0.00227
	(A * !B * !D_N * X)	-0.00229	-0.00229	-0.00228
	(A * !B * !D_N * X)	0.00334	0.00334	0.00333
	(!A * !B * !D_N * X)	-0.00226	-0.00226	-0.00224
	(!A * !B * !D_N * X)	0.00465	0.00468	0.00469

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00518	0.00842	0.07493
	(C * X)	0.00076	0.00397	0.07049
	(B * !C * X)	0.00525	0.00850	0.07497
	(B * !C * X)	0.00078	0.00400	0.07050
	(A * !B * !C * X)	0.00535	0.00860	0.07504
	(A * !B * !C * X)	0.00084	0.00406	0.07053
sky130_fd_sc_hs__or4b_2	(C * X)	0.00582	0.00892	0.07392
	(C * X)	0.00127	0.00436	0.06937
	(B * !C * X)	0.00590	0.00879	0.07398
	(B * !C * X)	0.00130	0.00417	0.06938
	(A * !B * !C * X)	0.00600	0.00888	0.07405
	(A * !B * !C * X)	0.00135	0.00422	0.06941
sky130_fd_sc_hs__or4b_4	(C * X)	0.00689	0.01004	0.08212
	(C * X)	0.00191	0.00503	0.07714
	(B * !C * X)	0.00712	0.01025	0.08228
	(B * !C * X)	0.00200	0.00511	0.07718
	(A * !B * !C * X)	0.00732	0.01046	0.08243
	(A * !B * !C * X)	0.00210	0.00521	0.07725

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00116	0.00555	0.07207
	(C * X)	0.00560	0.01000	0.07650
	(B * !C * X)	0.00116	0.00555	0.07206
	(B * !C * X)	0.00560	0.01001	0.07650
	(A * !B * !C * X)	0.00116	0.00537	0.07205
	(A * !B * !C * X)	0.00561	0.00980	0.07649
sky130_fd_sc_hs__or4b_2	(C * X)	0.00142	0.00558	0.07080
	(C * X)	0.00595	0.01013	0.07534
	(B * !C * X)	0.00142	0.00557	0.07080
	(B * !C * X)	0.00597	0.01014	0.07535
	(A * !B * !C * X)	0.00141	0.00558	0.07080
	(A * !B * !C * X)	0.00597	0.01014	0.07535
sky130_fd_sc_hs__or4b_4	(C * X)	0.00217	0.00627	0.07824
	(C * X)	0.00714	0.01125	0.08320
	(B * !C * X)	0.00217	0.00627	0.07824
	(B * !C * X)	0.00716	0.01127	0.08322
	(A * !B * !C * X)	0.00217	0.00627	0.07824
	(A * !B * !C * X)	0.00717	0.01128	0.08323

SKY130_FD_SC_HS__OR4x

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00257	0.00245	0.00250	0.00243	1.24239
sky130_fd_sc_hs__or4_2	0.00268	0.00264	0.00275	0.00273	2.49000
sky130_fd_sc_hs__or4_4	0.00391	0.00451	0.00457	0.00430	4.79673

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4_1	0.00000	0.05108	0.26733
sky130_fd_sc_hs__or4_2	0.00000	0.06710	0.27581
sky130_fd_sc_hs__or4_4	0.00000	0.13045	0.55162

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)	0.06258	0.54562	5.88941
	B->X (RR)	0.06325	0.53743	5.78943
	C->X (RR)	0.06073	0.52141	5.68708
	D->X (RR)	0.05477	0.50019	5.64611
sky130_fd_sc_hs__or4_2	A->X (RR)	0.05948	0.43907	5.71946
	B->X (RR)	0.05973	0.43134	5.62194
	C->X (RR)	0.05799	0.41950	5.53140
	D->X (RR)	0.05360	0.40412	5.49622
sky130_fd_sc_hs__or4_4	A->X (RR)	0.07931	0.44275	6.28034
	B->X (RR)	0.08225	0.43721	6.20301
	C->X (RR)	0.07529	0.41095	6.05509
	D->X (RR)	0.06820	0.39082	6.02759

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4_1	A->X (FF)	0.22567	0.62892	4.91760
	B->X (FF)	0.20985	0.63305	5.19038
	C->X (FF)	0.18250	0.63686	5.28596
	D->X (FF)	0.13920	0.61684	5.26513
sky130_fd_sc_hs__or4_2	A->X (FF)	0.27462	0.66610	5.21344
	B->X (FF)	0.25869	0.67429	5.49471
	C->X (FF)	0.23489	0.68492	5.61042
	D->X (FF)	0.19385	0.66905	5.60192
sky130_fd_sc_hs__or4_4	A->X (FF)	0.27668	0.63680	5.09428
	B->X (FF)	0.26593	0.63653	5.14338
	C->X (FF)	0.22723	0.62892	5.35128
	D->X (FF)	0.17416	0.60232	5.31158

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.01582	0.01617	0.04276
	A	0.00712	0.00748	0.03408
	B	0.01366	0.01486	0.04057
	B	0.00618	0.00741	0.03322
	C	0.01138	0.01259	0.03705
	C	0.00496	0.00617	0.03081
	D	0.00923	0.01082	0.04167
	D	0.00379	0.00540	0.03649
sky130_fd_sc_hs__or4_2	A	0.01919	0.02010	0.05244
	A	0.01010	0.01102	0.04376
	B	0.01693	0.01855	0.04950
	B	0.00901	0.01069	0.04222
	C	0.01486	0.01662	0.04562
	C	0.00800	0.00980	0.03942
	D	0.01271	0.01482	0.05073
	D	0.00682	0.00902	0.04552
sky130_fd_sc_hs__or4_4	A	0.03693	0.03887	0.10144
	A	0.02160	0.02362	0.08777
	B	0.03309	0.03460	0.08810
	B	0.01934	0.02092	0.07626
	C	0.02756	0.03033	0.08443
	C	0.01616	0.01913	0.07517
	D	0.02256	0.02634	0.09481
	D	0.01337	0.01717	0.08779

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.00483	0.00428	0.03222
	A	0.01361	0.01310	0.04003
	B	0.00486	0.00474	0.03422
	B	0.01238	0.01226	0.04157
	C	0.00486	0.00533	0.03372
	C	0.01131	0.01179	0.03929
	D	0.00474	0.00648	0.04242
	D	0.01015	0.01191	0.04785
sky130_fd_sc_hs__or4_2	A	0.01024	0.00793	0.03929
	A	0.01943	0.01717	0.04738
	B	0.01031	0.00836	0.04364
	B	0.01825	0.01637	0.04825
	C	0.01022	0.00890	0.04223
	C	0.01711	0.01585	0.04535
	D	0.01011	0.01010	0.05221
	D	0.01600	0.01603	0.05447
sky130_fd_sc_hs__or4_4	A	0.02111	0.01689	0.07450
	A	0.03669	0.03255	0.08866
	B	0.02098	0.01678	0.06331
	B	0.03490	0.03078	0.07606
	C	0.02101	0.01767	0.07169
	C	0.03245	0.02920	0.07888
	D	0.02047	0.02007	0.09022
	D	0.02967	0.02927	0.09491

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__or4_1	**(B * D * X)**	0.00165	0.00166	0.00164
	(B * D * X)	-0.00202	-0.00207	-0.00206
	(B * C * !D * X)	0.00165	0.00166	0.00164
	(B * C * !D * X)	-0.00202	-0.00207	-0.00206
	(B * !C * !D * X)	0.00166	0.00166	0.00165
	(B * !C * !D * X)	-0.00196	-0.00207	-0.00207
	(!B * C * D * X)	0.00164	0.00165	0.00164
	(!B * C * D * X)	-0.00186	-0.00201	-0.00200
	(!B * C * !D * X)	0.00164	0.00165	0.00165
	(!B * C * !D * X)	-0.00185	-0.00201	-0.00200
	(!B * !C * D * X)	0.00167	0.00166	0.00165
	(!B * !C * D * X)	-0.00180	-0.00199	-0.00198
sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00180	0.00183	0.00181
	(B * D * X)	-0.00205	-0.00210	-0.00210
	(B * C * !D * X)	0.00180	0.00182	0.00180
	(B * C * !D * X)	-0.00205	-0.00211	-0.00210
	(B * !C * !D * X)	0.00182	0.00183	0.00181
	(B * !C * !D * X)	-0.00199	-0.00210	-0.00210
	(!B * C * D * X)	0.00180	0.00181	0.00180
	(!B * C * D * X)	-0.00189	-0.00204	-0.00203
	(!B * C * !D * X)	0.00180	0.00181	0.00181
	(!B * C * !D * X)	-0.00189	-0.00205	-0.00203
	(!B * !C * D * X)	0.00183	0.00182	0.00181
	(!B * !C * D * X)	-0.00184	-0.00202	-0.00201

sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00183	0.00185	0.00182
	(B * D * X)	-0.00404	-0.00417	-0.00415
	(B * C * !D * X)	0.00184	0.00185	0.00183
	(B * C * !D * X)	-0.00403	-0.00416	-0.00415
	(B * !C * !D * X)	0.00186	0.00185	0.00183
	(B * !C * !D * X)	-0.00390	-0.00417	-0.00415
	(!B * C * D * X)	0.00184	0.00185	0.00182
	(!B * C * D * X)	-0.00368	-0.00405	-0.00401
	(!B * C * !D * X)	0.00184	0.00185	0.00183
	(!B * C * !D * X)	-0.00368	-0.00405	-0.00401
	(!B * !C * D * X)	0.00191	0.00185	0.00183
	(!B * !C * D * X)	-0.00356	-0.00397	-0.00395

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00164	-0.00165	-0.00164
	(B * D * X)	0.00205	0.00207	0.00206
	(B * C * !D * X)	-0.00164	-0.00165	-0.00164
	(B * C * !D * X)	0.00205	0.00207	0.00206
	(B * !C * !D * X)	-0.00164	-0.00164	-0.00164
	(B * !C * !D * X)	0.00205	0.00207	0.00207
	(!B * C * D * X)	-0.00164	-0.00165	-0.00164
	(!B * C * D * X)	0.00199	0.00201	0.00200
	(!B * C * !D * X)	-0.00164	-0.00164	-0.00164
	(!B * C * !D * X)	0.00200	0.00201	0.00200
	(!B * !C * D * X)	-0.00163	-0.00165	-0.00164
	(!B * !C * D * X)	0.00197	0.00199	0.00198

sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00180	-0.00180	-0.00180
	(B * D * X)	0.00210	0.00210	0.00210
	(B * C * !D * X)	-0.00180	-0.00181	-0.00180
	(B * C * !D * X)	0.00210	0.00211	0.00210
	(B * !C * !D * X)	-0.00180	-0.00180	-0.00180
	(B * !C * !D * X)	0.00210	0.00210	0.00210
	(!B * C * D * X)	-0.00180	-0.00180	-0.00180
	(!B * C * D * X)	0.00203	0.00204	0.00203
	(!B * C * !D * X)	-0.00180	-0.00181	-0.00180
	(!B * C * !D * X)	0.00203	0.00205	0.00203
	(!B * !C * D * X)	-0.00179	-0.00180	-0.00180
	(!B * !C * D * X)	0.00200	0.00202	0.00201
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00182	-0.00182	-0.00182
	(B * D * X)	0.00415	0.00417	0.00415
	(B * C * !D * X)	-0.00182	-0.00182	-0.00182
	(B * C * !D * X)	0.00415	0.00416	0.00415
	(B * !C * !D * X)	-0.00182	-0.00183	-0.00182
	(B * !C * !D * X)	0.00414	0.00417	0.00415
	(!B * C * D * X)	-0.00182	-0.00183	-0.00182
	(!B * C * D * X)	0.00400	0.00405	0.00401
	(!B * C * !D * X)	-0.00182	-0.00183	-0.00182
	(!B * C * !D * X)	0.00400	0.00405	0.00401
	(!B * !C * D * X)	-0.00182	-0.00182	-0.00181
	(!B * !C * D * X)	0.00395	0.00397	0.00395

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)**	0.00149	0.00150	0.00148
	(A * C * D * X)	-0.00143	-0.00144	-0.00143
	(A * C * !D * X)	0.00160	0.00161	0.00151
	(A * C * !D * X)	-0.00137	-0.00138	-0.00137
	(A * !C * D * X)	0.00147	0.00152	0.00148
	(A * !C * D * X)	-0.00134	-0.00134	-0.00133
	(A * !C * !D * X)	0.00145	0.00147	0.00146
	(A * !C * !D * X)	-0.00110	-0.00112	-0.00111
	(!A * C * D * X)	0.00146	0.00147	0.00146
	(!A * C * D * X)	-0.00198	-0.00204	-0.00204
	(!A * C * !D * X)	0.00172	0.00148	0.00146
	(!A * C * !D * X)	-0.00174	-0.00204	-0.00204
	(!A * !C * D * X)	0.00165	0.00148	0.00146
	(!A * !C * D * X)	-0.00167	-0.00198	-0.00197
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	0.00165	0.00166	0.00163
	(A * C * D * X)	-0.00150	-0.00151	-0.00150
	(A * C * !D * X)	0.00176	0.00175	0.00165
	(A * C * !D * X)	-0.00146	-0.00146	-0.00145
	(A * !C * D * X)	0.00162	0.00168	0.00163
	(A * !C * D * X)	-0.00142	-0.00142	-0.00141
	(A * !C * !D * X)	0.00161	0.00163	0.00161
	(A * !C * !D * X)	-0.00120	-0.00121	-0.00120
	(!A * C * D * X)	0.00161	0.00163	0.00161
	(!A * C * D * X)	-0.00208	-0.00215	-0.00214
	(!A * C * !D * X)	0.00188	0.00163	0.00161
	(!A * C * !D * X)	-0.00184	-0.00215	-0.00214
	(!A * !C * D * X)	0.00182	0.00164	0.00162
	(!A * !C * D * X)	-0.00176	-0.00208	-0.00207

sky130_fd_sc_hs__or4_4	**(A * C * D * X)**	0.00237	0.00238	0.00235
	(A * C * D * X)	-0.00294	-0.00297	-0.00295
	(A * C * !D * X)	0.00260	0.00264	0.00244
	(A * C * !D * X)	-0.00280	-0.00283	-0.00280
	(A * !C * D * X)	0.00234	0.00242	0.00235
	(A * !C * D * X)	-0.00276	-0.00276	-0.00275
	(A * !C * !D * X)	0.00231	0.00234	0.00232
	(A * !C * !D * X)	-0.00230	-0.00233	-0.00231
	(!A * C * D * X)	0.00234	0.00234	0.00231
	(!A * C * D * X)	-0.00406	-0.00422	-0.00418
	(!A * C * !D * X)	0.00282	0.00234	0.00231
	(!A * C * !D * X)	-0.00359	-0.00422	-0.00419
	(!A * !C * D * X)	0.00265	0.00235	0.00231
	(!A * !C * D * X)	-0.00343	-0.00407	-0.00406

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)**	-0.00146	-0.00147	-0.00146
	(A * C * D * X)	0.00143	0.00144	0.00143
	(A * C * !D * X)	-0.00146	-0.00147	-0.00146
	(A * C * !D * X)	0.00137	0.00138	0.00137
	(A * !C * D * X)	-0.00146	-0.00147	-0.00146
	(A * !C * D * X)	0.00134	0.00134	0.00133
	(A * !C * !D * X)	-0.00140	-0.00140	-0.00139
	(A * !C * !D * X)	0.00116	0.00117	0.00117
	(!A * C * D * X)	-0.00145	-0.00146	-0.00145
	(!A * C * D * X)	0.00203	0.00204	0.00204
	(!A * C * !D * X)	-0.00145	-0.00146	-0.00145
	(!A * C * !D * X)	0.00203	0.00204	0.00204
	(!A * !C * D * X)	-0.00145	-0.00146	-0.00145
	(!A * !C * D * X)	0.00197	0.00198	0.00197
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	-0.00161	-0.00161	-0.00161
	(A * C * D * X)	0.00150	0.00151	0.00150
	(A * C * !D * X)	-0.00161	-0.00162	-0.00161
	(A * C * !D * X)	0.00146	0.00146	0.00145
	(A * !C * D * X)	-0.00161	-0.00161	-0.00161
	(A * !C * D * X)	0.00142	0.00142	0.00141
	(A * !C * !D * X)	-0.00155	-0.00156	-0.00154
	(A * !C * !D * X)	0.00125	0.00126	0.00126
	(!A * C * D * X)	-0.00161	-0.00162	-0.00161
	(!A * C * D * X)	0.00213	0.00215	0.00214
	(!A * C * !D * X)	-0.00161	-0.00162	-0.00161
	(!A * C * !D * X)	0.00214	0.00215	0.00214
	(!A * !C * D * X)	-0.00160	-0.00161	-0.00160
	(!A * !C * D * X)	0.00205	0.00208	0.00207

sky130_fd_sc_hs__or4_4	(A * C * D * X)	-0.00233	-0.00235	-0.00234
	(A * C * D * X)	0.00294	0.00297	0.00295
	(A * C * !D * X)	-0.00233	-0.00234	-0.00233
	(A * C * !D * X)	0.00280	0.00283	0.00280
	(A * !C * D * X)	-0.00232	-0.00232	-0.00232
	(A * !C * D * X)	0.00276	0.00276	0.00275
	(A * !C * !D * X)	-0.00222	-0.00223	-0.00219
	(A * !C * !D * X)	0.00240	0.00241	0.00242
	(!A * C * D * X)	-0.00231	-0.00233	-0.00231
	(!A * C * D * X)	0.00418	0.00422	0.00418
	(!A * C * !D * X)	-0.00230	-0.00232	-0.00231
	(!A * C * !D * X)	0.00415	0.00422	0.00419
	(!A * !C * D * X)	-0.00230	-0.00230	-0.00229
	(!A * !C * D * X)	0.00405	0.00407	0.00406

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(B * D * X)	0.00165	0.00165	0.00156
	(B * D * X)	-0.00132	-0.00133	-0.00132
	(B * !D * X)	0.00150	0.00151	0.00149
	(B * !D * X)	-0.00108	-0.00110	-0.00109
	(A * !B * D * X)	0.00174	0.00159	0.00151
	(A * !B * D * X)	-0.00128	-0.00136	-0.00136
	(A * !B * !D * X)	0.00151	0.00153	0.00149
	(A * !B * !D * X)	-0.00107	-0.00108	-0.00108
	(!A * !B * D * X)	0.00197	0.00153	0.00149
	(!A * !B * D * X)	-0.00157	-0.00201	-0.00203

sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00187	0.00188	0.00179
	(B * D * X)	-0.00131	-0.00131	-0.00131
	(B * !D * X)	0.00173	0.00175	0.00172
	(B * !D * X)	-0.00110	-0.00111	-0.00111
	(A * !B * D * X)	0.00200	0.00180	0.00174
	(A * !B * D * X)	-0.00129	-0.00137	-0.00137
	(A * !B * !D * X)	0.00175	0.00176	0.00173
	(A * !B * !D * X)	-0.00108	-0.00110	-0.00110
	(!A * !B * D * X)	0.00220	0.00177	0.00172
	(!A * !B * D * X)	-0.00156	-0.00203	-0.00206
sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00271	0.00264	0.00248
	(B * D * X)	-0.00280	-0.00280	-0.00278
	(B * !D * X)	0.00239	0.00241	0.00237
	(B * !D * X)	-0.00228	-0.00228	-0.00228
	(A * !B * D * X)	0.00286	0.00255	0.00240
	(A * !B * D * X)	-0.00269	-0.00282	-0.00282
	(A * !B * !D * X)	0.00242	0.00243	0.00238
	(A * !B * !D * X)	-0.00225	-0.00226	-0.00226
	(!A * !B * D * X)	0.00331	0.00245	0.00236
	(!A * !B * D * X)	-0.00327	-0.00413	-0.00420

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

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

sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00149	-0.00150	-0.00149
	(B * D * X)	0.00132	0.00133	0.00132
	(B * !D * X)	-0.00148	-0.00148	-0.00147
	(B * !D * X)	0.00112	0.00112	0.00112
	(A * !B * D * X)	-0.00149	-0.00149	-0.00149
	(A * !B * D * X)	0.00136	0.00136	0.00136
	(A * !B * !D * X)	-0.00144	-0.00145	-0.00147
	(A * !B * !D * X)	0.00113	0.00113	0.00111
	(!A * !B * D * X)	-0.00147	-0.00148	-0.00147
	(!A * !B * D * X)	0.00203	0.00204	0.00204
sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00171	-0.00171	-0.00172
	(B * D * X)	0.00131	0.00131	0.00131
	(B * !D * X)	-0.00171	-0.00172	-0.00170
	(B * !D * X)	0.00113	0.00114	0.00114
	(A * !B * D * X)	-0.00171	-0.00172	-0.00171
	(A * !B * D * X)	0.00137	0.00137	0.00137
	(A * !B * !D * X)	-0.00168	-0.00169	-0.00170
	(A * !B * !D * X)	0.00113	0.00114	0.00112
	(!A * !B * D * X)	-0.00170	-0.00171	-0.00170
	(!A * !B * D * X)	0.00205	0.00207	0.00207
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00239	-0.00239	-0.00238
	(B * D * X)	0.00280	0.00280	0.00278
	(B * !D * X)	-0.00234	-0.00235	-0.00233
	(B * !D * X)	0.00233	0.00234	0.00234
	(A * !B * D * X)	-0.00236	-0.00237	-0.00237
	(A * !B * D * X)	0.00281	0.00282	0.00282
	(A * !B * !D * X)	-0.00224	-0.00226	-0.00232
	(A * !B * !D * X)	0.00236	0.00236	0.00230
	(!A * !B * D * X)	-0.00232	-0.00234	-0.00232
	(!A * !B * D * X)	0.00417	0.00421	0.00422

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	0.00165	0.00167	0.00165
	(C * X)	-0.00103	-0.00104	-0.00103
	(B * !C * X)	0.00165	0.00167	0.00165
	(B * !C * X)	-0.00103	-0.00104	-0.00103
	(A * !B * !C * X)	0.00165	0.00167	0.00165
	(A * !B * !C * X)	-0.00103	-0.00104	-0.00103
sky130_fd_sc_hs__or4_2	(C * X)	0.00196	0.00197	0.00196
	(C * X)	-0.00103	-0.00103	-0.00102
	(B * !C * X)	0.00196	0.00197	0.00196
	(B * !C * X)	-0.00102	-0.00103	-0.00102
	(A * !B * !C * X)	0.00196	0.00197	0.00196
	(A * !B * !C * X)	-0.00102	-0.00103	-0.00102
sky130_fd_sc_hs__or4_4	(C * X)	0.00268	0.00269	0.00269
	(C * X)	-0.00200	-0.00201	-0.00201
	(B * !C * X)	0.00268	0.00269	0.00269
	(B * !C * X)	-0.00199	-0.00200	-0.00200
	(A * !B * !C * X)	0.00268	0.00269	0.00269
	(A * !B * !C * X)	-0.00199	-0.00200	-0.00200

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	-0.00160	-0.00161	-0.00165
	(C * X)	0.00108	0.00108	0.00104
	(B * !C * X)	-0.00153	-0.00154	-0.00164
	(B * !C * X)	0.00112	0.00112	0.00104
	(A * !B * !C * X)	-0.00142	-0.00143	-0.00161
	(A * !B * !C * X)	0.00119	0.00119	0.00106
sky130_fd_sc_hs__or4_2	(C * X)	-0.00190	-0.00192	-0.00195
	(C * X)	0.00108	0.00108	0.00104
	(B * !C * X)	-0.00184	-0.00185	-0.00194
	(B * !C * X)	0.00111	0.00111	0.00104
	(A * !B * !C * X)	-0.00173	-0.00174	-0.00191
	(A * !B * !C * X)	0.00117	0.00117	0.00105
sky130_fd_sc_hs__or4_4	(C * X)	-0.00256	-0.00257	-0.00267
	(C * X)	0.00212	0.00212	0.00204
	(B * !C * X)	-0.00235	-0.00236	-0.00264
	(B * !C * X)	0.00223	0.00223	0.00204
	(A * !B * !C * X)	-0.00215	-0.00215	-0.00258
	(A * !B * !C * X)	0.00236	0.00235	0.00207

SKY130_FD_SC_HS__SDFBBNx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00198	0.00179	0.00418	0.00183	0.00560	0.00302	1.26936	1.27062
sky130_fd_sc_hs__sdfbbn_2	0.00200	0.00180	0.00423	0.00170	0.00552	0.00298	2.54167	2.55299

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfbbn_1	0.00000	1.96272	3.52027
sky130_fd_sc_hs__sdfbbn_2	0.00000	1.87204	3.63701

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)	0.32524	0.94305	8.49291
	SET_B->Q (FR)	0.15937	0.80798	8.50654
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FR)	0.36967	0.88400	8.51767
	SET_B->Q (FR)	0.18968	0.75113	8.55991

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)	0.33070	0.72274	4.79028
	RESET_B->Q (FF)	0.20980	0.62779	4.73354
	SET_B->Q (RF)	0.12708	0.36673	2.18055
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FF)	0.35585	0.70993	4.83868
	RESET_B->Q (FF)	0.23735	0.61968	4.80473
	SET_B->Q (RF)	0.15413	0.37125	2.32531

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)	0.30018	0.92960	8.51650
	RESET_B->Q_N (FR)	0.18003	0.83903	8.46374
	SET_B->Q_N (RR)	0.09728	0.58235	6.18245
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FR)	0.29863	0.83326	8.43322
	RESET_B->Q_N (FR)	0.18151	0.74442	8.40701
	SET_B->Q_N (RR)	0.09864	0.49974	6.16019

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)	0.27424	0.73119	4.91697
	SET_B->Q_N (FF)	0.11266	0.60189	5.14022
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FF)	0.29177	0.72036	4.87972
	SET_B->Q_N (FF)	0.12034	0.58301	5.13151

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)	-0.02952	0.01773	2.16902
	setup	CLK_N (F)	0.13121	0.06280	-2.15840
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.03661	0.01168	2.15370
	setup	CLK_N (F)	0.13218	0.06762	-2.14257

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)	-0.16989	-0.20847	-0.56270
	setup	CLK_N (F)	0.19131	0.22512	0.57402
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.18754	-0.22792	-0.61654
	setup	CLK_N (F)	0.20984	0.24396	0.62661

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)	-0.02952	0.01773	2.16902
	setup	CLK_N (F)	0.13121	0.06280	-2.15840
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.03661	0.01168	2.15370
	setup	CLK_N (F)	0.13218	0.06762	-2.14257

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)	-0.16989	-0.20847	-0.56270
	setup	CLK_N (F)	0.19131	0.22512	0.57402
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.18754	-0.22792	-0.61654
	setup	CLK_N (F)	0.20984	0.24396	0.62661

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)	-0.04987	0.00797	2.11570
	setup	CLK_N (F)	0.15137	0.07822	-2.08882
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.05169	0.00438	2.10522
	setup	CLK_N (F)	0.15394	0.08130	-2.08020

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)	-0.21427	-0.23729	-0.63137
	setup	CLK_N (F)	0.24671	0.26710	0.66569
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.23258	-0.25768	-0.68354
	setup	CLK_N (F)	0.26631	0.28619	0.72340

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)	-0.04987	0.00797	2.11570
	hold	CLK_N (F)	-0.05397	0.00400	2.09849
	setup	CLK_N (F)	0.14496	0.07314	-2.10913
	setup	CLK_N (F)	0.15137	0.07822	-2.08882
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.05169	0.00438	2.10522
	hold	CLK_N (F)	-0.05522	-0.00038	2.09318
	setup	CLK_N (F)	0.15040	0.07676	-2.09575
	setup	CLK_N (F)	0.15394	0.08130	-2.08020

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)	-0.22262	-0.24725	-0.65166
	hold	CLK_N (F)	-0.21427	-0.23729	-0.63137
	setup	CLK_N (F)	0.24671	0.26710	0.66569
	setup	CLK_N (F)	0.24105	0.25746	0.64033
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.24341	-0.26510	-0.71039
	hold	CLK_N (F)	-0.23258	-0.25768	-0.68354
	setup	CLK_N (F)	0.26631	0.28619	0.72340
	setup	CLK_N (F)	0.25965	0.27926	0.69762

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)	-0.03963	0.00000	2.01086
	setup	CLK_N (F)	0.24472	0.17147	-1.99163
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.04494	-0.00458	1.99329
	setup	CLK_N (F)	0.26294	0.18698	-1.97519

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)	-0.08125	-0.07068	0.01558
	setup	CLK_N (F)	0.19512	0.21235	0.48801
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.08610	-0.07539	0.00460
	setup	CLK_N (F)	0.21250	0.23099	0.54663

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)	-0.21771	-0.15172	2.01086
	hold	CLK_N (F)	-0.03963	0.00000	1.99922
	setup	CLK_N (F)	0.24472	0.17147	-1.99641
	setup	CLK_N (F)	0.13886	0.07866	-1.99163
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.23862	-0.17104	1.98560
	hold	CLK_N (F)	-0.04494	-0.00458	1.99329
	setup	CLK_N (F)	0.26294	0.18698	-1.97519
	setup	CLK_N (F)	0.14010	0.08410	-1.98119

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)	-0.08125	-0.07068	0.01558
	hold	CLK_N (F)	-0.17299	-0.19455	-0.47583
	setup	CLK_N (F)	0.18150	0.15600	-0.00592
	setup	CLK_N (F)	0.19512	0.21235	0.48801
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.08610	-0.07539	0.00460
	hold	CLK_N (F)	-0.18951	-0.21456	-0.53483
	setup	CLK_N (F)	0.18312	0.15968	0.00593
	setup	CLK_N (F)	0.21250	0.23099	0.54663

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)	0.09368	0.00696	-2.32805
	removal	CLK_N (F)	0.01294	0.08323	2.36050
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.09122	0.00847	-2.32805
	removal	CLK_N (F)	0.01482	0.08633	2.36527

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)	0.09293	0.00691	-2.32809
	recovery	CLK_N (F)	0.09362	0.00696	-2.32813
	recovery	CLK_N (F)	0.09368	0.00688	-2.32805
	removal	CLK_N (F)	0.01293	0.08323	2.36050
	removal	CLK_N (F)	0.01294	0.08323	2.36050
	removal	CLK_N (F)	0.01294	0.08323	2.36050
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.08853	0.00841	-2.32805
	recovery	CLK_N (F)	0.09122	0.00847	-2.32813
	recovery	CLK_N (F)	0.09104	0.00845	-2.32811
	removal	CLK_N (F)	0.01482	0.08633	2.36527
	removal	CLK_N (F)	0.01482	0.08633	2.36527
	removal	CLK_N (F)	0.01441	0.08633	2.36527

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 ()	0.17402	0.63232	16.50020
	min_pulse_width	RESET_B ()	0.15502	0.63232	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	RESET_B ()	0.17877	0.63232	16.50020
	min_pulse_width	RESET_B ()	0.15739	0.63232	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)	-0.02119	-0.11999	-2.15504
	removal	CLK_N (F)	0.03143	0.13274	2.46588
	hold	RESET_B (R)	-0.04873	-0.07982	-0.36063
	setup	RESET_B (R)	0.09384	0.12060	0.56327
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.01860	-0.11399	-1.93445
	removal	CLK_N (F)	0.03253	0.12641	2.44473
	hold	RESET_B (R)	-0.06168	-0.10149	-0.45030
	setup	RESET_B (R)	0.09727	0.13414	0.66364

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)	-0.02345	-0.11999	-2.15520
	recovery	CLK_N (F)	-0.02231	-0.11999	-2.15669
	recovery	CLK_N (F)	-0.02119	-0.11999	-2.15504
	removal	CLK_N (F)	0.03143	0.13274	2.46588
	removal	CLK_N (F)	0.03143	0.13274	2.46588
	removal	CLK_N (F)	0.03143	0.13274	2.46481
	hold	RESET_B (R)	-0.04873	-0.07986	-0.36063
	hold	RESET_B (R)	-0.04974	-0.07982	-0.36304
	setup	RESET_B (R)	0.09384	0.12060	0.52846
	setup	RESET_B (R)	0.07313	0.10536	0.56327
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.01860	-0.11399	-1.93445
	recovery	CLK_N (F)	-0.01860	-0.11399	-1.93449
	recovery	CLK_N (F)	-0.01976	-0.11399	-1.93453
	removal	CLK_N (F)	0.03253	0.12641	2.44473
	removal	CLK_N (F)	0.03253	0.12641	2.44473
	removal	CLK_N (F)	0.03049	0.12641	2.44473
	hold	RESET_B (R)	-0.06351	-0.10635	-0.45030
	hold	RESET_B (R)	-0.06168	-0.10149	-0.45390
	setup	RESET_B (R)	0.09727	0.13414	0.66364
	setup	RESET_B (R)	0.07785	0.12685	0.65481

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 ()	0.12890	0.63232	16.50020
	min_pulse_width	SET_B ()	0.11228	0.63232	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	SET_B ()	0.14552	0.63232	16.50020
	min_pulse_width	SET_B ()	0.12890	0.63232	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 ()	0.16214	0.63232	16.50020
	min_pulse_width	CLK_N ()	0.12177	0.63232	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.16452	0.63232	16.50020
	min_pulse_width	CLK_N ()	0.12890	0.63232	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 ()	0.14552	0.63232	16.50020
	min_pulse_width	CLK_N ()	0.17164	0.63232	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.15977	0.63232	16.50020
	min_pulse_width	CLK_N ()	0.17402	0.63232	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	0.01660	0.01845	0.05553
	CLK_N	0.01928	0.02118	0.05821
	SET_B	0.01736	0.02057	0.08593
	SET_B	0.02239	0.02557	0.09092
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.02066	0.02197	0.05906
	CLK_N	0.02323	0.02456	0.06163
	SET_B	0.02114	0.02410	0.08957
	SET_B	0.02602	0.02897	0.09444

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.01744	0.01947	0.05578
	CLK_N	0.01977	0.02181	0.05765
	RESET_B	0.02117	0.02243	0.04532
	RESET_B	0.02262	0.02388	0.04622
	SET_B	0.02226	0.02340	0.08532
	SET_B	0.01724	0.01835	0.08025
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.02078	0.02302	0.05934
	CLK_N	0.02316	0.02540	0.06128
	RESET_B	0.02502	0.02642	0.04968
	RESET_B	0.02651	0.02791	0.05072
	SET_B	0.02599	0.02723	0.08841
	SET_B	0.02108	0.02229	0.08350

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.01747	0.01950	0.05566
	CLK_N	0.01980	0.02184	0.05799
	RESET_B	0.02119	0.02246	0.04527
	RESET_B	0.02264	0.02391	0.04648
	SET_B	0.02229	0.02350	0.08577
	SET_B	0.01726	0.01838	0.08073
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.02081	0.02305	0.05958
	CLK_N	0.02319	0.02543	0.06167
	RESET_B	0.02213	0.02362	0.05240
	RESET_B	0.02653	0.02796	0.05094
	SET_B	0.02601	0.02720	0.08941
	SET_B	0.02110	0.02230	0.08440

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.01657	0.01845	0.05541
	CLK_N	0.01926	0.02113	0.05782
	SET_B	0.01731	0.02052	0.08534
	SET_B	0.02233	0.02553	0.09031
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.02063	0.02195	0.05927
	CLK_N	0.02320	0.02454	0.06126
	SET_B	0.02109	0.02405	0.08903
	SET_B	0.02597	0.02893	0.09377

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)**	0.00146	0.00147	0.00146
	(CLK_N * SCD * SCE)	-0.00068	-0.00069	-0.00068
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01415	0.01500	0.05040
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01096	0.01180	0.04721
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00978	0.01057	0.04304
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00606	0.00684	0.03932
	(CLK_N * !SCD * SCE)	0.00060	0.00060	0.00059
	(CLK_N * !SCD * SCE)	-0.00173	-0.00175	-0.00178
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00819	0.00896	0.04136
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00451	0.00527	0.03767
	(!CLK_N * SCD * SCE)	0.00148	0.00149	0.00148
	(!CLK_N * SCD * SCE)	-0.00066	-0.00067	-0.00067
	(!CLK_N * !SCE)	0.00547	0.00661	0.04058
	(!CLK_N * !SCE)	0.00179	0.00291	0.03690
	(!CLK_N * !SCD * SCE)	0.00059	0.00060	0.00058
	(!CLK_N * !SCD * SCE)	-0.00174	-0.00176	-0.00178

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	0.00149	0.00152	0.00150
	(CLK_N * SCD * SCE)	-0.00068	-0.00070	-0.00068
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01431	0.01512	0.05012
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01101	0.01182	0.04683
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00997	0.01072	0.04278
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00618	0.00694	0.03900
	(CLK_N * !SCD * SCE)	0.00063	0.00063	0.00062
	(CLK_N * !SCD * SCE)	-0.00174	-0.00175	-0.00178
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00827	0.00901	0.04100
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00452	0.00526	0.03725
	(!CLK_N * SCD * SCE)	0.00150	0.00152	0.00150
	(!CLK_N * SCD * SCE)	-0.00068	-0.00069	-0.00068
	(!CLK_N * !SCE)	0.00539	0.00652	0.04012
	(!CLK_N * !SCE)	0.00166	0.00275	0.03638
	(!CLK_N * !SCD * SCE)	0.00062	0.00063	0.00061
	(!CLK_N * !SCD * SCE)	-0.00175	-0.00177	-0.00179

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)**	-0.00138	-0.00140	-0.00143
	(CLK_N * SCD * SCE)	0.00075	0.00075	0.00072
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01357	0.01500	0.05104
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01677	0.01819	0.05423
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00414	0.00546	0.03830
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00788	0.00918	0.04203
	(CLK_N * !SCD * SCE)	-0.00051	-0.00053	-0.00052
	(CLK_N * !SCD * SCE)	0.00182	0.00183	0.00183
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00548	0.00685	0.03985
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00917	0.01054	0.04354
	(!CLK_N * SCD * SCE)	-0.00136	-0.00139	-0.00142
	(!CLK_N * SCD * SCE)	0.00076	0.00076	0.00074
	(!CLK_N * !SCE)	0.00259	0.00417	0.03829
	(!CLK_N * !SCE)	0.00626	0.00786	0.04198
	(!CLK_N * !SCD * SCE)	-0.00052	-0.00053	-0.00052
	(!CLK_N * !SCD * SCE)	0.00181	0.00183	0.00182

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	-0.00142	-0.00145	-0.00147
	(CLK_N * SCD * SCE)	0.00075	0.00075	0.00072
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01463	0.01600	0.05162
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01792	0.01928	0.05491
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00450	0.00578	0.03820
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00829	0.00957	0.04198
	(CLK_N * !SCD * SCE)	-0.00055	-0.00057	-0.00055
	(CLK_N * !SCD * SCE)	0.00182	0.00183	0.00183
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00595	0.00727	0.03986
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00970	0.01101	0.04362
	(!CLK_N * SCD * SCE)	-0.00142	-0.00144	-0.00147
	(!CLK_N * SCD * SCE)	0.00074	0.00075	0.00072
	(!CLK_N * !SCE)	0.00287	0.00442	0.03815
	(!CLK_N * !SCE)	0.00663	0.00817	0.04190
	(!CLK_N * !SCD * SCE)	-0.00056	-0.00058	-0.00056
	(!CLK_N * !SCD * SCE)	0.00180	0.00183	0.00181

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)**	0.01198	0.01249	0.03838
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00702	0.00753	0.03344
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01632	0.01690	0.04509
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01190	0.01247	0.04068
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01039	0.01089	0.03668
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00547	0.00596	0.03177
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.01295	0.01341	0.03889
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00778	0.00822	0.03373
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01730	0.01783	0.04574
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01266	0.01317	0.04112
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01136	0.01181	0.03719
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00622	0.00666	0.03207
	(!CLK_N * D * SCE)	0.00767	0.00831	0.03521
	(!CLK_N * D * SCE)	0.00275	0.00337	0.03030
	(!CLK_N * !D * SCE)	0.00865	0.00919	0.03566
	(!CLK_N * !D * SCE)	0.00351	0.00405	0.03055
	!SCE	0.00137	0.00114	0.00112
	!SCE	-0.00125	-0.00149	-0.00152

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.01210	0.01259	0.03813
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00716	0.00766	0.03321
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01641	0.01697	0.04481
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01197	0.01253	0.04038
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01040	0.01090	0.03633
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00550	0.00599	0.03144
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.01306	0.01350	0.03864
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00791	0.00835	0.03351
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01739	0.01786	0.04547
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01273	0.01320	0.04082
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01137	0.01180	0.03685
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00625	0.00668	0.03174
	(!CLK_N * D * SCE)	0.00754	0.00816	0.03474
	(!CLK_N * D * SCE)	0.00264	0.00325	0.02985
	(!CLK_N * !D * SCE)	0.00850	0.00903	0.03520
	(!CLK_N * !D * SCE)	0.00338	0.00391	0.03010
	!SCE	0.00137	0.00112	0.00111
	!SCE	-0.00126	-0.00150	-0.00153

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)**	0.00593	0.00635	0.03231
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.01090	0.01132	0.03726
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01539	0.01588	0.04440
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01982	0.02031	0.04881
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00727	0.00771	0.03384
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01220	0.01264	0.03875
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00543	0.00589	0.03208
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.01061	0.01109	0.03724
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01495	0.01548	0.04449
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01959	0.02012	0.04912
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00677	0.00725	0.03362
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01191	0.01240	0.03874
	(!CLK_N * D * SCE)	0.00440	0.00493	0.03182
	(!CLK_N * D * SCE)	0.00933	0.00987	0.03673
	(!CLK_N * !D * SCE)	0.00390	0.00448	0.03163
	(!CLK_N * !D * SCE)	0.00904	0.00963	0.03675
	!SCE	-0.00106	-0.00109	-0.00109
	!SCE	0.00155	0.00155	0.00155

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.00629	0.00672	0.03231
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.01124	0.01166	0.03722
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01645	0.01703	0.04505
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02089	0.02147	0.04947
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00774	0.00818	0.03394
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01265	0.01309	0.03883
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00579	0.00625	0.03206
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.01095	0.01141	0.03720
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01601	0.01654	0.04514
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02066	0.02119	0.04978
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00724	0.00772	0.03370
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01236	0.01283	0.03880
	(!CLK_N * D * SCE)	0.00470	0.00522	0.03177
	(!CLK_N * D * SCE)	0.00960	0.01014	0.03665
	(!CLK_N * !D * SCE)	0.00420	0.00477	0.03157
	(!CLK_N * !D * SCE)	0.00931	0.00990	0.03667
	!SCE	-0.00106	-0.00108	-0.00108
	!SCE	0.00156	0.00157	0.00156

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)**	0.00601	0.00791	0.05291
	(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)	-0.00063	0.00123	0.04623
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.02182	0.02378	0.07014
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01656	0.01849	0.06480
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01237	0.01435	0.06055
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00764	0.00960	0.05576
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01372	0.01570	0.06194
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00896	0.01090	0.05711
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01527	0.01813	0.09075
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00692	0.00976	0.08241
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01963	0.02255	0.09786
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01181	0.01474	0.09004
	(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)	0.00597	0.00801	0.05289
	(CLK_N * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (CLK_N * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	-0.00022	0.00178	0.04668
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01368	0.01653	0.08905
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00537	0.00819	0.08074
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00615	0.00805	0.05305
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00049	0.00137	0.04637
	(!CLK_N * D * !SCD)	0.01110	0.01295	0.05934
	(!CLK_N * D * !SCD)	0.00634	0.00816	0.05453
	(!CLK_N * !D * SCD)	0.01110	0.01414	0.08777
	(!CLK_N * !D * SCD)	0.00278	0.00580	0.07947

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)**	0.00610	0.00801	0.05310
	(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)	-0.00063	0.00125	0.04634
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.02293	0.02492	0.07134
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01766	0.01960	0.06600
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01277	0.01481	0.06106
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00801	0.00999	0.05621
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01424	0.01626	0.06254
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00944	0.01140	0.05769
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01551	0.01836	0.09070
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00706	0.00988	0.08226
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01984	0.02275	0.09781
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01188	0.01478	0.08985
	(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)	0.00603	0.00810	0.05306
	(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)	-0.00024	0.00178	0.04676
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01382	0.01665	0.08890
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00540	0.00821	0.08048
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00623	0.00815	0.05323
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00049	0.00138	0.04647
	(!CLK_N * D * !SCD)	0.01146	0.01335	0.05979
	(!CLK_N * D * !SCD)	0.00665	0.00848	0.05491
	(!CLK_N * !D * SCD)	0.01109	0.01412	0.08751
	(!CLK_N * !D * SCD)	0.00267	0.00567	0.07910

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)	-0.00069	0.00196	0.04710
	(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)	0.00594	0.00863	0.05375
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01335	0.01589	0.06124
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01863	0.02121	0.06637
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00899	0.01153	0.05690
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01374	0.01631	0.06149
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00740	0.00994	0.05530
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01218	0.01476	0.05990
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00416	0.00730	0.07928
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01249	0.01567	0.08762
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01356	0.01675	0.09110
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.02136	0.02457	0.09892
	(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)	-0.00032	0.00226	0.04718
	(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)	0.00590	0.00849	0.05340
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00549	0.00866	0.08084
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01378	0.01699	0.08915
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00080	0.00187	0.04698
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00583	0.00852	0.05364
	(!CLK_N * D * !SCD)	0.00460	0.00702	0.05292
	(!CLK_N * D * !SCD)	0.00937	0.01187	0.05753
	(!CLK_N * !D * SCD)	0.00247	0.00582	0.07918
	(!CLK_N * !D * SCD)	0.01076	0.01413	0.08749

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)	-0.00079	0.00187	0.04709
	(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)	0.00594	0.00862	0.05381
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01340	0.01594	0.06129
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01868	0.02126	0.06644
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00907	0.01160	0.05699
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01386	0.01644	0.06164
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00737	0.00991	0.05527
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01220	0.01478	0.05994
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00446	0.00757	0.07922
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01290	0.01603	0.08767
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01456	0.01772	0.09170
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.02249	0.02567	0.09965
	(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)	-0.00039	0.00218	0.04720
	(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)	0.00591	0.00849	0.05351
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00590	0.00904	0.08089
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01430	0.01747	0.08931
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00092	0.00175	0.04696
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00581	0.00851	0.05370
	(!CLK_N * D * !SCD)	0.00441	0.00687	0.05276
	(!CLK_N * D * !SCD)	0.00923	0.01171	0.05742
	(!CLK_N * !D * SCD)	0.00270	0.00602	0.07907
	(!CLK_N * !D * SCD)	0.01109	0.01444	0.08750

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)	0.01454	0.01566	0.06028
	(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)	0.01128	0.01240	0.05702
	(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)	0.00859	0.00995	0.05294
	(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)	0.00484	0.00618	0.04918
	(!SET_B * Q * !Q_N)	0.00858	0.01003	0.05350
	(!SET_B * Q * !Q_N)	0.00474	0.00621	0.04966

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)**	0.01422	0.01532	0.05986
	(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)	0.01105	0.01213	0.05669
	(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)	0.00824	0.00958	0.05254
	(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)	0.00460	0.00592	0.04889
	(!SET_B * Q * !Q_N)	0.00841	0.00987	0.05330
	(!SET_B * Q * !Q_N)	0.00470	0.00614	0.04957

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)**	0.01260	0.01476	0.05973
	(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)	0.01586	0.01803	0.06299
	(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)	0.00412	0.00626	0.04923
	(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)	0.00787	0.01002	0.05298
	(!SET_B * Q * !Q_N)	0.00268	0.00493	0.04818
	(!SET_B * Q * !Q_N)	0.00653	0.00879	0.05202

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)**	0.01333	0.01545	0.06034
	(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)	0.01651	0.01864	0.06352
	(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)	0.00433	0.00645	0.04937
	(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)	0.00799	0.01010	0.05301
	(!SET_B * Q * !Q_N)	0.00270	0.00495	0.04814
	(!SET_B * Q * !Q_N)	0.00645	0.00869	0.05187

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)**	0.00386	0.00388	0.00388
	(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)	-0.00483	-0.00484	-0.00484
	(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)	0.01329	0.01453	0.07258
	(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)	0.00391	0.00510	0.06318

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)**	0.00396	0.00399	0.00398
	(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)	-0.00467	-0.00469	-0.00469
	(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)	0.01399	0.01518	0.07296
	(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)	0.00468	0.00582	0.06364

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)**	-0.00374	-0.00385	-0.00384
	(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)	0.00490	0.00491	0.00489
	(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)	0.00196	0.00478	0.06453
	(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)	0.01129	0.01422	0.07392

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)**	-0.00390	-0.00395	-0.00396
	(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)	0.00477	0.00473	0.00473
	(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	0.00458	0.06422
	(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)	0.01109	0.01393	0.07352

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)	0.02381	0.02674	0.10056
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01927	0.02219	0.09602
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01461	0.01733	0.08917
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00958	0.01229	0.08415
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02392	0.02681	0.10069
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01938	0.02225	0.09615
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01470	0.01743	0.08926
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00967	0.01238	0.08424
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02543	0.02811	0.10178
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01993	0.02260	0.09630
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01440	0.01707	0.08919
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00937	0.01202	0.08416
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01586	0.01856	0.09230
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01086	0.01358	0.08729
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01788	0.02081	0.09454
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01285	0.01575	0.08952
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01797	0.02085	0.09463
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01294	0.01581	0.08962
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02381	0.02670	0.10057
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01928	0.02215	0.09603
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01461	0.01734	0.08917
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00958	0.01229	0.08415
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.02550	0.02818	0.10192
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01997	0.02264	0.09639
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02543	0.02812	0.10183
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01992	0.02259	0.09631
	(!D * !SCE * SET_B * !Q * Q_N)	0.01449	0.01716	0.08929
	(!D * !SCE * SET_B * !Q * Q_N)	0.00946	0.01211	0.08426
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01595	0.01866	0.09242
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01095	0.01366	0.08741
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01440	0.01707	0.08918
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00937	0.01202	0.08416
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01586	0.01860	0.09234
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01086	0.01357	0.08733
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01788	0.02076	0.09454
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01285	0.01571	0.08953

sky130_fd_sc_hs__sdfbbn_2	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02410	0.02704	0.10075
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01960	0.02253	0.09625
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01452	0.01727	0.08902
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00955	0.01229	0.08405
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02420	0.02710	0.10085
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01970	0.02258	0.09634
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01460	0.01736	0.08910
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00964	0.01238	0.08416
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02598	0.02868	0.10227
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02058	0.02326	0.09687
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01437	0.01706	0.08909
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00941	0.01208	0.08414
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01574	0.01847	0.09212
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01080	0.01355	0.08719
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01804	0.02095	0.09460
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01308	0.01600	0.08963
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01812	0.02102	0.09469
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01316	0.01604	0.08972
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02411	0.02701	0.10075
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01960	0.02249	0.09625
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01452	0.01727	0.08902
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00955	0.01229	0.08405
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.02604	0.02874	0.10236
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.02061	0.02330	0.09694
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02597	0.02868	0.10230
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02056	0.02325	0.09689
	(!D * !SCE * SET_B * !Q * Q_N)	0.01446	0.01715	0.08917
	(!D * !SCE * SET_B * !Q * Q_N)	0.00949	0.01216	0.08422
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01582	0.01856	0.09224
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01089	0.01363	0.08730
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01437	0.01706	0.08908
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00941	0.01208	0.08413
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01574	0.01851	0.09217
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01080	0.01355	0.08723
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01804	0.02095	0.09459
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01308	0.01596	0.08962

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)**	0.01111	0.01491	0.08638
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01615	0.01995	0.09141
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01101	0.01482	0.08629
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01605	0.01986	0.09131
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01172	0.01541	0.08683
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01676	0.02045	0.09185
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01548	0.01925	0.09243
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02050	0.02427	0.09745
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01558	0.01931	0.09047
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02062	0.02435	0.09549
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01549	0.01922	0.09037
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.02052	0.02426	0.09540
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01111	0.01491	0.08638
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01615	0.01995	0.09141
	(!D * !SCE * SET_B * !Q * Q_N)	0.01163	0.01531	0.08673
	(!D * !SCE * SET_B * !Q * Q_N)	0.01666	0.02035	0.09176
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01538	0.01915	0.09240
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02040	0.02416	0.09740
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01173	0.01541	0.08683
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01676	0.02045	0.09185
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01547	0.01925	0.09245
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02049	0.02427	0.09747
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01558	0.01932	0.09047
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02062	0.02436	0.09550

sky130_fd_sc_hs__sdfbbn_2	**(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)**	0.01112	0.01487	0.08632
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01607	0.01985	0.09128
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01103	0.01478	0.08623
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01598	0.01976	0.09119
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01167	0.01532	0.08670
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01663	0.02030	0.09166
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01550	0.01923	0.09239
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02043	0.02418	0.09734
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01579	0.01940	0.09059
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02075	0.02437	0.09555
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01571	0.01932	0.09050
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.02066	0.02429	0.09546
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01112	0.01487	0.08632
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01607	0.01985	0.09128
	(!D * !SCE * SET_B * !Q * Q_N)	0.01158	0.01523	0.08661
	(!D * !SCE * SET_B * !Q * Q_N)	0.01654	0.02021	0.09157
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01540	0.01913	0.09238
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02034	0.02408	0.09731
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01168	0.01532	0.08670
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01663	0.02030	0.09166
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01548	0.01923	0.09241
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02041	0.02418	0.09737
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01580	0.01941	0.09059
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02075	0.02438	0.09555

SKY130_FD_SC_HS__SDFBBP

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00198	0.00181	0.00408	0.00171	0.00634	0.00297	1.23625	1.16981

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfbbp_1	0.00000	1.96272	3.52027

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)	0.32014	0.77158	5.98909
	SET_B->Q (FR)	0.14718	0.79582	8.45050

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbp_1	CLK->Q (RF)	0.25382	0.47031	2.15287
	RESET_B->Q (FF)	0.20414	0.61395	4.64462
	SET_B->Q (RF)	0.12983	0.35491	2.07227

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)	0.22403	0.69312	5.99198
	RESET_B->Q_N (FR)	0.17497	0.84339	8.49221
	SET_B->Q_N (RR)	0.10051	0.58722	6.17549

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)	0.26848	0.54072	2.17945
	SET_B->Q_N (FF)	0.10111	0.56366	4.84982

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)	-0.07587	-0.13958	-0.67319
	setup	CLK (R)	0.10455	0.15435	0.69652

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)	-0.15338	-0.26349	-3.08277
	setup	CLK (R)	0.19724	0.30100	3.12467

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)	-0.07587	-0.13958	-0.67319
	setup	CLK (R)	0.10455	0.15435	0.69652

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)	-0.15338	-0.26349	-3.08277
	setup	CLK (R)	0.19724	0.30100	3.12467

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)	-0.09396	-0.15272	-0.69605
	setup	CLK (R)	0.12564	0.17072	0.71382

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)	-0.20188	-0.30707	-3.16011
	setup	CLK (R)	0.25373	0.34713	3.20222

