sky130_fd_sc_hs_tt_2.10v_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_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00288	0.00278	0.00289	0.00301	0.00300	0.37159
sky130_fd_sc_hs__a2111oi_2	0.00548	0.00533	0.00445	0.00446	0.00446	0.64090
sky130_fd_sc_hs__a2111oi_4	0.01089	0.01068	0.00871	0.00857	0.00874	1.15465

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2111oi_1	0.00000	0.04458	0.19015
sky130_fd_sc_hs__a2111oi_2	0.00000	0.08593	0.38031
sky130_fd_sc_hs__a2111oi_4	0.00000	0.17186	0.76061

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)	0.15204	0.94769	8.68612
	A2->Y (FR)	0.18104	0.99835	8.92203
	B1->Y (FR)	0.16669	1.01566	9.52281
	C1->Y (FR)	0.14202	1.03204	10.02710
	D1->Y (FR)	0.10451	1.01426	10.16180
sky130_fd_sc_hs__a2111oi_2	A1->Y (FR)	0.14306	0.80543	8.52567
	A2->Y (FR)	0.17985	0.84930	8.66834
	B1->Y (FR)	0.15849	0.85335	9.04887
	C1->Y (FR)	0.13151	0.87613	9.73546
	D1->Y (FR)	0.07794	0.84135	9.85623
sky130_fd_sc_hs__a2111oi_4	A1->Y (FR)	0.13740	0.67346	8.21131
	A2->Y (FR)	0.17750	0.72413	8.45936
	B1->Y (FR)	0.15664	0.73420	8.95074
	C1->Y (FR)	0.12587	0.75433	9.64557
	D1->Y (FR)	0.07241	0.73169	9.84187

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111oi_1	A1->Y (RF)	0.02583	0.27413	2.24606
	A2->Y (RF)	0.02870	0.24130	1.87365
	B1->Y (RF)	0.02019	0.21080	1.66709
	C1->Y (RF)	0.02057	0.20178	1.63733
	D1->Y (RF)	0.01751	0.19467	1.60705
sky130_fd_sc_hs__a2111oi_2	A1->Y (RF)	0.02272	0.23717	2.23962
	A2->Y (RF)	0.02740	0.20498	1.81421
	B1->Y (RF)	0.03039	0.29426	3.02956
	C1->Y (RF)	0.02942	0.28137	2.98372
	D1->Y (RF)	0.02137	0.26512	2.94817
sky130_fd_sc_hs__a2111oi_4	A1->Y (RF)	0.02448	0.20868	2.29449
	A2->Y (RF)	0.02840	0.16206	1.64346
	B1->Y (RF)	0.02624	0.23008	2.69572
	C1->Y (RF)	0.02610	0.21633	2.64705
	D1->Y (RF)	0.01881	0.20289	2.68692

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111oi_1	A1	0.00063	0.00073	0.04146
	A1	0.01348	0.01361	0.05436
	A2	0.00121	0.00141	0.04315
	A2	0.01576	0.01598	0.05771
	B1	0.00044	0.00136	0.04436
	B1	0.01137	0.01227	0.05530
	C1	0.00040	0.00175	0.04054
	C1	0.00976	0.01109	0.04992
	D1	0.00022	0.00312	0.05207
	D1	0.00806	0.01096	0.05998
sky130_fd_sc_hs__a2111oi_2	A1	0.00010	0.00027	0.07651
	A1	0.02445	0.02470	0.10093
	A2	0.00239	0.00252	0.08062
	A2	0.02997	0.03015	0.10830
	B1	0.00128	0.00223	0.05996
	B1	0.01996	0.02095	0.07892
	C1	0.00143	0.00296	0.05368
	C1	0.01654	0.01812	0.06892
	D1	0.00111	0.00549	0.07150
	D1	0.01288	0.01724	0.08323

sky130_fd_sc_hs__a2111oi_4	**A1**	-0.00106	-0.00047	0.13721
	A1	0.04783	0.04849	0.18623
	A2	0.00303	0.00349	0.14650
	A2	0.05844	0.05904	0.20198
	B1	0.00149	0.00369	0.11571
	B1	0.03875	0.04097	0.15358
	C1	0.00162	0.00536	0.10401
	C1	0.03180	0.03559	0.13436
	D1	0.00100	0.01061	0.13530
	D1	0.02430	0.03402	0.15865

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**A1**	0.01809	0.01898	0.05403
	A1	0.00545	0.00632	0.04144
	A2	0.01978	0.02049	0.05483
	A2	0.00543	0.00614	0.04051
	B1	0.01376	0.01536	0.05481
	B1	0.00294	0.00450	0.04401
	C1	0.01074	0.01286	0.04875
	C1	0.00142	0.00352	0.03946
	D1	0.00771	0.00983	0.04469
	D1	-0.00012	0.00196	0.03683

sky130_fd_sc_hs__a2111oi_2	**A1**	0.03421	0.03592	0.10093
	A1	0.01037	0.01205	0.07712
	A2	0.03748	0.03880	0.10394
	A2	0.01025	0.01152	0.07678
	B1	0.02380	0.02602	0.07692
	B1	0.00535	0.00758	0.05839
	C1	0.01756	0.02012	0.06645
	C1	0.00252	0.00506	0.05128
	D1	0.00973	0.01300	0.05705
	D1	-0.00199	0.00127	0.04516
sky130_fd_sc_hs__a2111oi_4	**A1**	0.06683	0.07030	0.19436
	A1	0.01897	0.02238	0.14645
	A2	0.07349	0.07659	0.20765
	A2	0.01879	0.02180	0.15319
	B1	0.04658	0.05104	0.15496
	B1	0.00981	0.01414	0.11819
	C1	0.03379	0.03900	0.13294
	C1	0.00386	0.00896	0.10289
	D1	0.01930	0.02640	0.11282
	D1	-0.00403	0.00293	0.08927

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)**	0.00227	0.00228	0.00226
	(A2 * B1 * D1 * !Y)	-0.00281	-0.00294	-0.00293
	(A2 * B1 * C1 * !D1 * !Y)	0.00227	0.00228	0.00226
	(A2 * B1 * C1 * !D1 * !Y)	-0.00281	-0.00294	-0.00293
	(A2 * B1 * !C1 * !D1 * !Y)	0.00227	0.00228	0.00226
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00276	-0.00294	-0.00293
	(A2 * !B1 * C1 * D1 * !Y)	0.00226	0.00227	0.00226
	(A2 * !B1 * C1 * D1 * !Y)	-0.00261	-0.00287	-0.00285
	(A2 * !B1 * C1 * !D1 * !Y)	0.00226	0.00227	0.00226
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00261	-0.00287	-0.00285
	(A2 * !B1 * !C1 * D1 * !Y)	0.00229	0.00227	0.00226
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00254	-0.00283	-0.00281
	(!A2 * B1 * D1 * !Y)	0.00220	0.00221	0.00220
	(!A2 * B1 * D1 * !Y)	-0.00297	-0.00298	-0.00298
	(!A2 * B1 * C1 * !D1 * !Y)	0.00219	0.00221	0.00220
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00297	-0.00298	-0.00298
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00218	0.00219	0.00219
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00297	-0.00298	-0.00298
	(!A2 * !B1 * C1 * D1 * !Y)	0.00221	0.00222	0.00221
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00297	-0.00298	-0.00298
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00217	0.00220	0.00218
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00296	-0.00299	-0.00298
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00217	0.00221	0.00218
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00296	-0.00299	-0.00297
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00071	0.00071	0.00069
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00339	-0.00339	-0.00343

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	0.00450	0.00456	0.00452
	(A2 * B1 * D1 * !Y)	-0.00561	-0.00590	-0.00585
	(A2 * B1 * C1 * !D1 * !Y)	0.00451	0.00456	0.00452
	(A2 * B1 * C1 * !D1 * !Y)	-0.00559	-0.00589	-0.00585
	(A2 * B1 * !C1 * !D1 * !Y)	0.00454	0.00456	0.00452
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00547	-0.00587	-0.00585
	(A2 * !B1 * C1 * D1 * !Y)	0.00452	0.00455	0.00452
	(A2 * !B1 * C1 * D1 * !Y)	-0.00519	-0.00572	-0.00568
	(A2 * !B1 * C1 * !D1 * !Y)	0.00453	0.00455	0.00452
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00519	-0.00573	-0.00568
	(A2 * !B1 * !C1 * D1 * !Y)	0.00460	0.00456	0.00452
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00505	-0.00564	-0.00561
	(!A2 * B1 * D1 * !Y)	0.00434	0.00437	0.00435
	(!A2 * B1 * D1 * !Y)	-0.00592	-0.00595	-0.00594
	(!A2 * B1 * C1 * !D1 * !Y)	0.00433	0.00436	0.00435
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00592	-0.00595	-0.00594
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00432	0.00436	0.00435
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00591	-0.00595	-0.00594
	(!A2 * !B1 * C1 * D1 * !Y)	0.00433	0.00437	0.00435
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00592	-0.00595	-0.00594
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00434	0.00434	0.00435
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00594	-0.00593	-0.00594
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00434	0.00436	0.00435
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00594	-0.00594	-0.00593
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00145	0.00146	0.00140
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00672	-0.00676	-0.00685

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	0.00905	0.00915	0.00908
	(A2 * B1 * D1 * !Y)	-0.01126	-0.01175	-0.01171
	(A2 * B1 * C1 * !D1 * !Y)	0.00905	0.00915	0.00908
	(A2 * B1 * C1 * !D1 * !Y)	-0.01124	-0.01174	-0.01170
	(A2 * B1 * !C1 * !D1 * !Y)	0.00910	0.00915	0.00908
	(A2 * B1 * !C1 * !D1 * !Y)	-0.01098	-0.01178	-0.01171
	(A2 * !B1 * C1 * D1 * !Y)	0.00908	0.00914	0.00908
	(A2 * !B1 * C1 * D1 * !Y)	-0.01046	-0.01150	-0.01141
	(A2 * !B1 * C1 * !D1 * !Y)	0.00910	0.00914	0.00908
	(A2 * !B1 * C1 * !D1 * !Y)	-0.01045	-0.01152	-0.01141
	(A2 * !B1 * !C1 * D1 * !Y)	0.00925	0.00915	0.00909
	(A2 * !B1 * !C1 * D1 * !Y)	-0.01018	-0.01132	-0.01123
	(!A2 * B1 * D1 * !Y)	0.00869	0.00876	0.00873
	(!A2 * B1 * D1 * !Y)	-0.01187	-0.01193	-0.01191
	(!A2 * B1 * C1 * !D1 * !Y)	0.00869	0.00876	0.00873
	(!A2 * B1 * C1 * !D1 * !Y)	-0.01187	-0.01193	-0.01191
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00869	0.00875	0.00873
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.01188	-0.01187	-0.01190
	(!A2 * !B1 * C1 * D1 * !Y)	0.00870	0.00876	0.00873
	(!A2 * !B1 * C1 * D1 * !Y)	-0.01189	-0.01193	-0.01191
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00868	0.00875	0.00873
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.01187	-0.01193	-0.01190
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00868	0.00875	0.00873
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.01186	-0.01193	-0.01190
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00278	0.00279	0.00269
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.01360	-0.01366	-0.01384

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)**	-0.00227	-0.00226	-0.00226
	(A2 * B1 * D1 * !Y)	0.00294	0.00294	0.00293
	(A2 * B1 * C1 * !D1 * !Y)	-0.00226	-0.00227	-0.00226
	(A2 * B1 * C1 * !D1 * !Y)	0.00294	0.00294	0.00293
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00226	-0.00227	-0.00226
	(A2 * B1 * !C1 * !D1 * !Y)	0.00292	0.00295	0.00293
	(A2 * !B1 * C1 * D1 * !Y)	-0.00226	-0.00227	-0.00226
	(A2 * !B1 * C1 * D1 * !Y)	0.00284	0.00287	0.00285
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00226	-0.00227	-0.00226
	(A2 * !B1 * C1 * !D1 * !Y)	0.00284	0.00287	0.00285
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00225	-0.00226	-0.00225
	(A2 * !B1 * !C1 * D1 * !Y)	0.00280	0.00283	0.00281
	(!A2 * B1 * D1 * !Y)	-0.00213	-0.00219	-0.00220
	(!A2 * B1 * D1 * !Y)	0.00297	0.00301	0.00298
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00212	-0.00219	-0.00220
	(!A2 * B1 * C1 * !D1 * !Y)	0.00297	0.00301	0.00298
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00213	-0.00219	-0.00219
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00299	0.00302	0.00298
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00212	-0.00220	-0.00220
	(!A2 * !B1 * C1 * D1 * !Y)	0.00297	0.00301	0.00298
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00213	-0.00220	-0.00218
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00299	0.00301	0.00298
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00213	-0.00220	-0.00218
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00299	0.00301	0.00299
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00068	-0.00068	-0.00067
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00344	0.00346	0.00343

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	-0.00450	-0.00453	-0.00451
	(A2 * B1 * D1 * !Y)	0.00585	0.00591	0.00585
	(A2 * B1 * C1 * !D1 * !Y)	-0.00451	-0.00453	-0.00451
	(A2 * B1 * C1 * !D1 * !Y)	0.00585	0.00590	0.00585
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00451	-0.00452	-0.00451
	(A2 * B1 * !C1 * !D1 * !Y)	0.00585	0.00587	0.00585
	(A2 * !B1 * C1 * D1 * !Y)	-0.00452	-0.00453	-0.00451
	(A2 * !B1 * C1 * D1 * !Y)	0.00569	0.00572	0.00568
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00451	-0.00453	-0.00451
	(A2 * !B1 * C1 * !D1 * !Y)	0.00568	0.00573	0.00568
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00452	-0.00453	-0.00451
	(A2 * !B1 * !C1 * D1 * !Y)	0.00561	0.00564	0.00561
	(!A2 * B1 * D1 * !Y)	-0.00420	-0.00437	-0.00435
	(!A2 * B1 * D1 * !Y)	0.00592	0.00595	0.00595
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00421	-0.00436	-0.00435
	(!A2 * B1 * C1 * !D1 * !Y)	0.00594	0.00597	0.00595
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00422	-0.00436	-0.00435
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00596	0.00601	0.00595
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00421	-0.00437	-0.00435
	(!A2 * !B1 * C1 * D1 * !Y)	0.00594	0.00597	0.00595
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00422	-0.00434	-0.00435
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00595	0.00601	0.00595
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00421	-0.00436	-0.00435
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00596	0.00601	0.00595
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00136	-0.00138	-0.00137
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00684	0.00693	0.00687

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	-0.00904	-0.00908	-0.00906
	(A2 * B1 * D1 * !Y)	0.01166	0.01175	0.01171
	(A2 * B1 * C1 * !D1 * !Y)	-0.00904	-0.00908	-0.00906
	(A2 * B1 * C1 * !D1 * !Y)	0.01165	0.01174	0.01170
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00903	-0.00910	-0.00906
	(A2 * B1 * !C1 * !D1 * !Y)	0.01164	0.01182	0.01171
	(A2 * !B1 * C1 * D1 * !Y)	-0.00902	-0.00910	-0.00906
	(A2 * !B1 * C1 * D1 * !Y)	0.01133	0.01150	0.01141
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00907	-0.00910	-0.00906
	(A2 * !B1 * C1 * !D1 * !Y)	0.01143	0.01152	0.01141
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00907	-0.00910	-0.00905
	(A2 * !B1 * !C1 * D1 * !Y)	0.01125	0.01132	0.01123
	(!A2 * B1 * D1 * !Y)	-0.00844	-0.00876	-0.00873
	(!A2 * B1 * D1 * !Y)	0.01187	0.01198	0.01194
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00849	-0.00876	-0.00873
	(!A2 * B1 * C1 * !D1 * !Y)	0.01196	0.01201	0.01194
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00848	-0.00874	-0.00873
	(!A2 * B1 * !C1 * !D1 * !Y)	0.01195	0.01187	0.01194
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00848	-0.00876	-0.00873
	(!A2 * !B1 * C1 * D1 * !Y)	0.01195	0.01198	0.01194
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00847	-0.00875	-0.00873
	(!A2 * !B1 * C1 * !D1 * !Y)	0.01194	0.01200	0.01194
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00847	-0.00875	-0.00873
	(!A2 * !B1 * !C1 * D1 * !Y)	0.01195	0.01200	0.01194
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00262	-0.00266	-0.00263
	(!A2 * !B1 * !C1 * !D1 * Y)	0.01382	0.01399	0.01386

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)**	0.00240	0.00241	0.00239
	(A1 * B1 * D1 * !Y)	-0.00283	-0.00296	-0.00295
	(A1 * B1 * C1 * !D1 * !Y)	0.00240	0.00241	0.00239
	(A1 * B1 * C1 * !D1 * !Y)	-0.00283	-0.00296	-0.00295
	(A1 * B1 * !C1 * !D1 * !Y)	0.00240	0.00241	0.00239
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00277	-0.00296	-0.00295
	(A1 * !B1 * C1 * D1 * !Y)	0.00239	0.00240	0.00239
	(A1 * !B1 * C1 * D1 * !Y)	-0.00264	-0.00289	-0.00287
	(A1 * !B1 * C1 * !D1 * !Y)	0.00239	0.00240	0.00239
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00264	-0.00289	-0.00287
	(A1 * !B1 * !C1 * D1 * !Y)	0.00243	0.00240	0.00239
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00256	-0.00284	-0.00283
	(!A1 * B1 * !Y)	0.00233	0.00234	0.00234
	(!A1 * B1 * !Y)	-0.00298	-0.00300	-0.00299
	(!A1 * !B1 * C1 * !Y)	0.00231	0.00232	0.00230
	(!A1 * !B1 * C1 * !Y)	-0.00300	-0.00301	-0.00299
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00231	0.00232	0.00231
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00299	-0.00300	-0.00299
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00231	0.00231	0.00231
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00300	-0.00300	-0.00299

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00455	0.00458	0.00454
	(A1 * B1 * D1 * !Y)	-0.00561	-0.00585	-0.00583
	(A1 * B1 * C1 * !D1 * !Y)	0.00455	0.00458	0.00454
	(A1 * B1 * C1 * !D1 * !Y)	-0.00560	-0.00586	-0.00583
	(A1 * B1 * !C1 * !D1 * !Y)	0.00457	0.00459	0.00455
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00547	-0.00587	-0.00583
	(A1 * !B1 * C1 * D1 * !Y)	0.00455	0.00458	0.00454
	(A1 * !B1 * C1 * D1 * !Y)	-0.00520	-0.00572	-0.00567
	(A1 * !B1 * C1 * !D1 * !Y)	0.00456	0.00458	0.00455
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00520	-0.00571	-0.00567
	(A1 * !B1 * !C1 * D1 * !Y)	0.00463	0.00458	0.00455
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00508	-0.00562	-0.00560
	(!A1 * B1 * !Y)	0.00437	0.00440	0.00438
	(!A1 * B1 * !Y)	-0.00590	-0.00593	-0.00591
	(!A1 * !B1 * C1 * !Y)	0.00437	0.00442	0.00438
	(!A1 * !B1 * C1 * !Y)	-0.00590	-0.00595	-0.00591
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00438	0.00442	0.00439
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00590	-0.00594	-0.00591
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00437	0.00440	0.00438
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00591	-0.00593	-0.00591

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00914	0.00921	0.00913
	(A1 * B1 * D1 * !Y)	-0.01128	-0.01176	-0.01169
	(A1 * B1 * C1 * !D1 * !Y)	0.00915	0.00921	0.00913
	(A1 * B1 * C1 * !D1 * !Y)	-0.01127	-0.01176	-0.01169
	(A1 * B1 * !C1 * !D1 * !Y)	0.00919	0.00921	0.00913
	(A1 * B1 * !C1 * !D1 * !Y)	-0.01101	-0.01176	-0.01169
	(A1 * !B1 * C1 * D1 * !Y)	0.00908	0.00920	0.00913
	(A1 * !B1 * C1 * D1 * !Y)	-0.01042	-0.01141	-0.01139
	(A1 * !B1 * C1 * !D1 * !Y)	0.00911	0.00920	0.00913
	(A1 * !B1 * C1 * !D1 * !Y)	-0.01041	-0.01133	-0.01140
	(A1 * !B1 * !C1 * D1 * !Y)	0.00925	0.00921	0.00914
	(A1 * !B1 * !C1 * D1 * !Y)	-0.01016	-0.01132	-0.01123
	(!A1 * B1 * !Y)	0.00877	0.00880	0.00876
	(!A1 * B1 * !Y)	-0.01187	-0.01192	-0.01189
	(!A1 * !B1 * C1 * !Y)	0.00870	0.00879	0.00876
	(!A1 * !B1 * C1 * !Y)	-0.01184	-0.01192	-0.01189
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00870	0.00880	0.00876
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.01183	-0.01191	-0.01188
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00882	0.00889	0.00887
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.01185	-0.01190	-0.01188

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)**	-0.00238	-0.00240	-0.00239
	(A1 * B1 * D1 * !Y)	0.00293	0.00297	0.00295
	(A1 * B1 * C1 * !D1 * !Y)	-0.00238	-0.00240	-0.00239
	(A1 * B1 * C1 * !D1 * !Y)	0.00293	0.00296	0.00295
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00238	-0.00239	-0.00239
	(A1 * B1 * !C1 * !D1 * !Y)	0.00294	0.00297	0.00295
	(A1 * !B1 * C1 * D1 * !Y)	-0.00238	-0.00239	-0.00239
	(A1 * !B1 * C1 * D1 * !Y)	0.00286	0.00289	0.00287
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00238	-0.00239	-0.00239
	(A1 * !B1 * C1 * !D1 * !Y)	0.00286	0.00289	0.00287
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00238	-0.00239	-0.00238
	(A1 * !B1 * !C1 * D1 * !Y)	0.00281	0.00284	0.00283
	(!A1 * B1 * !Y)	-0.00225	-0.00233	-0.00233
	(!A1 * B1 * !Y)	0.00298	0.00302	0.00300
	(!A1 * !B1 * C1 * !Y)	-0.00226	-0.00231	-0.00230
	(!A1 * !B1 * C1 * !Y)	0.00301	0.00302	0.00300
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00226	-0.00231	-0.00231
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00301	0.00302	0.00300
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00218	-0.00231	-0.00231
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00312	0.00302	0.00301

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00454	-0.00454	-0.00454
	(A1 * B1 * D1 * !Y)	0.00583	0.00585	0.00583
	(A1 * B1 * C1 * !D1 * !Y)	-0.00454	-0.00455	-0.00454
	(A1 * B1 * C1 * !D1 * !Y)	0.00583	0.00586	0.00583
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00454	-0.00456	-0.00454
	(A1 * B1 * !C1 * !D1 * !Y)	0.00583	0.00589	0.00583
	(A1 * !B1 * C1 * D1 * !Y)	-0.00454	-0.00456	-0.00454
	(A1 * !B1 * C1 * D1 * !Y)	0.00568	0.00572	0.00567
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00454	-0.00456	-0.00453
	(A1 * !B1 * C1 * !D1 * !Y)	0.00567	0.00571	0.00567
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00454	-0.00455	-0.00453
	(A1 * !B1 * !C1 * D1 * !Y)	0.00560	0.00562	0.00560
	(!A1 * B1 * !Y)	-0.00424	-0.00440	-0.00438
	(!A1 * B1 * !Y)	0.00590	0.00596	0.00593
	(!A1 * !B1 * C1 * !Y)	-0.00424	-0.00440	-0.00438
	(!A1 * !B1 * C1 * !Y)	0.00590	0.00595	0.00593
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00424	-0.00439	-0.00439
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00590	0.00596	0.00593
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00405	-0.00440	-0.00438
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00615	0.00595	0.00593

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00907	-0.00914	-0.00911
	(A1 * B1 * D1 * !Y)	0.01161	0.01176	0.01169
	(A1 * B1 * C1 * !D1 * !Y)	-0.00907	-0.00914	-0.00911
	(A1 * B1 * C1 * !D1 * !Y)	0.01161	0.01176	0.01169
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00907	-0.00914	-0.00911
	(A1 * B1 * !C1 * !D1 * !Y)	0.01162	0.01176	0.01169
	(A1 * !B1 * C1 * D1 * !Y)	-0.00908	-0.00912	-0.00911
	(A1 * !B1 * C1 * D1 * !Y)	0.01141	0.01141	0.01139
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00911	-0.00908	-0.00911
	(A1 * !B1 * C1 * !D1 * !Y)	0.01141	0.01133	0.01140
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00912	-0.00915	-0.00911
	(A1 * !B1 * !C1 * D1 * !Y)	0.01125	0.01132	0.01123
	(!A1 * B1 * !Y)	-0.00852	-0.00880	-0.00876
	(!A1 * B1 * !Y)	0.01187	0.01198	0.01192
	(!A1 * !B1 * C1 * !Y)	-0.00852	-0.00879	-0.00876
	(!A1 * !B1 * C1 * !Y)	0.01187	0.01198	0.01192
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00852	-0.00880	-0.00876
	(!A1 * !B1 * !C1 * D1 * !Y)	0.01188	0.01198	0.01192
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00809	-0.00889	-0.00886
	(!A1 * !B1 * !C1 * !D1 * Y)	0.01241	0.01196	0.01192

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)**	0.00237	0.00238	0.00237
	(A1 * A2 * C1 * D1 * !Y)	-0.00205	-0.00205	-0.00204
	(A1 * A2 * C1 * !D1 * !Y)	0.00264	0.00256	0.00241
	(A1 * A2 * C1 * !D1 * !Y)	-0.00197	-0.00200	-0.00198
	(A1 * A2 * !C1 * D1 * !Y)	0.00238	0.00246	0.00238
	(A1 * A2 * !C1 * D1 * !Y)	-0.00187	-0.00188	-0.00187
	(A1 * A2 * !C1 * !D1 * !Y)	0.00235	0.00237	0.00234
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00148	-0.00148	-0.00147
	(A1 * !A2 * C1 * D1 * !Y)	0.00235	0.00236	0.00233
	(A1 * !A2 * C1 * D1 * !Y)	-0.00282	-0.00289	-0.00288
	(A1 * !A2 * C1 * !D1 * !Y)	0.00273	0.00236	0.00233
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00245	-0.00291	-0.00289
	(A1 * !A2 * !C1 * D1 * !Y)	0.00263	0.00235	0.00233
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00234	-0.00281	-0.00279
	(!A1 * C1 * D1 * !Y)	0.00232	0.00236	0.00233
	(!A1 * C1 * D1 * !Y)	-0.00278	-0.00289	-0.00289
	(!A1 * C1 * !D1 * !Y)	0.00268	0.00236	0.00233
	(!A1 * C1 * !D1 * !Y)	-0.00244	-0.00291	-0.00289
	(!A1 * !C1 * D1 * !Y)	0.00261	0.00235	0.00233
	(!A1 * !C1 * D1 * !Y)	-0.00237	-0.00281	-0.00280

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	0.00265	0.00269	0.00265
	(A1 * A2 * C1 * D1 * !Y)	-0.00402	-0.00406	-0.00404
	(A1 * A2 * C1 * !D1 * !Y)	0.00322	0.00307	0.00278
	(A1 * A2 * C1 * !D1 * !Y)	-0.00388	-0.00391	-0.00389
	(A1 * A2 * !C1 * D1 * !Y)	0.00270	0.00284	0.00272
	(A1 * A2 * !C1 * D1 * !Y)	-0.00374	-0.00380	-0.00376
	(A1 * A2 * !C1 * !D1 * !Y)	0.00265	0.00269	0.00265
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00293	-0.00296	-0.00293
	(A1 * !A2 * C1 * D1 * !Y)	0.00266	0.00267	0.00264
	(A1 * !A2 * C1 * D1 * !Y)	-0.00558	-0.00578	-0.00577
	(A1 * !A2 * C1 * !D1 * !Y)	0.00329	0.00267	0.00264
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00496	-0.00583	-0.00579
	(A1 * !A2 * !C1 * D1 * !Y)	0.00308	0.00267	0.00265
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00481	-0.00559	-0.00558
	(!A1 * C1 * D1 * !Y)	0.00266	0.00267	0.00264
	(!A1 * C1 * D1 * !Y)	-0.00559	-0.00579	-0.00578
	(!A1 * C1 * !D1 * !Y)	0.00327	0.00267	0.00264
	(!A1 * C1 * !D1 * !Y)	-0.00498	-0.00581	-0.00580
	(!A1 * !C1 * D1 * !Y)	0.00306	0.00267	0.00265
	(!A1 * !C1 * D1 * !Y)	-0.00484	-0.00560	-0.00559

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	0.00514	0.00516	0.00510
	(A1 * A2 * C1 * D1 * !Y)	-0.00822	-0.00830	-0.00822
	(A1 * A2 * C1 * !D1 * !Y)	0.00616	0.00595	0.00537
	(A1 * A2 * C1 * !D1 * !Y)	-0.00788	-0.00798	-0.00793
	(A1 * A2 * !C1 * D1 * !Y)	0.00522	0.00554	0.00527
	(A1 * A2 * !C1 * D1 * !Y)	-0.00760	-0.00764	-0.00757
	(A1 * A2 * !C1 * !D1 * !Y)	0.00514	0.00515	0.00510
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00612	-0.00613	-0.00609
	(A1 * !A2 * C1 * D1 * !Y)	0.00518	0.00513	0.00509
	(A1 * !A2 * C1 * D1 * !Y)	-0.01147	-0.01186	-0.01183
	(A1 * !A2 * C1 * !D1 * !Y)	0.00661	0.00514	0.00509
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00991	-0.01187	-0.01186
	(A1 * !A2 * !C1 * D1 * !Y)	0.00608	0.00511	0.00510
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00966	-0.01142	-0.01139
	(!A1 * C1 * D1 * !Y)	0.00518	0.00513	0.00508
	(!A1 * C1 * D1 * !Y)	-0.01149	-0.01186	-0.01183
	(!A1 * C1 * !D1 * !Y)	0.00654	0.00514	0.00509
	(!A1 * C1 * !D1 * !Y)	-0.01001	-0.01187	-0.01185
	(!A1 * !C1 * D1 * !Y)	0.00603	0.00515	0.00510
	(!A1 * !C1 * D1 * !Y)	-0.00977	-0.01143	-0.01141

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)**	-0.00236	-0.00236	-0.00236
	(A1 * A2 * C1 * D1 * !Y)	0.00205	0.00205	0.00204
	(A1 * A2 * C1 * !D1 * !Y)	-0.00235	-0.00237	-0.00236
	(A1 * A2 * C1 * !D1 * !Y)	0.00197	0.00200	0.00198
	(A1 * A2 * !C1 * D1 * !Y)	-0.00235	-0.00236	-0.00235
	(A1 * A2 * !C1 * D1 * !Y)	0.00187	0.00188	0.00187
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00224	-0.00226	-0.00226
	(A1 * A2 * !C1 * !D1 * !Y)	0.00156	0.00157	0.00155
	(A1 * !A2 * C1 * D1 * !Y)	-0.00233	-0.00233	-0.00233
	(A1 * !A2 * C1 * D1 * !Y)	0.00287	0.00289	0.00288
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00233	-0.00234	-0.00233
	(A1 * !A2 * C1 * !D1 * !Y)	0.00288	0.00291	0.00289
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00232	-0.00234	-0.00232
	(A1 * !A2 * !C1 * D1 * !Y)	0.00278	0.00281	0.00279
	(!A1 * C1 * D1 * !Y)	-0.00232	-0.00233	-0.00233
	(!A1 * C1 * D1 * !Y)	0.00288	0.00289	0.00289
	(!A1 * C1 * !D1 * !Y)	-0.00233	-0.00234	-0.00233
	(!A1 * C1 * !D1 * !Y)	0.00289	0.00291	0.00289
	(!A1 * !C1 * D1 * !Y)	-0.00232	-0.00233	-0.00232
	(!A1 * !C1 * D1 * !Y)	0.00279	0.00281	0.00280

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	-0.00264	-0.00265	-0.00264
	(A1 * A2 * C1 * D1 * !Y)	0.00402	0.00406	0.00404
	(A1 * A2 * C1 * !D1 * !Y)	-0.00264	-0.00265	-0.00264
	(A1 * A2 * C1 * !D1 * !Y)	0.00388	0.00391	0.00389
	(A1 * A2 * !C1 * D1 * !Y)	-0.00266	-0.00269	-0.00267
	(A1 * A2 * !C1 * D1 * !Y)	0.00374	0.00380	0.00376
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00246	-0.00246	-0.00244
	(A1 * A2 * !C1 * !D1 * !Y)	0.00316	0.00315	0.00314
	(A1 * !A2 * C1 * D1 * !Y)	-0.00263	-0.00264	-0.00264
	(A1 * !A2 * C1 * D1 * !Y)	0.00575	0.00578	0.00577
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00263	-0.00265	-0.00263
	(A1 * !A2 * C1 * !D1 * !Y)	0.00577	0.00583	0.00579
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00263	-0.00265	-0.00263
	(A1 * !A2 * !C1 * D1 * !Y)	0.00554	0.00559	0.00558
	(!A1 * C1 * D1 * !Y)	-0.00263	-0.00264	-0.00264
	(!A1 * C1 * D1 * !Y)	0.00575	0.00579	0.00578
	(!A1 * C1 * !D1 * !Y)	-0.00263	-0.00264	-0.00263
	(!A1 * C1 * !D1 * !Y)	0.00576	0.00581	0.00580
	(!A1 * !C1 * D1 * !Y)	-0.00263	-0.00265	-0.00263
	(!A1 * !C1 * D1 * !Y)	0.00554	0.00560	0.00559

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	-0.00508	-0.00511	-0.00508
	(A1 * A2 * C1 * D1 * !Y)	0.00822	0.00830	0.00822
	(A1 * A2 * C1 * !D1 * !Y)	-0.00506	-0.00510	-0.00508
	(A1 * A2 * C1 * !D1 * !Y)	0.00788	0.00798	0.00793
	(A1 * A2 * !C1 * D1 * !Y)	-0.00515	-0.00517	-0.00515
	(A1 * A2 * !C1 * D1 * !Y)	0.00760	0.00764	0.00757
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00472	-0.00475	-0.00470
	(A1 * A2 * !C1 * !D1 * !Y)	0.00641	0.00646	0.00645
	(A1 * !A2 * C1 * D1 * !Y)	-0.00506	-0.00508	-0.00507
	(A1 * !A2 * C1 * D1 * !Y)	0.01178	0.01186	0.01183
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00508	-0.00508	-0.00507
	(A1 * !A2 * C1 * !D1 * !Y)	0.01186	0.01187	0.01186
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00507	-0.00510	-0.00506
	(A1 * !A2 * !C1 * D1 * !Y)	0.01133	0.01142	0.01139
	(!A1 * C1 * D1 * !Y)	-0.00508	-0.00508	-0.00507
	(!A1 * C1 * D1 * !Y)	0.01183	0.01186	0.01183
	(!A1 * C1 * !D1 * !Y)	-0.00508	-0.00508	-0.00507
	(!A1 * C1 * !D1 * !Y)	0.01185	0.01187	0.01185
	(!A1 * !C1 * D1 * !Y)	-0.00508	-0.00510	-0.00507
	(!A1 * !C1 * D1 * !Y)	0.01137	0.01143	0.01141