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)	-0.09396	-0.15272	-0.69611
	hold	CLK (R)	-0.09456	-0.15816	-0.69605
	setup	CLK (R)	0.12492	0.16620	0.71382
	setup	CLK (R)	0.12564	0.17072	0.71306

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)	-0.21181	-0.31271	-3.16025
	hold	CLK (R)	-0.20188	-0.30707	-3.16011
	setup	CLK (R)	0.25373	0.34713	3.20222
	setup	CLK (R)	0.24792	0.34226	3.19930

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)	-0.08691	-0.15757	-0.32961
	setup	CLK (R)	0.24932	0.25166	0.81374

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)	-0.12773	-0.24109	-2.77610
	setup	CLK (R)	0.20132	0.28740	3.01245

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)	-0.20800	-0.21420	-0.32961
	hold	CLK (R)	-0.08691	-0.15757	-0.79549
	setup	CLK (R)	0.24932	0.25166	0.39026
	setup	CLK (R)	0.11679	0.17190	0.81374

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)	-0.12773	-0.24109	-2.77610
	hold	CLK (R)	-0.15371	-0.24955	-2.96642
	setup	CLK (R)	0.16002	0.25459	2.79058
	setup	CLK (R)	0.20132	0.28740	3.01245

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)	0.06578	0.07408	0.19949
	removal	CLK (R)	-0.03213	-0.04367	-0.11480

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)	0.06578	0.07405	0.19949
	recovery	CLK (R)	0.06558	0.07408	0.19931
	recovery	CLK (R)	0.06561	0.07407	0.19934
	removal	CLK (R)	-0.03213	-0.04367	-0.11480
	removal	CLK (R)	-0.03218	-0.04367	-0.11480
	removal	CLK (R)	-0.03218	-0.04367	-0.11480

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 ()	0.15265	0.63232	16.50020
	min_pulse_width	RESET_B ()	0.15977	0.63232	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)	0.00369	0.00400	1.31118
	removal	CLK (R)	0.05761	0.07796	0.02739
	hold	RESET_B (R)	-0.05023	-0.08678	-0.42594
	setup	RESET_B (R)	0.08525	0.11887	0.64401

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)	0.00369	0.00400	1.30968
	recovery	CLK (R)	0.00366	0.00400	1.30968
	recovery	CLK (R)	0.00355	0.00400	1.31118
	removal	CLK (R)	0.05761	0.07796	0.02739
	removal	CLK (R)	0.05761	0.07796	0.02739
	removal	CLK (R)	0.05761	0.07796	0.02739
	hold	RESET_B (R)	-0.05375	-0.08678	-0.43389
	hold	RESET_B (R)	-0.05023	-0.08742	-0.42594
	setup	RESET_B (R)	0.08096	0.11464	0.64401
	setup	RESET_B (R)	0.08525	0.11887	0.57275

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 ()	0.10040	0.63232	16.50020
	min_pulse_width	SET_B ()	0.11228	0.63232	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 ()	0.08853	0.63232	16.50020
	min_pulse_width	CLK ()	0.10990	0.63232	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 ()	0.14315	0.63232	16.50020
	min_pulse_width	CLK ()	0.19539	0.63232	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	0.01934	0.02095	0.05774
	CLK	0.01679	0.01834	0.05518
	SET_B	0.01696	0.02046	0.08803
	SET_B	0.02232	0.02582	0.09317

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01892	0.02056	0.05808
	CLK	0.01613	0.01777	0.05527
	RESET_B	0.01942	0.02069	0.04271
	RESET_B	0.02075	0.02199	0.04384
	SET_B	0.02109	0.02213	0.08564
	SET_B	0.01571	0.01675	0.08023

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01894	0.02070	0.05856
	CLK	0.01615	0.01779	0.05587
	RESET_B	0.01945	0.02068	0.04293
	RESET_B	0.02077	0.02200	0.04426
	SET_B	0.02111	0.02221	0.08624
	SET_B	0.01573	0.01677	0.08091

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01931	0.02086	0.05699
	CLK	0.01676	0.01831	0.05449
	SET_B	0.01690	0.02041	0.08754
	SET_B	0.02225	0.02576	0.09249

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	0.00149	0.00150	0.00149
	(CLK * SCD * SCE)	-0.00066	-0.00067	-0.00066
	(CLK * !SCE)	0.00531	0.00653	0.04064
	(CLK * !SCE)	0.00160	0.00281	0.03692
	(CLK * !SCD * SCE)	0.00060	0.00061	0.00059
	(CLK * !SCD * SCE)	-0.00174	-0.00176	-0.00178
	(!CLK * SCD * SCE)	0.00147	0.00149	0.00147
	(!CLK * SCD * SCE)	-0.00067	-0.00069	-0.00067
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01408	0.01497	0.05033
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01060	0.01149	0.04686
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00935	0.01033	0.04248
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00531	0.00630	0.03845
	(!CLK * !SCD * SCE)	0.00061	0.00061	0.00060
	(!CLK * !SCD * SCE)	-0.00174	-0.00175	-0.00177
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00793	0.00874	0.04098
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00392	0.00472	0.03698

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	-0.00138	-0.00140	-0.00143
	(CLK * SCD * SCE)	0.00075	0.00076	0.00073
	(CLK * !SCE)	0.00129	0.00297	0.03713
	(CLK * !SCE)	0.00502	0.00670	0.04085
	(CLK * !SCD * SCE)	-0.00053	-0.00054	-0.00053
	(CLK * !SCD * SCE)	0.00180	0.00182	0.00181
	(!CLK * SCD * SCE)	-0.00140	-0.00142	-0.00144
	(!CLK * SCD * SCE)	0.00074	0.00074	0.00072
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01104	0.01254	0.04856
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01452	0.01601	0.05203
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00397	0.00530	0.03794
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00802	0.00935	0.04197
	(!CLK * !SCD * SCE)	-0.00052	-0.00054	-0.00053
	(!CLK * !SCD * SCE)	0.00181	0.00183	0.00182
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00510	0.00647	0.03929
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00912	0.01049	0.04329

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCE)**	0.00755	0.00822	0.03503
	(CLK * D * SCE)	0.00260	0.00326	0.03011
	(CLK * !D * SCE)	0.00852	0.00910	0.03549
	(CLK * !D * SCE)	0.00336	0.00394	0.03034
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01157	0.01208	0.03773
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00631	0.00682	0.03250
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01627	0.01686	0.04491
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01157	0.01215	0.04022
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01015	0.01066	0.03621
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00491	0.00541	0.03099
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01254	0.01300	0.03824
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00707	0.00751	0.03279
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01725	0.01779	0.04556
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01233	0.01286	0.04066
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01113	0.01158	0.03672
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00567	0.00611	0.03129
	!SCE	0.00140	0.00115	0.00114
	!SCE	-0.00124	-0.00148	-0.00151

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCE)**	0.00311	0.00367	0.03047
	(CLK * D * SCE)	0.00805	0.00863	0.03539
	(CLK * !D * SCE)	0.00262	0.00325	0.03030
	(CLK * !D * SCE)	0.00778	0.00839	0.03543
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00573	0.00616	0.03186
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01100	0.01143	0.03710
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01287	0.01338	0.04188
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01758	0.01809	0.04657
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00686	0.00731	0.03319
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01210	0.01254	0.03841
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00525	0.00572	0.03164
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01073	0.01119	0.03710
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01246	0.01302	0.04203
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01737	0.01793	0.04693
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00638	0.00687	0.03298
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01183	0.01233	0.03841
	!SCE	-0.00106	-0.00108	-0.00108
	!SCE	0.00157	0.00158	0.00158

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)	0.00597	0.00784	0.05225
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00056	0.00126	0.04569
	(CLK * D * !SCD)	0.00968	0.01147	0.05731
	(CLK * D * !SCD)	0.00507	0.00680	0.05262
	(CLK * !D * SCD)	0.01080	0.01387	0.08686
	(CLK * !D * SCD)	0.00257	0.00563	0.07865
	(!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)	0.00619	0.00806	0.05247
	(!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)	-0.00034	0.00148	0.04591
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01946	0.02140	0.06731
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01461	0.01650	0.06237
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01235	0.01430	0.05990
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00806	0.00996	0.05555
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01350	0.01543	0.06109
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00918	0.01106	0.05671
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01505	0.01787	0.08971
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00651	0.00931	0.08119
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01976	0.02267	0.09727
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01178	0.01467	0.08930
	(!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)	0.00616	0.00818	0.05248
	(!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	0.00206	0.04638
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01363	0.01645	0.08818
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00512	0.00790	0.07969

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)	-0.00056	0.00205	0.04661
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00596	0.00860	0.05312
	(CLK * D * !SCD)	0.00467	0.00704	0.05248
	(CLK * D * !SCD)	0.00932	0.01171	0.05693
	(CLK * !D * SCD)	0.00142	0.00483	0.07769
	(CLK * !D * SCD)	0.00962	0.01306	0.08592
	(!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)	-0.00081	0.00190	0.04636
	(!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)	0.00572	0.00846	0.05287
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01314	0.01562	0.06043
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01803	0.02051	0.06516
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00842	0.01090	0.05569
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01276	0.01524	0.05987
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00700	0.00948	0.05427
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01136	0.01386	0.05846
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00386	0.00698	0.07822
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01238	0.01554	0.08675
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01090	0.01413	0.08789
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01886	0.02209	0.09587
	(!CLK * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (!CLK * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	-0.00045	0.00206	0.04643
	(!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)	0.00565	0.00819	0.05253
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00498	0.00817	0.07959
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01348	0.01670	0.08808

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)	0.00730	0.00882	0.05167
	(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)	0.00418	0.00568	0.04854
	(!SET_B * Q * !Q_N)	0.00789	0.00946	0.05281
	(!SET_B * Q * !Q_N)	0.00469	0.00625	0.04960
	(!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)	0.01369	0.01491	0.05930
	(!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)	0.01110	0.01231	0.05671

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)	0.00390	0.00606	0.04875
	(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)	0.00704	0.00920	0.05188
	(!SET_B * Q * !Q_N)	0.00184	0.00412	0.04711
	(!SET_B * Q * !Q_N)	0.00507	0.00734	0.05033
	(!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)	0.01040	0.01255	0.05721
	(!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)	0.01299	0.01514	0.05980

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)	0.00406	0.00407	0.00406
	(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)	-0.00576	-0.00576	-0.00575
	(!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)	0.01074	0.01222	0.07177
	(!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)	0.00027	0.00165	0.06125

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)	-0.00393	-0.00404	-0.00402
	(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)	0.00582	0.00582	0.00580
	(!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)	0.00257	0.00568	0.06645
	(!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)	0.01305	0.01622	0.07698

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)**	0.01680	0.01946	0.09084
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01144	0.01409	0.08549
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01706	0.01973	0.09111
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01170	0.01436	0.08574
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01681	0.01945	0.09105
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01145	0.01407	0.08570
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02145	0.02411	0.09544
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01578	0.01843	0.08977
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02030	0.02288	0.09543
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01524	0.01780	0.09037
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.02058	0.02315	0.09569
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01552	0.01807	0.09064
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01680	0.01946	0.09085
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01144	0.01410	0.08549
	(!D * !SCE * SET_B * !Q * Q_N)	0.01707	0.01971	0.09131
	(!D * !SCE * SET_B * !Q * Q_N)	0.01171	0.01434	0.08595
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02171	0.02438	0.09570
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01604	0.01870	0.09004
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01681	0.01945	0.09105
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01145	0.01408	0.08569
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02146	0.02411	0.09544
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01579	0.01843	0.08978
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02031	0.02289	0.09543
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01525	0.01780	0.09037

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)	0.01796	0.02154	0.09414
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02354	0.02713	0.09972
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00897	0.01269	0.08400
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01432	0.01805	0.08937
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01770	0.02129	0.09392
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02329	0.02689	0.09952
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00870	0.01242	0.08373
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01405	0.01778	0.08910
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01989	0.02379	0.09622
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02505	0.02896	0.10138
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00936	0.01302	0.08420
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01470	0.01838	0.08954
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01272	0.01667	0.08895
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01838	0.02235	0.09462
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01143	0.01509	0.08752
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01647	0.02016	0.09258
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01116	0.01482	0.08725
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01621	0.01989	0.09231
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01795	0.02154	0.09413
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02354	0.02715	0.09972
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00897	0.01269	0.08400
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01432	0.01805	0.08937
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01959	0.02351	0.09593
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.02472	0.02866	0.10107
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01989	0.02381	0.09621
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02504	0.02896	0.10137
	(!D * !SCE * SET_B * !Q * Q_N)	0.00909	0.01276	0.08392
	(!D * !SCE * SET_B * !Q * Q_N)	0.01444	0.01811	0.08926
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01246	0.01641	0.08869
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01812	0.02210	0.09436
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00936	0.01302	0.08419
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01471	0.01838	0.08953
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01274	0.01669	0.08896
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01840	0.02237	0.09463
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01143	0.01509	0.08751
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01647	0.02016	0.09258

SKY130_FD_SC_HS__SDFRBPx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00189	0.00195	0.00426	0.00579	0.00310	1.28324	1.30089
sky130_fd_sc_hs__sdfrbp_2	0.00191	0.00197	0.00438	0.00590	0.00305	2.54441	2.53788

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfrbp_1	0.00000	1.14327	2.06406
sky130_fd_sc_hs__sdfrbp_2	0.00000	1.14477	1.83511

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)	0.19621	0.63924	5.89098
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RR)	0.22775	0.58071	6.14479

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrbp_1	CLK->Q (RF)	0.18424	0.40215	2.10999
	RESET_B->Q (FF)	0.25934	0.70963	5.14290
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RF)	0.21059	0.39626	2.24456
	RESET_B->Q (FF)	0.28858	0.70845	5.30077

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)	0.15367	0.60800	5.83940
	RESET_B->Q_N (FR)	0.22856	0.91181	8.86529
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RR)	0.15570	0.51850	5.74286
	RESET_B->Q_N (FR)	0.23374	0.82779	8.79462

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)	0.14698	0.43122	2.39644
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RF)	0.15445	0.40608	2.24593

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)	-0.08054	-0.17191	-1.01301
	setup	CLK (R)	0.13845	0.20303	1.03060
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.08372	-0.17669	-1.04537
	setup	CLK (R)	0.13961	0.21085	1.06403

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)	-0.10108	-0.22713	-3.02233
	setup	CLK (R)	0.18064	0.30153	3.07116
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.10997	-0.23936	-3.05552
	setup	CLK (R)	0.18571	0.31161	3.11335

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)	-0.08054	-0.17191	-1.01301
	hold	CLK (R)	-0.08164	-0.17191	-1.01301
	setup	CLK (R)	0.13800	0.20303	1.03046
	setup	CLK (R)	0.13845	0.20303	1.03060
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.08372	-0.17669	-1.04789
	hold	CLK (R)	-0.08410	-0.17669	-1.04537
	setup	CLK (R)	0.13946	0.21050	1.06403
	setup	CLK (R)	0.13961	0.21085	1.06400

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)	-0.10108	-0.22713	-3.02233
	hold	CLK (R)	-0.10108	-0.22716	-3.02289
	setup	CLK (R)	0.17809	0.30005	3.07116
	setup	CLK (R)	0.18064	0.30153	3.06986
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.11009	-0.23936	-3.05552
	hold	CLK (R)	-0.10997	-0.23957	-3.05784
	setup	CLK (R)	0.18569	0.30855	3.11335
	setup	CLK (R)	0.18571	0.31161	3.11047

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)	-0.09970	-0.18184	-1.00130
	setup	CLK (R)	0.15671	0.21915	1.01762
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.09889	-0.18547	-1.02794
	setup	CLK (R)	0.15865	0.22259	1.04615

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)	-0.13075	-0.25353	-3.14166
	setup	CLK (R)	0.23037	0.34004	3.17965
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.13828	-0.26181	-3.16940
	setup	CLK (R)	0.23633	0.34633	3.21737

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)	-0.09970	-0.18184	-1.00346
	hold	CLK (R)	-0.10333	-0.18962	-1.00130
	setup	CLK (R)	0.15331	0.21280	1.01762
	setup	CLK (R)	0.15671	0.21915	1.01623
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.09889	-0.18547	-1.02794
	hold	CLK (R)	-0.10633	-0.19332	-1.03155
	setup	CLK (R)	0.15250	0.21380	1.04391
	setup	CLK (R)	0.15865	0.22259	1.04615

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)	-0.14335	-0.26081	-3.14166
	hold	CLK (R)	-0.13075	-0.25353	-3.14224
	setup	CLK (R)	0.23037	0.34004	3.17965
	setup	CLK (R)	0.22186	0.33353	3.17867
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.15088	-0.26853	-3.16940
	hold	CLK (R)	-0.13828	-0.26181	-3.17126
	setup	CLK (R)	0.23633	0.34633	3.21397
	setup	CLK (R)	0.23229	0.34039	3.21737

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)	-0.08676	-0.17639	-0.40286
	setup	CLK (R)	0.23342	0.25268	1.05851
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.08829	-0.17984	-0.42255
	setup	CLK (R)	0.23822	0.25602	1.08865

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)	-0.11502	-0.22108	-2.93675
	setup	CLK (R)	0.19444	0.30347	3.01889
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.11929	-0.22937	-2.94957
	setup	CLK (R)	0.19657	0.30451	3.05109

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)	-0.14497	-0.17639	-0.40286
	hold	CLK (R)	-0.08676	-0.17822	-1.04070
	setup	CLK (R)	0.23342	0.25268	0.43289
	setup	CLK (R)	0.13939	0.20902	1.05851
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.15437	-0.18366	-0.42255
	hold	CLK (R)	-0.08829	-0.17984	-1.07424
	setup	CLK (R)	0.23822	0.25602	0.45267
	setup	CLK (R)	0.13899	0.21080	1.08865

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)	-0.13939	-0.27434	-2.93675
	hold	CLK (R)	-0.11502	-0.22108	-2.97576
	setup	CLK (R)	0.19444	0.30347	2.94921
	setup	CLK (R)	0.19262	0.29661	3.01889
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.14028	-0.27193	-2.94957
	hold	CLK (R)	-0.11929	-0.22937	-3.00032
	setup	CLK (R)	0.19523	0.30320	2.96289
	setup	CLK (R)	0.19657	0.30451	3.05109

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)	0.17505	0.21539	1.28004
	removal	CLK (R)	-0.13253	-0.17766	-1.22252
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.17558	0.21802	1.30681
	removal	CLK (R)	-0.14040	-0.18327	-1.24801

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)	0.16921	0.20997	1.28004
	recovery	CLK (R)	0.16540	0.19903	1.24758
	recovery	CLK (R)	0.16148	0.19212	1.23182
	recovery	CLK (R)	0.17505	0.21539	1.27774
	removal	CLK (R)	-0.14336	-0.19644	-1.27802
	removal	CLK (R)	-0.13741	-0.18547	-1.24416
	removal	CLK (R)	-0.13253	-0.17766	-1.22252
	removal	CLK (R)	-0.14764	-0.20250	-1.27098
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.17127	0.21319	1.30188
	recovery	CLK (R)	0.16657	0.20303	1.27200
	recovery	CLK (R)	0.16356	0.19730	1.25386
	recovery	CLK (R)	0.17558	0.21802	1.30681
	removal	CLK (R)	-0.14745	-0.20083	-1.29796
	removal	CLK (R)	-0.14294	-0.19205	-1.26885
	removal	CLK (R)	-0.14040	-0.18327	-1.24801
	removal	CLK (R)	-0.15107	-0.20606	-1.29852

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 ()	0.13365	0.63232	16.50020
	min_pulse_width	RESET_B ()	0.11703	0.63232	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	RESET_B ()	0.13365	0.63232	16.50020
	min_pulse_width	RESET_B ()	0.12890	0.63232	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 ()	0.10990	0.63232	16.50020
	min_pulse_width	CLK ()	0.07191	0.63232	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.13365	0.63232	16.50020
	min_pulse_width	CLK ()	0.08378	0.63232	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 ()	0.15027	0.63232	16.50020
	min_pulse_width	CLK ()	0.17402	0.63232	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.14790	0.63232	16.50020
	min_pulse_width	CLK ()	0.17402	0.63232	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	0.01756	0.01892	0.05597
	CLK	0.01483	0.01616	0.05324
sky130_fd_sc_hs__sdfrbp_2	CLK	0.02152	0.02283	0.06079
	CLK	0.01871	0.01989	0.05790

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.01765	0.01933	0.05522
	CLK	0.01496	0.01659	0.05254
	RESET_B	0.01510	0.01708	0.05734
	RESET_B	0.02130	0.02321	0.06340
sky130_fd_sc_hs__sdfrbp_2	CLK	0.02092	0.02283	0.05915
	CLK	0.01839	0.02029	0.05658
	RESET_B	0.01824	0.02045	0.06323
	RESET_B	0.02487	0.02704	0.06742

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.01767	0.01932	0.05601
	CLK	0.01498	0.01661	0.05331
	RESET_B	0.01514	0.01712	0.05870
	RESET_B	0.02134	0.02326	0.06401
sky130_fd_sc_hs__sdfrbp_2	CLK	0.02093	0.02291	0.06001
	CLK	0.01840	0.02032	0.05743
	RESET_B	0.01826	0.02046	0.06285
	RESET_B	0.02490	0.02708	0.06789

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.01754	0.01894	0.05534
	CLK	0.01481	0.01613	0.05257
sky130_fd_sc_hs__sdfrbp_2	CLK	0.02150	0.02273	0.05945
	CLK	0.01869	0.01985	0.05659

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrbp_1	**(CLK * RESET_B * SCD * SCE)**	0.00144	0.00145	0.00145
	(CLK * RESET_B * SCD * SCE)	-0.00065	-0.00066	-0.00065
	(CLK * RESET_B * SCD * !SCE)	0.00615	0.00721	0.03933
	(CLK * RESET_B * SCD * !SCE)	0.00205	0.00310	0.03523
	(CLK * RESET_B * !SCD * !SCE)	0.00615	0.00721	0.03933
	(CLK * RESET_B * !SCD * !SCE)	0.00206	0.00310	0.03523
	(CLK * !SCD * SCE)	0.00073	0.00074	0.00072
	(CLK * !SCD * SCE)	-0.00155	-0.00157	-0.00159
	(CLK * !RESET_B * SCD * SCE)	0.00072	0.00072	0.00070
	(CLK * !RESET_B * SCD * SCE)	-0.00156	-0.00158	-0.00160
	(CLK * !RESET_B * SCD * !SCE)	0.00049	0.00049	0.00043
	(CLK * !RESET_B * SCD * !SCE)	-0.00177	-0.00179	-0.00187
	(CLK * !RESET_B * !SCD * !SCE)	0.00048	0.00049	0.00044
	(CLK * !RESET_B * !SCD * !SCE)	-0.00182	-0.00183	-0.00189
	(!CLK * RESET_B * SCD * SCE)	0.00144	0.00145	0.00145
	(!CLK * RESET_B * SCD * SCE)	-0.00065	-0.00066	-0.00065
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.01417	0.01529	0.05166
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00987	0.01098	0.04735
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01418	0.01529	0.05166
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00987	0.01098	0.04735
	(!CLK * !SCD * SCE)	0.00074	0.00075	0.00073
	(!CLK * !SCD * SCE)	-0.00154	-0.00157	-0.00159
	(!CLK * !RESET_B * SCD * SCE)	0.00072	0.00072	0.00070
	(!CLK * !RESET_B * SCD * SCE)	-0.00156	-0.00159	-0.00160
	(!CLK * !RESET_B * SCD * !SCE)	0.00049	0.00049	0.00043
	(!CLK * !RESET_B * SCD * !SCE)	-0.00177	-0.00179	-0.00187
	(!CLK * !RESET_B * !SCD * !SCE)	0.00049	0.00049	0.00044
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00182	-0.00183	-0.00189

	(CLK * RESET_B * SCD * SCE)	0.00147	0.00149	0.00148
	(CLK * RESET_B * SCD * SCE)	-0.00065	-0.00066	-0.00065
	(CLK * RESET_B * SCD * !SCE)	0.00651	0.00754	0.03953
	(CLK * RESET_B * SCD * !SCE)	0.00234	0.00335	0.03535
	(CLK * RESET_B * !SCD * !SCE)	0.00652	0.00754	0.03953
	(CLK * RESET_B * !SCD * !SCE)	0.00235	0.00335	0.03535
	(CLK * !SCD * SCE)	0.00075	0.00075	0.00073
	(CLK * !SCD * SCE)	-0.00156	-0.00159	-0.00161
	(CLK * !RESET_B * SCD * SCE)	0.00072	0.00073	0.00072
	(CLK * !RESET_B * SCD * SCE)	-0.00158	-0.00160	-0.00161
	(CLK * !RESET_B * SCD * !SCE)	0.00047	0.00048	0.00042
	(CLK * !RESET_B * SCD * !SCE)	-0.00182	-0.00184	-0.00191
	(CLK * !RESET_B * !SCD * !SCE)	0.00047	0.00047	0.00043
	(CLK * !RESET_B * !SCD * !SCE)	-0.00186	-0.00188	-0.00193
	(!CLK * RESET_B * SCD * SCE)	0.00147	0.00148	0.00148
	(!CLK * RESET_B * SCD * SCE)	-0.00065	-0.00066	-0.00065
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.01459	0.01567	0.05196
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.01020	0.01128	0.04756
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01459	0.01567	0.05196
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01020	0.01128	0.04756
	(!CLK * !SCD * SCE)	0.00075	0.00076	0.00074
	(!CLK * !SCD * SCE)	-0.00156	-0.00159	-0.00161
	(!CLK * !RESET_B * SCD * SCE)	0.00072	0.00073	0.00072
	(!CLK * !RESET_B * SCD * SCE)	-0.00158	-0.00161	-0.00161
	(!CLK * !RESET_B * SCD * !SCE)	0.00047	0.00048	0.00042
	(!CLK * !RESET_B * SCD * !SCE)	-0.00182	-0.00184	-0.00191
	(!CLK * !RESET_B * !SCD * !SCE)	0.00047	0.00047	0.00043
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00186	-0.00188	-0.00193

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * RESET_B * SCD * SCE)	-0.00136	-0.00139	-0.00142
	(CLK * RESET_B * SCD * SCE)	0.00071	0.00072	0.00069
	(CLK * RESET_B * SCD * !SCE)	0.00074	0.00237	0.03473
	(CLK * RESET_B * SCD * !SCE)	0.00483	0.00647	0.03883
	(CLK * RESET_B * !SCD * !SCE)	0.00075	0.00225	0.03474
	(CLK * RESET_B * !SCD * !SCE)	0.00483	0.00635	0.03883
	(CLK * !SCD * SCE)	-0.00069	-0.00070	-0.00069
	(CLK * !SCD * SCE)	0.00159	0.00161	0.00160
	(CLK * !RESET_B * SCD * SCE)	-0.00068	-0.00069	-0.00068
	(CLK * !RESET_B * SCD * SCE)	0.00160	0.00161	0.00160
	(CLK * !RESET_B * SCD * !SCE)	-0.00042	-0.00041	-0.00041
	(CLK * !RESET_B * SCD * !SCE)	0.00189	0.00191	0.00189
	(CLK * !RESET_B * !SCD * !SCE)	-0.00042	-0.00042	-0.00041
	(CLK * !RESET_B * !SCD * !SCE)	0.00190	0.00191	0.00190
	(!CLK * RESET_B * SCD * SCE)	-0.00136	-0.00139	-0.00141
	(!CLK * RESET_B * SCD * SCE)	0.00072	0.00072	0.00069
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.00903	0.01122	0.04886
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.01335	0.01555	0.05318
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00904	0.01122	0.04887
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01335	0.01554	0.05318
	(!CLK * !SCD * SCE)	-0.00069	-0.00070	-0.00069
	(!CLK * !SCD * SCE)	0.00160	0.00162	0.00161
	(!CLK * !RESET_B * SCD * SCE)	-0.00068	-0.00068	-0.00068
	(!CLK * !RESET_B * SCD * SCE)	0.00160	0.00161	0.00160
	(!CLK * !RESET_B * SCD * !SCE)	-0.00042	-0.00042	-0.00041
	(!CLK * !RESET_B * SCD * !SCE)	0.00189	0.00191	0.00189
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00042	-0.00042	-0.00041
	(!CLK * !RESET_B * !SCD * !SCE)	0.00189	0.00191	0.00190

	(CLK * RESET_B * SCD * SCE)	-0.00140	-0.00142	-0.00145
	(CLK * RESET_B * SCD * SCE)	0.00071	0.00072	0.00069
	(CLK * RESET_B * SCD * !SCE)	0.00087	0.00244	0.03473
	(CLK * RESET_B * SCD * !SCE)	0.00504	0.00662	0.03890
	(CLK * RESET_B * !SCD * !SCE)	0.00087	0.00234	0.03473
	(CLK * RESET_B * !SCD * !SCE)	0.00504	0.00651	0.03890
	(CLK * !SCD * SCE)	-0.00070	-0.00071	-0.00071
	(CLK * !SCD * SCE)	0.00161	0.00162	0.00162
	(CLK * !RESET_B * SCD * SCE)	-0.00069	-0.00070	-0.00069
	(CLK * !RESET_B * SCD * SCE)	0.00161	0.00163	0.00162
	(CLK * !RESET_B * SCD * !SCE)	-0.00039	-0.00039	-0.00039
	(CLK * !RESET_B * SCD * !SCE)	0.00193	0.00196	0.00194
	(CLK * !RESET_B * !SCD * !SCE)	-0.00039	-0.00040	-0.00039
	(CLK * !RESET_B * !SCD * !SCE)	0.00193	0.00196	0.00194
	(!CLK * RESET_B * SCD * SCE)	-0.00140	-0.00141	-0.00145
	(!CLK * RESET_B * SCD * SCE)	0.00072	0.00071	0.00069
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.00924	0.01139	0.04896
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.01364	0.01579	0.05335
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00922	0.01139	0.04897
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01361	0.01580	0.05335
	(!CLK * !SCD * SCE)	-0.00070	-0.00071	-0.00070
	(!CLK * !SCD * SCE)	0.00162	0.00162	0.00162
	(!CLK * !RESET_B * SCD * SCE)	-0.00069	-0.00070	-0.00069
	(!CLK * !RESET_B * SCD * SCE)	0.00162	0.00163	0.00162
	(!CLK * !RESET_B * SCD * !SCE)	-0.00039	-0.00040	-0.00039
	(!CLK * !RESET_B * SCD * !SCE)	0.00193	0.00196	0.00194
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00039	-0.00040	-0.00039
	(!CLK * !RESET_B * !SCD * !SCE)	0.00193	0.00196	0.00194

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.00806	0.00863	0.03424
	(CLK * D * RESET_B * SCE)	0.00276	0.00332	0.02894
	(CLK * D * RESET_B * !SCE)	0.00144	0.00124	0.00121
	(CLK * D * RESET_B * !SCE)	-0.00126	-0.00149	-0.00151
	(CLK * D * !RESET_B * SCE)	0.00065	0.00064	0.00062
	(CLK * D * !RESET_B * SCE)	-0.00165	-0.00165	-0.00164
	(CLK * D * !RESET_B * !SCE)	0.00046	0.00047	0.00046
	(CLK * D * !RESET_B * !SCE)	-0.00178	-0.00180	-0.00179
	(CLK * !D * RESET_B * SCE)	0.00904	0.00952	0.03469
	(CLK * !D * RESET_B * SCE)	0.00353	0.00399	0.02919
	(CLK * !D * !RESET_B * SCE)	0.00065	0.00065	0.00062
	(CLK * !D * !RESET_B * SCE)	-0.00165	-0.00165	-0.00164
	(!D * RESET_B * !SCE)	0.00096	0.00097	0.00097
	(!D * RESET_B * !SCE)	-0.00173	-0.00175	-0.00175
	(!D * !RESET_B * !SCE)	0.00056	0.00056	0.00056
	(!D * !RESET_B * !SCE)	-0.00187	-0.00188	-0.00188
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.01608	0.01684	0.04573
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.01057	0.01131	0.04021
	(!CLK * D * RESET_B * !SCE)	0.00145	0.00124	0.00121
	(!CLK * D * RESET_B * !SCE)	-0.00126	-0.00149	-0.00151
	(!CLK * D * !RESET_B * SCE)	0.00065	0.00065	0.00062
	(!CLK * D * !RESET_B * SCE)	-0.00165	-0.00166	-0.00164
	(!CLK * D * !RESET_B * !SCE)	0.00046	0.00047	0.00046
	(!CLK * D * !RESET_B * !SCE)	-0.00178	-0.00180	-0.00179
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01707	0.01774	0.04607
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01135	0.01200	0.04035
	(!CLK * !D * !RESET_B * SCE)	0.00065	0.00064	0.00062
	(!CLK * !D * !RESET_B * SCE)	-0.00165	-0.00165	-0.00164

	(CLK * D * RESET_B * SCE)	0.00832	0.00887	0.03441
	(CLK * D * RESET_B * SCE)	0.00294	0.00347	0.02903
	(CLK * D * RESET_B * !SCE)	0.00148	0.00127	0.00124
	(CLK * D * RESET_B * !SCE)	-0.00127	-0.00149	-0.00151
	(CLK * D * !RESET_B * SCE)	0.00067	0.00067	0.00065
	(CLK * D * !RESET_B * SCE)	-0.00166	-0.00165	-0.00164
	(CLK * D * !RESET_B * !SCE)	0.00048	0.00048	0.00048
	(CLK * D * !RESET_B * !SCE)	-0.00179	-0.00181	-0.00181
	(CLK * !D * RESET_B * SCE)	0.00930	0.00976	0.03487
	(CLK * !D * RESET_B * SCE)	0.00371	0.00415	0.02927
	(CLK * !D * !RESET_B * SCE)	0.00067	0.00067	0.00065
	(CLK * !D * !RESET_B * SCE)	-0.00166	-0.00166	-0.00164
	(!D * RESET_B * !SCE)	0.00099	0.00100	0.00099
	(!D * RESET_B * !SCE)	-0.00175	-0.00177	-0.00176
	(!D * !RESET_B * !SCE)	0.00057	0.00057	0.00057
	(!D * !RESET_B * !SCE)	-0.00189	-0.00190	-0.00190
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.01638	0.01713	0.04599
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.01078	0.01152	0.04039
	(!CLK * D * RESET_B * !SCE)	0.00148	0.00127	0.00124
	(!CLK * D * RESET_B * !SCE)	-0.00127	-0.00149	-0.00151
	(!CLK * D * !RESET_B * SCE)	0.00068	0.00068	0.00065
	(!CLK * D * !RESET_B * SCE)	-0.00166	-0.00166	-0.00164
	(!CLK * D * !RESET_B * !SCE)	0.00048	0.00048	0.00048
	(!CLK * D * !RESET_B * !SCE)	-0.00179	-0.00181	-0.00181
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01737	0.01803	0.04638
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01157	0.01221	0.04056
	(!CLK * !D * !RESET_B * SCE)	0.00067	0.00067	0.00065
	(!CLK * !D * !RESET_B * SCE)	-0.00165	-0.00165	-0.00164

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.00243	0.00296	0.02860
	(CLK * D * RESET_B * SCE)	0.00774	0.00828	0.03388
	(CLK * D * RESET_B * !SCE)	-0.00115	-0.00118	-0.00118
	(CLK * D * RESET_B * !SCE)	0.00154	0.00156	0.00155
	(CLK * D * !RESET_B * SCE)	-0.00058	-0.00058	-0.00058
	(CLK * D * !RESET_B * SCE)	0.00168	0.00170	0.00167
	(CLK * D * !RESET_B * !SCE)	-0.00044	-0.00045	-0.00045
	(CLK * D * !RESET_B * !SCE)	0.00180	0.00181	0.00180
	(CLK * !D * RESET_B * SCE)	0.00185	0.00246	0.02837
	(CLK * !D * RESET_B * SCE)	0.00736	0.00799	0.03386
	(CLK * !D * !RESET_B * SCE)	-0.00058	-0.00058	-0.00058
	(CLK * !D * !RESET_B * SCE)	0.00168	0.00170	0.00167
	(!D * RESET_B * !SCE)	-0.00089	-0.00096	-0.00097
	(!D * RESET_B * !SCE)	0.00181	0.00176	0.00176
	(!D * !RESET_B * !SCE)	-0.00056	-0.00056	-0.00056
	(!D * !RESET_B * !SCE)	0.00190	0.00192	0.00191
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.01092	0.01175	0.04146
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.01644	0.01728	0.04698
	(!CLK * D * RESET_B * !SCE)	-0.00115	-0.00118	-0.00118
	(!CLK * D * RESET_B * !SCE)	0.00155	0.00156	0.00155
	(!CLK * D * !RESET_B * SCE)	-0.00058	-0.00058	-0.00058
	(!CLK * D * !RESET_B * SCE)	0.00168	0.00170	0.00167
	(!CLK * D * !RESET_B * !SCE)	-0.00045	-0.00045	-0.00045
	(!CLK * D * !RESET_B * !SCE)	0.00180	0.00181	0.00180
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01048	0.01136	0.04167
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01620	0.01710	0.04739
	(!CLK * !D * !RESET_B * SCE)	-0.00058	-0.00058	-0.00058
	(!CLK * !D * !RESET_B * SCE)	0.00168	0.00170	0.00167

	(CLK * D * RESET_B * SCE)	0.00251	0.00304	0.02863
	(CLK * D * RESET_B * SCE)	0.00790	0.00844	0.03400
	(CLK * D * RESET_B * !SCE)	-0.00118	-0.00121	-0.00121
	(CLK * D * RESET_B * !SCE)	0.00155	0.00156	0.00156
	(CLK * D * !RESET_B * SCE)	-0.00060	-0.00061	-0.00061
	(CLK * D * !RESET_B * SCE)	0.00168	0.00170	0.00167
	(CLK * D * !RESET_B * !SCE)	-0.00046	-0.00046	-0.00046
	(CLK * D * !RESET_B * !SCE)	0.00181	0.00184	0.00182
	(CLK * !D * RESET_B * SCE)	0.00201	0.00261	0.02844
	(CLK * !D * RESET_B * SCE)	0.00760	0.00822	0.03402
	(CLK * !D * !RESET_B * SCE)	-0.00060	-0.00061	-0.00061
	(CLK * !D * !RESET_B * SCE)	0.00168	0.00170	0.00167
	(!D * RESET_B * !SCE)	-0.00091	-0.00098	-0.00099
	(!D * RESET_B * !SCE)	0.00182	0.00178	0.00178
	(!D * !RESET_B * !SCE)	-0.00057	-0.00057	-0.00057
	(!D * !RESET_B * !SCE)	0.00192	0.00194	0.00193
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.01104	0.01182	0.04147
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.01665	0.01743	0.04705
	(!CLK * D * RESET_B * !SCE)	-0.00118	-0.00121	-0.00121
	(!CLK * D * RESET_B * !SCE)	0.00155	0.00156	0.00156
	(!CLK * D * !RESET_B * SCE)	-0.00060	-0.00061	-0.00061
	(!CLK * D * !RESET_B * SCE)	0.00168	0.00170	0.00167
	(!CLK * D * !RESET_B * !SCE)	-0.00046	-0.00046	-0.00046
	(!CLK * D * !RESET_B * !SCE)	0.00181	0.00184	0.00182
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01070	0.01163	0.04182
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01652	0.01746	0.04762
	(!CLK * !D * !RESET_B * SCE)	-0.00060	-0.00061	-0.00061
	(!CLK * !D * !RESET_B * SCE)	0.00168	0.00170	0.00167

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)**	0.00717	0.00871	0.05363
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00004	0.00152	0.04647
	(CLK * D * RESET_B * !SCD)	0.01014	0.01173	0.05799
	(CLK * D * RESET_B * !SCD)	0.00538	0.00692	0.05315
	(CLK * !D * RESET_B * SCD)	0.01311	0.01571	0.08698
	(CLK * !D * RESET_B * SCD)	0.00386	0.00642	0.07774
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00718	0.00870	0.05363
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00004	0.00153	0.04647
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01846	0.02012	0.06687
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01391	0.01553	0.06225
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00707	0.00885	0.05382
	(!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	0.00205	0.04704
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.02111	0.02395	0.09919
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01165	0.01446	0.08972

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00669	0.00828	0.05333
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00069	0.00088	0.04593
	(CLK * D * RESET_B * !SCD)	0.00981	0.01145	0.05779
	(CLK * D * RESET_B * !SCD)	0.00486	0.00645	0.05277
	(CLK * !D * RESET_B * SCD)	0.01292	0.01555	0.08699
	(CLK * !D * RESET_B * SCD)	0.00339	0.00598	0.07748
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00669	0.00827	0.05333
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00069	0.00088	0.04593
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01818	0.01990	0.06673
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01345	0.01512	0.06191
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00664	0.00849	0.05358
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00035	0.00145	0.04656
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.02096	0.02385	0.09934
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01122	0.01407	0.08959

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)**	-0.00045	0.00208	0.04707
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00669	0.00926	0.05423
	(CLK * D * RESET_B * !SCD)	0.00573	0.00799	0.05406
	(CLK * D * RESET_B * !SCD)	0.01054	0.01282	0.05870
	(CLK * !D * RESET_B * SCD)	0.00123	0.00424	0.07538
	(CLK * !D * RESET_B * SCD)	0.01049	0.01351	0.08464
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00044	0.00210	0.04708
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00670	0.00927	0.05423
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01374	0.01610	0.06208
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01833	0.02069	0.06650
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00043	0.00201	0.04691
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00634	0.00880	0.05367
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00952	0.01272	0.08732
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01898	0.02222	0.09680

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00040	0.00216	0.04723
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00697	0.00956	0.05462
	(CLK * D * RESET_B * !SCD)	0.00614	0.00842	0.05451
	(CLK * D * RESET_B * !SCD)	0.01114	0.01346	0.05934
	(CLK * !D * RESET_B * SCD)	0.00134	0.00436	0.07561
	(CLK * !D * RESET_B * SCD)	0.01086	0.01391	0.08516
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00040	0.00218	0.04723
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00697	0.00958	0.05462
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01419	0.01657	0.06261
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01897	0.02136	0.06720
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00043	0.00204	0.04701
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00656	0.00907	0.05401
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00966	0.01290	0.08768
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01942	0.02268	0.09744

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)**	0.01176	0.01240	0.05091
	(CLK * D * SCD * SCE * !Q * Q_N)	-0.00051	0.00004	0.03858
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.01131	0.01199	0.05107
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00055	0.00007	0.03921
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00400	0.00402	0.00401
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00512	-0.00514	-0.00512
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.01073	0.01154	0.05087
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00054	0.00020	0.03958
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.01275	0.01328	0.05132
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00026	0.00072	0.03877
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00396	0.00399	0.00397
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00514	-0.00516	-0.00514
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00400	0.00402	0.00400
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00512	-0.00514	-0.00512
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00397	0.00400	0.00398
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00515	-0.00516	-0.00515
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.02060	0.02097	0.07026
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00809	0.00844	0.05773
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.02013	0.02056	0.07067
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00812	0.00846	0.05859
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00401	0.00401	0.00401
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00512	-0.00512	-0.00512
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01957	0.02008	0.07021
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00810	0.00855	0.05872
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.02160	0.02188	0.07042
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00888	0.00915	0.05772
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00397	0.00401	0.00398
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00514	-0.00516	-0.00514
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00400	0.00406	0.00401
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00512	-0.00515	-0.00512
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00398	0.00403	0.00398
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00514	-0.00517	-0.00514

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.01186	0.01247	0.05083
	(CLK * D * SCD * SCE * !Q * Q_N)	-0.00048	0.00008	0.03850
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.01154	0.01219	0.05108
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00035	0.00024	0.03921
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00386	0.00389	0.00387
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00524	-0.00525	-0.00524
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.01097	0.01173	0.05089
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00035	0.00036	0.03956
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.01285	0.01335	0.05125
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00030	0.00078	0.03867
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00383	0.00385	0.00384
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00526	-0.00527	-0.00526
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00386	0.00388	0.00387
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00524	-0.00525	-0.00524
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00384	0.00386	0.00384
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00526	-0.00527	-0.00526
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.02068	0.02106	0.07025
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00817	0.00850	0.05767
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.02037	0.02075	0.07080
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00831	0.00863	0.05868
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00385	0.00391	0.00386
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00524	-0.00528	-0.00524
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01978	0.02030	0.07029
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00831	0.00874	0.05875
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.02168	0.02212	0.07043
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00896	0.00932	0.05769
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00382	0.00386	0.00383
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00526	-0.00529	-0.00526
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00385	0.00389	0.00386
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00524	-0.00527	-0.00524
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00383	0.00388	0.00384
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00527	-0.00530	-0.00527

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)**	0.00072	0.00245	0.04242
	(CLK * D * SCD * SCE * !Q * Q_N)	0.01304	0.01481	0.05473
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00044	0.00131	0.04115
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.01142	0.01325	0.05302
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00388	-0.00401	-0.00399
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00519	0.00518	0.00515
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00081	0.00086	0.04112
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.01046	0.01220	0.05237
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00014	0.00190	0.04218
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.01266	0.01444	0.05470
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00381	-0.00399	-0.00397
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00523	0.00519	0.00516
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00388	-0.00401	-0.00399
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00519	0.00518	0.00515
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00383	-0.00400	-0.00398
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00524	0.00519	0.00516
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00895	0.01048	0.06448
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.02153	0.02301	0.07702
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00782	0.00923	0.06286
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01985	0.02134	0.07494
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00389	-0.00401	-0.00399
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00517	0.00518	0.00514
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00742	0.00893	0.06274
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01895	0.02045	0.07423
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00841	0.00998	0.06444
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.02109	0.02277	0.07719
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00382	-0.00400	-0.00398
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00521	0.00519	0.00515
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00389	-0.00402	-0.00399
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00517	0.00517	0.00514
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00384	-0.00401	-0.00398
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00523	0.00519	0.00516

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.00093	0.00260	0.04252
	(CLK * D * SCD * SCE * !Q * Q_N)	0.01328	0.01501	0.05488
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00030	0.00143	0.04121
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.01163	0.01337	0.05309
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00373	-0.00384	-0.00385
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00531	0.00528	0.00527
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00066	0.00111	0.04116
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.01066	0.01244	0.05246
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00043	0.00221	0.04233
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.01299	0.01479	0.05490
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00366	-0.00383	-0.00383
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00535	0.00529	0.00527
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00373	-0.00384	-0.00385
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00531	0.00528	0.00527
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00368	-0.00383	-0.00384
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00536	0.00530	0.00528
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00918	0.01072	0.06467
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.02181	0.02330	0.07724
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00801	0.00940	0.06301
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.02007	0.02157	0.07512
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00373	-0.00384	-0.00384
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00531	0.00530	0.00527
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00760	0.00912	0.06287
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01918	0.02068	0.07441
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00874	0.01030	0.06466
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.02146	0.02312	0.07744
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00366	-0.00382	-0.00382
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00534	0.00530	0.00528
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00373	-0.00384	-0.00384
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00531	0.00529	0.00527
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00368	-0.00383	-0.00383
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00536	0.00531	0.00529

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)**	0.01645	0.01887	0.08848
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.01101	0.01341	0.08304
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01645	0.01887	0.08848
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01101	0.01341	0.08304
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01645	0.01887	0.08848
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01101	0.01341	0.08304
	(D * !SCD * SCE * !Q * Q_N)	0.01686	0.01925	0.08884
	(D * !SCD * SCE * !Q * Q_N)	0.01142	0.01379	0.08341
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01686	0.01926	0.08887
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01142	0.01381	0.08343
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01686	0.01926	0.08886
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01141	0.01380	0.08342
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01686	0.01926	0.08885
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01141	0.01380	0.08341
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01645	0.01887	0.08849
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01101	0.01341	0.08305
	(!D * !SCE * !Q * Q_N)	0.01686	0.01925	0.08922
	(!D * !SCE * !Q * Q_N)	0.01141	0.01379	0.08376
	(!D * !SCD * SCE * !Q * Q_N)	0.01686	0.01925	0.08884
	(!D * !SCD * SCE * !Q * Q_N)	0.01142	0.01380	0.08341
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01686	0.01927	0.08887
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01142	0.01381	0.08343

sky130_fd_sc_hs__sdfrbp_2	**(D * RESET_B * SCD * SCE * Q * !Q_N)**	0.01655	0.01886	0.08905
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.01124	0.01351	0.08373
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01655	0.01885	0.08906
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01124	0.01351	0.08373
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01655	0.01886	0.08911
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01124	0.01351	0.08376
	(D * !SCD * SCE * !Q * Q_N)	0.01687	0.01916	0.08926
	(D * !SCD * SCE * !Q * Q_N)	0.01155	0.01381	0.08392
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01687	0.01917	0.08925
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01156	0.01382	0.08391
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01687	0.01916	0.08925
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01155	0.01382	0.08391
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01687	0.01916	0.08925
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01155	0.01382	0.08391
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01655	0.01886	0.08910
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01124	0.01351	0.08376
	(!D * !SCE * !Q * Q_N)	0.01687	0.01915	0.08932
	(!D * !SCE * !Q * Q_N)	0.01155	0.01381	0.08399
	(!D * !SCD * SCE * !Q * Q_N)	0.01687	0.01916	0.08932
	(!D * !SCD * SCE * !Q * Q_N)	0.01155	0.01381	0.08398
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01687	0.01917	0.08931
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01156	0.01382	0.08399

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)	0.00866	0.01218	0.08206
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.01411	0.01763	0.08750
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01607	0.01963	0.09140
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.02130	0.02486	0.09661
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00866	0.01217	0.08206
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01410	0.01763	0.08750
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01604	0.01960	0.09136
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.02127	0.02484	0.09659
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01771	0.02141	0.09247
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.02340	0.02707	0.09814
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00866	0.01218	0.08206
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01411	0.01763	0.08751
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01604	0.01960	0.09136
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.02128	0.02484	0.09660
	(D * !SCD * SCE * !Q * Q_N)	0.00804	0.01157	0.08154
	(D * !SCD * SCE * !Q * Q_N)	0.01349	0.01702	0.08698
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00804	0.01158	0.08151
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01349	0.01701	0.08695
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00804	0.01158	0.08151
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01348	0.01702	0.08695
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00804	0.01158	0.08151
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01348	0.01702	0.08695
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00866	0.01218	0.08206
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01411	0.01763	0.08750
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01611	0.01967	0.09144
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.02133	0.02490	0.09666
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01766	0.02135	0.09242
	(!D * RESET_B * !SCE * Q * !Q_N)	0.02332	0.02700	0.09809
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01768	0.02139	0.09245
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.02335	0.02707	0.09813
	(!D * !SCE * !Q * Q_N)	0.00804	0.01156	0.08153
	(!D * !SCE * !Q * Q_N)	0.01348	0.01702	0.08697
	(!D * !SCD * SCE * !Q * Q_N)	0.00804	0.01157	0.08154
	(!D * !SCD * SCE * !Q * Q_N)	0.01349	0.01702	0.08698
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00804	0.01158	0.08151
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01349	0.01701	0.08695

sky130_fd_sc_hs__sdfrbp_2	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00860	0.01218	0.08291
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.01394	0.01751	0.08824
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01610	0.01974	0.09236
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.02122	0.02487	0.09748
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00859	0.01218	0.08290
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01394	0.01751	0.08824
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01607	0.01970	0.09232
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.02119	0.02484	0.09744
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01763	0.02138	0.09332
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.02322	0.02698	0.09889
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00860	0.01218	0.08291
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01394	0.01752	0.08825
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01607	0.01971	0.09232
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.02119	0.02484	0.09745
	(D * !SCD * SCE * !Q * Q_N)	0.00807	0.01168	0.08249
	(D * !SCD * SCE * !Q * Q_N)	0.01341	0.01701	0.08783
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00808	0.01168	0.08247
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01342	0.01702	0.08780
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00807	0.01168	0.08246
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01341	0.01701	0.08780
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00807	0.01168	0.08246
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01341	0.01701	0.08780
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00860	0.01218	0.08291
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01394	0.01751	0.08824
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01613	0.01978	0.09240
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.02124	0.02487	0.09749
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01758	0.02133	0.09328
	(!D * RESET_B * !SCE * Q * !Q_N)	0.02314	0.02688	0.09883
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01759	0.02136	0.09325
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.02316	0.02694	0.09881
	(!D * !SCE * !Q * Q_N)	0.00807	0.01168	0.08249
	(!D * !SCE * !Q * Q_N)	0.01341	0.01701	0.08782
	(!D * !SCD * SCE * !Q * Q_N)	0.00807	0.01168	0.08249
	(!D * !SCD * SCE * !Q * Q_N)	0.01341	0.01701	0.08783
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00808	0.01168	0.08247
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01342	0.01702	0.08780

SKY130_FD_SC_HS__SDFRTN

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00200	0.00194	0.00420	0.00577	0.00291	1.27377

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrtn_1	0.00000	1.10383	1.96273

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)	0.21452	0.84058	8.43449

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)	0.18313	0.58469	4.71311
	RESET_B->Q (FF)	0.24843	0.69570	5.09589

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)	-0.02110	0.01517	1.90899
	setup	CLK_N (F)	0.10511	0.05900	-1.84340

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)	-0.10405	-0.13991	-0.32951
	setup	CLK_N (F)	0.22734	0.23082	0.36991

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)	-0.02110	0.01517	1.90899
	hold	CLK_N (F)	-0.02166	0.01517	1.90882
	setup	CLK_N (F)	0.10511	0.05600	-1.84340
	setup	CLK_N (F)	0.10482	0.05900	-1.84480

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)	-0.10436	-0.13991	-0.33042
	hold	CLK_N (F)	-0.10405	-0.14135	-0.32951
	setup	CLK_N (F)	0.22734	0.23051	0.36991
	setup	CLK_N (F)	0.22661	0.23082	0.36965

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)	-0.03674	0.00717	1.88280
	setup	CLK_N (F)	0.12646	0.06764	-1.81370

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)	-0.13262	-0.15617	-0.42679
	setup	CLK_N (F)	0.27059	0.26357	0.49138

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)	-0.03674	0.00717	1.88280
	hold	CLK_N (F)	-0.04352	-0.00186	1.86135
	setup	CLK_N (F)	0.12260	0.06000	-1.83295
	setup	CLK_N (F)	0.12646	0.06764	-1.81370

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)	-0.14426	-0.16725	-0.45399
	hold	CLK_N (F)	-0.13262	-0.15617	-0.42679
	setup	CLK_N (F)	0.27059	0.26357	0.49138
	setup	CLK_N (F)	0.26962	0.25491	0.46277

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)	-0.02506	0.01028	2.14253
	setup	CLK_N (F)	0.27332	0.17505	-1.79330

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)	-0.07997	-0.08270	-0.07486
	setup	CLK_N (F)	0.24181	0.23242	0.37891

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)	-0.14630	-0.08133	2.14253
	hold	CLK_N (F)	-0.02506	0.01028	1.84636
	setup	CLK_N (F)	0.27332	0.17505	-2.11730
	setup	CLK_N (F)	0.10726	0.06257	-1.79330