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)**	0.00267	0.00267	0.00255
	(A1 * B1 * D1 * !Y)	-0.00174	-0.00175	-0.00173
	(A1 * B1 * !D1 * !Y)	0.00249	0.00249	0.00246
	(A1 * B1 * !D1 * !Y)	-0.00140	-0.00140	-0.00140
	(A1 * A2 * !B1 * D1 * !Y)	0.00288	0.00261	0.00249
	(A1 * A2 * !B1 * D1 * !Y)	-0.00171	-0.00189	-0.00188
	(A1 * A2 * !B1 * !D1 * !Y)	0.00250	0.00251	0.00246
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00138	-0.00138	-0.00139
	(A1 * !A2 * !B1 * D1 * !Y)	0.00312	0.00250	0.00245
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00216	-0.00280	-0.00281
	(!A1 * B1 * D1 * !Y)	0.00268	0.00268	0.00256
	(!A1 * B1 * D1 * !Y)	-0.00175	-0.00176	-0.00174
	(!A1 * B1 * !D1 * !Y)	0.00250	0.00251	0.00246
	(!A1 * B1 * !D1 * !Y)	-0.00139	-0.00139	-0.00140
	(!A1 * !B1 * D1 * !Y)	0.00309	0.00250	0.00245
	(!A1 * !B1 * D1 * !Y)	-0.00213	-0.00280	-0.00281

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00289	0.00298	0.00275
	(A1 * B1 * D1 * !Y)	-0.00368	-0.00369	-0.00367
	(A1 * B1 * !D1 * !Y)	0.00256	0.00257	0.00253
	(A1 * B1 * !D1 * !Y)	-0.00304	-0.00304	-0.00303
	(A1 * A2 * !B1 * D1 * !Y)	0.00340	0.00273	0.00260
	(A1 * A2 * !B1 * D1 * !Y)	-0.00369	-0.00396	-0.00395
	(A1 * A2 * !B1 * !D1 * !Y)	0.00260	0.00260	0.00255
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00301	-0.00300	-0.00300
	(A1 * !A2 * !B1 * D1 * !Y)	0.00406	0.00259	0.00252
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00441	-0.00591	-0.00595
	(!A1 * B1 * D1 * !Y)	0.00294	0.00303	0.00278
	(!A1 * B1 * D1 * !Y)	-0.00372	-0.00373	-0.00371
	(!A1 * B1 * !D1 * !Y)	0.00259	0.00259	0.00254
	(!A1 * B1 * !D1 * !Y)	-0.00303	-0.00303	-0.00303
	(!A1 * !B1 * D1 * !Y)	0.00405	0.00260	0.00252
	(!A1 * !B1 * D1 * !Y)	-0.00441	-0.00591	-0.00595

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00579	0.00585	0.00536
	(A1 * B1 * D1 * !Y)	-0.00725	-0.00728	-0.00723
	(A1 * B1 * !D1 * !Y)	0.00506	0.00507	0.00494
	(A1 * B1 * !D1 * !Y)	-0.00591	-0.00591	-0.00593
	(A1 * A2 * !B1 * D1 * !Y)	0.00684	0.00536	0.00505
	(A1 * A2 * !B1 * D1 * !Y)	-0.00698	-0.00771	-0.00768
	(A1 * A2 * !B1 * !D1 * !Y)	0.00515	0.00516	0.00497
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00581	-0.00582	-0.00587
	(A1 * !A2 * !B1 * D1 * !Y)	0.00806	0.00506	0.00487
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00837	-0.01161	-0.01172
	(!A1 * B1 * D1 * !Y)	0.00588	0.00593	0.00542
	(!A1 * B1 * D1 * !Y)	-0.00731	-0.00734	-0.00729
	(!A1 * B1 * !D1 * !Y)	0.00512	0.00513	0.00496
	(!A1 * B1 * !D1 * !Y)	-0.00587	-0.00588	-0.00593
	(!A1 * !B1 * D1 * !Y)	0.00806	0.00507	0.00487
	(!A1 * !B1 * D1 * !Y)	-0.00839	-0.01160	-0.01172

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)**	-0.00246	-0.00247	-0.00245
	(A1 * B1 * D1 * !Y)	0.00174	0.00175	0.00173
	(A1 * B1 * !D1 * !Y)	-0.00243	-0.00245	-0.00243
	(A1 * B1 * !D1 * !Y)	0.00142	0.00143	0.00143
	(A1 * A2 * !B1 * D1 * !Y)	-0.00246	-0.00247	-0.00246
	(A1 * A2 * !B1 * D1 * !Y)	0.00188	0.00189	0.00188
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00234	-0.00237	-0.00243
	(A1 * A2 * !B1 * !D1 * !Y)	0.00146	0.00147	0.00142
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00242	-0.00245	-0.00243
	(A1 * !A2 * !B1 * D1 * !Y)	0.00279	0.00283	0.00282
	(!A1 * B1 * D1 * !Y)	-0.00246	-0.00247	-0.00245
	(!A1 * B1 * D1 * !Y)	0.00175	0.00176	0.00174
	(!A1 * B1 * !D1 * !Y)	-0.00243	-0.00245	-0.00243
	(!A1 * B1 * !D1 * !Y)	0.00142	0.00144	0.00144
	(!A1 * !B1 * D1 * !Y)	-0.00243	-0.00244	-0.00243
	(!A1 * !B1 * D1 * !Y)	0.00280	0.00282	0.00282

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00256	-0.00257	-0.00256
	(A1 * B1 * D1 * !Y)	0.00368	0.00369	0.00367
	(A1 * B1 * !D1 * !Y)	-0.00250	-0.00250	-0.00246
	(A1 * B1 * !D1 * !Y)	0.00307	0.00308	0.00310
	(A1 * A2 * !B1 * D1 * !Y)	-0.00255	-0.00256	-0.00255
	(A1 * A2 * !B1 * D1 * !Y)	0.00397	0.00396	0.00395
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00235	-0.00238	-0.00245
	(A1 * A2 * !B1 * !D1 * !Y)	0.00309	0.00312	0.00308
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00250	-0.00251	-0.00248
	(A1 * !A2 * !B1 * D1 * !Y)	0.00591	0.00594	0.00595
	(!A1 * B1 * D1 * !Y)	-0.00257	-0.00257	-0.00256
	(!A1 * B1 * D1 * !Y)	0.00372	0.00373	0.00371
	(!A1 * B1 * !D1 * !Y)	-0.00248	-0.00250	-0.00246
	(!A1 * B1 * !D1 * !Y)	0.00305	0.00309	0.00312
	(!A1 * !B1 * D1 * !Y)	-0.00250	-0.00251	-0.00248
	(!A1 * !B1 * D1 * !Y)	0.00591	0.00594	0.00595

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00498	-0.00500	-0.00498
	(A1 * B1 * D1 * !Y)	0.00725	0.00728	0.00723
	(A1 * B1 * !D1 * !Y)	-0.00485	-0.00486	-0.00480
	(A1 * B1 * !D1 * !Y)	0.00606	0.00608	0.00609
	(A1 * A2 * !B1 * D1 * !Y)	-0.00495	-0.00496	-0.00494
	(A1 * A2 * !B1 * D1 * !Y)	0.00770	0.00771	0.00768
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00467	-0.00471	-0.00479
	(A1 * A2 * !B1 * !D1 * !Y)	0.00599	0.00605	0.00600
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00483	-0.00486	-0.00480
	(A1 * !A2 * !B1 * D1 * !Y)	0.01162	0.01172	0.01172
	(!A1 * B1 * D1 * !Y)	-0.00498	-0.00500	-0.00498
	(!A1 * B1 * D1 * !Y)	0.00731	0.00734	0.00729
	(!A1 * B1 * !D1 * !Y)	-0.00483	-0.00486	-0.00480
	(!A1 * B1 * !D1 * !Y)	0.00603	0.00610	0.00610
	(!A1 * !B1 * D1 * !Y)	-0.00483	-0.00486	-0.00480
	(!A1 * !B1 * D1 * !Y)	0.01162	0.01173	0.01172

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	0.00272	0.00274	0.00272
	(A1 * C1 * !Y)	-0.00129	-0.00130	-0.00129
	(A1 * B1 * !C1 * !Y)	0.00273	0.00274	0.00272
	(A1 * B1 * !C1 * !Y)	-0.00129	-0.00129	-0.00128
	(A1 * A2 * !B1 * !C1 * !Y)	0.00273	0.00274	0.00272
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00129	-0.00129	-0.00128
	(!A1 * C1 * !Y)	0.00272	0.00274	0.00272
	(!A1 * C1 * !Y)	-0.00129	-0.00130	-0.00129
	(!A1 * B1 * !C1 * !Y)	0.00273	0.00274	0.00272
	(!A1 * B1 * !C1 * !Y)	-0.00129	-0.00129	-0.00128

sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	0.00310	0.00310	0.00308
	(A1 * C1 * !Y)	-0.00264	-0.00263	-0.00261
	(A1 * B1 * !C1 * !Y)	0.00309	0.00310	0.00308
	(A1 * B1 * !C1 * !Y)	-0.00263	-0.00263	-0.00261
	(A1 * A2 * !B1 * !C1 * !Y)	0.00309	0.00310	0.00308
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00263	-0.00262	-0.00260
	(!A1 * C1 * !Y)	0.00310	0.00310	0.00308
	(!A1 * C1 * !Y)	-0.00264	-0.00264	-0.00262
	(!A1 * B1 * !C1 * !Y)	0.00309	0.00310	0.00308
	(!A1 * B1 * !C1 * !Y)	-0.00263	-0.00263	-0.00261
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	0.00607	0.00615	0.00611
	(A1 * C1 * !Y)	-0.00509	-0.00517	-0.00513
	(A1 * B1 * !C1 * !Y)	0.00608	0.00615	0.00611
	(A1 * B1 * !C1 * !Y)	-0.00510	-0.00516	-0.00511
	(A1 * A2 * !B1 * !C1 * !Y)	0.00609	0.00616	0.00611
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00511	-0.00517	-0.00511
	(!A1 * C1 * !Y)	0.00607	0.00615	0.00611
	(!A1 * C1 * !Y)	-0.00510	-0.00517	-0.00514
	(!A1 * B1 * !C1 * !Y)	0.00609	0.00615	0.00611
	(!A1 * B1 * !C1 * !Y)	-0.00512	-0.00517	-0.00512

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

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

sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	-0.00266	-0.00267	-0.00271
	(A1 * C1 * !Y)	0.00134	0.00134	0.00130
	(A1 * B1 * !C1 * !Y)	-0.00256	-0.00259	-0.00270
	(A1 * B1 * !C1 * !Y)	0.00137	0.00139	0.00130
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00235	-0.00238	-0.00265
	(A1 * A2 * !B1 * !C1 * !Y)	0.00151	0.00152	0.00133
	(!A1 * C1 * !Y)	-0.00264	-0.00267	-0.00271
	(!A1 * C1 * !Y)	0.00133	0.00134	0.00130
	(!A1 * B1 * !C1 * !Y)	-0.00257	-0.00259	-0.00270
	(!A1 * B1 * !C1 * !Y)	0.00138	0.00139	0.00130
sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	-0.00289	-0.00289	-0.00307
	(A1 * C1 * !Y)	0.00281	0.00280	0.00266
	(A1 * B1 * !C1 * !Y)	-0.00268	-0.00272	-0.00303
	(A1 * B1 * !C1 * !Y)	0.00284	0.00287	0.00264
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00228	-0.00232	-0.00292
	(A1 * A2 * !B1 * !C1 * !Y)	0.00310	0.00312	0.00271
	(!A1 * C1 * !Y)	-0.00287	-0.00289	-0.00307
	(!A1 * C1 * !Y)	0.00279	0.00280	0.00266
	(!A1 * B1 * !C1 * !Y)	-0.00268	-0.00272	-0.00303
	(!A1 * B1 * !C1 * !Y)	0.00285	0.00288	0.00264
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	-0.00577	-0.00581	-0.00609
	(A1 * C1 * !Y)	0.00545	0.00545	0.00521
	(A1 * B1 * !C1 * !Y)	-0.00535	-0.00541	-0.00599
	(A1 * B1 * !C1 * !Y)	0.00561	0.00564	0.00520
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00459	-0.00466	-0.00580
	(A1 * A2 * !B1 * !C1 * !Y)	0.00605	0.00609	0.00532
	(!A1 * C1 * !Y)	-0.00574	-0.00581	-0.00609
	(!A1 * C1 * !Y)	0.00541	0.00546	0.00521
	(!A1 * B1 * !C1 * !Y)	-0.00535	-0.00538	-0.00600
	(!A1 * B1 * !C1 * !Y)	0.00561	0.00562	0.00521

SKY130_FD_SC_HS__A2111Ox

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00263	0.00277	0.00264	0.00269	0.00265	1.43217
sky130_fd_sc_hs__a2111o_2	0.00293	0.00305	0.00288	0.00296	0.00308	2.70421
sky130_fd_sc_hs__a2111o_4	0.00497	0.00491	0.00509	0.00510	0.00503	5.22371

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2111o_1	0.00000	0.12558	0.48974
sky130_fd_sc_hs__a2111o_2	0.00000	0.10097	0.42609
sky130_fd_sc_hs__a2111o_4	0.00000	0.30756	1.00236

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)	0.06654	0.49484	5.56995
	A2->X (RR)	0.06988	0.48491	5.44222
	B1->X (RR)	0.05539	0.45689	5.20736
	C1->X (RR)	0.05369	0.44405	5.08043
	D1->X (RR)	0.04803	0.42581	5.01225
sky130_fd_sc_hs__a2111o_2	A1->X (RR)	0.06895	0.42312	5.46995
	A2->X (RR)	0.07233	0.40996	5.34352
	B1->X (RR)	0.05547	0.38189	5.11741
	C1->X (RR)	0.05296	0.36773	4.98504
	D1->X (RR)	0.04856	0.35314	4.91905
sky130_fd_sc_hs__a2111o_4	A1->X (RR)	0.07549	0.37432	5.65765
	A2->X (RR)	0.08012	0.36119	5.49838
	B1->X (RR)	0.05477	0.31399	5.14819
	C1->X (RR)	0.05301	0.30206	5.01011
	D1->X (RR)	0.04708	0.28408	4.94578

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111o_1	A1->X (FF)	0.20179	0.57022	5.35389
	A2->X (FF)	0.21694	0.59534	5.42468
	B1->X (FF)	0.19918	0.61012	5.63985
	C1->X (FF)	0.17675	0.62465	5.75499
	D1->X (FF)	0.14219	0.61831	5.78860
sky130_fd_sc_hs__a2111o_2	A1->X (FF)	0.23703	0.58386	5.35130
	A2->X (FF)	0.24929	0.60787	5.42865
	B1->X (FF)	0.21616	0.60177	5.64446
	C1->X (FF)	0.20741	0.63830	5.78186
	D1->X (FF)	0.17396	0.63751	5.82318
sky130_fd_sc_hs__a2111o_4	A1->X (FF)	0.25861	0.56826	5.49959
	A2->X (FF)	0.29119	0.61308	5.62112
	B1->X (FF)	0.27406	0.62797	5.89002
	C1->X (FF)	0.24775	0.65282	6.05826
	D1->X (FF)	0.19292	0.64008	6.03781

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111o_1	A1	0.02141	0.02454	0.11529
	A1	0.00978	0.01293	0.10417
	A2	0.02267	0.02529	0.11293
	A2	0.00977	0.01240	0.10041
	B1	0.01717	0.02138	0.11255
	B1	0.00737	0.01163	0.10278
	C1	0.01448	0.01872	0.09994
	C1	0.00610	0.01036	0.09156
	D1	0.01169	0.01681	0.10964
	D1	0.00468	0.00982	0.10264
sky130_fd_sc_hs__a2111o_2	A1	0.02760	0.03072	0.12405
	A1	0.01456	0.01772	0.11205
	A2	0.02928	0.03183	0.12288
	A2	0.01464	0.01724	0.10898
	B1	0.02251	0.02681	0.12062
	B1	0.01158	0.01590	0.10971
	C1	0.01922	0.02375	0.10701
	C1	0.00981	0.01436	0.09760
	D1	0.01642	0.02161	0.11446
	D1	0.00837	0.01379	0.10648

sky130_fd_sc_hs__a2111o_4	**A1**	0.05244	0.05772	0.22836
	A1	0.02967	0.03499	0.20715
	A2	0.05548	0.05951	0.22362
	A2	0.02962	0.03372	0.19965
	B1	0.04333	0.05189	0.22792
	B1	0.02358	0.03215	0.20820
	C1	0.03757	0.04576	0.19485
	C1	0.02086	0.02910	0.17816
	D1	0.03005	0.04006	0.20800
	D1	0.01647	0.02661	0.19457

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**A1**	0.00727	0.00741	0.09581
	A1	0.01903	0.01916	0.10715
	A2	0.00840	0.00827	0.09812
	A2	0.02138	0.02126	0.10815
	B1	0.00690	0.00909	0.10144
	B1	0.01673	0.01875	0.10688
	C1	0.00692	0.00947	0.08911
	C1	0.01533	0.01787	0.09573
	D1	0.00694	0.01155	0.10428
	D1	0.01396	0.01854	0.10873

sky130_fd_sc_hs__a2111o_2	**A1**	0.01624	0.01221	0.10665
	A1	0.02943	0.02543	0.11518
	A2	0.01739	0.01299	0.10663
	A2	0.03214	0.02778	0.11748
	B1	0.01483	0.01359	0.10706
	B1	0.02583	0.02459	0.11413
	C1	0.01484	0.01431	0.09586
	C1	0.02428	0.02375	0.10239
	D1	0.01462	0.01610	0.10800
	D1	0.02264	0.02413	0.11360
sky130_fd_sc_hs__a2111o_4	**A1**	0.03389	0.02384	0.19172
	A1	0.05698	0.04690	0.20997
	A2	0.03859	0.02622	0.18894
	A2	0.06464	0.05231	0.21305
	B1	0.03107	0.02603	0.19889
	B1	0.05099	0.04560	0.21322
	C1	0.03113	0.02702	0.16971
	C1	0.04792	0.04376	0.18339
	D1	0.03091	0.03111	0.18973
	D1	0.04451	0.04465	0.20084

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)**	0.00232	0.00234	0.00232
	(A2 * B1 * D1 * X)	-0.00253	-0.00263	-0.00262
	(A2 * B1 * C1 * !D1 * X)	0.00232	0.00234	0.00232
	(A2 * B1 * C1 * !D1 * X)	-0.00253	-0.00263	-0.00262
	(A2 * B1 * !C1 * !D1 * X)	0.00236	0.00234	0.00232
	(A2 * B1 * !C1 * !D1 * X)	-0.00245	-0.00262	-0.00262
	(A2 * !B1 * C1 * D1 * X)	0.00233	0.00234	0.00232
	(A2 * !B1 * C1 * D1 * X)	-0.00237	-0.00258	-0.00256
	(A2 * !B1 * C1 * !D1 * X)	0.00234	0.00234	0.00232
	(A2 * !B1 * C1 * !D1 * X)	-0.00236	-0.00256	-0.00256
	(A2 * !B1 * !C1 * D1 * X)	0.00239	0.00234	0.00232
	(A2 * !B1 * !C1 * D1 * X)	-0.00229	-0.00255	-0.00253
	(!A2 * B1 * D1 * X)	0.00224	0.00225	0.00224
	(!A2 * B1 * D1 * X)	-0.00266	-0.00267	-0.00267
	(!A2 * B1 * C1 * !D1 * X)	0.00223	0.00225	0.00224
	(!A2 * B1 * C1 * !D1 * X)	-0.00266	-0.00267	-0.00267
	(!A2 * B1 * !C1 * !D1 * X)	0.00224	0.00225	0.00224
	(!A2 * B1 * !C1 * !D1 * X)	-0.00266	-0.00267	-0.00267
	(!A2 * !B1 * C1 * D1 * X)	0.00223	0.00225	0.00224
	(!A2 * !B1 * C1 * D1 * X)	-0.00266	-0.00267	-0.00267
	(!A2 * !B1 * C1 * !D1 * X)	0.00224	0.00223	0.00224
	(!A2 * !B1 * C1 * !D1 * X)	-0.00266	-0.00266	-0.00267
	(!A2 * !B1 * !C1 * D1 * X)	0.00225	0.00225	0.00224
	(!A2 * !B1 * !C1 * D1 * X)	-0.00266	-0.00267	-0.00266
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00092	0.00092	0.00090
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00308	-0.00309	-0.00311

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	0.00237	0.00240	0.00238
	(A2 * B1 * D1 * X)	-0.00285	-0.00298	-0.00297
	(A2 * B1 * C1 * !D1 * X)	0.00237	0.00240	0.00238
	(A2 * B1 * C1 * !D1 * X)	-0.00285	-0.00298	-0.00297
	(A2 * B1 * !C1 * !D1 * X)	0.00237	0.00240	0.00238
	(A2 * B1 * !C1 * !D1 * X)	-0.00280	-0.00297	-0.00297
	(A2 * !B1 * C1 * D1 * X)	0.00237	0.00239	0.00238
	(A2 * !B1 * C1 * D1 * X)	-0.00267	-0.00291	-0.00290
	(A2 * !B1 * C1 * !D1 * X)	0.00237	0.00239	0.00238
	(A2 * !B1 * C1 * !D1 * X)	-0.00266	-0.00291	-0.00290
	(A2 * !B1 * !C1 * D1 * X)	0.00240	0.00239	0.00238
	(A2 * !B1 * !C1 * D1 * X)	-0.00259	-0.00288	-0.00286
	(!A2 * B1 * D1 * X)	0.00228	0.00230	0.00229
	(!A2 * B1 * D1 * X)	-0.00301	-0.00303	-0.00302
	(!A2 * B1 * C1 * !D1 * X)	0.00228	0.00230	0.00229
	(!A2 * B1 * C1 * !D1 * X)	-0.00301	-0.00303	-0.00302
	(!A2 * B1 * !C1 * !D1 * X)	0.00228	0.00230	0.00229
	(!A2 * B1 * !C1 * !D1 * X)	-0.00301	-0.00303	-0.00302
	(!A2 * !B1 * C1 * D1 * X)	0.00228	0.00230	0.00229
	(!A2 * !B1 * C1 * D1 * X)	-0.00301	-0.00303	-0.00302
	(!A2 * !B1 * C1 * !D1 * X)	0.00228	0.00230	0.00229
	(!A2 * !B1 * C1 * !D1 * X)	-0.00301	-0.00303	-0.00302
	(!A2 * !B1 * !C1 * D1 * X)	0.00228	0.00230	0.00229
	(!A2 * !B1 * !C1 * D1 * X)	-0.00301	-0.00302	-0.00302
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00076	0.00077	0.00075
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00346	-0.00347	-0.00351

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	0.00396	0.00401	0.00397
	(A2 * B1 * D1 * X)	-0.00512	-0.00538	-0.00534
	(A2 * B1 * C1 * !D1 * X)	0.00396	0.00401	0.00397
	(A2 * B1 * C1 * !D1 * X)	-0.00511	-0.00538	-0.00534
	(A2 * B1 * !C1 * !D1 * X)	0.00400	0.00401	0.00398
	(A2 * B1 * !C1 * !D1 * X)	-0.00496	-0.00537	-0.00535
	(A2 * !B1 * C1 * D1 * X)	0.00396	0.00400	0.00397
	(A2 * !B1 * C1 * D1 * X)	-0.00475	-0.00523	-0.00520
	(A2 * !B1 * C1 * !D1 * X)	0.00398	0.00400	0.00398
	(A2 * !B1 * C1 * !D1 * X)	-0.00474	-0.00523	-0.00520
	(A2 * !B1 * !C1 * D1 * X)	0.00410	0.00402	0.00398
	(A2 * !B1 * !C1 * D1 * X)	-0.00459	-0.00516	-0.00514
	(!A2 * B1 * D1 * X)	0.00383	0.00385	0.00384
	(!A2 * B1 * D1 * X)	-0.00542	-0.00544	-0.00543
	(!A2 * B1 * C1 * !D1 * X)	0.00383	0.00385	0.00384
	(!A2 * B1 * C1 * !D1 * X)	-0.00542	-0.00545	-0.00543
	(!A2 * B1 * !C1 * !D1 * X)	0.00383	0.00385	0.00384
	(!A2 * B1 * !C1 * !D1 * X)	-0.00541	-0.00544	-0.00542
	(!A2 * !B1 * C1 * D1 * X)	0.00382	0.00385	0.00384
	(!A2 * !B1 * C1 * D1 * X)	-0.00541	-0.00544	-0.00543
	(!A2 * !B1 * C1 * !D1 * X)	0.00382	0.00384	0.00384
	(!A2 * !B1 * C1 * !D1 * X)	-0.00541	-0.00544	-0.00542
	(!A2 * !B1 * !C1 * D1 * X)	0.00383	0.00386	0.00385
	(!A2 * !B1 * !C1 * D1 * X)	-0.00540	-0.00544	-0.00542
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00131	0.00132	0.00127
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00613	-0.00616	-0.00625

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)**	-0.00231	-0.00232	-0.00232
	(A2 * B1 * D1 * X)	0.00261	0.00263	0.00262
	(A2 * B1 * C1 * !D1 * X)	-0.00231	-0.00232	-0.00232
	(A2 * B1 * C1 * !D1 * X)	0.00261	0.00263	0.00262
	(A2 * B1 * !C1 * !D1 * X)	-0.00231	-0.00231	-0.00232
	(A2 * B1 * !C1 * !D1 * X)	0.00261	0.00262	0.00262
	(A2 * !B1 * C1 * D1 * X)	-0.00231	-0.00233	-0.00231
	(A2 * !B1 * C1 * D1 * X)	0.00254	0.00258	0.00256
	(A2 * !B1 * C1 * !D1 * X)	-0.00231	-0.00232	-0.00231
	(A2 * !B1 * C1 * !D1 * X)	0.00255	0.00256	0.00256
	(A2 * !B1 * !C1 * D1 * X)	-0.00230	-0.00232	-0.00231
	(A2 * !B1 * !C1 * D1 * X)	0.00251	0.00255	0.00253
	(!A2 * B1 * D1 * X)	-0.00221	-0.00225	-0.00224
	(!A2 * B1 * D1 * X)	0.00266	0.00269	0.00267
	(!A2 * B1 * C1 * !D1 * X)	-0.00221	-0.00225	-0.00224
	(!A2 * B1 * C1 * !D1 * X)	0.00266	0.00269	0.00267
	(!A2 * B1 * !C1 * !D1 * X)	-0.00220	-0.00225	-0.00224
	(!A2 * B1 * !C1 * !D1 * X)	0.00266	0.00269	0.00268
	(!A2 * !B1 * C1 * D1 * X)	-0.00221	-0.00225	-0.00224
	(!A2 * !B1 * C1 * D1 * X)	0.00266	0.00269	0.00267
	(!A2 * !B1 * C1 * !D1 * X)	-0.00220	-0.00223	-0.00224
	(!A2 * !B1 * C1 * !D1 * X)	0.00266	0.00269	0.00268
	(!A2 * !B1 * !C1 * D1 * X)	-0.00220	-0.00225	-0.00224
	(!A2 * !B1 * !C1 * D1 * X)	0.00266	0.00270	0.00268
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00089	-0.00090	-0.00089
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00310	0.00317	0.00312

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	-0.00237	-0.00238	-0.00238
	(A2 * B1 * D1 * X)	0.00298	0.00298	0.00297
	(A2 * B1 * C1 * !D1 * X)	-0.00237	-0.00238	-0.00238
	(A2 * B1 * C1 * !D1 * X)	0.00298	0.00298	0.00297
	(A2 * B1 * !C1 * !D1 * X)	-0.00237	-0.00237	-0.00237
	(A2 * B1 * !C1 * !D1 * X)	0.00298	0.00297	0.00297
	(A2 * !B1 * C1 * D1 * X)	-0.00237	-0.00238	-0.00237
	(A2 * !B1 * C1 * D1 * X)	0.00289	0.00291	0.00290
	(A2 * !B1 * C1 * !D1 * X)	-0.00237	-0.00238	-0.00237
	(A2 * !B1 * C1 * !D1 * X)	0.00289	0.00291	0.00290
	(A2 * !B1 * !C1 * D1 * X)	-0.00237	-0.00238	-0.00237
	(A2 * !B1 * !C1 * D1 * X)	0.00285	0.00288	0.00286
	(!A2 * B1 * D1 * X)	-0.00225	-0.00230	-0.00229
	(!A2 * B1 * D1 * X)	0.00302	0.00304	0.00303
	(!A2 * B1 * C1 * !D1 * X)	-0.00225	-0.00230	-0.00229
	(!A2 * B1 * C1 * !D1 * X)	0.00301	0.00304	0.00303
	(!A2 * B1 * !C1 * !D1 * X)	-0.00224	-0.00230	-0.00229
	(!A2 * B1 * !C1 * !D1 * X)	0.00301	0.00304	0.00303
	(!A2 * !B1 * C1 * D1 * X)	-0.00225	-0.00230	-0.00229
	(!A2 * !B1 * C1 * D1 * X)	0.00301	0.00303	0.00303
	(!A2 * !B1 * C1 * !D1 * X)	-0.00224	-0.00230	-0.00229
	(!A2 * !B1 * C1 * !D1 * X)	0.00301	0.00304	0.00303
	(!A2 * !B1 * !C1 * D1 * X)	-0.00224	-0.00230	-0.00229
	(!A2 * !B1 * !C1 * D1 * X)	0.00301	0.00306	0.00303
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00073	-0.00074	-0.00073
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00350	0.00355	0.00352

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	-0.00396	-0.00398	-0.00397
	(A2 * B1 * D1 * X)	0.00535	0.00539	0.00534
	(A2 * B1 * C1 * !D1 * X)	-0.00396	-0.00398	-0.00397
	(A2 * B1 * C1 * !D1 * X)	0.00535	0.00539	0.00534
	(A2 * B1 * !C1 * !D1 * X)	-0.00397	-0.00397	-0.00397
	(A2 * B1 * !C1 * !D1 * X)	0.00535	0.00537	0.00535
	(A2 * !B1 * C1 * D1 * X)	-0.00396	-0.00398	-0.00397
	(A2 * !B1 * C1 * D1 * X)	0.00521	0.00523	0.00520
	(A2 * !B1 * C1 * !D1 * X)	-0.00397	-0.00398	-0.00396
	(A2 * !B1 * C1 * !D1 * X)	0.00521	0.00523	0.00520
	(A2 * !B1 * !C1 * D1 * X)	-0.00397	-0.00397	-0.00395
	(A2 * !B1 * !C1 * D1 * X)	0.00515	0.00516	0.00514
	(!A2 * B1 * D1 * X)	-0.00371	-0.00385	-0.00384
	(!A2 * B1 * D1 * X)	0.00542	0.00548	0.00544
	(!A2 * B1 * C1 * !D1 * X)	-0.00370	-0.00385	-0.00384
	(!A2 * B1 * C1 * !D1 * X)	0.00542	0.00548	0.00544
	(!A2 * B1 * !C1 * !D1 * X)	-0.00369	-0.00385	-0.00384
	(!A2 * B1 * !C1 * !D1 * X)	0.00541	0.00548	0.00544
	(!A2 * !B1 * C1 * D1 * X)	-0.00370	-0.00385	-0.00384
	(!A2 * !B1 * C1 * D1 * X)	0.00542	0.00548	0.00544
	(!A2 * !B1 * C1 * !D1 * X)	-0.00369	-0.00384	-0.00384
	(!A2 * !B1 * C1 * !D1 * X)	0.00541	0.00548	0.00544
	(!A2 * !B1 * !C1 * D1 * X)	-0.00369	-0.00386	-0.00385
	(!A2 * !B1 * !C1 * D1 * X)	0.00542	0.00548	0.00545
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00122	-0.00124	-0.00122
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00626	0.00633	0.00628

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)**	0.00212	0.00214	0.00212
	(A1 * B1 * D1 * X)	-0.00263	-0.00274	-0.00273
	(A1 * B1 * C1 * !D1 * X)	0.00212	0.00214	0.00212
	(A1 * B1 * C1 * !D1 * X)	-0.00262	-0.00274	-0.00273
	(A1 * B1 * !C1 * !D1 * X)	0.00218	0.00214	0.00212
	(A1 * B1 * !C1 * !D1 * X)	-0.00251	-0.00273	-0.00273
	(A1 * !B1 * C1 * D1 * X)	0.00212	0.00213	0.00212
	(A1 * !B1 * C1 * D1 * X)	-0.00244	-0.00265	-0.00265
	(A1 * !B1 * C1 * !D1 * X)	0.00213	0.00213	0.00212
	(A1 * !B1 * C1 * !D1 * X)	-0.00243	-0.00265	-0.00265
	(A1 * !B1 * !C1 * D1 * X)	0.00219	0.00214	0.00212
	(A1 * !B1 * !C1 * D1 * X)	-0.00234	-0.00263	-0.00262
	(!A1 * B1 * X)	0.00204	0.00205	0.00204
	(!A1 * B1 * X)	-0.00277	-0.00278	-0.00277
	(!A1 * !B1 * C1 * X)	0.00204	0.00206	0.00204
	(!A1 * !B1 * C1 * X)	-0.00276	-0.00278	-0.00277
	(!A1 * !B1 * !C1 * D1 * X)	0.00207	0.00208	0.00207
	(!A1 * !B1 * !C1 * D1 * X)	-0.00276	-0.00277	-0.00277
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00182	0.00183	0.00182
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00301	-0.00302	-0.00301

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00239	0.00241	0.00239
	(A1 * B1 * D1 * X)	-0.00286	-0.00299	-0.00298
	(A1 * B1 * C1 * !D1 * X)	0.00238	0.00241	0.00239
	(A1 * B1 * C1 * !D1 * X)	-0.00285	-0.00299	-0.00298
	(A1 * B1 * !C1 * !D1 * X)	0.00239	0.00241	0.00239
	(A1 * B1 * !C1 * !D1 * X)	-0.00280	-0.00299	-0.00298
	(A1 * !B1 * C1 * D1 * X)	0.00239	0.00241	0.00239
	(A1 * !B1 * C1 * D1 * X)	-0.00266	-0.00292	-0.00290
	(A1 * !B1 * C1 * !D1 * X)	0.00239	0.00241	0.00239
	(A1 * !B1 * C1 * !D1 * X)	-0.00266	-0.00292	-0.00290
	(A1 * !B1 * !C1 * D1 * X)	0.00243	0.00241	0.00240
	(A1 * !B1 * !C1 * D1 * X)	-0.00257	-0.00288	-0.00286
	(!A1 * B1 * X)	0.00232	0.00233	0.00233
	(!A1 * B1 * X)	-0.00302	-0.00303	-0.00303
	(!A1 * !B1 * C1 * X)	0.00232	0.00234	0.00233
	(!A1 * !B1 * C1 * X)	-0.00302	-0.00304	-0.00303
	(!A1 * !B1 * !C1 * D1 * X)	0.00233	0.00234	0.00234
	(!A1 * !B1 * !C1 * D1 * X)	-0.00302	-0.00303	-0.00303
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00216	0.00218	0.00217
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00318	-0.00320	-0.00319