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)	-0.07997	-0.08270	-0.07486
	hold	CLK_N (F)	-0.11913	-0.13865	-0.34423
	setup	CLK_N (F)	0.16559	0.14507	0.09787
	setup	CLK_N (F)	0.24181	0.23242	0.37891

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)	0.14092	0.06215	-1.63021
	removal	CLK_N (F)	-0.10077	-0.01957	1.70463

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)	0.13915	0.05500	-1.63917
	recovery	CLK_N (F)	0.13247	0.04820	-1.68564
	recovery	CLK_N (F)	0.12865	0.04129	-1.69966
	recovery	CLK_N (F)	0.14092	0.06215	-1.63021
	removal	CLK_N (F)	-0.10758	-0.03729	1.64702
	removal	CLK_N (F)	-0.10468	-0.02621	1.68963
	removal	CLK_N (F)	-0.10077	-0.01957	1.70463
	removal	CLK_N (F)	-0.11290	-0.04339	1.63733

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 ()	0.10753	0.63232	16.50020
	min_pulse_width	RESET_B ()	0.13365	0.63232	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 ()	0.12177	0.63232	16.50020
	min_pulse_width	CLK_N ()	0.16214	0.63232	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 ()	0.12177	0.63232	16.50020
	min_pulse_width	CLK_N ()	0.11703	0.63232	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	0.02762	0.03168	0.10543
	CLK_N	0.03313	0.03720	0.11099

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtn_1	CLK_N	0.02547	0.02921	0.10394
	CLK_N	0.03031	0.03404	0.10800
	RESET_B	0.02754	0.03098	0.11222
	RESET_B	0.03942	0.04276	0.12277

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)**	0.00149	0.00149	0.00149
	(CLK_N * RESET_B * SCD * SCE)	-0.00076	-0.00077	-0.00076
	(CLK_N * RESET_B * SCD * !SCE)	0.01496	0.01602	0.05149
	(CLK_N * RESET_B * SCD * !SCE)	0.01074	0.01179	0.04728
	(CLK_N * RESET_B * !SCD * !SCE)	0.01497	0.01602	0.05149
	(CLK_N * RESET_B * !SCD * !SCE)	0.01075	0.01179	0.04728
	(CLK_N * !SCD * SCE)	0.00083	0.00084	0.00082
	(CLK_N * !SCD * SCE)	-0.00161	-0.00164	-0.00165
	(CLK_N * !RESET_B * SCD * SCE)	0.00080	0.00081	0.00080
	(CLK_N * !RESET_B * SCD * SCE)	-0.00163	-0.00166	-0.00166
	(CLK_N * !RESET_B * SCD * !SCE)	0.00041	0.00042	0.00037
	(CLK_N * !RESET_B * SCD * !SCE)	-0.00200	-0.00203	-0.00210
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00041	0.00041	0.00037
	(CLK_N * !RESET_B * !SCD * !SCE)	-0.00206	-0.00207	-0.00211
	(!CLK_N * RESET_B * SCD * SCE)	0.00148	0.00149	0.00149
	(!CLK_N * RESET_B * SCD * SCE)	-0.00076	-0.00077	-0.00076
	(!CLK_N * RESET_B * SCD * !SCE)	0.00644	0.00745	0.03896
	(!CLK_N * RESET_B * SCD * !SCE)	0.00218	0.00318	0.03470
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00644	0.00745	0.03896
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00218	0.00318	0.03469
	(!CLK_N * !SCD * SCE)	0.00082	0.00083	0.00081
	(!CLK_N * !SCD * SCE)	-0.00161	-0.00164	-0.00166
	(!CLK_N * !RESET_B * SCD * SCE)	0.00080	0.00081	0.00080
	(!CLK_N * !RESET_B * SCD * SCE)	-0.00163	-0.00165	-0.00166
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00041	0.00042	0.00037
	(!CLK_N * !RESET_B * SCD * !SCE)	-0.00200	-0.00203	-0.00210
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00041	0.00041	0.00037
	(!CLK_N * !RESET_B * !SCD * !SCE)	-0.00206	-0.00207	-0.00211

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)**	-0.00141	-0.00142	-0.00146
	(CLK_N * RESET_B * SCD * SCE)	0.00083	0.00082	0.00080
	(CLK_N * RESET_B * SCD * !SCE)	0.01055	0.01243	0.04973
	(CLK_N * RESET_B * SCD * !SCE)	0.01478	0.01665	0.05395
	(CLK_N * RESET_B * !SCD * !SCE)	0.01054	0.01243	0.04973
	(CLK_N * RESET_B * !SCD * !SCE)	0.01476	0.01665	0.05395
	(CLK_N * !SCD * SCE)	-0.00078	-0.00079	-0.00078
	(CLK_N * !SCD * SCE)	0.00167	0.00168	0.00167
	(CLK_N * !RESET_B * SCD * SCE)	-0.00077	-0.00078	-0.00078
	(CLK_N * !RESET_B * SCD * SCE)	0.00166	0.00168	0.00167
	(CLK_N * !RESET_B * SCD * !SCE)	-0.00034	-0.00035	-0.00034
	(CLK_N * !RESET_B * SCD * !SCE)	0.00211	0.00214	0.00212
	(CLK_N * !RESET_B * !SCD * !SCE)	-0.00034	-0.00035	-0.00034
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00211	0.00214	0.00212
	(!CLK_N * RESET_B * SCD * SCE)	-0.00141	-0.00143	-0.00146
	(!CLK_N * RESET_B * SCD * SCE)	0.00083	0.00083	0.00080
	(!CLK_N * RESET_B * SCD * !SCE)	0.00137	0.00292	0.03481
	(!CLK_N * RESET_B * SCD * !SCE)	0.00562	0.00719	0.03907
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00138	0.00282	0.03481
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00563	0.00709	0.03907
	(!CLK_N * !SCD * SCE)	-0.00078	-0.00079	-0.00079
	(!CLK_N * !SCD * SCE)	0.00166	0.00167	0.00166
	(!CLK_N * !RESET_B * SCD * SCE)	-0.00077	-0.00079	-0.00078
	(!CLK_N * !RESET_B * SCD * SCE)	0.00166	0.00168	0.00167
	(!CLK_N * !RESET_B * SCD * !SCE)	-0.00034	-0.00035	-0.00034
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00211	0.00214	0.00212
	(!CLK_N * !RESET_B * !SCD * !SCE)	-0.00034	-0.00035	-0.00034
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00211	0.00214	0.00212

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)**	0.01682	0.01756	0.04601
	(CLK_N * D * RESET_B * SCE)	0.01154	0.01225	0.04072
	(CLK_N * D * RESET_B * !SCE)	0.00137	0.00117	0.00114
	(CLK_N * D * RESET_B * !SCE)	-0.00137	-0.00159	-0.00161
	(CLK_N * D * !RESET_B * SCE)	0.00073	0.00074	0.00072
	(CLK_N * D * !RESET_B * SCE)	-0.00158	-0.00159	-0.00157
	(CLK_N * D * !RESET_B * !SCE)	0.00047	0.00047	0.00047
	(CLK_N * D * !RESET_B * !SCE)	-0.00180	-0.00182	-0.00181
	(CLK_N * !D * RESET_B * SCE)	0.01780	0.01848	0.04641
	(CLK_N * !D * RESET_B * SCE)	0.01230	0.01295	0.04090
	(CLK_N * !D * !RESET_B * SCE)	0.00073	0.00073	0.00072
	(CLK_N * !D * !RESET_B * SCE)	-0.00158	-0.00158	-0.00157
	(!D * RESET_B * !SCE)	0.00099	0.00100	0.00100
	(!D * RESET_B * !SCE)	-0.00174	-0.00176	-0.00175
	(!D * !RESET_B * !SCE)	0.00055	0.00055	0.00055
	(!D * !RESET_B * !SCE)	-0.00189	-0.00191	-0.00191
	(!CLK_N * D * RESET_B * SCE)	0.00831	0.00888	0.03425
	(!CLK_N * D * RESET_B * SCE)	0.00299	0.00354	0.02892
	(!CLK_N * D * RESET_B * !SCE)	0.00137	0.00117	0.00114
	(!CLK_N * D * RESET_B * !SCE)	-0.00137	-0.00159	-0.00161
	(!CLK_N * D * !RESET_B * SCE)	0.00073	0.00073	0.00072
	(!CLK_N * D * !RESET_B * SCE)	-0.00158	-0.00158	-0.00157
	(!CLK_N * D * !RESET_B * !SCE)	0.00047	0.00047	0.00047
	(!CLK_N * D * !RESET_B * !SCE)	-0.00180	-0.00182	-0.00181
	(!CLK_N * !D * RESET_B * SCE)	0.00928	0.00976	0.03470
	(!CLK_N * !D * RESET_B * SCE)	0.00373	0.00420	0.02916
	(!CLK_N * !D * !RESET_B * SCE)	0.00073	0.00074	0.00072
	(!CLK_N * !D * !RESET_B * SCE)	-0.00158	-0.00158	-0.00157

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)**	0.01219	0.01294	0.04229
	(CLK_N * D * RESET_B * SCE)	0.01749	0.01825	0.04757
	(CLK_N * D * RESET_B * !SCE)	-0.00108	-0.00111	-0.00111
	(CLK_N * D * RESET_B * !SCE)	0.00165	0.00166	0.00166
	(CLK_N * D * !RESET_B * SCE)	-0.00067	-0.00068	-0.00068
	(CLK_N * D * !RESET_B * SCE)	0.00161	0.00163	0.00159
	(CLK_N * D * !RESET_B * !SCE)	-0.00045	-0.00045	-0.00045
	(CLK_N * D * !RESET_B * !SCE)	0.00182	0.00182	0.00182
	(CLK_N * !D * RESET_B * SCE)	0.01184	0.01264	0.04253
	(CLK_N * !D * RESET_B * SCE)	0.01734	0.01815	0.04802
	(CLK_N * !D * !RESET_B * SCE)	-0.00067	-0.00068	-0.00068
	(CLK_N * !D * !RESET_B * SCE)	0.00161	0.00163	0.00159
	(!D * RESET_B * !SCE)	-0.00090	-0.00097	-0.00098
	(!D * RESET_B * !SCE)	0.00182	0.00179	0.00178
	(!D * !RESET_B * !SCE)	-0.00055	-0.00055	-0.00055
	(!D * !RESET_B * !SCE)	0.00192	0.00194	0.00194
	(!CLK_N * D * RESET_B * SCE)	0.00286	0.00342	0.02884
	(!CLK_N * D * RESET_B * SCE)	0.00819	0.00876	0.03416
	(!CLK_N * D * RESET_B * !SCE)	-0.00108	-0.00110	-0.00111
	(!CLK_N * D * RESET_B * !SCE)	0.00164	0.00165	0.00165
	(!CLK_N * D * !RESET_B * SCE)	-0.00067	-0.00068	-0.00068
	(!CLK_N * D * !RESET_B * SCE)	0.00161	0.00163	0.00159
	(!CLK_N * D * !RESET_B * !SCE)	-0.00045	-0.00045	-0.00045
	(!CLK_N * D * !RESET_B * !SCE)	0.00182	0.00182	0.00182
	(!CLK_N * !D * RESET_B * SCE)	0.00237	0.00299	0.02866
	(!CLK_N * !D * RESET_B * SCE)	0.00792	0.00855	0.03420
	(!CLK_N * !D * !RESET_B * SCE)	-0.00067	-0.00068	-0.00068
	(!CLK_N * !D * !RESET_B * SCE)	0.00161	0.00163	0.00159

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)	0.00661	0.00820	0.05264
	(CLK_N * D * RESET_B * SCD)	-0.00059	0.00097	0.04542
	(CLK_N * D * RESET_B * !SCD)	0.01927	0.02099	0.06712
	(CLK_N * D * RESET_B * !SCD)	0.01442	0.01608	0.06218
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00651	0.00838	0.05286
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	-0.00032	0.00151	0.04601
	(CLK_N * !D * RESET_B * SCD)	0.02135	0.02412	0.09753
	(CLK_N * !D * RESET_B * SCD)	0.01208	0.01486	0.08827
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00660	0.00820	0.05264
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	-0.00060	0.00097	0.04541
	(!CLK_N * D * RESET_B * !SCD)	0.01007	0.01174	0.05745
	(!CLK_N * D * RESET_B * !SCD)	0.00527	0.00688	0.05255
	(!CLK_N * !D * RESET_B * SCD)	0.01285	0.01540	0.08503
	(!CLK_N * !D * RESET_B * SCD)	0.00354	0.00605	0.07572

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)	-0.00039	0.00216	0.04660
	(CLK_N * D * RESET_B * SCD)	0.00679	0.00939	0.05381
	(CLK_N * D * RESET_B * !SCD)	0.01468	0.01707	0.06239
	(CLK_N * D * RESET_B * !SCD)	0.01960	0.02198	0.06712
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	-0.00042	0.00205	0.04640
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00643	0.00891	0.05323
	(CLK_N * !D * RESET_B * SCD)	0.01097	0.01405	0.08673
	(CLK_N * !D * RESET_B * SCD)	0.02022	0.02333	0.09600
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	-0.00040	0.00215	0.04660
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00678	0.00937	0.05381
	(!CLK_N * D * RESET_B * !SCD)	0.00619	0.00848	0.05387
	(!CLK_N * D * RESET_B * !SCD)	0.01106	0.01335	0.05857
	(!CLK_N * !D * RESET_B * SCD)	0.00181	0.00472	0.07406
	(!CLK_N * !D * RESET_B * SCD)	0.01111	0.01405	0.08337

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.02183	0.02211	0.07062
	(CLK_N * D * SCD * SCE * !Q)	0.00953	0.00980	0.05829
	(CLK_N * D * SCD * !SCE * !Q)	0.02154	0.02185	0.07118
	(CLK_N * D * SCD * !SCE * !Q)	0.00971	0.00995	0.05930
	(CLK_N * D * !SCD * SCE * !Q)	0.00454	0.00453	0.00454
	(CLK_N * D * !SCD * SCE * !Q)	-0.00462	-0.00462	-0.00462
	(CLK_N * D * !SCD * !SCE * !Q)	0.02096	0.02139	0.07099
	(CLK_N * D * !SCD * !SCE * !Q)	0.00970	0.01006	0.05970
	(CLK_N * !D * SCD * SCE * !Q)	0.02282	0.02305	0.07109
	(CLK_N * !D * SCD * SCE * !Q)	0.01030	0.01046	0.05858
	(CLK_N * !D * SCD * !SCE * !Q)	0.00450	0.00455	0.00451
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00464	-0.00466	-0.00464
	(CLK_N * !D * !SCD * SCE * !Q)	0.00454	0.00458	0.00454
	(CLK_N * !D * !SCD * SCE * !Q)	-0.00462	-0.00464	-0.00462
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00451	0.00456	0.00451
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00465	-0.00467	-0.00465
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.01247	0.01306	0.05113
	(!CLK_N * D * SCD * SCE * !Q)	0.00013	0.00064	0.03878
	(!CLK_N * D * SCD * !SCE * !Q)	0.01218	0.01278	0.05141
	(!CLK_N * D * SCD * !SCE * !Q)	0.00026	0.00082	0.03952
	(!CLK_N * D * !SCD * SCE * !Q)	0.00441	0.00444	0.00442
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00474	-0.00476	-0.00474
	(!CLK_N * D * !SCD * !SCE * !Q)	0.01158	0.01234	0.05124
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00028	0.00094	0.03988
	(!CLK_N * !D * SCD * SCE * !Q)	0.01344	0.01393	0.05156
	(!CLK_N * !D * SCD * SCE * !Q)	0.00088	0.00130	0.03895
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00438	0.00440	0.00438
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00476	-0.00477	-0.00476
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00441	0.00446	0.00443
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00473	-0.00476	-0.00474
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00439	0.00441	0.00439
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00477	-0.00478	-0.00477

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.00975	0.01128	0.06454
	(CLK_N * D * SCD * SCE * !Q)	0.02210	0.02359	0.07685
	(CLK_N * D * SCD * !SCE * !Q)	0.00851	0.00974	0.06289
	(CLK_N * D * SCD * !SCE * !Q)	0.02041	0.02166	0.07474
	(CLK_N * D * !SCD * SCE * !Q)	-0.00442	-0.00453	-0.00454
	(CLK_N * D * !SCD * SCE * !Q)	0.00467	0.00465	0.00465
	(CLK_N * D * !SCD * !SCE * !Q)	0.00815	0.00944	0.06276
	(CLK_N * D * !SCD * !SCE * !Q)	0.01946	0.02078	0.07405
	(CLK_N * !D * SCD * SCE * !Q)	0.00928	0.01065	0.06455
	(CLK_N * !D * SCD * SCE * !Q)	0.02184	0.02324	0.07709
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00434	-0.00450	-0.00451
	(CLK_N * !D * SCD * !SCE * !Q)	0.00471	0.00466	0.00466
	(CLK_N * !D * !SCD * SCE * !Q)	-0.00442	-0.00452	-0.00454
	(CLK_N * !D * !SCD * SCE * !Q)	0.00467	0.00464	0.00465
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00436	-0.00451	-0.00451
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00473	0.00467	0.00466
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.00062	0.00233	0.04199
	(!CLK_N * D * SCD * SCE * !Q)	0.01298	0.01474	0.05437
	(!CLK_N * D * SCD * !SCE * !Q)	-0.00061	0.00110	0.04068
	(!CLK_N * D * SCD * !SCE * !Q)	0.01129	0.01307	0.05260
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00430	-0.00443	-0.00442
	(!CLK_N * D * !SCD * SCE * !Q)	0.00479	0.00479	0.00477
	(!CLK_N * D * !SCD * !SCE * !Q)	-0.00098	0.00068	0.04064
	(!CLK_N * D * !SCD * !SCE * !Q)	0.01034	0.01204	0.05196
	(!CLK_N * !D * SCD * SCE * !Q)	0.00015	0.00182	0.04181
	(!CLK_N * !D * SCD * SCE * !Q)	0.01271	0.01442	0.05440
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00422	-0.00440	-0.00438
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00483	0.00481	0.00477
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00429	-0.00441	-0.00442
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00479	0.00476	0.00477
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00424	-0.00441	-0.00439
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00485	0.00482	0.00478

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)**	0.01520	0.01758	0.08878
	(D * RESET_B * SCD * SCE * Q)	0.01001	0.01238	0.08360
	(D * RESET_B * SCD * SCE * !Q)	0.02424	0.02671	0.09888
	(D * RESET_B * SCD * SCE * !Q)	0.01908	0.02156	0.09372
	(D * RESET_B * SCD * !SCE * Q)	0.01520	0.01758	0.08878
	(D * RESET_B * SCD * !SCE * Q)	0.01001	0.01237	0.08360
	(D * RESET_B * SCD * !SCE * !Q)	0.02423	0.02669	0.09891
	(D * RESET_B * SCD * !SCE * !Q)	0.01908	0.02155	0.09376
	(D * RESET_B * !SCD * SCE * Q)	0.02343	0.02563	0.09841
	(D * RESET_B * !SCD * SCE * Q)	0.01822	0.02040	0.09321
	(D * RESET_B * !SCD * !SCE * Q)	0.01520	0.01758	0.08879
	(D * RESET_B * !SCD * !SCE * Q)	0.01001	0.01238	0.08360
	(D * RESET_B * !SCD * !SCE * !Q)	0.02423	0.02670	0.09892
	(D * RESET_B * !SCD * !SCE * !Q)	0.01908	0.02156	0.09376
	(D * !SCD * SCE * !Q)	0.01497	0.01735	0.08852
	(D * !SCD * SCE * !Q)	0.00977	0.01215	0.08333
	(D * !RESET_B * SCD * SCE * !Q)	0.01497	0.01736	0.08852
	(D * !RESET_B * SCD * SCE * !Q)	0.00978	0.01216	0.08332
	(D * !RESET_B * SCD * !SCE * !Q)	0.01497	0.01736	0.08852
	(D * !RESET_B * SCD * !SCE * !Q)	0.00977	0.01215	0.08332
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01497	0.01736	0.08852
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00977	0.01215	0.08332
	(!D * RESET_B * SCD * SCE * Q)	0.01521	0.01758	0.08878
	(!D * RESET_B * SCD * SCE * Q)	0.01001	0.01238	0.08360
	(!D * RESET_B * SCD * SCE * !Q)	0.02428	0.02676	0.09894
	(!D * RESET_B * SCD * SCE * !Q)	0.01912	0.02159	0.09377
	(!D * RESET_B * !SCE * Q)	0.02340	0.02560	0.09834
	(!D * RESET_B * !SCE * Q)	0.01817	0.02034	0.09311
	(!D * RESET_B * !SCD * SCE * Q)	0.02340	0.02560	0.09840
	(!D * RESET_B * !SCD * SCE * Q)	0.01818	0.02036	0.09319
	(!D * !SCE * !Q)	0.01496	0.01735	0.08852
	(!D * !SCE * !Q)	0.00977	0.01215	0.08333
	(!D * !SCD * SCE * !Q)	0.01497	0.01735	0.08851
	(!D * !SCD * SCE * !Q)	0.00977	0.01215	0.08332
	(!D * !RESET_B * SCD * SCE * !Q)	0.01497	0.01736	0.08850
	(!D * !RESET_B * SCD * SCE * !Q)	0.00978	0.01216	0.08332

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)	0.01106	0.01446	0.08552
	(D * RESET_B * SCD * SCE * Q)	0.01626	0.01965	0.09071
	(D * RESET_B * SCD * !SCE * Q)	0.01106	0.01446	0.08552
	(D * RESET_B * SCD * !SCE * Q)	0.01626	0.01966	0.09071
	(D * RESET_B * !SCD * !SCE * Q)	0.01106	0.01446	0.08552
	(D * RESET_B * !SCD * !SCE * Q)	0.01626	0.01966	0.09071
	(D * !SCD * SCE * !Q)	0.01103	0.01441	0.08546
	(D * !SCD * SCE * !Q)	0.01622	0.01960	0.09066
	(D * !RESET_B * SCD * SCE * !Q)	0.01103	0.01441	0.08545
	(D * !RESET_B * SCD * SCE * !Q)	0.01623	0.01961	0.09063
	(D * !RESET_B * SCD * !SCE * !Q)	0.01103	0.01441	0.08545
	(D * !RESET_B * SCD * !SCE * !Q)	0.01623	0.01961	0.09063
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01103	0.01441	0.08545
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01623	0.01961	0.09063
	(!D * RESET_B * SCD * SCE * Q)	0.01106	0.01446	0.08552
	(!D * RESET_B * SCD * SCE * Q)	0.01626	0.01965	0.09071
	(!D * !SCE * !Q)	0.01102	0.01440	0.08546
	(!D * !SCE * !Q)	0.01622	0.01960	0.09066
	(!D * !SCD * SCE * !Q)	0.01103	0.01441	0.08548
	(!D * !SCD * SCE * !Q)	0.01623	0.01960	0.09066
	(!D * !RESET_B * SCD * SCE * !Q)	0.01104	0.01441	0.08546
	(!D * !RESET_B * SCD * SCE * !Q)	0.01623	0.01961	0.09063

SKY130_FD_SC_HS__SDFRTPx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00192	0.00198	0.00421	0.00572	0.00312	1.29280
sky130_fd_sc_hs__sdfrtp_2	0.00185	0.00200	0.00429	0.00579	0.00311	2.55699
sky130_fd_sc_hs__sdfrtp_4	0.00186	0.00197	0.00432	0.00571	0.00311	4.76615

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfrtp_1	0.00000	1.10383	1.96273
sky130_fd_sc_hs__sdfrtp_2	0.00000	1.06428	1.80864
sky130_fd_sc_hs__sdfrtp_4	0.00000	1.51555	2.58254

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)	0.17060	0.61390	5.85865
sky130_fd_sc_hs__sdfrtp_2	CLK->Q (RR)	0.18158	0.52860	5.85062
sky130_fd_sc_hs__sdfrtp_4	CLK->Q (RR)	0.21039	0.49223	5.90792

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrtp_1	CLK->Q (RF)	0.17514	0.39290	2.11086
	RESET_B->Q (FF)	0.24758	0.69606	5.13552
sky130_fd_sc_hs__sdfrtp_2	CLK->Q (RF)	0.18097	0.36394	2.11083
	RESET_B->Q (FF)	0.25510	0.67038	5.14598
sky130_fd_sc_hs__sdfrtp_4	CLK->Q (RF)	0.18936	0.34113	2.01095
	RESET_B->Q (FF)	0.26149	0.64598	5.04306

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)	-0.09021	-0.18586	-1.05943
	setup	CLK (R)	0.16072	0.22584	1.07462
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.08935	-0.17900	-1.04650
	setup	CLK (R)	0.15593	0.21825	1.06146
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.08704	-0.17900	-1.04502
	setup	CLK (R)	0.14459	0.21291	1.06097

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)	-0.09841	-0.22532	-3.06836
	setup	CLK (R)	0.19134	0.31504	3.11185
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.09796	-0.22262	-3.03657
	setup	CLK (R)	0.18064	0.30300	3.07873
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.10177	-0.22828	-3.03171
	setup	CLK (R)	0.17778	0.30135	3.07310

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)	-0.09021	-0.18586	-1.05943
	hold	CLK (R)	-0.09046	-0.18586	-1.05957
	setup	CLK (R)	0.16025	0.22584	1.07441
	setup	CLK (R)	0.16072	0.22579	1.07462
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.08935	-0.17900	-1.04650
	hold	CLK (R)	-0.08959	-0.17900	-1.04650
	setup	CLK (R)	0.15593	0.21761	1.06146
	setup	CLK (R)	0.15586	0.21825	1.06101
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.08876	-0.17900	-1.04799
	hold	CLK (R)	-0.08704	-0.18027	-1.04502
	setup	CLK (R)	0.14459	0.21190	1.05998
	setup	CLK (R)	0.14378	0.21291	1.06097

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)	-0.09841	-0.22532	-3.06853
	hold	CLK (R)	-0.10080	-0.22869	-3.06836
	setup	CLK (R)	0.19134	0.31504	3.11181
	setup	CLK (R)	0.19134	0.31504	3.11185
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.09796	-0.22282	-3.03657
	hold	CLK (R)	-0.09845	-0.22262	-3.03678
	setup	CLK (R)	0.18064	0.30300	3.07869
	setup	CLK (R)	0.18063	0.30300	3.07873
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.10177	-0.22828	-3.03171
	hold	CLK (R)	-0.10357	-0.22838	-3.03353
	setup	CLK (R)	0.17778	0.30135	3.07308
	setup	CLK (R)	0.17778	0.30135	3.07310

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)	-0.10682	-0.19472	-1.04563
	setup	CLK (R)	0.17740	0.23828	1.06207
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.10782	-0.19007	-1.02581
	setup	CLK (R)	0.17759	0.23318	1.04167
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.10454	-0.18909	-1.02096
	setup	CLK (R)	0.16743	0.22458	1.03738

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)	-0.12486	-0.24986	-3.17191
	setup	CLK (R)	0.23747	0.35104	3.21182
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.13177	-0.24939	-3.15662
	setup	CLK (R)	0.23447	0.34337	3.19350
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.13530	-0.25567	-3.15564
	setup	CLK (R)	0.23202	0.34224	3.19549

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)	-0.10682	-0.19472	-1.04563
	hold	CLK (R)	-0.11217	-0.20211	-1.04839
	setup	CLK (R)	0.17377	0.23015	1.05612
	setup	CLK (R)	0.17740	0.23828	1.06207
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.10782	-0.19007	-1.02581
	hold	CLK (R)	-0.11123	-0.19791	-1.02595
	setup	CLK (R)	0.17167	0.22739	1.04060
	setup	CLK (R)	0.17759	0.23318	1.04167
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.10454	-0.18909	-1.02215
	hold	CLK (R)	-0.11100	-0.19644	-1.02096
	setup	CLK (R)	0.16060	0.22207	1.03738
	setup	CLK (R)	0.16743	0.22458	1.03388

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)	-0.13767	-0.25683	-3.17384
	hold	CLK (R)	-0.12486	-0.24986	-3.17191
	setup	CLK (R)	0.23747	0.35104	3.20838
	setup	CLK (R)	0.23139	0.34378	3.21182
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.14048	-0.25917	-3.15662
	hold	CLK (R)	-0.13177	-0.24939	-3.15973
	setup	CLK (R)	0.23447	0.34337	3.19256
	setup	CLK (R)	0.22470	0.33986	3.19350
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.14911	-0.26496	-3.15988
	hold	CLK (R)	-0.13530	-0.25567	-3.15564
	setup	CLK (R)	0.23202	0.34224	3.19549
	setup	CLK (R)	0.22316	0.33721	3.19311

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)	-0.09110	-0.16825	-0.38431
	setup	CLK (R)	0.24115	0.26070	1.10095
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.09339	-0.16652	-0.39050
	setup	CLK (R)	0.23200	0.25032	1.10272
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.09089	-0.17348	-0.39171
	setup	CLK (R)	0.23053	0.24705	1.09095

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)	-0.11037	-0.22186	-2.94437
	setup	CLK (R)	0.21503	0.31536	3.05048
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.11068	-0.21538	-2.92254
	setup	CLK (R)	0.20997	0.30514	3.00497
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.11310	-0.21893	-2.91959
	setup	CLK (R)	0.19769	0.30320	3.00414

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)	-0.13680	-0.16825	-0.38431
	hold	CLK (R)	-0.09110	-0.18879	-1.08861
	setup	CLK (R)	0.24115	0.26070	0.43662
	setup	CLK (R)	0.15755	0.22837	1.10095
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.13972	-0.16652	-0.39050
	hold	CLK (R)	-0.09339	-0.18547	-1.08325
	setup	CLK (R)	0.23200	0.25032	0.42602
	setup	CLK (R)	0.15773	0.22437	1.10272
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.14594	-0.17348	-0.39171
	hold	CLK (R)	-0.09089	-0.18547	-1.07837
	setup	CLK (R)	0.23053	0.24705	0.42607
	setup	CLK (R)	0.14554	0.21658	1.09095

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)	-0.14688	-0.28175	-2.94437
	hold	CLK (R)	-0.11037	-0.22186	-3.01360
	setup	CLK (R)	0.21503	0.31536	2.95703
	setup	CLK (R)	0.19954	0.30620	3.05048
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.14255	-0.27262	-2.92254
	hold	CLK (R)	-0.11068	-0.21538	-2.96717
	setup	CLK (R)	0.20997	0.30514	2.93054
	setup	CLK (R)	0.19012	0.29619	3.00497
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.14219	-0.27193	-2.91959
	hold	CLK (R)	-0.11310	-0.21893	-2.96843
	setup	CLK (R)	0.19769	0.30320	2.92839
	setup	CLK (R)	0.18917	0.29344	3.00414

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)	0.19417	0.23415	1.30654
	removal	CLK (R)	-0.14108	-0.18668	-1.25077
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.19228	0.22837	1.29538
	removal	CLK (R)	-0.13780	-0.18227	-1.23918
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.18108	0.22258	1.29339
	removal	CLK (R)	-0.13952	-0.18227	-1.23730

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)	0.19249	0.22837	1.30418
	recovery	CLK (R)	0.18766	0.21865	1.27505
	recovery	CLK (R)	0.18338	0.21185	1.25757
	recovery	CLK (R)	0.19417	0.23415	1.30654
	removal	CLK (R)	-0.14825	-0.20432	-1.29853
	removal	CLK (R)	-0.14396	-0.19450	-1.26946
	removal	CLK (R)	-0.14108	-0.18668	-1.25077
	removal	CLK (R)	-0.15431	-0.21093	-1.29967
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.19004	0.22419	1.29441
	recovery	CLK (R)	0.18481	0.21393	1.26481
	recovery	CLK (R)	0.18233	0.20646	1.24824
	recovery	CLK (R)	0.19228	0.22837	1.29538
	removal	CLK (R)	-0.14962	-0.20115	-1.29060
	removal	CLK (R)	-0.14068	-0.19007	-1.25684
	removal	CLK (R)	-0.13780	-0.18227	-1.23918
	removal	CLK (R)	-0.15103	-0.20652	-1.28703
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.17838	0.21657	1.29339
	recovery	CLK (R)	0.17317	0.20771	1.26310
	recovery	CLK (R)	0.17193	0.19909	1.24527
	recovery	CLK (R)	0.18108	0.22258	1.29204
	removal	CLK (R)	-0.14508	-0.19991	-1.29200
	removal	CLK (R)	-0.14119	-0.19007	-1.25496
	removal	CLK (R)	-0.13952	-0.18227	-1.23730
	removal	CLK (R)	-0.15150	-0.20522	-1.28661

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 ()	0.13127	0.63232	16.50020
	min_pulse_width	RESET_B ()	0.10515	0.63232	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	RESET_B ()	0.13365	0.63232	16.50020
	min_pulse_width	RESET_B ()	0.10515	0.63232	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	RESET_B ()	0.13127	0.63232	16.50020
	min_pulse_width	RESET_B ()	0.10753	0.63232	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 ()	0.08378	0.63232	16.50020
	min_pulse_width	CLK ()	0.06716	0.63232	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.09328	0.63232	16.50020
	min_pulse_width	CLK ()	0.06716	0.63232	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.10990	0.63232	16.50020
	min_pulse_width	CLK ()	0.07191	0.63232	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 ()	0.16214	0.63232	16.50020
	min_pulse_width	CLK ()	0.16927	0.63232	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.16927	0.63232	16.50020
	min_pulse_width	CLK ()	0.17639	0.63232	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.15739	0.63232	16.50020
	min_pulse_width	CLK ()	0.17164	0.63232	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	0.03094	0.03373	0.10805
	CLK	0.02548	0.02827	0.10261
sky130_fd_sc_hs__sdfrtp_2	CLK	0.03514	0.03834	0.11260
	CLK	0.02951	0.03272	0.10708
sky130_fd_sc_hs__sdfrtp_4	CLK	0.04285	0.04588	0.12046
	CLK	0.03734	0.04038	0.11723

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtp_1	CLK	0.03203	0.03510	0.10694
	CLK	0.02667	0.02966	0.10132
	RESET_B	0.02687	0.03053	0.11163
	RESET_B	0.03930	0.04276	0.12311
sky130_fd_sc_hs__sdfrtp_2	CLK	0.03550	0.03893	0.11138
	CLK	0.03024	0.03361	0.10534
	RESET_B	0.03088	0.03484	0.11640
	RESET_B	0.04339	0.04739	0.12777
sky130_fd_sc_hs__sdfrtp_4	CLK	0.04450	0.04830	0.12034
	CLK	0.03913	0.04293	0.11477
	RESET_B	0.03983	0.04444	0.12489
	RESET_B	0.05250	0.05702	0.13725

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)**	0.00148	0.00149	0.00148
	(CLK * RESET_B * SCD * SCE)	-0.00070	-0.00071	-0.00070
	(CLK * RESET_B * SCD * !SCE)	0.00716	0.00812	0.03994
	(CLK * RESET_B * SCD * !SCE)	0.00296	0.00391	0.03573
	(CLK * RESET_B * !SCD * !SCE)	0.00716	0.00812	0.03993
	(CLK * RESET_B * !SCD * !SCE)	0.00296	0.00391	0.03573
	(CLK * !SCD * SCE)	0.00075	0.00075	0.00074
	(CLK * !SCD * SCE)	-0.00161	-0.00163	-0.00166
	(CLK * !RESET_B * SCD * SCE)	0.00073	0.00073	0.00072
	(CLK * !RESET_B * SCD * SCE)	-0.00162	-0.00165	-0.00166
	(CLK * !RESET_B * SCD * !SCE)	0.00050	0.00051	0.00045
	(CLK * !RESET_B * SCD * !SCE)	-0.00183	-0.00185	-0.00193
	(CLK * !RESET_B * !SCD * !SCE)	0.00050	0.00050	0.00046
	(CLK * !RESET_B * !SCD * !SCE)	-0.00188	-0.00190	-0.00195
	(!CLK * RESET_B * SCD * SCE)	0.00148	0.00150	0.00148
	(!CLK * RESET_B * SCD * SCE)	-0.00069	-0.00071	-0.00070
	(!CLK * RESET_B * SCD * !SCE)	0.01527	0.01633	0.05247
	(!CLK * RESET_B * SCD * !SCE)	0.01084	0.01190	0.04804
	(!CLK * RESET_B * !SCD * !SCE)	0.01527	0.01633	0.05247
	(!CLK * RESET_B * !SCD * !SCE)	0.01085	0.01190	0.04804
	(!CLK * !SCD * SCE)	0.00076	0.00077	0.00074
	(!CLK * !SCD * SCE)	-0.00160	-0.00163	-0.00165
	(!CLK * !RESET_B * SCD * SCE)	0.00073	0.00074	0.00072
	(!CLK * !RESET_B * SCD * SCE)	-0.00162	-0.00165	-0.00166
	(!CLK * !RESET_B * SCD * !SCE)	0.00051	0.00051	0.00045
	(!CLK * !RESET_B * SCD * !SCE)	-0.00183	-0.00185	-0.00193
	(!CLK * !RESET_B * !SCD * !SCE)	0.00050	0.00051	0.00046
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00188	-0.00190	-0.00195

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	0.00141	0.00142	0.00141
	(CLK * RESET_B * SCD * SCE)	-0.00065	-0.00066	-0.00065
	(CLK * RESET_B * SCD * !SCE)	0.00611	0.00718	0.03948
	(CLK * RESET_B * SCD * !SCE)	0.00209	0.00315	0.03544
	(CLK * RESET_B * !SCD * !SCE)	0.00611	0.00718	0.03948
	(CLK * RESET_B * !SCD * !SCE)	0.00209	0.00315	0.03545
	(CLK * !SCD * SCE)	0.00073	0.00073	0.00072
	(CLK * !SCD * SCE)	-0.00152	-0.00154	-0.00156
	(CLK * !RESET_B * SCD * SCE)	0.00071	0.00071	0.00070
	(CLK * !RESET_B * SCD * SCE)	-0.00153	-0.00155	-0.00157
	(CLK * !RESET_B * SCD * !SCE)	0.00049	0.00049	0.00044
	(CLK * !RESET_B * SCD * !SCE)	-0.00174	-0.00176	-0.00183
	(CLK * !RESET_B * !SCD * !SCE)	0.00048	0.00049	0.00044
	(CLK * !RESET_B * !SCD * !SCE)	-0.00178	-0.00180	-0.00185
	(!CLK * RESET_B * SCD * SCE)	0.00141	0.00143	0.00141
	(!CLK * RESET_B * SCD * SCE)	-0.00065	-0.00067	-0.00066
	(!CLK * RESET_B * SCD * !SCE)	0.01450	0.01560	0.05191
	(!CLK * RESET_B * SCD * !SCE)	0.01027	0.01136	0.04767
	(!CLK * RESET_B * !SCD * !SCE)	0.01450	0.01560	0.05191
	(!CLK * RESET_B * !SCD * !SCE)	0.01027	0.01137	0.04767
	(!CLK * !SCD * SCE)	0.00073	0.00074	0.00072
	(!CLK * !SCD * SCE)	-0.00152	-0.00154	-0.00156
	(!CLK * !RESET_B * SCD * SCE)	0.00071	0.00071	0.00070
	(!CLK * !RESET_B * SCD * SCE)	-0.00153	-0.00156	-0.00157
	(!CLK * !RESET_B * SCD * !SCE)	0.00049	0.00049	0.00044
	(!CLK * !RESET_B * SCD * !SCE)	-0.00174	-0.00176	-0.00183
	(!CLK * !RESET_B * !SCD * !SCE)	0.00048	0.00049	0.00044
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00178	-0.00180	-0.00185

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	0.00141	0.00142	0.00142
	(CLK * RESET_B * SCD * SCE)	-0.00065	-0.00066	-0.00065
	(CLK * RESET_B * SCD * !SCE)	0.00619	0.00725	0.03951
	(CLK * RESET_B * SCD * !SCE)	0.00212	0.00318	0.03544
	(CLK * RESET_B * !SCD * !SCE)	0.00619	0.00725	0.03951
	(CLK * RESET_B * !SCD * !SCE)	0.00213	0.00318	0.03544
	(CLK * !SCD * SCE)	0.00072	0.00073	0.00071
	(CLK * !SCD * SCE)	-0.00153	-0.00155	-0.00158
	(CLK * !RESET_B * SCD * SCE)	0.00070	0.00070	0.00069
	(CLK * !RESET_B * SCD * SCE)	-0.00154	-0.00156	-0.00158
	(CLK * !RESET_B * SCD * !SCE)	0.00050	0.00050	0.00044
	(CLK * !RESET_B * SCD * !SCE)	-0.00173	-0.00175	-0.00182
	(CLK * !RESET_B * !SCD * !SCE)	0.00049	0.00049	0.00045
	(CLK * !RESET_B * !SCD * !SCE)	-0.00178	-0.00179	-0.00184
	(!CLK * RESET_B * SCD * SCE)	0.00141	0.00142	0.00142
	(!CLK * RESET_B * SCD * SCE)	-0.00064	-0.00065	-0.00065
	(!CLK * RESET_B * SCD * !SCE)	0.01463	0.01577	0.05236
	(!CLK * RESET_B * SCD * !SCE)	0.01035	0.01148	0.04807
	(!CLK * RESET_B * !SCD * !SCE)	0.01463	0.01577	0.05236
	(!CLK * RESET_B * !SCD * !SCE)	0.01035	0.01148	0.04807
	(!CLK * !SCD * SCE)	0.00073	0.00074	0.00072
	(!CLK * !SCD * SCE)	-0.00152	-0.00155	-0.00157
	(!CLK * !RESET_B * SCD * SCE)	0.00070	0.00071	0.00069
	(!CLK * !RESET_B * SCD * SCE)	-0.00154	-0.00157	-0.00158
	(!CLK * !RESET_B * SCD * !SCE)	0.00049	0.00050	0.00044
	(!CLK * !RESET_B * SCD * !SCE)	-0.00173	-0.00175	-0.00182
	(!CLK * !RESET_B * !SCD * !SCE)	0.00049	0.00049	0.00045
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00177	-0.00179	-0.00184

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)**	-0.00140	-0.00142	-0.00146
	(CLK * RESET_B * SCD * SCE)	0.00076	0.00076	0.00073
	(CLK * RESET_B * SCD * !SCE)	0.00083	0.00237	0.03455
	(CLK * RESET_B * SCD * !SCE)	0.00503	0.00658	0.03876
	(CLK * RESET_B * !SCD * !SCE)	0.00083	0.00226	0.03455
	(CLK * RESET_B * !SCD * !SCE)	0.00503	0.00647	0.03876
	(CLK * !SCD * SCE)	-0.00072	-0.00072	-0.00071
	(CLK * !SCD * SCE)	0.00166	0.00167	0.00166
	(CLK * !RESET_B * SCD * SCE)	-0.00070	-0.00070	-0.00070
	(CLK * !RESET_B * SCD * SCE)	0.00166	0.00167	0.00166
	(CLK * !RESET_B * SCD * !SCE)	-0.00042	-0.00043	-0.00042
	(CLK * !RESET_B * SCD * !SCE)	0.00195	0.00197	0.00196
	(CLK * !RESET_B * !SCD * !SCE)	-0.00042	-0.00043	-0.00042
	(CLK * !RESET_B * !SCD * !SCE)	0.00195	0.00198	0.00196
	(!CLK * RESET_B * SCD * SCE)	-0.00141	-0.00142	-0.00145
	(!CLK * RESET_B * SCD * SCE)	0.00076	0.00076	0.00074
	(!CLK * RESET_B * SCD * !SCE)	0.00934	0.01146	0.04907
	(!CLK * RESET_B * SCD * !SCE)	0.01378	0.01589	0.05350
	(!CLK * RESET_B * !SCD * !SCE)	0.00931	0.01146	0.04907
	(!CLK * RESET_B * !SCD * !SCE)	0.01374	0.01590	0.05350
	(!CLK * !SCD * SCE)	-0.00071	-0.00071	-0.00071
	(!CLK * !SCD * SCE)	0.00167	0.00167	0.00167
	(!CLK * !RESET_B * SCD * SCE)	-0.00070	-0.00070	-0.00070
	(!CLK * !RESET_B * SCD * SCE)	0.00167	0.00167	0.00166
	(!CLK * !RESET_B * SCD * !SCE)	-0.00042	-0.00043	-0.00042
	(!CLK * !RESET_B * SCD * !SCE)	0.00195	0.00197	0.00196
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00043	-0.00043	-0.00042
	(!CLK * !RESET_B * !SCD * !SCE)	0.00195	0.00197	0.00196

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	-0.00133	-0.00135	-0.00138
	(CLK * RESET_B * SCD * SCE)	0.00071	0.00072	0.00069
	(CLK * RESET_B * SCD * !SCE)	0.00089	0.00252	0.03506
	(CLK * RESET_B * SCD * !SCE)	0.00491	0.00655	0.03908
	(CLK * RESET_B * !SCD * !SCE)	0.00089	0.00241	0.03506
	(CLK * RESET_B * !SCD * !SCE)	0.00491	0.00644	0.03909
	(CLK * !SCD * SCE)	-0.00069	-0.00070	-0.00069
	(CLK * !SCD * SCE)	0.00156	0.00158	0.00157
	(CLK * !RESET_B * SCD * SCE)	-0.00067	-0.00068	-0.00067
	(CLK * !RESET_B * SCD * SCE)	0.00157	0.00158	0.00157
	(CLK * !RESET_B * SCD * !SCE)	-0.00041	-0.00041	-0.00040
	(CLK * !RESET_B * SCD * !SCE)	0.00186	0.00187	0.00186
	(CLK * !RESET_B * !SCD * !SCE)	-0.00041	-0.00041	-0.00041
	(CLK * !RESET_B * !SCD * !SCE)	0.00186	0.00188	0.00186
	(!CLK * RESET_B * SCD * SCE)	-0.00134	-0.00135	-0.00138
	(!CLK * RESET_B * SCD * SCE)	0.00072	0.00071	0.00069
	(!CLK * RESET_B * SCD * !SCE)	0.01004	0.01218	0.04992
	(!CLK * RESET_B * SCD * !SCE)	0.01429	0.01642	0.05416
	(!CLK * RESET_B * !SCD * !SCE)	0.01004	0.01217	0.04993
	(!CLK * RESET_B * !SCD * !SCE)	0.01429	0.01642	0.05417
	(!CLK * !SCD * SCE)	-0.00068	-0.00070	-0.00069
	(!CLK * !SCD * SCE)	0.00157	0.00158	0.00157
	(!CLK * !RESET_B * SCD * SCE)	-0.00067	-0.00068	-0.00067
	(!CLK * !RESET_B * SCD * SCE)	0.00157	0.00158	0.00157
	(!CLK * !RESET_B * SCD * !SCE)	-0.00041	-0.00041	-0.00040
	(!CLK * !RESET_B * SCD * !SCE)	0.00186	0.00187	0.00186
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00041	-0.00041	-0.00041
	(!CLK * !RESET_B * !SCD * !SCE)	0.00186	0.00188	0.00186

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	-0.00133	-0.00135	-0.00138
	(CLK * RESET_B * SCD * SCE)	0.00071	0.00072	0.00069
	(CLK * RESET_B * SCD * !SCE)	0.00082	0.00244	0.03496
	(CLK * RESET_B * SCD * !SCE)	0.00489	0.00652	0.03903
	(CLK * RESET_B * !SCD * !SCE)	0.00083	0.00234	0.03496
	(CLK * RESET_B * !SCD * !SCE)	0.00489	0.00642	0.03903
	(CLK * !SCD * SCE)	-0.00067	-0.00068	-0.00068
	(CLK * !SCD * SCE)	0.00158	0.00159	0.00159
	(CLK * !RESET_B * SCD * SCE)	-0.00066	-0.00066	-0.00066
	(CLK * !RESET_B * SCD * SCE)	0.00158	0.00160	0.00159
	(CLK * !RESET_B * SCD * !SCE)	-0.00041	-0.00042	-0.00042
	(CLK * !RESET_B * SCD * !SCE)	0.00184	0.00187	0.00185
	(CLK * !RESET_B * !SCD * !SCE)	-0.00042	-0.00043	-0.00042
	(CLK * !RESET_B * !SCD * !SCE)	0.00184	0.00187	0.00185
	(!CLK * RESET_B * SCD * SCE)	-0.00133	-0.00135	-0.00138
	(!CLK * RESET_B * SCD * SCE)	0.00072	0.00073	0.00070
	(!CLK * RESET_B * SCD * !SCE)	0.00965	0.01183	0.04984
	(!CLK * RESET_B * SCD * !SCE)	0.01395	0.01613	0.05414
	(!CLK * RESET_B * !SCD * !SCE)	0.00965	0.01183	0.04984
	(!CLK * RESET_B * !SCD * !SCE)	0.01395	0.01613	0.05414
	(!CLK * !SCD * SCE)	-0.00067	-0.00068	-0.00067
	(!CLK * !SCD * SCE)	0.00159	0.00161	0.00160
	(!CLK * !RESET_B * SCD * SCE)	-0.00066	-0.00067	-0.00066
	(!CLK * !RESET_B * SCD * SCE)	0.00159	0.00160	0.00159
	(!CLK * !RESET_B * SCD * !SCE)	-0.00042	-0.00043	-0.00042
	(!CLK * !RESET_B * SCD * !SCE)	0.00185	0.00186	0.00185
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00043	-0.00043	-0.00042
	(!CLK * !RESET_B * !SCD * !SCE)	0.00185	0.00187	0.00185

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)**	0.00890	0.00944	0.03484
	(CLK * D * RESET_B * SCE)	0.00352	0.00404	0.02945
	(CLK * D * RESET_B * !SCE)	0.00148	0.00128	0.00125
	(CLK * D * RESET_B * !SCE)	-0.00129	-0.00151	-0.00154
	(CLK * D * !RESET_B * SCE)	0.00069	0.00069	0.00067
	(CLK * D * !RESET_B * SCE)	-0.00166	-0.00166	-0.00165
	(CLK * D * !RESET_B * !SCE)	0.00048	0.00049	0.00048
	(CLK * D * !RESET_B * !SCE)	-0.00182	-0.00184	-0.00183
	(CLK * !D * RESET_B * SCE)	0.00989	0.01033	0.03528
	(CLK * !D * RESET_B * SCE)	0.00429	0.00472	0.02969
	(CLK * !D * !RESET_B * SCE)	0.00069	0.00069	0.00067
	(CLK * !D * !RESET_B * SCE)	-0.00166	-0.00166	-0.00165
	(!D * RESET_B * !SCE)	0.00099	0.00101	0.00100
	(!D * RESET_B * !SCE)	-0.00177	-0.00179	-0.00179
	(!D * !RESET_B * !SCE)	0.00057	0.00057	0.00057
	(!D * !RESET_B * !SCE)	-0.00191	-0.00192	-0.00192
	(!CLK * D * RESET_B * SCE)	0.01700	0.01773	0.04650
	(!CLK * D * RESET_B * SCE)	0.01140	0.01211	0.04089
	(!CLK * D * RESET_B * !SCE)	0.00148	0.00128	0.00125
	(!CLK * D * RESET_B * !SCE)	-0.00129	-0.00151	-0.00153
	(!CLK * D * !RESET_B * SCE)	0.00069	0.00070	0.00067
	(!CLK * D * !RESET_B * SCE)	-0.00166	-0.00167	-0.00165
	(!CLK * D * !RESET_B * !SCE)	0.00048	0.00049	0.00048
	(!CLK * D * !RESET_B * !SCE)	-0.00182	-0.00184	-0.00183
	(!CLK * !D * RESET_B * SCE)	0.01800	0.01865	0.04688
	(!CLK * !D * RESET_B * SCE)	0.01217	0.01282	0.04106
	(!CLK * !D * !RESET_B * SCE)	0.00069	0.00069	0.00067
	(!CLK * !D * !RESET_B * SCE)	-0.00166	-0.00166	-0.00165

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.00809	0.00865	0.03423
	(CLK * D * RESET_B * SCE)	0.00278	0.00332	0.02891
	(CLK * D * RESET_B * !SCE)	0.00150	0.00129	0.00127
	(CLK * D * RESET_B * !SCE)	-0.00126	-0.00149	-0.00151
	(CLK * D * !RESET_B * SCE)	0.00065	0.00065	0.00063
	(CLK * D * !RESET_B * SCE)	-0.00170	-0.00170	-0.00169
	(CLK * D * !RESET_B * !SCE)	0.00047	0.00047	0.00047
	(CLK * D * !RESET_B * !SCE)	-0.00182	-0.00184	-0.00183
	(CLK * !D * RESET_B * SCE)	0.00907	0.00953	0.03468
	(CLK * !D * RESET_B * SCE)	0.00355	0.00399	0.02915
	(CLK * !D * !RESET_B * SCE)	0.00065	0.00065	0.00063
	(CLK * !D * !RESET_B * SCE)	-0.00170	-0.00170	-0.00169
	(!D * RESET_B * !SCE)	0.00098	0.00099	0.00099
	(!D * RESET_B * !SCE)	-0.00177	-0.00179	-0.00179
	(!D * !RESET_B * !SCE)	0.00055	0.00056	0.00056
	(!D * !RESET_B * !SCE)	-0.00191	-0.00193	-0.00193
	(!CLK * D * RESET_B * SCE)	0.01647	0.01722	0.04594
	(!CLK * D * RESET_B * SCE)	0.01095	0.01168	0.04042
	(!CLK * D * RESET_B * !SCE)	0.00149	0.00129	0.00126
	(!CLK * D * RESET_B * !SCE)	-0.00126	-0.00150	-0.00151
	(!CLK * D * !RESET_B * SCE)	0.00065	0.00065	0.00063
	(!CLK * D * !RESET_B * SCE)	-0.00170	-0.00170	-0.00169
	(!CLK * D * !RESET_B * !SCE)	0.00047	0.00047	0.00047
	(!CLK * D * !RESET_B * !SCE)	-0.00182	-0.00184	-0.00183
	(!CLK * !D * RESET_B * SCE)	0.01746	0.01812	0.04631
	(!CLK * !D * RESET_B * SCE)	0.01173	0.01237	0.04058
	(!CLK * !D * !RESET_B * SCE)	0.00065	0.00064	0.00063
	(!CLK * !D * !RESET_B * SCE)	-0.00170	-0.00169	-0.00169

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.00812	0.00868	0.03430
	(CLK * D * RESET_B * SCE)	0.00280	0.00335	0.02896
	(CLK * D * RESET_B * !SCE)	0.00147	0.00126	0.00124
	(CLK * D * RESET_B * !SCE)	-0.00126	-0.00149	-0.00151
	(CLK * D * !RESET_B * SCE)	0.00065	0.00064	0.00063
	(CLK * D * !RESET_B * SCE)	-0.00167	-0.00166	-0.00165
	(CLK * D * !RESET_B * !SCE)	0.00047	0.00047	0.00047
	(CLK * D * !RESET_B * !SCE)	-0.00178	-0.00181	-0.00180
	(CLK * !D * RESET_B * SCE)	0.00911	0.00958	0.03475
	(CLK * !D * RESET_B * SCE)	0.00357	0.00402	0.02921
	(CLK * !D * !RESET_B * SCE)	0.00065	0.00065	0.00063
	(CLK * !D * !RESET_B * SCE)	-0.00167	-0.00166	-0.00165
	(!D * RESET_B * !SCE)	0.00098	0.00099	0.00099
	(!D * RESET_B * !SCE)	-0.00174	-0.00176	-0.00176
	(!D * !RESET_B * !SCE)	0.00056	0.00056	0.00056
	(!D * !RESET_B * !SCE)	-0.00188	-0.00189	-0.00189
	(!CLK * D * RESET_B * SCE)	0.01656	0.01732	0.04634
	(!CLK * D * RESET_B * SCE)	0.01102	0.01176	0.04080
	(!CLK * D * RESET_B * !SCE)	0.00147	0.00127	0.00124
	(!CLK * D * RESET_B * !SCE)	-0.00126	-0.00149	-0.00150
	(!CLK * D * !RESET_B * SCE)	0.00065	0.00065	0.00063
	(!CLK * D * !RESET_B * SCE)	-0.00167	-0.00167	-0.00165
	(!CLK * D * !RESET_B * !SCE)	0.00047	0.00047	0.00047
	(!CLK * D * !RESET_B * !SCE)	-0.00179	-0.00181	-0.00180
	(!CLK * !D * RESET_B * SCE)	0.01754	0.01822	0.04669
	(!CLK * !D * RESET_B * SCE)	0.01179	0.01245	0.04092
	(!CLK * !D * !RESET_B * SCE)	0.00065	0.00064	0.00063
	(!CLK * !D * !RESET_B * SCE)	-0.00166	-0.00166	-0.00165

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)	0.00251	0.00302	0.02850
	(CLK * D * RESET_B * SCE)	0.00791	0.00842	0.03388
	(CLK * D * RESET_B * !SCE)	-0.00119	-0.00122	-0.00122
	(CLK * D * RESET_B * !SCE)	0.00157	0.00158	0.00158
	(CLK * D * !RESET_B * SCE)	-0.00062	-0.00063	-0.00063
	(CLK * D * !RESET_B * SCE)	0.00169	0.00171	0.00168
	(CLK * D * !RESET_B * !SCE)	-0.00046	-0.00047	-0.00047
	(CLK * D * !RESET_B * !SCE)	0.00183	0.00185	0.00184
	(CLK * !D * RESET_B * SCE)	0.00200	0.00258	0.02831
	(CLK * !D * RESET_B * SCE)	0.00760	0.00819	0.03390
	(CLK * !D * !RESET_B * SCE)	-0.00062	-0.00063	-0.00063
	(CLK * !D * !RESET_B * SCE)	0.00169	0.00171	0.00168
	(!D * RESET_B * !SCE)	-0.00092	-0.00099	-0.00100
	(!D * RESET_B * !SCE)	0.00184	0.00180	0.00180
	(!D * !RESET_B * !SCE)	-0.00057	-0.00057	-0.00057
	(!D * !RESET_B * !SCE)	0.00194	0.00196	0.00195
	(!CLK * D * RESET_B * SCE)	0.01118	0.01196	0.04160
	(!CLK * D * RESET_B * SCE)	0.01681	0.01759	0.04721
	(!CLK * D * RESET_B * !SCE)	-0.00119	-0.00122	-0.00122
	(!CLK * D * RESET_B * !SCE)	0.00157	0.00158	0.00158
	(!CLK * D * !RESET_B * SCE)	-0.00062	-0.00063	-0.00063
	(!CLK * D * !RESET_B * SCE)	0.00169	0.00171	0.00168
	(!CLK * D * !RESET_B * !SCE)	-0.00046	-0.00047	-0.00047
	(!CLK * D * !RESET_B * !SCE)	0.00184	0.00185	0.00184
	(!CLK * !D * RESET_B * SCE)	0.01079	0.01171	0.04181
	(!CLK * !D * RESET_B * SCE)	0.01662	0.01754	0.04762
	(!CLK * !D * !RESET_B * SCE)	-0.00062	-0.00063	-0.00063
	(!CLK * !D * !RESET_B * SCE)	0.00169	0.00171	0.00168

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.00249	0.00301	0.02862
	(CLK * D * RESET_B * SCE)	0.00781	0.00834	0.03392
	(CLK * D * RESET_B * !SCE)	-0.00120	-0.00123	-0.00124
	(CLK * D * RESET_B * !SCE)	0.00154	0.00156	0.00155
	(CLK * D * !RESET_B * SCE)	-0.00058	-0.00059	-0.00059
	(CLK * D * !RESET_B * SCE)	0.00173	0.00175	0.00171
	(CLK * D * !RESET_B * !SCE)	-0.00045	-0.00045	-0.00045
	(CLK * D * !RESET_B * !SCE)	0.00185	0.00186	0.00185
	(CLK * !D * RESET_B * SCE)	0.00198	0.00257	0.02843
	(CLK * !D * RESET_B * SCE)	0.00750	0.00810	0.03395
	(CLK * !D * !RESET_B * SCE)	-0.00058	-0.00059	-0.00059
	(CLK * !D * !RESET_B * SCE)	0.00173	0.00175	0.00171
	(!D * RESET_B * !SCE)	-0.00090	-0.00097	-0.00098
	(!D * RESET_B * !SCE)	0.00185	0.00181	0.00180
	(!D * !RESET_B * !SCE)	-0.00055	-0.00056	-0.00056
	(!D * !RESET_B * !SCE)	0.00195	0.00197	0.00196
	(!CLK * D * RESET_B * SCE)	0.01181	0.01254	0.04235
	(!CLK * D * RESET_B * SCE)	0.01734	0.01807	0.04786
	(!CLK * D * RESET_B * !SCE)	-0.00121	-0.00124	-0.00124
	(!CLK * D * RESET_B * !SCE)	0.00154	0.00156	0.00155
	(!CLK * D * !RESET_B * SCE)	-0.00058	-0.00059	-0.00059
	(!CLK * D * !RESET_B * SCE)	0.00173	0.00175	0.00171
	(!CLK * D * !RESET_B * !SCE)	-0.00045	-0.00045	-0.00045
	(!CLK * D * !RESET_B * !SCE)	0.00185	0.00186	0.00185
	(!CLK * !D * RESET_B * SCE)	0.01142	0.01222	0.04249
	(!CLK * !D * RESET_B * SCE)	0.01716	0.01797	0.04821
	(!CLK * !D * !RESET_B * SCE)	-0.00058	-0.00059	-0.00059
	(!CLK * !D * !RESET_B * SCE)	0.00173	0.00175	0.00171

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.00252	0.00305	0.02867
	(CLK * D * RESET_B * SCE)	0.00786	0.00838	0.03399
	(CLK * D * RESET_B * !SCE)	-0.00117	-0.00121	-0.00120
	(CLK * D * RESET_B * !SCE)	0.00155	0.00157	0.00155
	(CLK * D * !RESET_B * SCE)	-0.00058	-0.00058	-0.00058
	(CLK * D * !RESET_B * SCE)	0.00170	0.00172	0.00168
	(CLK * D * !RESET_B * !SCE)	-0.00045	-0.00045	-0.00045
	(CLK * D * !RESET_B * !SCE)	0.00181	0.00183	0.00182
	(CLK * !D * RESET_B * SCE)	0.00193	0.00253	0.02843
	(CLK * !D * RESET_B * SCE)	0.00747	0.00809	0.03396
	(CLK * !D * !RESET_B * SCE)	-0.00058	-0.00058	-0.00058
	(CLK * !D * !RESET_B * SCE)	0.00170	0.00172	0.00168
	(!D * RESET_B * !SCE)	-0.00090	-0.00097	-0.00098
	(!D * RESET_B * !SCE)	0.00182	0.00178	0.00177
	(!D * !RESET_B * !SCE)	-0.00056	-0.00056	-0.00056
	(!D * !RESET_B * !SCE)	0.00192	0.00194	0.00193
	(!CLK * D * RESET_B * SCE)	0.01152	0.01230	0.04215
	(!CLK * D * RESET_B * SCE)	0.01708	0.01785	0.04768
	(!CLK * D * RESET_B * !SCE)	-0.00117	-0.00120	-0.00120
	(!CLK * D * RESET_B * !SCE)	0.00155	0.00156	0.00156
	(!CLK * D * !RESET_B * SCE)	-0.00057	-0.00058	-0.00058
	(!CLK * D * !RESET_B * SCE)	0.00170	0.00172	0.00168
	(!CLK * D * !RESET_B * !SCE)	-0.00045	-0.00045	-0.00045
	(!CLK * D * !RESET_B * !SCE)	0.00181	0.00183	0.00182
	(!CLK * !D * RESET_B * SCE)	0.01104	0.01196	0.04232
	(!CLK * !D * RESET_B * SCE)	0.01681	0.01774	0.04807
	(!CLK * !D * !RESET_B * SCE)	-0.00058	-0.00058	-0.00058
	(!CLK * !D * !RESET_B * SCE)	0.00170	0.00171	0.00168

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)	0.00653	0.00817	0.05323
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00058	0.00101	0.04608
	(CLK * D * RESET_B * !SCD)	0.00967	0.01138	0.05769
	(CLK * D * RESET_B * !SCD)	0.00496	0.00661	0.05290
	(CLK * !D * RESET_B * SCD)	0.01333	0.01598	0.08722
	(CLK * !D * RESET_B * SCD)	0.00408	0.00669	0.07798
	(!CLK * D * RESET_B * SCD)	0.00654	0.00817	0.05323
	(!CLK * D * RESET_B * SCD)	-0.00058	0.00101	0.04609
	(!CLK * D * RESET_B * !SCD)	0.01820	0.01993	0.06679
	(!CLK * D * RESET_B * !SCD)	0.01370	0.01542	0.06222
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00653	0.00842	0.05352
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00021	0.00164	0.04676
	(!CLK * !D * RESET_B * SCD)	0.02142	0.02435	0.09965
	(!CLK * !D * RESET_B * SCD)	0.01194	0.01486	0.09018

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00655	0.00823	0.05370
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00065	0.00100	0.04647
	(CLK * D * RESET_B * !SCD)	0.00958	0.01132	0.05810
	(CLK * D * RESET_B * !SCD)	0.00472	0.00640	0.05318
	(CLK * !D * RESET_B * SCD)	0.01247	0.01525	0.08765
	(CLK * !D * RESET_B * SCD)	0.00320	0.00595	0.07839
	(!CLK * D * RESET_B * SCD)	0.00655	0.00823	0.05370
	(!CLK * D * RESET_B * SCD)	-0.00065	0.00101	0.04647
	(!CLK * D * RESET_B * !SCD)	0.01875	0.02056	0.06779
	(!CLK * D * RESET_B * !SCD)	0.01409	0.01588	0.06306
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00646	0.00840	0.05390
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00036	0.00153	0.04706
	(!CLK * !D * RESET_B * SCD)	0.02083	0.02385	0.10006
	(!CLK * !D * RESET_B * SCD)	0.01135	0.01436	0.09059

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00657	0.00826	0.05372
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00065	0.00101	0.04648
	(CLK * D * RESET_B * !SCD)	0.00960	0.01136	0.05813
	(CLK * D * RESET_B * !SCD)	0.00478	0.00647	0.05325
	(CLK * !D * RESET_B * SCD)	0.01254	0.01533	0.08775
	(CLK * !D * RESET_B * SCD)	0.00321	0.00596	0.07843
	(!CLK * D * RESET_B * SCD)	0.00657	0.00826	0.05373
	(!CLK * D * RESET_B * SCD)	-0.00064	0.00102	0.04649
	(!CLK * D * RESET_B * !SCD)	0.01852	0.02029	0.06757
	(!CLK * D * RESET_B * !SCD)	0.01390	0.01564	0.06288
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00646	0.00839	0.05390
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00038	0.00151	0.04705
	(!CLK * !D * RESET_B * SCD)	0.02095	0.02402	0.10055
	(!CLK * !D * RESET_B * SCD)	0.01141	0.01444	0.09100

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)**	-0.00036	0.00223	0.04731
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00675	0.00938	0.05445
	(CLK * D * RESET_B * !SCD)	0.00679	0.00908	0.05512
	(CLK * D * RESET_B * !SCD)	0.01153	0.01386	0.05970
	(CLK * !D * RESET_B * SCD)	0.00133	0.00435	0.07537
	(CLK * !D * RESET_B * SCD)	0.01058	0.01362	0.08463
	(!CLK * D * RESET_B * SCD)	-0.00035	0.00225	0.04732
	(!CLK * D * RESET_B * SCD)	0.00676	0.00939	0.05445
	(!CLK * D * RESET_B * !SCD)	0.01487	0.01727	0.06325
	(!CLK * D * RESET_B * !SCD)	0.01940	0.02179	0.06762
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00043	0.00206	0.04705
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00630	0.00884	0.05379
	(!CLK * !D * RESET_B * SCD)	0.00980	0.01303	0.08773
	(!CLK * !D * RESET_B * SCD)	0.01925	0.02251	0.09721

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00050	0.00213	0.04763
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00671	0.00937	0.05485
	(CLK * D * RESET_B * !SCD)	0.00567	0.00801	0.05456
	(CLK * D * RESET_B * !SCD)	0.01057	0.01295	0.05929
	(CLK * !D * RESET_B * SCD)	0.00132	0.00444	0.07671
	(CLK * !D * RESET_B * SCD)	0.01057	0.01375	0.08598
	(!CLK * D * RESET_B * SCD)	-0.00050	0.00215	0.04763
	(!CLK * D * RESET_B * SCD)	0.00671	0.00938	0.05485
	(!CLK * D * RESET_B * !SCD)	0.01403	0.01648	0.06295
	(!CLK * D * RESET_B * !SCD)	0.01872	0.02121	0.06747
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00049	0.00204	0.04744
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00633	0.00890	0.05427
	(!CLK * !D * RESET_B * SCD)	0.01043	0.01374	0.08940
	(!CLK * !D * RESET_B * SCD)	0.01992	0.02320	0.09887

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00054	0.00210	0.04760
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00669	0.00935	0.05484
	(CLK * D * RESET_B * !SCD)	0.00570	0.00805	0.05458
	(CLK * D * RESET_B * !SCD)	0.01057	0.01296	0.05929
	(CLK * !D * RESET_B * SCD)	0.00126	0.00438	0.07667
	(CLK * !D * RESET_B * SCD)	0.01056	0.01373	0.08600
	(!CLK * D * RESET_B * SCD)	-0.00053	0.00212	0.04761
	(!CLK * D * RESET_B * SCD)	0.00670	0.00937	0.05484
	(!CLK * D * RESET_B * !SCD)	0.01411	0.01657	0.06305
	(!CLK * D * RESET_B * !SCD)	0.01876	0.02123	0.06752
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00050	0.00204	0.04744
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00634	0.00891	0.05428
	(!CLK * !D * RESET_B * SCD)	0.01003	0.01335	0.08928
	(!CLK * !D * RESET_B * SCD)	0.01958	0.02293	0.09881

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)**	0.01248	0.01304	0.05118
	(CLK * D * SCD * SCE * !Q)	0.00027	0.00074	0.03896
	(CLK * D * SCD * !SCE * !Q)	0.01220	0.01275	0.05149
	(CLK * D * SCD * !SCE * !Q)	0.00040	0.00096	0.03967
	(CLK * D * !SCD * SCE * !Q)	0.00390	0.00392	0.00391
	(CLK * D * !SCD * SCE * !Q)	-0.00511	-0.00512	-0.00511
	(CLK * D * !SCD * !SCE * !Q)	0.01163	0.01233	0.05127
	(CLK * D * !SCD * !SCE * !Q)	0.00040	0.00105	0.04003
	(CLK * !D * SCD * SCE * !Q)	0.01347	0.01395	0.05161
	(CLK * !D * SCD * SCE * !Q)	0.00104	0.00143	0.03915
	(CLK * !D * SCD * !SCE * !Q)	0.00387	0.00389	0.00387
	(CLK * !D * SCD * !SCE * !Q)	-0.00513	-0.00514	-0.00513
	(CLK * !D * !SCD * SCE * !Q)	0.00390	0.00392	0.00391
	(CLK * !D * !SCD * SCE * !Q)	-0.00511	-0.00512	-0.00511
	(CLK * !D * !SCD * !SCE * !Q)	0.00387	0.00391	0.00388
	(CLK * !D * !SCD * !SCE * !Q)	-0.00514	-0.00516	-0.00514
	(!CLK * D * SCD * SCE * !Q)	0.02139	0.02167	0.07062
	(!CLK * D * SCD * SCE * !Q)	0.00895	0.00923	0.05813
	(!CLK * D * SCD * !SCE * !Q)	0.02112	0.02147	0.07114
	(!CLK * D * SCD * !SCE * !Q)	0.00912	0.00943	0.05911
	(!CLK * D * !SCD * SCE * !Q)	0.00392	0.00397	0.00393
	(!CLK * D * !SCD * SCE * !Q)	-0.00509	-0.00512	-0.00509
	(!CLK * D * !SCD * !SCE * !Q)	0.02055	0.02095	0.07088
	(!CLK * D * !SCD * !SCE * !Q)	0.00912	0.00948	0.05947
	(!CLK * !D * SCD * SCE * !Q)	0.02240	0.02264	0.07098
	(!CLK * !D * SCD * SCE * !Q)	0.00973	0.00992	0.05832
	(!CLK * !D * SCD * !SCE * !Q)	0.00389	0.00394	0.00389
	(!CLK * !D * SCD * !SCE * !Q)	-0.00511	-0.00514	-0.00511
	(!CLK * !D * !SCD * SCE * !Q)	0.00392	0.00397	0.00393
	(!CLK * !D * !SCD * SCE * !Q)	-0.00509	-0.00512	-0.00509
	(!CLK * !D * !SCD * !SCE * !Q)	0.00389	0.00394	0.00390
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00512	-0.00515	-0.00512

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.01165	0.01229	0.05073
	(CLK * D * SCD * SCE * !Q)	-0.00056	0.00002	0.03854
	(CLK * D * SCD * !SCE * !Q)	0.01118	0.01186	0.05092
	(CLK * D * SCD * !SCE * !Q)	-0.00058	0.00006	0.03915
	(CLK * D * !SCD * SCE * !Q)	0.00391	0.00393	0.00391
	(CLK * D * !SCD * SCE * !Q)	-0.00514	-0.00515	-0.00514
	(CLK * D * !SCD * !SCE * !Q)	0.01060	0.01142	0.05071
	(CLK * D * !SCD * !SCE * !Q)	-0.00058	0.00018	0.03952
	(CLK * !D * SCD * SCE * !Q)	0.01265	0.01317	0.05114
	(CLK * !D * SCD * SCE * !Q)	0.00022	0.00071	0.03873
	(CLK * !D * SCD * !SCE * !Q)	0.00387	0.00390	0.00388
	(CLK * !D * SCD * !SCE * !Q)	-0.00516	-0.00517	-0.00516
	(CLK * !D * !SCD * SCE * !Q)	0.00391	0.00393	0.00391
	(CLK * !D * !SCD * SCE * !Q)	-0.00514	-0.00515	-0.00514
	(CLK * !D * !SCD * !SCE * !Q)	0.00388	0.00391	0.00389
	(CLK * !D * !SCD * !SCE * !Q)	-0.00517	-0.00518	-0.00517
	(!CLK * D * SCD * SCE * !Q)	0.02091	0.02125	0.07025
	(!CLK * D * SCD * SCE * !Q)	0.00851	0.00881	0.05782
	(!CLK * D * SCD * !SCE * !Q)	0.02043	0.02086	0.07071
	(!CLK * D * SCD * !SCE * !Q)	0.00851	0.00886	0.05873
	(!CLK * D * !SCD * SCE * !Q)	0.00390	0.00391	0.00391
	(!CLK * D * !SCD * SCE * !Q)	-0.00515	-0.00515	-0.00515
	(!CLK * D * !SCD * !SCE * !Q)	0.01987	0.02033	0.07049
	(!CLK * D * !SCD * !SCE * !Q)	0.00849	0.00892	0.05909
	(!CLK * !D * SCD * SCE * !Q)	0.02192	0.02217	0.07069
	(!CLK * !D * SCD * SCE * !Q)	0.00930	0.00951	0.05806
	(!CLK * !D * SCD * !SCE * !Q)	0.00386	0.00391	0.00387
	(!CLK * !D * SCD * !SCE * !Q)	-0.00517	-0.00519	-0.00517
	(!CLK * !D * !SCD * SCE * !Q)	0.00390	0.00395	0.00390
	(!CLK * !D * !SCD * SCE * !Q)	-0.00515	-0.00518	-0.00515
	(!CLK * !D * !SCD * !SCE * !Q)	0.00387	0.00392	0.00388
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00517	-0.00521	-0.00517

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.01170	0.01232	0.05079
	(CLK * D * SCD * SCE * !Q)	-0.00047	0.00009	0.03860
	(CLK * D * SCD * !SCE * !Q)	0.01122	0.01190	0.05094
	(CLK * D * SCD * !SCE * !Q)	-0.00050	0.00012	0.03920
	(CLK * D * !SCD * SCE * !Q)	0.00385	0.00388	0.00386
	(CLK * D * !SCD * SCE * !Q)	-0.00511	-0.00512	-0.00511
	(CLK * D * !SCD * !SCE * !Q)	0.01065	0.01142	0.05073
	(CLK * D * !SCD * !SCE * !Q)	-0.00050	0.00027	0.03958
	(CLK * !D * SCD * SCE * !Q)	0.01269	0.01322	0.05121
	(CLK * !D * SCD * SCE * !Q)	0.00030	0.00077	0.03880
	(CLK * !D * SCD * !SCE * !Q)	0.00382	0.00384	0.00383
	(CLK * !D * SCD * !SCE * !Q)	-0.00513	-0.00514	-0.00513
	(CLK * !D * !SCD * SCE * !Q)	0.00385	0.00388	0.00386
	(CLK * !D * !SCD * SCE * !Q)	-0.00511	-0.00512	-0.00511
	(CLK * !D * !SCD * !SCE * !Q)	0.00383	0.00385	0.00384
	(CLK * !D * !SCD * !SCE * !Q)	-0.00514	-0.00515	-0.00513
	(!CLK * D * SCD * SCE * !Q)	0.02087	0.02128	0.07049
	(!CLK * D * SCD * SCE * !Q)	0.00854	0.00886	0.05809
	(!CLK * D * SCD * !SCE * !Q)	0.02042	0.02081	0.07093
	(!CLK * D * SCD * !SCE * !Q)	0.00852	0.00884	0.05897
	(!CLK * D * !SCD * SCE * !Q)	0.00384	0.00389	0.00384
	(!CLK * D * !SCD * SCE * !Q)	-0.00513	-0.00516	-0.00513
	(!CLK * D * !SCD * !SCE * !Q)	0.01985	0.02035	0.07075
	(!CLK * D * !SCD * !SCE * !Q)	0.00850	0.00895	0.05938
	(!CLK * !D * SCD * SCE * !Q)	0.02188	0.02219	0.07099
	(!CLK * !D * SCD * SCE * !Q)	0.00932	0.00955	0.05838
	(!CLK * !D * SCD * !SCE * !Q)	0.00380	0.00379	0.00381
	(!CLK * !D * SCD * !SCE * !Q)	-0.00515	-0.00513	-0.00514
	(!CLK * !D * !SCD * SCE * !Q)	0.00384	0.00389	0.00384
	(!CLK * !D * !SCD * SCE * !Q)	-0.00513	-0.00516	-0.00513
	(!CLK * !D * !SCD * !SCE * !Q)	0.00381	0.00386	0.00382
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00515	-0.00518	-0.00515

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)**	0.00094	0.00262	0.04241
	(CLK * D * SCD * SCE * !Q)	0.01319	0.01491	0.05467
	(CLK * D * SCD * !SCE * !Q)	-0.00031	0.00139	0.04107
	(CLK * D * SCD * !SCE * !Q)	0.01149	0.01321	0.05287
	(CLK * D * !SCD * SCE * !Q)	-0.00377	-0.00391	-0.00389
	(CLK * D * !SCD * SCE * !Q)	0.00518	0.00516	0.00514
	(CLK * D * !SCD * !SCE * !Q)	-0.00068	0.00096	0.04103
	(CLK * D * !SCD * !SCE * !Q)	0.01053	0.01224	0.05221
	(CLK * !D * SCD * SCE * !Q)	0.00043	0.00210	0.04221
	(CLK * !D * SCD * SCE * !Q)	0.01290	0.01461	0.05468
	(CLK * !D * SCD * !SCE * !Q)	-0.00370	-0.00388	-0.00387
	(CLK * !D * SCD * !SCE * !Q)	0.00522	0.00517	0.00514
	(CLK * !D * !SCD * SCE * !Q)	-0.00377	-0.00391	-0.00389
	(CLK * !D * !SCD * SCE * !Q)	0.00518	0.00516	0.00514
	(CLK * !D * !SCD * !SCE * !Q)	-0.00372	-0.00389	-0.00388
	(CLK * !D * !SCD * !SCE * !Q)	0.00523	0.00517	0.00515
	(!CLK * D * SCD * SCE * !Q)	0.00934	0.01074	0.06534
	(!CLK * D * SCD * SCE * !Q)	0.02177	0.02326	0.07782
	(!CLK * D * SCD * !SCE * !Q)	0.00809	0.00941	0.06302
	(!CLK * D * SCD * !SCE * !Q)	0.02008	0.02148	0.07502
	(!CLK * D * !SCD * SCE * !Q)	-0.00380	-0.00393	-0.00391
	(!CLK * D * !SCD * SCE * !Q)	0.00515	0.00514	0.00512
	(!CLK * D * !SCD * !SCE * !Q)	0.00772	0.00913	0.06289
	(!CLK * D * !SCD * !SCE * !Q)	0.01912	0.02058	0.07433
	(!CLK * !D * SCD * SCE * !Q)	0.00884	0.01033	0.06470
	(!CLK * !D * SCD * SCE * !Q)	0.02149	0.02306	0.07739
	(!CLK * !D * SCD * !SCE * !Q)	-0.00373	-0.00391	-0.00389
	(!CLK * !D * SCD * !SCE * !Q)	0.00519	0.00515	0.00512
	(!CLK * !D * !SCD * SCE * !Q)	-0.00380	-0.00393	-0.00391
	(!CLK * !D * !SCD * SCE * !Q)	0.00515	0.00514	0.00512
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00375	-0.00392	-0.00390
	(!CLK * !D * !SCD * !SCE * !Q)	0.00520	0.00515	0.00513

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.00081	0.00254	0.04249
	(CLK * D * SCD * SCE * !Q)	0.01302	0.01482	0.05471
	(CLK * D * SCD * !SCE * !Q)	-0.00034	0.00139	0.04125
	(CLK * D * SCD * !SCE * !Q)	0.01143	0.01316	0.05302
	(CLK * D * !SCD * SCE * !Q)	-0.00378	-0.00392	-0.00390
	(CLK * D * !SCD * SCE * !Q)	0.00521	0.00520	0.00517
	(CLK * D * !SCD * !SCE * !Q)	-0.00071	0.00099	0.04121
	(CLK * D * !SCD * !SCE * !Q)	0.01047	0.01220	0.05238
	(CLK * !D * SCD * SCE * !Q)	0.00030	0.00207	0.04230
	(CLK * !D * SCD * SCE * !Q)	0.01273	0.01450	0.05472
	(CLK * !D * SCD * !SCE * !Q)	-0.00371	-0.00390	-0.00388
	(CLK * !D * SCD * !SCE * !Q)	0.00525	0.00521	0.00518
	(CLK * !D * !SCD * SCE * !Q)	-0.00378	-0.00392	-0.00390
	(CLK * !D * !SCD * SCE * !Q)	0.00521	0.00520	0.00517
	(CLK * !D * !SCD * !SCE * !Q)	-0.00373	-0.00391	-0.00388
	(CLK * !D * !SCD * !SCE * !Q)	0.00526	0.00521	0.00518
	(!CLK * D * SCD * SCE * !Q)	0.00991	0.01136	0.06519
	(!CLK * D * SCD * SCE * !Q)	0.02230	0.02377	0.07763
	(!CLK * D * SCD * !SCE * !Q)	0.00876	0.01012	0.06360
	(!CLK * D * SCD * !SCE * !Q)	0.02070	0.02211	0.07557
	(!CLK * D * !SCD * SCE * !Q)	-0.00378	-0.00389	-0.00389
	(!CLK * D * !SCD * SCE * !Q)	0.00521	0.00520	0.00518
	(!CLK * D * !SCD * !SCE * !Q)	0.00840	0.00982	0.06349
	(!CLK * D * !SCD * !SCE * !Q)	0.01975	0.02125	0.07488
	(!CLK * !D * SCD * SCE * !Q)	0.00942	0.01094	0.06520
	(!CLK * !D * SCD * SCE * !Q)	0.02202	0.02360	0.07785
	(!CLK * !D * SCD * !SCE * !Q)	-0.00370	-0.00387	-0.00387
	(!CLK * !D * SCD * !SCE * !Q)	0.00525	0.00521	0.00518
	(!CLK * !D * !SCD * SCE * !Q)	-0.00378	-0.00391	-0.00389
	(!CLK * !D * !SCD * SCE * !Q)	0.00521	0.00521	0.00518
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00373	-0.00388	-0.00387
	(!CLK * !D * !SCD * !SCE * !Q)	0.00526	0.00522	0.00519

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.00083	0.00258	0.04249
	(CLK * D * SCD * SCE * !Q)	0.01301	0.01480	0.05468
	(CLK * D * SCD * !SCE * !Q)	-0.00032	0.00143	0.04124
	(CLK * D * SCD * !SCE * !Q)	0.01141	0.01323	0.05297
	(CLK * D * !SCD * SCE * !Q)	-0.00372	-0.00386	-0.00384
	(CLK * D * !SCD * SCE * !Q)	0.00518	0.00517	0.00514
	(CLK * D * !SCD * !SCE * !Q)	-0.00069	0.00101	0.04120
	(CLK * D * !SCD * !SCE * !Q)	0.01045	0.01222	0.05234
	(CLK * !D * SCD * SCE * !Q)	0.00025	0.00198	0.04225
	(CLK * !D * SCD * SCE * !Q)	0.01264	0.01443	0.05464
	(CLK * !D * SCD * !SCE * !Q)	-0.00365	-0.00384	-0.00382
	(CLK * !D * SCD * !SCE * !Q)	0.00522	0.00517	0.00515
	(CLK * !D * !SCD * SCE * !Q)	-0.00372	-0.00386	-0.00384
	(CLK * !D * !SCD * SCE * !Q)	0.00518	0.00517	0.00514
	(CLK * !D * !SCD * !SCE * !Q)	-0.00367	-0.00384	-0.00383
	(CLK * !D * !SCD * !SCE * !Q)	0.00523	0.00518	0.00515
	(!CLK * D * SCD * SCE * !Q)	0.00959	0.01103	0.06520
	(!CLK * D * SCD * SCE * !Q)	0.02196	0.02348	0.07761
	(!CLK * D * SCD * !SCE * !Q)	0.00842	0.00982	0.06359
	(!CLK * D * SCD * !SCE * !Q)	0.02035	0.02177	0.07553
	(!CLK * D * !SCD * SCE * !Q)	-0.00371	-0.00384	-0.00382
	(!CLK * D * !SCD * SCE * !Q)	0.00519	0.00518	0.00516
	(!CLK * D * !SCD * !SCE * !Q)	0.00806	0.00952	0.06347
	(!CLK * D * !SCD * !SCE * !Q)	0.01938	0.02090	0.07484
	(!CLK * !D * SCD * SCE * !Q)	0.00901	0.01056	0.06516
	(!CLK * !D * SCD * SCE * !Q)	0.02159	0.02322	0.07776
	(!CLK * !D * SCD * !SCE * !Q)	-0.00364	-0.00379	-0.00380
	(!CLK * !D * SCD * !SCE * !Q)	0.00523	0.00519	0.00516
	(!CLK * !D * !SCD * SCE * !Q)	-0.00371	-0.00384	-0.00382
	(!CLK * !D * !SCD * SCE * !Q)	0.00519	0.00518	0.00516
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00366	-0.00383	-0.00381
	(!CLK * !D * !SCD * !SCE * !Q)	0.00524	0.00520	0.00517

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)	0.01668	0.01909	0.08866
	(D * RESET_B * SCD * SCE * Q)	0.01126	0.01364	0.08324
	(D * RESET_B * SCD * !SCE * Q)	0.01668	0.01908	0.08865
	(D * RESET_B * SCD * !SCE * Q)	0.01125	0.01364	0.08323
	(D * RESET_B * !SCD * !SCE * Q)	0.01668	0.01909	0.08866
	(D * RESET_B * !SCD * !SCE * Q)	0.01126	0.01364	0.08324
	(D * !SCD * SCE * !Q)	0.01708	0.01951	0.08904
	(D * !SCD * SCE * !Q)	0.01165	0.01407	0.08361
	(D * !RESET_B * SCD * SCE * !Q)	0.01708	0.01953	0.08903
	(D * !RESET_B * SCD * SCE * !Q)	0.01165	0.01409	0.08361
	(D * !RESET_B * SCD * !SCE * !Q)	0.01707	0.01952	0.08902
	(D * !RESET_B * SCD * !SCE * !Q)	0.01165	0.01408	0.08360
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01707	0.01952	0.08902
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01165	0.01408	0.08360
	(!D * RESET_B * SCD * SCE * Q)	0.01668	0.01909	0.08866
	(!D * RESET_B * SCD * SCE * Q)	0.01126	0.01365	0.08324
	(!D * !SCE * !Q)	0.01707	0.01951	0.08904
	(!D * !SCE * !Q)	0.01165	0.01407	0.08360
	(!D * !SCD * SCE * !Q)	0.01708	0.01952	0.08937
	(!D * !SCD * SCE * !Q)	0.01165	0.01408	0.08396
	(!D * !RESET_B * SCD * SCE * !Q)	0.01708	0.01947	0.08903
	(!D * !RESET_B * SCD * SCE * !Q)	0.01165	0.01403	0.08361

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.01665	0.01905	0.08866
	(D * RESET_B * SCD * SCE * Q)	0.01119	0.01357	0.08320
	(D * RESET_B * SCD * !SCE * Q)	0.01665	0.01905	0.08866
	(D * RESET_B * SCD * !SCE * Q)	0.01118	0.01357	0.08320
	(D * RESET_B * !SCD * !SCE * Q)	0.01665	0.01905	0.08866
	(D * RESET_B * !SCD * !SCE * Q)	0.01119	0.01357	0.08320
	(D * !SCD * SCE * !Q)	0.01714	0.01957	0.08947
	(D * !SCD * SCE * !Q)	0.01167	0.01409	0.08402
	(D * !RESET_B * SCD * SCE * !Q)	0.01714	0.01958	0.08912
	(D * !RESET_B * SCD * SCE * !Q)	0.01168	0.01410	0.08366
	(D * !RESET_B * SCD * !SCE * !Q)	0.01714	0.01958	0.08911
	(D * !RESET_B * SCD * !SCE * !Q)	0.01167	0.01410	0.08365
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01714	0.01958	0.08911
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01167	0.01410	0.08365
	(!D * RESET_B * SCD * SCE * Q)	0.01665	0.01905	0.08866
	(!D * RESET_B * SCD * SCE * Q)	0.01119	0.01357	0.08321
	(!D * !SCE * !Q)	0.01714	0.01956	0.08947
	(!D * !SCE * !Q)	0.01167	0.01409	0.08399
	(!D * !SCD * SCE * !Q)	0.01714	0.01957	0.08909
	(!D * !SCD * SCE * !Q)	0.01168	0.01409	0.08364
	(!D * !RESET_B * SCD * SCE * !Q)	0.01714	0.01958	0.08912
	(!D * !RESET_B * SCD * SCE * !Q)	0.01168	0.01410	0.08367

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.01643	0.01884	0.08846
	(D * RESET_B * SCD * SCE * Q)	0.01097	0.01337	0.08300
	(D * RESET_B * SCD * !SCE * Q)	0.01643	0.01884	0.08845
	(D * RESET_B * SCD * !SCE * Q)	0.01097	0.01337	0.08300
	(D * RESET_B * !SCD * !SCE * Q)	0.01643	0.01885	0.08845
	(D * RESET_B * !SCD * !SCE * Q)	0.01097	0.01337	0.08300
	(D * !SCD * SCE * !Q)	0.01686	0.01925	0.08921
	(D * !SCD * SCE * !Q)	0.01140	0.01378	0.08376
	(D * !RESET_B * SCD * SCE * !Q)	0.01686	0.01926	0.08886
	(D * !RESET_B * SCD * SCE * !Q)	0.01140	0.01379	0.08341
	(D * !RESET_B * SCD * !SCE * !Q)	0.01686	0.01926	0.08885
	(D * !RESET_B * SCD * !SCE * !Q)	0.01140	0.01379	0.08339
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01686	0.01926	0.08885
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01140	0.01379	0.08339
	(!D * RESET_B * SCD * SCE * Q)	0.01643	0.01885	0.08846
	(!D * RESET_B * SCD * SCE * Q)	0.01097	0.01337	0.08300
	(!D * !SCE * !Q)	0.01686	0.01925	0.08921
	(!D * !SCE * !Q)	0.01140	0.01378	0.08374
	(!D * !SCD * SCE * !Q)	0.01686	0.01925	0.08887
	(!D * !SCD * SCE * !Q)	0.01140	0.01378	0.08342
	(!D * !RESET_B * SCD * SCE * !Q)	0.01686	0.01927	0.08887
	(!D * !RESET_B * SCD * SCE * !Q)	0.01140	0.01379	0.08341

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)**	0.00865	0.01216	0.08193
	(D * RESET_B * SCD * SCE * Q)	0.01409	0.01760	0.08736
	(D * RESET_B * SCD * SCE * !Q)	0.01612	0.01967	0.09132
	(D * RESET_B * SCD * SCE * !Q)	0.02132	0.02489	0.09653
	(D * RESET_B * SCD * !SCE * Q)	0.00865	0.01216	0.08193
	(D * RESET_B * SCD * !SCE * Q)	0.01408	0.01760	0.08736
	(D * RESET_B * SCD * !SCE * !Q)	0.01608	0.01964	0.09129
	(D * RESET_B * SCD * !SCE * !Q)	0.02129	0.02486	0.09650
	(D * RESET_B * !SCD * SCE * Q)	0.01782	0.02152	0.09237
	(D * RESET_B * !SCD * SCE * Q)	0.02350	0.02719	0.09804
	(D * RESET_B * !SCD * !SCE * Q)	0.00865	0.01216	0.08193
	(D * RESET_B * !SCD * !SCE * Q)	0.01409	0.01760	0.08736
	(D * RESET_B * !SCD * !SCE * !Q)	0.01609	0.01965	0.09119
	(D * RESET_B * !SCD * !SCE * !Q)	0.02130	0.02486	0.09640
	(D * !SCD * SCE * !Q)	0.00805	0.01157	0.08141
	(D * !SCD * SCE * !Q)	0.01348	0.01702	0.08684
	(D * !RESET_B * SCD * SCE * !Q)	0.00805	0.01158	0.08140
	(D * !RESET_B * SCD * SCE * !Q)	0.01349	0.01702	0.08682
	(D * !RESET_B * SCD * !SCE * !Q)	0.00805	0.01157	0.08139
	(D * !RESET_B * SCD * !SCE * !Q)	0.01348	0.01701	0.08682
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00805	0.01157	0.08139
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01348	0.01701	0.08682
	(!D * RESET_B * SCD * SCE * Q)	0.00865	0.01216	0.08193
	(!D * RESET_B * SCD * SCE * Q)	0.01409	0.01760	0.08736
	(!D * RESET_B * SCD * SCE * !Q)	0.01615	0.01971	0.09136
	(!D * RESET_B * SCD * SCE * !Q)	0.02134	0.02492	0.09656
	(!D * RESET_B * !SCE * Q)	0.01777	0.02147	0.09245
	(!D * RESET_B * !SCE * Q)	0.02343	0.02712	0.09810
	(!D * RESET_B * !SCD * SCE * Q)	0.01777	0.02148	0.09240
	(!D * RESET_B * !SCD * SCE * Q)	0.02345	0.02714	0.09805
	(!D * !SCE * !Q)	0.00805	0.01157	0.08141
	(!D * !SCE * !Q)	0.01348	0.01701	0.08684
	(!D * !SCD * SCE * !Q)	0.00805	0.01157	0.08141
	(!D * !SCD * SCE * !Q)	0.01348	0.01702	0.08684
	(!D * !RESET_B * SCD * SCE * !Q)	0.00805	0.01158	0.08140
	(!D * !RESET_B * SCD * SCE * !Q)	0.01349	0.01702	0.08682

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.00867	0.01219	0.08206
	(D * RESET_B * SCD * SCE * Q)	0.01414	0.01765	0.08752
	(D * RESET_B * SCD * SCE * !Q)	0.01650	0.02006	0.09180
	(D * RESET_B * SCD * SCE * !Q)	0.02176	0.02533	0.09705
	(D * RESET_B * SCD * !SCE * Q)	0.00866	0.01218	0.08206
	(D * RESET_B * SCD * !SCE * Q)	0.01414	0.01765	0.08752
	(D * RESET_B * SCD * !SCE * !Q)	0.01647	0.02003	0.09175
	(D * RESET_B * SCD * !SCE * !Q)	0.02173	0.02530	0.09701
	(D * RESET_B * !SCD * SCE * Q)	0.01859	0.02227	0.09334
	(D * RESET_B * !SCD * SCE * Q)	0.02429	0.02799	0.09905
	(D * RESET_B * !SCD * !SCE * Q)	0.00867	0.01219	0.08206
	(D * RESET_B * !SCD * !SCE * Q)	0.01414	0.01765	0.08753
	(D * RESET_B * !SCD * !SCE * !Q)	0.01647	0.02004	0.09175
	(D * RESET_B * !SCD * !SCE * !Q)	0.02174	0.02528	0.09702
	(D * !SCD * SCE * !Q)	0.00808	0.01160	0.08153
	(D * !SCD * SCE * !Q)	0.01355	0.01708	0.08700
	(D * !RESET_B * SCD * SCE * !Q)	0.00808	0.01160	0.08151
	(D * !RESET_B * SCD * SCE * !Q)	0.01355	0.01709	0.08697
	(D * !RESET_B * SCD * !SCE * !Q)	0.00808	0.01160	0.08151
	(D * !RESET_B * SCD * !SCE * !Q)	0.01355	0.01708	0.08697
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00808	0.01160	0.08151
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01355	0.01708	0.08697
	(!D * RESET_B * SCD * SCE * Q)	0.00867	0.01219	0.08206
	(!D * RESET_B * SCD * SCE * Q)	0.01414	0.01765	0.08753
	(!D * RESET_B * SCD * SCE * !Q)	0.01654	0.02010	0.09183
	(!D * RESET_B * SCD * SCE * !Q)	0.02179	0.02535	0.09707
	(!D * RESET_B * !SCE * Q)	0.01853	0.02221	0.09330
	(!D * RESET_B * !SCE * Q)	0.02421	0.02787	0.09896
	(!D * RESET_B * !SCD * SCE * Q)	0.01856	0.02226	0.09320
	(!D * RESET_B * !SCD * SCE * Q)	0.02425	0.02796	0.09890
	(!D * !SCE * !Q)	0.00808	0.01160	0.08153
	(!D * !SCE * !Q)	0.01355	0.01708	0.08699
	(!D * !SCD * SCE * !Q)	0.00808	0.01160	0.08153
	(!D * !SCD * SCE * !Q)	0.01355	0.01708	0.08699
	(!D * !RESET_B * SCD * SCE * !Q)	0.00808	0.01161	0.08151
	(!D * !RESET_B * SCD * SCE * !Q)	0.01355	0.01709	0.08698

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.00863	0.01214	0.08200
	(D * RESET_B * SCD * SCE * Q)	0.01409	0.01762	0.08746
	(D * RESET_B * SCD * SCE * !Q)	0.01635	0.01993	0.09165
	(D * RESET_B * SCD * SCE * !Q)	0.02160	0.02518	0.09689
	(D * RESET_B * SCD * !SCE * Q)	0.00863	0.01214	0.08200
	(D * RESET_B * SCD * !SCE * Q)	0.01409	0.01762	0.08746
	(D * RESET_B * SCD * !SCE * !Q)	0.01632	0.01990	0.09160
	(D * RESET_B * SCD * !SCE * !Q)	0.02157	0.02513	0.09685
	(D * RESET_B * !SCD * SCE * Q)	0.01819	0.02190	0.09292
	(D * RESET_B * !SCD * SCE * Q)	0.02390	0.02761	0.09860
	(D * RESET_B * !SCD * !SCE * Q)	0.00863	0.01215	0.08200
	(D * RESET_B * !SCD * !SCE * Q)	0.01409	0.01762	0.08746
	(D * RESET_B * !SCD * !SCE * !Q)	0.01633	0.01990	0.09160
	(D * RESET_B * !SCD * !SCE * !Q)	0.02157	0.02514	0.09685
	(D * !SCD * SCE * !Q)	0.00798	0.01152	0.08144
	(D * !SCD * SCE * !Q)	0.01345	0.01699	0.08690
	(D * !RESET_B * SCD * SCE * !Q)	0.00799	0.01152	0.08139
	(D * !RESET_B * SCD * SCE * !Q)	0.01345	0.01699	0.08685
	(D * !RESET_B * SCD * !SCE * !Q)	0.00798	0.01152	0.08139
	(D * !RESET_B * SCD * !SCE * !Q)	0.01345	0.01699	0.08685
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00798	0.01152	0.08139
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01345	0.01699	0.08685
	(!D * RESET_B * SCD * SCE * Q)	0.00863	0.01215	0.08200
	(!D * RESET_B * SCD * SCE * Q)	0.01409	0.01762	0.08746
	(!D * RESET_B * SCD * SCE * !Q)	0.01639	0.01997	0.09167
	(!D * RESET_B * SCD * SCE * !Q)	0.02162	0.02520	0.09690
	(!D * RESET_B * !SCE * Q)	0.01812	0.02183	0.09286
	(!D * RESET_B * !SCE * Q)	0.02381	0.02752	0.09853
	(!D * RESET_B * !SCD * SCE * Q)	0.01815	0.02187	0.09289
	(!D * RESET_B * !SCD * SCE * Q)	0.02385	0.02757	0.09858
	(!D * !SCE * !Q)	0.00798	0.01151	0.08144
	(!D * !SCE * !Q)	0.01345	0.01699	0.08690
	(!D * !SCD * SCE * !Q)	0.00798	0.01152	0.08144
	(!D * !SCD * SCE * !Q)	0.01345	0.01699	0.08690
	(!D * !RESET_B * SCD * SCE * !Q)	0.00799	0.01152	0.08139
	(!D * !RESET_B * SCD * SCE * !Q)	0.01345	0.01699	0.08685

SKY130_FD_SC_HS__SDFSBPx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00192	0.00211	0.00406	0.00347	0.00301	1.25125	1.16835
sky130_fd_sc_hs__sdfsbp_2	0.00198	0.00205	0.00426	0.00348	0.00304	2.53849	2.54353

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfsbp_1	0.00000	1.11462	1.64525
sky130_fd_sc_hs__sdfsbp_2	0.00000	1.12973	2.35419

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)	0.23800	0.68123	5.94861
	SET_B->Q (FR)	0.22249	0.92679	9.01923
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RR)	0.26584	0.61442	5.97771
	SET_B->Q (FR)	0.30267	0.91285	9.15928

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfsbp_1	CLK->Q (RF)	0.20478	0.41860	2.05341
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RF)	0.22604	0.41913	2.22504

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)	0.17531	0.64898	5.88106
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RR)	0.17177	0.54659	5.91609

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)	0.18760	0.46207	1.97126
	SET_B->Q_N (FF)	0.17036	0.70939	5.07164
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RF)	0.19107	0.44110	2.35369
	SET_B->Q_N (FF)	0.21081	0.75430	5.58334

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)	-0.07568	-0.15570	-0.83495
	setup	CLK (R)	0.10915	0.17530	0.83066
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.09279	-0.17700	-0.87738
	setup	CLK (R)	0.13586	0.20034	0.88675

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)	-0.09485	-0.22024	-3.13288
	setup	CLK (R)	0.19675	0.31901	3.21851
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.12456	-0.24328	-3.01578
	setup	CLK (R)	0.23662	0.35104	3.24723

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)	-0.07568	-0.15570	-0.83495
	setup	CLK (R)	0.10915	0.17530	0.83066
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.09279	-0.17700	-0.87738
	setup	CLK (R)	0.13586	0.20034	0.88675

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)	-0.09485	-0.22024	-3.13288
	setup	CLK (R)	0.19675	0.31901	3.21851
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.12456	-0.24328	-3.01578
	setup	CLK (R)	0.23662	0.35104	3.24723

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)	-0.08810	-0.16310	-0.83435
	setup	CLK (R)	0.12944	0.18690	0.83171
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.11027	-0.18021	-0.85485
	setup	CLK (R)	0.15213	0.20958	0.86303

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)	-0.11929	-0.23867	-3.20298
	setup	CLK (R)	0.24342	0.35045	3.27954
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.15023	-0.26876	-3.11837
	setup	CLK (R)	0.28356	0.38941	3.31176

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)	-0.08810	-0.16310	-0.83435
	hold	CLK (R)	-0.09250	-0.16815	-0.83759
	setup	CLK (R)	0.12457	0.18212	0.82915
	setup	CLK (R)	0.12944	0.18690	0.83171
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.11027	-0.18021	-0.85485
	hold	CLK (R)	-0.11357	-0.18540	-0.85485
	setup	CLK (R)	0.14968	0.20434	0.86076
	setup	CLK (R)	0.15213	0.20958	0.86303

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)	-0.12648	-0.24776	-3.20298
	hold	CLK (R)	-0.11929	-0.23867	-3.21216
	setup	CLK (R)	0.24342	0.35045	3.27638
	setup	CLK (R)	0.23673	0.34654	3.27954
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.15986	-0.27471	-3.11837
	hold	CLK (R)	-0.15023	-0.26876	-3.11913
	setup	CLK (R)	0.28356	0.38941	3.30337
	setup	CLK (R)	0.27827	0.38217	3.31176

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)	-0.07953	-0.15459	-0.35937
	setup	CLK (R)	0.24251	0.25451	0.88324
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.10300	-0.17897	-0.29342
	setup	CLK (R)	0.28383	0.28996	0.95371

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)	-0.10813	-0.21681	-2.91984
	setup	CLK (R)	0.21329	0.31652	3.16064
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.13694	-0.23789	-2.86876
	setup	CLK (R)	0.24702	0.34641	3.16147

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)	-0.12395	-0.15459	-0.35937
	hold	CLK (R)	-0.07953	-0.16710	-0.89104
	setup	CLK (R)	0.24251	0.25451	0.42822
	setup	CLK (R)	0.11471	0.18713	0.88324
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.15822	-0.17897	-0.29342
	hold	CLK (R)	-0.10300	-0.18872	-0.94632
	setup	CLK (R)	0.28383	0.28996	0.42230
	setup	CLK (R)	0.14222	0.21241	0.95371

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)	-0.12481	-0.25472	-2.91984
	hold	CLK (R)	-0.10813	-0.21681	-3.08283
	setup	CLK (R)	0.16219	0.27393	2.91518
	setup	CLK (R)	0.21329	0.31652	3.16064
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.14356	-0.26862	-2.86876
	hold	CLK (R)	-0.13694	-0.23789	-2.95806
	setup	CLK (R)	0.18580	0.29088	2.86669
	setup	CLK (R)	0.24702	0.34641	3.16147

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)	-0.07826	-0.11333	-0.36059
	removal	CLK (R)	0.10035	0.13274	0.42464
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.10954	-0.16630	-0.50882
	removal	CLK (R)	0.12670	0.18119	0.95349

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)	-0.07848	-0.11334	-0.36118
	recovery	CLK (R)	-0.07848	-0.11333	-0.36118
	recovery	CLK (R)	-0.07826	-0.11372	-0.36059
	removal	CLK (R)	0.10035	0.13274	0.42357
	removal	CLK (R)	0.10035	0.13274	0.42357
	removal	CLK (R)	0.10035	0.13274	0.42464
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.10963	-0.16630	-0.51291
	recovery	CLK (R)	-0.10960	-0.16636	-0.51288
	recovery	CLK (R)	-0.10954	-0.16648	-0.50882
	removal	CLK (R)	0.12670	0.18119	0.95349
	removal	CLK (R)	0.12670	0.18119	0.95242
	removal	CLK (R)	0.12670	0.18119	0.94443

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 ()	0.17877	0.63232	16.50020
	min_pulse_width	SET_B ()	0.17164	0.63232	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	SET_B ()	0.20726	0.63232	16.50020
	min_pulse_width	SET_B ()	0.23576	0.63232	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 ()	0.14315	0.63232	16.50020
	min_pulse_width	CLK ()	0.08378	0.63232	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.15265	0.63232	16.50020
	min_pulse_width	CLK ()	0.09328	0.63232	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 ()	0.14315	0.63232	16.50020
	min_pulse_width	CLK ()	0.20964	0.63232	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.17877	0.63232	16.50020
	min_pulse_width	CLK ()	0.25950	0.63232	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	0.01838	0.01957	0.05686
	CLK	0.01580	0.01685	0.05437
	SET_B	0.01072	0.01176	0.03570
	SET_B	0.01383	0.01493	0.03826
sky130_fd_sc_hs__sdfsbp_2	CLK	0.02580	0.02687	0.06613
	CLK	0.02312	0.02396	0.06339
	SET_B	0.01612	0.01594	0.04307
	SET_B	0.01925	0.01905	0.04272

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01861	0.02007	0.05537
	CLK	0.01587	0.01734	0.05264
sky130_fd_sc_hs__sdfsbp_2	CLK	0.02499	0.02693	0.06333
	CLK	0.02230	0.02420	0.06063

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01863	0.02017	0.05623
	CLK	0.01590	0.01738	0.05351
sky130_fd_sc_hs__sdfsbp_2	CLK	0.02503	0.02691	0.06455
	CLK	0.02234	0.02423	0.06191

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01835	0.01939	0.05566
	CLK	0.01577	0.01681	0.05316
	SET_B	0.01070	0.01176	0.03524
	SET_B	0.01381	0.01489	0.03792
sky130_fd_sc_hs__sdfsbp_2	CLK	0.02577	0.02658	0.06476
	CLK	0.02309	0.02390	0.06202
	SET_B	0.01611	0.01590	0.04050
	SET_B	0.01923	0.01903	0.04218