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00408	0.00411	0.00408
	(A1 * B1 * D1 * X)	-0.00517	-0.00541	-0.00537
	(A1 * B1 * C1 * !D1 * X)	0.00408	0.00411	0.00408
	(A1 * B1 * C1 * !D1 * X)	-0.00516	-0.00540	-0.00537
	(A1 * B1 * !C1 * !D1 * X)	0.00412	0.00411	0.00408
	(A1 * B1 * !C1 * !D1 * X)	-0.00501	-0.00540	-0.00538
	(A1 * !B1 * C1 * D1 * X)	0.00408	0.00411	0.00408
	(A1 * !B1 * C1 * D1 * X)	-0.00480	-0.00525	-0.00522
	(A1 * !B1 * C1 * !D1 * X)	0.00410	0.00411	0.00408
	(A1 * !B1 * C1 * !D1 * X)	-0.00479	-0.00525	-0.00523
	(A1 * !B1 * !C1 * D1 * X)	0.00422	0.00412	0.00409
	(A1 * !B1 * !C1 * D1 * X)	-0.00465	-0.00518	-0.00517
	(!A1 * B1 * X)	0.00393	0.00394	0.00393
	(!A1 * B1 * X)	-0.00545	-0.00547	-0.00546
	(!A1 * !B1 * C1 * X)	0.00393	0.00396	0.00393
	(!A1 * !B1 * C1 * X)	-0.00545	-0.00549	-0.00546
	(!A1 * !B1 * !C1 * D1 * X)	0.00394	0.00396	0.00394
	(!A1 * !B1 * !C1 * D1 * X)	-0.00545	-0.00547	-0.00545
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00393	0.00395	0.00393
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00546	-0.00547	-0.00545

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)**	-0.00212	-0.00212	-0.00212
	(A1 * B1 * D1 * X)	0.00274	0.00274	0.00273
	(A1 * B1 * C1 * !D1 * X)	-0.00212	-0.00213	-0.00212
	(A1 * B1 * C1 * !D1 * X)	0.00274	0.00275	0.00273
	(A1 * B1 * !C1 * !D1 * X)	-0.00212	-0.00213	-0.00212
	(A1 * B1 * !C1 * !D1 * X)	0.00274	0.00275	0.00273
	(A1 * !B1 * C1 * D1 * X)	-0.00211	-0.00211	-0.00212
	(A1 * !B1 * C1 * D1 * X)	0.00264	0.00265	0.00265
	(A1 * !B1 * C1 * !D1 * X)	-0.00211	-0.00211	-0.00212
	(A1 * !B1 * C1 * !D1 * X)	0.00264	0.00265	0.00265
	(A1 * !B1 * !C1 * D1 * X)	-0.00211	-0.00212	-0.00211
	(A1 * !B1 * !C1 * D1 * X)	0.00261	0.00263	0.00262
	(!A1 * B1 * X)	-0.00201	-0.00205	-0.00204
	(!A1 * B1 * X)	0.00277	0.00280	0.00278
	(!A1 * !B1 * C1 * X)	-0.00200	-0.00205	-0.00204
	(!A1 * !B1 * C1 * X)	0.00276	0.00279	0.00278
	(!A1 * !B1 * !C1 * D1 * X)	-0.00200	-0.00205	-0.00206
	(!A1 * !B1 * !C1 * D1 * X)	0.00277	0.00280	0.00278
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00166	-0.00181	-0.00181
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00313	0.00304	0.00303

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00239	-0.00239	-0.00239
	(A1 * B1 * D1 * X)	0.00299	0.00299	0.00298
	(A1 * B1 * C1 * !D1 * X)	-0.00238	-0.00239	-0.00239
	(A1 * B1 * C1 * !D1 * X)	0.00299	0.00299	0.00298
	(A1 * B1 * !C1 * !D1 * X)	-0.00239	-0.00239	-0.00239
	(A1 * B1 * !C1 * !D1 * X)	0.00299	0.00299	0.00298
	(A1 * !B1 * C1 * D1 * X)	-0.00238	-0.00240	-0.00239
	(A1 * !B1 * C1 * D1 * X)	0.00289	0.00293	0.00290
	(A1 * !B1 * C1 * !D1 * X)	-0.00238	-0.00240	-0.00239
	(A1 * !B1 * C1 * !D1 * X)	0.00289	0.00293	0.00290
	(A1 * !B1 * !C1 * D1 * X)	-0.00238	-0.00239	-0.00238
	(A1 * !B1 * !C1 * D1 * X)	0.00285	0.00288	0.00286
	(!A1 * B1 * X)	-0.00226	-0.00231	-0.00233
	(!A1 * B1 * X)	0.00303	0.00306	0.00304
	(!A1 * !B1 * C1 * X)	-0.00226	-0.00231	-0.00233
	(!A1 * !B1 * C1 * X)	0.00303	0.00306	0.00304
	(!A1 * !B1 * !C1 * D1 * X)	-0.00226	-0.00231	-0.00233
	(!A1 * !B1 * !C1 * D1 * X)	0.00303	0.00305	0.00304
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00199	-0.00214	-0.00215
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00333	0.00324	0.00321

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00407	-0.00408	-0.00407
	(A1 * B1 * D1 * X)	0.00538	0.00541	0.00537
	(A1 * B1 * C1 * !D1 * X)	-0.00407	-0.00408	-0.00407
	(A1 * B1 * C1 * !D1 * X)	0.00538	0.00540	0.00537
	(A1 * B1 * !C1 * !D1 * X)	-0.00407	-0.00408	-0.00407
	(A1 * B1 * !C1 * !D1 * X)	0.00538	0.00540	0.00538
	(A1 * !B1 * C1 * D1 * X)	-0.00407	-0.00408	-0.00407
	(A1 * !B1 * C1 * D1 * X)	0.00523	0.00525	0.00522
	(A1 * !B1 * C1 * !D1 * X)	-0.00407	-0.00408	-0.00407
	(A1 * !B1 * C1 * !D1 * X)	0.00523	0.00525	0.00523
	(A1 * !B1 * !C1 * D1 * X)	-0.00406	-0.00407	-0.00406
	(A1 * !B1 * !C1 * D1 * X)	0.00517	0.00518	0.00517
	(!A1 * B1 * X)	-0.00381	-0.00394	-0.00393
	(!A1 * B1 * X)	0.00545	0.00550	0.00547
	(!A1 * !B1 * C1 * X)	-0.00381	-0.00394	-0.00393
	(!A1 * !B1 * C1 * X)	0.00545	0.00550	0.00547
	(!A1 * !B1 * !C1 * D1 * X)	-0.00380	-0.00393	-0.00394
	(!A1 * !B1 * !C1 * D1 * X)	0.00545	0.00551	0.00548
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00359	-0.00395	-0.00393
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00572	0.00551	0.00549

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)**	0.00223	0.00222	0.00218
	(A1 * A2 * C1 * D1 * X)	-0.00182	-0.00184	-0.00182
	(A1 * A2 * C1 * !D1 * X)	0.00245	0.00237	0.00222
	(A1 * A2 * C1 * !D1 * X)	-0.00177	-0.00179	-0.00178
	(A1 * A2 * !C1 * D1 * X)	0.00222	0.00231	0.00220
	(A1 * A2 * !C1 * D1 * X)	-0.00168	-0.00170	-0.00168
	(A1 * A2 * !C1 * !D1 * X)	0.00217	0.00222	0.00217
	(A1 * A2 * !C1 * !D1 * X)	-0.00132	-0.00135	-0.00133
	(A1 * !A2 * C1 * D1 * X)	0.00217	0.00218	0.00216
	(A1 * !A2 * C1 * D1 * X)	-0.00251	-0.00259	-0.00258
	(A1 * !A2 * C1 * !D1 * X)	0.00257	0.00218	0.00216
	(A1 * !A2 * C1 * !D1 * X)	-0.00214	-0.00259	-0.00258
	(A1 * !A2 * !C1 * D1 * X)	0.00251	0.00218	0.00216
	(A1 * !A2 * !C1 * D1 * X)	-0.00203	-0.00249	-0.00250
	(!A1 * C1 * D1 * X)	0.00217	0.00216	0.00216
	(!A1 * C1 * D1 * X)	-0.00251	-0.00258	-0.00258
	(!A1 * C1 * !D1 * X)	0.00259	0.00217	0.00216
	(!A1 * C1 * !D1 * X)	-0.00212	-0.00257	-0.00258
	(!A1 * !C1 * D1 * X)	0.00253	0.00218	0.00216
	(!A1 * !C1 * D1 * X)	-0.00201	-0.00249	-0.00250

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	0.00233	0.00233	0.00231
	(A1 * A2 * C1 * D1 * X)	-0.00205	-0.00205	-0.00204
	(A1 * A2 * C1 * !D1 * X)	0.00259	0.00251	0.00236
	(A1 * A2 * C1 * !D1 * X)	-0.00196	-0.00199	-0.00197
	(A1 * A2 * !C1 * D1 * X)	0.00233	0.00241	0.00233
	(A1 * A2 * !C1 * D1 * X)	-0.00187	-0.00188	-0.00186
	(A1 * A2 * !C1 * !D1 * X)	0.00231	0.00234	0.00231
	(A1 * A2 * !C1 * !D1 * X)	-0.00147	-0.00148	-0.00147
	(A1 * !A2 * C1 * D1 * X)	0.00229	0.00233	0.00231
	(A1 * !A2 * C1 * D1 * X)	-0.00279	-0.00289	-0.00289
	(A1 * !A2 * C1 * !D1 * X)	0.00266	0.00233	0.00231
	(A1 * !A2 * C1 * !D1 * X)	-0.00244	-0.00291	-0.00289
	(A1 * !A2 * !C1 * D1 * X)	0.00258	0.00232	0.00231
	(A1 * !A2 * !C1 * D1 * X)	-0.00237	-0.00281	-0.00280
	(!A1 * C1 * D1 * X)	0.00232	0.00234	0.00231
	(!A1 * C1 * D1 * X)	-0.00282	-0.00289	-0.00288
	(!A1 * C1 * !D1 * X)	0.00271	0.00234	0.00231
	(!A1 * C1 * !D1 * X)	-0.00245	-0.00289	-0.00289
	(!A1 * !C1 * D1 * X)	0.00260	0.00232	0.00231
	(!A1 * !C1 * D1 * X)	-0.00234	-0.00281	-0.00279

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	0.00424	0.00430	0.00425
	(A1 * A2 * C1 * D1 * X)	-0.00372	-0.00375	-0.00374
	(A1 * A2 * C1 * !D1 * X)	0.00481	0.00472	0.00438
	(A1 * A2 * C1 * !D1 * X)	-0.00362	-0.00367	-0.00364
	(A1 * A2 * !C1 * D1 * X)	0.00430	0.00449	0.00432
	(A1 * A2 * !C1 * D1 * X)	-0.00354	-0.00355	-0.00352
	(A1 * A2 * !C1 * !D1 * X)	0.00426	0.00431	0.00426
	(A1 * A2 * !C1 * !D1 * X)	-0.00275	-0.00279	-0.00277
	(A1 * !A2 * C1 * D1 * X)	0.00425	0.00428	0.00424
	(A1 * !A2 * C1 * D1 * X)	-0.00512	-0.00533	-0.00529
	(A1 * !A2 * C1 * !D1 * X)	0.00499	0.00429	0.00425
	(A1 * !A2 * C1 * !D1 * X)	-0.00442	-0.00533	-0.00532
	(A1 * !A2 * !C1 * D1 * X)	0.00481	0.00429	0.00425
	(A1 * !A2 * !C1 * D1 * X)	-0.00428	-0.00515	-0.00515
	(!A1 * C1 * D1 * X)	0.00425	0.00427	0.00424
	(!A1 * C1 * D1 * X)	-0.00513	-0.00534	-0.00530
	(!A1 * C1 * !D1 * X)	0.00496	0.00428	0.00425
	(!A1 * C1 * !D1 * X)	-0.00444	-0.00533	-0.00532
	(!A1 * !C1 * D1 * X)	0.00479	0.00429	0.00425
	(!A1 * !C1 * D1 * X)	-0.00431	-0.00515	-0.00515

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)**	-0.00216	-0.00217	-0.00216
	(A1 * A2 * C1 * D1 * X)	0.00182	0.00184	0.00182
	(A1 * A2 * C1 * !D1 * X)	-0.00216	-0.00217	-0.00216
	(A1 * A2 * C1 * !D1 * X)	0.00177	0.00179	0.00178
	(A1 * A2 * !C1 * D1 * X)	-0.00216	-0.00217	-0.00216
	(A1 * A2 * !C1 * D1 * X)	0.00168	0.00170	0.00168
	(A1 * A2 * !C1 * !D1 * X)	-0.00208	-0.00210	-0.00209
	(A1 * A2 * !C1 * !D1 * X)	0.00141	0.00143	0.00140
	(A1 * !A2 * C1 * D1 * X)	-0.00215	-0.00216	-0.00215
	(A1 * !A2 * C1 * D1 * X)	0.00256	0.00259	0.00258
	(A1 * !A2 * C1 * !D1 * X)	-0.00215	-0.00216	-0.00215
	(A1 * !A2 * C1 * !D1 * X)	0.00257	0.00259	0.00258
	(A1 * !A2 * !C1 * D1 * X)	-0.00215	-0.00215	-0.00214
	(A1 * !A2 * !C1 * D1 * X)	0.00250	0.00251	0.00250
	(!A1 * C1 * D1 * X)	-0.00215	-0.00216	-0.00215
	(!A1 * C1 * D1 * X)	0.00256	0.00258	0.00258
	(!A1 * C1 * !D1 * X)	-0.00215	-0.00216	-0.00215
	(!A1 * C1 * !D1 * X)	0.00257	0.00259	0.00258
	(!A1 * !C1 * D1 * X)	-0.00215	-0.00215	-0.00214
	(!A1 * !C1 * D1 * X)	0.00249	0.00250	0.00250

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	-0.00231	-0.00231	-0.00230
	(A1 * A2 * C1 * D1 * X)	0.00205	0.00205	0.00204
	(A1 * A2 * C1 * !D1 * X)	-0.00230	-0.00232	-0.00230
	(A1 * A2 * C1 * !D1 * X)	0.00196	0.00199	0.00197
	(A1 * A2 * !C1 * D1 * X)	-0.00231	-0.00231	-0.00230
	(A1 * A2 * !C1 * D1 * X)	0.00187	0.00188	0.00186
	(A1 * A2 * !C1 * !D1 * X)	-0.00220	-0.00222	-0.00222
	(A1 * A2 * !C1 * !D1 * X)	0.00155	0.00157	0.00155
	(A1 * !A2 * C1 * D1 * X)	-0.00229	-0.00231	-0.00230
	(A1 * !A2 * C1 * D1 * X)	0.00288	0.00289	0.00289
	(A1 * !A2 * C1 * !D1 * X)	-0.00231	-0.00231	-0.00230
	(A1 * !A2 * C1 * !D1 * X)	0.00289	0.00291	0.00289
	(A1 * !A2 * !C1 * D1 * X)	-0.00229	-0.00231	-0.00230
	(A1 * !A2 * !C1 * D1 * X)	0.00278	0.00281	0.00280
	(!A1 * C1 * D1 * X)	-0.00230	-0.00231	-0.00230
	(!A1 * C1 * D1 * X)	0.00287	0.00289	0.00288
	(!A1 * C1 * !D1 * X)	-0.00230	-0.00231	-0.00230
	(!A1 * C1 * !D1 * X)	0.00288	0.00289	0.00289
	(!A1 * !C1 * D1 * X)	-0.00229	-0.00231	-0.00230
	(!A1 * !C1 * D1 * X)	0.00278	0.00281	0.00279

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	-0.00422	-0.00424	-0.00424
	(A1 * A2 * C1 * D1 * X)	0.00372	0.00375	0.00374
	(A1 * A2 * C1 * !D1 * X)	-0.00422	-0.00426	-0.00424
	(A1 * A2 * C1 * !D1 * X)	0.00362	0.00367	0.00364
	(A1 * A2 * !C1 * D1 * X)	-0.00426	-0.00428	-0.00426
	(A1 * A2 * !C1 * D1 * X)	0.00354	0.00355	0.00352
	(A1 * A2 * !C1 * !D1 * X)	-0.00406	-0.00406	-0.00404
	(A1 * A2 * !C1 * !D1 * X)	0.00298	0.00298	0.00297
	(A1 * !A2 * C1 * D1 * X)	-0.00423	-0.00425	-0.00423
	(A1 * !A2 * C1 * D1 * X)	0.00529	0.00533	0.00529
	(A1 * !A2 * C1 * !D1 * X)	-0.00421	-0.00424	-0.00423
	(A1 * !A2 * C1 * !D1 * X)	0.00528	0.00534	0.00532
	(A1 * !A2 * !C1 * D1 * X)	-0.00422	-0.00423	-0.00421
	(A1 * !A2 * !C1 * D1 * X)	0.00512	0.00515	0.00515
	(!A1 * C1 * D1 * X)	-0.00423	-0.00425	-0.00423
	(!A1 * C1 * D1 * X)	0.00531	0.00534	0.00530
	(!A1 * C1 * !D1 * X)	-0.00421	-0.00424	-0.00423
	(!A1 * C1 * !D1 * X)	0.00528	0.00534	0.00532
	(!A1 * !C1 * D1 * X)	-0.00422	-0.00423	-0.00421
	(!A1 * !C1 * D1 * X)	0.00513	0.00515	0.00515

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)**	0.00234	0.00238	0.00226
	(A1 * B1 * D1 * X)	-0.00157	-0.00159	-0.00158
	(A1 * B1 * !D1 * X)	0.00220	0.00223	0.00218
	(A1 * B1 * !D1 * X)	-0.00130	-0.00132	-0.00131
	(A1 * A2 * !B1 * D1 * X)	0.00260	0.00229	0.00222
	(A1 * A2 * !B1 * D1 * X)	-0.00154	-0.00172	-0.00172
	(A1 * A2 * !B1 * !D1 * X)	0.00221	0.00225	0.00219
	(A1 * A2 * !B1 * !D1 * X)	-0.00127	-0.00130	-0.00129
	(A1 * !A2 * !B1 * D1 * X)	0.00283	0.00225	0.00218
	(A1 * !A2 * !B1 * D1 * X)	-0.00190	-0.00252	-0.00255
	(!A1 * B1 * D1 * X)	0.00235	0.00238	0.00226
	(!A1 * B1 * D1 * X)	-0.00159	-0.00161	-0.00159
	(!A1 * B1 * !D1 * X)	0.00220	0.00225	0.00218
	(!A1 * B1 * !D1 * X)	-0.00128	-0.00131	-0.00131
	(!A1 * !B1 * D1 * X)	0.00284	0.00224	0.00218
	(!A1 * !B1 * D1 * X)	-0.00190	-0.00252	-0.00255

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00251	0.00250	0.00238
	(A1 * B1 * D1 * X)	-0.00187	-0.00188	-0.00187
	(A1 * B1 * !D1 * X)	0.00232	0.00233	0.00230
	(A1 * B1 * !D1 * X)	-0.00153	-0.00154	-0.00154
	(A1 * A2 * !B1 * D1 * X)	0.00271	0.00245	0.00232
	(A1 * A2 * !B1 * D1 * X)	-0.00183	-0.00200	-0.00199
	(A1 * A2 * !B1 * !D1 * X)	0.00233	0.00235	0.00230
	(A1 * A2 * !B1 * !D1 * X)	-0.00151	-0.00151	-0.00152
	(A1 * !A2 * !B1 * D1 * X)	0.00296	0.00234	0.00229
	(A1 * !A2 * !B1 * D1 * X)	-0.00232	-0.00297	-0.00298
	(!A1 * B1 * D1 * X)	0.00252	0.00251	0.00239
	(!A1 * B1 * D1 * X)	-0.00191	-0.00191	-0.00190
	(!A1 * B1 * !D1 * X)	0.00233	0.00234	0.00230
	(!A1 * B1 * !D1 * X)	-0.00154	-0.00155	-0.00156
	(!A1 * !B1 * D1 * X)	0.00297	0.00234	0.00229
	(!A1 * !B1 * D1 * X)	-0.00232	-0.00297	-0.00298

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00450	0.00462	0.00438
	(A1 * B1 * D1 * X)	-0.00345	-0.00345	-0.00344
	(A1 * B1 * !D1 * X)	0.00420	0.00421	0.00416
	(A1 * B1 * !D1 * X)	-0.00288	-0.00287	-0.00286
	(A1 * A2 * !B1 * D1 * X)	0.00498	0.00446	0.00423
	(A1 * A2 * !B1 * D1 * X)	-0.00334	-0.00369	-0.00369
	(A1 * A2 * !B1 * !D1 * X)	0.00426	0.00427	0.00418
	(A1 * A2 * !B1 * !D1 * X)	-0.00283	-0.00282	-0.00282
	(A1 * !A2 * !B1 * D1 * X)	0.00568	0.00428	0.00415
	(A1 * !A2 * !B1 * D1 * X)	-0.00395	-0.00537	-0.00547
	(!A1 * B1 * D1 * X)	0.00453	0.00465	0.00441
	(!A1 * B1 * D1 * X)	-0.00350	-0.00350	-0.00348
	(!A1 * B1 * !D1 * X)	0.00425	0.00426	0.00417
	(!A1 * B1 * !D1 * X)	-0.00285	-0.00284	-0.00286
	(!A1 * !B1 * D1 * X)	0.00563	0.00428	0.00415
	(!A1 * !B1 * D1 * X)	-0.00388	-0.00536	-0.00547

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)**	-0.00216	-0.00218	-0.00217
	(A1 * B1 * D1 * X)	0.00157	0.00159	0.00158
	(A1 * B1 * !D1 * X)	-0.00216	-0.00217	-0.00215
	(A1 * B1 * !D1 * X)	0.00132	0.00134	0.00134
	(A1 * A2 * !B1 * D1 * X)	-0.00217	-0.00217	-0.00217
	(A1 * A2 * !B1 * D1 * X)	0.00171	0.00172	0.00172
	(A1 * A2 * !B1 * !D1 * X)	-0.00209	-0.00211	-0.00215
	(A1 * A2 * !B1 * !D1 * X)	0.00136	0.00137	0.00132
	(A1 * !A2 * !B1 * D1 * X)	-0.00215	-0.00216	-0.00215
	(A1 * !A2 * !B1 * D1 * X)	0.00255	0.00257	0.00257
	(!A1 * B1 * D1 * X)	-0.00216	-0.00218	-0.00217
	(!A1 * B1 * D1 * X)	0.00159	0.00161	0.00159
	(!A1 * B1 * !D1 * X)	-0.00216	-0.00217	-0.00215
	(!A1 * B1 * !D1 * X)	0.00133	0.00134	0.00134
	(!A1 * !B1 * D1 * X)	-0.00215	-0.00216	-0.00215
	(!A1 * !B1 * D1 * X)	0.00255	0.00257	0.00257

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00229	-0.00230	-0.00229
	(A1 * B1 * D1 * X)	0.00187	0.00188	0.00187
	(A1 * B1 * !D1 * X)	-0.00228	-0.00229	-0.00227
	(A1 * B1 * !D1 * X)	0.00157	0.00158	0.00158
	(A1 * A2 * !B1 * D1 * X)	-0.00229	-0.00229	-0.00228
	(A1 * A2 * !B1 * D1 * X)	0.00200	0.00200	0.00199
	(A1 * A2 * !B1 * !D1 * X)	-0.00219	-0.00220	-0.00227
	(A1 * A2 * !B1 * !D1 * X)	0.00159	0.00159	0.00154
	(A1 * !A2 * !B1 * D1 * X)	-0.00227	-0.00228	-0.00227
	(A1 * !A2 * !B1 * D1 * X)	0.00296	0.00299	0.00299
	(!A1 * B1 * D1 * X)	-0.00229	-0.00230	-0.00229
	(!A1 * B1 * D1 * X)	0.00191	0.00191	0.00190
	(!A1 * B1 * !D1 * X)	-0.00228	-0.00229	-0.00227
	(!A1 * B1 * !D1 * X)	0.00159	0.00160	0.00160
	(!A1 * !B1 * D1 * X)	-0.00227	-0.00228	-0.00227
	(!A1 * !B1 * D1 * X)	0.00296	0.00298	0.00299

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00418	-0.00418	-0.00417
	(A1 * B1 * D1 * X)	0.00345	0.00345	0.00344
	(A1 * B1 * !D1 * X)	-0.00412	-0.00413	-0.00408
	(A1 * B1 * !D1 * X)	0.00290	0.00291	0.00293
	(A1 * A2 * !B1 * D1 * X)	-0.00416	-0.00416	-0.00416
	(A1 * A2 * !B1 * D1 * X)	0.00370	0.00369	0.00369
	(A1 * A2 * !B1 * !D1 * X)	-0.00402	-0.00404	-0.00407
	(A1 * A2 * !B1 * !D1 * X)	0.00293	0.00294	0.00292
	(A1 * !A2 * !B1 * D1 * X)	-0.00411	-0.00412	-0.00409
	(A1 * !A2 * !B1 * D1 * X)	0.00546	0.00547	0.00548
	(!A1 * B1 * D1 * X)	-0.00418	-0.00419	-0.00417
	(!A1 * B1 * D1 * X)	0.00350	0.00350	0.00348
	(!A1 * B1 * !D1 * X)	-0.00412	-0.00413	-0.00408
	(!A1 * B1 * !D1 * X)	0.00291	0.00292	0.00295
	(!A1 * !B1 * D1 * X)	-0.00411	-0.00412	-0.00409
	(!A1 * !B1 * D1 * X)	0.00546	0.00547	0.00548

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	0.00232	0.00234	0.00233
	(A1 * C1 * X)	-0.00123	-0.00124	-0.00123
	(A1 * B1 * !C1 * X)	0.00232	0.00234	0.00233
	(A1 * B1 * !C1 * X)	-0.00122	-0.00123	-0.00122
	(A1 * A2 * !B1 * !C1 * X)	0.00232	0.00234	0.00233
	(A1 * A2 * !B1 * !C1 * X)	-0.00122	-0.00123	-0.00122
	(!A1 * C1 * X)	0.00232	0.00234	0.00233
	(!A1 * C1 * X)	-0.00123	-0.00124	-0.00123
	(!A1 * B1 * !C1 * X)	0.00232	0.00234	0.00233
	(!A1 * B1 * !C1 * X)	-0.00122	-0.00123	-0.00122

sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	0.00279	0.00281	0.00279
	(A1 * C1 * X)	-0.00133	-0.00133	-0.00132
	(A1 * B1 * !C1 * X)	0.00279	0.00281	0.00279
	(A1 * B1 * !C1 * X)	-0.00132	-0.00133	-0.00132
	(A1 * A2 * !B1 * !C1 * X)	0.00279	0.00282	0.00279
	(A1 * A2 * !B1 * !C1 * X)	-0.00132	-0.00133	-0.00132
	(!A1 * C1 * X)	0.00279	0.00281	0.00279
	(!A1 * C1 * X)	-0.00133	-0.00133	-0.00132
	(!A1 * B1 * !C1 * X)	0.00279	0.00281	0.00279
	(!A1 * B1 * !C1 * X)	-0.00132	-0.00133	-0.00132
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	0.00455	0.00457	0.00454
	(A1 * C1 * X)	-0.00253	-0.00252	-0.00250
	(A1 * B1 * !C1 * X)	0.00455	0.00457	0.00454
	(A1 * B1 * !C1 * X)	-0.00252	-0.00251	-0.00249
	(A1 * A2 * !B1 * !C1 * X)	0.00451	0.00457	0.00454
	(A1 * A2 * !B1 * !C1 * X)	-0.00247	-0.00251	-0.00249
	(!A1 * C1 * X)	0.00455	0.00457	0.00454
	(!A1 * C1 * X)	-0.00253	-0.00252	-0.00250
	(!A1 * B1 * !C1 * X)	0.00455	0.00457	0.00454
	(!A1 * B1 * !C1 * X)	-0.00252	-0.00251	-0.00249

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

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

sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	-0.00227	-0.00228	-0.00232
	(A1 * C1 * X)	0.00128	0.00128	0.00124
	(A1 * B1 * !C1 * X)	-0.00220	-0.00222	-0.00231
	(A1 * B1 * !C1 * X)	0.00131	0.00131	0.00123
	(A1 * A2 * !B1 * !C1 * X)	-0.00202	-0.00203	-0.00226
	(A1 * A2 * !B1 * !C1 * X)	0.00143	0.00143	0.00127
	(!A1 * C1 * X)	-0.00227	-0.00228	-0.00232
	(!A1 * C1 * X)	0.00128	0.00128	0.00124
	(!A1 * B1 * !C1 * X)	-0.00220	-0.00222	-0.00231
	(!A1 * B1 * !C1 * X)	0.00131	0.00131	0.00123
sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	-0.00273	-0.00274	-0.00279
	(A1 * C1 * X)	0.00138	0.00138	0.00134
	(A1 * B1 * !C1 * X)	-0.00264	-0.00266	-0.00277
	(A1 * B1 * !C1 * X)	0.00142	0.00142	0.00133
	(A1 * A2 * !B1 * !C1 * X)	-0.00243	-0.00245	-0.00272
	(A1 * A2 * !B1 * !C1 * X)	0.00156	0.00156	0.00137
	(!A1 * C1 * X)	-0.00273	-0.00274	-0.00279
	(!A1 * C1 * X)	0.00138	0.00138	0.00134
	(!A1 * B1 * !C1 * X)	-0.00264	-0.00266	-0.00277
	(!A1 * B1 * !C1 * X)	0.00142	0.00142	0.00133
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	-0.00434	-0.00435	-0.00452
	(A1 * C1 * X)	0.00268	0.00267	0.00254
	(A1 * B1 * !C1 * X)	-0.00415	-0.00418	-0.00448
	(A1 * B1 * !C1 * X)	0.00271	0.00273	0.00252
	(A1 * A2 * !B1 * !C1 * X)	-0.00378	-0.00383	-0.00438
	(A1 * A2 * !B1 * !C1 * X)	0.00295	0.00298	0.00259
	(!A1 * C1 * X)	-0.00432	-0.00435	-0.00452
	(!A1 * C1 * X)	0.00266	0.00268	0.00255
	(!A1 * B1 * !C1 * X)	-0.00415	-0.00418	-0.00448
	(!A1 * B1 * !C1 * X)	0.00272	0.00273	0.00252

SKY130_FD_SC_HS__A211OIx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00293	0.00278	0.00292	0.00297	0.49704
sky130_fd_sc_hs__a211oi_2	0.00537	0.00563	0.00451	0.00430	0.88317
sky130_fd_sc_hs__a211oi_4	0.01081	0.01086	0.00862	0.00875	1.57067

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a211oi_1	0.00000	0.06726	0.19016
sky130_fd_sc_hs__a211oi_2	0.00000	0.13024	0.38031
sky130_fd_sc_hs__a211oi_4	0.00000	0.26047	0.76062

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)	0.10071	0.85448	9.00679
	A2->Y (FR)	0.12111	0.89603	9.25121
	B1->Y (FR)	0.10644	0.93604	10.04130
	C1->Y (FR)	0.08084	0.93329	10.29850
sky130_fd_sc_hs__a211oi_2	A1->Y (FR)	0.09062	0.71596	8.81213
	A2->Y (FR)	0.11675	0.74104	8.84809
	B1->Y (FR)	0.07366	0.75675	9.63159
	C1->Y (FR)	0.03821	0.74757	9.89593
sky130_fd_sc_hs__a211oi_4	A1->Y (FR)	0.08765	0.60245	8.52809
	A2->Y (FR)	0.11749	0.64247	8.77458
	B1->Y (FR)	0.09732	0.68010	9.60087
	C1->Y (FR)	0.06172	0.67925	9.94671

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211oi_1	A1->Y (RF)	0.02500	0.29964	2.93893
	A2->Y (RF)	0.02771	0.26623	2.52301
	B1->Y (RF)	0.01907	0.23091	2.26623
	C1->Y (RF)	0.01638	0.22367	2.25362
sky130_fd_sc_hs__a211oi_2	A1->Y (RF)	0.02243	0.26160	3.01757
	A2->Y (RF)	0.02749	0.23043	2.55505
	B1->Y (RF)	0.02840	0.31877	3.90184
	C1->Y (RF)	0.01954	0.29476	3.76116
sky130_fd_sc_hs__a211oi_4	A1->Y (RF)	0.02328	0.22712	3.04273
	A2->Y (RF)	0.02736	0.17900	2.30107
	B1->Y (RF)	0.02728	0.26816	3.81662
	C1->Y (RF)	0.01909	0.25011	3.77588

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.00053	0.00116	0.04114
	A1	0.01123	0.01186	0.05193
	A2	0.00109	0.00178	0.04264
	A2	0.01335	0.01406	0.05503
	B1	0.00033	0.00202	0.04445
	B1	0.00913	0.01086	0.05325
	C1	-0.00001	0.00330	0.05638
	C1	0.00737	0.01069	0.06389
sky130_fd_sc_hs__a211oi_2	A1	-0.00048	0.00105	0.07448
	A1	0.02005	0.02162	0.09520
	A2	0.00204	0.00339	0.08021
	A2	0.02609	0.02748	0.10444
	B1	0.00088	0.00287	0.05646
	B1	0.01574	0.01776	0.07145
	C1	0.00058	0.00545	0.07530
	C1	0.01188	0.01677	0.08677
sky130_fd_sc_hs__a211oi_4	A1	-0.00158	0.00150	0.13743
	A1	0.03929	0.04237	0.17834
	A2	0.00246	0.00519	0.14619
	A2	0.05021	0.05304	0.19419
	B1	0.00120	0.00585	0.10802
	B1	0.03015	0.03491	0.13700
	C1	0.00059	0.01066	0.13997
	C1	0.02271	0.03280	0.16225

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.01423	0.01542	0.04818
	A1	0.00368	0.00484	0.03756
	A2	0.01582	0.01681	0.04861
	A2	0.00363	0.00459	0.03639
	B1	0.00989	0.01185	0.04918
	B1	0.00112	0.00303	0.04040
	C1	0.00696	0.00917	0.04352
	C1	-0.00040	0.00176	0.03613
sky130_fd_sc_hs__a211oi_2	A1	0.02661	0.02917	0.09028
	A1	0.00639	0.00886	0.06973
	A2	0.03025	0.03224	0.09323
	A2	0.00637	0.00831	0.06918
	B1	0.01737	0.01999	0.06610
	B1	0.00259	0.00523	0.05133
	C1	0.00941	0.01276	0.05720
	C1	-0.00189	0.00142	0.04559
sky130_fd_sc_hs__a211oi_4	A1	0.05282	0.05786	0.17322
	A1	0.01260	0.01766	0.13285
	A2	0.05988	0.06437	0.18690
	A2	0.01246	0.01684	0.13936
	B1	0.03243	0.03831	0.12800
	B1	0.00366	0.00948	0.09831
	C1	0.01765	0.02458	0.10771
	C1	-0.00442	0.00242	0.08508

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)**	0.00227	0.00229	0.00228
	(A2 * B1 * C1 * !Y)	-0.00281	-0.00294	-0.00293
	(A2 * B1 * !C1 * !Y)	0.00242	0.00229	0.00228
	(A2 * B1 * !C1 * !Y)	-0.00266	-0.00293	-0.00293
	(A2 * !B1 * C1 * !Y)	0.00240	0.00229	0.00228
	(A2 * !B1 * C1 * !Y)	-0.00252	-0.00286	-0.00285
	(!A2 * B1 * C1 * !Y)	0.00220	0.00224	0.00221
	(!A2 * B1 * C1 * !Y)	-0.00296	-0.00299	-0.00297
	(!A2 * B1 * !C1 * !Y)	0.00220	0.00224	0.00221
	(!A2 * B1 * !C1 * !Y)	-0.00296	-0.00299	-0.00297
	(!A2 * !B1 * C1 * !Y)	0.00221	0.00222	0.00222
	(!A2 * !B1 * C1 * !Y)	-0.00297	-0.00297	-0.00297
	(!A2 * !B1 * !C1 * Y)	0.00067	0.00067	0.00065
	(!A2 * !B1 * !C1 * Y)	-0.00341	-0.00342	-0.00345
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	0.00465	0.00468	0.00464
	(A2 * B1 * C1 * !Y)	-0.00554	-0.00575	-0.00575
	(A2 * B1 * !C1 * !Y)	0.00478	0.00468	0.00464
	(A2 * B1 * !C1 * !Y)	-0.00538	-0.00577	-0.00575
	(A2 * !B1 * C1 * !Y)	0.00483	0.00468	0.00464
	(A2 * !B1 * C1 * !Y)	-0.00511	-0.00566	-0.00563
	(!A2 * B1 * C1 * !Y)	0.00445	0.00449	0.00447
	(!A2 * B1 * C1 * !Y)	-0.00583	-0.00586	-0.00585
	(!A2 * B1 * !C1 * !Y)	0.00447	0.00448	0.00447
	(!A2 * B1 * !C1 * !Y)	-0.00583	-0.00586	-0.00585
	(!A2 * !B1 * C1 * !Y)	0.00445	0.00448	0.00447
	(!A2 * !B1 * C1 * !Y)	-0.00583	-0.00586	-0.00584
	(!A2 * !B1 * !C1 * Y)	0.00160	0.00160	0.00154
	(!A2 * !B1 * !C1 * Y)	-0.00662	-0.00665	-0.00674

sky130_fd_sc_hs__a211oi_4	**(A2 * B1 * C1 * !Y)**	0.00902	0.00910	0.00903
	(A2 * B1 * C1 * !Y)	-0.01121	-0.01177	-0.01169
	(A2 * B1 * !C1 * !Y)	0.00953	0.00911	0.00903
	(A2 * B1 * !C1 * !Y)	-0.01065	-0.01176	-0.01169
	(A2 * !B1 * C1 * !Y)	0.00952	0.00913	0.00904
	(A2 * !B1 * C1 * !Y)	-0.01015	-0.01151	-0.01141
	(!A2 * B1 * C1 * !Y)	0.00865	0.00872	0.00869
	(!A2 * B1 * C1 * !Y)	-0.01186	-0.01191	-0.01189
	(!A2 * B1 * !C1 * !Y)	0.00863	0.00870	0.00867
	(!A2 * B1 * !C1 * !Y)	-0.01185	-0.01191	-0.01188
	(!A2 * !B1 * C1 * !Y)	0.00863	0.00877	0.00868
	(!A2 * !B1 * C1 * !Y)	-0.01184	-0.01196	-0.01188
	(!A2 * !B1 * !C1 * Y)	0.00276	0.00278	0.00267
	(!A2 * !B1 * !C1 * Y)	-0.01356	-0.01364	-0.01379

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)**	-0.00227	-0.00228	-0.00227
	(A2 * B1 * C1 * !Y)	0.00293	0.00295	0.00293
	(A2 * B1 * !C1 * !Y)	-0.00227	-0.00228	-0.00227
	(A2 * B1 * !C1 * !Y)	0.00292	0.00295	0.00293
	(A2 * !B1 * C1 * !Y)	-0.00226	-0.00228	-0.00226
	(A2 * !B1 * C1 * !Y)	0.00284	0.00287	0.00285
	(!A2 * B1 * C1 * !Y)	-0.00214	-0.00219	-0.00221
	(!A2 * B1 * C1 * !Y)	0.00296	0.00299	0.00298
	(!A2 * B1 * !C1 * !Y)	-0.00213	-0.00221	-0.00221
	(!A2 * B1 * !C1 * !Y)	0.00296	0.00300	0.00298
	(!A2 * !B1 * C1 * !Y)	-0.00215	-0.00221	-0.00221
	(!A2 * !B1 * C1 * !Y)	0.00298	0.00300	0.00298
	(!A2 * !B1 * !C1 * Y)	-0.00064	-0.00065	-0.00064
	(!A2 * !B1 * !C1 * Y)	0.00345	0.00351	0.00345
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	-0.00462	-0.00463	-0.00463
	(A2 * B1 * C1 * !Y)	0.00572	0.00575	0.00575
	(A2 * B1 * !C1 * !Y)	-0.00462	-0.00464	-0.00463
	(A2 * B1 * !C1 * !Y)	0.00572	0.00577	0.00575
	(A2 * !B1 * C1 * !Y)	-0.00461	-0.00465	-0.00463
	(A2 * !B1 * C1 * !Y)	0.00559	0.00567	0.00563
	(!A2 * B1 * C1 * !Y)	-0.00432	-0.00449	-0.00447
	(!A2 * B1 * C1 * !Y)	0.00583	0.00586	0.00586
	(!A2 * B1 * !C1 * !Y)	-0.00432	-0.00448	-0.00447
	(!A2 * B1 * !C1 * !Y)	0.00583	0.00592	0.00586
	(!A2 * !B1 * C1 * !Y)	-0.00434	-0.00448	-0.00447
	(!A2 * !B1 * C1 * !Y)	0.00587	0.00589	0.00587
	(!A2 * !B1 * !C1 * Y)	-0.00150	-0.00153	-0.00150
	(!A2 * !B1 * !C1 * Y)	0.00673	0.00687	0.00676

sky130_fd_sc_hs__a211oi_4	(A2 * B1 * C1 * !Y)	-0.00899	-0.00906	-0.00901
	(A2 * B1 * C1 * !Y)	0.01163	0.01180	0.01169
	(A2 * B1 * !C1 * !Y)	-0.00898	-0.00905	-0.00901
	(A2 * B1 * !C1 * !Y)	0.01162	0.01180	0.01169
	(A2 * !B1 * C1 * !Y)	-0.00902	-0.00905	-0.00900
	(A2 * !B1 * C1 * !Y)	0.01142	0.01151	0.01141
	(!A2 * B1 * C1 * !Y)	-0.00844	-0.00872	-0.00869
	(!A2 * B1 * C1 * !Y)	0.01194	0.01200	0.01192
	(!A2 * B1 * !C1 * !Y)	-0.00842	-0.00870	-0.00867
	(!A2 * B1 * !C1 * !Y)	0.01193	0.01196	0.01192
	(!A2 * !B1 * C1 * !Y)	-0.00842	-0.00872	-0.00868
	(!A2 * !B1 * C1 * !Y)	0.01193	0.01196	0.01192
	(!A2 * !B1 * !C1 * Y)	-0.00261	-0.00266	-0.00261
	(!A2 * !B1 * !C1 * Y)	0.01379	0.01405	0.01382

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)	0.00230	0.00232	0.00230
	(A1 * B1 * C1 * !Y)	-0.00283	-0.00296	-0.00295
	(A1 * B1 * !C1 * !Y)	0.00244	0.00232	0.00230
	(A1 * B1 * !C1 * !Y)	-0.00268	-0.00296	-0.00295
	(A1 * !B1 * C1 * !Y)	0.00242	0.00232	0.00230
	(A1 * !B1 * C1 * !Y)	-0.00255	-0.00288	-0.00288
	(!A1 * B1 * !Y)	0.00221	0.00222	0.00221
	(!A1 * B1 * !Y)	-0.00298	-0.00300	-0.00299
	(!A1 * !B1 * C1 * !Y)	0.00220	0.00222	0.00221
	(!A1 * !B1 * C1 * !Y)	-0.00298	-0.00299	-0.00299
	(!A1 * !B1 * !C1 * Y)	0.00221	0.00224	0.00222
	(!A1 * !B1 * !C1 * Y)	-0.00298	-0.00300	-0.00299

sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	0.00477	0.00479	0.00475
	(A1 * B1 * C1 * !Y)	-0.00572	-0.00596	-0.00594
	(A1 * B1 * !C1 * !Y)	0.00496	0.00479	0.00475
	(A1 * B1 * !C1 * !Y)	-0.00549	-0.00597	-0.00594
	(A1 * !B1 * C1 * !Y)	0.00498	0.00480	0.00475
	(A1 * !B1 * C1 * !Y)	-0.00521	-0.00582	-0.00579
	(!A1 * B1 * !Y)	0.00458	0.00462	0.00460
	(!A1 * B1 * !Y)	-0.00603	-0.00606	-0.00604
	(!A1 * !B1 * C1 * !Y)	0.00459	0.00466	0.00461
	(!A1 * !B1 * C1 * !Y)	-0.00603	-0.00608	-0.00604
	(!A1 * !B1 * !C1 * Y)	0.00423	0.00427	0.00425
	(!A1 * !B1 * !C1 * Y)	-0.00637	-0.00641	-0.00638
sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	0.00930	0.00935	0.00926
	(A1 * B1 * C1 * !Y)	-0.01137	-0.01187	-0.01179
	(A1 * B1 * !C1 * !Y)	0.00977	0.00935	0.00927
	(A1 * B1 * !C1 * !Y)	-0.01067	-0.01187	-0.01180
	(A1 * !B1 * C1 * !Y)	0.00972	0.00937	0.00928
	(A1 * !B1 * C1 * !Y)	-0.01021	-0.01162	-0.01151
	(!A1 * B1 * !Y)	0.00895	0.00903	0.00899
	(!A1 * B1 * !Y)	-0.01197	-0.01203	-0.01201
	(!A1 * !B1 * C1 * !Y)	0.00890	0.00893	0.00893
	(!A1 * !B1 * C1 * !Y)	-0.01198	-0.01199	-0.01200
	(!A1 * !B1 * !C1 * Y)	0.00895	0.00904	0.00899
	(!A1 * !B1 * !C1 * Y)	-0.01197	-0.01205	-0.01200

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)**	-0.00230	-0.00231	-0.00230
	(A1 * B1 * C1 * !Y)	0.00295	0.00297	0.00295
	(A1 * B1 * !C1 * !Y)	-0.00230	-0.00231	-0.00230
	(A1 * B1 * !C1 * !Y)	0.00295	0.00297	0.00295
	(A1 * !B1 * C1 * !Y)	-0.00229	-0.00230	-0.00229
	(A1 * !B1 * C1 * !Y)	0.00287	0.00290	0.00288
	(!A1 * B1 * !Y)	-0.00217	-0.00222	-0.00221
	(!A1 * B1 * !Y)	0.00298	0.00302	0.00300
	(!A1 * !B1 * C1 * !Y)	-0.00216	-0.00222	-0.00221
	(!A1 * !B1 * C1 * !Y)	0.00298	0.00302	0.00300
	(!A1 * !B1 * !C1 * Y)	-0.00207	-0.00224	-0.00222
	(!A1 * !B1 * !C1 * Y)	0.00311	0.00302	0.00300
sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	-0.00473	-0.00475	-0.00474
	(A1 * B1 * C1 * !Y)	0.00591	0.00596	0.00594
	(A1 * B1 * !C1 * !Y)	-0.00473	-0.00476	-0.00474
	(A1 * B1 * !C1 * !Y)	0.00591	0.00600	0.00594
	(A1 * !B1 * C1 * !Y)	-0.00475	-0.00476	-0.00474
	(A1 * !B1 * C1 * !Y)	0.00581	0.00585	0.00579
	(!A1 * B1 * !Y)	-0.00446	-0.00461	-0.00460
	(!A1 * B1 * !Y)	0.00603	0.00607	0.00606
	(!A1 * !B1 * C1 * !Y)	-0.00445	-0.00461	-0.00461
	(!A1 * !B1 * C1 * !Y)	0.00603	0.00608	0.00606
	(!A1 * !B1 * !C1 * Y)	-0.00395	-0.00427	-0.00425
	(!A1 * !B1 * !C1 * Y)	0.00659	0.00646	0.00640

sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	-0.00925	-0.00928	-0.00924
	(A1 * B1 * C1 * !Y)	0.01179	0.01187	0.01179
	(A1 * B1 * !C1 * !Y)	-0.00921	-0.00928	-0.00924
	(A1 * B1 * !C1 * !Y)	0.01172	0.01187	0.01180
	(A1 * !B1 * C1 * !Y)	-0.00925	-0.00929	-0.00924
	(A1 * !B1 * C1 * !Y)	0.01151	0.01162	0.01151
	(!A1 * B1 * !Y)	-0.00865	-0.00893	-0.00899
	(!A1 * B1 * !Y)	0.01199	0.01209	0.01204
	(!A1 * !B1 * C1 * !Y)	-0.00864	-0.00893	-0.00893
	(!A1 * !B1 * C1 * !Y)	0.01200	0.01214	0.01204
	(!A1 * !B1 * !C1 * Y)	-0.00819	-0.00901	-0.00898
	(!A1 * !B1 * !C1 * Y)	0.01256	0.01208	0.01204

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)	0.00275	0.00267	0.00254
	(A1 * A2 * C1 * !Y)	-0.00193	-0.00196	-0.00194
	(A1 * A2 * !C1 * !Y)	0.00245	0.00246	0.00241
	(A1 * A2 * !C1 * !Y)	-0.00145	-0.00145	-0.00145
	(A1 * !A2 * C1 * !Y)	0.00304	0.00245	0.00240
	(A1 * !A2 * C1 * !Y)	-0.00226	-0.00287	-0.00288
	(!A1 * C1 * !Y)	0.00299	0.00244	0.00240
	(!A1 * C1 * !Y)	-0.00225	-0.00288	-0.00288
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	0.00343	0.00339	0.00310
	(A1 * A2 * C1 * !Y)	-0.00376	-0.00378	-0.00375
	(A1 * A2 * !C1 * !Y)	0.00287	0.00288	0.00282
	(A1 * A2 * !C1 * !Y)	-0.00284	-0.00284	-0.00285
	(A1 * !A2 * C1 * !Y)	0.00419	0.00286	0.00278
	(A1 * !A2 * C1 * !Y)	-0.00428	-0.00564	-0.00571
	(!A1 * C1 * !Y)	0.00420	0.00286	0.00278
	(!A1 * C1 * !Y)	-0.00427	-0.00564	-0.00571
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	0.00633	0.00614	0.00560
	(A1 * A2 * C1 * !Y)	-0.00776	-0.00770	-0.00773
	(A1 * A2 * !C1 * !Y)	0.00522	0.00523	0.00509
	(A1 * A2 * !C1 * !Y)	-0.00591	-0.00591	-0.00594
	(A1 * !A2 * C1 * !Y)	0.00799	0.00517	0.00502
	(A1 * !A2 * C1 * !Y)	-0.00881	-0.01172	-0.01179
	(!A1 * C1 * !Y)	0.00791	0.00518	0.00502
	(!A1 * C1 * !Y)	-0.00889	-0.01171	-0.01179

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)	-0.00240	-0.00241	-0.00240
	(A1 * A2 * C1 * !Y)	0.00193	0.00196	0.00194
	(A1 * A2 * !C1 * !Y)	-0.00237	-0.00239	-0.00238
	(A1 * A2 * !C1 * !Y)	0.00149	0.00151	0.00150
	(A1 * !A2 * C1 * !Y)	-0.00239	-0.00239	-0.00238
	(A1 * !A2 * C1 * !Y)	0.00288	0.00289	0.00289
	(!A1 * C1 * !Y)	-0.00238	-0.00239	-0.00238
	(!A1 * C1 * !Y)	0.00287	0.00289	0.00289
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	-0.00285	-0.00287	-0.00285
	(A1 * A2 * C1 * !Y)	0.00376	0.00378	0.00375
	(A1 * A2 * !C1 * !Y)	-0.00273	-0.00275	-0.00273
	(A1 * A2 * !C1 * !Y)	0.00290	0.00293	0.00295
	(A1 * !A2 * C1 * !Y)	-0.00276	-0.00277	-0.00275
	(A1 * !A2 * C1 * !Y)	0.00567	0.00571	0.00571
	(!A1 * C1 * !Y)	-0.00277	-0.00277	-0.00275
	(!A1 * C1 * !Y)	0.00568	0.00571	0.00571
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	-0.00509	-0.00507	-0.00508
	(A1 * A2 * C1 * !Y)	0.00776	0.00770	0.00773
	(A1 * A2 * !C1 * !Y)	-0.00492	-0.00495	-0.00491
	(A1 * A2 * !C1 * !Y)	0.00606	0.00612	0.00614
	(A1 * !A2 * C1 * !Y)	-0.00498	-0.00501	-0.00496
	(A1 * !A2 * C1 * !Y)	0.01171	0.01182	0.01179
	(!A1 * C1 * !Y)	-0.00498	-0.00501	-0.00495
	(!A1 * C1 * !Y)	0.01171	0.01182	0.01179

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	0.00283	0.00284	0.00282
	(A1 * B1 * !Y)	-0.00129	-0.00129	-0.00128
	(A1 * A2 * !B1 * !Y)	0.00283	0.00284	0.00282
	(A1 * A2 * !B1 * !Y)	-0.00129	-0.00129	-0.00128
	(!A1 * B1 * !Y)	0.00283	0.00284	0.00282
	(!A1 * B1 * !Y)	-0.00130	-0.00130	-0.00129
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	0.00298	0.00300	0.00298
	(A1 * B1 * !Y)	-0.00263	-0.00265	-0.00263
	(A1 * A2 * !B1 * !Y)	0.00299	0.00300	0.00298
	(A1 * A2 * !B1 * !Y)	-0.00264	-0.00264	-0.00262
	(!A1 * B1 * !Y)	0.00299	0.00300	0.00298
	(!A1 * B1 * !Y)	-0.00265	-0.00265	-0.00263
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	0.00604	0.00605	0.00601
	(A1 * B1 * !Y)	-0.00534	-0.00532	-0.00528
	(A1 * A2 * !B1 * !Y)	0.00599	0.00606	0.00601
	(A1 * A2 * !B1 * !Y)	-0.00525	-0.00531	-0.00526
	(!A1 * B1 * !Y)	0.00603	0.00606	0.00601
	(!A1 * B1 * !Y)	-0.00534	-0.00535	-0.00530

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	-0.00274	-0.00277	-0.00281
	(A1 * B1 * !Y)	0.00133	0.00135	0.00130
	(A1 * A2 * !B1 * !Y)	-0.00259	-0.00261	-0.00279
	(A1 * A2 * !B1 * !Y)	0.00143	0.00144	0.00131
	(!A1 * B1 * !Y)	-0.00274	-0.00277	-0.00281
	(!A1 * B1 * !Y)	0.00134	0.00135	0.00130
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	-0.00278	-0.00280	-0.00296
	(A1 * B1 * !Y)	0.00282	0.00282	0.00267
	(A1 * A2 * !B1 * !Y)	-0.00249	-0.00252	-0.00290
	(A1 * A2 * !B1 * !Y)	0.00293	0.00295	0.00267
	(!A1 * B1 * !Y)	-0.00276	-0.00280	-0.00296
	(!A1 * B1 * !Y)	0.00280	0.00283	0.00268
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	-0.00563	-0.00570	-0.00598
	(A1 * B1 * !Y)	0.00558	0.00562	0.00537
	(A1 * A2 * !B1 * !Y)	-0.00505	-0.00511	-0.00586
	(A1 * A2 * !B1 * !Y)	0.00589	0.00592	0.00537
	(!A1 * B1 * !Y)	-0.00564	-0.00567	-0.00598
	(!A1 * B1 * !Y)	0.00561	0.00562	0.00538

SKY130_FD_SC_HS__A211Ox

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00270	0.00255	0.00273	0.00271	1.44542
sky130_fd_sc_hs__a211o_2	0.00294	0.00293	0.00290	0.00280	2.71579
sky130_fd_sc_hs__a211o_4	0.00502	0.00515	0.00542	0.00493	5.19145

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a211o_1	0.00000	0.19878	0.48975
sky130_fd_sc_hs__a211o_2	0.00000	0.24151	0.50119
sky130_fd_sc_hs__a211o_4	0.00000	0.48746	1.00239

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)	0.06174	0.47588	5.61599
	A2->X (RR)	0.06470	0.46517	5.47566
	B1->X (RR)	0.05219	0.44167	5.23411
	C1->X (RR)	0.04770	0.42509	5.16221
sky130_fd_sc_hs__a211o_2	A1->X (RR)	0.06241	0.39766	5.40594
	A2->X (RR)	0.06564	0.38539	5.27168
	B1->X (RR)	0.05164	0.36415	5.05488
	C1->X (RR)	0.04762	0.35098	4.99086
sky130_fd_sc_hs__a211o_4	A1->X (RR)	0.06581	0.34052	5.54968
	A2->X (RR)	0.07029	0.33234	5.42969
	B1->X (RR)	0.05024	0.29363	5.09958
	C1->X (RR)	0.04802	0.28873	5.09928

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211o_1	A1->X (FF)	0.13861	0.50564	5.09751
	A2->X (FF)	0.15872	0.53595	5.22659
	B1->X (FF)	0.14231	0.56367	5.58978
	C1->X (FF)	0.11743	0.56349	5.64965
sky130_fd_sc_hs__a211o_2	A1->X (FF)	0.17825	0.53339	5.20156
	A2->X (FF)	0.20385	0.56938	5.33861
	B1->X (FF)	0.18713	0.60286	5.69316
	C1->X (FF)	0.15995	0.60646	5.75130
sky130_fd_sc_hs__a211o_4	A1->X (FF)	0.16811	0.47358	5.20593
	A2->X (FF)	0.17966	0.49673	5.27587
	B1->X (FF)	0.15182	0.51109	5.50127
	C1->X (FF)	0.13714	0.52966	5.59326

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.01816	0.02185	0.11738
	A1	0.00854	0.01225	0.10820
	A2	0.01950	0.02249	0.11440
	A2	0.00851	0.01152	0.10391
	B1	0.01438	0.01964	0.11860
	B1	0.00624	0.01153	0.11080
	C1	0.01177	0.01795	0.12806
	C1	0.00498	0.01118	0.12128
sky130_fd_sc_hs__a211o_2	A1	0.02278	0.02634	0.11933
	A1	0.01239	0.01603	0.10969
	A2	0.02452	0.02729	0.11712
	A2	0.01234	0.01522	0.10558
	B1	0.01884	0.02396	0.12021
	B1	0.01002	0.01515	0.11139
	C1	0.01610	0.02204	0.12958
	C1	0.00862	0.01463	0.12212
sky130_fd_sc_hs__a211o_4	A1	0.04316	0.05118	0.24475
	A1	0.02418	0.03234	0.22769
	A2	0.04660	0.05329	0.24089
	A2	0.02428	0.03104	0.22003
	B1	0.03481	0.04489	0.23567
	B1	0.01881	0.02894	0.21968
	C1	0.02816	0.04046	0.25194
	C1	0.01561	0.02803	0.23941

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.00629	0.00834	0.09219
	A1	0.01599	0.01803	0.10167
	A2	0.00721	0.00906	0.09255
	A2	0.01822	0.02005	0.10320
	B1	0.00553	0.00965	0.10801
	B1	0.01369	0.01775	0.11387
	C1	0.00540	0.01149	0.12133
	C1	0.01218	0.01826	0.12639
sky130_fd_sc_hs__a211o_2	A1	0.01358	0.01267	0.09720
	A1	0.02406	0.02313	0.10379
	A2	0.01521	0.01328	0.09771
	A2	0.02738	0.02544	0.10722
	B1	0.01245	0.01470	0.10863
	B1	0.02128	0.02277	0.11484
	C1	0.01231	0.01613	0.12181
	C1	0.01979	0.02345	0.12794
sky130_fd_sc_hs__a211o_4	A1	0.02649	0.02503	0.21402
	A1	0.04558	0.04378	0.23024
	A2	0.02774	0.02524	0.21046
	A2	0.05011	0.04759	0.23215
	B1	0.02376	0.02707	0.20606
	B1	0.03981	0.04277	0.21722
	C1	0.02389	0.03126	0.23739
	C1	0.03644	0.04369	0.24919

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)**	0.00201	0.00203	0.00201
	(A2 * B1 * C1 * X)	-0.00259	-0.00272	-0.00271
	(A2 * B1 * !C1 * X)	0.00224	0.00203	0.00201
	(A2 * B1 * !C1 * X)	-0.00236	-0.00271	-0.00271
	(A2 * !B1 * C1 * X)	0.00222	0.00204	0.00201
	(A2 * !B1 * C1 * X)	-0.00226	-0.00264	-0.00265
	(!A2 * B1 * C1 * X)	0.00194	0.00195	0.00195
	(!A2 * B1 * C1 * X)	-0.00275	-0.00277	-0.00276
	(!A2 * B1 * !C1 * X)	0.00193	0.00194	0.00194
	(!A2 * B1 * !C1 * X)	-0.00275	-0.00277	-0.00276
	(!A2 * !B1 * C1 * X)	0.00195	0.00197	0.00196
	(!A2 * !B1 * C1 * X)	-0.00275	-0.00277	-0.00276
	(!A2 * !B1 * !C1 * !X)	0.00056	0.00055	0.00054
	(!A2 * !B1 * !C1 * !X)	-0.00324	-0.00323	-0.00327
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	0.00247	0.00247	0.00245
	(A2 * B1 * C1 * X)	-0.00249	-0.00261	-0.00260
	(A2 * B1 * !C1 * X)	0.00266	0.00247	0.00245
	(A2 * B1 * !C1 * X)	-0.00229	-0.00261	-0.00260
	(A2 * !B1 * C1 * X)	0.00264	0.00248	0.00245
	(A2 * !B1 * C1 * X)	-0.00219	-0.00255	-0.00255
	(!A2 * B1 * C1 * X)	0.00237	0.00241	0.00238
	(!A2 * B1 * C1 * X)	-0.00263	-0.00266	-0.00264
	(!A2 * B1 * !C1 * X)	0.00238	0.00241	0.00238
	(!A2 * B1 * !C1 * X)	-0.00264	-0.00266	-0.00264
	(!A2 * !B1 * C1 * X)	0.00238	0.00239	0.00239
	(!A2 * !B1 * C1 * X)	-0.00264	-0.00264	-0.00263
	(!A2 * !B1 * !C1 * !X)	0.00068	0.00069	0.00067
	(!A2 * !B1 * !C1 * !X)	-0.00322	-0.00322	-0.00327

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	0.00394	0.00396	0.00393
	(A2 * B1 * C1 * X)	-0.00518	-0.00540	-0.00538
	(A2 * B1 * !C1 * X)	0.00429	0.00397	0.00393
	(A2 * B1 * !C1 * X)	-0.00482	-0.00540	-0.00539
	(A2 * !B1 * C1 * X)	0.00425	0.00398	0.00393
	(A2 * !B1 * C1 * X)	-0.00464	-0.00528	-0.00529
	(!A2 * B1 * C1 * X)	0.00377	0.00378	0.00377
	(!A2 * B1 * C1 * X)	-0.00547	-0.00550	-0.00548
	(!A2 * B1 * !C1 * X)	0.00376	0.00380	0.00377
	(!A2 * B1 * !C1 * X)	-0.00546	-0.00552	-0.00548
	(!A2 * !B1 * C1 * X)	0.00376	0.00380	0.00378
	(!A2 * !B1 * C1 * X)	-0.00546	-0.00551	-0.00547
	(!A2 * !B1 * !C1 * !X)	0.00111	0.00112	0.00108
	(!A2 * !B1 * !C1 * !X)	-0.00631	-0.00633	-0.00640

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)**	-0.00201	-0.00202	-0.00201
	(A2 * B1 * C1 * X)	0.00270	0.00273	0.00271
	(A2 * B1 * !C1 * X)	-0.00201	-0.00201	-0.00201
	(A2 * B1 * !C1 * X)	0.00271	0.00273	0.00271
	(A2 * !B1 * C1 * X)	-0.00199	-0.00200	-0.00199
	(A2 * !B1 * C1 * X)	0.00263	0.00266	0.00265
	(!A2 * B1 * C1 * X)	-0.00190	-0.00195	-0.00195
	(!A2 * B1 * C1 * X)	0.00277	0.00278	0.00277
	(!A2 * B1 * !C1 * X)	-0.00190	-0.00194	-0.00194
	(!A2 * B1 * !C1 * X)	0.00277	0.00279	0.00277
	(!A2 * !B1 * C1 * X)	-0.00189	-0.00195	-0.00195
	(!A2 * !B1 * C1 * X)	0.00276	0.00279	0.00277
	(!A2 * !B1 * !C1 * !X)	-0.00053	-0.00053	-0.00052
	(!A2 * !B1 * !C1 * !X)	0.00328	0.00331	0.00328
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	-0.00245	-0.00246	-0.00245
	(A2 * B1 * C1 * X)	0.00259	0.00262	0.00260
	(A2 * B1 * !C1 * X)	-0.00245	-0.00246	-0.00245
	(A2 * B1 * !C1 * X)	0.00259	0.00262	0.00260
	(A2 * !B1 * C1 * X)	-0.00244	-0.00245	-0.00244
	(A2 * !B1 * C1 * X)	0.00253	0.00256	0.00255
	(!A2 * B1 * C1 * X)	-0.00230	-0.00237	-0.00238
	(!A2 * B1 * C1 * X)	0.00263	0.00268	0.00265
	(!A2 * B1 * !C1 * X)	-0.00232	-0.00237	-0.00238
	(!A2 * B1 * !C1 * X)	0.00265	0.00267	0.00265
	(!A2 * !B1 * C1 * X)	-0.00231	-0.00237	-0.00237
	(!A2 * !B1 * C1 * X)	0.00265	0.00267	0.00265
	(!A2 * !B1 * !C1 * !X)	-0.00065	-0.00066	-0.00065
	(!A2 * !B1 * !C1 * !X)	0.00326	0.00330	0.00328

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	-0.00391	-0.00393	-0.00393
	(A2 * B1 * C1 * X)	0.00535	0.00540	0.00538
	(A2 * B1 * !C1 * X)	-0.00391	-0.00393	-0.00392
	(A2 * B1 * !C1 * X)	0.00535	0.00540	0.00539
	(A2 * !B1 * C1 * X)	-0.00391	-0.00391	-0.00390
	(A2 * !B1 * C1 * X)	0.00529	0.00530	0.00529
	(!A2 * B1 * C1 * X)	-0.00368	-0.00378	-0.00377
	(!A2 * B1 * C1 * X)	0.00547	0.00554	0.00550
	(!A2 * B1 * !C1 * X)	-0.00368	-0.00380	-0.00377
	(!A2 * B1 * !C1 * X)	0.00548	0.00555	0.00550
	(!A2 * !B1 * C1 * X)	-0.00367	-0.00380	-0.00378
	(!A2 * !B1 * C1 * X)	0.00549	0.00554	0.00551
	(!A2 * !B1 * !C1 * !X)	-0.00105	-0.00106	-0.00105
	(!A2 * !B1 * !C1 * !X)	0.00640	0.00648	0.00642

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__a211o_1	**(A1 * B1 * C1 * X)**	0.00205	0.00207	0.00205
	(A1 * B1 * C1 * X)	-0.00257	-0.00269	-0.00268
	(A1 * B1 * !C1 * X)	0.00225	0.00207	0.00205
	(A1 * B1 * !C1 * X)	-0.00237	-0.00268	-0.00268
	(A1 * !B1 * C1 * X)	0.00223	0.00207	0.00206
	(A1 * !B1 * C1 * X)	-0.00228	-0.00262	-0.00263
	(!A1 * B1 * X)	0.00199	0.00200	0.00199
	(!A1 * B1 * X)	-0.00272	-0.00273	-0.00273
	(!A1 * !B1 * C1 * X)	0.00200	0.00200	0.00199
	(!A1 * !B1 * C1 * X)	-0.00272	-0.00273	-0.00272
	(!A1 * !B1 * !C1 * !X)	0.00181	0.00182	0.00181
	(!A1 * !B1 * !C1 * !X)	-0.00290	-0.00291	-0.00291

sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	0.00264	0.00264	0.00262
	(A1 * B1 * C1 * X)	-0.00251	-0.00262	-0.00262
	(A1 * B1 * !C1 * X)	0.00283	0.00265	0.00262
	(A1 * B1 * !C1 * X)	-0.00232	-0.00263	-0.00262
	(A1 * !B1 * C1 * X)	0.00280	0.00265	0.00262
	(A1 * !B1 * C1 * X)	-0.00223	-0.00257	-0.00257
	(!A1 * B1 * X)	0.00251	0.00253	0.00252
	(!A1 * B1 * X)	-0.00265	-0.00266	-0.00265
	(!A1 * !B1 * C1 * X)	0.00251	0.00254	0.00253
	(!A1 * !B1 * C1 * X)	-0.00264	-0.00266	-0.00265
	(!A1 * !B1 * !C1 * !X)	0.00220	0.00220	0.00219
	(!A1 * !B1 * !C1 * !X)	-0.00302	-0.00302	-0.00302
sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	0.00468	0.00473	0.00468
	(A1 * B1 * C1 * X)	-0.00500	-0.00524	-0.00521
	(A1 * B1 * !C1 * X)	0.00494	0.00473	0.00469
	(A1 * B1 * !C1 * X)	-0.00473	-0.00524	-0.00522
	(A1 * !B1 * C1 * X)	0.00499	0.00472	0.00469
	(A1 * !B1 * C1 * X)	-0.00454	-0.00514	-0.00511
	(!A1 * B1 * X)	0.00456	0.00460	0.00458
	(!A1 * B1 * X)	-0.00530	-0.00532	-0.00531
	(!A1 * !B1 * C1 * X)	0.00458	0.00461	0.00459
	(!A1 * !B1 * C1 * X)	-0.00529	-0.00532	-0.00530
	(!A1 * !B1 * !C1 * !X)	0.00449	0.00455	0.00450
	(!A1 * !B1 * !C1 * !X)	-0.00538	-0.00542	-0.00539

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)**	-0.00205	-0.00206	-0.00205
	(A1 * B1 * C1 * X)	0.00268	0.00270	0.00268
	(A1 * B1 * !C1 * X)	-0.00205	-0.00206	-0.00205
	(A1 * B1 * !C1 * X)	0.00268	0.00270	0.00268
	(A1 * !B1 * C1 * X)	-0.00204	-0.00205	-0.00204
	(A1 * !B1 * C1 * X)	0.00261	0.00265	0.00263
	(!A1 * B1 * X)	-0.00195	-0.00200	-0.00199
	(!A1 * B1 * X)	0.00274	0.00275	0.00273
	(!A1 * !B1 * C1 * X)	-0.00194	-0.00198	-0.00199
	(!A1 * !B1 * C1 * X)	0.00274	0.00276	0.00274
	(!A1 * !B1 * !C1 * !X)	-0.00168	-0.00181	-0.00181
	(!A1 * !B1 * !C1 * !X)	0.00303	0.00293	0.00292
sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	-0.00262	-0.00262	-0.00262
	(A1 * B1 * C1 * X)	0.00261	0.00262	0.00262
	(A1 * B1 * !C1 * X)	-0.00262	-0.00262	-0.00262
	(A1 * B1 * !C1 * X)	0.00262	0.00263	0.00262
	(A1 * !B1 * C1 * X)	-0.00261	-0.00262	-0.00261
	(A1 * !B1 * C1 * X)	0.00256	0.00258	0.00257
	(!A1 * B1 * X)	-0.00248	-0.00253	-0.00252
	(!A1 * B1 * X)	0.00265	0.00269	0.00266
	(!A1 * !B1 * C1 * X)	-0.00247	-0.00254	-0.00253
	(!A1 * !B1 * C1 * X)	0.00265	0.00269	0.00267
	(!A1 * !B1 * !C1 * !X)	-0.00201	-0.00218	-0.00218
	(!A1 * !B1 * !C1 * !X)	0.00314	0.00304	0.00303

sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	-0.00468	-0.00470	-0.00468
	(A1 * B1 * C1 * X)	0.00520	0.00524	0.00521
	(A1 * B1 * !C1 * X)	-0.00468	-0.00469	-0.00468
	(A1 * B1 * !C1 * X)	0.00520	0.00524	0.00522
	(A1 * !B1 * C1 * X)	-0.00464	-0.00468	-0.00466
	(A1 * !B1 * C1 * X)	0.00507	0.00514	0.00511
	(!A1 * B1 * X)	-0.00444	-0.00460	-0.00457
	(!A1 * B1 * X)	0.00530	0.00534	0.00532
	(!A1 * !B1 * C1 * X)	-0.00444	-0.00459	-0.00456
	(!A1 * !B1 * C1 * X)	0.00531	0.00534	0.00533
	(!A1 * !B1 * !C1 * !X)	-0.00419	-0.00450	-0.00447
	(!A1 * !B1 * !C1 * !X)	0.00561	0.00544	0.00542