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	0.00145	0.00148	0.00146
	(CLK * SCD * SCE)	-0.00068	-0.00070	-0.00069
	(CLK * !SCE)	0.00490	0.00626	0.04052
	(CLK * !SCE)	0.00115	0.00250	0.03676
	(CLK * !SCD * SCE)	0.00075	0.00076	0.00074
	(CLK * !SCD * SCE)	-0.00157	-0.00159	-0.00161
	(!CLK * SCD * SCE)	0.00145	0.00146	0.00145
	(!CLK * SCD * SCE)	-0.00068	-0.00069	-0.00069
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01319	0.01411	0.04715
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00903	0.00993	0.04298
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.01059	0.01146	0.04314
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00630	0.00716	0.03884
	(!CLK * !SCD * SCE)	0.00075	0.00076	0.00074
	(!CLK * !SCD * SCE)	-0.00157	-0.00160	-0.00161

sky130_fd_sc_hs__sdfsbp_2	**(CLK * SCD * SCE)**	0.00155	0.00156	0.00155
	(CLK * SCD * SCE)	-0.00065	-0.00066	-0.00066
	(CLK * !SCE)	0.00513	0.00643	0.04099
	(CLK * !SCE)	0.00131	0.00260	0.03716
	(CLK * !SCD * SCE)	0.00080	0.00080	0.00078
	(CLK * !SCD * SCE)	-0.00159	-0.00161	-0.00164
	(!CLK * SCD * SCE)	0.00154	0.00155	0.00155
	(!CLK * SCD * SCE)	-0.00065	-0.00067	-0.00066
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01488	0.01573	0.04838
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01083	0.01167	0.04432
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.01233	0.01311	0.04428
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00813	0.00889	0.04008
	(!CLK * !SCD * SCE)	0.00080	0.00080	0.00078
	(!CLK * !SCD * SCE)	-0.00159	-0.00162	-0.00164

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	-0.00138	-0.00140	-0.00143
	(CLK * SCD * SCE)	0.00075	0.00075	0.00072
	(CLK * !SCE)	0.00090	0.00269	0.03700
	(CLK * !SCE)	0.00465	0.00644	0.04076
	(CLK * !SCD * SCE)	-0.00071	-0.00072	-0.00071
	(CLK * !SCD * SCE)	0.00162	0.00163	0.00162
	(!CLK * SCD * SCE)	-0.00137	-0.00139	-0.00143
	(!CLK * SCD * SCE)	0.00074	0.00074	0.00072
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00890	0.01065	0.04447
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01308	0.01482	0.04864
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00512	0.00642	0.03860
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00942	0.01071	0.04288
	(!CLK * !SCD * SCE)	-0.00071	-0.00072	-0.00071
	(!CLK * !SCD * SCE)	0.00162	0.00163	0.00162

sky130_fd_sc_hs__sdfsbp_2	**(CLK * SCD * SCE)**	-0.00147	-0.00150	-0.00152
	(CLK * SCD * SCE)	0.00071	0.00072	0.00069
	(CLK * !SCE)	0.00108	0.00282	0.03739
	(CLK * !SCE)	0.00491	0.00665	0.04122
	(CLK * !SCD * SCE)	-0.00075	-0.00076	-0.00075
	(CLK * !SCD * SCE)	0.00164	0.00165	0.00164
	(!CLK * SCD * SCE)	-0.00148	-0.00150	-0.00152
	(!CLK * SCD * SCE)	0.00072	0.00072	0.00069
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01149	0.01297	0.04677
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01554	0.01703	0.05083
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00741	0.00875	0.04045
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.01163	0.01296	0.04466
	(!CLK * !SCD * SCE)	-0.00075	-0.00076	-0.00076
	(!CLK * !SCD * SCE)	0.00164	0.00165	0.00164

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00707	0.00781	0.03512
	(CLK * D * SCE)	0.00178	0.00250	0.02983
	(CLK * !D * SCE)	0.00806	0.00869	0.03553
	(CLK * !D * SCE)	0.00255	0.00316	0.03003
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01518	0.01577	0.04243
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00948	0.01005	0.03673
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01257	0.01313	0.03880
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00675	0.00728	0.03297
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01617	0.01667	0.04301
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01025	0.01074	0.03710
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01356	0.01405	0.03930
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00752	0.00798	0.03326
	!SCE	0.00183	0.00162	0.00159
	!SCE	-0.00128	-0.00149	-0.00151

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.00712	0.00787	0.03512
	(CLK * D * SCE)	0.00190	0.00265	0.02992
	(CLK * !D * SCE)	0.00810	0.00876	0.03555
	(CLK * !D * SCE)	0.00267	0.00331	0.03013
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01672	0.01733	0.04360
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01128	0.01187	0.03816
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01417	0.01473	0.03989
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00858	0.00913	0.03431
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01771	0.01825	0.04415
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01204	0.01257	0.03850
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01516	0.01564	0.04043
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00935	0.00984	0.03463
	!SCE	0.00173	0.00152	0.00149
	!SCE	-0.00129	-0.00151	-0.00153

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00226	0.00297	0.03009
	(CLK * D * SCE)	0.00756	0.00828	0.03537
	(CLK * !D * SCE)	0.00175	0.00256	0.02992
	(CLK * !D * SCE)	0.00726	0.00808	0.03541
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01046	0.01099	0.03824
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01617	0.01670	0.04393
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00661	0.00707	0.03267
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01246	0.01293	0.03848
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00997	0.01058	0.03796
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01588	0.01651	0.04386
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00611	0.00662	0.03243
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01217	0.01268	0.03847
	!SCE	-0.00153	-0.00156	-0.00156
	!SCE	0.00154	0.00156	0.00155

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.00251	0.00323	0.03029
	(CLK * D * SCE)	0.00773	0.00846	0.03549
	(CLK * !D * SCE)	0.00201	0.00281	0.03011
	(CLK * !D * SCE)	0.00743	0.00824	0.03552
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01306	0.01362	0.04032
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01851	0.01906	0.04575
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00894	0.00938	0.03446
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01454	0.01500	0.04004
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01259	0.01319	0.04019
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01825	0.01885	0.04583
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00844	0.00892	0.03419
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01424	0.01474	0.03998
	!SCE	-0.00143	-0.00146	-0.00146
	!SCE	0.00156	0.00156	0.00157

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)**	0.00619	0.00788	0.05243
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00062	0.00104	0.04560
	(CLK * D * !SCD)	0.00939	0.01104	0.05714
	(CLK * D * !SCD)	0.00456	0.00617	0.05225
	(CLK * !D * SCD)	0.01088	0.01370	0.08516
	(CLK * !D * SCD)	0.00233	0.00516	0.07664
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00619	0.00787	0.05243
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00061	0.00104	0.04560
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01712	0.01901	0.06488
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01270	0.01455	0.06042
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01331	0.01517	0.06092
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00902	0.01085	0.05658
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01916	0.02183	0.09287
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01020	0.01287	0.08393
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01656	0.01920	0.08895
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00746	0.01008	0.07989
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00608	0.00791	0.05233
	(!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	0.00156	0.04597

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00646	0.00817	0.05326
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00059	0.00109	0.04619
	(CLK * D * !SCD)	0.00979	0.01150	0.05813
	(CLK * D * !SCD)	0.00476	0.00641	0.05302
	(CLK * !D * SCD)	0.01127	0.01415	0.08714
	(CLK * !D * SCD)	0.00246	0.00534	0.07837
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00646	0.00816	0.05326
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00059	0.00109	0.04619
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01994	0.02186	0.06834
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01513	0.01698	0.06345
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01582	0.01774	0.06397
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01115	0.01302	0.05923
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.02100	0.02374	0.09594
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01199	0.01473	0.08693
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01845	0.02114	0.09193
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00929	0.01195	0.08279
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00626	0.00812	0.05307
	(!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	0.00150	0.04646

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)**	-0.00040	0.00223	0.04675
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00639	0.00905	0.05357
	(CLK * D * !SCD)	0.00464	0.00698	0.05261
	(CLK * D * !SCD)	0.00951	0.01184	0.05729
	(CLK * !D * SCD)	0.00131	0.00454	0.07573
	(CLK * !D * SCD)	0.00982	0.01308	0.08428
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00040	0.00223	0.04675
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00640	0.00906	0.05357
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01289	0.01533	0.06013
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01735	0.01977	0.06440
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01028	0.01272	0.05754
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01462	0.01706	0.06168
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00931	0.01229	0.08263
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01824	0.02124	0.09159
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00554	0.00841	0.07734
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01459	0.01750	0.08642
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00007	0.00253	0.04697
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00645	0.00892	0.05333

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00062	0.00204	0.04713
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00642	0.00910	0.05419
	(CLK * D * !SCD)	0.00455	0.00688	0.05303
	(CLK * D * !SCD)	0.00960	0.01200	0.05795
	(CLK * !D * SCD)	0.00148	0.00473	0.07748
	(CLK * !D * SCD)	0.01024	0.01352	0.08626
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00061	0.00203	0.04713
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00642	0.00911	0.05419
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01425	0.01670	0.06195
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01907	0.02157	0.06661
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01170	0.01415	0.05939
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01638	0.01888	0.06392
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01188	0.01484	0.08625
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.02088	0.02385	0.09525
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00782	0.01069	0.08053
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01697	0.01984	0.08970
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	-0.00005	0.00244	0.04742
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00657	0.00906	0.05404

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)	0.00311	0.00312	0.00311
	(CLK * Q * !Q_N)	-0.00269	-0.00270	-0.00269
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00329	0.00335	0.00331
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00249	-0.00252	-0.00250
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00616	0.00691	0.02925
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00015	0.00086	0.02321
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	0.00316	0.00317	0.00316
	(CLK * Q * !Q_N)	-0.00279	-0.00280	-0.00279
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00329	0.00333	0.00330
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00266	-0.00268	-0.00266
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00648	0.00721	0.02940
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00030	0.00099	0.02319

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)	-0.00304	-0.00311	-0.00309
	(CLK * Q * !Q_N)	0.00277	0.00276	0.00273
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00324	-0.00330	-0.00328
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00258	0.00255	0.00253
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	-0.00007	0.00101	0.02348
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00592	0.00705	0.02949
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	-0.00308	-0.00316	-0.00315
	(CLK * Q * !Q_N)	0.00284	0.00284	0.00282
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00320	-0.00329	-0.00328
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00272	0.00271	0.00269
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	-0.00032	0.00073	0.02305
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00586	0.00695	0.02926

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)	0.01687	0.01918	0.08915
	(D * SCD * SCE * Q * !Q_N)	0.01156	0.01385	0.08384
	(D * !SCE * Q * !Q_N)	0.01686	0.01918	0.08908
	(D * !SCE * Q * !Q_N)	0.01155	0.01385	0.08377
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01668	0.01897	0.08887
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01140	0.01365	0.08355
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03123	0.03392	0.10480
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02539	0.02806	0.09895
	(!D * SCD * SCE * Q * !Q_N)	0.01687	0.01918	0.08908
	(!D * SCD * SCE * Q * !Q_N)	0.01156	0.01385	0.08377
	(!D * !SCE * SET_B * !Q * Q_N)	0.01668	0.01897	0.08886
	(!D * !SCE * SET_B * !Q * Q_N)	0.01140	0.01364	0.08355
	(!D * !SCE * !SET_B * Q * !Q_N)	0.03122	0.03391	0.10494
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02538	0.02804	0.09909
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01668	0.01897	0.08894
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01140	0.01365	0.08362
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03128	0.03392	0.10491
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02544	0.02806	0.09906

sky130_fd_sc_hs__sdfsbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.02198	0.02403	0.09586
	(D * SCD * SCE * Q * !Q_N)	0.01664	0.01865	0.09051
	(D * !SCE * Q * !Q_N)	0.02197	0.02403	0.09586
	(D * !SCE * Q * !Q_N)	0.01663	0.01864	0.09051
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.02160	0.02365	0.09549
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01625	0.01827	0.09012
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.05327	0.05599	0.13111
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.04754	0.05026	0.12539
	(!D * SCD * SCE * Q * !Q_N)	0.02198	0.02403	0.09587
	(!D * SCD * SCE * Q * !Q_N)	0.01664	0.01865	0.09052
	(!D * !SCE * SET_B * !Q * Q_N)	0.02159	0.02365	0.09548
	(!D * !SCE * SET_B * !Q * Q_N)	0.01625	0.01827	0.09012
	(!D * !SCE * !SET_B * Q * !Q_N)	0.05326	0.05599	0.13108
	(!D * !SCE * !SET_B * Q * !Q_N)	0.04752	0.05024	0.12534
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.02160	0.02365	0.09549
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01626	0.01827	0.09012
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.05339	0.05601	0.13101
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.04765	0.05026	0.12526

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(D * SCD * SCE * SET_B * !Q * Q_N)	0.01730	0.02086	0.09283
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.02221	0.02576	0.09774
	(D * SCD * SCE * Q * !Q_N)	0.00935	0.01293	0.08350
	(D * SCD * SCE * Q * !Q_N)	0.01467	0.01824	0.08881
	(D * !SCE * SET_B * !Q * Q_N)	0.01726	0.02083	0.09280
	(D * !SCE * SET_B * !Q * Q_N)	0.02218	0.02574	0.09771
	(D * !SCE * Q * !Q_N)	0.00935	0.01293	0.08349
	(D * !SCE * Q * !Q_N)	0.01467	0.01824	0.08881
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01926	0.02303	0.09467
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.02501	0.02877	0.10042
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00949	0.01307	0.08374
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01480	0.01839	0.08905
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01545	0.01921	0.09082
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02129	0.02509	0.09668
sky130_fd_sc_hs__sdfsbp_1	**(!D * SCD * SCE * SET_B * !Q * Q_N)**	0.01733	0.02090	0.09287
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.02223	0.02579	0.09776
	(!D * SCD * SCE * Q * !Q_N)	0.00935	0.01293	0.08350
	(!D * SCD * SCE * Q * !Q_N)	0.01467	0.01825	0.08881
	(!D * !SCE * SET_B * Q * !Q_N)	0.01924	0.02301	0.09464
	(!D * !SCE * SET_B * Q * !Q_N)	0.02497	0.02873	0.10036
	(!D * !SCE * SET_B * !Q * Q_N)	0.00949	0.01306	0.08374
	(!D * !SCE * SET_B * !Q * Q_N)	0.01480	0.01839	0.08905
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01546	0.01920	0.09081
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02132	0.02507	0.09667
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01926	0.02302	0.09467
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.02500	0.02876	0.10041
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00949	0.01307	0.08374
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01481	0.01839	0.08905
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01547	0.01921	0.09082
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02132	0.02508	0.09669

	(D * SCD * SCE * SET_B * !Q * Q_N)	0.02094	0.02432	0.09757
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.02609	0.02946	0.10272
	(D * SCD * SCE * Q * !Q_N)	0.01134	0.01479	0.08638
	(D * SCD * SCE * Q * !Q_N)	0.01671	0.02015	0.09174
	(D * !SCE * SET_B * !Q * Q_N)	0.02090	0.02429	0.09752
	(D * !SCE * SET_B * !Q * Q_N)	0.02606	0.02942	0.10267
	(D * !SCE * Q * !Q_N)	0.01134	0.01479	0.08637
	(D * !SCE * Q * !Q_N)	0.01671	0.02015	0.09174
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.02443	0.02806	0.10082
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.03005	0.03367	0.10643
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01164	0.01505	0.08684
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01702	0.02042	0.09221
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02021	0.02382	0.09655
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02597	0.02959	0.10232
sky130_fd_sc_hs__sdfsbp_2	**(!D * SCD * SCE * SET_B * !Q * Q_N)**	0.02097	0.02436	0.09760
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.02611	0.02948	0.10274
	(!D * SCD * SCE * Q * !Q_N)	0.01134	0.01479	0.08638
	(!D * SCD * SCE * Q * !Q_N)	0.01671	0.02016	0.09174
	(!D * !SCE * SET_B * Q * !Q_N)	0.02439	0.02802	0.10078
	(!D * !SCE * SET_B * Q * !Q_N)	0.02999	0.03361	0.10637
	(!D * !SCE * SET_B * !Q * Q_N)	0.01164	0.01505	0.08684
	(!D * !SCE * SET_B * !Q * Q_N)	0.01702	0.02041	0.09221
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02021	0.02382	0.09658
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02596	0.02955	0.10233
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.02442	0.02806	0.10082
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.03004	0.03367	0.10643
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01165	0.01505	0.08684
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01702	0.02042	0.09221
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02021	0.02385	0.09655
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02596	0.02961	0.10230

SKY130_FD_SC_HS__SDFSTPx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00191	0.00212	0.00405	0.00338	0.00300	1.25025
sky130_fd_sc_hs__sdfstp_2	0.00191	0.00208	0.00404	0.00348	0.00300	2.52838
sky130_fd_sc_hs__sdfstp_4	0.00191	0.00212	0.00410	0.00348	0.00300	4.73066

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfstp_1	0.00000	1.04424	1.54392
sky130_fd_sc_hs__sdfstp_2	0.00000	0.98897	2.33722
sky130_fd_sc_hs__sdfstp_4	0.00000	1.69100	2.53662

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)	0.19661	0.64157	5.86884
	SET_B->Q (FR)	0.19107	0.88468	8.88333
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RR)	0.18407	0.53319	5.82582
	SET_B->Q (FR)	0.21795	0.82252	8.95249
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RR)	0.21344	0.49434	5.80997
	SET_B->Q (FR)	0.25627	0.79793	8.97072

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfstp_1	CLK->Q (RF)	0.19389	0.40782	2.05104
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RF)	0.20409	0.39111	2.14483
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RF)	0.20958	0.37205	2.16851

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)	-0.07523	-0.15573	-0.82947
	setup	CLK (R)	0.11121	0.17527	0.82513
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.09300	-0.17422	-0.88904
	setup	CLK (R)	0.13417	0.19932	0.89533
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.09485	-0.17720	-0.89463
	setup	CLK (R)	0.12892	0.19732	0.89544

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)	-0.08229	-0.20820	-3.11101
	setup	CLK (R)	0.19051	0.31327	3.20144
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.09591	-0.21963	-3.08940
	setup	CLK (R)	0.22113	0.34015	3.26295
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.10054	-0.22867	-3.09768
	setup	CLK (R)	0.22222	0.34150	3.27208

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)	-0.07523	-0.15573	-0.82947
	setup	CLK (R)	0.11121	0.17527	0.82513
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.09300	-0.17422	-0.88904
	setup	CLK (R)	0.13417	0.19932	0.89533
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.09485	-0.17720	-0.89463
	setup	CLK (R)	0.12892	0.19732	0.89544

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)	-0.08229	-0.20820	-3.11101
	setup	CLK (R)	0.19051	0.31327	3.20144
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.09591	-0.21963	-3.08940
	setup	CLK (R)	0.22113	0.34015	3.26295
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.10054	-0.22867	-3.09768
	setup	CLK (R)	0.22222	0.34150	3.27208

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)	-0.09194	-0.16387	-0.82805
	setup	CLK (R)	0.13048	0.18741	0.82463
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.10884	-0.18147	-0.87680
	setup	CLK (R)	0.15350	0.21080	0.87818
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.10737	-0.18177	-0.88254
	setup	CLK (R)	0.14847	0.20838	0.88120

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)	-0.10403	-0.22709	-3.19002
	setup	CLK (R)	0.23695	0.34432	3.26679
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.11929	-0.23811	-3.17826
	setup	CLK (R)	0.26541	0.37343	3.31554
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.12696	-0.24768	-3.18288
	setup	CLK (R)	0.26863	0.37401	3.32461

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)	-0.09194	-0.16387	-0.82805
	hold	CLK (R)	-0.09528	-0.17055	-0.83383
	setup	CLK (R)	0.12690	0.18207	0.82315
	setup	CLK (R)	0.13048	0.18741	0.82463
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.10884	-0.18147	-0.87680
	hold	CLK (R)	-0.11215	-0.18658	-0.87785
	setup	CLK (R)	0.15199	0.20303	0.87696
	setup	CLK (R)	0.15350	0.21080	0.87818
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.10737	-0.18177	-0.88313
	hold	CLK (R)	-0.11203	-0.18747	-0.88254
	setup	CLK (R)	0.14822	0.20303	0.87908
	setup	CLK (R)	0.14847	0.20838	0.88120

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)	-0.11418	-0.23575	-3.19002
	hold	CLK (R)	-0.10403	-0.22709	-3.19408
	setup	CLK (R)	0.23695	0.34432	3.26142
	setup	CLK (R)	0.22841	0.34240	3.26679
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.12898	-0.24926	-3.17826
	hold	CLK (R)	-0.11929	-0.23811	-3.18165
	setup	CLK (R)	0.26541	0.37343	3.30892
	setup	CLK (R)	0.25889	0.36943	3.31554
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.13374	-0.25658	-3.18288
	hold	CLK (R)	-0.12696	-0.24768	-3.18529
	setup	CLK (R)	0.26863	0.37401	3.32237
	setup	CLK (R)	0.25855	0.37158	3.32461

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)	-0.08146	-0.14278	-0.34707
	setup	CLK (R)	0.23448	0.25193	0.87772
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.10142	-0.15391	-0.35021
	setup	CLK (R)	0.26588	0.27634	0.94271
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.10207	-0.16271	-0.34839
	setup	CLK (R)	0.26548	0.27851	0.94522

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)	-0.09599	-0.20461	-2.91689
	setup	CLK (R)	0.20611	0.31152	3.14668
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.10762	-0.21567	-2.92703
	setup	CLK (R)	0.23537	0.33858	3.20321
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.11427	-0.22457	-2.92889
	setup	CLK (R)	0.23491	0.34099	3.21489

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)	-0.10854	-0.14278	-0.34707
	hold	CLK (R)	-0.08146	-0.16756	-0.88384
	setup	CLK (R)	0.23448	0.25193	0.41522
	setup	CLK (R)	0.11893	0.18727	0.87772
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.12514	-0.15391	-0.35021
	hold	CLK (R)	-0.10142	-0.18747	-0.93955
	setup	CLK (R)	0.26588	0.27634	0.43388
	setup	CLK (R)	0.14249	0.21068	0.94271
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.13244	-0.16271	-0.34839
	hold	CLK (R)	-0.10207	-0.18909	-0.94546
	setup	CLK (R)	0.26548	0.27851	0.43773
	setup	CLK (R)	0.13648	0.20873	0.94522

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)	-0.12699	-0.25521	-2.91689
	hold	CLK (R)	-0.09599	-0.20461	-3.06284
	setup	CLK (R)	0.16270	0.27254	2.91413
	setup	CLK (R)	0.20611	0.31152	3.14668
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.14589	-0.27144	-2.92703
	hold	CLK (R)	-0.10762	-0.21567	-3.05350
	setup	CLK (R)	0.18690	0.29241	2.92440
	setup	CLK (R)	0.23537	0.33858	3.20321
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.14450	-0.27144	-2.92889
	hold	CLK (R)	-0.11427	-0.22457	-3.06114
	setup	CLK (R)	0.18435	0.29133	2.92483
	setup	CLK (R)	0.23491	0.34099	3.21489

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)	-0.08031	-0.12363	-0.38612
	removal	CLK (R)	0.10246	0.13906	0.50658
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.12083	-0.16012	-0.40581
	removal	CLK (R)	0.16216	0.36239	4.83940
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.11423	-0.16012	-0.43222
	removal	CLK (R)	0.13527	0.28865	3.42295

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)	-0.08031	-0.12364	-0.39036
	recovery	CLK (R)	-0.08031	-0.12363	-0.39037
	recovery	CLK (R)	-0.08329	-0.12388	-0.38612
	removal	CLK (R)	0.09846	0.13906	0.50658
	removal	CLK (R)	0.09846	0.13906	0.50658
	removal	CLK (R)	0.10246	0.13906	0.50552
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.12083	-0.16012	-0.40688
	recovery	CLK (R)	-0.12083	-0.16012	-0.40688
	recovery	CLK (R)	-0.12083	-0.16012	-0.40581
	removal	CLK (R)	0.15880	0.36239	4.83940
	removal	CLK (R)	0.15880	0.36239	4.83940
	removal	CLK (R)	0.16216	0.36239	4.78030
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.11491	-0.16012	-0.43222
	recovery	CLK (R)	-0.11491	-0.16012	-0.43621
	recovery	CLK (R)	-0.11423	-0.16012	-0.43328
	removal	CLK (R)	0.13527	0.28865	3.42295
	removal	CLK (R)	0.13527	0.28865	3.42295
	removal	CLK (R)	0.13459	0.28865	3.34813

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 ()	0.16214	0.63232	16.50020
	min_pulse_width	SET_B ()	0.14077	0.63232	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	SET_B ()	0.17402	0.63232	16.50020
	min_pulse_width	SET_B ()	0.16214	0.63232	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	SET_B ()	0.17877	0.63232	16.50020
	min_pulse_width	SET_B ()	0.17877	0.63232	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 ()	0.10515	0.63232	16.50020
	min_pulse_width	CLK ()	0.07428	0.63232	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.08853	0.63232	16.50020
	min_pulse_width	CLK ()	0.08141	0.63232	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.10515	0.63232	16.50020
	min_pulse_width	CLK ()	0.08141	0.63232	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 ()	0.14315	0.63232	16.50020
	min_pulse_width	CLK ()	0.20489	0.63232	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.17877	0.63232	16.50020
	min_pulse_width	CLK ()	0.24288	0.63232	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.17402	0.63232	16.50020
	min_pulse_width	CLK ()	0.23813	0.63232	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	0.03171	0.03409	0.10850
	CLK	0.02669	0.02910	0.10352
	SET_B	0.03015	0.03137	0.06886
	SET_B	0.03568	0.03689	0.07452
sky130_fd_sc_hs__sdfstp_2	CLK	0.03912	0.04176	0.11694
	CLK	0.03414	0.03681	0.11220
	SET_B	0.03970	0.04081	0.07776
	SET_B	0.04534	0.04645	0.08378
sky130_fd_sc_hs__sdfstp_4	CLK	0.04694	0.04994	0.12512
	CLK	0.04204	0.04507	0.12066
	SET_B	0.04740	0.04857	0.08635
	SET_B	0.05310	0.05431	0.09278

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfstp_1	CLK	0.03381	0.03645	0.10716
	CLK	0.02835	0.03088	0.10145
sky130_fd_sc_hs__sdfstp_2	CLK	0.04154	0.04442	0.11467
	CLK	0.03618	0.03896	0.10909
sky130_fd_sc_hs__sdfstp_4	CLK	0.05008	0.05351	0.12385
	CLK	0.04461	0.04799	0.11832

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	0.00144	0.00147	0.00145
	(CLK * SCD * SCE)	-0.00068	-0.00069	-0.00068
	(CLK * !SCE)	0.00496	0.00632	0.04061
	(CLK * !SCE)	0.00123	0.00258	0.03688
	(CLK * !SCD * SCE)	0.00075	0.00075	0.00074
	(CLK * !SCD * SCE)	-0.00156	-0.00158	-0.00160
	(!CLK * SCD * SCE)	0.00144	0.00145	0.00144
	(!CLK * SCD * SCE)	-0.00068	-0.00069	-0.00068
	(!CLK * !SCE * SET_B)	0.01281	0.01375	0.04685
	(!CLK * !SCE * SET_B)	0.00875	0.00967	0.04277
	(!CLK * !SCE * !SET_B * Q)	0.01036	0.01124	0.04296
	(!CLK * !SCE * !SET_B * Q)	0.00619	0.00706	0.03878
	(!CLK * !SCD * SCE)	0.00075	0.00076	0.00074
	(!CLK * !SCD * SCE)	-0.00156	-0.00159	-0.00160
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	0.00144	0.00146	0.00144
	(CLK * SCD * SCE)	-0.00069	-0.00070	-0.00069
	(CLK * !SCE)	0.00490	0.00626	0.04055
	(CLK * !SCE)	0.00118	0.00252	0.03681
	(CLK * !SCD * SCE)	0.00074	0.00075	0.00073
	(CLK * !SCD * SCE)	-0.00156	-0.00159	-0.00161
	(!CLK * SCD * SCE)	0.00143	0.00145	0.00144
	(!CLK * SCD * SCE)	-0.00068	-0.00069	-0.00069
	(!CLK * !SCE * SET_B)	0.01470	0.01556	0.04808
	(!CLK * !SCE * SET_B)	0.01048	0.01133	0.04387
	(!CLK * !SCE * !SET_B * Q)	0.01207	0.01290	0.04392
	(!CLK * !SCE * !SET_B * Q)	0.00775	0.00856	0.03959
	(!CLK * !SCD * SCE)	0.00074	0.00075	0.00073
	(!CLK * !SCD * SCE)	-0.00156	-0.00159	-0.00161

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	0.00144	0.00147	0.00145
	(CLK * SCD * SCE)	-0.00068	-0.00069	-0.00068
	(CLK * !SCE)	0.00508	0.00642	0.04061
	(CLK * !SCE)	0.00136	0.00268	0.03688
	(CLK * !SCD * SCE)	0.00075	0.00076	0.00074
	(CLK * !SCD * SCE)	-0.00155	-0.00157	-0.00159
	(!CLK * SCD * SCE)	0.00144	0.00146	0.00145
	(!CLK * SCD * SCE)	-0.00067	-0.00069	-0.00068
	(!CLK * !SCE * SET_B)	0.01458	0.01547	0.04789
	(!CLK * !SCE * SET_B)	0.01047	0.01134	0.04377
	(!CLK * !SCE * !SET_B * Q)	0.01200	0.01283	0.04383
	(!CLK * !SCE * !SET_B * Q)	0.00778	0.00859	0.03960
	(!CLK * !SCD * SCE)	0.00075	0.00076	0.00074
	(!CLK * !SCD * SCE)	-0.00154	-0.00158	-0.00159

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	-0.00137	-0.00139	-0.00142
	(CLK * SCD * SCE)	0.00074	0.00074	0.00071
	(CLK * !SCE)	0.00077	0.00257	0.03691
	(CLK * !SCE)	0.00450	0.00631	0.04065
	(CLK * !SCD * SCE)	-0.00070	-0.00072	-0.00071
	(CLK * !SCD * SCE)	0.00161	0.00162	0.00161
	(!CLK * SCD * SCE)	-0.00136	-0.00139	-0.00142
	(!CLK * SCD * SCE)	0.00073	0.00074	0.00071
	(!CLK * !SCE * SET_B)	0.00883	0.01059	0.04444
	(!CLK * !SCE * SET_B)	0.01291	0.01464	0.04851
	(!CLK * !SCE * !SET_B * Q)	0.00525	0.00655	0.03875
	(!CLK * !SCE * !SET_B * Q)	0.00942	0.01073	0.04292
	(!CLK * !SCD * SCE)	-0.00070	-0.00072	-0.00071
	(!CLK * !SCD * SCE)	0.00161	0.00162	0.00161
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	-0.00137	-0.00140	-0.00142
	(CLK * SCD * SCE)	0.00074	0.00074	0.00071
	(CLK * !SCE)	0.00083	0.00263	0.03697
	(CLK * !SCE)	0.00456	0.00636	0.04070
	(CLK * !SCD * SCE)	-0.00071	-0.00072	-0.00071
	(CLK * !SCD * SCE)	0.00161	0.00162	0.00161
	(!CLK * SCD * SCE)	-0.00137	-0.00140	-0.00142
	(!CLK * SCD * SCE)	0.00073	0.00074	0.00071
	(!CLK * !SCE * SET_B)	0.01036	0.01192	0.04552
	(!CLK * !SCE * SET_B)	0.01460	0.01614	0.04974
	(!CLK * !SCE * !SET_B * Q)	0.00657	0.00799	0.03949
	(!CLK * !SCE * !SET_B * Q)	0.01090	0.01234	0.04382
	(!CLK * !SCD * SCE)	-0.00071	-0.00072	-0.00071
	(!CLK * !SCD * SCE)	0.00161	0.00162	0.00161

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	-0.00136	-0.00139	-0.00141
	(CLK * SCD * SCE)	0.00074	0.00074	0.00072
	(CLK * !SCE)	0.00098	0.00274	0.03699
	(CLK * !SCE)	0.00470	0.00648	0.04072
	(CLK * !SCD * SCE)	-0.00070	-0.00072	-0.00071
	(CLK * !SCD * SCE)	0.00160	0.00162	0.00161
	(!CLK * SCD * SCE)	-0.00135	-0.00139	-0.00141
	(!CLK * SCD * SCE)	0.00074	0.00075	0.00072
	(!CLK * !SCE * SET_B)	0.01049	0.01205	0.04564
	(!CLK * !SCE * SET_B)	0.01462	0.01617	0.04975
	(!CLK * !SCE * !SET_B * Q)	0.00674	0.00815	0.03963
	(!CLK * !SCE * !SET_B * Q)	0.01096	0.01239	0.04386
	(!CLK * !SCD * SCE)	-0.00070	-0.00072	-0.00070
	(!CLK * !SCD * SCE)	0.00161	0.00162	0.00161

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00711	0.00785	0.03515
	(CLK * D * SCE)	0.00182	0.00255	0.02986
	(CLK * !D * SCE)	0.00810	0.00874	0.03557
	(CLK * !D * SCE)	0.00259	0.00321	0.03007
	(!CLK * D * SCE * SET_B)	0.01480	0.01539	0.04208
	(!CLK * D * SCE * SET_B)	0.00918	0.00975	0.03646
	(!CLK * D * SCE * !SET_B * Q)	0.01234	0.01290	0.03857
	(!CLK * D * SCE * !SET_B * Q)	0.00662	0.00716	0.03284
	(!CLK * !D * SCE * SET_B)	0.01579	0.01630	0.04264
	(!CLK * !D * SCE * SET_B)	0.00995	0.01045	0.03681
	(!CLK * !D * SCE * !SET_B * Q)	0.01333	0.01382	0.03908
	(!CLK * !D * SCE * !SET_B * Q)	0.00739	0.00785	0.03313
	!SCE	0.00181	0.00161	0.00157
	!SCE	-0.00129	-0.00151	-0.00153
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00702	0.00774	0.03506
	(CLK * D * SCE)	0.00177	0.00251	0.02981
	(CLK * !D * SCE)	0.00799	0.00863	0.03549
	(CLK * !D * SCE)	0.00255	0.00316	0.03003
	(!CLK * D * SCE * SET_B)	0.01665	0.01724	0.04358
	(!CLK * D * SCE * SET_B)	0.01091	0.01150	0.03784
	(!CLK * D * SCE * !SET_B * Q)	0.01403	0.01456	0.03982
	(!CLK * D * SCE * !SET_B * Q)	0.00818	0.00872	0.03397
	(!CLK * !D * SCE * SET_B)	0.01764	0.01816	0.04418
	(!CLK * !D * SCE * SET_B)	0.01168	0.01221	0.03824
	(!CLK * !D * SCE * !SET_B * Q)	0.01501	0.01549	0.04034
	(!CLK * !D * SCE * !SET_B * Q)	0.00895	0.00942	0.03429
	!SCE	0.00177	0.00156	0.00153
	!SCE	-0.00129	-0.00150	-0.00153

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.00724	0.00797	0.03522
	(CLK * D * SCE)	0.00195	0.00266	0.02992
	(CLK * !D * SCE)	0.00823	0.00884	0.03564
	(CLK * !D * SCE)	0.00271	0.00332	0.03014
	(!CLK * D * SCE * SET_B)	0.01656	0.01714	0.04348
	(!CLK * D * SCE * SET_B)	0.01089	0.01145	0.03780
	(!CLK * D * SCE * !SET_B * Q)	0.01398	0.01451	0.03975
	(!CLK * D * SCE * !SET_B * Q)	0.00820	0.00872	0.03397
	(!CLK * !D * SCE * SET_B)	0.01754	0.01807	0.04406
	(!CLK * !D * SCE * SET_B)	0.01166	0.01215	0.03817
	(!CLK * !D * SCE * !SET_B * Q)	0.01497	0.01544	0.04029
	(!CLK * !D * SCE * !SET_B * Q)	0.00897	0.00942	0.03429
	!SCE	0.00181	0.00161	0.00157
	!SCE	-0.00129	-0.00151	-0.00153

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00215	0.00287	0.02998
	(CLK * D * SCE)	0.00745	0.00816	0.03526
	(CLK * !D * SCE)	0.00164	0.00246	0.02982
	(CLK * !D * SCE)	0.00715	0.00797	0.03531
	(!CLK * D * SCE * SET_B)	0.01037	0.01093	0.03819
	(!CLK * D * SCE * SET_B)	0.01600	0.01657	0.04380
	(!CLK * D * SCE * !SET_B * Q)	0.00674	0.00720	0.03280
	(!CLK * D * SCE * !SET_B * Q)	0.01249	0.01296	0.03851
	(!CLK * !D * SCE * SET_B)	0.00992	0.01052	0.03789
	(!CLK * !D * SCE * SET_B)	0.01576	0.01637	0.04372
	(!CLK * !D * SCE * !SET_B * Q)	0.00624	0.00675	0.03255
	(!CLK * !D * SCE * !SET_B * Q)	0.01220	0.01271	0.03850
	!SCE	-0.00152	-0.00154	-0.00155
	!SCE	0.00156	0.00156	0.00157
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00229	0.00300	0.03012
	(CLK * D * SCE)	0.00754	0.00827	0.03535
	(CLK * !D * SCE)	0.00178	0.00260	0.02995
	(CLK * !D * SCE)	0.00724	0.00806	0.03539
	(!CLK * D * SCE * SET_B)	0.01200	0.01252	0.03936
	(!CLK * D * SCE * SET_B)	0.01773	0.01827	0.04508
	(!CLK * D * SCE * !SET_B * Q)	0.00813	0.00855	0.03377
	(!CLK * D * SCE * !SET_B * Q)	0.01398	0.01442	0.03960
	(!CLK * !D * SCE * SET_B)	0.01153	0.01210	0.03925
	(!CLK * !D * SCE * SET_B)	0.01749	0.01805	0.04518
	(!CLK * !D * SCE * !SET_B * Q)	0.00763	0.00810	0.03351
	(!CLK * !D * SCE * !SET_B * Q)	0.01369	0.01418	0.03955
	!SCE	-0.00148	-0.00151	-0.00151
	!SCE	0.00155	0.00156	0.00156

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.00235	0.00304	0.03012
	(CLK * D * SCE)	0.00765	0.00835	0.03540
	(CLK * !D * SCE)	0.00185	0.00262	0.02994
	(CLK * !D * SCE)	0.00735	0.00814	0.03543
	(!CLK * D * SCE * SET_B)	0.01204	0.01258	0.03941
	(!CLK * D * SCE * SET_B)	0.01773	0.01827	0.04508
	(!CLK * D * SCE * !SET_B * Q)	0.00823	0.00866	0.03385
	(!CLK * D * SCE * !SET_B * Q)	0.01403	0.01447	0.03963
	(!CLK * !D * SCE * SET_B)	0.01160	0.01216	0.03930
	(!CLK * !D * SCE * SET_B)	0.01750	0.01804	0.04518
	(!CLK * !D * SCE * !SET_B * Q)	0.00773	0.00820	0.03360
	(!CLK * !D * SCE * !SET_B * Q)	0.01374	0.01422	0.03959
	!SCE	-0.00151	-0.00154	-0.00154
	!SCE	0.00156	0.00157	0.00157

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00621	0.00789	0.05243
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00058	0.00107	0.04562
	(CLK * D * !SCD)	0.00929	0.01095	0.05704
	(CLK * D * !SCD)	0.00447	0.00610	0.05216
	(CLK * !D * SCD)	0.01095	0.01379	0.08523
	(CLK * !D * SCD)	0.00242	0.00524	0.07673
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00621	0.00789	0.05243
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00058	0.00106	0.04562
	(!CLK * D * !SCD * SET_B)	0.01708	0.01894	0.06486
	(!CLK * D * !SCD * SET_B)	0.01263	0.01442	0.06032
	(!CLK * D * !SCD * !SET_B * Q)	0.01345	0.01533	0.06107
	(!CLK * D * !SCD * !SET_B * Q)	0.00911	0.01092	0.05664
	(!CLK * !D * SCD * SET_B)	0.01879	0.02149	0.09252
	(!CLK * !D * SCD * SET_B)	0.00993	0.01261	0.08370
	(!CLK * !D * SCD * !SET_B * Q)	0.01634	0.01898	0.08875
	(!CLK * !D * SCD * !SET_B * Q)	0.00737	0.01000	0.07981
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00611	0.00794	0.05235
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00024	0.00160	0.04601

sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00621	0.00787	0.05240
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00058	0.00105	0.04558
	(CLK * D * !SCD)	0.00940	0.01105	0.05709
	(CLK * D * !SCD)	0.00457	0.00617	0.05219
	(CLK * !D * SCD)	0.01089	0.01372	0.08512
	(CLK * !D * SCD)	0.00237	0.00518	0.07662
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00621	0.00788	0.05239
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00058	0.00105	0.04558
	(!CLK * D * !SCD * SET_B)	0.01869	0.02056	0.06644
	(!CLK * D * !SCD * SET_B)	0.01434	0.01616	0.06204
	(!CLK * D * !SCD * !SET_B * Q)	0.01482	0.01670	0.06233
	(!CLK * D * !SCD * !SET_B * Q)	0.01058	0.01243	0.05802
	(!CLK * !D * SCD * SET_B)	0.02067	0.02335	0.09403
	(!CLK * !D * SCD * SET_B)	0.01167	0.01431	0.08505
	(!CLK * !D * SCD * !SET_B * Q)	0.01805	0.02066	0.08997
	(!CLK * !D * SCD * !SET_B * Q)	0.00894	0.01152	0.08087
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00613	0.00795	0.05233
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00022	0.00158	0.04597

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00627	0.00794	0.05249
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00059	0.00104	0.04560
	(CLK * D * !SCD)	0.00953	0.01117	0.05727
	(CLK * D * !SCD)	0.00464	0.00626	0.05232
	(CLK * !D * SCD)	0.01113	0.01394	0.08534
	(CLK * !D * SCD)	0.00254	0.00533	0.07677
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00627	0.00794	0.05249
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00059	0.00104	0.04561
	(!CLK * D * !SCD * SET_B)	0.01881	0.02063	0.06660
	(!CLK * D * !SCD * SET_B)	0.01434	0.01612	0.06204
	(!CLK * D * !SCD * !SET_B * Q)	0.01499	0.01687	0.06255
	(!CLK * D * !SCD * !SET_B * Q)	0.01060	0.01244	0.05810
	(!CLK * !D * SCD * SET_B)	0.02061	0.02328	0.09401
	(!CLK * !D * SCD * SET_B)	0.01164	0.01428	0.08506
	(!CLK * !D * SCD * !SET_B * Q)	0.01804	0.02064	0.08999
	(!CLK * !D * SCD * !SET_B * Q)	0.00896	0.01153	0.08092
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00617	0.00799	0.05241
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00023	0.00157	0.04599

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

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

	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00038	0.00224	0.04675
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00641	0.00905	0.05356
	(CLK * D * !SCD)	0.00474	0.00705	0.05270
	(CLK * D * !SCD)	0.00956	0.01191	0.05736
	(CLK * !D * SCD)	0.00119	0.00443	0.07563
	(CLK * !D * SCD)	0.00969	0.01293	0.08415
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00037	0.00224	0.04675
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00641	0.00906	0.05356
sky130_fd_sc_hs__sdfstp_1	**(!CLK * D * !SCD * SET_B)**	0.01255	0.01497	0.05976
	(!CLK * D * !SCD * SET_B)	0.01705	0.01949	0.06411
	(!CLK * D * !SCD * !SET_B * Q)	0.01010	0.01251	0.05731
	(!CLK * D * !SCD * !SET_B * Q)	0.01449	0.01694	0.06155
	(!CLK * !D * SCD * SET_B)	0.00925	0.01223	0.08258
	(!CLK * !D * SCD * SET_B)	0.01808	0.02106	0.09143
	(!CLK * !D * SCD * !SET_B * Q)	0.00567	0.00854	0.07748
	(!CLK * !D * SCD * !SET_B * Q)	0.01462	0.01751	0.08643
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00011	0.00253	0.04695
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00645	0.00889	0.05330

sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00038	0.00224	0.04672
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00640	0.00905	0.05353
	(CLK * D * !SCD)	0.00466	0.00697	0.05259
	(CLK * D * !SCD)	0.00951	0.01187	0.05728
	(CLK * !D * SCD)	0.00125	0.00449	0.07565
	(CLK * !D * SCD)	0.00975	0.01301	0.08418
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00038	0.00224	0.04672
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00641	0.00906	0.05353
	(!CLK * D * !SCD * SET_B)	0.01441	0.01684	0.06151
	(!CLK * D * !SCD * SET_B)	0.01877	0.02123	0.06571
	(!CLK * D * !SCD * !SET_B * Q)	0.01179	0.01422	0.05889
	(!CLK * D * !SCD * !SET_B * Q)	0.01605	0.01850	0.06298
	(!CLK * !D * SCD * SET_B)	0.01078	0.01371	0.08362
	(!CLK * !D * SCD * SET_B)	0.01977	0.02272	0.09264
	(!CLK * !D * SCD * !SET_B * Q)	0.00699	0.00981	0.07819
	(!CLK * !D * SCD * !SET_B * Q)	0.01609	0.01895	0.08732
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00009	0.00251	0.04691
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00644	0.00889	0.05328

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00043	0.00218	0.04670
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00642	0.00906	0.05358
	(CLK * D * !SCD)	0.00479	0.00712	0.05271
	(CLK * D * !SCD)	0.00970	0.01202	0.05745
	(CLK * !D * SCD)	0.00134	0.00455	0.07566
	(CLK * !D * SCD)	0.00992	0.01314	0.08426
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00042	0.00219	0.04670
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00643	0.00908	0.05358
	(!CLK * D * !SCD * SET_B)	0.01425	0.01667	0.06135
	(!CLK * D * !SCD * SET_B)	0.01877	0.02122	0.06568
	(!CLK * D * !SCD * !SET_B * Q)	0.01167	0.01410	0.05877
	(!CLK * D * !SCD * !SET_B * Q)	0.01608	0.01854	0.06302
	(!CLK * !D * SCD * SET_B)	0.01086	0.01380	0.08373
	(!CLK * !D * SCD * SET_B)	0.01982	0.02275	0.09271
	(!CLK * !D * SCD * !SET_B * Q)	0.00710	0.00993	0.07833
	(!CLK * !D * SCD * !SET_B * Q)	0.01618	0.01903	0.08743
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00006	0.00248	0.04691
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00647	0.00892	0.05333

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	0.00286	0.00290	0.00288
	(CLK * Q)	-0.00271	-0.00273	-0.00272
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00311	0.00315	0.00313
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00246	-0.00248	-0.00247
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00589	0.00668	0.02907
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00013	0.00086	0.02326
sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	0.00318	0.00321	0.00319
	(CLK * Q)	-0.00265	-0.00267	-0.00265
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00347	0.00347	0.00348
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00236	-0.00236	-0.00236
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00620	0.00697	0.02939
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00016	0.00088	0.02335

sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	0.00296	0.00298	0.00297
	(CLK * Q)	-0.00277	-0.00278	-0.00277
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00325	0.00329	0.00326
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00249	-0.00250	-0.00249
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00605	0.00680	0.02905
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00011	0.00083	0.02309

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	-0.00281	-0.00288	-0.00286
	(CLK * Q)	0.00279	0.00279	0.00275
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00306	-0.00313	-0.00311
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00255	0.00254	0.00250
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00011	0.00118	0.02348
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00566	0.00701	0.02927

sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	-0.00309	-0.00320	-0.00317
	(CLK * Q)	0.00269	0.00272	0.00268
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00338	-0.00347	-0.00346
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00241	0.00242	0.00239
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00018	0.00089	0.02348
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00583	0.00696	0.02953
sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	-0.00286	-0.00296	-0.00294
	(CLK * Q)	0.00283	0.00285	0.00281
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00314	-0.00324	-0.00322
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00255	0.00255	0.00253
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00008	0.00100	0.02337
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00584	0.00697	0.02930

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)**	0.01697	0.01931	0.08916
	(D * SCD * SCE * Q)	0.01175	0.01407	0.08394
	(D * !SCE * Q)	0.01697	0.01931	0.08916
	(D * !SCE * Q)	0.01174	0.01407	0.08394
	(D * !SCD * SCE * SET_B * !Q)	0.01666	0.01896	0.08883
	(D * !SCD * SCE * SET_B * !Q)	0.01143	0.01372	0.08359
	(D * !SCD * SCE * !SET_B * Q)	0.03131	0.03370	0.10490
	(D * !SCD * SCE * !SET_B * Q)	0.02566	0.02803	0.09924
	(!D * SCD * SCE * Q)	0.01697	0.01931	0.08916
	(!D * SCD * SCE * Q)	0.01175	0.01407	0.08394
	(!D * !SCE * SET_B * !Q)	0.01666	0.01895	0.08882
	(!D * !SCE * SET_B * !Q)	0.01143	0.01371	0.08359
	(!D * !SCE * !SET_B * Q)	0.03130	0.03369	0.10481
	(!D * !SCE * !SET_B * Q)	0.02563	0.02801	0.09916
	(!D * !SCD * SCE * SET_B * !Q)	0.01666	0.01896	0.08885
	(!D * !SCD * SCE * SET_B * !Q)	0.01143	0.01372	0.08362
	(!D * !SCD * SCE * !SET_B * Q)	0.03136	0.03371	0.10478
	(!D * !SCD * SCE * !SET_B * Q)	0.02570	0.02802	0.09912

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * Q)**	0.01957	0.02173	0.09090
	(D * SCD * SCE * Q)	0.01439	0.01654	0.08572
	(D * !SCE * Q)	0.01957	0.02173	0.09127
	(D * !SCE * Q)	0.01439	0.01654	0.08609
	(D * !SCD * SCE * SET_B * !Q)	0.01976	0.02188	0.09103
	(D * !SCD * SCE * SET_B * !Q)	0.01456	0.01667	0.08583
	(D * !SCD * SCE * !SET_B * Q)	0.04774	0.05019	0.12245
	(D * !SCD * SCE * !SET_B * Q)	0.04203	0.04446	0.11674
	(!D * SCD * SCE * Q)	0.01957	0.02173	0.09091
	(!D * SCD * SCE * Q)	0.01439	0.01654	0.08573
	(!D * !SCE * SET_B * !Q)	0.01976	0.02188	0.09103
	(!D * !SCE * SET_B * !Q)	0.01455	0.01666	0.08583
	(!D * !SCE * !SET_B * Q)	0.04772	0.05017	0.12241
	(!D * !SCE * !SET_B * Q)	0.04200	0.04442	0.11668
	(!D * !SCD * SCE * SET_B * !Q)	0.01976	0.02189	0.09102
	(!D * !SCD * SCE * SET_B * !Q)	0.01456	0.01667	0.08582
	(!D * !SCD * SCE * !SET_B * Q)	0.04783	0.05020	0.12236
	(!D * !SCD * SCE * !SET_B * Q)	0.04211	0.04446	0.11664

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * Q)**	0.01933	0.02152	0.09077
	(D * SCD * SCE * Q)	0.01414	0.01632	0.08558
	(D * !SCE * Q)	0.01933	0.02152	0.09076
	(D * !SCE * Q)	0.01414	0.01632	0.08558
	(D * !SCD * SCE * SET_B * !Q)	0.01959	0.02175	0.09096
	(D * !SCD * SCE * SET_B * !Q)	0.01438	0.01653	0.08577
	(D * !SCD * SCE * !SET_B * Q)	0.04773	0.05029	0.12298
	(D * !SCD * SCE * !SET_B * Q)	0.04209	0.04466	0.11735
	(!D * SCD * SCE * Q)	0.01933	0.02153	0.09077
	(!D * SCD * SCE * Q)	0.01414	0.01632	0.08558
	(!D * !SCE * SET_B * !Q)	0.01959	0.02174	0.09095
	(!D * !SCE * SET_B * !Q)	0.01438	0.01652	0.08577
	(!D * !SCE * !SET_B * Q)	0.04771	0.05027	0.12292
	(!D * !SCE * !SET_B * Q)	0.04206	0.04463	0.11727
	(!D * !SCD * SCE * SET_B * !Q)	0.01959	0.02175	0.09095
	(!D * !SCD * SCE * SET_B * !Q)	0.01439	0.01653	0.08575
	(!D * !SCD * SCE * !SET_B * Q)	0.04783	0.05031	0.12287
	(!D * !SCD * SCE * !SET_B * Q)	0.04218	0.04466	0.11721

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)**	0.01694	0.02049	0.09240
	(D * SCD * SCE * SET_B * !Q)	0.02186	0.02542	0.09732
	(D * SCD * SCE * Q)	0.00930	0.01286	0.08335
	(D * SCD * SCE * Q)	0.01453	0.01809	0.08858
	(D * !SCE * SET_B * !Q)	0.01691	0.02046	0.09237
	(D * !SCE * SET_B * !Q)	0.02183	0.02538	0.09730
	(D * !SCE * Q)	0.00930	0.01287	0.08335
	(D * !SCE * Q)	0.01453	0.01810	0.08858
	(D * !SCD * SCE * SET_B * Q)	0.01937	0.02312	0.09467
	(D * !SCD * SCE * SET_B * Q)	0.02495	0.02871	0.10024
	(D * !SCD * SCE * SET_B * !Q)	0.00958	0.01314	0.08374
	(D * !SCD * SCE * SET_B * !Q)	0.01481	0.01837	0.08897
	(D * !SCD * SCE * !SET_B * Q)	0.01575	0.01949	0.09100
	(D * !SCD * SCE * !SET_B * Q)	0.02142	0.02518	0.09669
	(!D * SCD * SCE * SET_B * !Q)	0.01698	0.02053	0.09244
	(!D * SCD * SCE * SET_B * !Q)	0.02188	0.02544	0.09735
	(!D * SCD * SCE * Q)	0.00930	0.01287	0.08335
	(!D * SCD * SCE * Q)	0.01453	0.01810	0.08858
	(!D * !SCE * SET_B * Q)	0.01935	0.02310	0.09464
	(!D * !SCE * SET_B * Q)	0.02491	0.02866	0.10019
	(!D * !SCE * SET_B * !Q)	0.00957	0.01314	0.08374
	(!D * !SCE * SET_B * !Q)	0.01480	0.01838	0.08897
	(!D * !SCE * !SET_B * Q)	0.01575	0.01948	0.09099
	(!D * !SCE * !SET_B * Q)	0.02142	0.02517	0.09667
	(!D * !SCD * SCE * SET_B * Q)	0.01936	0.02311	0.09466
	(!D * !SCD * SCE * SET_B * Q)	0.02494	0.02869	0.10023
	(!D * !SCD * SCE * SET_B * !Q)	0.00958	0.01315	0.08374
	(!D * !SCD * SCE * SET_B * !Q)	0.01481	0.01838	0.08897
	(!D * !SCD * SCE * !SET_B * Q)	0.01575	0.01948	0.09100
	(!D * !SCD * SCE * !SET_B * Q)	0.02141	0.02516	0.09668