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)	0.00275	0.00266	0.00255
	(A1 * A2 * C1 * X)	-0.00172	-0.00177	-0.00176
	(A1 * A2 * !C1 * X)	0.00242	0.00246	0.00239
	(A1 * A2 * !C1 * X)	-0.00130	-0.00132	-0.00132
	(A1 * !A2 * C1 * X)	0.00299	0.00243	0.00238
	(A1 * !A2 * C1 * X)	-0.00198	-0.00254	-0.00258
	(!A1 * C1 * X)	0.00298	0.00244	0.00238
	(!A1 * C1 * X)	-0.00200	-0.00256	-0.00258
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	0.00284	0.00278	0.00267
	(A1 * A2 * C1 * X)	-0.00171	-0.00175	-0.00176
	(A1 * A2 * !C1 * X)	0.00252	0.00254	0.00249
	(A1 * A2 * !C1 * X)	-0.00130	-0.00131	-0.00132
	(A1 * !A2 * C1 * X)	0.00309	0.00254	0.00247
	(A1 * !A2 * C1 * X)	-0.00195	-0.00255	-0.00258
	(!A1 * C1 * X)	0.00306	0.00252	0.00247
	(!A1 * C1 * X)	-0.00198	-0.00257	-0.00258
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	0.00508	0.00494	0.00470
	(A1 * A2 * C1 * X)	-0.00363	-0.00370	-0.00367
	(A1 * A2 * !C1 * X)	0.00449	0.00450	0.00441
	(A1 * A2 * !C1 * X)	-0.00279	-0.00278	-0.00280
	(A1 * !A2 * C1 * X)	0.00562	0.00448	0.00437
	(A1 * !A2 * C1 * X)	-0.00406	-0.00532	-0.00535
	(!A1 * C1 * X)	0.00566	0.00450	0.00437
	(!A1 * C1 * X)	-0.00402	-0.00530	-0.00535

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)	-0.00238	-0.00240	-0.00239
	(A1 * A2 * C1 * X)	0.00175	0.00177	0.00176
	(A1 * A2 * !C1 * X)	-0.00235	-0.00236	-0.00236
	(A1 * A2 * !C1 * X)	0.00136	0.00137	0.00136
	(A1 * !A2 * C1 * X)	-0.00236	-0.00237	-0.00235
	(A1 * !A2 * C1 * X)	0.00258	0.00260	0.00260
	(!A1 * C1 * X)	-0.00236	-0.00236	-0.00235
	(!A1 * C1 * X)	0.00258	0.00260	0.00260
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	-0.00250	-0.00250	-0.00251
	(A1 * A2 * C1 * X)	0.00175	0.00175	0.00176
	(A1 * A2 * !C1 * X)	-0.00246	-0.00247	-0.00246
	(A1 * A2 * !C1 * X)	0.00137	0.00137	0.00136
	(A1 * !A2 * C1 * X)	-0.00245	-0.00246	-0.00244
	(A1 * !A2 * C1 * X)	0.00259	0.00260	0.00260
	(!A1 * C1 * X)	-0.00245	-0.00246	-0.00244
	(!A1 * C1 * X)	0.00258	0.00261	0.00260
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	-0.00439	-0.00443	-0.00440
	(A1 * A2 * C1 * X)	0.00365	0.00370	0.00367
	(A1 * A2 * !C1 * X)	-0.00435	-0.00436	-0.00433
	(A1 * A2 * !C1 * X)	0.00289	0.00290	0.00289
	(A1 * !A2 * C1 * X)	-0.00432	-0.00434	-0.00431
	(A1 * !A2 * C1 * X)	0.00535	0.00538	0.00539
	(!A1 * C1 * X)	-0.00431	-0.00435	-0.00431
	(!A1 * C1 * X)	0.00533	0.00540	0.00539

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	0.00261	0.00264	0.00259
	(A1 * B1 * X)	-0.00122	-0.00124	-0.00121
	(A1 * A2 * !B1 * X)	0.00259	0.00264	0.00260
	(A1 * A2 * !B1 * X)	-0.00121	-0.00123	-0.00121
	(!A1 * B1 * X)	0.00259	0.00264	0.00260
	(!A1 * B1 * X)	-0.00121	-0.00124	-0.00122
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	0.00264	0.00265	0.00263
	(A1 * B1 * X)	-0.00128	-0.00127	-0.00126
	(A1 * A2 * !B1 * X)	0.00264	0.00265	0.00263
	(A1 * A2 * !B1 * X)	-0.00127	-0.00127	-0.00126
	(!A1 * B1 * X)	0.00264	0.00265	0.00263
	(!A1 * B1 * X)	-0.00128	-0.00128	-0.00126
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	0.00428	0.00429	0.00426
	(A1 * B1 * X)	-0.00246	-0.00246	-0.00244
	(A1 * A2 * !B1 * X)	0.00428	0.00430	0.00426
	(A1 * A2 * !B1 * X)	-0.00245	-0.00245	-0.00242
	(!A1 * B1 * X)	0.00428	0.00429	0.00426
	(!A1 * B1 * X)	-0.00248	-0.00248	-0.00246

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	-0.00254	-0.00254	-0.00259
	(A1 * B1 * X)	0.00126	0.00126	0.00123
	(A1 * A2 * !B1 * X)	-0.00239	-0.00240	-0.00256
	(A1 * A2 * !B1 * X)	0.00135	0.00136	0.00124
	(!A1 * B1 * X)	-0.00254	-0.00256	-0.00259
	(!A1 * B1 * X)	0.00126	0.00128	0.00123
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	-0.00257	-0.00258	-0.00262
	(A1 * B1 * X)	0.00132	0.00132	0.00128
	(A1 * A2 * !B1 * X)	-0.00244	-0.00245	-0.00260
	(A1 * A2 * !B1 * X)	0.00141	0.00141	0.00129
	(!A1 * B1 * X)	-0.00257	-0.00258	-0.00262
	(!A1 * B1 * X)	0.00132	0.00132	0.00128
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	-0.00412	-0.00414	-0.00424
	(A1 * B1 * X)	0.00257	0.00258	0.00248
	(A1 * A2 * !B1 * X)	-0.00382	-0.00387	-0.00420
	(A1 * A2 * !B1 * X)	0.00270	0.00273	0.00248
	(!A1 * B1 * X)	-0.00412	-0.00414	-0.00424
	(!A1 * B1 * X)	0.00259	0.00260	0.00249

SKY130_FD_SC_HS__A21BOIx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00287	0.00279	0.00263	0.70839
sky130_fd_sc_hs__a21boi_2	0.00546	0.00530	0.00260	1.36547
sky130_fd_sc_hs__a21boi_4	0.01083	0.01080	0.00383	2.39573

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21boi_1	0.00000	0.67571	1.28757
sky130_fd_sc_hs__a21boi_2	0.00000	0.44179	0.75267
sky130_fd_sc_hs__a21boi_4	0.00000	1.54533	2.84949

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)	0.05656	0.75857	9.27737
	A2->Y (FR)	0.07174	0.79798	9.58465
	B1_N->Y (RR)	0.07326	0.59376	5.88755
sky130_fd_sc_hs__a21boi_2	A1->Y (FR)	0.05217	0.65970	9.52932
	A2->Y (FR)	0.06761	0.67031	9.49971
	B1_N->Y (RR)	0.06989	0.47419	5.76827
sky130_fd_sc_hs__a21boi_4	A1->Y (FR)	0.05292	0.55962	9.23657
	A2->Y (FR)	0.06723	0.56559	9.04695
	B1_N->Y (RR)	0.06599	0.42869	6.18851

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21boi_1	A1->Y (RF)	0.02285	0.33983	3.99793
	A2->Y (RF)	0.02551	0.30192	3.47353
	B1_N->Y (FF)	0.05336	0.34463	3.20736
sky130_fd_sc_hs__a21boi_2	A1->Y (RF)	0.02137	0.30364	4.33576
	A2->Y (RF)	0.02549	0.26672	3.72367
	B1_N->Y (FF)	0.05707	0.34349	3.30336
sky130_fd_sc_hs__a21boi_4	A1->Y (RF)	0.02247	0.26020	4.32280
	A2->Y (RF)	0.02639	0.20770	3.41328
	B1_N->Y (FF)	0.05994	0.30960	2.88052

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.00151	0.00285	0.03885
	A1	0.00785	0.00922	0.04535
	A2	0.00232	0.00366	0.04050
	A2	0.01020	0.01155	0.04841
	B1_N	0.01053	0.01823	0.15971
	B1_N	0.00769	0.01529	0.15735
sky130_fd_sc_hs__a21boi_2	A1	0.00317	0.00606	0.06931
	A1	0.01544	0.01841	0.08177
	A2	0.00570	0.00840	0.07560
	A2	0.02109	0.02384	0.09117
	B1_N	0.01479	0.02340	0.18348
	B1_N	0.01002	0.01866	0.17911
sky130_fd_sc_hs__a21boi_4	A1	0.00650	0.01265	0.13404
	A1	0.03149	0.03776	0.15966
	A2	0.01051	0.01633	0.14295
	A2	0.04177	0.04779	0.17494
	B1_N	0.02624	0.03894	0.28875
	B1_N	0.02014	0.03288	0.28285

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.00846	0.00992	0.03960
	A1	0.00217	0.00361	0.03286
	A2	0.01002	0.01127	0.03973
	A2	0.00215	0.00334	0.03137
	B1_N	0.00505	0.01388	0.14100
	B1_N	0.01044	0.01924	0.14636
sky130_fd_sc_hs__a21boi_2	A1	0.01544	0.01869	0.07144
	A1	0.00323	0.00641	0.05828
	A2	0.01860	0.02114	0.07331
	A2	0.00314	0.00562	0.05764
	B1_N	0.00969	0.01944	0.15980
	B1_N	0.01444	0.02416	0.16442
sky130_fd_sc_hs__a21boi_4	A1	0.03006	0.03648	0.13606
	A1	0.00526	0.01171	0.11122
	A2	0.03695	0.04303	0.15272
	A2	0.00557	0.01152	0.11998
	B1_N	0.02080	0.03604	0.26077
	B1_N	0.02692	0.04215	0.26684

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)	0.00275	0.00237	0.00233
	(A2 * !B1_N * !Y)	-0.00258	-0.00303	-0.00305
	(!A2 * B1_N * Y)	0.00087	0.00087	0.00084
	(!A2 * B1_N * Y)	-0.00339	-0.00340	-0.00343
	(!A2 * !B1_N * !Y)	0.00227	0.00228	0.00227
	(!A2 * !B1_N * !Y)	-0.00306	-0.00307	-0.00306
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	0.00552	0.00467	0.00460
	(A2 * !B1_N * !Y)	-0.00487	-0.00589	-0.00589
	(!A2 * B1_N * Y)	0.00152	0.00153	0.00147
	(!A2 * B1_N * Y)	-0.00675	-0.00679	-0.00688
	(!A2 * !B1_N * !Y)	0.00442	0.00445	0.00444
	(!A2 * !B1_N * !Y)	-0.00592	-0.00595	-0.00593
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	0.01101	0.00922	0.00908
	(A2 * !B1_N * !Y)	-0.00983	-0.01185	-0.01187
	(!A2 * B1_N * Y)	0.00286	0.00286	0.00276
	(!A2 * B1_N * Y)	-0.01365	-0.01369	-0.01384
	(!A2 * !B1_N * !Y)	0.00869	0.00876	0.00873
	(!A2 * !B1_N * !Y)	-0.01191	-0.01198	-0.01195

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)	-0.00232	-0.00233	-0.00232
	(A2 * !B1_N * !Y)	0.00302	0.00306	0.00305
	(!A2 * B1_N * Y)	-0.00080	-0.00083	-0.00081
	(!A2 * B1_N * Y)	0.00343	0.00352	0.00346
	(!A2 * !B1_N * !Y)	-0.00219	-0.00227	-0.00227
	(!A2 * !B1_N * !Y)	0.00306	0.00310	0.00308
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	-0.00457	-0.00460	-0.00458
	(A2 * !B1_N * !Y)	0.00585	0.00592	0.00590
	(!A2 * B1_N * Y)	-0.00143	-0.00146	-0.00143
	(!A2 * B1_N * Y)	0.00687	0.00701	0.00690
	(!A2 * !B1_N * !Y)	-0.00427	-0.00445	-0.00444
	(!A2 * !B1_N * !Y)	0.00592	0.00596	0.00596
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	-0.00901	-0.00902	-0.00901
	(A2 * !B1_N * !Y)	0.01181	0.01185	0.01188
	(!A2 * B1_N * Y)	-0.00268	-0.00271	-0.00265
	(!A2 * B1_N * Y)	0.01393	0.01415	0.01391
	(!A2 * !B1_N * !Y)	-0.00845	-0.00876	-0.00873
	(!A2 * !B1_N * !Y)	0.01191	0.01204	0.01200

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)	0.00288	0.00247	0.00243
	(A1 * !B1_N * !Y)	-0.00246	-0.00293	-0.00295
	(!A1 * B1_N * Y)	0.00235	0.00236	0.00234
	(!A1 * B1_N * Y)	-0.00297	-0.00298	-0.00297
	(!A1 * !B1_N * !Y)	0.00234	0.00234	0.00234
	(!A1 * !B1_N * !Y)	-0.00296	-0.00296	-0.00297
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	0.00542	0.00460	0.00453
	(A1 * !B1_N * !Y)	-0.00491	-0.00587	-0.00588
	(!A1 * B1_N * Y)	0.00437	0.00438	0.00437
	(!A1 * B1_N * Y)	-0.00592	-0.00593	-0.00591
	(!A1 * !B1_N * !Y)	0.00437	0.00438	0.00436
	(!A1 * !B1_N * !Y)	-0.00592	-0.00593	-0.00592
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	0.01118	0.00932	0.00917
	(A1 * !B1_N * !Y)	-0.00972	-0.01179	-0.01182
	(!A1 * B1_N * Y)	0.00852	0.00859	0.00855
	(!A1 * B1_N * Y)	-0.01225	-0.01230	-0.01227
	(!A1 * !B1_N * !Y)	0.00891	0.00899	0.00895
	(!A1 * !B1_N * !Y)	-0.01186	-0.01192	-0.01189

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)	-0.00241	-0.00243	-0.00241
	(A1 * !B1_N * !Y)	0.00293	0.00297	0.00295
	(!A1 * B1_N * Y)	-0.00219	-0.00234	-0.00233
	(!A1 * B1_N * Y)	0.00311	0.00301	0.00300
	(!A1 * !B1_N * !Y)	-0.00228	-0.00234	-0.00234
	(!A1 * !B1_N * !Y)	0.00296	0.00299	0.00298
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	-0.00450	-0.00452	-0.00450
	(A1 * !B1_N * !Y)	0.00585	0.00589	0.00588
	(!A1 * B1_N * Y)	-0.00404	-0.00438	-0.00437
	(!A1 * B1_N * Y)	0.00615	0.00597	0.00594
	(!A1 * !B1_N * !Y)	-0.00422	-0.00437	-0.00436
	(!A1 * !B1_N * !Y)	0.00592	0.00596	0.00594
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	-0.00910	-0.00915	-0.00911
	(A1 * !B1_N * !Y)	0.01175	0.01187	0.01183
	(!A1 * B1_N * Y)	-0.00782	-0.00854	-0.00851
	(!A1 * B1_N * Y)	0.01276	0.01238	0.01235
	(!A1 * !B1_N * !Y)	-0.00859	-0.00890	-0.00893
	(!A1 * !B1_N * !Y)	0.01189	0.01203	0.01194

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)	0.00700	0.01470	0.15622
	(A1 * A2 * !Y)	0.00101	0.00871	0.15024
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00819	0.01647	0.17611
	(A1 * A2 * !Y)	0.00229	0.01057	0.17022
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.01254	0.02417	0.27242
	(A1 * A2 * !Y)	0.00382	0.01543	0.26374

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)	0.00135	0.01053	0.15205
	(A1 * A2 * !Y)	0.00729	0.01651	0.15802
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00415	0.01404	0.17355
	(A1 * A2 * !Y)	0.01001	0.01991	0.17941
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.00906	0.02453	0.27396
	(A1 * A2 * !Y)	0.01768	0.03317	0.28262

SKY130_FD_SC_HS__A21BOx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00266	0.00257	0.00224	1.29582
sky130_fd_sc_hs__a21bo_2	0.00284	0.00269	0.00233	2.35179
sky130_fd_sc_hs__a21bo_4	0.00492	0.00522	0.00270	4.41443

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21bo_1	0.00000	0.88874	1.48465
sky130_fd_sc_hs__a21bo_2	0.00000	0.96447	1.55359
sky130_fd_sc_hs__a21bo_4	0.00000	1.02476	1.30308

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)	0.06189	0.48768	5.71723
	A2->X (RR)	0.06466	0.48023	5.58646
	B1_N->X (FR)	0.08532	0.65585	8.16632
sky130_fd_sc_hs__a21bo_2	A1->X (RR)	0.05891	0.39355	5.29752
	A2->X (RR)	0.06182	0.38205	5.15873
	B1_N->X (FR)	0.08864	0.56435	7.87690
sky130_fd_sc_hs__a21bo_4	A1->X (RR)	0.06113	0.33470	5.44844
	A2->X (RR)	0.06633	0.32910	5.33200
	B1_N->X (FR)	0.10437	0.53165	8.03702

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21bo_1	A1->X (FF)	0.09246	0.45452	4.87224
	A2->X (FF)	0.10630	0.47905	4.98780
	B1_N->X (RF)	0.10738	0.29598	2.07542
sky130_fd_sc_hs__a21bo_2	A1->X (FF)	0.11495	0.45755	4.76876
	A2->X (FF)	0.13136	0.48582	4.89059
	B1_N->X (RF)	0.13727	0.30115	1.78130
sky130_fd_sc_hs__a21bo_4	A1->X (FF)	0.11115	0.41100	4.66476
	A2->X (FF)	0.12116	0.43319	4.75071
	B1_N->X (RF)	0.12582	0.25812	1.63134

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.01314	0.01845	0.12431
	A1	0.00713	0.01244	0.11857
	A2	0.01461	0.01932	0.12112
	A2	0.00715	0.01186	0.11409
	B1_N	0.01049	0.01976	0.16951
	B1_N	0.01482	0.02412	0.17401
sky130_fd_sc_hs__a21bo_2	A1	0.01737	0.02261	0.12798
	A1	0.01110	0.01639	0.12233
	A2	0.01878	0.02339	0.12493
	A2	0.01104	0.01565	0.11719
	B1_N	0.01498	0.02390	0.17364
	B1_N	0.01957	0.02848	0.17939
sky130_fd_sc_hs__a21bo_4	A1	0.03229	0.04257	0.25411
	A1	0.02134	0.03169	0.24441
	A2	0.03609	0.04520	0.24929
	A2	0.02138	0.03057	0.23579
	B1_N	0.02713	0.03776	0.22244
	B1_N	0.03208	0.04279	0.22880

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.00729	0.01146	0.11598
	A1	0.01334	0.01744	0.12112
	A2	0.00768	0.01178	0.11387
	A2	0.01512	0.01914	0.12003
	B1_N	0.01499	0.02237	0.16964
	B1_N	0.01066	0.01802	0.16492
sky130_fd_sc_hs__a21bo_2	A1	0.01244	0.01501	0.11872
	A1	0.01874	0.02128	0.12311
	A2	0.01392	0.01631	0.11719
	A2	0.02163	0.02373	0.12394
	B1_N	0.02319	0.02799	0.16380
	B1_N	0.02012	0.02491	0.16030
sky130_fd_sc_hs__a21bo_4	A1	0.02496	0.03004	0.23829
	A1	0.03599	0.04098	0.24481
	A2	0.02602	0.03077	0.23448
	A2	0.04063	0.04531	0.24611
	B1_N	0.03947	0.04463	0.20562
	B1_N	0.03723	0.04231	0.20240

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)	0.00254	0.00208	0.00202
	(A2 * !B1_N * X)	-0.00231	-0.00284	-0.00287
	(!A2 * B1_N * !X)	0.00071	0.00071	0.00070
	(!A2 * B1_N * !X)	-0.00319	-0.00320	-0.00323
	(!A2 * !B1_N * X)	0.00193	0.00194	0.00194
	(!A2 * !B1_N * X)	-0.00289	-0.00290	-0.00289
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	0.00288	0.00243	0.00239
	(A2 * !B1_N * X)	-0.00228	-0.00279	-0.00281
	(!A2 * B1_N * !X)	0.00089	0.00090	0.00088
	(!A2 * B1_N * !X)	-0.00316	-0.00319	-0.00322
	(!A2 * !B1_N * X)	0.00232	0.00233	0.00233
	(!A2 * !B1_N * X)	-0.00283	-0.00284	-0.00283
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	0.00479	0.00393	0.00385
	(A2 * !B1_N * X)	-0.00438	-0.00535	-0.00538
	(!A2 * B1_N * !X)	0.00113	0.00113	0.00109
	(!A2 * B1_N * !X)	-0.00617	-0.00618	-0.00628
	(!A2 * !B1_N * X)	0.00369	0.00370	0.00369
	(!A2 * !B1_N * X)	-0.00543	-0.00544	-0.00543

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)	-0.00200	-0.00201	-0.00199
	(A2 * !B1_N * X)	0.00287	0.00290	0.00288
	(!A2 * B1_N * !X)	-0.00067	-0.00068	-0.00067
	(!A2 * B1_N * !X)	0.00325	0.00332	0.00326
	(!A2 * !B1_N * X)	-0.00190	-0.00194	-0.00194
	(!A2 * !B1_N * X)	0.00292	0.00294	0.00291
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	-0.00237	-0.00238	-0.00237
	(A2 * !B1_N * X)	0.00281	0.00284	0.00282
	(!A2 * B1_N * !X)	-0.00083	-0.00085	-0.00083
	(!A2 * B1_N * !X)	0.00323	0.00328	0.00325
	(!A2 * !B1_N * X)	-0.00225	-0.00231	-0.00231
	(!A2 * !B1_N * X)	0.00285	0.00288	0.00285
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	-0.00380	-0.00381	-0.00380
	(A2 * !B1_N * X)	0.00536	0.00539	0.00541
	(!A2 * B1_N * !X)	-0.00104	-0.00106	-0.00104
	(!A2 * B1_N * !X)	0.00629	0.00637	0.00631
	(!A2 * !B1_N * X)	-0.00355	-0.00370	-0.00369
	(!A2 * !B1_N * X)	0.00543	0.00550	0.00546

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)	0.00280	0.00237	0.00234
	(A1 * !B1_N * X)	-0.00218	-0.00264	-0.00265
	(!A1 * B1_N * !X)	0.00227	0.00229	0.00228
	(!A1 * B1_N * !X)	-0.00265	-0.00267	-0.00266
	(!A1 * !B1_N * X)	0.00225	0.00227	0.00226
	(!A1 * !B1_N * X)	-0.00266	-0.00267	-0.00267
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	0.00285	0.00238	0.00233
	(A1 * !B1_N * X)	-0.00219	-0.00272	-0.00275
	(!A1 * B1_N * !X)	0.00225	0.00227	0.00225
	(!A1 * B1_N * !X)	-0.00276	-0.00277	-0.00276
	(!A1 * !B1_N * X)	0.00224	0.00226	0.00224
	(!A1 * !B1_N * X)	-0.00276	-0.00278	-0.00277
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	0.00553	0.00478	0.00471
	(A1 * !B1_N * X)	-0.00444	-0.00536	-0.00535
	(!A1 * B1_N * !X)	0.00458	0.00462	0.00460
	(!A1 * B1_N * !X)	-0.00536	-0.00538	-0.00537
	(!A1 * !B1_N * X)	0.00456	0.00459	0.00458
	(!A1 * !B1_N * X)	-0.00537	-0.00539	-0.00538

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)	-0.00232	-0.00232	-0.00231
	(A1 * !B1_N * X)	0.00264	0.00266	0.00266
	(!A1 * B1_N * !X)	-0.00211	-0.00227	-0.00226
	(!A1 * B1_N * !X)	0.00280	0.00271	0.00269
	(!A1 * !B1_N * X)	-0.00221	-0.00227	-0.00226
	(!A1 * !B1_N * X)	0.00267	0.00270	0.00268
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	-0.00230	-0.00232	-0.00231
	(A1 * !B1_N * X)	0.00273	0.00277	0.00276
	(!A1 * B1_N * !X)	-0.00209	-0.00224	-0.00224
	(!A1 * B1_N * !X)	0.00290	0.00281	0.00280
	(!A1 * !B1_N * X)	-0.00218	-0.00226	-0.00224
	(!A1 * !B1_N * X)	0.00277	0.00280	0.00278
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	-0.00469	-0.00469	-0.00467
	(A1 * !B1_N * X)	0.00534	0.00537	0.00537
	(!A1 * B1_N * !X)	-0.00425	-0.00460	-0.00457
	(!A1 * B1_N * !X)	0.00562	0.00543	0.00541
	(!A1 * !B1_N * X)	-0.00443	-0.00459	-0.00457
	(!A1 * !B1_N * X)	0.00539	0.00543	0.00541

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)	0.00584	0.01349	0.15044
	(A1 * A2 * X)	0.00076	0.00838	0.14535
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00661	0.01398	0.15146
	(A1 * A2 * X)	0.00128	0.00863	0.14614
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00883	0.01709	0.17113
	(A1 * A2 * X)	0.00270	0.01093	0.16497

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)	0.00167	0.01072	0.14765
	(A1 * A2 * X)	0.00675	0.01581	0.15273
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00204	0.01089	0.14846
	(A1 * A2 * X)	0.00737	0.01621	0.15378
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00336	0.01274	0.16686
	(A1 * A2 * X)	0.00945	0.01885	0.17298

SKY130_FD_SC_HS__A21OIx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00297	0.00279	0.00290	0.68882
sky130_fd_sc_hs__a21oi_2	0.00541	0.00563	0.00435	1.21479
sky130_fd_sc_hs__a21oi_4	0.01101	0.01078	0.00858	2.27853

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21oi_1	0.00000	0.09731	0.19016
sky130_fd_sc_hs__a21oi_2	0.00000	0.19032	0.38031
sky130_fd_sc_hs__a21oi_4	0.00000	0.38063	0.76062

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)	0.05646	0.75154	9.12139
	A2->Y (FR)	0.07045	0.78887	9.40694
	B1->Y (FR)	0.05409	0.81872	10.10870
sky130_fd_sc_hs__a21oi_2	A1->Y (FR)	0.05521	0.68203	9.56037
	A2->Y (FR)	0.07241	0.68607	9.37634
	B1->Y (FR)	0.02973	0.69598	10.06800
sky130_fd_sc_hs__a21oi_4	A1->Y (FR)	0.05122	0.57123	9.28677
	A2->Y (FR)	0.06687	0.57143	9.06109
	B1->Y (FR)	0.02712	0.59239	9.84853

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21oi_1	A1->Y (RF)	0.02303	0.33442	3.89387
	A2->Y (RF)	0.02525	0.29823	3.39386
	B1->Y (RF)	0.01423	0.25287	2.99981
sky130_fd_sc_hs__a21oi_2	A1->Y (RF)	0.02223	0.29232	4.00230
	A2->Y (RF)	0.02754	0.25613	3.39691
	B1->Y (RF)	0.01782	0.33617	4.83089
sky130_fd_sc_hs__a21oi_4	A1->Y (RF)	0.02146	0.25156	4.14513
	A2->Y (RF)	0.02489	0.19977	3.23986
	B1->Y (RF)	0.01771	0.29561	5.06406

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	-0.00048	0.00086	0.03760
	A1	0.00811	0.00947	0.04639
	A2	0.00009	0.00145	0.03869
	A2	0.01023	0.01159	0.04892
	B1	-0.00096	0.00345	0.06087
	B1	0.00581	0.01024	0.06771
sky130_fd_sc_hs__a21oi_2	A1	-0.00108	0.00155	0.06431
	A1	0.01507	0.01769	0.08055
	A2	0.00108	0.00355	0.06824
	A2	0.02098	0.02332	0.08828
	B1	-0.00022	0.00660	0.07838
	B1	0.01031	0.01721	0.08918
sky130_fd_sc_hs__a21oi_4	A1	-0.00327	0.00314	0.12833
	A1	0.02968	0.03625	0.16199
	A2	0.00113	0.00770	0.14522
	A2	0.04074	0.04744	0.18561
	B1	-0.00081	0.01053	0.14239
	B1	0.02024	0.03176	0.16383

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	0.01054	0.01204	0.04204
	A1	0.00202	0.00351	0.03303
	A2	0.01213	0.01339	0.04174
	A2	0.00201	0.00319	0.03162
	B1	0.00625	0.00861	0.04353
	B1	-0.00051	0.00178	0.03669
sky130_fd_sc_hs__a21oi_2	A1	0.01920	0.02230	0.07538
	A1	0.00320	0.00624	0.05876
	A2	0.02324	0.02561	0.07936
	A2	0.00331	0.00564	0.05903
	B1	0.00800	0.01194	0.05736
	B1	-0.00254	0.00129	0.04526
sky130_fd_sc_hs__a21oi_4	A1	0.03841	0.04566	0.14344
	A1	0.00569	0.01286	0.10977
	A2	0.04493	0.05068	0.15897
	A2	0.00529	0.01101	0.11853
	B1	0.01650	0.02339	0.10543
	B1	-0.00455	0.00224	0.08215

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	0.00281	0.00241	0.00237
	(A2 * B1 * !Y)	-0.00242	-0.00291	-0.00292
	(!A2 * B1 * !Y)	0.00229	0.00231	0.00230
	(!A2 * B1 * !Y)	-0.00296	-0.00297	-0.00296
	(!A2 * !B1 * Y)	0.00069	0.00068	0.00067
	(!A2 * !B1 * Y)	-0.00348	-0.00349	-0.00351
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	0.00574	0.00477	0.00471
	(A2 * B1 * !Y)	-0.00460	-0.00575	-0.00573
	(!A2 * B1 * !Y)	0.00445	0.00448	0.00446
	(!A2 * B1 * !Y)	-0.00582	-0.00583	-0.00582
	(!A2 * !B1 * Y)	0.00146	0.00147	0.00141
	(!A2 * !B1 * Y)	-0.00664	-0.00668	-0.00678
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	0.01155	0.00960	0.00948
	(A2 * B1 * !Y)	-0.00920	-0.01143	-0.01144
	(!A2 * B1 * !Y)	0.00909	0.00911	0.00911
	(!A2 * B1 * !Y)	-0.01159	-0.01160	-0.01159
	(!A2 * !B1 * Y)	0.00278	0.00278	0.00267
	(!A2 * !B1 * Y)	-0.01373	-0.01379	-0.01394

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	-0.00235	-0.00237	-0.00236
	(A2 * B1 * !Y)	0.00290	0.00294	0.00292
	(!A2 * B1 * !Y)	-0.00223	-0.00230	-0.00230
	(!A2 * B1 * !Y)	0.00296	0.00299	0.00297
	(!A2 * !B1 * Y)	-0.00066	-0.00067	-0.00065
	(!A2 * !B1 * Y)	0.00351	0.00358	0.00352
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	-0.00470	-0.00471	-0.00469
	(A2 * B1 * !Y)	0.00572	0.00575	0.00573
	(!A2 * B1 * !Y)	-0.00429	-0.00448	-0.00446
	(!A2 * B1 * !Y)	0.00586	0.00586	0.00583
	(!A2 * !B1 * Y)	-0.00138	-0.00140	-0.00138
	(!A2 * !B1 * Y)	0.00677	0.00690	0.00679
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	-0.00943	-0.00945	-0.00944
	(A2 * B1 * !Y)	0.01136	0.01143	0.01144
	(!A2 * B1 * !Y)	-0.00885	-0.00911	-0.00911
	(!A2 * B1 * !Y)	0.01163	0.01166	0.01163
	(!A2 * !B1 * Y)	-0.00261	-0.00266	-0.00261
	(!A2 * !B1 * Y)	0.01392	0.01420	0.01396

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	0.00283	0.00242	0.00238
	(A1 * B1 * !Y)	-0.00242	-0.00291	-0.00292
	(!A1 * B1 * !Y)	0.00228	0.00230	0.00229
	(!A1 * B1 * !Y)	-0.00295	-0.00297	-0.00296
	(!A1 * !B1 * Y)	0.00227	0.00230	0.00229
	(!A1 * !B1 * Y)	-0.00295	-0.00297	-0.00296
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	0.00592	0.00493	0.00487
	(A1 * B1 * !Y)	-0.00461	-0.00574	-0.00574
	(!A1 * B1 * !Y)	0.00463	0.00466	0.00464
	(!A1 * B1 * !Y)	-0.00583	-0.00585	-0.00583
	(!A1 * !B1 * Y)	0.00445	0.00447	0.00445
	(!A1 * !B1 * Y)	-0.00601	-0.00603	-0.00601
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	0.01125	0.00940	0.00925
	(A1 * B1 * !Y)	-0.00962	-0.01175	-0.01175
	(!A1 * B1 * !Y)	0.00887	0.00889	0.00886
	(!A1 * B1 * !Y)	-0.01191	-0.01194	-0.01191
	(!A1 * !B1 * Y)	0.00883	0.00890	0.00887
	(!A1 * !B1 * Y)	-0.01195	-0.01200	-0.01198

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	-0.00237	-0.00238	-0.00237
	(A1 * B1 * !Y)	0.00291	0.00294	0.00292
	(!A1 * B1 * !Y)	-0.00223	-0.00229	-0.00229
	(!A1 * B1 * !Y)	0.00295	0.00299	0.00297
	(!A1 * !B1 * Y)	-0.00214	-0.00229	-0.00229
	(!A1 * !B1 * Y)	0.00307	0.00301	0.00297
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	-0.00486	-0.00486	-0.00485
	(A1 * B1 * !Y)	0.00573	0.00574	0.00574
	(!A1 * B1 * !Y)	-0.00445	-0.00466	-0.00464
	(!A1 * B1 * !Y)	0.00584	0.00590	0.00585
	(!A1 * !B1 * Y)	-0.00409	-0.00447	-0.00445
	(!A1 * !B1 * Y)	0.00626	0.00605	0.00602
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	-0.00919	-0.00924	-0.00920
	(A1 * B1 * !Y)	0.01167	0.01180	0.01175
	(!A1 * B1 * !Y)	-0.00860	-0.00889	-0.00886
	(!A1 * B1 * !Y)	0.01191	0.01201	0.01195
	(!A1 * !B1 * Y)	-0.00811	-0.00883	-0.00887
	(!A1 * !B1 * Y)	0.01250	0.01213	0.01201

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	0.00277	0.00279	0.00276
	(A1 * A2 * !Y)	-0.00131	-0.00132	-0.00130
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	0.00305	0.00311	0.00306
	(A1 * A2 * !Y)	-0.00269	-0.00274	-0.00270
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	0.00589	0.00596	0.00592
	(A1 * A2 * !Y)	-0.00517	-0.00523	-0.00519

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	-0.00262	-0.00265	-0.00275
	(A1 * A2 * !Y)	0.00141	0.00142	0.00133
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	-0.00279	-0.00281	-0.00303
	(A1 * A2 * !Y)	0.00292	0.00292	0.00275
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	-0.00540	-0.00544	-0.00587
	(A1 * A2 * !Y)	0.00560	0.00560	0.00529

SKY130_FD_SC_HS__A21Ox

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00249	0.00255	0.00255	1.44706
sky130_fd_sc_hs__a21o_2	0.00277	0.00268	0.00281	2.74245
sky130_fd_sc_hs__a21o_4	0.00503	0.00483	0.00513	5.25696

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21o_1	0.00000	0.31033	0.48976
sky130_fd_sc_hs__a21o_2	0.00000	0.38607	0.50120
sky130_fd_sc_hs__a21o_4	0.00000	0.77759	1.00240

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)	0.05798	0.46560	5.72389
	A2->X (RR)	0.06155	0.45915	5.59414
	B1->X (RR)	0.04346	0.41879	5.32621
sky130_fd_sc_hs__a21o_2	A1->X (RR)	0.05678	0.38052	5.46809
	A2->X (RR)	0.05974	0.36894	5.32612
	B1->X (RR)	0.04273	0.33642	5.08586
sky130_fd_sc_hs__a21o_4	A1->X (RR)	0.06586	0.34194	5.75812
	A2->X (RR)	0.07012	0.33097	5.61372
	B1->X (RR)	0.04444	0.28335	5.28248

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21o_1	A1->X (FF)	0.08807	0.46221	5.18919
	A2->X (FF)	0.10350	0.48860	5.30920
	B1->X (FF)	0.08591	0.50323	5.33285
sky130_fd_sc_hs__a21o_2	A1->X (FF)	0.10676	0.45316	5.05569
	A2->X (FF)	0.12268	0.48031	5.17938
	B1->X (FF)	0.10687	0.50589	5.29718
sky130_fd_sc_hs__a21o_4	A1->X (FF)	0.11138	0.42850	5.15012
	A2->X (FF)	0.12741	0.45614	5.27860
	B1->X (FF)	0.10830	0.47955	5.45284

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.01447	0.01972	0.12554
	A1	0.00713	0.01240	0.11848
	A2	0.01624	0.02081	0.12240
	A2	0.00711	0.01171	0.11373
	B1	0.01033	0.01746	0.15019
	B1	0.00452	0.01166	0.14487
sky130_fd_sc_hs__a21o_2	A1	0.01917	0.02448	0.13359
	A1	0.01115	0.01659	0.12660
	A2	0.02083	0.02557	0.13065
	A2	0.01112	0.01594	0.12166
	B1	0.01488	0.02233	0.16059
	B1	0.00846	0.01594	0.15418
sky130_fd_sc_hs__a21o_4	A1	0.03720	0.04671	0.24746
	A1	0.02187	0.03150	0.23304
	A2	0.03999	0.04793	0.24226
	A2	0.02183	0.02992	0.22584
	B1	0.02783	0.04243	0.30532
	B1	0.01568	0.03042	0.29457

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.00526	0.00952	0.11452
	A1	0.01265	0.01686	0.12027
	A2	0.00560	0.00979	0.11220
	A2	0.01472	0.01877	0.11946
	B1	0.00485	0.01274	0.12417
	B1	0.01065	0.01853	0.12864
sky130_fd_sc_hs__a21o_2	A1	0.01040	0.01342	0.11890
	A1	0.01847	0.02138	0.12687
	A2	0.01167	0.01411	0.11806
	A2	0.02137	0.02374	0.12773
	B1	0.00928	0.01720	0.14159
	B1	0.01569	0.02360	0.14796
sky130_fd_sc_hs__a21o_4	A1	0.02159	0.02615	0.22359
	A1	0.03700	0.04146	0.23595
	A2	0.02484	0.02827	0.22246
	A2	0.04295	0.04631	0.23780
	B1	0.01909	0.03342	0.27748
	B1	0.03127	0.04525	0.28676

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	0.00240	0.00196	0.00191
	(A2 * B1 * X)	-0.00216	-0.00264	-0.00268
	(!A2 * B1 * X)	0.00184	0.00185	0.00184
	(!A2 * B1 * X)	-0.00270	-0.00271	-0.00271
	(!A2 * !B1 * !X)	0.00061	0.00060	0.00059
	(!A2 * !B1 * !X)	-0.00304	-0.00302	-0.00307
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	0.00276	0.00233	0.00227
	(A2 * B1 * X)	-0.00217	-0.00267	-0.00271
	(!A2 * B1 * X)	0.00217	0.00218	0.00218
	(!A2 * B1 * X)	-0.00274	-0.00275	-0.00274
	(!A2 * !B1 * !X)	0.00073	0.00074	0.00072
	(!A2 * !B1 * !X)	-0.00312	-0.00313	-0.00317
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	0.00512	0.00417	0.00410
	(A2 * B1 * X)	-0.00421	-0.00532	-0.00535
	(!A2 * B1 * X)	0.00393	0.00396	0.00395
	(!A2 * B1 * X)	-0.00539	-0.00543	-0.00541
	(!A2 * !B1 * !X)	0.00133	0.00133	0.00128
	(!A2 * !B1 * !X)	-0.00624	-0.00627	-0.00635

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	-0.00189	-0.00190	-0.00189
	(A2 * B1 * X)	0.00267	0.00269	0.00268
	(!A2 * B1 * X)	-0.00179	-0.00184	-0.00184
	(!A2 * B1 * X)	0.00273	0.00275	0.00272
	(!A2 * !B1 * !X)	-0.00057	-0.00059	-0.00057
	(!A2 * !B1 * !X)	0.00307	0.00313	0.00308
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	-0.00225	-0.00227	-0.00225
	(A2 * B1 * X)	0.00269	0.00272	0.00271
	(!A2 * B1 * X)	-0.00213	-0.00218	-0.00218
	(!A2 * B1 * X)	0.00276	0.00279	0.00276
	(!A2 * !B1 * !X)	-0.00069	-0.00071	-0.00070
	(!A2 * !B1 * !X)	0.00316	0.00321	0.00318
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	-0.00407	-0.00406	-0.00405
	(A2 * B1 * X)	0.00535	0.00534	0.00535
	(!A2 * B1 * X)	-0.00380	-0.00396	-0.00395
	(!A2 * B1 * X)	0.00540	0.00547	0.00544
	(!A2 * !B1 * !X)	-0.00123	-0.00125	-0.00123
	(!A2 * !B1 * !X)	0.00635	0.00644	0.00638

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	0.00284	0.00241	0.00237
	(A1 * B1 * X)	-0.00215	-0.00263	-0.00264
	(!A1 * B1 * X)	0.00232	0.00233	0.00232
	(!A1 * B1 * X)	-0.00267	-0.00268	-0.00267
	(!A1 * !B1 * !X)	0.00232	0.00235	0.00232
	(!A1 * !B1 * !X)	-0.00267	-0.00268	-0.00267
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	0.00287	0.00244	0.00239
	(A1 * B1 * X)	-0.00218	-0.00267	-0.00270
	(!A1 * B1 * X)	0.00232	0.00234	0.00233
	(!A1 * B1 * X)	-0.00272	-0.00274	-0.00274
	(!A1 * !B1 * !X)	0.00231	0.00234	0.00233
	(!A1 * !B1 * !X)	-0.00273	-0.00274	-0.00274
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	0.00503	0.00410	0.00402
	(A1 * B1 * X)	-0.00426	-0.00531	-0.00534
	(!A1 * B1 * X)	0.00387	0.00389	0.00387
	(!A1 * B1 * X)	-0.00540	-0.00541	-0.00540
	(!A1 * !B1 * !X)	0.00386	0.00389	0.00387
	(!A1 * !B1 * !X)	-0.00540	-0.00542	-0.00540

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	-0.00235	-0.00237	-0.00235
	(A1 * B1 * X)	0.00261	0.00264	0.00264
	(!A1 * B1 * X)	-0.00225	-0.00232	-0.00231
	(!A1 * B1 * X)	0.00267	0.00270	0.00268
	(!A1 * !B1 * !X)	-0.00217	-0.00232	-0.00231
	(!A1 * !B1 * !X)	0.00278	0.00270	0.00268
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	-0.00237	-0.00238	-0.00237
	(A1 * B1 * X)	0.00269	0.00271	0.00271
	(!A1 * B1 * X)	-0.00224	-0.00232	-0.00232
	(!A1 * B1 * X)	0.00273	0.00276	0.00275
	(!A1 * !B1 * !X)	-0.00216	-0.00231	-0.00232
	(!A1 * !B1 * !X)	0.00284	0.00277	0.00275
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	-0.00399	-0.00400	-0.00398
	(A1 * B1 * X)	0.00533	0.00536	0.00534
	(!A1 * B1 * X)	-0.00374	-0.00387	-0.00387
	(!A1 * B1 * X)	0.00540	0.00545	0.00543
	(!A1 * !B1 * !X)	-0.00354	-0.00389	-0.00387
	(!A1 * !B1 * !X)	0.00565	0.00545	0.00543

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	0.00226	0.00229	0.00227
	(A1 * A2 * X)	-0.00125	-0.00126	-0.00125
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	0.00269	0.00272	0.00270
	(A1 * A2 * X)	-0.00123	-0.00124	-0.00123
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	0.00468	0.00474	0.00470
	(A1 * A2 * X)	-0.00254	-0.00258	-0.00256

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	-0.00215	-0.00216	-0.00226
	(A1 * A2 * X)	0.00136	0.00136	0.00127
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	-0.00256	-0.00258	-0.00268
	(A1 * A2 * X)	0.00134	0.00134	0.00126
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	-0.00442	-0.00445	-0.00467
	(A1 * A2 * X)	0.00277	0.00278	0.00261

SKY130_FD_SC_HS__A221OIx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00286	0.00282	0.00291	0.00300	0.00300	0.45674
sky130_fd_sc_hs__a221oi_2	0.00605	0.00548	0.00595	0.00543	0.00553	0.76531
sky130_fd_sc_hs__a221oi_4	0.01117	0.01112	0.01107	0.01079	0.01096	1.32048

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a221oi_1	0.00000	0.08883	0.19016
sky130_fd_sc_hs__a221oi_2	0.00000	0.17765	0.38031
sky130_fd_sc_hs__a221oi_4	0.00000	0.35530	0.76062

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)	0.14824	0.91511	8.94245
	A2->Y (FR)	0.16633	0.93706	8.99857
	B1->Y (FR)	0.12683	0.93533	9.63126
	B2->Y (FR)	0.14743	0.96682	9.75530
	C1->Y (FR)	0.10936	0.96361	10.15040
sky130_fd_sc_hs__a221oi_2	A1->Y (FR)	0.13858	0.75362	8.39895
	A2->Y (FR)	0.17739	0.83202	8.99392
	B1->Y (FR)	0.12408	0.80715	9.46278
	B2->Y (FR)	0.15375	0.85691	9.74611
	C1->Y (FR)	0.10789	0.85733	10.22480
sky130_fd_sc_hs__a221oi_4	A1->Y (FR)	0.15680	0.68867	8.52531
	A2->Y (FR)	0.18843	0.72948	8.72046
	B1->Y (FR)	0.12906	0.70384	9.18906
	B2->Y (FR)	0.16337	0.75830	9.53143
	C1->Y (FR)	0.11620	0.77656	10.25370

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221oi_1	A1->Y (RF)	0.02683	0.30143	2.74698
	A2->Y (RF)	0.02946	0.26711	2.34417
	B1->Y (RF)	0.02745	0.29177	2.79536
	B2->Y (RF)	0.03098	0.26123	2.40213
	C1->Y (RF)	0.01731	0.21684	2.07609
sky130_fd_sc_hs__a221oi_2	A1->Y (RF)	0.02377	0.24745	2.54141
	A2->Y (RF)	0.02854	0.22332	2.19450
	B1->Y (RF)	0.02396	0.22625	2.48940
	B2->Y (RF)	0.02786	0.20574	2.15433
	C1->Y (RF)	0.01518	0.16470	1.85697
sky130_fd_sc_hs__a221oi_4	A1->Y (RF)	0.02630	0.22363	2.59810
	A2->Y (RF)	0.03012	0.17513	1.91342
	B1->Y (RF)	0.02824	0.20502	2.59287
	B2->Y (RF)	0.03206	0.16083	1.89715
	C1->Y (RF)	0.01384	0.11229	1.53846

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221oi_1	A1	0.00159	0.00182	0.04276
	A1	0.01411	0.01438	0.05549
	A2	0.00201	0.00235	0.04442
	A2	0.01628	0.01663	0.05878
	B1	0.00159	0.00261	0.04155
	B1	0.01064	0.01168	0.05060
	B2	0.00219	0.00320	0.04202
	B2	0.01292	0.01394	0.05274
	C1	0.00115	0.00474	0.06282
	C1	0.00860	0.01221	0.07049
sky130_fd_sc_hs__a221oi_2	A1	0.00070	0.00159	0.08457
	A1	0.02633	0.02730	0.11043
	A2	0.00299	0.00356	0.08164
	A2	0.03113	0.03171	0.10999
	B1	0.00080	0.00321	0.07933
	B1	0.01924	0.02165	0.09798
	B2	0.00255	0.00491	0.08225
	B2	0.02363	0.02596	0.10331
	C1	0.00009	0.00774	0.11901
	C1	0.01468	0.02230	0.13412

sky130_fd_sc_hs__a221oi_4	**A1**	0.00034	0.00162	0.14280
	A1	0.05092	0.05225	0.19405
	A2	0.00391	0.00514	0.14946
	A2	0.06107	0.06232	0.20733
	B1	0.00021	0.00478	0.13476
	B1	0.03741	0.04204	0.17279
	B2	0.00407	0.00838	0.13805
	B2	0.04780	0.05222	0.18188
	C1	-0.00131	0.01387	0.21508
	C1	0.02734	0.04262	0.24427

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221oi_1	**A1**	0.01845	0.01951	0.05439
	A1	0.00617	0.00720	0.04210
	A2	0.02018	0.02105	0.05510
	A2	0.00612	0.00695	0.04105
	B1	0.01124	0.01278	0.04574
	B1	0.00227	0.00376	0.03677
	B2	0.01300	0.01419	0.04579
	B2	0.00228	0.00343	0.03503
	C1	0.00690	0.00922	0.04707
	C1	-0.00055	0.00176	0.03961

sky130_fd_sc_hs__a221oi_2	**A1**	0.03470	0.03710	0.10726
	A1	0.00951	0.01187	0.08204
	A2	0.03773	0.03945	0.10407
	A2	0.00995	0.01161	0.07628
	B1	0.02157	0.02540	0.09036
	B1	0.00327	0.00707	0.07210
	B2	0.02447	0.02712	0.08919
	B2	0.00342	0.00597	0.06810
	C1	0.01242	0.01749	0.09193
	C1	-0.00213	0.00289	0.07737
sky130_fd_sc_hs__a221oi_4	**A1**	0.06975	0.07385	0.19854
	A1	0.02006	0.02407	0.14865
	A2	0.07627	0.07984	0.21155
	A2	0.01992	0.02331	0.15522
	B1	0.04285	0.04911	0.16937
	B1	0.00606	0.01224	0.13233
	B2	0.04984	0.05532	0.17863
	B2	0.00613	0.01155	0.13487
	C1	0.02593	0.03645	0.17957
	C1	-0.00272	0.00766	0.15085

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)**	0.00226	0.00226	0.00225
	(A2 * B1 * B2 * C1 * !Y)	-0.00276	-0.00291	-0.00289
	(A2 * B1 * B2 * !C1 * !Y)	0.00229	0.00227	0.00225
	(A2 * B1 * B2 * !C1 * !Y)	-0.00270	-0.00290	-0.00289
	(A2 * B1 * !B2 * C1 * !Y)	0.00231	0.00226	0.00225
	(A2 * B1 * !B2 * C1 * !Y)	-0.00259	-0.00284	-0.00282
	(A2 * !B1 * C1 * !Y)	0.00232	0.00226	0.00225
	(A2 * !B1 * C1 * !Y)	-0.00258	-0.00284	-0.00282
	(!A2 * B1 * B2 * C1 * !Y)	0.00219	0.00220	0.00219
	(!A2 * B1 * B2 * C1 * !Y)	-0.00293	-0.00295	-0.00294
	(!A2 * B1 * B2 * !C1 * !Y)	0.00216	0.00217	0.00216
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00294	-0.00295	-0.00294
	(!A2 * B1 * !B2 * C1 * !Y)	0.00218	0.00220	0.00219
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00293	-0.00295	-0.00294
	(!A2 * B1 * !B2 * !C1 * Y)	0.00069	0.00069	0.00067
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00334	-0.00334	-0.00338
	(!A2 * !B1 * C1 * !Y)	0.00219	0.00220	0.00219
	(!A2 * !B1 * C1 * !Y)	-0.00295	-0.00294	-0.00294
	(!A2 * !B1 * !C1 * Y)	0.00069	0.00068	0.00067
	(!A2 * !B1 * !C1 * Y)	-0.00334	-0.00333	-0.00338

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	0.00477	0.00481	0.00477
	(A2 * B1 * B2 * C1 * !Y)	-0.00581	-0.00614	-0.00609
	(A2 * B1 * B2 * !C1 * !Y)	0.00496	0.00481	0.00477
	(A2 * B1 * B2 * !C1 * !Y)	-0.00559	-0.00613	-0.00610
	(A2 * B1 * !B2 * C1 * !Y)	0.00494	0.00482	0.00478
	(A2 * B1 * !B2 * C1 * !Y)	-0.00544	-0.00598	-0.00596
	(A2 * !B1 * C1 * !Y)	0.00494	0.00482	0.00478
	(A2 * !B1 * C1 * !Y)	-0.00543	-0.00598	-0.00596
	(!A2 * B1 * B2 * C1 * !Y)	0.00461	0.00465	0.00463
	(!A2 * B1 * B2 * C1 * !Y)	-0.00620	-0.00623	-0.00622
	(!A2 * B1 * B2 * !C1 * !Y)	0.00460	0.00464	0.00462
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00619	-0.00623	-0.00622
	(!A2 * B1 * !B2 * C1 * !Y)	0.00461	0.00464	0.00463
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00620	-0.00623	-0.00622
	(!A2 * B1 * !B2 * !C1 * Y)	0.00156	0.00156	0.00151
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00721	-0.00725	-0.00733
	(!A2 * !B1 * C1 * !Y)	0.00461	0.00465	0.00463
	(!A2 * !B1 * C1 * !Y)	-0.00619	-0.00624	-0.00622
	(!A2 * !B1 * !C1 * Y)	0.00156	0.00156	0.00151
	(!A2 * !B1 * !C1 * Y)	-0.00721	-0.00725	-0.00733

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	0.00922	0.00930	0.00922
	(A2 * B1 * B2 * C1 * !Y)	-0.01117	-0.01184	-0.01173
	(A2 * B1 * B2 * !C1 * !Y)	0.00996	0.00932	0.00923
	(A2 * B1 * B2 * !C1 * !Y)	-0.01030	-0.01180	-0.01170
	(A2 * B1 * !B2 * C1 * !Y)	0.00962	0.00927	0.00922
	(A2 * B1 * !B2 * C1 * !Y)	-0.01018	-0.01155	-0.01146
	(A2 * !B1 * C1 * !Y)	0.00965	0.00927	0.00922
	(A2 * !B1 * C1 * !Y)	-0.01014	-0.01154	-0.01145
	(!A2 * B1 * B2 * C1 * !Y)	0.00894	0.00900	0.00896
	(!A2 * B1 * B2 * C1 * !Y)	-0.01188	-0.01196	-0.01192
	(!A2 * B1 * B2 * !C1 * !Y)	0.00886	0.00889	0.00888
	(!A2 * B1 * B2 * !C1 * !Y)	-0.01185	-0.01188	-0.01187
	(!A2 * B1 * !B2 * C1 * !Y)	0.00885	0.00894	0.00889
	(!A2 * B1 * !B2 * C1 * !Y)	-0.01199	-0.01207	-0.01202
	(!A2 * B1 * !B2 * !C1 * Y)	0.00280	0.00280	0.00269
	(!A2 * B1 * !B2 * !C1 * Y)	-0.01394	-0.01400	-0.01414
	(!A2 * !B1 * C1 * !Y)	0.00887	0.00892	0.00889
	(!A2 * !B1 * C1 * !Y)	-0.01202	-0.01204	-0.01202
	(!A2 * !B1 * !C1 * Y)	0.00281	0.00281	0.00270
	(!A2 * !B1 * !C1 * Y)	-0.01394	-0.01401	-0.01414

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)**	-0.00224	-0.00226	-0.00225
	(A2 * B1 * B2 * C1 * !Y)	0.00288	0.00292	0.00289
	(A2 * B1 * B2 * !C1 * !Y)	-0.00224	-0.00225	-0.00224
	(A2 * B1 * B2 * !C1 * !Y)	0.00288	0.00291	0.00289
	(A2 * B1 * !B2 * C1 * !Y)	-0.00224	-0.00226	-0.00224
	(A2 * B1 * !B2 * C1 * !Y)	0.00281	0.00285	0.00282
	(A2 * !B1 * C1 * !Y)	-0.00224	-0.00225	-0.00224
	(A2 * !B1 * C1 * !Y)	0.00281	0.00284	0.00282
	(!A2 * B1 * B2 * C1 * !Y)	-0.00211	-0.00217	-0.00218
	(!A2 * B1 * B2 * C1 * !Y)	0.00293	0.00297	0.00295
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00212	-0.00217	-0.00216
	(!A2 * B1 * B2 * !C1 * !Y)	0.00294	0.00296	0.00295
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00212	-0.00218	-0.00218
	(!A2 * B1 * !B2 * C1 * !Y)	0.00296	0.00297	0.00295
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00066	-0.00067	-0.00066
	(!A2 * B1 * !B2 * !C1 * Y)	0.00338	0.00341	0.00338
	(!A2 * !B1 * C1 * !Y)	-0.00212	-0.00218	-0.00218
	(!A2 * !B1 * C1 * !Y)	0.00296	0.00297	0.00295
	(!A2 * !B1 * !C1 * Y)	-0.00066	-0.00067	-0.00066
	(!A2 * !B1 * !C1 * Y)	0.00338	0.00341	0.00338

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	-0.00474	-0.00479	-0.00476
	(A2 * B1 * B2 * C1 * !Y)	0.00606	0.00615	0.00609
	(A2 * B1 * B2 * !C1 * !Y)	-0.00475	-0.00478	-0.00476
	(A2 * B1 * B2 * !C1 * !Y)	0.00606	0.00614	0.00610
	(A2 * B1 * !B2 * C1 * !Y)	-0.00475	-0.00477	-0.00476
	(A2 * B1 * !B2 * C1 * !Y)	0.00593	0.00598	0.00596
	(A2 * !B1 * C1 * !Y)	-0.00475	-0.00477	-0.00476
	(A2 * !B1 * C1 * !Y)	0.00592	0.00598	0.00596
	(!A2 * B1 * B2 * C1 * !Y)	-0.00448	-0.00465	-0.00463
	(!A2 * B1 * B2 * C1 * !Y)	0.00621	0.00628	0.00623
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00450	-0.00464	-0.00462
	(!A2 * B1 * B2 * !C1 * !Y)	0.00625	0.00626	0.00624
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00450	-0.00464	-0.00463
	(!A2 * B1 * !B2 * C1 * !Y)	0.00625	0.00627	0.00624
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00147	-0.00150	-0.00147
	(!A2 * B1 * !B2 * !C1 * Y)	0.00732	0.00746	0.00735
	(!A2 * !B1 * C1 * !Y)	-0.00449	-0.00465	-0.00463
	(!A2 * !B1 * C1 * !Y)	0.00623	0.00624	0.00624
	(!A2 * !B1 * !C1 * Y)	-0.00147	-0.00150	-0.00147
	(!A2 * !B1 * !C1 * Y)	0.00732	0.00746	0.00735

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	-0.00917	-0.00925	-0.00920
	(A2 * B1 * B2 * C1 * !Y)	0.01166	0.01184	0.01173
	(A2 * B1 * B2 * !C1 * !Y)	-0.00921	-0.00924	-0.00920
	(A2 * B1 * B2 * !C1 * !Y)	0.01171	0.01180	0.01170
	(A2 * B1 * !B2 * C1 * !Y)	-0.00916	-0.00923	-0.00918
	(A2 * B1 * !B2 * C1 * !Y)	0.01138	0.01155	0.01146
	(A2 * !B1 * C1 * !Y)	-0.00915	-0.00923	-0.00918
	(A2 * !B1 * C1 * !Y)	0.01137	0.01154	0.01145
	(!A2 * B1 * B2 * C1 * !Y)	-0.00862	-0.00900	-0.00896
	(!A2 * B1 * B2 * C1 * !Y)	0.01188	0.01197	0.01195
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00866	-0.00889	-0.00888
	(!A2 * B1 * B2 * !C1 * !Y)	0.01193	0.01194	0.01191
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00859	-0.00894	-0.00889
	(!A2 * B1 * !B2 * C1 * !Y)	0.01199	0.01211	0.01206
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00262	-0.00268	-0.00263
	(!A2 * B1 * !B2 * !C1 * Y)	0.01411	0.01439	0.01416
	(!A2 * !B1 * C1 * !Y)	-0.00865	-0.00892	-0.00889
	(!A2 * !B1 * C1 * !Y)	0.01208	0.01210	0.01206
	(!A2 * !B1 * !C1 * Y)	-0.00263	-0.00269	-0.00264
	(!A2 * !B1 * !C1 * Y)	0.01410	0.01438	0.01416

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)**	0.00239	0.00241	0.00239
	(A1 * B1 * B2 * C1 * !Y)	-0.00280	-0.00296	-0.00294
	(A1 * B1 * B2 * !C1 * !Y)	0.00243	0.00241	0.00239
	(A1 * B1 * B2 * !C1 * !Y)	-0.00274	-0.00295	-0.00294
	(A1 * B1 * !B2 * C1 * !Y)	0.00245	0.00241	0.00239
	(A1 * B1 * !B2 * C1 * !Y)	-0.00262	-0.00289	-0.00287
	(A1 * !B1 * C1 * !Y)	0.00245	0.00241	0.00239
	(A1 * !B1 * C1 * !Y)	-0.00262	-0.00289	-0.00287
	(!A1 * B1 * B2 * !Y)	0.00233	0.00235	0.00234
	(!A1 * B1 * B2 * !Y)	-0.00299	-0.00300	-0.00300
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00230	0.00231	0.00230
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00300	-0.00300	-0.00300
	(!A1 * B1 * !B2 * !C1 * Y)	0.00230	0.00232	0.00231
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00298	-0.00299	-0.00299
	(!A1 * !B1 * !C1 * Y)	0.00230	0.00232	0.00231
	(!A1 * !B1 * !C1 * Y)	-0.00298	-0.00300	-0.00299

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00456	0.00459	0.00455
	(A1 * B1 * B2 * C1 * !Y)	-0.00540	-0.00573	-0.00569
	(A1 * B1 * B2 * !C1 * !Y)	0.00478	0.00460	0.00455
	(A1 * B1 * B2 * !C1 * !Y)	-0.00515	-0.00572	-0.00569
	(A1 * B1 * !B2 * C1 * !Y)	0.00473	0.00458	0.00456
	(A1 * B1 * !B2 * C1 * !Y)	-0.00499	-0.00559	-0.00555
	(A1 * !B1 * C1 * !Y)	0.00473	0.00458	0.00456
	(A1 * !B1 * C1 * !Y)	-0.00498	-0.00559	-0.00555
	(!A1 * B1 * B2 * !Y)	0.00440	0.00443	0.00441
	(!A1 * B1 * B2 * !Y)	-0.00578	-0.00581	-0.00579
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00441	0.00444	0.00442
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00578	-0.00581	-0.00579
	(!A1 * B1 * !B2 * !C1 * Y)	0.00419	0.00422	0.00421
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00598	-0.00600	-0.00599
	(!A1 * !B1 * !C1 * Y)	0.00419	0.00424	0.00421
	(!A1 * !B1 * !C1 * Y)	-0.00599	-0.00602	-0.00599

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	0.00928	0.00940	0.00931
	(A1 * B1 * B2 * C1 * !Y)	-0.01116	-0.01184	-0.01178
	(A1 * B1 * B2 * !C1 * !Y)	0.01005	0.00943	0.00933
	(A1 * B1 * B2 * !C1 * !Y)	-0.01030	-0.01177	-0.01174
	(A1 * B1 * !B2 * C1 * !Y)	0.00968	0.00937	0.00931
	(A1 * B1 * !B2 * C1 * !Y)	-0.01021	-0.01153	-0.01152
	(A1 * !B1 * C1 * !Y)	0.00971	0.00937	0.00931
	(A1 * !B1 * C1 * !Y)	-0.01021	-0.01153	-0.01151
	(!A1 * B1 * B2 * !Y)	0.00905	0.00913	0.00908
	(!A1 * B1 * B2 * !Y)	-0.01194	-0.01202	-0.01196
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00894	0.00903	0.00899
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.01204	-0.01211	-0.01209
	(!A1 * B1 * !B2 * !C1 * Y)	0.00841	0.00849	0.00846
	(!A1 * B1 * !B2 * !C1 * Y)	-0.01260	-0.01266	-0.01263
	(!A1 * !B1 * !C1 * Y)	0.00839	0.00846	0.00844
	(!A1 * !B1 * !C1 * Y)	-0.01259	-0.01266	-0.01263

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)**	-0.00238	-0.00240	-0.00239
	(A1 * B1 * B2 * C1 * !Y)	0.00293	0.00297	0.00294
	(A1 * B1 * B2 * !C1 * !Y)	-0.00238	-0.00240	-0.00239
	(A1 * B1 * B2 * !C1 * !Y)	0.00293	0.00297	0.00294
	(A1 * B1 * !B2 * C1 * !Y)	-0.00238	-0.00240	-0.00239
	(A1 * B1 * !B2 * C1 * !Y)	0.00286	0.00289	0.00287
	(A1 * !B1 * C1 * !Y)	-0.00238	-0.00240	-0.00239
	(A1 * !B1 * C1 * !Y)	0.00286	0.00289	0.00287
	(!A1 * B1 * B2 * !Y)	-0.00227	-0.00231	-0.00233
	(!A1 * B1 * B2 * !Y)	0.00301	0.00302	0.00300
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00227	-0.00231	-0.00230
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00301	0.00302	0.00301
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00218	-0.00231	-0.00231
	(!A1 * B1 * !B2 * !C1 * Y)	0.00312	0.00303	0.00300
	(!A1 * !B1 * !C1 * Y)	-0.00218	-0.00231	-0.00231
	(!A1 * !B1 * !C1 * Y)	0.00312	0.00303	0.00300

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00454	-0.00456	-0.00454
	(A1 * B1 * B2 * C1 * !Y)	0.00568	0.00573	0.00569
	(A1 * B1 * B2 * !C1 * !Y)	-0.00454	-0.00456	-0.00454
	(A1 * B1 * B2 * !C1 * !Y)	0.00568	0.00572	0.00569
	(A1 * B1 * !B2 * C1 * !Y)	-0.00453	-0.00456	-0.00454
	(A1 * B1 * !B2 * C1 * !Y)	0.00552	0.00559	0.00555
	(A1 * !B1 * C1 * !Y)	-0.00453	-0.00456	-0.00454
	(A1 * !B1 * C1 * !Y)	0.00552	0.00559	0.00555
	(!A1 * B1 * B2 * !Y)	-0.00427	-0.00443	-0.00441
	(!A1 * B1 * B2 * !Y)	0.00578	0.00586	0.00581
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00427	-0.00444	-0.00442
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00578	0.00586	0.00581
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00391	-0.00422	-0.00421
	(!A1 * B1 * !B2 * !C1 * Y)	0.00619	0.00603	0.00600
	(!A1 * !B1 * !C1 * Y)	-0.00391	-0.00424	-0.00421
	(!A1 * !B1 * !C1 * Y)	0.00619	0.00603	0.00600

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	-0.00925	-0.00933	-0.00930
	(A1 * B1 * B2 * C1 * !Y)	0.01169	0.01184	0.01178
	(A1 * B1 * B2 * !C1 * !Y)	-0.00931	-0.00931	-0.00930
	(A1 * B1 * B2 * !C1 * !Y)	0.01175	0.01177	0.01174
	(A1 * B1 * !B2 * C1 * !Y)	-0.00925	-0.00929	-0.00927
	(A1 * B1 * !B2 * C1 * !Y)	0.01144	0.01153	0.01152
	(A1 * !B1 * C1 * !Y)	-0.00924	-0.00930	-0.00927
	(A1 * !B1 * C1 * !Y)	0.01143	0.01153	0.01151
	(!A1 * B1 * B2 * !Y)	-0.00875	-0.00903	-0.00908
	(!A1 * B1 * B2 * !Y)	0.01195	0.01204	0.01199
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00874	-0.00903	-0.00899
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.01209	0.01222	0.01213
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00784	-0.00849	-0.00846
	(!A1 * B1 * !B2 * !C1 * Y)	0.01308	0.01274	0.01267
	(!A1 * !B1 * !C1 * Y)	-0.00784	-0.00846	-0.00844
	(!A1 * !B1 * !C1 * Y)	0.01308	0.01278	0.01267

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)**	0.00254	0.00250	0.00238
	(A1 * A2 * B2 * C1 * !Y)	-0.00209	-0.00210	-0.00208
	(A1 * A2 * B2 * !C1 * !Y)	0.00232	0.00234	0.00231
	(A1 * A2 * B2 * !C1 * !Y)	-0.00149	-0.00150	-0.00150
	(A1 * A2 * !B2 * C1 * !Y)	0.00229	0.00232	0.00226
	(A1 * A2 * !B2 * C1 * !Y)	-0.00192	-0.00194	-0.00193
	(A1 * A2 * !B2 * !C1 * !Y)	0.00222	0.00226	0.00222
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00149	-0.00150	-0.00149
	(A1 * !A2 * B2 * C1 * !Y)	0.00284	0.00233	0.00230
	(A1 * !A2 * B2 * C1 * !Y)	-0.00236	-0.00294	-0.00292
	(A1 * !A2 * !B2 * C1 * !Y)	0.00220	0.00223	0.00221
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00295	-0.00298	-0.00296
	(A1 * !A2 * !B2 * !C1 * Y)	0.00068	0.00068	0.00066
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00342	-0.00343	-0.00345
	(!A1 * B2 * C1 * !Y)	0.00282	0.00233	0.00230
	(!A1 * B2 * C1 * !Y)	-0.00239	-0.00294	-0.00292
	(!A1 * !B2 * C1 * !Y)	0.00220	0.00223	0.00221
	(!A1 * !B2 * C1 * !Y)	-0.00295	-0.00298	-0.00296
	(!A1 * !B2 * !C1 * Y)	0.00068	0.00068	0.00066
	(!A1 * !B2 * !C1 * Y)	-0.00342	-0.00343	-0.00345