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * SET_B * !Q)**	0.02005	0.02350	0.09489
	(D * SCD * SCE * SET_B * !Q)	0.02477	0.02821	0.09960
	(D * SCD * SCE * Q)	0.01081	0.01436	0.08410
	(D * SCD * SCE * Q)	0.01599	0.01955	0.08927
	(D * !SCE * SET_B * !Q)	0.02002	0.02347	0.09485
	(D * !SCE * SET_B * !Q)	0.02474	0.02818	0.09957
	(D * !SCE * Q)	0.01080	0.01436	0.08409
	(D * !SCE * Q)	0.01599	0.01955	0.08927
	(D * !SCD * SCE * SET_B * Q)	0.02288	0.02664	0.09762
	(D * !SCD * SCE * SET_B * Q)	0.02851	0.03226	0.10324
	(D * !SCD * SCE * SET_B * !Q)	0.01056	0.01402	0.08406
	(D * !SCD * SCE * SET_B * !Q)	0.01577	0.01924	0.08926
	(D * !SCD * SCE * !SET_B * Q)	0.01896	0.02272	0.09363
	(D * !SCD * SCE * !SET_B * Q)	0.02469	0.02847	0.09935
	(!D * SCD * SCE * SET_B * !Q)	0.02009	0.02354	0.09492
	(!D * SCD * SCE * SET_B * !Q)	0.02479	0.02823	0.09962
	(!D * SCD * SCE * Q)	0.01081	0.01437	0.08410
	(!D * SCD * SCE * Q)	0.01599	0.01955	0.08927
	(!D * !SCE * SET_B * Q)	0.02286	0.02661	0.09759
	(!D * !SCE * SET_B * Q)	0.02846	0.03221	0.10319
	(!D * !SCE * SET_B * !Q)	0.01056	0.01402	0.08405
	(!D * !SCE * SET_B * !Q)	0.01576	0.01923	0.08926
	(!D * !SCE * !SET_B * Q)	0.01895	0.02271	0.09361
	(!D * !SCE * !SET_B * Q)	0.02468	0.02845	0.09932
	(!D * !SCD * SCE * SET_B * Q)	0.02289	0.02665	0.09752
	(!D * !SCD * SCE * SET_B * Q)	0.02851	0.03226	0.10312
	(!D * !SCD * SCE * SET_B * !Q)	0.01056	0.01401	0.08406
	(!D * !SCD * SCE * SET_B * !Q)	0.01577	0.01923	0.08926
	(!D * !SCD * SCE * !SET_B * Q)	0.01897	0.02262	0.09353
	(!D * !SCD * SCE * !SET_B * Q)	0.02470	0.02836	0.09926

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * SET_B * !Q)**	0.01953	0.02300	0.09443
	(D * SCD * SCE * SET_B * !Q)	0.02435	0.02781	0.09925
	(D * SCD * SCE * Q)	0.01059	0.01416	0.08395
	(D * SCD * SCE * Q)	0.01578	0.01935	0.08913
	(D * !SCE * SET_B * !Q)	0.01950	0.02297	0.09440
	(D * !SCE * SET_B * !Q)	0.02432	0.02777	0.09921
	(D * !SCE * Q)	0.01059	0.01416	0.08394
	(D * !SCE * Q)	0.01578	0.01935	0.08913
	(D * !SCD * SCE * SET_B * Q)	0.02244	0.02621	0.09714
	(D * !SCD * SCE * SET_B * Q)	0.02800	0.03177	0.10270
	(D * !SCD * SCE * SET_B * !Q)	0.01027	0.01374	0.08382
	(D * !SCD * SCE * SET_B * !Q)	0.01548	0.01896	0.08902
	(D * !SCD * SCE * !SET_B * Q)	0.01855	0.02232	0.09330
	(D * !SCD * SCE * !SET_B * Q)	0.02421	0.02799	0.09895
	(!D * SCD * SCE * SET_B * !Q)	0.01957	0.02303	0.09447
	(!D * SCD * SCE * SET_B * !Q)	0.02438	0.02783	0.09927
	(!D * SCD * SCE * Q)	0.01059	0.01416	0.08395
	(!D * SCD * SCE * Q)	0.01578	0.01935	0.08914
	(!D * !SCE * SET_B * Q)	0.02241	0.02618	0.09724
	(!D * !SCE * SET_B * Q)	0.02795	0.03171	0.10278
	(!D * !SCE * SET_B * !Q)	0.01027	0.01374	0.08381
	(!D * !SCE * SET_B * !Q)	0.01547	0.01896	0.08901
	(!D * !SCE * !SET_B * Q)	0.01854	0.02220	0.09328
	(!D * !SCE * !SET_B * Q)	0.02420	0.02786	0.09893
	(!D * !SCD * SCE * SET_B * Q)	0.02245	0.02622	0.09717
	(!D * !SCD * SCE * SET_B * Q)	0.02800	0.03177	0.10270
	(!D * !SCD * SCE * SET_B * !Q)	0.01027	0.01374	0.08382
	(!D * !SCD * SCE * SET_B * !Q)	0.01548	0.01895	0.08902
	(!D * !SCD * SCE * !SET_B * Q)	0.01856	0.02221	0.09321
	(!D * !SCD * SCE * !SET_B * Q)	0.02420	0.02785	0.09886

SKY130_FD_SC_HS__SDFXBPx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00192	0.00194	0.00411	0.00299	1.30930	1.24698
sky130_fd_sc_hs__sdfxbp_2	0.00190	0.00190	0.00416	0.00299	2.53678	2.51697

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfxbp_1	0.00000	1.53458	2.22995
sky130_fd_sc_hs__sdfxbp_2	0.00000	1.47685	2.19925

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)	0.18242	0.62662	5.92459
sky130_fd_sc_hs__sdfxbp_2	CLK->Q (RR)	0.17659	0.52536	5.82049

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxbp_1	CLK->Q (RF)	0.19347	0.42543	2.20155
sky130_fd_sc_hs__sdfxbp_2	CLK->Q (RF)	0.20625	0.40613	2.13051

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)	0.22969	0.67635	5.90933
sky130_fd_sc_hs__sdfxbp_2	CLK->Q_N (RR)	0.26669	0.60695	5.89472

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)	0.21243	0.42362	2.07882
sky130_fd_sc_hs__sdfxbp_2	CLK->Q_N (RF)	0.22640	0.40635	2.21208

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)	-0.05447	-0.12439	-0.69951
	setup	CLK (R)	0.11130	0.15915	0.71432
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.05518	-0.12385	-0.71055
	setup	CLK (R)	0.11340	0.16023	0.72577

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)	-0.08330	-0.20625	-3.01819
	setup	CLK (R)	0.16106	0.28454	3.13203
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.08070	-0.20764	-3.09717
	setup	CLK (R)	0.16505	0.28900	3.15373

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)	-0.05447	-0.12439	-0.69951
	setup	CLK (R)	0.11130	0.15915	0.71432
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.05518	-0.12385	-0.71055
	setup	CLK (R)	0.11340	0.16023	0.72577

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)	-0.08330	-0.20625	-3.01819
	setup	CLK (R)	0.16106	0.28454	3.13203
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.08070	-0.20764	-3.09717
	setup	CLK (R)	0.16505	0.28900	3.15373

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)	-0.07283	-0.13284	-0.70527
	setup	CLK (R)	0.13492	0.17796	0.74447
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.06807	-0.13453	-0.70659
	setup	CLK (R)	0.13252	0.17558	0.72170

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)	-0.11385	-0.23512	-3.22301
	setup	CLK (R)	0.21042	0.32085	3.25304
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.11169	-0.23628	-3.26228
	setup	CLK (R)	0.21548	0.32317	3.29472

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)	-0.07283	-0.13284	-0.70912
	hold	CLK (R)	-0.07338	-0.13884	-0.70527
	setup	CLK (R)	0.13138	0.17300	0.74447
	setup	CLK (R)	0.13492	0.17796	0.74306
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.06807	-0.13453	-0.70843
	hold	CLK (R)	-0.07367	-0.13881	-0.70659
	setup	CLK (R)	0.13164	0.17055	0.71895
	setup	CLK (R)	0.13252	0.17558	0.72170

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)	-0.12299	-0.24742	-3.22301
	hold	CLK (R)	-0.11385	-0.23512	-3.22693
	setup	CLK (R)	0.21042	0.32085	3.25144
	setup	CLK (R)	0.20329	0.31651	3.25304
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.12166	-0.24754	-3.26228
	hold	CLK (R)	-0.11169	-0.23628	-3.26460
	setup	CLK (R)	0.21548	0.32317	3.28790
	setup	CLK (R)	0.20705	0.31763	3.29472

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)	-0.06347	-0.13695	-0.39455
	setup	CLK (R)	0.20649	0.22652	0.84481
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.06371	-0.13654	-0.41467
	setup	CLK (R)	0.21241	0.22985	0.83825

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)	-0.09614	-0.20361	-2.81943
	setup	CLK (R)	0.17753	0.28027	3.00916
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.10038	-0.20589	-2.84070
	setup	CLK (R)	0.17778	0.28563	3.05089

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)	-0.11910	-0.15358	-0.39455
	hold	CLK (R)	-0.06347	-0.13695	-0.79559
	setup	CLK (R)	0.20649	0.22652	0.41633
	setup	CLK (R)	0.12479	0.17731	0.84481
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.11951	-0.15343	-0.41467
	hold	CLK (R)	-0.06371	-0.13654	-0.79723
	setup	CLK (R)	0.21241	0.22985	0.43674
	setup	CLK (R)	0.12008	0.17547	0.83825

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)	-0.10665	-0.22965	-2.81943
	hold	CLK (R)	-0.09614	-0.20361	-2.87269
	setup	CLK (R)	0.16360	0.25976	2.83014
	setup	CLK (R)	0.17753	0.28027	3.00916
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.10678	-0.23280	-2.84070
	hold	CLK (R)	-0.10038	-0.20589	-2.93418
	setup	CLK (R)	0.16640	0.26265	2.84861
	setup	CLK (R)	0.17778	0.28563	3.05089

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 ()	0.08615	0.63232	16.50020
	min_pulse_width	CLK ()	0.06716	0.63232	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.08615	0.63232	16.50020
	min_pulse_width	CLK ()	0.06953	0.63232	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 ()	0.14552	0.63232	16.50020
	min_pulse_width	CLK ()	0.17402	0.63232	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.14790	0.63232	16.50020
	min_pulse_width	CLK ()	0.17877	0.63232	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	0.01735	0.01914	0.05729
	CLK	0.01473	0.01645	0.05470
sky130_fd_sc_hs__sdfxbp_2	CLK	0.02104	0.02299	0.06135
	CLK	0.01842	0.02034	0.05869

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.01787	0.01977	0.05667
	CLK	0.01525	0.01709	0.05402
sky130_fd_sc_hs__sdfxbp_2	CLK	0.02160	0.02364	0.06073
	CLK	0.01899	0.02098	0.05811

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.01790	0.01988	0.05730
	CLK	0.01527	0.01712	0.05475
sky130_fd_sc_hs__sdfxbp_2	CLK	0.02163	0.02365	0.06118
	CLK	0.01902	0.02100	0.05857

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.01732	0.01902	0.05615
	CLK	0.01470	0.01641	0.05356
sky130_fd_sc_hs__sdfxbp_2	CLK	0.02102	0.02298	0.06026
	CLK	0.01840	0.02032	0.05765

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	0.00155	0.00156	0.00156
	(CLK * SCD * SCE)	-0.00067	-0.00068	-0.00067
	(CLK * !SCE)	0.00506	0.00640	0.04097
	(CLK * !SCE)	0.00116	0.00250	0.03706
	(CLK * !SCD * SCE)	0.00087	0.00088	0.00086
	(CLK * !SCD * SCE)	-0.00153	-0.00156	-0.00158
	(!CLK * SCD * SCE)	0.00154	0.00155	0.00155
	(!CLK * SCD * SCE)	-0.00068	-0.00069	-0.00068
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01181	0.01308	0.05068
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00792	0.00916	0.04679
	(!CLK * !SCD * SCE)	0.00087	0.00088	0.00086
	(!CLK * !SCD * SCE)	-0.00153	-0.00155	-0.00158
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	0.00157	0.00158	0.00157
	(CLK * SCD * SCE)	-0.00065	-0.00066	-0.00066
	(CLK * !SCE)	0.00495	0.00630	0.04085
	(CLK * !SCE)	0.00109	0.00243	0.03698
	(CLK * !SCD * SCE)	0.00090	0.00091	0.00089
	(CLK * !SCD * SCE)	-0.00150	-0.00153	-0.00155
	(!CLK * SCD * SCE)	0.00156	0.00157	0.00156
	(!CLK * SCD * SCE)	-0.00066	-0.00067	-0.00066
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01188	0.01318	0.05069
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00802	0.00930	0.04682
	(!CLK * !SCD * SCE)	0.00090	0.00091	0.00090
	(!CLK * !SCD * SCE)	-0.00149	-0.00152	-0.00154

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	-0.00147	-0.00149	-0.00152
	(CLK * SCD * SCE)	0.00074	0.00074	0.00072
	(CLK * !SCE)	0.00104	0.00283	0.03744
	(CLK * !SCE)	0.00496	0.00672	0.04134
	(CLK * !SCD * SCE)	-0.00082	-0.00083	-0.00082
	(CLK * !SCD * SCE)	0.00159	0.00161	0.00160
	(!CLK * SCD * SCE)	-0.00148	-0.00149	-0.00153
	(!CLK * SCD * SCE)	0.00074	0.00073	0.00071
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00899	0.01114	0.04920
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01290	0.01504	0.05311
	(!CLK * !SCD * SCE)	-0.00082	-0.00083	-0.00082
	(!CLK * !SCD * SCE)	0.00160	0.00161	0.00160
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	-0.00148	-0.00151	-0.00154
	(CLK * SCD * SCE)	0.00072	0.00073	0.00070
	(CLK * !SCE)	0.00118	0.00295	0.03756
	(CLK * !SCE)	0.00506	0.00683	0.04142
	(CLK * !SCD * SCE)	-0.00085	-0.00087	-0.00086
	(CLK * !SCD * SCE)	0.00156	0.00157	0.00157
	(!CLK * SCD * SCE)	-0.00149	-0.00150	-0.00154
	(!CLK * SCD * SCE)	0.00072	0.00071	0.00069
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00902	0.01106	0.04917
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01288	0.01492	0.05304
	(!CLK * !SCD * SCE)	-0.00085	-0.00086	-0.00085
	(!CLK * !SCD * SCE)	0.00157	0.00158	0.00157

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.00711	0.00784	0.03504
	(CLK * D * SCE)	0.00205	0.00277	0.02999
	(CLK * !D * SCE)	0.00809	0.00872	0.03549
	(CLK * !D * SCE)	0.00282	0.00343	0.03021
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01386	0.01468	0.04443
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00880	0.00962	0.03937
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01485	0.01558	0.04510
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00957	0.01029	0.03983
	!SCE	0.00151	0.00130	0.00128
	!SCE	-0.00128	-0.00151	-0.00153
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.00697	0.00772	0.03499
	(CLK * D * SCE)	0.00198	0.00271	0.03000
	(CLK * !D * SCE)	0.00795	0.00860	0.03543
	(CLK * !D * SCE)	0.00275	0.00338	0.03022
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01389	0.01473	0.04442
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00890	0.00973	0.03943
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01488	0.01562	0.04518
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00967	0.01040	0.03998
	!SCE	0.00147	0.00126	0.00123
	!SCE	-0.00130	-0.00152	-0.00154

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.00255	0.00325	0.03027
	(CLK * D * SCE)	0.00761	0.00832	0.03531
	(CLK * !D * SCE)	0.00204	0.00282	0.03009
	(CLK * !D * SCE)	0.00731	0.00810	0.03534
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01067	0.01148	0.04133
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01574	0.01655	0.04637
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01024	0.01116	0.04158
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01552	0.01644	0.04684
	!SCE	-0.00121	-0.00124	-0.00124
	!SCE	0.00157	0.00158	0.00158
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.00266	0.00338	0.03047
	(CLK * D * SCE)	0.00765	0.00839	0.03544
	(CLK * !D * SCE)	0.00215	0.00296	0.03028
	(CLK * !D * SCE)	0.00735	0.00818	0.03547
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01066	0.01153	0.04137
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01565	0.01653	0.04635
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01029	0.01125	0.04161
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01549	0.01646	0.04680
	!SCE	-0.00117	-0.00120	-0.00120
	!SCE	0.00159	0.00160	0.00159

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)**	0.00651	0.00826	0.05336
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00054	0.00114	0.04626
	(CLK * D * !SCD)	0.00963	0.01140	0.05806
	(CLK * D * !SCD)	0.00461	0.00631	0.05296
	(CLK * !D * SCD)	0.01144	0.01437	0.08737
	(CLK * !D * SCD)	0.00257	0.00546	0.07851
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00650	0.00825	0.05336
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00055	0.00113	0.04626
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01751	0.01937	0.06637
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01249	0.01432	0.06127
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01818	0.02122	0.09737
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00932	0.01232	0.08850
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00628	0.00816	0.05313
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00034	0.00151	0.04649

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00679	0.00847	0.05355
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00047	0.00120	0.04630
	(CLK * D * !SCD)	0.00999	0.01172	0.05835
	(CLK * D * !SCD)	0.00478	0.00646	0.05307
	(CLK * !D * SCD)	0.01161	0.01449	0.08750
	(CLK * !D * SCD)	0.00264	0.00548	0.07853
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00679	0.00847	0.05354
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00047	0.00120	0.04629
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01775	0.01960	0.06654
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01255	0.01433	0.06124
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01853	0.02152	0.09762
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00955	0.01251	0.08865
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00653	0.00836	0.05330
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00027	0.00155	0.04651

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)**	-0.00062	0.00199	0.04709
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00647	0.00909	0.05418
	(CLK * D * !SCD)	0.00461	0.00692	0.05305
	(CLK * D * !SCD)	0.00966	0.01201	0.05794
	(CLK * !D * SCD)	0.00140	0.00461	0.07733
	(CLK * !D * SCD)	0.01026	0.01346	0.08621
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00062	0.00199	0.04708
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00646	0.00911	0.05418
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01132	0.01372	0.05949
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01638	0.01882	0.06438
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00933	0.01260	0.08767
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01820	0.02148	0.09654
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00002	0.00263	0.04742
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00664	0.00928	0.05407

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00067	0.00190	0.04698
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00657	0.00916	0.05422
	(CLK * D * !SCD)	0.00447	0.00676	0.05285
	(CLK * D * !SCD)	0.00973	0.01203	0.05794
	(CLK * !D * SCD)	0.00150	0.00466	0.07737
	(CLK * !D * SCD)	0.01047	0.01364	0.08636
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00067	0.00191	0.04697
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00656	0.00917	0.05422
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01135	0.01373	0.05944
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01661	0.01902	0.06452
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00933	0.01255	0.08752
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01830	0.02154	0.09652
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00001	0.00254	0.04734
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00677	0.00933	0.05413

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)	0.01594	0.01867	0.08975
	(D * SCD * SCE * Q * !Q_N)	0.01069	0.01341	0.08450
	(D * !SCE * Q * !Q_N)	0.01592	0.01866	0.08964
	(D * !SCE * Q * !Q_N)	0.01067	0.01340	0.08439
	(D * !SCD * SCE * !Q * Q_N)	0.01569	0.01842	0.08979
	(D * !SCD * SCE * !Q * Q_N)	0.01044	0.01315	0.08454
	(!D * SCD * SCE * Q * !Q_N)	0.01594	0.01867	0.08975
	(!D * SCD * SCE * Q * !Q_N)	0.01069	0.01341	0.08450
	(!D * !SCE * !Q * Q_N)	0.01569	0.01841	0.08939
	(!D * !SCE * !Q * Q_N)	0.01044	0.01314	0.08414
	(!D * !SCD * SCE * !Q * Q_N)	0.01569	0.01842	0.08943
	(!D * !SCD * SCE * !Q * Q_N)	0.01045	0.01315	0.08418
sky130_fd_sc_hs__sdfxbp_2	(D * SCD * SCE * Q * !Q_N)	0.01627	0.01902	0.09035
	(D * SCD * SCE * Q * !Q_N)	0.01102	0.01376	0.08511
	(D * !SCE * Q * !Q_N)	0.01625	0.01901	0.09023
	(D * !SCE * Q * !Q_N)	0.01101	0.01375	0.08498
	(D * !SCD * SCE * !Q * Q_N)	0.01604	0.01879	0.09007
	(D * !SCD * SCE * !Q * Q_N)	0.01080	0.01352	0.08482
	(!D * SCD * SCE * Q * !Q_N)	0.01627	0.01902	0.09035
	(!D * SCD * SCE * Q * !Q_N)	0.01102	0.01376	0.08512
	(!D * !SCE * !Q * Q_N)	0.01604	0.01879	0.08999
	(!D * !SCE * !Q * Q_N)	0.01080	0.01353	0.08476
	(!D * !SCD * SCE * !Q * Q_N)	0.01605	0.01879	0.09002
	(!D * !SCD * SCE * !Q * Q_N)	0.01080	0.01353	0.08478

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)**	0.00898	0.01241	0.08355
	(D * SCD * SCE * Q * !Q_N)	0.01423	0.01767	0.08878
	(D * SCD * SCE * !Q * Q_N)	0.01537	0.01879	0.09115
	(D * SCD * SCE * !Q * Q_N)	0.02062	0.02405	0.09638
	(D * !SCE * Q * !Q_N)	0.00898	0.01242	0.08350
	(D * !SCE * Q * !Q_N)	0.01423	0.01767	0.08874
	(D * !SCE * !Q * Q_N)	0.01533	0.01876	0.09173
	(D * !SCE * !Q * Q_N)	0.02059	0.02403	0.09697
	(D * !SCD * SCE * Q * !Q_N)	0.01835	0.02186	0.09465
	(D * !SCD * SCE * Q * !Q_N)	0.02362	0.02713	0.09992
	(D * !SCD * SCE * !Q * Q_N)	0.00906	0.01248	0.08374
	(D * !SCD * SCE * !Q * Q_N)	0.01432	0.01774	0.08899
	(!D * SCD * SCE * Q * !Q_N)	0.00898	0.01242	0.08355
	(!D * SCD * SCE * Q * !Q_N)	0.01424	0.01767	0.08879
	(!D * SCD * SCE * !Q * Q_N)	0.01541	0.01883	0.09119
	(!D * SCD * SCE * !Q * Q_N)	0.02064	0.02408	0.09643
	(!D * !SCE * Q * !Q_N)	0.01826	0.02175	0.09414
	(!D * !SCE * Q * !Q_N)	0.02351	0.02699	0.09939
	(!D * !SCE * !Q * Q_N)	0.00905	0.01248	0.08367
	(!D * !SCE * !Q * Q_N)	0.01430	0.01774	0.08892
	(!D * !SCD * SCE * Q * !Q_N)	0.01835	0.02184	0.09463
	(!D * !SCD * SCE * Q * !Q_N)	0.02362	0.02709	0.09989
	(!D * !SCD * SCE * !Q * Q_N)	0.00906	0.01248	0.08374
	(!D * !SCD * SCE * !Q * Q_N)	0.01432	0.01774	0.08899

sky130_fd_sc_hs__sdfxbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.00910	0.01258	0.08394
	(D * SCD * SCE * Q * !Q_N)	0.01433	0.01783	0.08919
	(D * SCD * SCE * !Q * Q_N)	0.01563	0.01912	0.09196
	(D * SCD * SCE * !Q * Q_N)	0.02086	0.02434	0.09718
	(D * !SCE * Q * !Q_N)	0.00910	0.01258	0.08391
	(D * !SCE * Q * !Q_N)	0.01435	0.01783	0.08916
	(D * !SCE * !Q * Q_N)	0.01559	0.01908	0.09231
	(D * !SCE * !Q * Q_N)	0.02082	0.02433	0.09756
	(D * !SCD * SCE * Q * !Q_N)	0.01835	0.02191	0.09494
	(D * !SCD * SCE * Q * !Q_N)	0.02362	0.02717	0.10021
	(D * !SCD * SCE * !Q * Q_N)	0.00914	0.01262	0.08414
	(D * !SCD * SCE * !Q * Q_N)	0.01438	0.01787	0.08938
	(!D * SCD * SCE * Q * !Q_N)	0.00910	0.01258	0.08394
	(!D * SCD * SCE * Q * !Q_N)	0.01433	0.01783	0.08919
	(!D * SCD * SCE * !Q * Q_N)	0.01566	0.01914	0.09199
	(!D * SCD * SCE * !Q * Q_N)	0.02088	0.02438	0.09722
	(!D * !SCE * Q * !Q_N)	0.01826	0.02179	0.09450
	(!D * !SCE * Q * !Q_N)	0.02351	0.02703	0.09975
	(!D * !SCE * !Q * Q_N)	0.00913	0.01261	0.08406
	(!D * !SCE * !Q * Q_N)	0.01436	0.01786	0.08931
	(!D * !SCD * SCE * Q * !Q_N)	0.01835	0.02190	0.09492
	(!D * !SCD * SCE * Q * !Q_N)	0.02362	0.02714	0.10018
	(!D * !SCD * SCE * !Q * Q_N)	0.00914	0.01261	0.08413
	(!D * !SCD * SCE * !Q * Q_N)	0.01438	0.01787	0.08938

SKY130_FD_SC_HS__SDFXTPx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00193	0.00203	0.00426	0.00297	1.27535
sky130_fd_sc_hs__sdfxtp_2	0.00196	0.00199	0.00412	0.00300	2.48143
sky130_fd_sc_hs__sdfxtp_4	0.00194	0.00197	0.00425	0.00298	4.71214

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfxtp_1	0.00000	1.34438	2.31516
sky130_fd_sc_hs__sdfxtp_2	0.00000	1.23174	1.98486
sky130_fd_sc_hs__sdfxtp_4	0.00000	1.80975	2.93828

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)**	0.16750	0.60985	5.81023
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RR)**	0.17051	0.52002	5.76807
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RR)**	0.20334	0.48489	5.89677

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxtp_1	**CLK->Q (RF)**	0.18437	0.40574	2.10071
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RF)**	0.19071	0.38078	2.08397
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RF)**	0.19251	0.35108	2.12140

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)	-0.05606	-0.12641	-0.70284
	setup	CLK (R)	0.11238	0.16130	0.72045
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.05803	-0.12852	-0.71055
	setup	CLK (R)	0.11874	0.16655	0.72755
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.05414	-0.12441	-0.69899
	setup	CLK (R)	0.10390	0.15614	0.71346

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)	-0.08553	-0.20946	-3.02765
	setup	CLK (R)	0.16648	0.28748	3.14120
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.08758	-0.21472	-3.07362
	setup	CLK (R)	0.17288	0.29819	3.16281
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.08904	-0.20925	-3.09466
	setup	CLK (R)	0.16744	0.28958	3.13640

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)	-0.05606	-0.12641	-0.70284
	setup	CLK (R)	0.11238	0.16130	0.72045
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.05803	-0.12852	-0.71055
	setup	CLK (R)	0.11874	0.16655	0.72755
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.05414	-0.12441	-0.69899
	setup	CLK (R)	0.10390	0.15614	0.71346

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)	-0.08553	-0.20946	-3.02765
	setup	CLK (R)	0.16648	0.28748	3.14120
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.08758	-0.21472	-3.07362
	setup	CLK (R)	0.17288	0.29819	3.16281
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.08904	-0.20925	-3.09466
	setup	CLK (R)	0.16744	0.28958	3.13640

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)	-0.07057	-0.13484	-0.71553
	setup	CLK (R)	0.13476	0.18041	0.75217
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.07518	-0.13695	-0.72022
	setup	CLK (R)	0.14330	0.18506	0.75787
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.07054	-0.13284	-0.70512
	setup	CLK (R)	0.12990	0.17636	0.72139

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)	-0.11683	-0.23876	-3.22583
	setup	CLK (R)	0.21668	0.32762	3.25991
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.12108	-0.24620	-3.24468
	setup	CLK (R)	0.22610	0.33465	3.27944
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.11997	-0.24028	-3.22321
	setup	CLK (R)	0.21725	0.32589	3.25664

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)	-0.07057	-0.13484	-0.71553
	hold	CLK (R)	-0.07640	-0.14127	-0.71713
	setup	CLK (R)	0.13397	0.17470	0.74972
	setup	CLK (R)	0.13476	0.18041	0.75217
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.07518	-0.13695	-0.72022
	hold	CLK (R)	-0.07757	-0.14327	-0.72022
	setup	CLK (R)	0.13859	0.17927	0.75787
	setup	CLK (R)	0.14330	0.18506	0.75609
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.07054	-0.13284	-0.70512
	hold	CLK (R)	-0.07345	-0.13884	-0.70521
	setup	CLK (R)	0.12599	0.17055	0.72021
	setup	CLK (R)	0.12990	0.17636	0.72139

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)	-0.12480	-0.25046	-3.22583
	hold	CLK (R)	-0.11683	-0.23876	-3.22852
	setup	CLK (R)	0.21668	0.32762	3.25603
	setup	CLK (R)	0.20934	0.32388	3.25991
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.12956	-0.25555	-3.24468
	hold	CLK (R)	-0.12108	-0.24620	-3.24720
	setup	CLK (R)	0.22610	0.33465	3.27260
	setup	CLK (R)	0.21934	0.32782	3.27944
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.13154	-0.25109	-3.22321
	hold	CLK (R)	-0.11997	-0.24028	-3.22521
	setup	CLK (R)	0.21725	0.32589	3.25041
	setup	CLK (R)	0.21236	0.32124	3.25664

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)	-0.06292	-0.13906	-0.40194
	setup	CLK (R)	0.21604	0.23270	0.85476
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.06597	-0.13884	-0.40078
	setup	CLK (R)	0.22400	0.24053	0.85975
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.06489	-0.13695	-0.40330
	setup	CLK (R)	0.21433	0.23185	0.84837

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)	-0.10280	-0.20655	-2.83765
	setup	CLK (R)	0.18295	0.28562	3.01314
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.10287	-0.21033	-2.82998
	setup	CLK (R)	0.18714	0.29323	3.03551
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.10596	-0.20757	-2.82797
	setup	CLK (R)	0.18062	0.28382	3.01088

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)	-0.12137	-0.15978	-0.40194
	hold	CLK (R)	-0.06292	-0.13906	-0.80556
	setup	CLK (R)	0.21604	0.23270	0.42310
	setup	CLK (R)	0.12269	0.17990	0.85476
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.12762	-0.16093	-0.40078
	hold	CLK (R)	-0.06597	-0.13884	-0.80705
	setup	CLK (R)	0.22400	0.24053	0.42330
	setup	CLK (R)	0.13215	0.18228	0.85975
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.12748	-0.15832	-0.40330
	hold	CLK (R)	-0.06489	-0.13695	-0.79438
	setup	CLK (R)	0.21433	0.23185	0.42690
	setup	CLK (R)	0.11908	0.17577	0.84837

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)	-0.11033	-0.23597	-2.83765
	hold	CLK (R)	-0.10280	-0.20655	-2.87591
	setup	CLK (R)	0.16918	0.26525	2.84226
	setup	CLK (R)	0.18295	0.28562	3.01314
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.11179	-0.23368	-2.82998
	hold	CLK (R)	-0.10287	-0.21033	-2.89282
	setup	CLK (R)	0.17084	0.26514	2.83987
	setup	CLK (R)	0.18714	0.29323	3.03551
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.10765	-0.23397	-2.82797
	hold	CLK (R)	-0.10596	-0.20757	-2.89376
	setup	CLK (R)	0.15908	0.25962	2.83806
	setup	CLK (R)	0.18062	0.28382	3.01088

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 ()	0.07903	0.63232	16.50020
	min_pulse_width	CLK ()	0.06478	0.63232	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.08378	0.63232	16.50020
	min_pulse_width	CLK ()	0.06716	0.63232	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.10753	0.63232	16.50020
	min_pulse_width	CLK ()	0.06953	0.63232	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 ()	0.14790	0.63232	16.50020
	min_pulse_width	CLK ()	0.17402	0.63232	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.15502	0.63232	16.50020
	min_pulse_width	CLK ()	0.18114	0.63232	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.14077	0.63232	16.50020
	min_pulse_width	CLK ()	0.17877	0.63232	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	0.02681	0.03011	0.10577
	CLK	0.02161	0.02493	0.10069
sky130_fd_sc_hs__sdfxtp_2	CLK	0.03089	0.03409	0.11003
	CLK	0.02567	0.02886	0.10505
sky130_fd_sc_hs__sdfxtp_4	CLK	0.03903	0.04258	0.11851
	CLK	0.03381	0.03739	0.11332

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	CLK	0.02822	0.03173	0.10539
	CLK	0.02302	0.02646	0.09992
sky130_fd_sc_hs__sdfxtp_2	CLK	0.03216	0.03588	0.10921
	CLK	0.02694	0.03058	0.10388
sky130_fd_sc_hs__sdfxtp_4	CLK	0.04056	0.04474	0.11910
	CLK	0.03535	0.03943	0.11294

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	0.00158	0.00160	0.00159
	(CLK * SCD * SCE)	-0.00067	-0.00068	-0.00067
	(CLK * !SCE)	0.00507	0.00640	0.04091
	(CLK * !SCE)	0.00107	0.00240	0.03690
	(CLK * !SCD * SCE)	0.00090	0.00091	0.00090
	(CLK * !SCD * SCE)	-0.00153	-0.00156	-0.00158
	(!CLK * SCD * SCE)	0.00159	0.00160	0.00159
	(!CLK * SCD * SCE)	-0.00067	-0.00068	-0.00067
	(!CLK * !SCE)	0.01208	0.01337	0.05089
	(!CLK * !SCE)	0.00808	0.00935	0.04688
	(!CLK * !SCD * SCE)	0.00091	0.00092	0.00091
	(!CLK * !SCD * SCE)	-0.00152	-0.00155	-0.00157
sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	0.00164	0.00165	0.00164
	(CLK * SCD * SCE)	-0.00067	-0.00068	-0.00067
	(CLK * !SCE)	0.00547	0.00676	0.04115
	(CLK * !SCE)	0.00140	0.00267	0.03707
	(CLK * !SCD * SCE)	0.00095	0.00095	0.00093
	(CLK * !SCD * SCE)	-0.00156	-0.00157	-0.00160
	(!CLK * SCD * SCE)	0.00163	0.00165	0.00164
	(!CLK * SCD * SCE)	-0.00067	-0.00068	-0.00067
	(!CLK * !SCE)	0.01303	0.01424	0.05158
	(!CLK * !SCE)	0.00896	0.01016	0.04750
	(!CLK * !SCD * SCE)	0.00095	0.00095	0.00094
	(!CLK * !SCD * SCE)	-0.00156	-0.00157	-0.00159

sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	0.00161	0.00163	0.00162
	(CLK * SCD * SCE)	-0.00066	-0.00067	-0.00066
	(CLK * !SCE)	0.00508	0.00642	0.04096
	(CLK * !SCE)	0.00110	0.00243	0.03697
	(CLK * !SCD * SCE)	0.00094	0.00095	0.00093
	(CLK * !SCD * SCE)	-0.00152	-0.00155	-0.00157
	(!CLK * SCD * SCE)	0.00162	0.00163	0.00162
	(!CLK * SCD * SCE)	-0.00066	-0.00067	-0.00066
	(!CLK * !SCE)	0.01211	0.01336	0.05088
	(!CLK * !SCE)	0.00813	0.00935	0.04688
	(!CLK * !SCD * SCE)	0.00095	0.00096	0.00094
	(!CLK * !SCD * SCE)	-0.00151	-0.00153	-0.00156

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	-0.00151	-0.00154	-0.00157
	(CLK * SCD * SCE)	0.00073	0.00073	0.00071
	(CLK * !SCE)	0.00114	0.00291	0.03746
	(CLK * !SCE)	0.00516	0.00691	0.04147
	(CLK * !SCD * SCE)	-0.00086	-0.00088	-0.00087
	(CLK * !SCD * SCE)	0.00158	0.00160	0.00159
	(!CLK * SCD * SCE)	-0.00152	-0.00153	-0.00157
	(!CLK * SCD * SCE)	0.00073	0.00072	0.00070
	(!CLK * !SCE)	0.00880	0.01098	0.04899
	(!CLK * !SCE)	0.01281	0.01500	0.05300
	(!CLK * !SCD * SCE)	-0.00085	-0.00087	-0.00086
	(!CLK * !SCD * SCE)	0.00160	0.00161	0.00160

sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	-0.00156	-0.00159	-0.00161
	(CLK * SCD * SCE)	0.00073	0.00073	0.00071
	(CLK * !SCE)	0.00122	0.00294	0.03741
	(CLK * !SCE)	0.00531	0.00702	0.04149
	(CLK * !SCD * SCE)	-0.00089	-0.00091	-0.00090
	(CLK * !SCD * SCE)	0.00160	0.00162	0.00161
	(!CLK * SCD * SCE)	-0.00157	-0.00158	-0.00162
	(!CLK * SCD * SCE)	0.00073	0.00072	0.00070
	(!CLK * !SCE)	0.00900	0.01094	0.04895
	(!CLK * !SCE)	0.01308	0.01503	0.05302
	(!CLK * !SCD * SCE)	-0.00089	-0.00090	-0.00089
	(!CLK * !SCD * SCE)	0.00161	0.00162	0.00161
sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	-0.00154	-0.00157	-0.00159
	(CLK * SCD * SCE)	0.00073	0.00073	0.00070
	(CLK * !SCE)	0.00110	0.00286	0.03746
	(CLK * !SCE)	0.00510	0.00687	0.04145
	(CLK * !SCD * SCE)	-0.00089	-0.00090	-0.00089
	(CLK * !SCD * SCE)	0.00158	0.00159	0.00158
	(!CLK * SCD * SCE)	-0.00154	-0.00155	-0.00159
	(!CLK * SCD * SCE)	0.00073	0.00072	0.00070
	(!CLK * !SCE)	0.00920	0.01135	0.04929
	(!CLK * !SCE)	0.01319	0.01535	0.05329
	(!CLK * !SCD * SCE)	-0.00088	-0.00089	-0.00088
	(!CLK * !SCD * SCE)	0.00159	0.00160	0.00160

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

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

sky130_fd_sc_hs__sdfxtp_1	**(CLK * D * SCE)**	0.00724	0.00795	0.03507
	(CLK * D * SCE)	0.00201	0.00270	0.02985
	(CLK * !D * SCE)	0.00823	0.00883	0.03550
	(CLK * !D * SCE)	0.00278	0.00337	0.03006
	(!CLK * D * SCE)	0.01423	0.01505	0.04473
	(!CLK * D * SCE)	0.00901	0.00980	0.03951
	(!CLK * !D * SCE)	0.01523	0.01594	0.04540
	(!CLK * !D * SCE)	0.00979	0.01048	0.03996
	!SCE	0.00153	0.00133	0.00130
	!SCE	-0.00137	-0.00159	-0.00161
sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCE)**	0.00743	0.00813	0.03519
	(CLK * D * SCE)	0.00224	0.00292	0.03000
	(CLK * !D * SCE)	0.00841	0.00901	0.03564
	(CLK * !D * SCE)	0.00301	0.00359	0.03024
	(!CLK * D * SCE)	0.01498	0.01578	0.04533
	(!CLK * D * SCE)	0.00980	0.01057	0.04014
	(!CLK * !D * SCE)	0.01597	0.01667	0.04602
	(!CLK * !D * SCE)	0.01057	0.01126	0.04061
	!SCE	0.00155	0.00134	0.00131
	!SCE	-0.00129	-0.00151	-0.00153
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCE)**	0.00719	0.00791	0.03511
	(CLK * D * SCE)	0.00206	0.00278	0.02998
	(CLK * !D * SCE)	0.00818	0.00879	0.03553
	(CLK * !D * SCE)	0.00283	0.00343	0.03020
	(!CLK * D * SCE)	0.01421	0.01502	0.04470
	(!CLK * D * SCE)	0.00909	0.00988	0.03958
	(!CLK * !D * SCE)	0.01520	0.01591	0.04537
	(!CLK * !D * SCE)	0.00986	0.01056	0.04004
	!SCE	0.00150	0.00130	0.00127
	!SCE	-0.00133	-0.00155	-0.00157

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	(CLK * D * SCE)	0.00257	0.00323	0.03018
	(CLK * D * SCE)	0.00779	0.00847	0.03539
	(CLK * !D * SCE)	0.00206	0.00280	0.02999
	(CLK * !D * SCE)	0.00749	0.00825	0.03542
	(!CLK * D * SCE)	0.01038	0.01122	0.04100
	(!CLK * D * SCE)	0.01562	0.01646	0.04621
	(!CLK * !D * SCE)	0.00999	0.01092	0.04124
	(!CLK * !D * SCE)	0.01543	0.01636	0.04666
	!SCE	-0.00124	-0.00127	-0.00127
	!SCE	0.00164	0.00166	0.00165
sky130_fd_sc_hs__sdfxtp_2	(CLK * D * SCE)	0.00274	0.00341	0.03031
	(CLK * D * SCE)	0.00794	0.00861	0.03548
	(CLK * !D * SCE)	0.00224	0.00298	0.03012
	(CLK * !D * SCE)	0.00763	0.00839	0.03551
	(!CLK * D * SCE)	0.01069	0.01147	0.04116
	(!CLK * D * SCE)	0.01589	0.01668	0.04632
	(!CLK * !D * SCE)	0.01032	0.01117	0.04138
	(!CLK * !D * SCE)	0.01572	0.01658	0.04677
	!SCE	-0.00125	-0.00128	-0.00128
	!SCE	0.00157	0.00157	0.00157

sky130_fd_sc_hs__sdfxtp_4	(CLK * D * SCE)	0.00255	0.00324	0.03025
	(CLK * D * SCE)	0.00768	0.00838	0.03536
	(CLK * !D * SCE)	0.00204	0.00281	0.03006
	(CLK * !D * SCE)	0.00738	0.00815	0.03539
	(!CLK * D * SCE)	0.01083	0.01163	0.04139
	(!CLK * D * SCE)	0.01597	0.01676	0.04651
	(!CLK * !D * SCE)	0.01039	0.01132	0.04163
	(!CLK * !D * SCE)	0.01574	0.01668	0.04696
	!SCE	-0.00121	-0.00124	-0.00124
	!SCE	0.00161	0.00162	0.00162

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)	0.00690	0.00856	0.05362
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00058	0.00107	0.04614
	(CLK * D * !SCD)	0.01010	0.01179	0.05840
	(CLK * D * !SCD)	0.00477	0.00641	0.05299
	(CLK * !D * SCD)	0.01182	0.01466	0.08757
	(CLK * !D * SCD)	0.00251	0.00532	0.07827
	(!CLK * D * SCD)	0.00690	0.00856	0.05362
	(!CLK * D * SCD)	-0.00058	0.00106	0.04614
	(!CLK * D * !SCD)	0.01768	0.01951	0.06643
	(!CLK * D * !SCD)	0.01236	0.01412	0.06101
	(!CLK * !D * SCD)	0.01881	0.02178	0.09786
	(!CLK * !D * SCD)	0.00950	0.01244	0.08856
	(!CLK * !D * !SCD)	0.00665	0.00846	0.05339
	(!CLK * !D * !SCD)	-0.00038	0.00142	0.04636

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00661	0.00834	0.05342
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00056	0.00111	0.04622
	(CLK * D * !SCD)	0.00996	0.01172	0.05833
	(CLK * D * !SCD)	0.00493	0.00663	0.05322
	(CLK * !D * SCD)	0.01188	0.01475	0.08761
	(CLK * !D * SCD)	0.00282	0.00565	0.07855
	(!CLK * D * SCD)	0.00661	0.00833	0.05342
	(!CLK * D * SCD)	-0.00056	0.00110	0.04621
	(!CLK * D * !SCD)	0.01773	0.01956	0.06647
	(!CLK * D * !SCD)	0.01268	0.01446	0.06135
	(!CLK * !D * SCD)	0.01943	0.02243	0.09839
	(!CLK * !D * SCD)	0.01037	0.01334	0.08933
	(!CLK * !D * !SCD)	0.00642	0.00828	0.05324
	(!CLK * !D * !SCD)	-0.00030	0.00152	0.04649
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00689	0.00854	0.05355
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00057	0.00106	0.04609
	(CLK * D * !SCD)	0.01004	0.01171	0.05828
	(CLK * D * !SCD)	0.00469	0.00631	0.05286
	(CLK * !D * SCD)	0.01183	0.01466	0.08756
	(CLK * !D * SCD)	0.00258	0.00538	0.07831
	(!CLK * D * SCD)	0.00690	0.00854	0.05355
	(!CLK * D * SCD)	-0.00057	0.00106	0.04609
	(!CLK * D * !SCD)	0.01805	0.01984	0.06673
	(!CLK * D * !SCD)	0.01270	0.01446	0.06130
	(!CLK * !D * SCD)	0.01885	0.02179	0.09776
	(!CLK * !D * SCD)	0.00960	0.01249	0.08851
	(!CLK * !D * !SCD)	0.00664	0.00843	0.05331
	(!CLK * !D * !SCD)	-0.00037	0.00141	0.04631

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)	-0.00063	0.00189	0.04695
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00680	0.00938	0.05442
	(CLK * D * !SCD)	0.00462	0.00688	0.05296
	(CLK * D * !SCD)	0.01000	0.01227	0.05815
	(CLK * !D * SCD)	0.00146	0.00458	0.07718
	(CLK * !D * SCD)	0.01076	0.01389	0.08650
	(!CLK * D * SCD)	-0.00063	0.00190	0.04695
	(!CLK * D * SCD)	0.00680	0.00938	0.05442
	(!CLK * D * !SCD)	0.01157	0.01395	0.05961
	(!CLK * D * !SCD)	0.01696	0.01930	0.06481
	(!CLK * !D * SCD)	0.00911	0.01230	0.08726
	(!CLK * !D * SCD)	0.01842	0.02162	0.09658
	(!CLK * !D * !SCD)	0.00000	0.00251	0.04730
	(!CLK * !D * !SCD)	0.00701	0.00954	0.05433

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00063	0.00196	0.04704
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00656	0.00917	0.05424
	(CLK * D * !SCD)	0.00497	0.00727	0.05331
	(CLK * D * !SCD)	0.01006	0.01238	0.05822
	(CLK * !D * SCD)	0.00155	0.00470	0.07722
	(CLK * !D * SCD)	0.01060	0.01376	0.08629
	(!CLK * D * SCD)	-0.00063	0.00197	0.04703
	(!CLK * D * SCD)	0.00656	0.00918	0.05423
	(!CLK * D * !SCD)	0.01250	0.01489	0.06051
	(!CLK * D * !SCD)	0.01758	0.01999	0.06542
	(!CLK * !D * SCD)	0.00932	0.01253	0.08733
	(!CLK * !D * SCD)	0.01838	0.02161	0.09639
	(!CLK * !D * !SCD)	-0.00002	0.00257	0.04734
	(!CLK * !D * !SCD)	0.00670	0.00933	0.05408
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00062	0.00193	0.04694
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00682	0.00939	0.05440
	(CLK * D * !SCD)	0.00466	0.00692	0.05296
	(CLK * D * !SCD)	0.01006	0.01233	0.05818
	(CLK * !D * SCD)	0.00146	0.00458	0.07718
	(CLK * !D * SCD)	0.01071	0.01386	0.08645
	(!CLK * D * SCD)	-0.00061	0.00194	0.04695
	(!CLK * D * SCD)	0.00683	0.00940	0.05440
	(!CLK * D * !SCD)	0.01165	0.01400	0.05961
	(!CLK * D * !SCD)	0.01703	0.01942	0.06483
	(!CLK * !D * SCD)	0.00955	0.01272	0.08761
	(!CLK * !D * SCD)	0.01880	0.02200	0.09688
	(!CLK * !D * !SCD)	0.00005	0.00256	0.04731
	(!CLK * !D * !SCD)	0.00704	0.00958	0.05431

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)	0.01577	0.01853	0.08942
	(D * SCD * SCE * Q)	0.01058	0.01332	0.08422
	(D * !SCE * Q)	0.01575	0.01851	0.08937
	(D * !SCE * Q)	0.01055	0.01330	0.08418
	(D * !SCD * SCE * !Q)	0.01568	0.01842	0.08966
	(D * !SCD * SCE * !Q)	0.01048	0.01320	0.08446
	(!D * SCD * SCE * Q)	0.01577	0.01853	0.08942
	(!D * SCD * SCE * Q)	0.01058	0.01332	0.08423
	(!D * !SCE * !Q)	0.01567	0.01841	0.08928
	(!D * !SCE * !Q)	0.01048	0.01320	0.08409
	(!D * !SCD * SCE * !Q)	0.01568	0.01842	0.08932
	(!D * !SCD * SCE * !Q)	0.01048	0.01321	0.08412
sky130_fd_sc_hs__sdfxtp_2	(D * SCD * SCE * Q)	0.01604	0.01878	0.08950
	(D * SCD * SCE * Q)	0.01080	0.01351	0.08425
	(D * !SCE * Q)	0.01602	0.01877	0.08946
	(D * !SCE * Q)	0.01077	0.01350	0.08422
	(D * !SCD * SCE * !Q)	0.01611	0.01853	0.08988
	(D * !SCD * SCE * !Q)	0.01086	0.01327	0.08464
	(!D * SCD * SCE * Q)	0.01604	0.01878	0.08950
	(!D * SCD * SCE * Q)	0.01080	0.01351	0.08426
	(!D * !SCE * !Q)	0.01610	0.01883	0.08986
	(!D * !SCE * !Q)	0.01086	0.01356	0.08462
	(!D * !SCD * SCE * !Q)	0.01611	0.01854	0.08990
	(!D * !SCD * SCE * !Q)	0.01087	0.01328	0.08466

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.01596	0.01869	0.08958
	(D * SCD * SCE * Q)	0.01075	0.01346	0.08437
	(D * !SCE * Q)	0.01594	0.01867	0.08954
	(D * !SCE * Q)	0.01072	0.01345	0.08432
	(D * !SCD * SCE * !Q)	0.01579	0.01851	0.08976
	(D * !SCD * SCE * !Q)	0.01058	0.01328	0.08455
	(!D * SCD * SCE * Q)	0.01596	0.01869	0.08958
	(!D * SCD * SCE * Q)	0.01075	0.01346	0.08437
	(!D * !SCE * !Q)	0.01579	0.01851	0.08936
	(!D * !SCE * !Q)	0.01058	0.01328	0.08415
	(!D * !SCD * SCE * !Q)	0.01580	0.01852	0.08941
	(!D * !SCD * SCE * !Q)	0.01058	0.01329	0.08420

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)**	0.00914	0.01258	0.08362
	(D * SCD * SCE * Q)	0.01434	0.01778	0.08882
	(D * SCD * SCE * !Q)	0.01562	0.01905	0.09130
	(D * SCD * SCE * !Q)	0.02082	0.02423	0.09650
	(D * !SCE * Q)	0.00914	0.01258	0.08357
	(D * !SCE * Q)	0.01434	0.01779	0.08875
	(D * !SCE * !Q)	0.01558	0.01902	0.09198
	(D * !SCE * !Q)	0.02078	0.02422	0.09718
	(D * !SCD * SCE * Q)	0.01816	0.02168	0.09429
	(D * !SCD * SCE * Q)	0.02339	0.02691	0.09952
	(D * !SCD * SCE * !Q)	0.00905	0.01247	0.08367
	(D * !SCD * SCE * !Q)	0.01425	0.01768	0.08886
	(!D * SCD * SCE * Q)	0.00914	0.01258	0.08362
	(!D * SCD * SCE * Q)	0.01435	0.01779	0.08882
	(!D * SCD * SCE * !Q)	0.01565	0.01908	0.09133
	(!D * SCD * SCE * !Q)	0.02084	0.02426	0.09652
	(!D * !SCE * Q)	0.01806	0.02154	0.09388
	(!D * !SCE * Q)	0.02327	0.02675	0.09908
	(!D * !SCE * !Q)	0.00904	0.01247	0.08357
	(!D * !SCE * !Q)	0.01424	0.01768	0.08877
	(!D * !SCD * SCE * Q)	0.01816	0.02165	0.09426
	(!D * !SCD * SCE * Q)	0.02337	0.02687	0.09948
	(!D * !SCD * SCE * !Q)	0.00905	0.01246	0.08366
	(!D * !SCD * SCE * !Q)	0.01425	0.01767	0.08886

sky130_fd_sc_hs__sdfxtp_2	**(D * SCD * SCE * Q)**	0.00952	0.01294	0.08385
	(D * SCD * SCE * Q)	0.01477	0.01819	0.08909
	(D * SCD * SCE * !Q)	0.01650	0.01990	0.09207
	(D * SCD * SCE * !Q)	0.02173	0.02516	0.09731
	(D * !SCE * Q)	0.00952	0.01294	0.08381
	(D * !SCE * Q)	0.01477	0.01819	0.08903
	(D * !SCE * !Q)	0.01646	0.01988	0.09271
	(D * !SCE * !Q)	0.02169	0.02514	0.09796
	(D * !SCD * SCE * Q)	0.01862	0.02213	0.09468
	(D * !SCD * SCE * Q)	0.02390	0.02739	0.09994
	(D * !SCD * SCE * !Q)	0.00927	0.01269	0.08374
	(D * !SCD * SCE * !Q)	0.01452	0.01795	0.08899
	(!D * SCD * SCE * Q)	0.00952	0.01294	0.08385
	(!D * SCD * SCE * Q)	0.01477	0.01819	0.08910
	(!D * SCD * SCE * !Q)	0.01653	0.01994	0.09210
	(!D * SCD * SCE * !Q)	0.02174	0.02518	0.09733
	(!D * !SCE * Q)	0.01852	0.02201	0.09423
	(!D * !SCE * Q)	0.02378	0.02727	0.09946
	(!D * !SCE * !Q)	0.00926	0.01268	0.08366
	(!D * !SCE * !Q)	0.01449	0.01794	0.08890
	(!D * !SCD * SCE * Q)	0.01861	0.02211	0.09465
	(!D * !SCD * SCE * Q)	0.02388	0.02738	0.09990
	(!D * !SCD * SCE * !Q)	0.00927	0.01269	0.08374
	(!D * !SCD * SCE * !Q)	0.01452	0.01795	0.08898

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.00909	0.01252	0.08357
	(D * SCD * SCE * Q)	0.01431	0.01775	0.08878
	(D * SCD * SCE * !Q)	0.01566	0.01908	0.09129
	(D * SCD * SCE * !Q)	0.02088	0.02429	0.09648
	(D * !SCE * Q)	0.00909	0.01253	0.08351
	(D * !SCE * Q)	0.01431	0.01775	0.08871
	(D * !SCE * !Q)	0.01561	0.01905	0.09190
	(D * !SCE * !Q)	0.02083	0.02427	0.09712
	(D * !SCD * SCE * Q)	0.01860	0.02212	0.09476
	(D * !SCD * SCE * Q)	0.02384	0.02736	0.10000
	(D * !SCD * SCE * !Q)	0.00906	0.01248	0.08367
	(D * !SCD * SCE * !Q)	0.01428	0.01770	0.08888
	(!D * SCD * SCE * Q)	0.00909	0.01253	0.08357
	(!D * SCD * SCE * Q)	0.01431	0.01775	0.08878
	(!D * SCD * SCE * !Q)	0.01569	0.01911	0.09132
	(!D * SCD * SCE * !Q)	0.02089	0.02431	0.09651
	(!D * !SCE * Q)	0.01850	0.02200	0.09435
	(!D * !SCE * Q)	0.02372	0.02722	0.09955
	(!D * !SCE * !Q)	0.00904	0.01247	0.08358
	(!D * !SCE * !Q)	0.01426	0.01770	0.08879
	(!D * !SCD * SCE * Q)	0.01860	0.02210	0.09478
	(!D * !SCD * SCE * Q)	0.02383	0.02734	0.10001
	(!D * !SCD * SCE * !Q)	0.00906	0.01248	0.08367
	(!D * !SCD * SCE * !Q)	0.01428	0.01770	0.08888