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	0.00518	0.00525	0.00489
	(A1 * A2 * B2 * C1 * !Y)	-0.00418	-0.00417	-0.00416
	(A1 * A2 * B2 * !C1 * !Y)	0.00468	0.00474	0.00467
	(A1 * A2 * B2 * !C1 * !Y)	-0.00307	-0.00311	-0.00311
	(A1 * A2 * !B2 * C1 * !Y)	0.00473	0.00482	0.00458
	(A1 * A2 * !B2 * C1 * !Y)	-0.00386	-0.00389	-0.00387
	(A1 * A2 * !B2 * !C1 * !Y)	0.00455	0.00463	0.00452
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00306	-0.00312	-0.00310
	(A1 * !A2 * B2 * C1 * !Y)	0.00593	0.00472	0.00465
	(A1 * !A2 * B2 * C1 * !Y)	-0.00474	-0.00600	-0.00604
	(A1 * !A2 * !B2 * C1 * !Y)	0.00446	0.00452	0.00447
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00611	-0.00616	-0.00612
	(A1 * !A2 * !B2 * !C1 * Y)	0.00140	0.00140	0.00135
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00713	-0.00715	-0.00720
	(!A1 * B2 * C1 * !Y)	0.00587	0.00474	0.00465
	(!A1 * B2 * C1 * !Y)	-0.00469	-0.00603	-0.00604
	(!A1 * !B2 * C1 * !Y)	0.00446	0.00452	0.00447
	(!A1 * !B2 * C1 * !Y)	-0.00610	-0.00616	-0.00612
	(!A1 * !B2 * !C1 * Y)	0.00140	0.00140	0.00135
	(!A1 * !B2 * !C1 * Y)	-0.00713	-0.00715	-0.00721

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	0.01044	0.01027	0.00963
	(A1 * A2 * B2 * C1 * !Y)	-0.00789	-0.00799	-0.00793
	(A1 * A2 * B2 * !C1 * !Y)	0.00935	0.00944	0.00923
	(A1 * A2 * B2 * !C1 * !Y)	-0.00576	-0.00583	-0.00586
	(A1 * A2 * !B2 * C1 * !Y)	0.00927	0.00931	0.00897
	(A1 * A2 * !B2 * C1 * !Y)	-0.00743	-0.00739	-0.00740
	(A1 * A2 * !B2 * !C1 * !Y)	0.00898	0.00907	0.00891
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00573	-0.00582	-0.00584
	(A1 * !A2 * B2 * C1 * !Y)	0.01179	0.00933	0.00916
	(A1 * !A2 * B2 * C1 * !Y)	-0.00881	-0.01154	-0.01164
	(A1 * !A2 * !B2 * C1 * !Y)	0.00875	0.00888	0.00880
	(A1 * !A2 * !B2 * C1 * !Y)	-0.01187	-0.01199	-0.01192
	(A1 * !A2 * !B2 * !C1 * Y)	0.00278	0.00278	0.00266
	(A1 * !A2 * !B2 * !C1 * Y)	-0.01377	-0.01382	-0.01396
	(!A1 * B2 * C1 * !Y)	0.01172	0.00926	0.00916
	(!A1 * B2 * C1 * !Y)	-0.00890	-0.01153	-0.01164
	(!A1 * !B2 * C1 * !Y)	0.00875	0.00889	0.00880
	(!A1 * !B2 * C1 * !Y)	-0.01187	-0.01199	-0.01192
	(!A1 * !B2 * !C1 * Y)	0.00279	0.00279	0.00267
	(!A1 * !B2 * !C1 * Y)	-0.01377	-0.01382	-0.01396

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)**	-0.00232	-0.00233	-0.00232
	(A1 * A2 * B2 * C1 * !Y)	0.00209	0.00210	0.00208
	(A1 * A2 * B2 * !C1 * !Y)	-0.00222	-0.00224	-0.00225
	(A1 * A2 * B2 * !C1 * !Y)	0.00156	0.00157	0.00157
	(A1 * A2 * !B2 * C1 * !Y)	-0.00218	-0.00224	-0.00225
	(A1 * A2 * !B2 * C1 * !Y)	0.00192	0.00194	0.00193
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00217	-0.00223	-0.00222
	(A1 * A2 * !B2 * !C1 * !Y)	0.00150	0.00150	0.00150
	(A1 * !A2 * B2 * C1 * !Y)	-0.00229	-0.00231	-0.00229
	(A1 * !A2 * B2 * C1 * !Y)	0.00290	0.00294	0.00292
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00217	-0.00223	-0.00221
	(A1 * !A2 * !B2 * C1 * !Y)	0.00297	0.00299	0.00297
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00065	-0.00066	-0.00065
	(A1 * !A2 * !B2 * !C1 * Y)	0.00346	0.00350	0.00346
	(!A1 * B2 * C1 * !Y)	-0.00229	-0.00231	-0.00229
	(!A1 * B2 * C1 * !Y)	0.00290	0.00294	0.00292
	(!A1 * !B2 * C1 * !Y)	-0.00217	-0.00223	-0.00221
	(!A1 * !B2 * C1 * !Y)	0.00297	0.00299	0.00297
	(!A1 * !B2 * !C1 * Y)	-0.00065	-0.00066	-0.00065
	(!A1 * !B2 * !C1 * Y)	0.00346	0.00350	0.00346

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	-0.00469	-0.00469	-0.00468
	(A1 * A2 * B2 * C1 * !Y)	0.00418	0.00417	0.00416
	(A1 * A2 * B2 * !C1 * !Y)	-0.00456	-0.00458	-0.00455
	(A1 * A2 * B2 * !C1 * !Y)	0.00318	0.00320	0.00323
	(A1 * A2 * !B2 * C1 * !Y)	-0.00439	-0.00457	-0.00456
	(A1 * A2 * !B2 * C1 * !Y)	0.00386	0.00389	0.00387
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00437	-0.00458	-0.00452
	(A1 * A2 * !B2 * !C1 * !Y)	0.00311	0.00312	0.00311
	(A1 * !A2 * B2 * C1 * !Y)	-0.00462	-0.00465	-0.00462
	(A1 * !A2 * B2 * C1 * !Y)	0.00600	0.00607	0.00604
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00437	-0.00452	-0.00447
	(A1 * !A2 * !B2 * C1 * !Y)	0.00615	0.00616	0.00614
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00132	-0.00132	-0.00132
	(A1 * !A2 * !B2 * !C1 * Y)	0.00719	0.00720	0.00721
	(!A1 * B2 * C1 * !Y)	-0.00462	-0.00465	-0.00462
	(!A1 * B2 * C1 * !Y)	0.00601	0.00606	0.00604
	(!A1 * !B2 * C1 * !Y)	-0.00434	-0.00452	-0.00447
	(!A1 * !B2 * C1 * !Y)	0.00610	0.00616	0.00614
	(!A1 * !B2 * !C1 * Y)	-0.00132	-0.00132	-0.00132
	(!A1 * !B2 * !C1 * Y)	0.00719	0.00720	0.00721

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	-0.00917	-0.00924	-0.00920
	(A1 * A2 * B2 * C1 * !Y)	0.00789	0.00799	0.00793
	(A1 * A2 * B2 * !C1 * !Y)	-0.00906	-0.00909	-0.00901
	(A1 * A2 * B2 * !C1 * !Y)	0.00611	0.00614	0.00608
	(A1 * A2 * !B2 * C1 * !Y)	-0.00861	-0.00887	-0.00896
	(A1 * A2 * !B2 * C1 * !Y)	0.00743	0.00739	0.00740
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00856	-0.00888	-0.00891
	(A1 * A2 * !B2 * !C1 * !Y)	0.00587	0.00589	0.00587
	(A1 * !A2 * B2 * C1 * !Y)	-0.00910	-0.00913	-0.00908
	(A1 * !A2 * B2 * C1 * !Y)	0.01157	0.01163	0.01164
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00855	-0.00884	-0.00880
	(A1 * !A2 * !B2 * C1 * !Y)	0.01197	0.01199	0.01195
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00260	-0.00261	-0.00260
	(A1 * !A2 * !B2 * !C1 * Y)	0.01394	0.01397	0.01398
	(!A1 * B2 * C1 * !Y)	-0.00913	-0.00913	-0.00908
	(!A1 * B2 * C1 * !Y)	0.01161	0.01164	0.01164
	(!A1 * !B2 * C1 * !Y)	-0.00854	-0.00884	-0.00880
	(!A1 * !B2 * C1 * !Y)	0.01196	0.01199	0.01195
	(!A1 * !B2 * !C1 * Y)	-0.00261	-0.00261	-0.00261
	(!A1 * !B2 * !C1 * Y)	0.01394	0.01397	0.01398

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)**	0.00262	0.00259	0.00246
	(A1 * A2 * B1 * C1 * !Y)	-0.00215	-0.00216	-0.00214
	(A1 * A2 * B1 * !C1 * !Y)	0.00241	0.00242	0.00238
	(A1 * A2 * B1 * !C1 * !Y)	-0.00157	-0.00157	-0.00156
	(A1 * A2 * !B1 * C1 * !Y)	0.00237	0.00237	0.00231
	(A1 * A2 * !B1 * C1 * !Y)	-0.00198	-0.00199	-0.00199
	(A1 * A2 * !B1 * !C1 * !Y)	0.00231	0.00236	0.00230
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00154	-0.00157	-0.00156
	(A1 * !A2 * B1 * C1 * !Y)	0.00295	0.00241	0.00237
	(A1 * !A2 * B1 * C1 * !Y)	-0.00241	-0.00302	-0.00300
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00227	0.00231	0.00228
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00304	-0.00306	-0.00304
	(A1 * !A2 * !B1 * !C1 * Y)	0.00214	0.00215	0.00215
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00320	-0.00321	-0.00321
	(!A1 * B1 * C1 * !Y)	0.00293	0.00241	0.00237
	(!A1 * B1 * C1 * !Y)	-0.00238	-0.00302	-0.00300
	(!A1 * !B1 * !C1 * Y)	0.00214	0.00217	0.00215
	(!A1 * !B1 * !C1 * Y)	-0.00320	-0.00323	-0.00321

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00497	0.00505	0.00473
	(A1 * A2 * B1 * C1 * !Y)	-0.00393	-0.00395	-0.00392
	(A1 * A2 * B1 * !C1 * !Y)	0.00454	0.00460	0.00454
	(A1 * A2 * B1 * !C1 * !Y)	-0.00282	-0.00286	-0.00285
	(A1 * A2 * !B1 * C1 * !Y)	0.00455	0.00457	0.00443
	(A1 * A2 * !B1 * C1 * !Y)	-0.00364	-0.00366	-0.00365
	(A1 * A2 * !B1 * !C1 * !Y)	0.00439	0.00444	0.00439
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00281	-0.00285	-0.00284
	(A1 * !A2 * B1 * C1 * !Y)	0.00563	0.00458	0.00452
	(A1 * !A2 * B1 * C1 * !Y)	-0.00448	-0.00564	-0.00568
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00435	0.00439	0.00435
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00575	-0.00579	-0.00576
	(A1 * !A2 * !B1 * !C1 * Y)	0.00420	0.00423	0.00421
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00590	-0.00592	-0.00590
	(!A1 * B1 * C1 * !Y)	0.00561	0.00457	0.00452
	(!A1 * B1 * C1 * !Y)	-0.00448	-0.00565	-0.00568
	(!A1 * !B1 * !C1 * Y)	0.00420	0.00424	0.00421
	(!A1 * !B1 * !C1 * Y)	-0.00591	-0.00593	-0.00590

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.01051	0.01031	0.00965
	(A1 * A2 * B1 * C1 * !Y)	-0.00790	-0.00802	-0.00793
	(A1 * A2 * B1 * !C1 * !Y)	0.00936	0.00946	0.00925
	(A1 * A2 * B1 * !C1 * !Y)	-0.00578	-0.00585	-0.00587
	(A1 * A2 * !B1 * C1 * !Y)	0.00934	0.00944	0.00904
	(A1 * A2 * !B1 * C1 * !Y)	-0.00738	-0.00740	-0.00740
	(A1 * A2 * !B1 * !C1 * !Y)	0.00899	0.00905	0.00887
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00580	-0.00584	-0.00585
	(A1 * !A2 * B1 * C1 * !Y)	0.01188	0.00935	0.00919
	(A1 * !A2 * B1 * C1 * !Y)	-0.00884	-0.01166	-0.01164
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00881	0.00881	0.00880
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.01190	-0.01192	-0.01191
	(A1 * !A2 * !B1 * !C1 * Y)	0.00881	0.00885	0.00887
	(A1 * !A2 * !B1 * !C1 * Y)	-0.01187	-0.01190	-0.01191
	(!A1 * B1 * C1 * !Y)	0.01178	0.00935	0.00919
	(!A1 * B1 * C1 * !Y)	-0.00880	-0.01165	-0.01164
	(!A1 * !B1 * !C1 * Y)	0.00882	0.00892	0.00888
	(!A1 * !B1 * !C1 * Y)	-0.01187	-0.01195	-0.01191

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)**	-0.00239	-0.00240	-0.00239
	(A1 * A2 * B1 * C1 * !Y)	0.00215	0.00216	0.00214
	(A1 * A2 * B1 * !C1 * !Y)	-0.00231	-0.00233	-0.00232
	(A1 * A2 * B1 * !C1 * !Y)	0.00161	0.00163	0.00163
	(A1 * A2 * !B1 * C1 * !Y)	-0.00225	-0.00230	-0.00231
	(A1 * A2 * !B1 * C1 * !Y)	0.00198	0.00199	0.00199
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00224	-0.00230	-0.00230
	(A1 * A2 * !B1 * !C1 * !Y)	0.00156	0.00157	0.00156
	(A1 * !A2 * B1 * C1 * !Y)	-0.00236	-0.00237	-0.00236
	(A1 * !A2 * B1 * C1 * !Y)	0.00298	0.00302	0.00300
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00223	-0.00230	-0.00228
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00304	0.00307	0.00305
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00197	-0.00213	-0.00214
	(A1 * !A2 * !B1 * !C1 * Y)	0.00333	0.00324	0.00321
	(!A1 * B1 * C1 * !Y)	-0.00236	-0.00237	-0.00236
	(!A1 * B1 * C1 * !Y)	0.00298	0.00302	0.00300
	(!A1 * !B1 * !C1 * Y)	-0.00197	-0.00213	-0.00214
	(!A1 * !B1 * !C1 * Y)	0.00333	0.00324	0.00321

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00456	-0.00457	-0.00455
	(A1 * A2 * B1 * C1 * !Y)	0.00393	0.00395	0.00392
	(A1 * A2 * B1 * !C1 * !Y)	-0.00441	-0.00442	-0.00442
	(A1 * A2 * B1 * !C1 * !Y)	0.00293	0.00295	0.00297
	(A1 * A2 * !B1 * C1 * !Y)	-0.00427	-0.00444	-0.00443
	(A1 * A2 * !B1 * C1 * !Y)	0.00364	0.00366	0.00365
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00425	-0.00440	-0.00439
	(A1 * A2 * !B1 * !C1 * !Y)	0.00284	0.00287	0.00285
	(A1 * !A2 * B1 * C1 * !Y)	-0.00450	-0.00451	-0.00449
	(A1 * !A2 * B1 * C1 * !Y)	0.00565	0.00568	0.00568
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00423	-0.00439	-0.00435
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00575	0.00581	0.00578
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00389	-0.00423	-0.00421
	(A1 * !A2 * !B1 * !C1 * Y)	0.00615	0.00595	0.00592
	(!A1 * B1 * C1 * !Y)	-0.00450	-0.00451	-0.00450
	(!A1 * B1 * C1 * !Y)	0.00565	0.00569	0.00568
	(!A1 * !B1 * !C1 * Y)	-0.00389	-0.00424	-0.00421
	(!A1 * !B1 * !C1 * Y)	0.00615	0.00596	0.00592

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00920	-0.00927	-0.00922
	(A1 * A2 * B1 * C1 * !Y)	0.00790	0.00802	0.00793
	(A1 * A2 * B1 * !C1 * !Y)	-0.00910	-0.00913	-0.00903
	(A1 * A2 * B1 * !C1 * !Y)	0.00614	0.00618	0.00609
	(A1 * A2 * !B1 * C1 * !Y)	-0.00861	-0.00890	-0.00895
	(A1 * A2 * !B1 * C1 * !Y)	0.00738	0.00740	0.00740
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00859	-0.00887	-0.00887
	(A1 * A2 * !B1 * !C1 * !Y)	0.00586	0.00590	0.00588
	(A1 * !A2 * B1 * C1 * !Y)	-0.00912	-0.00918	-0.00910
	(A1 * !A2 * B1 * C1 * !Y)	0.01156	0.01170	0.01164
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00855	-0.00881	-0.00880
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.01190	0.01201	0.01195
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00811	-0.00885	-0.00887
	(A1 * !A2 * !B1 * !C1 * Y)	0.01245	0.01202	0.01194
	(!A1 * B1 * C1 * !Y)	-0.00912	-0.00918	-0.00910
	(!A1 * B1 * C1 * !Y)	0.01157	0.01170	0.01164
	(!A1 * !B1 * !C1 * Y)	-0.00811	-0.00888	-0.00888
	(!A1 * !B1 * !C1 * Y)	0.01245	0.01202	0.01194

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)	0.00275	0.00276	0.00274
	(A1 * B1 * B2 * !Y)	-0.00144	-0.00144	-0.00142
	(A1 * A2 * B1 * !B2 * !Y)	0.00275	0.00276	0.00274
	(A1 * A2 * B1 * !B2 * !Y)	-0.00143	-0.00143	-0.00142
	(A1 * A2 * !B1 * !Y)	0.00275	0.00276	0.00274
	(A1 * A2 * !B1 * !Y)	-0.00143	-0.00143	-0.00142
	(!A1 * B1 * B2 * !Y)	0.00275	0.00277	0.00274
	(!A1 * B1 * B2 * !Y)	-0.00144	-0.00144	-0.00143
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	0.00512	0.00519	0.00515
	(A1 * B1 * B2 * !Y)	-0.00259	-0.00263	-0.00261
	(A1 * A2 * B1 * !B2 * !Y)	0.00512	0.00519	0.00515
	(A1 * A2 * B1 * !B2 * !Y)	-0.00259	-0.00262	-0.00260
	(A1 * A2 * !B1 * !Y)	0.00513	0.00519	0.00515
	(A1 * A2 * !B1 * !Y)	-0.00259	-0.00262	-0.00260
	(!A1 * B1 * B2 * !Y)	0.00513	0.00519	0.00515
	(!A1 * B1 * B2 * !Y)	-0.00261	-0.00264	-0.00261
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	0.01016	0.01026	0.01018
	(A1 * B1 * B2 * !Y)	-0.00522	-0.00527	-0.00522
	(A1 * A2 * B1 * !B2 * !Y)	0.01016	0.01028	0.01018
	(A1 * A2 * B1 * !B2 * !Y)	-0.00522	-0.00527	-0.00521
	(A1 * A2 * !B1 * !Y)	0.01016	0.01029	0.01018
	(A1 * A2 * !B1 * !Y)	-0.00522	-0.00527	-0.00521
	(!A1 * B1 * B2 * !Y)	0.01016	0.01036	0.01018
	(!A1 * B1 * B2 * !Y)	-0.00525	-0.00534	-0.00524

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)	-0.00259	-0.00261	-0.00273
	(A1 * B1 * B2 * !Y)	0.00154	0.00155	0.00145
	(A1 * A2 * B1 * !B2 * !Y)	-0.00239	-0.00241	-0.00268
	(A1 * A2 * B1 * !B2 * !Y)	0.00167	0.00168	0.00147
	(A1 * A2 * !B1 * !Y)	-0.00239	-0.00241	-0.00268
	(A1 * A2 * !B1 * !Y)	0.00167	0.00168	0.00147
	(!A1 * B1 * B2 * !Y)	-0.00259	-0.00262	-0.00273
	(!A1 * B1 * B2 * !Y)	0.00155	0.00156	0.00146
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	-0.00486	-0.00489	-0.00512
	(A1 * B1 * B2 * !Y)	0.00283	0.00284	0.00266
	(A1 * A2 * B1 * !B2 * !Y)	-0.00452	-0.00455	-0.00505
	(A1 * A2 * B1 * !B2 * !Y)	0.00301	0.00302	0.00268
	(A1 * A2 * !B1 * !Y)	-0.00453	-0.00455	-0.00505
	(A1 * A2 * !B1 * !Y)	0.00302	0.00302	0.00268
	(!A1 * B1 * B2 * !Y)	-0.00487	-0.00489	-0.00512
	(!A1 * B1 * B2 * !Y)	0.00284	0.00285	0.00267
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	-0.00969	-0.00971	-0.01013
	(A1 * B1 * B2 * !Y)	0.00559	0.00558	0.00531
	(A1 * A2 * B1 * !B2 * !Y)	-0.00901	-0.00903	-0.00999
	(A1 * A2 * B1 * !B2 * !Y)	0.00607	0.00605	0.00543
	(A1 * A2 * !B1 * !Y)	-0.00901	-0.00904	-0.00999
	(A1 * A2 * !B1 * !Y)	0.00607	0.00605	0.00543
	(!A1 * B1 * B2 * !Y)	-0.00968	-0.00971	-0.01013
	(!A1 * B1 * B2 * !Y)	0.00562	0.00561	0.00533

SKY130_FD_SC_HS__A221Ox

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00268	0.00278	0.00266	0.00267	0.00263	1.46849
sky130_fd_sc_hs__a221o_2	0.00281	0.00288	0.00288	0.00289	0.00279	2.71991
sky130_fd_sc_hs__a221o_4	0.00496	0.00497	0.00511	0.00522	0.00506	4.04016

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a221o_1	0.00000	0.26826	0.48975
sky130_fd_sc_hs__a221o_2	0.00000	0.32717	0.50120
sky130_fd_sc_hs__a221o_4	0.00000	0.65992	1.00239

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)	0.06828	0.49698	5.68975
	A2->X (RR)	0.07162	0.48381	5.49931
	B1->X (RR)	0.06566	0.47685	5.41091
	B2->X (RR)	0.06896	0.46809	5.30924
	C1->X (RR)	0.04991	0.43439	5.16097
sky130_fd_sc_hs__a221o_2	A1->X (RR)	0.07078	0.42556	5.53221
	A2->X (RR)	0.07427	0.41011	5.35332
	B1->X (RR)	0.06863	0.40936	5.27892
	B2->X (RR)	0.07175	0.39727	5.17867
	C1->X (RR)	0.05145	0.36665	5.03800
sky130_fd_sc_hs__a221o_4	A1->X (RR)	0.08863	0.40946	5.42827
	A2->X (RR)	0.09303	0.37226	5.05188
	B1->X (RR)	0.07702	0.36323	5.01346
	B2->X (RR)	0.08267	0.34088	4.81133
	C1->X (RR)	0.04881	0.29076	4.57309

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221o_1	A1->X (FF)	0.17395	0.54784	5.20646
	A2->X (FF)	0.18827	0.56939	5.28989
	B1->X (FF)	0.15877	0.57431	5.53328
	B2->X (FF)	0.16986	0.59817	5.61122
	C1->X (FF)	0.13157	0.59478	5.71391
sky130_fd_sc_hs__a221o_2	A1->X (FF)	0.21740	0.58005	5.27499
	A2->X (FF)	0.23255	0.60342	5.38315
	B1->X (FF)	0.20879	0.61708	5.69036
	B2->X (FF)	0.21531	0.63795	5.76629
	C1->X (FF)	0.16785	0.62852	5.87944
sky130_fd_sc_hs__a221o_4	A1->X (FF)	0.22739	0.51985	4.50743
	A2->X (FF)	0.24667	0.55378	4.74193
	B1->X (FF)	0.21298	0.56337	4.98472
	B2->X (FF)	0.22921	0.59508	5.12098
	C1->X (FF)	0.17926	0.59131	5.19238

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221o_1	A1	0.02168	0.02507	0.12275
	A1	0.01015	0.01355	0.11153
	A2	0.02330	0.02556	0.10263
	A2	0.01019	0.01245	0.09001
	B1	0.01573	0.01983	0.10408
	B1	0.00724	0.01136	0.09607
	B2	0.01724	0.02072	0.10107
	B2	0.00736	0.01087	0.09156
	C1	0.01183	0.01812	0.12738
	C1	0.00473	0.01104	0.12029
sky130_fd_sc_hs__a221o_2	A1	0.02656	0.02962	0.12444
	A1	0.01441	0.01752	0.11331
	A2	0.02835	0.03030	0.10599
	A2	0.01447	0.01646	0.09285
	B1	0.02079	0.02480	0.10829
	B1	0.01147	0.01557	0.09969
	B2	0.02249	0.02600	0.10655
	B2	0.01169	0.01533	0.09675
	C1	0.01645	0.02253	0.13060
	C1	0.00883	0.01498	0.12299

sky130_fd_sc_hs__a221o_4	**A1**	0.05354	0.05894	0.23951
	A1	0.03129	0.03688	0.21892
	A2	0.05649	0.06041	0.21100
	A2	0.03138	0.03554	0.18593
	B1	0.04053	0.04712	0.19672
	B1	0.02427	0.03094	0.18051
	B2	0.04392	0.04987	0.19712
	B2	0.02441	0.03037	0.17765
	C1	0.02995	0.04169	0.23875
	C1	0.01708	0.02890	0.22667

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221o_1	**A1**	0.00659	0.00807	0.09510
	A1	0.01826	0.01973	0.10674
	A2	0.00695	0.00786	0.09199
	A2	0.02014	0.02104	0.10463
	B1	0.00651	0.00925	0.10024
	B1	0.01503	0.01777	0.10598
	B2	0.00707	0.00980	0.09738
	B2	0.01694	0.01963	0.10580
	C1	0.00566	0.01241	0.13209
	C1	0.01275	0.01938	0.13455

sky130_fd_sc_hs__a221o_2	**A1**	0.01437	0.01329	0.09642
	A1	0.02664	0.02547	0.10547
	A2	0.01515	0.01325	0.09646
	A2	0.02911	0.02719	0.10674
	B1	0.01433	0.01417	0.10248
	B1	0.02368	0.02348	0.10974
	B2	0.01505	0.01492	0.10526
	B2	0.02581	0.02566	0.11134
	C1	0.01267	0.01779	0.13034
	C1	0.02027	0.02528	0.13780
sky130_fd_sc_hs__a221o_4	**A1**	0.02703	0.02391	0.18261
	A1	0.04953	0.04616	0.20508
	A2	0.02987	0.02480	0.19142
	A2	0.05511	0.05000	0.21269
	B1	0.02727	0.02603	0.18178
	B1	0.04358	0.04168	0.19590
	B2	0.02907	0.02777	0.18591
	B2	0.04850	0.04651	0.20315
	C1	0.02417	0.03192	0.23454
	C1	0.03705	0.04475	0.24390

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)**	0.00204	0.00204	0.00203
	(A2 * B1 * B2 * C1 * X)	-0.00261	-0.00272	-0.00272
	(A2 * B1 * B2 * !C1 * X)	0.00218	0.00205	0.00203
	(A2 * B1 * B2 * !C1 * X)	-0.00246	-0.00272	-0.00272
	(A2 * B1 * !B2 * C1 * X)	0.00214	0.00205	0.00204
	(A2 * B1 * !B2 * C1 * X)	-0.00238	-0.00267	-0.00267
	(A2 * !B1 * C1 * X)	0.00214	0.00205	0.00204
	(A2 * !B1 * C1 * X)	-0.00238	-0.00267	-0.00267
	(!A2 * B1 * B2 * C1 * X)	0.00197	0.00199	0.00198
	(!A2 * B1 * B2 * C1 * X)	-0.00277	-0.00278	-0.00278
	(!A2 * B1 * B2 * !C1 * X)	0.00197	0.00199	0.00198
	(!A2 * B1 * B2 * !C1 * X)	-0.00276	-0.00278	-0.00277
	(!A2 * B1 * !B2 * C1 * X)	0.00197	0.00199	0.00199
	(!A2 * B1 * !B2 * C1 * X)	-0.00276	-0.00278	-0.00277
	(!A2 * B1 * !B2 * !C1 * !X)	0.00063	0.00063	0.00061
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00319	-0.00319	-0.00322
	(!A2 * !B1 * C1 * X)	0.00195	0.00197	0.00196
	(!A2 * !B1 * C1 * X)	-0.00277	-0.00278	-0.00277
	(!A2 * !B1 * !C1 * !X)	0.00063	0.00063	0.00061
	(!A2 * !B1 * !C1 * !X)	-0.00319	-0.00319	-0.00322

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	0.00232	0.00233	0.00231
	(A2 * B1 * B2 * C1 * X)	-0.00259	-0.00270	-0.00270
	(A2 * B1 * B2 * !C1 * X)	0.00247	0.00233	0.00231
	(A2 * B1 * B2 * !C1 * X)	-0.00244	-0.00270	-0.00270
	(A2 * B1 * !B2 * C1 * X)	0.00242	0.00233	0.00232
	(A2 * B1 * !B2 * C1 * X)	-0.00236	-0.00265	-0.00264
	(A2 * !B1 * C1 * X)	0.00242	0.00233	0.00232
	(A2 * !B1 * C1 * X)	-0.00236	-0.00265	-0.00265
	(!A2 * B1 * B2 * C1 * X)	0.00224	0.00226	0.00225
	(!A2 * B1 * B2 * C1 * X)	-0.00275	-0.00276	-0.00275
	(!A2 * B1 * B2 * !C1 * X)	0.00221	0.00222	0.00222
	(!A2 * B1 * B2 * !C1 * X)	-0.00275	-0.00276	-0.00275
	(!A2 * B1 * !B2 * C1 * X)	0.00224	0.00226	0.00225
	(!A2 * B1 * !B2 * C1 * X)	-0.00274	-0.00277	-0.00275
	(!A2 * B1 * !B2 * !C1 * !X)	0.00069	0.00069	0.00068
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00321	-0.00321	-0.00325
	(!A2 * !B1 * C1 * X)	0.00224	0.00226	0.00226
	(!A2 * !B1 * C1 * X)	-0.00274	-0.00276	-0.00275
	(!A2 * !B1 * !C1 * !X)	0.00069	0.00069	0.00068
	(!A2 * !B1 * !C1 * !X)	-0.00321	-0.00321	-0.00325

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	0.00456	0.00456	0.00452
	(A2 * B1 * B2 * C1 * X)	-0.00506	-0.00528	-0.00528
	(A2 * B1 * B2 * !C1 * X)	0.00464	0.00456	0.00452
	(A2 * B1 * B2 * !C1 * X)	-0.00495	-0.00534	-0.00529
	(A2 * B1 * !B2 * C1 * X)	0.00467	0.00457	0.00452
	(A2 * B1 * !B2 * C1 * X)	-0.00479	-0.00522	-0.00520
	(A2 * !B1 * C1 * X)	0.00467	0.00457	0.00452
	(A2 * !B1 * C1 * X)	-0.00479	-0.00522	-0.00520
	(!A2 * B1 * B2 * C1 * X)	0.00436	0.00438	0.00437
	(!A2 * B1 * B2 * C1 * X)	-0.00540	-0.00541	-0.00540
	(!A2 * B1 * B2 * !C1 * X)	0.00437	0.00438	0.00437
	(!A2 * B1 * B2 * !C1 * X)	-0.00539	-0.00541	-0.00539
	(!A2 * B1 * !B2 * C1 * X)	0.00437	0.00441	0.00437
	(!A2 * B1 * !B2 * C1 * X)	-0.00539	-0.00543	-0.00539
	(!A2 * B1 * !B2 * !C1 * !X)	0.00197	0.00197	0.00191
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00597	-0.00599	-0.00607
	(!A2 * !B1 * C1 * X)	0.00437	0.00442	0.00438
	(!A2 * !B1 * C1 * X)	-0.00539	-0.00543	-0.00539
	(!A2 * !B1 * !C1 * !X)	0.00197	0.00197	0.00191
	(!A2 * !B1 * !C1 * !X)	-0.00597	-0.00599	-0.00607

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)**	-0.00202	-0.00202	-0.00203
	(A2 * B1 * B2 * C1 * X)	0.00272	0.00272	0.00272
	(A2 * B1 * B2 * !C1 * X)	-0.00203	-0.00203	-0.00202
	(A2 * B1 * B2 * !C1 * X)	0.00273	0.00273	0.00272
	(A2 * B1 * !B2 * C1 * X)	-0.00202	-0.00203	-0.00202
	(A2 * B1 * !B2 * C1 * X)	0.00266	0.00268	0.00267
	(A2 * !B1 * C1 * X)	-0.00202	-0.00203	-0.00202
	(A2 * !B1 * C1 * X)	0.00266	0.00268	0.00267
	(!A2 * B1 * B2 * C1 * X)	-0.00191	-0.00197	-0.00197
	(!A2 * B1 * B2 * C1 * X)	0.00277	0.00282	0.00278
	(!A2 * B1 * B2 * !C1 * X)	-0.00192	-0.00197	-0.00197
	(!A2 * B1 * B2 * !C1 * X)	0.00279	0.00281	0.00279
	(!A2 * B1 * !B2 * C1 * X)	-0.00192	-0.00196	-0.00197
	(!A2 * B1 * !B2 * C1 * X)	0.00279	0.00281	0.00279
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00060	-0.00060	-0.00060
	(!A2 * B1 * !B2 * !C1 * !X)	0.00322	0.00325	0.00323
	(!A2 * !B1 * C1 * X)	-0.00192	-0.00197	-0.00196
	(!A2 * !B1 * C1 * X)	0.00279	0.00281	0.00279
	(!A2 * !B1 * !C1 * !X)	-0.00060	-0.00060	-0.00060
	(!A2 * !B1 * !C1 * !X)	0.00322	0.00325	0.00323

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	-0.00230	-0.00230	-0.00231
	(A2 * B1 * B2 * C1 * X)	0.00269	0.00270	0.00270
	(A2 * B1 * B2 * !C1 * X)	-0.00231	-0.00230	-0.00231
	(A2 * B1 * B2 * !C1 * X)	0.00271	0.00270	0.00270
	(A2 * B1 * !B2 * C1 * X)	-0.00230	-0.00231	-0.00230
	(A2 * B1 * !B2 * C1 * X)	0.00264	0.00266	0.00264
	(A2 * !B1 * C1 * X)	-0.00230	-0.00231	-0.00230
	(A2 * !B1 * C1 * X)	0.00264	0.00266	0.00265
	(!A2 * B1 * B2 * C1 * X)	-0.00218	-0.00223	-0.00224
	(!A2 * B1 * B2 * C1 * X)	0.00277	0.00279	0.00276
	(!A2 * B1 * B2 * !C1 * X)	-0.00218	-0.00222	-0.00222
	(!A2 * B1 * B2 * !C1 * X)	0.00277	0.00278	0.00276
	(!A2 * B1 * !B2 * C1 * X)	-0.00218	-0.00223	-0.00224
	(!A2 * B1 * !B2 * C1 * X)	0.00277	0.00279	0.00277
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00066	-0.00066	-0.00066
	(!A2 * B1 * !B2 * !C1 * !X)	0.00325	0.00328	0.00326
	(!A2 * !B1 * C1 * X)	-0.00218	-0.00223	-0.00224
	(!A2 * !B1 * C1 * X)	0.00277	0.00279	0.00277
	(!A2 * !B1 * !C1 * !X)	-0.00066	-0.00066	-0.00066
	(!A2 * !B1 * !C1 * !X)	0.00325	0.00328	0.00326