SKY130_FD_SC_HS__SDLCLKPx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00239	0.00220	0.00474	1.24291
sky130_fd_sc_hs__sdlclkp_2	0.00238	0.00219	0.00502	2.43610
sky130_fd_sc_hs__sdlclkp_4	0.00227	0.00207	0.00512	4.72098

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdlclkp_1	0.00000	1.53448	2.43753
sky130_fd_sc_hs__sdlclkp_2	0.00000	1.37734	2.12046
sky130_fd_sc_hs__sdlclkp_4	0.00000	1.41309	2.32312

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)	0.06174	0.49582	5.96060
sky130_fd_sc_hs__sdlclkp_2	CLK->GCLK (RR)	0.06423	0.41403	5.84891
sky130_fd_sc_hs__sdlclkp_4	CLK->GCLK (RR)	0.08412	0.39868	6.05841

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdlclkp_1	CLK->GCLK (FF)	0.07534	0.47150	4.73149
sky130_fd_sc_hs__sdlclkp_2	CLK->GCLK (FF)	0.08415	0.47199	4.82467
sky130_fd_sc_hs__sdlclkp_4	CLK->GCLK (FF)	0.10871	0.50664	5.01070

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)	-0.03625	-0.09481	-0.59399
	setup	CLK (R)	0.12440	0.20862	0.67741
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.03801	-0.09481	-0.58919
	setup	CLK (R)	0.12147	0.18952	0.67514
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.03703	-0.09692	-0.59482
	setup	CLK (R)	0.12246	0.17234	0.69887

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)	-0.10479	-0.22755	-3.16111
	setup	CLK (R)	0.13345	0.27083	3.29058
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.10680	-0.22511	-3.15625
	setup	CLK (R)	0.13199	0.26554	3.27591
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.11058	-0.23015	-3.15974
	setup	CLK (R)	0.13460	0.27073	3.29349

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)	-0.03625	-0.09481	-0.59399
	setup	CLK (R)	0.12440	0.20862	0.67741
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.03801	-0.09481	-0.58919
	setup	CLK (R)	0.12147	0.18952	0.67514
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.03703	-0.09692	-0.59482
	setup	CLK (R)	0.12246	0.17234	0.69887

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)	-0.10479	-0.22755	-3.16111
	setup	CLK (R)	0.13345	0.27083	3.29058
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.10680	-0.22511	-3.15625
	setup	CLK (R)	0.13199	0.26554	3.27591
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.11058	-0.23015	-3.15974
	setup	CLK (R)	0.13460	0.27073	3.29349

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)	-0.03948	-0.10535	-0.64748
	setup	CLK (R)	0.12923	0.21804	0.74597
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.04146	-0.10535	-0.64268
	setup	CLK (R)	0.12477	0.19901	0.74724
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.03948	-0.10535	-0.65041
	setup	CLK (R)	0.12402	0.18129	0.77613

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)	-0.11511	-0.22254	-3.10085
	setup	CLK (R)	0.14483	0.26554	3.16714
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.11341	-0.22007	-3.09602
	setup	CLK (R)	0.13986	0.26048	3.15718
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.11802	-0.22507	-3.10023
	setup	CLK (R)	0.14432	0.26566	3.16234

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)	-0.03948	-0.10535	-0.64748
	setup	CLK (R)	0.12923	0.21804	0.74597
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.04146	-0.10535	-0.64268
	setup	CLK (R)	0.12477	0.19901	0.74724
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.03948	-0.10535	-0.65041
	setup	CLK (R)	0.12402	0.18129	0.77613

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)	-0.11511	-0.22254	-3.10085
	setup	CLK (R)	0.14483	0.26554	3.16714
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.11341	-0.22007	-3.09602
	setup	CLK (R)	0.13986	0.26048	3.15718
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.11802	-0.22507	-3.10023
	setup	CLK (R)	0.14432	0.26566	3.16234

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 ()	0.04341	0.63232	16.50020
sky130_fd_sc_hs__sdlclkp_2	min_pulse_width	CLK ()	0.04816	0.63232	16.50020
sky130_fd_sc_hs__sdlclkp_4	min_pulse_width	CLK ()	0.06953	0.63232	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 ()	0.17639	0.63232	16.50020
	min_pulse_width	CLK ()	0.14315	0.63232	16.50020
sky130_fd_sc_hs__sdlclkp_2	min_pulse_width	CLK ()	0.16927	0.63232	16.50020
	min_pulse_width	CLK ()	0.14315	0.63232	16.50020
sky130_fd_sc_hs__sdlclkp_4	min_pulse_width	CLK ()	0.16927	0.63232	16.50020
	min_pulse_width	CLK ()	0.14790	0.63232	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	0.01990	0.02578	0.16349
	CLK	0.01162	0.01750	0.15574
sky130_fd_sc_hs__sdlclkp_2	CLK	0.02390	0.02951	0.16530
	CLK	0.01514	0.02075	0.15666
sky130_fd_sc_hs__sdlclkp_4	CLK	0.03148	0.03682	0.16842
	CLK	0.02251	0.02785	0.16159

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	CLK	0.02364	0.03190	0.16284
	CLK	0.03142	0.03951	0.16992
sky130_fd_sc_hs__sdlclkp_2	CLK	0.02666	0.03471	0.16666
	CLK	0.03485	0.04282	0.17241
sky130_fd_sc_hs__sdlclkp_4	CLK	0.02342	0.03072	0.16328
	CLK	0.03236	0.03925	0.17205

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	0.00174	0.00176	0.00174
	(CLK * SCE)	-0.00085	-0.00086	-0.00085
	(CLK * !SCE)	0.00549	0.00791	0.06121
	(CLK * !SCE)	0.00121	0.00360	0.05692
	(!CLK * SCE * !GCLK)	0.00169	0.00171	0.00169
	(!CLK * SCE * !GCLK)	-0.00090	-0.00091	-0.00090
	(!CLK * !SCE * !GCLK)	0.01395	0.01588	0.07110
	(!CLK * !SCE * !GCLK)	0.01013	0.01204	0.06727
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	0.00174	0.00175	0.00174
	(CLK * SCE)	-0.00085	-0.00086	-0.00085
	(CLK * !SCE)	0.00543	0.00786	0.06117
	(CLK * !SCE)	0.00118	0.00357	0.05690
	(!CLK * SCE * !GCLK)	0.00169	0.00170	0.00169
	(!CLK * SCE * !GCLK)	-0.00090	-0.00091	-0.00090
	(!CLK * !SCE * !GCLK)	0.01375	0.01569	0.07107
	(!CLK * !SCE * !GCLK)	0.00999	0.01191	0.06730
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	0.00167	0.00169	0.00167
	(CLK * SCE)	-0.00081	-0.00082	-0.00081
	(CLK * !SCE)	0.00529	0.00769	0.06085
	(CLK * !SCE)	0.00120	0.00359	0.05678
	(!CLK * SCE * !GCLK)	0.00164	0.00165	0.00164
	(!CLK * SCE * !GCLK)	-0.00085	-0.00085	-0.00085
	(!CLK * !SCE * !GCLK)	0.01382	0.01578	0.07100
	(!CLK * !SCE * !GCLK)	0.01021	0.01215	0.06737

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	-0.00167	-0.00168	-0.00171
	(CLK * SCE)	0.00091	0.00092	0.00089
	(CLK * !SCE)	0.00085	0.00391	0.05715
	(CLK * !SCE)	0.00515	0.00821	0.06144
	(!CLK * SCE * !GCLK)	-0.00164	-0.00165	-0.00168
	(!CLK * SCE * !GCLK)	0.00095	0.00095	0.00092
	(!CLK * !SCE * !GCLK)	0.01243	0.01558	0.07173
	(!CLK * !SCE * !GCLK)	0.01627	0.01942	0.07557
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	-0.00166	-0.00168	-0.00171
	(CLK * SCE)	0.00091	0.00092	0.00089
	(CLK * !SCE)	0.00089	0.00395	0.05720
	(CLK * !SCE)	0.00516	0.00823	0.06146
	(!CLK * SCE * !GCLK)	-0.00163	-0.00164	-0.00167
	(!CLK * SCE * !GCLK)	0.00096	0.00096	0.00092
	(!CLK * !SCE * !GCLK)	0.01248	0.01565	0.07191
	(!CLK * !SCE * !GCLK)	0.01627	0.01945	0.07569
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	-0.00160	-0.00160	-0.00164
	(CLK * SCE)	0.00089	0.00089	0.00086
	(CLK * !SCE)	0.00120	0.00442	0.05735
	(CLK * !SCE)	0.00529	0.00851	0.06143
	(!CLK * SCE * !GCLK)	-0.00158	-0.00158	-0.00161
	(!CLK * SCE * !GCLK)	0.00091	0.00091	0.00088
	(!CLK * !SCE * !GCLK)	0.01290	0.01600	0.07210
	(!CLK * !SCE * !GCLK)	0.01653	0.01964	0.07573

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	0.00180	0.00152	0.00148
	(CLK * GATE)	-0.00152	-0.00183	-0.00184
	(CLK * !GATE)	0.00710	0.00884	0.05061
	(CLK * !GATE)	0.00195	0.00367	0.04548
	(!CLK * GATE * !GCLK)	0.00179	0.00151	0.00147
	(!CLK * GATE * !GCLK)	-0.00152	-0.00183	-0.00185
	(!CLK * !GATE * !GCLK)	0.01555	0.01699	0.06115
	(!CLK * !GATE * !GCLK)	0.01088	0.01230	0.05649
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	0.00179	0.00151	0.00146
	(CLK * GATE)	-0.00151	-0.00182	-0.00184
	(CLK * !GATE)	0.00704	0.00878	0.05056
	(CLK * !GATE)	0.00192	0.00365	0.04546
	(!CLK * GATE * !GCLK)	0.00178	0.00150	0.00146
	(!CLK * GATE * !GCLK)	-0.00152	-0.00183	-0.00184
	(!CLK * !GATE * !GCLK)	0.01535	0.01680	0.06109
	(!CLK * !GATE * !GCLK)	0.01073	0.01217	0.05650
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	0.00172	0.00144	0.00140
	(CLK * GATE)	-0.00148	-0.00179	-0.00180
	(CLK * !GATE)	0.00691	0.00863	0.05035
	(CLK * !GATE)	0.00198	0.00369	0.04544
	(!CLK * GATE * !GCLK)	0.00172	0.00144	0.00139
	(!CLK * GATE * !GCLK)	-0.00148	-0.00179	-0.00181
	(!CLK * !GATE * !GCLK)	0.01542	0.01687	0.06106
	(!CLK * !GATE * !GCLK)	0.01096	0.01239	0.05661

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	-0.00143	-0.00144	-0.00142
	(CLK * GATE)	0.00188	0.00190	0.00189
	(CLK * !GATE)	0.00094	0.00254	0.04396
	(CLK * !GATE)	0.00608	0.00769	0.04910
	(!CLK * GATE * !GCLK)	-0.00143	-0.00144	-0.00143
	(!CLK * GATE * !GCLK)	0.00187	0.00189	0.00188
	(!CLK * !GATE * !GCLK)	0.01245	0.01394	0.05689
	(!CLK * !GATE * !GCLK)	0.01713	0.01863	0.06158
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	-0.00142	-0.00142	-0.00141
	(CLK * GATE)	0.00187	0.00190	0.00188
	(CLK * !GATE)	0.00099	0.00258	0.04401
	(CLK * !GATE)	0.00609	0.00770	0.04913
	(!CLK * GATE * !GCLK)	-0.00142	-0.00143	-0.00142
	(!CLK * GATE * !GCLK)	0.00187	0.00189	0.00188
	(!CLK * !GATE * !GCLK)	0.01250	0.01402	0.05706
	(!CLK * !GATE * !GCLK)	0.01712	0.01866	0.06169
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	-0.00135	-0.00136	-0.00134
	(CLK * GATE)	0.00184	0.00187	0.00185
	(CLK * !GATE)	0.00131	0.00288	0.04422
	(CLK * !GATE)	0.00622	0.00782	0.04915
	(!CLK * GATE * !GCLK)	-0.00136	-0.00136	-0.00135
	(!CLK * GATE * !GCLK)	0.00185	0.00186	0.00185
	(!CLK * !GATE * !GCLK)	0.01291	0.01440	0.05747
	(!CLK * !GATE * !GCLK)	0.01736	0.01889	0.06195

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(!GATE * !SCE * !GCLK)	0.01235	0.01579	0.09320
	(!GATE * !SCE * !GCLK)	0.00447	0.00788	0.08533
sky130_fd_sc_hs__sdlclkp_2	(!GATE * !SCE * !GCLK)	0.01252	0.01598	0.09356
	(!GATE * !SCE * !GCLK)	0.00418	0.00760	0.08523
sky130_fd_sc_hs__sdlclkp_4	(!GATE * !SCE * !GCLK)	0.01269	0.01613	0.09369
	(!GATE * !SCE * !GCLK)	0.00417	0.00756	0.08514

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(GATE * SCE * !GCLK)	0.01372	0.01831	0.10521
	(GATE * SCE * !GCLK)	0.02220	0.02685	0.11369
	(GATE * !SCE * !GCLK)	0.01370	0.01827	0.10494
	(GATE * !SCE * !GCLK)	0.02218	0.02681	0.11342
	(!GATE * SCE * !GCLK)	0.01375	0.01835	0.10512
	(!GATE * SCE * !GCLK)	0.02222	0.02687	0.11360
	(!GATE * !SCE * !GCLK)	0.00549	0.00994	0.08698
	(!GATE * !SCE * !GCLK)	0.01335	0.01786	0.09488
sky130_fd_sc_hs__sdlclkp_2	(GATE * SCE * !GCLK)	0.01328	0.01785	0.10533
	(GATE * SCE * !GCLK)	0.02227	0.02684	0.11434
	(GATE * !SCE * !GCLK)	0.01328	0.01778	0.10505
	(GATE * !SCE * !GCLK)	0.02227	0.02684	0.11405
	(!GATE * SCE * !GCLK)	0.01332	0.01786	0.10525
	(!GATE * SCE * !GCLK)	0.02229	0.02689	0.11423
	(!GATE * !SCE * !GCLK)	0.00520	0.00965	0.08685
	(!GATE * !SCE * !GCLK)	0.01351	0.01803	0.09521
sky130_fd_sc_hs__sdlclkp_4	(GATE * SCE * !GCLK)	0.01379	0.01839	0.10571
	(GATE * SCE * !GCLK)	0.02294	0.02761	0.11490
	(GATE * !SCE * !GCLK)	0.01377	0.01834	0.10543
	(GATE * !SCE * !GCLK)	0.02293	0.02756	0.11461
	(!GATE * SCE * !GCLK)	0.01382	0.01842	0.10562
	(!GATE * SCE * !GCLK)	0.02296	0.02762	0.11479
	(!GATE * !SCE * !GCLK)	0.00547	0.00986	0.08704
	(!GATE * !SCE * !GCLK)	0.01398	0.01845	0.09561

SKY130_FD_SC_HS__SEDFXBPx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00201	0.00386	0.00179	0.00389	0.00284	1.28514	1.28598
sky130_fd_sc_hs__sedfxbp_2	0.00210	0.00391	0.00181	0.00396	0.00285	2.16886	2.24380

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sedfxbp_1	0.00000	1.55820	2.83794
sky130_fd_sc_hs__sedfxbp_2	0.00000	1.58762	2.79023

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)	0.16861	0.62097	5.86161
sky130_fd_sc_hs__sedfxbp_2	CLK->Q (RR)	0.17317	0.54394	5.67489

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxbp_1	CLK->Q (RF)	0.15180	0.42257	2.28757
sky130_fd_sc_hs__sedfxbp_2	CLK->Q (RF)	0.17066	0.40060	1.81010

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)	0.22983	0.66995	5.95642
sky130_fd_sc_hs__sedfxbp_2	CLK->Q_N (RR)	0.27256	0.61687	5.78202

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)	0.23458	0.47287	2.23233
sky130_fd_sc_hs__sedfxbp_2	CLK->Q_N (RF)	0.25695	0.44729	1.92368

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)	-0.13800	-0.22491	-1.05349
	setup	CLK (R)	0.16289	0.24572	1.06849
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.13697	-0.22767	-1.07141
	setup	CLK (R)	0.16526	0.24630	1.09042

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)	-0.24809	-0.39086	-3.47254
	setup	CLK (R)	0.31088	0.43894	3.50781
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.24629	-0.39015	-3.49610
	setup	CLK (R)	0.30666	0.43695	3.53275

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)	-0.13800	-0.22491	-1.05349
	setup	CLK (R)	0.16289	0.24572	1.06849
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.13697	-0.22767	-1.07141
	setup	CLK (R)	0.16526	0.24630	1.09042

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)	-0.24809	-0.39086	-3.47254
	setup	CLK (R)	0.31088	0.43894	3.50781
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.24629	-0.39015	-3.49610
	setup	CLK (R)	0.30666	0.43695	3.53275

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)	-0.03258	-0.04863	0.01428
	setup	CLK (R)	0.33989	0.36583	0.93955
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.03430	-0.05091	-0.00895
	setup	CLK (R)	0.33981	0.36549	0.96097

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)	-0.19068	-0.31544	-2.95414
	setup	CLK (R)	0.28603	0.40530	3.45566
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.19158	-0.31838	-2.98145
	setup	CLK (R)	0.28197	0.40606	3.47961

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)	-0.03258	-0.04863	0.01428
	hold	CLK (R)	-0.13272	-0.15683	-0.35705
	setup	CLK (R)	0.16293	0.22358	0.93955
	setup	CLK (R)	0.33989	0.36583	0.56785
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.03430	-0.05091	-0.00895
	hold	CLK (R)	-0.13241	-0.15704	-0.38180
	setup	CLK (R)	0.16421	0.22592	0.96097
	setup	CLK (R)	0.33981	0.36549	0.59685

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)	-0.26901	-0.39232	-3.45145
	hold	CLK (R)	-0.19068	-0.31544	-2.95414
	setup	CLK (R)	0.28603	0.40530	3.45566
	setup	CLK (R)	0.20608	0.32240	2.96024
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.26719	-0.39178	-3.47776
	hold	CLK (R)	-0.19158	-0.31838	-2.98145
	setup	CLK (R)	0.28197	0.40606	3.47961
	setup	CLK (R)	0.20581	0.32367	2.98476

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)	-0.08412	-0.14834	-0.72949
	setup	CLK (R)	0.10022	0.15802	0.74545
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.08176	-0.15079	-0.75574
	setup	CLK (R)	0.10147	0.16012	0.77091

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)	-0.18062	-0.29217	-3.18151
	setup	CLK (R)	0.23032	0.33794	3.22609
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.18114	-0.29461	-3.20824
	setup	CLK (R)	0.22631	0.33804	3.25592

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)	-0.08412	-0.14834	-0.72949
	setup	CLK (R)	0.10022	0.15802	0.74545
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.08176	-0.15079	-0.75574
	setup	CLK (R)	0.10147	0.16012	0.77091

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)	-0.18062	-0.29217	-3.18151
	setup	CLK (R)	0.23032	0.33794	3.22609
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.18114	-0.29461	-3.20824
	setup	CLK (R)	0.22631	0.33804	3.25592

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)	0.00200	0.01475	0.35494
	setup	CLK (R)	0.24140	0.25738	0.66516
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	0.00513	0.01264	0.32371
	setup	CLK (R)	0.24096	0.25986	0.68799

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)	-0.13151	-0.26404	-2.95214
	setup	CLK (R)	0.19564	0.31090	3.31175
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.13221	-0.26855	-2.98951
	setup	CLK (R)	0.19139	0.31333	3.33794

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)	-0.19586	-0.21272	-0.35271
	hold	CLK (R)	0.00200	0.01475	0.35494
	hold	CLK (R)	-0.07047	-0.14358	-0.63532
	hold	CLK (R)	-0.09301	-0.11900	-0.24394
	setup	CLK (R)	0.24140	0.25728	0.42755
	setup	CLK (R)	0.08864	0.15407	0.66121
	setup	CLK (R)	0.08814	0.15429	0.66516
	setup	CLK (R)	0.24136	0.25738	0.42801
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.19441	-0.21826	-0.38742
	hold	CLK (R)	0.00513	0.01264	0.32371
	hold	CLK (R)	-0.07228	-0.14462	-0.65470
	hold	CLK (R)	-0.09433	-0.12173	-0.27613
	setup	CLK (R)	0.24096	0.25969	0.46350
	setup	CLK (R)	0.08807	0.15591	0.68706
	setup	CLK (R)	0.08814	0.15591	0.68799
	setup	CLK (R)	0.24087	0.25986	0.46385

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)	-0.13928	-0.27324	-2.97136
	hold	CLK (R)	-0.13889	-0.26584	-3.25998
	hold	CLK (R)	-0.13401	-0.26479	-3.27720
	hold	CLK (R)	-0.13151	-0.26404	-2.95214
	setup	CLK (R)	0.16069	0.28413	2.98333
	setup	CLK (R)	0.15498	0.27771	3.26422
	setup	CLK (R)	0.19564	0.31090	3.31175
	setup	CLK (R)	0.14609	0.27130	2.95326
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.14068	-0.27907	-3.00727
	hold	CLK (R)	-0.14120	-0.26855	-3.28978
	hold	CLK (R)	-0.13221	-0.26919	-3.30436
	hold	CLK (R)	-0.13425	-0.26933	-2.98951
	setup	CLK (R)	0.16392	0.28996	3.01796
	setup	CLK (R)	0.15522	0.28212	3.29482
	setup	CLK (R)	0.19139	0.31333	3.33794
	setup	CLK (R)	0.14884	0.27696	2.99205

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 ()	0.07903	0.63232	16.50020
	min_pulse_width	CLK ()	0.07903	0.63232	16.50020
	min_pulse_width	CLK ()	0.12415	0.63232	16.50020
	min_pulse_width	CLK ()	0.07903	0.63232	16.50020
	min_pulse_width	CLK ()	0.12415	0.63232	16.50020
	min_pulse_width	CLK ()	0.07903	0.63232	16.50020
	min_pulse_width	CLK ()	0.12177	0.63232	16.50020
	min_pulse_width	CLK ()	0.12177	0.63232	16.50020
	min_pulse_width	CLK ()	0.07903	0.63232	16.50020
	min_pulse_width	CLK ()	0.12415	0.63232	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.09090	0.63232	16.50020
	min_pulse_width	CLK ()	0.09090	0.63232	16.50020
	min_pulse_width	CLK ()	0.16214	0.63232	16.50020
	min_pulse_width	CLK ()	0.09090	0.63232	16.50020
	min_pulse_width	CLK ()	0.16452	0.63232	16.50020
	min_pulse_width	CLK ()	0.09090	0.63232	16.50020
	min_pulse_width	CLK ()	0.16214	0.63232	16.50020
	min_pulse_width	CLK ()	0.16214	0.63232	16.50020
	min_pulse_width	CLK ()	0.09090	0.63232	16.50020
	min_pulse_width	CLK ()	0.16452	0.63232	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 ()	0.12415	0.63232	16.50020
	min_pulse_width	CLK ()	0.13365	0.63232	16.50020
	min_pulse_width	CLK ()	0.19064	0.63232	16.50020
	min_pulse_width	CLK ()	0.12415	0.63232	16.50020
	min_pulse_width	CLK ()	0.19064	0.63232	16.50020
	min_pulse_width	CLK ()	0.12415	0.63232	16.50020
	min_pulse_width	CLK ()	0.19776	0.63232	16.50020
	min_pulse_width	CLK ()	0.19064	0.63232	16.50020
	min_pulse_width	CLK ()	0.12415	0.63232	16.50020
	min_pulse_width	CLK ()	0.19064	0.63232	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.12415	0.63232	16.50020
	min_pulse_width	CLK ()	0.13365	0.63232	16.50020
	min_pulse_width	CLK ()	0.18826	0.63232	16.50020
	min_pulse_width	CLK ()	0.12415	0.63232	16.50020
	min_pulse_width	CLK ()	0.18826	0.63232	16.50020
	min_pulse_width	CLK ()	0.12415	0.63232	16.50020
	min_pulse_width	CLK ()	0.19539	0.63232	16.50020
	min_pulse_width	CLK ()	0.18826	0.63232	16.50020
	min_pulse_width	CLK ()	0.12415	0.63232	16.50020
	min_pulse_width	CLK ()	0.18826	0.63232	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	0.02144	0.02302	0.05933
	CLK	0.01828	0.01984	0.05618
sky130_fd_sc_hs__sedfxbp_2	CLK	0.02488	0.02611	0.06314
	CLK	0.02175	0.02299	0.06014

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.01965	0.02093	0.05761
	CLK	0.01774	0.01898	0.05568
sky130_fd_sc_hs__sedfxbp_2	CLK	0.02367	0.02439	0.06131
	CLK	0.02173	0.02242	0.05945

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.01968	0.02091	0.05879
	CLK	0.01777	0.01900	0.05684
sky130_fd_sc_hs__sedfxbp_2	CLK	0.02369	0.02438	0.06241
	CLK	0.02176	0.02245	0.06059

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.02140	0.02303	0.05866
	CLK	0.01824	0.01980	0.05549
sky130_fd_sc_hs__sedfxbp_2	CLK	0.02483	0.02609	0.06202
	CLK	0.02170	0.02295	0.05891

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.00589	0.00709	0.04114
	(DE * SCE)	0.00218	0.00335	0.03743
	(CLK * DE * !SCE)	0.01211	0.01287	0.04482
	(CLK * DE * !SCE)	0.00720	0.00796	0.03991
	(CLK * !DE * !SCE)	0.00137	0.00140	0.00138
	(CLK * !DE * !SCE)	-0.00094	-0.00097	-0.00095
	(!DE * SCE)	0.00139	0.00140	0.00139
	(!DE * SCE)	-0.00094	-0.00095	-0.00094
	(!CLK * DE * !SCE * Q * !Q_N)	0.02111	0.02222	0.05750
	(!CLK * DE * !SCE * Q * !Q_N)	0.01620	0.01731	0.05259
	(!CLK * DE * !SCE * !Q * Q_N)	0.02058	0.02145	0.05644
	(!CLK * DE * !SCE * !Q * Q_N)	0.01561	0.01649	0.05148
	(!CLK * !DE * !SCE)	0.00138	0.00140	0.00138
	(!CLK * !DE * !SCE)	-0.00095	-0.00097	-0.00095
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.00598	0.00717	0.04126
	(DE * SCE)	0.00212	0.00330	0.03740
	(CLK * DE * !SCE)	0.01233	0.01308	0.04499
	(CLK * DE * !SCE)	0.00724	0.00799	0.03990
	(CLK * !DE * !SCE)	0.00144	0.00146	0.00144
	(CLK * !DE * !SCE)	-0.00099	-0.00101	-0.00099
	(!DE * SCE)	0.00145	0.00146	0.00145
	(!DE * SCE)	-0.00098	-0.00099	-0.00099
	(!CLK * DE * !SCE * Q * !Q_N)	0.02123	0.02234	0.05754
	(!CLK * DE * !SCE * Q * !Q_N)	0.01614	0.01724	0.05247
	(!CLK * DE * !SCE * !Q * Q_N)	0.02066	0.02169	0.05651
	(!CLK * DE * !SCE * !Q * Q_N)	0.01551	0.01654	0.05137
	(!CLK * !DE * !SCE)	0.00144	0.00146	0.00144
	(!CLK * !DE * !SCE)	-0.00099	-0.00101	-0.00099

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.00215	0.00386	0.03793
	(DE * SCE)	0.00594	0.00764	0.04170
	(CLK * DE * !SCE)	0.00390	0.00522	0.03773
	(CLK * DE * !SCE)	0.00886	0.01018	0.04270
	(CLK * !DE * !SCE)	-0.00040	-0.00041	-0.00040
	(CLK * !DE * !SCE)	0.00210	0.00211	0.00210
	(!DE * SCE)	-0.00040	-0.00039	-0.00039
	(!DE * SCE)	0.00211	0.00211	0.00211
	(!CLK * DE * !SCE * Q * !Q_N)	0.01370	0.01547	0.05383
	(!CLK * DE * !SCE * Q * !Q_N)	0.01860	0.02037	0.05874
	(!CLK * DE * !SCE * !Q * Q_N)	0.01478	0.01661	0.05488
	(!CLK * DE * !SCE * !Q * Q_N)	0.01974	0.02156	0.05984
	(!CLK * !DE * !SCE)	-0.00040	-0.00041	-0.00040
	(!CLK * !DE * !SCE)	0.00210	0.00211	0.00210
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.00187	0.00359	0.03769
	(DE * SCE)	0.00580	0.00752	0.04161
	(CLK * DE * !SCE)	0.00372	0.00504	0.03753
	(CLK * DE * !SCE)	0.00887	0.01019	0.04267
	(CLK * !DE * !SCE)	-0.00041	-0.00042	-0.00041
	(CLK * !DE * !SCE)	0.00218	0.00221	0.00219
	(!DE * SCE)	-0.00041	-0.00041	-0.00040
	(!DE * SCE)	0.00219	0.00221	0.00220
	(!CLK * DE * !SCE * Q * !Q_N)	0.01346	0.01512	0.05356
	(!CLK * DE * !SCE * Q * !Q_N)	0.01854	0.02020	0.05865
	(!CLK * DE * !SCE * !Q * Q_N)	0.01456	0.01630	0.05461
	(!CLK * DE * !SCE * !Q * Q_N)	0.01969	0.02143	0.05975
	(!CLK * !DE * !SCE)	-0.00041	-0.00042	-0.00041
	(!CLK * !DE * !SCE)	0.00218	0.00220	0.00219

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.01108	0.01358	0.08353
	SCE	0.00289	0.00541	0.07534
	(CLK * !SCE)	0.01706	0.01938	0.08786
	(CLK * !SCE)	0.00769	0.00998	0.07848
	(!CLK * D * !SCE * Q * !Q_N)	0.00689	0.00845	0.05260
	(!CLK * D * !SCE * Q * !Q_N)	0.00011	0.00166	0.04583
	(!CLK * D * !SCE * !Q * Q_N)	0.02598	0.02845	0.09977
	(!CLK * D * !SCE * !Q * Q_N)	0.01661	0.01905	0.09041
	(!CLK * !D * !SCE * Q * !Q_N)	0.02168	0.02340	0.06851
	(!CLK * !D * !SCE * Q * !Q_N)	0.01758	0.01926	0.06437
	(!CLK * !D * !SCE * !Q * Q_N)	0.00673	0.00853	0.05267
	(!CLK * !D * !SCE * !Q * Q_N)	0.00000	0.00178	0.04594
sky130_fd_sc_hs__sedfxbp_2	SCE	0.01110	0.01367	0.08360
	SCE	0.00279	0.00530	0.07528
	(CLK * !SCE)	0.01723	0.01955	0.08803
	(CLK * !SCE)	0.00770	0.01001	0.07848
	(!CLK * D * !SCE * Q * !Q_N)	0.00686	0.00844	0.05261
	(!CLK * D * !SCE * Q * !Q_N)	-0.00002	0.00154	0.04572
	(!CLK * D * !SCE * !Q * Q_N)	0.02597	0.02845	0.09980
	(!CLK * D * !SCE * !Q * Q_N)	0.01644	0.01891	0.09024
	(!CLK * !D * !SCE * Q * !Q_N)	0.02147	0.02321	0.06835
	(!CLK * !D * !SCE * Q * !Q_N)	0.01731	0.01907	0.06418
	(!CLK * !D * !SCE * !Q * Q_N)	0.00673	0.00856	0.05269
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00008	0.00170	0.04587

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.00309	0.00616	0.07609
	SCE	0.01128	0.01438	0.08427
	(CLK * !SCE)	0.00478	0.00762	0.07634
	(CLK * !SCE)	0.01415	0.01700	0.08571
	(!CLK * D * !SCE * Q * !Q_N)	-0.00009	0.00228	0.04625
	(!CLK * D * !SCE * Q * !Q_N)	0.00666	0.00904	0.05303
	(!CLK * D * !SCE * !Q * Q_N)	0.01543	0.01847	0.09104
	(!CLK * D * !SCE * !Q * Q_N)	0.02480	0.02784	0.10040
	(!CLK * !D * !SCE * Q * !Q_N)	0.02113	0.02345	0.06753
	(!CLK * !D * !SCE * Q * !Q_N)	0.02523	0.02759	0.07166
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00028	0.00203	0.04616
	(!CLK * !D * !SCE * !Q * Q_N)	0.00642	0.00877	0.05291
sky130_fd_sc_hs__sedfxbp_2	SCE	0.00280	0.00589	0.07585
	SCE	0.01113	0.01424	0.08417
	(CLK * !SCE)	0.00460	0.00744	0.07616
	(CLK * !SCE)	0.01414	0.01699	0.08570
	(!CLK * D * !SCE * Q * !Q_N)	-0.00013	0.00224	0.04622
	(!CLK * D * !SCE * Q * !Q_N)	0.00672	0.00911	0.05310
	(!CLK * D * !SCE * !Q * Q_N)	0.01519	0.01824	0.09075
	(!CLK * D * !SCE * !Q * Q_N)	0.02474	0.02778	0.10029
	(!CLK * !D * !SCE * Q * !Q_N)	0.02113	0.02345	0.06757
	(!CLK * !D * !SCE * Q * !Q_N)	0.02526	0.02762	0.07173
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00035	0.00195	0.04610
	(!CLK * !D * !SCE * !Q * Q_N)	0.00644	0.00880	0.05293

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.00671	0.00744	0.03441
	(CLK * SCE)	0.00273	0.00346	0.03044
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01555	0.01637	0.04615
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01157	0.01238	0.04217
	!SCE	0.00136	0.00116	0.00113
	!SCE	-0.00131	-0.00152	-0.00155
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.00685	0.00758	0.03452
	(CLK * SCE)	0.00280	0.00352	0.03047
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01551	0.01633	0.04611
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01146	0.01227	0.04206
	!SCE	0.00135	0.00115	0.00112
	!SCE	-0.00136	-0.00158	-0.00160

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.00342	0.00420	0.03121
	(CLK * SCE)	0.00739	0.00817	0.03517
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01320	0.01412	0.04469
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01716	0.01810	0.04865
	!SCE	-0.00105	-0.00108	-0.00108
	!SCE	0.00159	0.00160	0.00160
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.00338	0.00416	0.03115
	(CLK * SCE)	0.00743	0.00823	0.03519
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01312	0.01406	0.04412
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01718	0.01812	0.04817
	!SCE	-0.00105	-0.00107	-0.00108
	!SCE	0.00164	0.00166	0.00166

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxbp_1	**(CLK * D)**	0.00994	0.01297	0.08637
	(CLK * D)	0.00284	0.00584	0.07927
	(CLK * !D)	0.01037	0.01338	0.08619
	(CLK * !D)	0.00327	0.00625	0.07908
	(!CLK * D * SCD * Q * !Q_N)	0.00587	0.00777	0.05203
	(!CLK * D * SCD * Q * !Q_N)	-0.00003	0.00184	0.04610
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00565	0.00756	0.05182
	(!CLK * D * DE * SCD * !Q * Q_N)	-0.00025	0.00162	0.04588
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.02015	0.02170	0.07923
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01531	0.01683	0.07437
	(!CLK * D * !SCD * Q * !Q_N)	0.02018	0.02166	0.07930
	(!CLK * D * !SCD * Q * !Q_N)	0.01535	0.01681	0.07441
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01878	0.02183	0.09833
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01168	0.01468	0.09121
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00647	0.00837	0.05263
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00044	0.00230	0.04657
	(!CLK * !D * SCD * !Q * Q_N)	0.01878	0.02185	0.09773
	(!CLK * !D * SCD * !Q * Q_N)	0.01168	0.01473	0.09061
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01931	0.02232	0.09818
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01221	0.01517	0.09107
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00669	0.00859	0.05285
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00066	0.00252	0.04679
	(!CLK * !D * !SCD * !Q * Q_N)	0.00647	0.00838	0.05263
	(!CLK * !D * !SCD * !Q * Q_N)	0.00044	0.00230	0.04657
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00587	0.00777	0.05203
	(!CLK * !D * !DE * SCD * Q * !Q_N)	-0.00003	0.00184	0.04609
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.02017	0.02164	0.07931
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01533	0.01680	0.07443

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.01009	0.01323	0.08644
	(CLK * D)	0.00278	0.00589	0.07915
	(CLK * !D)	0.01049	0.01359	0.08622
	(CLK * !D)	0.00318	0.00626	0.07891
	(!CLK * D * SCD * Q * !Q_N)	0.00598	0.00785	0.05202
	(!CLK * D * SCD * Q * !Q_N)	-0.00010	0.00174	0.04592
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00579	0.00765	0.05183
	(!CLK * D * DE * SCD * !Q * Q_N)	-0.00029	0.00154	0.04573
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.02036	0.02180	0.07924
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01539	0.01679	0.07422
	(!CLK * D * !SCD * Q * !Q_N)	0.02028	0.02171	0.07920
	(!CLK * D * !SCD * Q * !Q_N)	0.01531	0.01671	0.07418
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01875	0.02179	0.09826
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01145	0.01444	0.09094
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00666	0.00853	0.05271
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00046	0.00229	0.04648
	(!CLK * !D * SCD * !Q * Q_N)	0.01875	0.02180	0.09763
	(!CLK * !D * SCD * !Q * Q_N)	0.01144	0.01445	0.09031
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01933	0.02231	0.09814
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01202	0.01498	0.09082
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00686	0.00873	0.05291
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00067	0.00249	0.04668
	(!CLK * !D * !SCD * !Q * Q_N)	0.00666	0.00853	0.05271
	(!CLK * !D * !SCD * !Q * Q_N)	0.00047	0.00230	0.04648
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00598	0.00785	0.05202
	(!CLK * !D * !DE * SCD * Q * !Q_N)	-0.00010	0.00174	0.04592
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.02025	0.02169	0.07922
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01529	0.01670	0.07420

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxbp_1	**(CLK * D)**	0.00131	0.00562	0.07884
	(CLK * D)	0.00842	0.01275	0.08595
	(CLK * !D)	0.00131	0.00563	0.07828
	(CLK * !D)	0.00840	0.01276	0.08540
	(!CLK * D * SCD * Q * !Q_N)	-0.00000	0.00253	0.04682
	(!CLK * D * SCD * Q * !Q_N)	0.00592	0.00847	0.05274
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00022	0.00276	0.04704
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00614	0.00869	0.05296
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01513	0.01913	0.08323
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01998	0.02400	0.08791
	(!CLK * D * !SCD * Q * !Q_N)	0.01520	0.01935	0.08324
	(!CLK * D * !SCD * Q * !Q_N)	0.02005	0.02421	0.08792
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01170	0.01599	0.09372
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01881	0.02312	0.10083
	(!CLK * D * !DE * !SCD * !Q * Q_N)	-0.00039	0.00204	0.04626
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00564	0.00811	0.05232
	(!CLK * !D * SCD * !Q * Q_N)	0.01176	0.01606	0.09337
	(!CLK * !D * SCD * !Q * Q_N)	0.01887	0.02318	0.10048
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01132	0.01560	0.09288
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01843	0.02270	0.09999
	(!CLK * !D * DE * !SCD * Q * !Q_N)	-0.00060	0.00183	0.04605
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00543	0.00790	0.05211
	(!CLK * !D * !SCD * !Q * Q_N)	-0.00039	0.00205	0.04626
	(!CLK * !D * !SCD * !Q * Q_N)	0.00564	0.00811	0.05232
	(!CLK * !D * !DE * SCD * Q * !Q_N)	-0.00000	0.00253	0.04682
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00592	0.00847	0.05274
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01518	0.01917	0.08328
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.02002	0.02405	0.08795

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.00137	0.00562	0.07877
	(CLK * D)	0.00868	0.01295	0.08608
	(CLK * !D)	0.00138	0.00563	0.07819
	(CLK * !D)	0.00869	0.01296	0.08550
	(!CLK * D * SCD * Q * !Q_N)	0.00012	0.00262	0.04681
	(!CLK * D * SCD * Q * !Q_N)	0.00621	0.00872	0.05290
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00032	0.00282	0.04701
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00641	0.00892	0.05310
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01522	0.01918	0.08326
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.02021	0.02418	0.08806
	(!CLK * D * !SCD * Q * !Q_N)	0.01538	0.01933	0.08332
	(!CLK * D * !SCD * Q * !Q_N)	0.02036	0.02434	0.08815
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01170	0.01595	0.09359
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01901	0.02325	0.10090
	(!CLK * D * !DE * !SCD * !Q * Q_N)	-0.00036	0.00221	0.04617
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00584	0.00843	0.05239
	(!CLK * !D * SCD * !Q * Q_N)	0.01175	0.01601	0.09319
	(!CLK * !D * SCD * !Q * Q_N)	0.01908	0.02331	0.10051
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01128	0.01551	0.09269
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01860	0.02283	0.09999
	(!CLK * !D * DE * !SCD * Q * !Q_N)	-0.00055	0.00202	0.04597
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00565	0.00824	0.05220
	(!CLK * !D * !SCD * !Q * Q_N)	-0.00035	0.00221	0.04617
	(!CLK * !D * !SCD * !Q * Q_N)	0.00585	0.00843	0.05240
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00012	0.00262	0.04681
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00621	0.00872	0.05290
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01535	0.01931	0.08339
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.02034	0.02431	0.08819

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)	0.01708	0.01951	0.09068
	(SCD * SCE * Q * !Q_N)	0.01203	0.01445	0.08565
	(D * !SCE * Q * !Q_N)	0.01706	0.01949	0.09070
	(D * !SCE * Q * !Q_N)	0.01201	0.01443	0.08565
	(D * !DE * !SCE * !Q * Q_N)	0.01720	0.01988	0.09065
	(D * !DE * !SCE * !Q * Q_N)	0.01215	0.01482	0.08560
	(!SCD * SCE * !Q * Q_N)	0.01722	0.01991	0.09104
	(!SCD * SCE * !Q * Q_N)	0.01217	0.01484	0.08598
	(!D * !SCE * !Q * Q_N)	0.01720	0.01989	0.09065
	(!D * !SCE * !Q * Q_N)	0.01215	0.01482	0.08560
	(!D * !DE * !SCE * Q * !Q_N)	0.01706	0.01949	0.09070
	(!D * !DE * !SCE * Q * !Q_N)	0.01201	0.01443	0.08564
sky130_fd_sc_hs__sedfxbp_2	(SCD * SCE * Q * !Q_N)	0.01700	0.01945	0.09091
	(SCD * SCE * Q * !Q_N)	0.01195	0.01439	0.08586
	(D * !SCE * Q * !Q_N)	0.01697	0.01942	0.09084
	(D * !SCE * Q * !Q_N)	0.01193	0.01437	0.08581
	(D * !DE * !SCE * !Q * Q_N)	0.01725	0.01969	0.09143
	(D * !DE * !SCE * !Q * Q_N)	0.01220	0.01464	0.08638
	(!SCD * SCE * !Q * Q_N)	0.01728	0.02003	0.09143
	(!SCD * SCE * !Q * Q_N)	0.01224	0.01497	0.08639
	(!D * !SCE * !Q * Q_N)	0.01725	0.01970	0.09143
	(!D * !SCE * !Q * Q_N)	0.01220	0.01465	0.08638
	(!D * !DE * !SCE * Q * !Q_N)	0.01697	0.01942	0.09084
	(!D * !DE * !SCE * Q * !Q_N)	0.01193	0.01436	0.08581

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)	0.00933	0.01287	0.08372
	(SCD * SCE * Q * !Q_N)	0.01439	0.01791	0.08877
	(SCD * SCE * !Q * Q_N)	0.01808	0.02157	0.09398
	(SCD * SCE * !Q * Q_N)	0.02313	0.02662	0.09903
	(D * DE * !SCE * !Q * Q_N)	0.01804	0.02152	0.09390
	(D * DE * !SCE * !Q * Q_N)	0.02310	0.02658	0.09895
	(D * !SCE * Q * !Q_N)	0.00933	0.01287	0.08373
	(D * !SCE * Q * !Q_N)	0.01439	0.01792	0.08878
	(D * !DE * !SCE * !Q * Q_N)	0.00938	0.01286	0.08357
	(D * !DE * !SCE * !Q * Q_N)	0.01444	0.01793	0.08861
	(!SCD * SCE * Q * !Q_N)	0.02033	0.02407	0.09600
	(!SCD * SCE * Q * !Q_N)	0.02540	0.02915	0.10107
	(!SCD * SCE * !Q * Q_N)	0.00939	0.01287	0.08357
	(!SCD * SCE * !Q * Q_N)	0.01445	0.01793	0.08861
	(!D * DE * !SCE * Q * !Q_N)	0.02060	0.02429	0.09628
	(!D * DE * !SCE * Q * !Q_N)	0.02566	0.02934	0.10133
	(!D * !SCE * !Q * Q_N)	0.00938	0.01287	0.08357
	(!D * !SCE * !Q * Q_N)	0.01444	0.01793	0.08861
	(!D * !DE * !SCE * Q * !Q_N)	0.00933	0.01287	0.08373
	(!D * !DE * !SCE * Q * !Q_N)	0.01439	0.01791	0.08877

sky130_fd_sc_hs__sedfxbp_2	**(SCD * SCE * Q * !Q_N)**	0.00948	0.01307	0.08450
	(SCD * SCE * Q * !Q_N)	0.01452	0.01811	0.08954
	(SCD * SCE * !Q * Q_N)	0.01794	0.02148	0.09442
	(SCD * SCE * !Q * Q_N)	0.02299	0.02652	0.09945
	(D * DE * !SCE * !Q * Q_N)	0.01792	0.02145	0.09436
	(D * DE * !SCE * !Q * Q_N)	0.02297	0.02649	0.09941
	(D * !SCE * Q * !Q_N)	0.00949	0.01308	0.08452
	(D * !SCE * Q * !Q_N)	0.01454	0.01812	0.08956
	(D * !DE * !SCE * !Q * Q_N)	0.00940	0.01294	0.08420
	(D * !DE * !SCE * !Q * Q_N)	0.01445	0.01799	0.08925
	(!SCD * SCE * Q * !Q_N)	0.02037	0.02412	0.09669
	(!SCD * SCE * Q * !Q_N)	0.02544	0.02918	0.10174
	(!SCD * SCE * !Q * Q_N)	0.00939	0.01294	0.08419
	(!SCD * SCE * !Q * Q_N)	0.01444	0.01799	0.08924
	(!D * DE * !SCE * Q * !Q_N)	0.02064	0.02438	0.09696
	(!D * DE * !SCE * Q * !Q_N)	0.02568	0.02944	0.10201
	(!D * !SCE * !Q * Q_N)	0.00940	0.01295	0.08421
	(!D * !SCE * !Q * Q_N)	0.01445	0.01799	0.08925
	(!D * !DE * !SCE * Q * !Q_N)	0.00949	0.01308	0.08451
	(!D * !DE * !SCE * Q * !Q_N)	0.01454	0.01812	0.08956

SKY130_FD_SC_HS__SEDFXTPx

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage 1.89, 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	0.00202	0.00393	0.00183	0.00384	0.00282	1.27182
sky130_fd_sc_hs__sedfxtp_2	0.00212	0.00396	0.00185	0.00389	0.00285	2.53798
sky130_fd_sc_hs__sedfxtp_4	0.00213	0.00394	0.00185	0.00387	0.00294	4.77081

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sedfxtp_1	0.00000	1.56563	2.96363
sky130_fd_sc_hs__sedfxtp_2	0.00000	1.62054	3.06496
sky130_fd_sc_hs__sedfxtp_4	0.00000	1.73035	3.26762

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)**	0.16434	0.61167	5.78451
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RR)**	0.16897	0.53248	5.88561
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RR)**	0.19136	0.49049	5.86455

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxtp_1	**CLK->Q (RF)**	0.14250	0.39664	2.14687
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RF)**	0.16253	0.40128	2.24382
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RF)**	0.21639	0.44621	2.37382

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)	-0.13855	-0.22709	-1.05535
	setup	CLK (R)	0.16390	0.24427	1.07046
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.13788	-0.22839	-1.05475
	setup	CLK (R)	0.16363	0.24385	1.07024
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.13842	-0.22900	-1.06007
	setup	CLK (R)	0.16333	0.24504	1.07876

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)	-0.24845	-0.39332	-3.47853
	setup	CLK (R)	0.30710	0.43930	3.51163
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.24568	-0.39080	-3.47817
	setup	CLK (R)	0.30945	0.43645	3.51442
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.24803	-0.39256	-3.48289
	setup	CLK (R)	0.30169	0.43268	3.52400

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)	-0.03258	-0.04863	0.01130
	setup	CLK (R)	0.34213	0.36745	0.94090
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.03258	-0.04863	0.01343
	setup	CLK (R)	0.33925	0.36529	0.94264
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.03258	-0.04863	0.00943
	setup	CLK (R)	0.33233	0.36209	0.94870

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)	-0.19265	-0.31801	-2.96633
	setup	CLK (R)	0.28514	0.40781	3.46305
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.19530	-0.31886	-2.96543
	setup	CLK (R)	0.28720	0.40690	3.46057
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.19621	-0.31924	-2.96637
	setup	CLK (R)	0.28698	0.40907	3.46578

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)	-0.03258	-0.04863	0.01130
	hold	CLK (R)	-0.13303	-0.16042	-0.36386
	setup	CLK (R)	0.16227	0.22381	0.94090
	setup	CLK (R)	0.34213	0.36745	0.56859
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.03258	-0.04863	0.01343
	hold	CLK (R)	-0.13225	-0.15346	-0.35748
	setup	CLK (R)	0.16406	0.22592	0.94264
	setup	CLK (R)	0.33925	0.36529	0.57895
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.03258	-0.04863	0.00943
	hold	CLK (R)	-0.13323	-0.15704	-0.36031
	setup	CLK (R)	0.16207	0.22392	0.94870
	setup	CLK (R)	0.33233	0.36209	0.59118

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)	-0.26915	-0.39365	-3.45832
	hold	CLK (R)	-0.19265	-0.31801	-2.96633
	setup	CLK (R)	0.28514	0.40781	3.46305
	setup	CLK (R)	0.20922	0.32524	2.97016
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.26840	-0.39339	-3.45550
	hold	CLK (R)	-0.19530	-0.31886	-2.96543
	setup	CLK (R)	0.28720	0.40690	3.46057
	setup	CLK (R)	0.20702	0.32662	2.97019
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.26780	-0.39549	-3.46159
	hold	CLK (R)	-0.19621	-0.31924	-2.96637
	setup	CLK (R)	0.28698	0.40907	3.46578
	setup	CLK (R)	0.20609	0.32543	2.96844

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)	-0.08177	-0.14814	-0.73891
	setup	CLK (R)	0.10239	0.16012	0.75416
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.08473	-0.14947	-0.73807
	setup	CLK (R)	0.10252	0.16012	0.74981
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.08239	-0.15110	-0.74419
	setup	CLK (R)	0.10015	0.16012	0.75816

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)	-0.18137	-0.29656	-3.19448
	setup	CLK (R)	0.22994	0.33907	3.23629
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.17864	-0.29240	-3.18859
	setup	CLK (R)	0.22575	0.33706	3.23596
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.18208	-0.29588	-3.19839
	setup	CLK (R)	0.22239	0.33460	3.25523

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)	0.00600	0.01475	0.35307
	setup	CLK (R)	0.24608	0.26489	0.66651
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	0.00303	0.01475	0.35601
	setup	CLK (R)	0.24178	0.25887	0.66538
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	0.00637	0.01475	0.34214
	setup	CLK (R)	0.23804	0.25639	0.67341

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)	-0.13297	-0.26628	-2.96996
	setup	CLK (R)	0.19315	0.31306	3.31835
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.13049	-0.26393	-2.97216
	setup	CLK (R)	0.19066	0.31087	3.32005
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.13337	-0.26565	-2.97340
	setup	CLK (R)	0.18645	0.30767	3.32803

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)	-0.19606	-0.21700	-0.37010
	hold	CLK (R)	0.00600	0.01475	0.35307
	hold	CLK (R)	-0.07218	-0.14232	-0.63472
	hold	CLK (R)	-0.09288	-0.12330	-0.25699
	setup	CLK (R)	0.24310	0.26126	0.43895
	setup	CLK (R)	0.08767	0.15418	0.66635
	setup	CLK (R)	0.08820	0.15440	0.66651
	setup	CLK (R)	0.24608	0.26489	0.43964
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.19393	-0.21472	-0.36523
	hold	CLK (R)	0.00303	0.01475	0.35601
	hold	CLK (R)	-0.07232	-0.14236	-0.63430
	hold	CLK (R)	-0.09354	-0.11784	-0.25350
	setup	CLK (R)	0.24178	0.25870	0.44760
	setup	CLK (R)	0.08985	0.15435	0.66228
	setup	CLK (R)	0.08975	0.15455	0.66538
	setup	CLK (R)	0.24171	0.25887	0.44648
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.19839	-0.21776	-0.36971
	hold	CLK (R)	0.00637	0.01475	0.34214
	hold	CLK (R)	-0.07339	-0.14503	-0.64110
	hold	CLK (R)	-0.09593	-0.11900	-0.26087
	setup	CLK (R)	0.23784	0.25631	0.46379
	setup	CLK (R)	0.08801	0.15591	0.67341
	setup	CLK (R)	0.08867	0.15591	0.67270
	setup	CLK (R)	0.23804	0.25639	0.46628

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)	-0.13989	-0.27565	-2.99098
	hold	CLK (R)	-0.13933	-0.26899	-3.27154
	hold	CLK (R)	-0.13643	-0.26628	-3.28803
	hold	CLK (R)	-0.13297	-0.27004	-2.96996
	setup	CLK (R)	0.16459	0.28860	3.00288
	setup	CLK (R)	0.15889	0.28195	3.27503
	setup	CLK (R)	0.19315	0.31306	3.31835
	setup	CLK (R)	0.14829	0.27608	2.97452
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.14073	-0.27498	-2.99029
	hold	CLK (R)	-0.13966	-0.26744	-3.26413
	hold	CLK (R)	-0.13049	-0.26393	-3.28158
	hold	CLK (R)	-0.13416	-0.26693	-2.97216
	setup	CLK (R)	0.16460	0.28859	3.00289
	setup	CLK (R)	0.15725	0.28079	3.27241
	setup	CLK (R)	0.19066	0.31087	3.32005
	setup	CLK (R)	0.14947	0.27603	2.97353
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.14302	-0.27708	-2.99121
	hold	CLK (R)	-0.14051	-0.26881	-3.27239
	hold	CLK (R)	-0.13337	-0.26565	-3.28915
	hold	CLK (R)	-0.13420	-0.26865	-2.97340
	setup	CLK (R)	0.16367	0.29045	3.00543
	setup	CLK (R)	0.15754	0.28284	3.27827
	setup	CLK (R)	0.18645	0.30767	3.32803
	setup	CLK (R)	0.14827	0.27720	2.97554

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 ()**	0.07666	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.07666	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.11465	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.07666	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.11703	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.07666	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.11465	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.11465	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.07666	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.11703	0.63232	16.50020
sky130_fd_sc_hs__sedfxtp_2	**min_pulse_width**	**CLK ()**	0.08615	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.08615	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.15265	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.08615	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.15265	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.08615	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.15265	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.15265	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.08615	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.15265	0.63232	16.50020
sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK ()**	0.10753	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.10753	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.21913	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.10990	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.22151	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.10990	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.21913	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.21913	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.10990	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.22151	0.63232	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 ()	0.12415	0.63232	16.50020
	min_pulse_width	CLK ()	0.13365	0.63232	16.50020
	min_pulse_width	CLK ()	0.18826	0.63232	16.50020
	min_pulse_width	CLK ()	0.12415	0.63232	16.50020
	min_pulse_width	CLK ()	0.18826	0.63232	16.50020
	min_pulse_width	CLK ()	0.12415	0.63232	16.50020
	min_pulse_width	CLK ()	0.19539	0.63232	16.50020
	min_pulse_width	CLK ()	0.18826	0.63232	16.50020
	min_pulse_width	CLK ()	0.12415	0.63232	16.50020
	min_pulse_width	CLK ()	0.18826	0.63232	16.50020
sky130_fd_sc_hs__sedfxtp_2	min_pulse_width	CLK ()	0.12415	0.63232	16.50020
	min_pulse_width	CLK ()	0.13365	0.63232	16.50020
	min_pulse_width	CLK ()	0.18589	0.63232	16.50020
	min_pulse_width	CLK ()	0.12415	0.63232	16.50020
	min_pulse_width	CLK ()	0.18589	0.63232	16.50020
	min_pulse_width	CLK ()	0.12415	0.63232	16.50020
	min_pulse_width	CLK ()	0.19539	0.63232	16.50020
	min_pulse_width	CLK ()	0.18589	0.63232	16.50020
	min_pulse_width	CLK ()	0.12415	0.63232	16.50020
	min_pulse_width	CLK ()	0.18589	0.63232	16.50020

sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK ()**	0.12177	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.13127	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.17877	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.12177	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.17877	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.12177	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.18589	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.17877	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.12177	0.63232	16.50020
	min_pulse_width	**CLK ()**	0.17877	0.63232	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	0.03713	0.04041	0.11317
	CLK	0.03099	0.03430	0.10720
sky130_fd_sc_hs__sedfxtp_2	CLK	0.04098	0.04406	0.11746
	CLK	0.03478	0.03788	0.11129
sky130_fd_sc_hs__sedfxtp_4	CLK	0.04860	0.05200	0.12551
	CLK	0.04225	0.04568	0.11945

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	CLK	0.03377	0.03667	0.11054
	CLK	0.02986	0.03278	0.10650
sky130_fd_sc_hs__sedfxtp_2	CLK	0.03865	0.04051	0.11472
	CLK	0.03475	0.03652	0.11039
sky130_fd_sc_hs__sedfxtp_4	CLK	0.04980	0.04804	0.12116
	CLK	0.04572	0.04375	0.11710

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.00582	0.00703	0.04113
	(DE * SCE)	0.00210	0.00329	0.03740
	(CLK * DE * !SCE)	0.01210	0.01287	0.04483
	(CLK * DE * !SCE)	0.00716	0.00792	0.03989
	(CLK * !DE * !SCE)	0.00137	0.00140	0.00138
	(CLK * !DE * !SCE)	-0.00095	-0.00098	-0.00096
	(!DE * SCE)	0.00140	0.00141	0.00140
	(!DE * SCE)	-0.00095	-0.00096	-0.00095
	(!CLK * DE * !SCE * Q)	0.02113	0.02226	0.05749
	(!CLK * DE * !SCE * Q)	0.01621	0.01731	0.05255
	(!CLK * DE * !SCE * !Q)	0.02057	0.02145	0.05646
	(!CLK * DE * !SCE * !Q)	0.01557	0.01646	0.05146
	(!CLK * !DE * !SCE)	0.00138	0.00140	0.00139
	(!CLK * !DE * !SCE)	-0.00096	-0.00098	-0.00096
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.00601	0.00718	0.04125
	(DE * SCE)	0.00211	0.00328	0.03735
	(CLK * DE * !SCE)	0.01229	0.01303	0.04495
	(CLK * DE * !SCE)	0.00715	0.00790	0.03982
	(CLK * !DE * !SCE)	0.00144	0.00144	0.00145
	(CLK * !DE * !SCE)	-0.00101	-0.00101	-0.00101
	(!DE * SCE)	0.00146	0.00146	0.00146
	(!DE * SCE)	-0.00101	-0.00101	-0.00100
	(!CLK * DE * !SCE * Q)	0.02128	0.02238	0.05765
	(!CLK * DE * !SCE * Q)	0.01615	0.01724	0.05252
	(!CLK * DE * !SCE * !Q)	0.02078	0.02181	0.05664
	(!CLK * DE * !SCE * !Q)	0.01559	0.01662	0.05145
	(!CLK * !DE * !SCE)	0.00144	0.00146	0.00144
	(!CLK * !DE * !SCE)	-0.00101	-0.00103	-0.00101

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.00603	0.00721	0.04130
	(DE * SCE)	0.00212	0.00329	0.03738
	(CLK * DE * !SCE)	0.01237	0.01311	0.04497
	(CLK * DE * !SCE)	0.00723	0.00798	0.03983
	(CLK * !DE * !SCE)	0.00145	0.00145	0.00145
	(CLK * !DE * !SCE)	-0.00101	-0.00101	-0.00101
	(!DE * SCE)	0.00146	0.00147	0.00146
	(!DE * SCE)	-0.00101	-0.00101	-0.00101
	(!CLK * DE * !SCE * Q)	0.02115	0.02226	0.05753
	(!CLK * DE * !SCE * Q)	0.01602	0.01712	0.05240
	(!CLK * DE * !SCE * !Q)	0.02059	0.02161	0.05645
	(!CLK * DE * !SCE * !Q)	0.01540	0.01642	0.05126
	(!CLK * !DE * !SCE)	0.00145	0.00147	0.00145
	(!CLK * !DE * !SCE)	-0.00101	-0.00103	-0.00101

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

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

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.00203	0.00375	0.03786
	(DE * SCE)	0.00582	0.00754	0.04164
	(CLK * DE * !SCE)	0.00380	0.00512	0.03765
	(CLK * DE * !SCE)	0.00879	0.01013	0.04265
	(CLK * !DE * !SCE)	-0.00041	-0.00041	-0.00041
	(CLK * !DE * !SCE)	0.00211	0.00212	0.00211
	(!DE * SCE)	-0.00040	-0.00040	-0.00040
	(!DE * SCE)	0.00212	0.00212	0.00212
	(!CLK * DE * !SCE * Q)	0.01347	0.01526	0.05362
	(!CLK * DE * !SCE * Q)	0.01841	0.02019	0.05856
	(!CLK * DE * !SCE * !Q)	0.01456	0.01641	0.05466
	(!CLK * DE * !SCE * !Q)	0.01955	0.02140	0.05966
	(!CLK * !DE * !SCE)	-0.00041	-0.00042	-0.00041
	(!CLK * !DE * !SCE)	0.00211	0.00212	0.00211
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.00196	0.00367	0.03774
	(DE * SCE)	0.00594	0.00763	0.04171
	(CLK * DE * !SCE)	0.00371	0.00502	0.03751
	(CLK * DE * !SCE)	0.00889	0.01021	0.04269
	(CLK * !DE * !SCE)	-0.00041	-0.00041	-0.00041
	(CLK * !DE * !SCE)	0.00221	0.00224	0.00222
	(!DE * SCE)	-0.00040	-0.00040	-0.00040
	(!DE * SCE)	0.00223	0.00224	0.00223
	(!CLK * DE * !SCE * Q)	0.01339	0.01505	0.05350
	(!CLK * DE * !SCE * Q)	0.01852	0.02017	0.05862
	(!CLK * DE * !SCE * !Q)	0.01442	0.01616	0.05449
	(!CLK * DE * !SCE * !Q)	0.01960	0.02133	0.05967
	(!CLK * !DE * !SCE)	-0.00041	-0.00042	-0.00041
	(!CLK * !DE * !SCE)	0.00222	0.00224	0.00222

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.00188	0.00360	0.03770
	(DE * SCE)	0.00587	0.00758	0.04167
	(CLK * DE * !SCE)	0.00393	0.00523	0.03767
	(CLK * DE * !SCE)	0.00912	0.01042	0.04286
	(CLK * !DE * !SCE)	-0.00041	-0.00041	-0.00041
	(CLK * !DE * !SCE)	0.00222	0.00224	0.00223
	(!DE * SCE)	-0.00040	-0.00040	-0.00040
	(!DE * SCE)	0.00223	0.00224	0.00224
	(!CLK * DE * !SCE * Q)	0.01350	0.01517	0.05359
	(!CLK * DE * !SCE * Q)	0.01864	0.02029	0.05872
	(!CLK * DE * !SCE * !Q)	0.01460	0.01634	0.05464
	(!CLK * DE * !SCE * !Q)	0.01978	0.02152	0.05983
	(!CLK * !DE * !SCE)	-0.00041	-0.00041	-0.00041
	(!CLK * !DE * !SCE)	0.00222	0.00224	0.00223

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.01108	0.01366	0.08360
	SCE	0.00279	0.00533	0.07530
	(CLK * !SCE)	0.01712	0.01947	0.08797
	(CLK * !SCE)	0.00763	0.00995	0.07846
	(!CLK * D * !SCE * Q)	0.00694	0.00851	0.05270
	(!CLK * D * !SCE * Q)	0.00005	0.00161	0.04581
	(!CLK * D * !SCE * !Q)	0.02603	0.02853	0.09987
	(!CLK * D * !SCE * !Q)	0.01654	0.01901	0.09038
	(!CLK * !D * !SCE * Q)	0.02152	0.02327	0.06838
	(!CLK * !D * !SCE * Q)	0.01729	0.01901	0.06416
	(!CLK * !D * !SCE * !Q)	0.00678	0.00860	0.05276
	(!CLK * !D * !SCE * !Q)	-0.00005	0.00174	0.04592

sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.01124	0.01380	0.08370
	SCE	0.00279	0.00531	0.07525
	(CLK * !SCE)	0.01735	0.01969	0.08815
	(CLK * !SCE)	0.00768	0.00999	0.07847
	(!CLK * D * !SCE * Q)	0.00698	0.00855	0.05274
	(!CLK * D * !SCE * Q)	-0.00001	0.00155	0.04575
	(!CLK * D * !SCE * !Q)	0.02620	0.02870	0.10003
	(!CLK * D * !SCE * !Q)	0.01654	0.01899	0.09034
	(!CLK * !D * !SCE * Q)	0.02152	0.02327	0.06841
	(!CLK * !D * !SCE * Q)	0.01726	0.01899	0.06415
	(!CLK * !D * !SCE * !Q)	0.00682	0.00864	0.05280
	(!CLK * !D * !SCE * !Q)	-0.00010	0.00168	0.04586
sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.01121	0.01379	0.08370
	SCE	0.00280	0.00533	0.07529
	(CLK * !SCE)	0.01738	0.01972	0.08815
	(CLK * !SCE)	0.00775	0.01007	0.07851
	(!CLK * D * !SCE * Q)	0.00696	0.00853	0.05273
	(!CLK * D * !SCE * Q)	0.00000	0.00157	0.04577
	(!CLK * D * !SCE * !Q)	0.02598	0.02850	0.09984
	(!CLK * D * !SCE * !Q)	0.01636	0.01883	0.09020
	(!CLK * !D * !SCE * Q)	0.02159	0.02337	0.06852
	(!CLK * !D * !SCE * Q)	0.01739	0.01915	0.06429
	(!CLK * !D * !SCE * !Q)	0.00681	0.00863	0.05279
	(!CLK * !D * !SCE * !Q)	-0.00009	0.00170	0.04589

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

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

sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.00298	0.00603	0.07598
	SCE	0.01127	0.01435	0.08427
	(CLK * !SCE)	0.00469	0.00750	0.07624
	(CLK * !SCE)	0.01419	0.01703	0.08574
	(!CLK * D * !SCE * Q)	-0.00012	0.00223	0.04623
	(!CLK * D * !SCE * Q)	0.00676	0.00911	0.05312
	(!CLK * D * !SCE * !Q)	0.01523	0.01825	0.09076
	(!CLK * D * !SCE * !Q)	0.02473	0.02775	0.10026
	(!CLK * !D * !SCE * Q)	0.02111	0.02341	0.06754
	(!CLK * !D * !SCE * Q)	0.02530	0.02764	0.07179
	(!CLK * !D * !SCE * !Q)	-0.00030	0.00198	0.04615
	(!CLK * !D * !SCE * !Q)	0.00651	0.00883	0.05300
sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.00297	0.00601	0.07594
	SCE	0.01143	0.01449	0.08439
	(CLK * !SCE)	0.00466	0.00745	0.07617
	(CLK * !SCE)	0.01433	0.01715	0.08584
	(!CLK * D * !SCE * Q)	-0.00015	0.00220	0.04620
	(!CLK * D * !SCE * Q)	0.00683	0.00917	0.05318
	(!CLK * D * !SCE * !Q)	0.01514	0.01815	0.09065
	(!CLK * D * !SCE * !Q)	0.02481	0.02782	0.10032
	(!CLK * !D * !SCE * Q)	0.02112	0.02341	0.06754
	(!CLK * !D * !SCE * Q)	0.02533	0.02767	0.07182
	(!CLK * !D * !SCE * !Q)	-0.00033	0.00195	0.04611
	(!CLK * !D * !SCE * !Q)	0.00658	0.00890	0.05307

sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.00290	0.00595	0.07590
	SCE	0.01133	0.01440	0.08432
	(CLK * !SCE)	0.00489	0.00768	0.07635
	(CLK * !SCE)	0.01452	0.01735	0.08599
	(!CLK * D * !SCE * Q)	-0.00015	0.00220	0.04621
	(!CLK * D * !SCE * Q)	0.00680	0.00914	0.05316
	(!CLK * D * !SCE * !Q)	0.01532	0.01833	0.09083
	(!CLK * D * !SCE * !Q)	0.02496	0.02796	0.10046
	(!CLK * !D * !SCE * Q)	0.02099	0.02329	0.06740
	(!CLK * !D * !SCE * Q)	0.02517	0.02751	0.07165
	(!CLK * !D * !SCE * !Q)	-0.00033	0.00196	0.04612
	(!CLK * !D * !SCE * !Q)	0.00655	0.00886	0.05304

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.00672	0.00747	0.03441
	(CLK * SCE)	0.00265	0.00338	0.03034
	(!CLK * SCE)	0.01555	0.01639	0.04616
	(!CLK * SCE)	0.01148	0.01232	0.04209
	!SCE	0.00134	0.00114	0.00111
	!SCE	-0.00140	-0.00162	-0.00164
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.00686	0.00761	0.03455
	(CLK * SCE)	0.00274	0.00348	0.03044
	(!CLK * SCE)	0.01564	0.01648	0.04626
	(!CLK * SCE)	0.01152	0.01236	0.04214
	!SCE	0.00137	0.00117	0.00114
	!SCE	-0.00141	-0.00163	-0.00165
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.00687	0.00761	0.03450
	(CLK * SCE)	0.00277	0.00349	0.03040
	(!CLK * SCE)	0.01540	0.01624	0.04602
	(!CLK * SCE)	0.01130	0.01212	0.04192
	!SCE	0.00136	0.00116	0.00113
	!SCE	-0.00140	-0.00162	-0.00164

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.00345	0.00424	0.03123
	(CLK * SCE)	0.00752	0.00831	0.03529
	(!CLK * SCE)	0.01317	0.01407	0.04416
	(!CLK * SCE)	0.01725	0.01816	0.04822
	!SCE	-0.00103	-0.00106	-0.00106
	!SCE	0.00168	0.00170	0.00169
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.00334	0.00413	0.03113
	(CLK * SCE)	0.00746	0.00825	0.03523
	(!CLK * SCE)	0.01298	0.01391	0.04399
	(!CLK * SCE)	0.01710	0.01803	0.04810
	!SCE	-0.00106	-0.00109	-0.00109
	!SCE	0.00169	0.00171	0.00171
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.00370	0.00447	0.03140
	(CLK * SCE)	0.00780	0.00858	0.03549
	(!CLK * SCE)	0.01332	0.01421	0.04477
	(!CLK * SCE)	0.01743	0.01832	0.04884
	!SCE	-0.00105	-0.00108	-0.00108
	!SCE	0.00169	0.00171	0.00170

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(CLK * D)**	0.00979	0.01284	0.08622
	(CLK * D)	0.00270	0.00573	0.07913
	(CLK * !D)	0.01018	0.01320	0.08599
	(CLK * !D)	0.00309	0.00609	0.07889
	(!CLK * D * SCD * Q)	0.00571	0.00762	0.05183
	(!CLK * D * SCD * Q)	-0.00016	0.00173	0.04594
	(!CLK * D * DE * SCD * !Q)	0.00554	0.00745	0.05166
	(!CLK * D * DE * SCD * !Q)	-0.00033	0.00156	0.04577
	(!CLK * D * DE * !SCD * !Q)	0.02019	0.02164	0.07909
	(!CLK * D * DE * !SCD * !Q)	0.01543	0.01687	0.07427
	(!CLK * D * !SCD * Q)	0.02010	0.02154	0.07906
	(!CLK * D * !SCD * Q)	0.01533	0.01676	0.07425
	(!CLK * D * !DE * SCD * !Q)	0.01861	0.02167	0.09817
	(!CLK * D * !DE * SCD * !Q)	0.01153	0.01457	0.09107
	(!CLK * D * !DE * !SCD * !Q)	0.00646	0.00836	0.05257
	(!CLK * D * !DE * !SCD * !Q)	0.00046	0.00234	0.04656
	(!CLK * !D * SCD * !Q)	0.01861	0.02168	0.09755
	(!CLK * !D * SCD * !Q)	0.01152	0.01458	0.09046
	(!CLK * !D * DE * SCD * Q)	0.01915	0.02218	0.09801
	(!CLK * !D * DE * SCD * Q)	0.01206	0.01505	0.09091
	(!CLK * !D * DE * !SCD * Q)	0.00663	0.00854	0.05275
	(!CLK * !D * DE * !SCD * Q)	0.00064	0.00251	0.04673
	(!CLK * !D * !SCD * !Q)	0.00646	0.00837	0.05258
	(!CLK * !D * !SCD * !Q)	0.00047	0.00234	0.04656
	(!CLK * !D * !DE * SCD * Q)	0.00571	0.00762	0.05183
	(!CLK * !D * !DE * SCD * Q)	-0.00016	0.00173	0.04594
	(!CLK * !D * !DE * !SCD * Q)	0.02012	0.02152	0.07909
	(!CLK * !D * !DE * !SCD * Q)	0.01535	0.01676	0.07427

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.00996	0.01299	0.08636
	(CLK * D)	0.00277	0.00578	0.07918
	(CLK * !D)	0.01026	0.01327	0.08604
	(CLK * !D)	0.00307	0.00606	0.07884
	(!CLK * D * SCD * Q)	0.00579	0.00769	0.05187
	(!CLK * D * SCD * Q)	-0.00017	0.00169	0.04589
	(!CLK * D * DE * SCD * !Q)	0.00563	0.00753	0.05171
	(!CLK * D * DE * SCD * !Q)	-0.00033	0.00154	0.04573
	(!CLK * D * DE * !SCD * !Q)	0.02013	0.02159	0.07901
	(!CLK * D * DE * !SCD * !Q)	0.01528	0.01670	0.07411
	(!CLK * D * !SCD * Q)	0.02007	0.02153	0.07903
	(!CLK * D * !SCD * Q)	0.01522	0.01666	0.07413
	(!CLK * D * !DE * SCD * !Q)	0.01873	0.02181	0.09827
	(!CLK * D * !DE * SCD * !Q)	0.01154	0.01458	0.09107
	(!CLK * D * !DE * !SCD * !Q)	0.00652	0.00842	0.05261
	(!CLK * D * !DE * !SCD * !Q)	0.00045	0.00230	0.04650
	(!CLK * !D * SCD * !Q)	0.01873	0.02182	0.09765
	(!CLK * !D * SCD * !Q)	0.01154	0.01459	0.09045
	(!CLK * !D * DE * SCD * Q)	0.01920	0.02223	0.09803
	(!CLK * !D * DE * SCD * Q)	0.01201	0.01502	0.09085
	(!CLK * !D * DE * !SCD * Q)	0.00669	0.00858	0.05277
	(!CLK * !D * DE * !SCD * Q)	0.00061	0.00247	0.04666
	(!CLK * !D * !SCD * !Q)	0.00653	0.00842	0.05261
	(!CLK * !D * !SCD * !Q)	0.00045	0.00231	0.04650
	(!CLK * !D * !DE * SCD * Q)	0.00579	0.00768	0.05187
	(!CLK * !D * !DE * SCD * Q)	-0.00017	0.00169	0.04588
	(!CLK * !D * !DE * !SCD * Q)	0.02009	0.02151	0.07906
	(!CLK * !D * !DE * !SCD * Q)	0.01524	0.01665	0.07416

sky130_fd_sc_hs__sedfxtp_4	**(CLK * D)**	0.00998	0.01299	0.08633
	(CLK * D)	0.00284	0.00583	0.07919
	(CLK * !D)	0.01030	0.01328	0.08600
	(CLK * !D)	0.00317	0.00612	0.07888
	(!CLK * D * SCD * Q)	0.00575	0.00765	0.05189
	(!CLK * D * SCD * Q)	-0.00017	0.00171	0.04595
	(!CLK * D * DE * SCD * !Q)	0.00559	0.00749	0.05173
	(!CLK * D * DE * SCD * !Q)	-0.00033	0.00156	0.04579
	(!CLK * D * DE * !SCD * !Q)	0.02038	0.02185	0.07932
	(!CLK * D * DE * !SCD * !Q)	0.01557	0.01701	0.07448
	(!CLK * D * !SCD * Q)	0.02029	0.02176	0.07928
	(!CLK * D * !SCD * Q)	0.01548	0.01691	0.07442
	(!CLK * D * !DE * SCD * !Q)	0.01850	0.02159	0.09807
	(!CLK * D * !DE * SCD * !Q)	0.01137	0.01441	0.09093
	(!CLK * D * !DE * !SCD * !Q)	0.00650	0.00840	0.05263
	(!CLK * D * !DE * !SCD * !Q)	0.00045	0.00233	0.04657
	(!CLK * !D * SCD * !Q)	0.01850	0.02160	0.09746
	(!CLK * !D * SCD * !Q)	0.01136	0.01442	0.09032
	(!CLK * !D * DE * SCD * Q)	0.01902	0.02202	0.09789
	(!CLK * !D * DE * SCD * Q)	0.01188	0.01485	0.09075
	(!CLK * !D * DE * !SCD * Q)	0.00665	0.00856	0.05280
	(!CLK * !D * DE * !SCD * Q)	0.00062	0.00249	0.04673
	(!CLK * !D * !SCD * !Q)	0.00650	0.00840	0.05264
	(!CLK * !D * !SCD * !Q)	0.00046	0.00233	0.04657
	(!CLK * !D * !DE * SCD * Q)	0.00575	0.00765	0.05188
	(!CLK * !D * !DE * SCD * Q)	-0.00017	0.00171	0.04595
	(!CLK * !D * !DE * !SCD * Q)	0.02031	0.02174	0.07931
	(!CLK * !D * !DE * !SCD * Q)	0.01549	0.01690	0.07445

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * D)	0.00144	0.00571	0.07890
	(CLK * D)	0.00852	0.01282	0.08599
	(CLK * !D)	0.00144	0.00572	0.07832
	(CLK * !D)	0.00853	0.01283	0.08542
	(!CLK * D * SCD * Q)	0.00025	0.00278	0.04700
	(!CLK * D * SCD * Q)	0.00612	0.00868	0.05288
	(!CLK * D * DE * SCD * !Q)	0.00043	0.00296	0.04718
	(!CLK * D * DE * SCD * !Q)	0.00630	0.00886	0.05306
	(!CLK * D * DE * !SCD * !Q)	0.01540	0.01938	0.08348
	(!CLK * D * DE * !SCD * !Q)	0.02018	0.02418	0.08809
	(!CLK * D * !SCD * Q)	0.01556	0.01972	0.08356
	(!CLK * D * !SCD * Q)	0.02034	0.02452	0.08818
	(!CLK * D * !DE * SCD * !Q)	0.01171	0.01598	0.09368
	(!CLK * D * !DE * SCD * !Q)	0.01880	0.02309	0.10077
	(!CLK * D * !DE * !SCD * !Q)	-0.00028	0.00232	0.04630
	(!CLK * D * !DE * !SCD * !Q)	0.00570	0.00832	0.05231
	(!CLK * !D * SCD * !Q)	0.01177	0.01605	0.09329
	(!CLK * !D * SCD * !Q)	0.01887	0.02315	0.10039
	(!CLK * !D * DE * SCD * Q)	0.01132	0.01559	0.09280
	(!CLK * !D * DE * SCD * Q)	0.01842	0.02268	0.09990
	(!CLK * !D * DE * !SCD * Q)	-0.00046	0.00215	0.04613
	(!CLK * !D * DE * !SCD * Q)	0.00552	0.00815	0.05214
	(!CLK * !D * !SCD * !Q)	-0.00028	0.00232	0.04630
	(!CLK * !D * !SCD * !Q)	0.00570	0.00833	0.05231
	(!CLK * !D * !DE * SCD * Q)	0.00025	0.00278	0.04700
	(!CLK * !D * !DE * SCD * Q)	0.00612	0.00867	0.05287
	(!CLK * !D * !DE * !SCD * Q)	0.01554	0.01952	0.08364
	(!CLK * !D * !DE * !SCD * Q)	0.02032	0.02432	0.08826

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.00137	0.00564	0.07882
	(CLK * D)	0.00856	0.01285	0.08601
	(CLK * !D)	0.00137	0.00565	0.07823
	(CLK * !D)	0.00856	0.01286	0.08543
	(!CLK * D * SCD * Q)	0.00021	0.00273	0.04693
	(!CLK * D * SCD * Q)	0.00618	0.00872	0.05290
	(!CLK * D * DE * SCD * !Q)	0.00038	0.00290	0.04710
	(!CLK * D * DE * SCD * !Q)	0.00635	0.00889	0.05307
	(!CLK * D * DE * !SCD * !Q)	0.01537	0.01934	0.08342
	(!CLK * D * DE * !SCD * !Q)	0.02023	0.02422	0.08812
	(!CLK * D * !SCD * Q)	0.01548	0.01963	0.08347
	(!CLK * D * !SCD * Q)	0.02034	0.02449	0.08816
	(!CLK * D * !DE * SCD * !Q)	0.01157	0.01585	0.09352
	(!CLK * D * !DE * SCD * !Q)	0.01877	0.02304	0.10073
	(!CLK * D * !DE * !SCD * !Q)	-0.00032	0.00227	0.04624
	(!CLK * D * !DE * !SCD * !Q)	0.00576	0.00837	0.05234
	(!CLK * !D * SCD * !Q)	0.01163	0.01591	0.09315
	(!CLK * !D * SCD * !Q)	0.01883	0.02311	0.10035
	(!CLK * !D * DE * SCD * Q)	0.01126	0.01552	0.09272
	(!CLK * !D * DE * SCD * Q)	0.01846	0.02270	0.09992
	(!CLK * !D * DE * !SCD * Q)	-0.00048	0.00211	0.04608
	(!CLK * !D * DE * !SCD * Q)	0.00560	0.00821	0.05218
	(!CLK * !D * !SCD * !Q)	-0.00031	0.00227	0.04624
	(!CLK * !D * !SCD * !Q)	0.00576	0.00837	0.05235
	(!CLK * !D * !DE * SCD * Q)	0.00021	0.00272	0.04693
	(!CLK * !D * !DE * SCD * Q)	0.00618	0.00872	0.05290
	(!CLK * !D * !DE * !SCD * Q)	0.01546	0.01942	0.08351
	(!CLK * !D * !DE * !SCD * Q)	0.02033	0.02430	0.08819

	(CLK * D)	0.00172	0.00596	0.07909
	(CLK * D)	0.00886	0.01312	0.08623
	(CLK * !D)	0.00173	0.00597	0.07852
	(CLK * !D)	0.00887	0.01312	0.08567
	(!CLK * D * SCD * Q)	0.00024	0.00277	0.04701
	(!CLK * D * SCD * Q)	0.00616	0.00871	0.05293
	(!CLK * D * DE * SCD * !Q)	0.00041	0.00294	0.04718
	(!CLK * D * DE * SCD * !Q)	0.00633	0.00888	0.05311
	(!CLK * D * DE * !SCD * !Q)	0.01518	0.01916	0.08330
	(!CLK * D * DE * !SCD * !Q)	0.02000	0.02400	0.08796
	(!CLK * D * !SCD * Q)	0.01533	0.01950	0.08341
	(!CLK * D * !SCD * Q)	0.02016	0.02435	0.08805
	(!CLK * D * !DE * SCD * !Q)	0.01189	0.01615	0.09384
	(!CLK * D * !DE * SCD * !Q)	0.01903	0.02329	0.10098
sky130_fd_sc_hs__sedfxtp_4	**(!CLK * D * !DE * !SCD * !Q)**	-0.00029	0.00231	0.04631
	(!CLK * D * !DE * !SCD * !Q)	0.00574	0.00836	0.05237
	(!CLK * !D * SCD * !Q)	0.01195	0.01621	0.09346
	(!CLK * !D * SCD * !Q)	0.01909	0.02336	0.10061
	(!CLK * !D * DE * SCD * Q)	0.01152	0.01577	0.09298
	(!CLK * !D * DE * SCD * Q)	0.01866	0.02291	0.10013
	(!CLK * !D * DE * !SCD * Q)	-0.00046	0.00214	0.04615
	(!CLK * !D * DE * !SCD * Q)	0.00557	0.00819	0.05221
	(!CLK * !D * !SCD * !Q)	-0.00029	0.00231	0.04631
	(!CLK * !D * !SCD * !Q)	0.00574	0.00836	0.05237
	(!CLK * !D * !DE * SCD * Q)	0.00024	0.00277	0.04701
	(!CLK * !D * !DE * SCD * Q)	0.00616	0.00871	0.05293
	(!CLK * !D * !DE * !SCD * Q)	0.01532	0.01930	0.08345
	(!CLK * !D * !DE * !SCD * Q)	0.02014	0.02414	0.08809

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(SCD * SCE * Q)	0.01666	0.01912	0.09015
	(SCD * SCE * Q)	0.01166	0.01411	0.08515
	(D * !SCE * Q)	0.01664	0.01909	0.09012
	(D * !SCE * Q)	0.01163	0.01408	0.08513
	(D * !DE * !SCE * !Q)	0.01708	0.01979	0.09076
	(D * !DE * !SCE * !Q)	0.01207	0.01477	0.08576
	(!SCD * SCE * !Q)	0.01711	0.01982	0.09079
	(!SCD * SCE * !Q)	0.01211	0.01480	0.08578
	(!D * !SCE * !Q)	0.01708	0.01979	0.09076
	(!D * !SCE * !Q)	0.01208	0.01477	0.08576
	(!D * !DE * !SCE * Q)	0.01663	0.01909	0.09012
	(!D * !DE * !SCE * Q)	0.01163	0.01408	0.08512
sky130_fd_sc_hs__sedfxtp_2	(SCD * SCE * Q)	0.01685	0.01931	0.09068
	(SCD * SCE * Q)	0.01182	0.01427	0.08565
	(D * !SCE * Q)	0.01683	0.01926	0.09032
	(D * !SCE * Q)	0.01180	0.01422	0.08529
	(D * !DE * !SCE * !Q)	0.01727	0.01970	0.09095
	(D * !DE * !SCE * !Q)	0.01224	0.01466	0.08592
	(!SCD * SCE * !Q)	0.01730	0.01973	0.09097
	(!SCD * SCE * !Q)	0.01227	0.01469	0.08595
	(!D * !SCE * !Q)	0.01728	0.01971	0.09095
	(!D * !SCE * !Q)	0.01225	0.01466	0.08592
	(!D * !DE * !SCE * Q)	0.01683	0.01926	0.09031
	(!D * !DE * !SCE * Q)	0.01180	0.01422	0.08528

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.01686	0.01957	0.09028
	(SCD * SCE * Q)	0.01167	0.01436	0.08509
	(D * !SCE * Q)	0.01683	0.01954	0.09026
	(D * !SCE * Q)	0.01164	0.01434	0.08507
	(D * !DE * !SCE * !Q)	0.01712	0.01977	0.09076
	(D * !DE * !SCE * !Q)	0.01193	0.01456	0.08557
	(!SCD * SCE * !Q)	0.01715	0.01980	0.09076
	(!SCD * SCE * !Q)	0.01196	0.01459	0.08557
	(!D * !SCE * !Q)	0.01713	0.01977	0.09080
	(!D * !SCE * !Q)	0.01194	0.01456	0.08561
	(!D * !DE * !SCE * Q)	0.01683	0.01954	0.09026
	(!D * !DE * !SCE * Q)	0.01164	0.01433	0.08507

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

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

sky130_fd_sc_hs__sedfxtp_1	**(SCD * SCE * Q)**	0.00942	0.01299	0.08400
	(SCD * SCE * Q)	0.01442	0.01799	0.08901
	(SCD * SCE * !Q)	0.01788	0.02141	0.09401
	(SCD * SCE * !Q)	0.02288	0.02639	0.09900
	(D * DE * !SCE * !Q)	0.01786	0.02137	0.09396
	(D * DE * !SCE * !Q)	0.02286	0.02637	0.09896
	(D * !SCE * Q)	0.00943	0.01300	0.08403
	(D * !SCE * Q)	0.01443	0.01800	0.08903
	(D * !DE * !SCE * !Q)	0.00918	0.01271	0.08360
	(D * !DE * !SCE * !Q)	0.01419	0.01772	0.08860
	(!SCD * SCE * Q)	0.02025	0.02403	0.09614
	(!SCD * SCE * Q)	0.02527	0.02906	0.10116
	(!SCD * SCE * !Q)	0.00918	0.01271	0.08359
	(!SCD * SCE * !Q)	0.01419	0.01772	0.08859
	(!D * DE * !SCE * Q)	0.02052	0.02426	0.09636
	(!D * DE * !SCE * Q)	0.02553	0.02926	0.10134
	(!D * !SCE * !Q)	0.00918	0.01271	0.08360
	(!D * !SCE * !Q)	0.01419	0.01773	0.08861
	(!D * !DE * !SCE * Q)	0.00943	0.01300	0.08403
	(!D * !DE * !SCE * Q)	0.01443	0.01800	0.08903

sky130_fd_sc_hs__sedfxtp_2	**(SCD * SCE * Q)**	0.00951	0.01306	0.08406
	(SCD * SCE * Q)	0.01454	0.01809	0.08907
	(SCD * SCE * !Q)	0.01790	0.02141	0.09400
	(SCD * SCE * !Q)	0.02293	0.02643	0.09903
	(D * DE * !SCE * !Q)	0.01787	0.02137	0.09392
	(D * DE * !SCE * !Q)	0.02290	0.02640	0.09895
	(D * !SCE * Q)	0.00951	0.01307	0.08407
	(D * !SCE * Q)	0.01455	0.01809	0.08908
	(D * !DE * !SCE * !Q)	0.00927	0.01276	0.08364
	(D * !DE * !SCE * !Q)	0.01430	0.01781	0.08867
	(!SCD * SCE * Q)	0.02035	0.02404	0.09616
	(!SCD * SCE * Q)	0.02539	0.02908	0.10121
	(!SCD * SCE * !Q)	0.00927	0.01277	0.08364
	(!SCD * SCE * !Q)	0.01431	0.01781	0.08867
	(!D * DE * !SCE * Q)	0.02060	0.02429	0.09632
	(!D * DE * !SCE * Q)	0.02564	0.02933	0.10136
	(!D * !SCE * !Q)	0.00927	0.01277	0.08365
	(!D * !SCE * !Q)	0.01430	0.01781	0.08868
	(!D * !DE * !SCE * Q)	0.00951	0.01306	0.08407
	(!D * !DE * !SCE * Q)	0.01455	0.01809	0.08908

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.00922	0.01264	0.08377
	(SCD * SCE * Q)	0.01442	0.01783	0.08895
	(SCD * SCE * !Q)	0.01759	0.02097	0.09363
	(SCD * SCE * !Q)	0.02278	0.02617	0.09881
	(D * DE * !SCE * !Q)	0.01757	0.02096	0.09357
	(D * DE * !SCE * !Q)	0.02276	0.02613	0.09876
	(D * !SCE * Q)	0.00923	0.01266	0.08378
	(D * !SCE * Q)	0.01443	0.01784	0.08897
	(D * !DE * !SCE * !Q)	0.00915	0.01253	0.08350
	(D * !DE * !SCE * !Q)	0.01435	0.01771	0.08869
	(!SCD * SCE * Q)	0.01994	0.02352	0.09577
	(!SCD * SCE * Q)	0.02515	0.02874	0.10098
	(!SCD * SCE * !Q)	0.00915	0.01253	0.08349
	(!SCD * SCE * !Q)	0.01435	0.01771	0.08868
	(!D * DE * !SCE * Q)	0.02019	0.02377	0.09604
	(!D * DE * !SCE * Q)	0.02538	0.02896	0.10124
	(!D * !SCE * !Q)	0.00916	0.01253	0.08351
	(!D * !SCE * !Q)	0.01435	0.01772	0.08870
	(!D * !DE * !SCE * Q)	0.00923	0.01266	0.08378
	(!D * !DE * !SCE * Q)	0.01443	0.01784	0.08897

SKY130_FD_SC_HS__XNOR2x

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00509	0.00527	0.65723
sky130_fd_sc_hs__xnor2_2	0.00847	0.00838	1.19505
sky130_fd_sc_hs__xnor2_4	0.01514	0.01526	2.02005

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xnor2_1	0.00000	0.39612	1.20371
sky130_fd_sc_hs__xnor2_2	0.00000	0.31712	0.53468
sky130_fd_sc_hs__xnor2_4	0.00000	0.87449	2.42437

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	0.06523	0.36354	2.84860
	A->Y (FR)	!B	0.08009	0.87368	10.22010
	B->Y (RR)	A	0.05904	0.36018	2.92368
	B->Y (FR)	!A	0.06788	0.88420	10.56950
sky130_fd_sc_hs__xnor2_2	A->Y (RR)	B	0.07067	0.31580	2.67987
	A->Y (FR)	!B	0.07842	0.73552	9.86186
	B->Y (RR)	A	0.06778	0.32046	2.68882
	B->Y (FR)	!A	0.06353	0.74463	10.19920
sky130_fd_sc_hs__xnor2_4	A->Y (RR)	B	0.08414	0.44417	5.72365
	A->Y (FR)	!B	0.08131	0.66454	9.97947
	B->Y (RR)	A	0.07987	0.44389	5.72545
	B->Y (FR)	!A	0.06396	0.68403	10.48670

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	0.08146	0.46202	4.05007
	A->Y (RF)	!B	0.03499	0.36173	4.10448
	B->Y (FF)	A	0.07825	0.46211	4.23687
	B->Y (RF)	!A	0.02706	0.34693	4.03554
sky130_fd_sc_hs__xnor2_2	A->Y (FF)	B	0.09613	0.48197	4.36593
	A->Y (RF)	!B	0.03307	0.29267	3.84149
	B->Y (FF)	A	0.08832	0.44070	4.04102
	B->Y (RF)	!A	0.02842	0.28642	3.88049
sky130_fd_sc_hs__xnor2_4	A->Y (FF)	B	0.08917	0.43981	4.41245
	A->Y (RF)	!B	0.03522	0.24322	3.63865
	B->Y (FF)	A	0.08331	0.40204	4.08552
	B->Y (RF)	!A	0.02906	0.23470	3.69692

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	0.01176	0.01473	0.08292
	A	B	0.00189	0.00485	0.07334
	A	!B	-0.00106	-0.00089	0.01028
	A	!B	0.00883	0.00902	0.02018
	B	A	0.01082	0.01422	0.08395
	B	A	0.00301	0.00641	0.07644
	B	!A	0.00012	0.00125	0.01873
	B	!A	0.00807	0.00919	0.02673
sky130_fd_sc_hs__xnor2_2	A	B	0.01866	0.02100	0.08554
	A	B	0.00429	0.00659	0.07132
	A	!B	-0.00021	0.00014	0.02156
	A	!B	0.01721	0.01759	0.03904
	B	A	0.01783	0.02000	0.07431
	B	A	0.00637	0.00854	0.06310
	B	!A	0.00063	0.00281	0.03362
	B	!A	0.01498	0.01719	0.04811
sky130_fd_sc_hs__xnor2_4	A	B	0.02992	0.03464	0.16331
	A	B	0.00400	0.00865	0.13758
	A	!B	-0.00131	-0.00058	0.04076
	A	!B	0.03188	0.03277	0.07418
	B	A	0.02889	0.03308	0.14617
	B	A	0.00861	0.01290	0.12626
	B	!A	-0.00009	0.00379	0.05927
	B	!A	0.02745	0.03092	0.08706

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	0.00284	0.00698	0.07570
	A	B	0.01272	0.01684	0.08554
	A	!B	0.01118	0.01144	0.02034
	A	!B	0.00113	0.00132	0.01003
	B	A	0.00475	0.00814	0.07759
	B	A	0.01242	0.01574	0.08501
	B	!A	0.00753	0.00789	0.01653
	B	!A	-0.00031	0.00006	0.00837
sky130_fd_sc_hs__xnor2_2	A	B	0.00597	0.00988	0.07552
	A	B	0.02045	0.02417	0.08992
	A	!B	0.02132	0.02171	0.03978
	A	!B	0.00370	0.00401	0.02144
	B	A	0.00975	0.01164	0.07786
	B	A	0.02081	0.02267	0.08845
	B	!A	0.01483	0.01572	0.03266
	B	!A	0.00060	0.00136	0.01800
sky130_fd_sc_hs__xnor2_4	A	B	0.00975	0.01682	0.14833
	A	B	0.03569	0.04276	0.17317
	A	!B	0.03949	0.04044	0.07728
	A	!B	0.00589	0.00680	0.04328
	B	A	0.01437	0.01897	0.14615
	B	A	0.03388	0.03843	0.16523
	B	!A	0.02769	0.02977	0.06402
	B	!A	0.00056	0.00265	0.03685

SKY130_FD_SC_HS__XNOR3x

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00266	0.00691	0.00429	1.25377
sky130_fd_sc_hs__xnor3_2	0.00271	0.00694	0.00434	2.47179
sky130_fd_sc_hs__xnor3_4	0.00270	0.00693	0.00425	4.86804

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xnor3_1	0.00000	2.19677	2.48022
sky130_fd_sc_hs__xnor3_2	0.00000	2.25168	2.58157
sky130_fd_sc_hs__xnor3_4	0.00000	2.36152	2.78428

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)	0.22742	0.88401	8.51789
	B->X (-R)	0.16092	0.78023	8.43647
	C->X (-R)	0.11830	0.73526	8.27627
sky130_fd_sc_hs__xnor3_2	A->X (-R)	0.24182	0.80992	8.48907
	B->X (-R)	0.17070	0.69892	8.38799
	C->X (-R)	0.12542	0.65406	8.22561
sky130_fd_sc_hs__xnor3_4	A->X (-R)	0.27720	0.78938	8.54724
	B->X (-R)	0.21115	0.68561	8.47976
	C->X (-R)	0.16061	0.63634	8.30670

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xnor3_1	A->X (-F)	0.17152	0.72027	5.28100
	B->X (-F)	0.16291	0.68769	5.54402
	C->X (-F)	0.09879	0.57341	5.24418
sky130_fd_sc_hs__xnor3_2	A->X (-F)	0.19098	0.71230	5.21645
	B->X (-F)	0.17720	0.66848	5.44121
	C->X (-F)	0.11278	0.56645	5.16544
sky130_fd_sc_hs__xnor3_4	A->X (-F)	0.23333	0.73989	5.38781
	B->X (-F)	0.22122	0.70257	5.63607
	C->X (-F)	0.16145	0.60668	5.37742

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.02821	0.03046	0.10239
	A	0.02790	0.03158	0.10358
	B	0.02534	0.03092	0.17849
	B	0.02599	0.03395	0.17946
	C	0.01302	0.01637	0.09410
	C	0.00539	0.00876	0.08648
sky130_fd_sc_hs__xnor3_2	A	0.03150	0.03359	0.10295
	A	0.02515	0.02730	0.09750
	B	0.02859	0.03405	0.17929
	B	0.02921	0.03689	0.18416
	C	0.01649	0.01998	0.09727
	C	0.00876	0.01231	0.09069
sky130_fd_sc_hs__xnor3_4	A	0.04045	0.04186	0.11385
	A	0.03421	0.03563	0.10858
	B	0.03729	0.04189	0.18660
	B	0.02415	0.02879	0.17470
	C	0.02508	0.02791	0.11037
	C	0.01750	0.02048	0.10456

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.02337	0.02588	0.09747
	A	0.02960	0.03210	0.10286
	B	0.02366	0.02916	0.17362
	B	0.02764	0.03460	0.17889
	C	0.00448	0.00922	0.09076
	C	0.01213	0.01685	0.09838
sky130_fd_sc_hs__xnor3_2	A	0.02876	0.02888	0.09875
	A	0.03508	0.03536	0.10366
	B	0.01935	0.02433	0.16799
	B	0.03264	0.03773	0.17983
	C	0.00931	0.01254	0.09648
	C	0.01703	0.02023	0.10283
sky130_fd_sc_hs__xnor3_4	A	0.04348	0.03799	0.10936
	A	0.04975	0.04449	0.11384
	B	0.03344	0.03273	0.17434
	B	0.04663	0.04589	0.18718
	C	0.02512	0.02109	0.10915
	C	0.03271	0.02873	0.11146

SKY130_FD_SC_HS__XOR2x

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00519	0.00538	0.58655
sky130_fd_sc_hs__xor2_2	0.00796	0.00790	1.08531
sky130_fd_sc_hs__xor2_4	0.01614	0.01573	1.86051

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xor2_1	0.00000	0.14563	0.27430
sky130_fd_sc_hs__xor2_2	0.00000	0.19768	0.28126
sky130_fd_sc_hs__xor2_4	0.00000	0.39211	0.56251

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	0.07787	0.64851	5.60915
	A->X (FR)	B	0.09594	0.90344	10.12340
	B->X (RR)	!A	0.09408	0.67313	5.98796
	B->X (FR)	A	0.07265	0.85269	9.79506
sky130_fd_sc_hs__xor2_2	A->X (RR)	!B	0.06742	0.53845	5.73826
	A->X (FR)	B	0.08403	0.76553	10.03990
	B->X (RR)	!A	0.07864	0.52149	5.64027
	B->X (FR)	A	0.06638	0.74848	10.02830
sky130_fd_sc_hs__xor2_4	A->X (RR)	!B	0.06368	0.43242	5.55185
	A->X (FR)	B	0.08447	0.65059	9.51711
	B->X (RR)	!A	0.06924	0.40122	5.19580
	B->X (FR)	A	0.06834	0.64248	9.68492

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	0.10269	0.42459	3.26196
	A->X (RF)	B	0.03240	0.33407	3.61283
	B->X (FF)	!A	0.09283	0.42868	3.32294
	B->X (RF)	A	0.02524	0.36350	4.05696
sky130_fd_sc_hs__xor2_2	A->X (FF)	!B	0.13517	0.53197	4.68727
	A->X (RF)	B	0.02992	0.28278	3.63014
	B->X (FF)	!A	0.11866	0.53699	4.76819
	B->X (RF)	A	0.02660	0.35825	4.73544
sky130_fd_sc_hs__xor2_4	A->X (FF)	!B	0.13757	0.49249	4.62188
	A->X (RF)	B	0.03145	0.23286	3.38836
	B->X (FF)	!A	0.11637	0.49409	4.62760
	B->X (RF)	A	0.02806	0.28404	4.23802

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	0.00038	0.00053	0.01246
	A	B	0.01056	0.01069	0.02278
	A	!B	0.01386	0.01566	0.05865
	A	!B	0.00356	0.00534	0.04844
	B	A	0.00042	0.00054	0.01254
	B	A	0.00819	0.00831	0.02034
	B	!A	0.01234	0.01346	0.06642
	B	!A	0.00444	0.00554	0.05862
sky130_fd_sc_hs__xor2_2	A	B	0.00165	0.00200	0.02344
	A	B	0.01831	0.01869	0.04005
	A	!B	0.01859	0.02055	0.06830
	A	!B	0.00435	0.00630	0.05425
	B	A	0.00035	0.00074	0.02176
	B	A	0.01359	0.01399	0.03503
	B	!A	0.01831	0.01877	0.07621
	B	!A	0.00746	0.00793	0.06563
sky130_fd_sc_hs__xor2_4	A	B	0.00232	0.00299	0.04449
	A	B	0.03737	0.03818	0.07973
	A	!B	0.03738	0.04055	0.13351
	A	!B	0.00940	0.01263	0.10587
	B	A	0.00100	0.00201	0.04251
	B	A	0.02870	0.02984	0.07038
	B	!A	0.03280	0.03470	0.14499
	B	!A	0.01220	0.01409	0.12435

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	0.01021	0.01016	0.01933
	A	B	0.00009	-0.00002	0.00915
	A	!B	0.00247	0.00403	0.04581
	A	!B	0.01267	0.01423	0.05609
	B	A	0.00866	0.00908	0.01996
	B	A	0.00079	0.00115	0.01139
	B	!A	0.00386	0.00664	0.05907
	B	!A	0.01206	0.01483	0.06729
sky130_fd_sc_hs__xor2_2	A	B	0.01756	0.01762	0.03601
	A	B	0.00090	0.00096	0.01890
	A	!B	0.00239	0.00425	0.04981
	A	!B	0.01639	0.01792	0.06350
	B	A	0.01478	0.01560	0.03340
	B	A	0.00154	0.00231	0.01954
	B	!A	0.00438	0.00703	0.06423
	B	!A	0.01595	0.01859	0.07506
sky130_fd_sc_hs__xor2_4	A	B	0.03607	0.03633	0.07418
	A	B	0.00102	0.00109	0.03812
	A	!B	0.00500	0.00781	0.09832
	A	!B	0.03256	0.03540	0.12514
	B	A	0.03014	0.03178	0.06914
	B	A	0.00211	0.00378	0.04019
	B	!A	0.00963	0.01550	0.11939
	B	!A	0.03164	0.03739	0.14067

SKY130_FD_SC_HS__XOR3x

sky130_fd_sc_hs_tt_1.89v_25C.ccs
Cell Library: Process , Voltage
1.89, 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	0.00266	0.00710	0.00429	1.27502
sky130_fd_sc_hs__xor3_2	0.00267	0.00722	0.00428	2.44977
sky130_fd_sc_hs__xor3_4	0.00266	0.00732	0.00424	4.78633

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xor3_1	0.00000	2.19678	2.48031
sky130_fd_sc_hs__xor3_2	0.00000	2.25169	2.58166
sky130_fd_sc_hs__xor3_4	0.00000	2.36152	2.78435

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)	0.22233	0.87388	8.46553
	B->X (-R)	0.15423	0.76527	8.33904
	C->X (-R)	0.11671	0.73406	8.23993
sky130_fd_sc_hs__xor3_2	A->X (-R)	0.23200	0.79358	8.34862
	B->X (-R)	0.16601	0.68909	8.22509
	C->X (-R)	0.12552	0.65767	8.13081
sky130_fd_sc_hs__xor3_4	A->X (-R)	0.26412	0.77247	8.47010
	B->X (-R)	0.20236	0.67174	8.35485
	C->X (-R)	0.15310	0.63503	8.25935

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xor3_1	A->X (-F)	0.16936	0.71009	5.16874
	B->X (-F)	0.16064	0.67336	5.41327
	C->X (-F)	0.09579	0.56140	5.16172
sky130_fd_sc_hs__xor3_2	A->X (-F)	0.18642	0.70398	5.17012
	B->X (-F)	0.17752	0.66625	5.40999
	C->X (-F)	0.11343	0.57469	5.18962
sky130_fd_sc_hs__xor3_4	A->X (-F)	0.23349	0.74316	5.37043
	B->X (-F)	0.22508	0.70409	5.60352
	C->X (-F)	0.15796	0.61738	5.38498

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.02982	0.03200	0.10322
	A	0.02782	0.03140	0.10294
	B	0.02788	0.03334	0.18242
	B	0.02482	0.03281	0.17986
	C	0.01320	0.01661	0.09769
	C	0.00555	0.00897	0.09061
sky130_fd_sc_hs__xor3_2	A	0.03319	0.03540	0.10657
	A	0.02719	0.02953	0.10134
	B	0.03138	0.03683	0.18468
	B	0.01757	0.02305	0.17198
	C	0.01682	0.02013	0.10280
	C	0.00919	0.01253	0.09635
sky130_fd_sc_hs__xor3_4	A	0.04176	0.04348	0.11466
	A	0.03556	0.03730	0.10978
	B	0.03981	0.04447	0.19195
	B	0.02598	0.03069	0.17947
	C	0.02548	0.02787	0.11006
	C	0.01792	0.02039	0.10431

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.02343	0.02581	0.09657
	A	0.02971	0.03208	0.10234
	B	0.02637	0.03141	0.17774
	B	0.02663	0.03389	0.17980
	C	0.00431	0.00916	0.09284
	C	0.01194	0.01678	0.09980
sky130_fd_sc_hs__xor3_2	A	0.02916	0.02928	0.09948
	A	0.03527	0.03538	0.10543
	B	0.01757	0.02306	0.16816
	B	0.03139	0.03685	0.18188
	C	0.00885	0.01250	0.09732
	C	0.01647	0.02011	0.10338
sky130_fd_sc_hs__xor3_4	A	0.04490	0.03844	0.11065
	A	0.05109	0.04495	0.11430
	B	0.03226	0.03200	0.17900
	B	0.04606	0.04581	0.18995
	C	0.02509	0.02118	0.10592
	C	0.03266	0.02872	0.11059