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	-0.00451	-0.00452	-0.00452
	(A2 * B1 * B2 * C1 * X)	0.00525	0.00528	0.00528
	(A2 * B1 * B2 * !C1 * X)	-0.00451	-0.00454	-0.00452
	(A2 * B1 * B2 * !C1 * X)	0.00526	0.00534	0.00529
	(A2 * B1 * !B2 * C1 * X)	-0.00449	-0.00451	-0.00449
	(A2 * B1 * !B2 * C1 * X)	0.00517	0.00522	0.00520
	(A2 * !B1 * C1 * X)	-0.00449	-0.00451	-0.00449
	(A2 * !B1 * C1 * X)	0.00517	0.00522	0.00520
	(!A2 * B1 * B2 * C1 * X)	-0.00421	-0.00438	-0.00437
	(!A2 * B1 * B2 * C1 * X)	0.00540	0.00542	0.00541
	(!A2 * B1 * B2 * !C1 * X)	-0.00420	-0.00435	-0.00437
	(!A2 * B1 * B2 * !C1 * X)	0.00541	0.00545	0.00542
	(!A2 * B1 * !B2 * C1 * X)	-0.00420	-0.00441	-0.00437
	(!A2 * B1 * !B2 * C1 * X)	0.00541	0.00545	0.00542
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00186	-0.00188	-0.00187
	(!A2 * B1 * !B2 * !C1 * !X)	0.00607	0.00612	0.00610
	(!A2 * !B1 * C1 * X)	-0.00420	-0.00441	-0.00438
	(!A2 * !B1 * C1 * X)	0.00541	0.00543	0.00542
	(!A2 * !B1 * !C1 * !X)	-0.00186	-0.00188	-0.00187
	(!A2 * !B1 * !C1 * !X)	0.00607	0.00612	0.00610

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)**	0.00234	0.00236	0.00234
	(A1 * B1 * B2 * C1 * X)	-0.00252	-0.00265	-0.00264
	(A1 * B1 * B2 * !C1 * X)	0.00245	0.00236	0.00235
	(A1 * B1 * B2 * !C1 * X)	-0.00240	-0.00264	-0.00264
	(A1 * B1 * !B2 * C1 * X)	0.00244	0.00236	0.00235
	(A1 * B1 * !B2 * C1 * X)	-0.00233	-0.00258	-0.00259
	(A1 * !B1 * C1 * X)	0.00244	0.00236	0.00235
	(A1 * !B1 * C1 * X)	-0.00233	-0.00258	-0.00259
	(!A1 * B1 * B2 * X)	0.00228	0.00231	0.00230
	(!A1 * B1 * B2 * X)	-0.00268	-0.00270	-0.00269
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00229	0.00230	0.00229
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00268	-0.00269	-0.00269
	(!A1 * B1 * !B2 * !C1 * !X)	0.00195	0.00196	0.00195
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00302	-0.00303	-0.00303
	(!A1 * !B1 * !C1 * !X)	0.00195	0.00196	0.00195
	(!A1 * !B1 * !C1 * !X)	-0.00302	-0.00303	-0.00303

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	0.00257	0.00259	0.00257
	(A1 * B1 * B2 * C1 * X)	-0.00250	-0.00263	-0.00262
	(A1 * B1 * B2 * !C1 * X)	0.00268	0.00259	0.00257
	(A1 * B1 * B2 * !C1 * X)	-0.00238	-0.00262	-0.00263
	(A1 * B1 * !B2 * C1 * X)	0.00266	0.00259	0.00258
	(A1 * B1 * !B2 * C1 * X)	-0.00231	-0.00257	-0.00257
	(A1 * !B1 * C1 * X)	0.00266	0.00259	0.00258
	(A1 * !B1 * C1 * X)	-0.00231	-0.00257	-0.00257
	(!A1 * B1 * B2 * X)	0.00251	0.00252	0.00251
	(!A1 * B1 * B2 * X)	-0.00267	-0.00267	-0.00267
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00251	0.00252	0.00251
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00267	-0.00267	-0.00267
	(!A1 * B1 * !B2 * !C1 * !X)	0.00218	0.00219	0.00218
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00300	-0.00300	-0.00300
	(!A1 * !B1 * !C1 * !X)	0.00218	0.00220	0.00218
	(!A1 * !B1 * !C1 * !X)	-0.00300	-0.00301	-0.00300

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	0.00449	0.00450	0.00446
	(A1 * B1 * B2 * C1 * X)	-0.00499	-0.00524	-0.00525
	(A1 * B1 * B2 * !C1 * X)	0.00459	0.00451	0.00447
	(A1 * B1 * B2 * !C1 * X)	-0.00486	-0.00523	-0.00525
	(A1 * B1 * !B2 * C1 * X)	0.00461	0.00452	0.00447
	(A1 * B1 * !B2 * C1 * X)	-0.00471	-0.00517	-0.00516
	(A1 * !B1 * C1 * X)	0.00461	0.00452	0.00447
	(A1 * !B1 * C1 * X)	-0.00471	-0.00517	-0.00516
	(!A1 * B1 * B2 * X)	0.00430	0.00436	0.00430
	(!A1 * B1 * B2 * X)	-0.00536	-0.00540	-0.00537
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00431	0.00437	0.00431
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00535	-0.00539	-0.00536
	(!A1 * B1 * !B2 * !C1 * !X)	0.00420	0.00426	0.00420
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00546	-0.00550	-0.00547
	(!A1 * !B1 * !C1 * !X)	0.00420	0.00426	0.00420
	(!A1 * !B1 * !C1 * !X)	-0.00546	-0.00550	-0.00547

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)**	-0.00234	-0.00235	-0.00234
	(A1 * B1 * B2 * C1 * X)	0.00264	0.00265	0.00264
	(A1 * B1 * B2 * !C1 * X)	-0.00234	-0.00234	-0.00234
	(A1 * B1 * B2 * !C1 * X)	0.00264	0.00265	0.00264
	(A1 * B1 * !B2 * C1 * X)	-0.00233	-0.00234	-0.00233
	(A1 * B1 * !B2 * C1 * X)	0.00258	0.00260	0.00259
	(A1 * !B1 * C1 * X)	-0.00233	-0.00235	-0.00233
	(A1 * !B1 * C1 * X)	0.00258	0.00260	0.00259
	(!A1 * B1 * B2 * X)	-0.00224	-0.00228	-0.00229
	(!A1 * B1 * B2 * X)	0.00270	0.00273	0.00270
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00224	-0.00228	-0.00228
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00271	0.00273	0.00270
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00181	-0.00194	-0.00194
	(!A1 * B1 * !B2 * !C1 * !X)	0.00316	0.00306	0.00304
	(!A1 * !B1 * !C1 * !X)	-0.00181	-0.00194	-0.00194
	(!A1 * !B1 * !C1 * !X)	0.00316	0.00306	0.00304

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00256	-0.00257	-0.00257
	(A1 * B1 * B2 * C1 * X)	0.00262	0.00263	0.00262
	(A1 * B1 * B2 * !C1 * X)	-0.00256	-0.00257	-0.00256
	(A1 * B1 * B2 * !C1 * X)	0.00262	0.00264	0.00263
	(A1 * B1 * !B2 * C1 * X)	-0.00256	-0.00257	-0.00256
	(A1 * B1 * !B2 * C1 * X)	0.00256	0.00259	0.00257
	(A1 * !B1 * C1 * X)	-0.00256	-0.00257	-0.00256
	(A1 * !B1 * C1 * X)	0.00256	0.00259	0.00257
	(!A1 * B1 * B2 * X)	-0.00243	-0.00251	-0.00250
	(!A1 * B1 * B2 * X)	0.00267	0.00269	0.00268
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00243	-0.00249	-0.00250
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00267	0.00270	0.00268
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00200	-0.00217	-0.00217
	(!A1 * B1 * !B2 * !C1 * !X)	0.00312	0.00303	0.00301
	(!A1 * !B1 * !C1 * !X)	-0.00200	-0.00215	-0.00217
	(!A1 * !B1 * !C1 * !X)	0.00312	0.00304	0.00301

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	-0.00445	-0.00446	-0.00446
	(A1 * B1 * B2 * C1 * X)	0.00522	0.00524	0.00525
	(A1 * B1 * B2 * !C1 * X)	-0.00445	-0.00446	-0.00446
	(A1 * B1 * B2 * !C1 * X)	0.00522	0.00523	0.00525
	(A1 * B1 * !B2 * C1 * X)	-0.00443	-0.00445	-0.00444
	(A1 * B1 * !B2 * C1 * X)	0.00513	0.00517	0.00516
	(A1 * !B1 * C1 * X)	-0.00443	-0.00445	-0.00444
	(A1 * !B1 * C1 * X)	0.00513	0.00517	0.00516
	(!A1 * B1 * B2 * X)	-0.00417	-0.00436	-0.00430
	(!A1 * B1 * B2 * X)	0.00537	0.00540	0.00538
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00416	-0.00437	-0.00431
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00537	0.00541	0.00538
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00392	-0.00425	-0.00420
	(!A1 * B1 * !B2 * !C1 * !X)	0.00566	0.00551	0.00550
	(!A1 * !B1 * !C1 * !X)	-0.00392	-0.00425	-0.00420
	(!A1 * !B1 * !C1 * !X)	0.00566	0.00551	0.00550

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)**	0.00229	0.00230	0.00217
	(A1 * A2 * B2 * C1 * X)	-0.00192	-0.00193	-0.00191
	(A1 * A2 * B2 * !C1 * X)	0.00207	0.00208	0.00206
	(A1 * A2 * B2 * !C1 * X)	-0.00142	-0.00143	-0.00143
	(A1 * A2 * !B2 * C1 * X)	0.00212	0.00213	0.00204
	(A1 * A2 * !B2 * C1 * X)	-0.00176	-0.00179	-0.00177
	(A1 * A2 * !B2 * !C1 * X)	0.00203	0.00205	0.00201
	(A1 * A2 * !B2 * !C1 * X)	-0.00140	-0.00142	-0.00142
	(A1 * !A2 * B2 * C1 * X)	0.00263	0.00208	0.00204
	(A1 * !A2 * B2 * C1 * X)	-0.00212	-0.00272	-0.00273
	(A1 * !A2 * !B2 * C1 * X)	0.00195	0.00198	0.00196
	(A1 * !A2 * !B2 * C1 * X)	-0.00274	-0.00276	-0.00275
	(A1 * !A2 * !B2 * !C1 * !X)	0.00060	0.00059	0.00058
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00320	-0.00321	-0.00323
	(!A1 * B2 * C1 * X)	0.00263	0.00208	0.00204
	(!A1 * B2 * C1 * X)	-0.00212	-0.00272	-0.00273
	(!A1 * !B2 * C1 * X)	0.00198	0.00200	0.00198
	(!A1 * !B2 * C1 * X)	-0.00276	-0.00276	-0.00275
	(!A1 * !B2 * !C1 * !X)	0.00060	0.00059	0.00058
	(!A1 * !B2 * !C1 * !X)	-0.00321	-0.00321	-0.00323

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	0.00272	0.00273	0.00259
	(A1 * A2 * B2 * C1 * X)	-0.00195	-0.00196	-0.00194
	(A1 * A2 * B2 * !C1 * X)	0.00250	0.00251	0.00247
	(A1 * A2 * B2 * !C1 * X)	-0.00146	-0.00146	-0.00146
	(A1 * A2 * !B2 * C1 * X)	0.00252	0.00254	0.00244
	(A1 * A2 * !B2 * C1 * X)	-0.00178	-0.00182	-0.00180
	(A1 * A2 * !B2 * !C1 * X)	0.00243	0.00245	0.00242
	(A1 * A2 * !B2 * !C1 * X)	-0.00142	-0.00145	-0.00145
	(A1 * !A2 * B2 * C1 * X)	0.00304	0.00250	0.00245
	(A1 * !A2 * B2 * C1 * X)	-0.00215	-0.00275	-0.00275
	(A1 * !A2 * !B2 * C1 * X)	0.00235	0.00238	0.00236
	(A1 * !A2 * !B2 * C1 * X)	-0.00277	-0.00279	-0.00277
	(A1 * !A2 * !B2 * !C1 * !X)	0.00071	0.00071	0.00069
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00336	-0.00336	-0.00339
	(!A1 * B2 * C1 * X)	0.00304	0.00250	0.00245
	(!A1 * B2 * C1 * X)	-0.00215	-0.00275	-0.00275
	(!A1 * !B2 * C1 * X)	0.00235	0.00235	0.00236
	(!A1 * !B2 * C1 * X)	-0.00277	-0.00277	-0.00277
	(!A1 * !B2 * !C1 * !X)	0.00071	0.00071	0.00069
	(!A1 * !B2 * !C1 * !X)	-0.00336	-0.00336	-0.00339

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	0.00491	0.00489	0.00458
	(A1 * A2 * B2 * C1 * X)	-0.00395	-0.00400	-0.00397
	(A1 * A2 * B2 * !C1 * X)	0.00442	0.00446	0.00439
	(A1 * A2 * B2 * !C1 * X)	-0.00288	-0.00292	-0.00293
	(A1 * A2 * !B2 * C1 * X)	0.00443	0.00446	0.00432
	(A1 * A2 * !B2 * C1 * X)	-0.00366	-0.00372	-0.00368
	(A1 * A2 * !B2 * !C1 * X)	0.00429	0.00432	0.00425
	(A1 * A2 * !B2 * !C1 * X)	-0.00290	-0.00292	-0.00292
	(A1 * !A2 * B2 * C1 * X)	0.00563	0.00443	0.00435
	(A1 * !A2 * B2 * C1 * X)	-0.00415	-0.00539	-0.00547
	(A1 * !A2 * !B2 * C1 * X)	0.00421	0.00423	0.00421
	(A1 * !A2 * !B2 * C1 * X)	-0.00551	-0.00553	-0.00551
	(A1 * !A2 * !B2 * !C1 * !X)	0.00153	0.00155	0.00148
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00639	-0.00644	-0.00652
	(!A1 * B2 * C1 * X)	0.00564	0.00443	0.00435
	(!A1 * B2 * C1 * X)	-0.00415	-0.00539	-0.00547
	(!A1 * !B2 * C1 * X)	0.00421	0.00423	0.00421
	(!A1 * !B2 * C1 * X)	-0.00551	-0.00554	-0.00551
	(!A1 * !B2 * !C1 * !X)	0.00153	0.00155	0.00148
	(!A1 * !B2 * !C1 * !X)	-0.00640	-0.00644	-0.00652

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)**	-0.00206	-0.00207	-0.00206
	(A1 * A2 * B2 * C1 * X)	0.00192	0.00193	0.00191
	(A1 * A2 * B2 * !C1 * X)	-0.00200	-0.00200	-0.00199
	(A1 * A2 * B2 * !C1 * X)	0.00148	0.00148	0.00149
	(A1 * A2 * !B2 * C1 * X)	-0.00194	-0.00200	-0.00200
	(A1 * A2 * !B2 * C1 * X)	0.00176	0.00179	0.00177
	(A1 * A2 * !B2 * !C1 * X)	-0.00193	-0.00199	-0.00199
	(A1 * A2 * !B2 * !C1 * X)	0.00143	0.00144	0.00143
	(A1 * !A2 * B2 * C1 * X)	-0.00202	-0.00203	-0.00202
	(A1 * !A2 * B2 * C1 * X)	0.00270	0.00273	0.00273
	(A1 * !A2 * !B2 * C1 * X)	-0.00193	-0.00197	-0.00196
	(A1 * !A2 * !B2 * C1 * X)	0.00276	0.00278	0.00276
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00057	-0.00057	-0.00056
	(A1 * !A2 * !B2 * !C1 * !X)	0.00325	0.00326	0.00324
	(!A1 * B2 * C1 * X)	-0.00202	-0.00203	-0.00202
	(!A1 * B2 * C1 * X)	0.00270	0.00272	0.00273
	(!A1 * !B2 * C1 * X)	-0.00193	-0.00198	-0.00198
	(!A1 * !B2 * C1 * X)	0.00276	0.00278	0.00276
	(!A1 * !B2 * !C1 * !X)	-0.00057	-0.00057	-0.00056
	(!A1 * !B2 * !C1 * !X)	0.00325	0.00326	0.00324

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	-0.00248	-0.00250	-0.00248
	(A1 * A2 * B2 * C1 * X)	0.00195	0.00196	0.00194
	(A1 * A2 * B2 * !C1 * X)	-0.00242	-0.00242	-0.00241
	(A1 * A2 * B2 * !C1 * X)	0.00151	0.00150	0.00151
	(A1 * A2 * !B2 * C1 * X)	-0.00234	-0.00241	-0.00241
	(A1 * A2 * !B2 * C1 * X)	0.00178	0.00182	0.00180
	(A1 * A2 * !B2 * !C1 * X)	-0.00233	-0.00238	-0.00239
	(A1 * A2 * !B2 * !C1 * X)	0.00147	0.00146	0.00146
	(A1 * !A2 * B2 * C1 * X)	-0.00243	-0.00245	-0.00243
	(A1 * !A2 * B2 * C1 * X)	0.00273	0.00277	0.00275
	(A1 * !A2 * !B2 * C1 * X)	-0.00231	-0.00238	-0.00236
	(A1 * !A2 * !B2 * C1 * X)	0.00279	0.00280	0.00279
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00067	-0.00068	-0.00067
	(A1 * !A2 * !B2 * !C1 * !X)	0.00339	0.00342	0.00340
	(!A1 * B2 * C1 * X)	-0.00243	-0.00245	-0.00243
	(!A1 * B2 * C1 * X)	0.00273	0.00277	0.00275
	(!A1 * !B2 * C1 * X)	-0.00231	-0.00235	-0.00236
	(!A1 * !B2 * C1 * X)	0.00279	0.00281	0.00279
	(!A1 * !B2 * !C1 * !X)	-0.00067	-0.00068	-0.00067
	(!A1 * !B2 * !C1 * !X)	0.00339	0.00342	0.00340

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	-0.00439	-0.00442	-0.00441
	(A1 * A2 * B2 * C1 * X)	0.00395	0.00400	0.00397
	(A1 * A2 * B2 * !C1 * X)	-0.00430	-0.00431	-0.00427
	(A1 * A2 * B2 * !C1 * X)	0.00300	0.00302	0.00305
	(A1 * A2 * !B2 * C1 * X)	-0.00412	-0.00432	-0.00431
	(A1 * A2 * !B2 * C1 * X)	0.00366	0.00372	0.00368
	(A1 * A2 * !B2 * !C1 * X)	-0.00409	-0.00424	-0.00425
	(A1 * A2 * !B2 * !C1 * X)	0.00295	0.00295	0.00295
	(A1 * !A2 * B2 * C1 * X)	-0.00430	-0.00433	-0.00429
	(A1 * !A2 * B2 * C1 * X)	0.00544	0.00550	0.00548
	(A1 * !A2 * !B2 * C1 * X)	-0.00405	-0.00423	-0.00421
	(A1 * !A2 * !B2 * C1 * X)	0.00551	0.00554	0.00554
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00144	-0.00146	-0.00144
	(A1 * !A2 * !B2 * !C1 * !X)	0.00652	0.00658	0.00654
	(!A1 * B2 * C1 * X)	-0.00430	-0.00433	-0.00429
	(!A1 * B2 * C1 * X)	0.00544	0.00550	0.00548
	(!A1 * !B2 * C1 * X)	-0.00405	-0.00423	-0.00421
	(!A1 * !B2 * C1 * X)	0.00551	0.00554	0.00554
	(!A1 * !B2 * !C1 * !X)	-0.00144	-0.00146	-0.00144
	(!A1 * !B2 * !C1 * !X)	0.00652	0.00658	0.00654

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)**	0.00238	0.00237	0.00223
	(A1 * A2 * B1 * C1 * X)	-0.00189	-0.00190	-0.00188
	(A1 * A2 * B1 * !C1 * X)	0.00216	0.00217	0.00213
	(A1 * A2 * B1 * !C1 * X)	-0.00138	-0.00138	-0.00139
	(A1 * A2 * !B1 * C1 * X)	0.00215	0.00216	0.00208
	(A1 * A2 * !B1 * C1 * X)	-0.00173	-0.00175	-0.00174
	(A1 * A2 * !B1 * !C1 * X)	0.00210	0.00214	0.00208
	(A1 * A2 * !B1 * !C1 * X)	-0.00136	-0.00139	-0.00138
	(A1 * !A2 * B1 * C1 * X)	0.00273	0.00215	0.00211
	(A1 * !A2 * B1 * C1 * X)	-0.00204	-0.00266	-0.00267
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00204	0.00207	0.00205
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00269	-0.00271	-0.00270
	(A1 * !A2 * !B1 * !C1 * !X)	0.00186	0.00188	0.00186
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00290	-0.00291	-0.00289
	(!A1 * B1 * C1 * X)	0.00274	0.00215	0.00211
	(!A1 * B1 * C1 * X)	-0.00204	-0.00266	-0.00267
	(!A1 * !B1 * !C1 * !X)	0.00186	0.00188	0.00186
	(!A1 * !B1 * !C1 * !X)	-0.00290	-0.00291	-0.00289

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	0.00278	0.00278	0.00264
	(A1 * A2 * B1 * C1 * X)	-0.00180	-0.00183	-0.00181
	(A1 * A2 * B1 * !C1 * X)	0.00256	0.00257	0.00253
	(A1 * A2 * B1 * !C1 * X)	-0.00132	-0.00132	-0.00132
	(A1 * A2 * !B1 * C1 * X)	0.00254	0.00256	0.00248
	(A1 * A2 * !B1 * C1 * X)	-0.00166	-0.00167	-0.00167
	(A1 * A2 * !B1 * !C1 * X)	0.00249	0.00254	0.00248
	(A1 * A2 * !B1 * !C1 * X)	-0.00130	-0.00133	-0.00131
	(A1 * !A2 * B1 * C1 * X)	0.00309	0.00255	0.00252
	(A1 * !A2 * B1 * C1 * X)	-0.00196	-0.00256	-0.00258
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00244	0.00246	0.00245
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00260	-0.00261	-0.00260
	(A1 * !A2 * !B1 * !C1 * !X)	0.00214	0.00217	0.00215
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00290	-0.00292	-0.00291
	(!A1 * B1 * C1 * X)	0.00310	0.00255	0.00252
	(!A1 * B1 * C1 * X)	-0.00196	-0.00256	-0.00258
	(!A1 * !B1 * !C1 * !X)	0.00214	0.00217	0.00215
	(!A1 * !B1 * !C1 * !X)	-0.00290	-0.00292	-0.00291

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	0.00536	0.00529	0.00504
	(A1 * A2 * B1 * C1 * X)	-0.00381	-0.00386	-0.00382
	(A1 * A2 * B1 * !C1 * X)	0.00487	0.00489	0.00484
	(A1 * A2 * B1 * !C1 * X)	-0.00273	-0.00276	-0.00277
	(A1 * A2 * !B1 * C1 * X)	0.00489	0.00490	0.00477
	(A1 * A2 * !B1 * C1 * X)	-0.00352	-0.00352	-0.00353
	(A1 * A2 * !B1 * !C1 * X)	0.00473	0.00479	0.00471
	(A1 * A2 * !B1 * !C1 * X)	-0.00272	-0.00276	-0.00276
	(A1 * !A2 * B1 * C1 * X)	0.00601	0.00487	0.00480
	(A1 * !A2 * B1 * C1 * X)	-0.00403	-0.00530	-0.00532
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00468	0.00473	0.00468
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00534	-0.00538	-0.00535
	(A1 * !A2 * !B1 * !C1 * !X)	0.00454	0.00458	0.00454
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00546	-0.00550	-0.00547
	(!A1 * B1 * C1 * X)	0.00602	0.00487	0.00480
	(!A1 * B1 * C1 * X)	-0.00402	-0.00530	-0.00532
	(!A1 * !B1 * !C1 * !X)	0.00454	0.00458	0.00454
	(!A1 * !B1 * !C1 * !X)	-0.00546	-0.00550	-0.00547

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)**	-0.00213	-0.00214	-0.00213
	(A1 * A2 * B1 * C1 * X)	0.00189	0.00190	0.00188
	(A1 * A2 * B1 * !C1 * X)	-0.00208	-0.00208	-0.00207
	(A1 * A2 * B1 * !C1 * X)	0.00143	0.00144	0.00145
	(A1 * A2 * !B1 * C1 * X)	-0.00201	-0.00206	-0.00207
	(A1 * A2 * !B1 * C1 * X)	0.00173	0.00175	0.00174
	(A1 * A2 * !B1 * !C1 * X)	-0.00200	-0.00204	-0.00206
	(A1 * A2 * !B1 * !C1 * X)	0.00139	0.00140	0.00140
	(A1 * !A2 * B1 * C1 * X)	-0.00209	-0.00210	-0.00209
	(A1 * !A2 * B1 * C1 * X)	0.00265	0.00267	0.00267
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00198	-0.00203	-0.00204
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00269	0.00272	0.00271
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00170	-0.00184	-0.00185
	(A1 * !A2 * !B1 * !C1 * !X)	0.00300	0.00293	0.00290
	(!A1 * B1 * C1 * X)	-0.00209	-0.00210	-0.00209
	(!A1 * B1 * C1 * X)	0.00265	0.00267	0.00267
	(!A1 * !B1 * !C1 * !X)	-0.00170	-0.00184	-0.00185
	(!A1 * !B1 * !C1 * !X)	0.00300	0.00293	0.00290

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00254	-0.00256	-0.00254
	(A1 * A2 * B1 * C1 * X)	0.00180	0.00183	0.00181
	(A1 * A2 * B1 * !C1 * X)	-0.00248	-0.00249	-0.00247
	(A1 * A2 * B1 * !C1 * X)	0.00136	0.00137	0.00138
	(A1 * A2 * !B1 * C1 * X)	-0.00240	-0.00246	-0.00247
	(A1 * A2 * !B1 * C1 * X)	0.00166	0.00167	0.00167
	(A1 * A2 * !B1 * !C1 * X)	-0.00239	-0.00246	-0.00246
	(A1 * A2 * !B1 * !C1 * X)	0.00132	0.00133	0.00132
	(A1 * !A2 * B1 * C1 * X)	-0.00250	-0.00251	-0.00250
	(A1 * !A2 * B1 * C1 * X)	0.00257	0.00259	0.00258
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00237	-0.00244	-0.00244
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00260	0.00264	0.00262
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00197	-0.00213	-0.00214
	(A1 * !A2 * !B1 * !C1 * !X)	0.00304	0.00294	0.00292
	(!A1 * B1 * C1 * X)	-0.00250	-0.00251	-0.00250
	(!A1 * B1 * C1 * X)	0.00257	0.00259	0.00258
	(!A1 * !B1 * !C1 * !X)	-0.00197	-0.00213	-0.00214
	(!A1 * !B1 * !C1 * !X)	0.00304	0.00294	0.00292

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00487	-0.00490	-0.00487
	(A1 * A2 * B1 * C1 * X)	0.00381	0.00386	0.00382
	(A1 * A2 * B1 * !C1 * X)	-0.00473	-0.00476	-0.00472
	(A1 * A2 * B1 * !C1 * X)	0.00285	0.00288	0.00290
	(A1 * A2 * !B1 * C1 * X)	-0.00463	-0.00471	-0.00476
	(A1 * A2 * !B1 * C1 * X)	0.00352	0.00352	0.00353
	(A1 * A2 * !B1 * !C1 * X)	-0.00457	-0.00470	-0.00471
	(A1 * A2 * !B1 * !C1 * X)	0.00277	0.00279	0.00279
	(A1 * !A2 * B1 * C1 * X)	-0.00475	-0.00477	-0.00475
	(A1 * !A2 * B1 * C1 * X)	0.00527	0.00532	0.00532
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00454	-0.00467	-0.00468
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00535	0.00540	0.00538
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00430	-0.00458	-0.00454
	(A1 * !A2 * !B1 * !C1 * !X)	0.00563	0.00552	0.00549
	(!A1 * B1 * C1 * X)	-0.00475	-0.00477	-0.00475
	(!A1 * B1 * C1 * X)	0.00527	0.00532	0.00532
	(!A1 * !B1 * !C1 * !X)	-0.00430	-0.00458	-0.00454
	(!A1 * !B1 * !C1 * !X)	0.00563	0.00552	0.00549

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)	0.00254	0.00258	0.00255
	(A1 * B1 * B2 * X)	-0.00122	-0.00124	-0.00122
	(A1 * A2 * B1 * !B2 * X)	0.00254	0.00258	0.00255
	(A1 * A2 * B1 * !B2 * X)	-0.00122	-0.00124	-0.00122
	(A1 * A2 * !B1 * X)	0.00255	0.00258	0.00255
	(A1 * A2 * !B1 * X)	-0.00122	-0.00124	-0.00122
	(!A1 * B1 * B2 * X)	0.00255	0.00258	0.00255
	(!A1 * B1 * B2 * X)	-0.00122	-0.00124	-0.00123
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	0.00268	0.00270	0.00268
	(A1 * B1 * B2 * X)	-0.00122	-0.00123	-0.00122
	(A1 * A2 * B1 * !B2 * X)	0.00268	0.00270	0.00268
	(A1 * A2 * B1 * !B2 * X)	-0.00122	-0.00123	-0.00122
	(A1 * A2 * !B1 * X)	0.00268	0.00270	0.00268
	(A1 * A2 * !B1 * X)	-0.00122	-0.00123	-0.00122
	(!A1 * B1 * B2 * X)	0.00268	0.00270	0.00268
	(!A1 * B1 * B2 * X)	-0.00123	-0.00124	-0.00123
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	0.00452	0.00457	0.00453
	(A1 * B1 * B2 * X)	-0.00259	-0.00263	-0.00260
	(A1 * A2 * B1 * !B2 * X)	0.00452	0.00458	0.00454
	(A1 * A2 * B1 * !B2 * X)	-0.00258	-0.00262	-0.00259
	(A1 * A2 * !B1 * X)	0.00452	0.00458	0.00454
	(A1 * A2 * !B1 * X)	-0.00258	-0.00262	-0.00259
	(!A1 * B1 * B2 * X)	0.00451	0.00457	0.00453
	(!A1 * B1 * B2 * X)	-0.00263	-0.00267	-0.00264

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)	-0.00242	-0.00243	-0.00254
	(A1 * B1 * B2 * X)	0.00133	0.00134	0.00125
	(A1 * A2 * B1 * !B2 * X)	-0.00226	-0.00228	-0.00250
	(A1 * A2 * B1 * !B2 * X)	0.00142	0.00142	0.00126
	(A1 * A2 * !B1 * X)	-0.00226	-0.00227	-0.00250
	(A1 * A2 * !B1 * X)	0.00142	0.00142	0.00126
	(!A1 * B1 * B2 * X)	-0.00242	-0.00243	-0.00254
	(!A1 * B1 * B2 * X)	0.00134	0.00134	0.00125
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	-0.00255	-0.00257	-0.00267
	(A1 * B1 * B2 * X)	0.00134	0.00134	0.00125
	(A1 * A2 * B1 * !B2 * X)	-0.00240	-0.00242	-0.00264
	(A1 * A2 * B1 * !B2 * X)	0.00142	0.00143	0.00126
	(A1 * A2 * !B1 * X)	-0.00240	-0.00242	-0.00264
	(A1 * A2 * !B1 * X)	0.00142	0.00143	0.00126
	(!A1 * B1 * B2 * X)	-0.00255	-0.00257	-0.00267
	(!A1 * B1 * B2 * X)	0.00134	0.00135	0.00125
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	-0.00423	-0.00427	-0.00450
	(A1 * B1 * B2 * X)	0.00284	0.00285	0.00266
	(A1 * A2 * B1 * !B2 * X)	-0.00390	-0.00393	-0.00444
	(A1 * A2 * B1 * !B2 * X)	0.00304	0.00305	0.00268
	(A1 * A2 * !B1 * X)	-0.00390	-0.00393	-0.00443
	(A1 * A2 * !B1 * X)	0.00304	0.00305	0.00268
	(!A1 * B1 * B2 * X)	-0.00422	-0.00425	-0.00449
	(!A1 * B1 * B2 * X)	0.00289	0.00290	0.00270

SKY130_FD_SC_HS__A222OIx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00272	0.00257	0.00265	0.00268	0.00268	0.00277	0.41112
sky130_fd_sc_hs__a222oi_2	0.00545	0.00485	0.00538	0.00497	0.00490	0.00553	0.70076

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222oi_1	0.00000	0.24284	0.95659
sky130_fd_sc_hs__a222oi_2	0.00000	0.48568	1.91316

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)	0.18342	0.97110	8.92884
	A2->Y (FR)	0.20056	0.99333	8.99325
	B1->Y (FR)	0.16077	0.98947	9.62842
	B2->Y (FR)	0.18084	1.02001	9.74091
	C1->Y (FR)	0.12085	0.98845	10.02670
	C2->Y (FR)	0.13911	1.00778	10.05890
sky130_fd_sc_hs__a222oi_2	A1->Y (FR)	0.17994	0.81647	8.53607
	A2->Y (FR)	0.20535	0.85479	8.72658
	B1->Y (FR)	0.15434	0.82746	9.14604
	B2->Y (FR)	0.18569	0.89582	9.65161
	C1->Y (FR)	0.11205	0.85540	9.93938
	C2->Y (FR)	0.13741	0.88231	9.96018

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222oi_1	A1->Y (RF)	0.04063	0.32688	2.79729
	A2->Y (RF)	0.04362	0.29537	2.43414
	B1->Y (RF)	0.03577	0.30463	2.71829
	B2->Y (RF)	0.03906	0.27462	2.35257
	C1->Y (RF)	0.02490	0.28390	2.68024
	C2->Y (RF)	0.02783	0.25565	2.31956
sky130_fd_sc_hs__a222oi_2	A1->Y (RF)	0.03914	0.27537	2.61999
	A2->Y (RF)	0.04253	0.25068	2.29921
	B1->Y (RF)	0.03508	0.25528	2.58366
	B2->Y (RF)	0.03912	0.23383	2.26956
	C1->Y (RF)	0.02081	0.21390	2.34493
	C2->Y (RF)	0.02469	0.19346	2.02939

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.00122	0.00149	0.04200
	A1	0.01444	0.01471	0.05520
	A2	0.00163	0.00203	0.04384
	A2	0.01623	0.01661	0.05841
	B1	0.00126	0.00226	0.04203
	B1	0.01120	0.01221	0.05216
	B2	0.00171	0.00271	0.04238
	B2	0.01313	0.01415	0.05400
	C1	0.00105	0.00422	0.05649
	C1	0.00818	0.01136	0.06387
	C2	0.00158	0.00483	0.05876
	C2	0.01015	0.01341	0.06755
sky130_fd_sc_hs__a222oi_2	A1	0.00092	0.00177	0.08198
	A1	0.02730	0.02815	0.10866
	A2	0.00245	0.00336	0.08571
	A2	0.03087	0.03181	0.11439
	B1	0.00098	0.00334	0.08091
	B1	0.02108	0.02344	0.10102
	B2	0.00232	0.00438	0.07804
	B2	0.02461	0.02665	0.10062
	C1	0.00073	0.00722	0.10607
	C1	0.01432	0.02082	0.12003
	C2	0.00191	0.00863	0.11037
	C2	0.01901	0.02575	0.12793

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.02097	0.02222	0.05853
	A1	0.00799	0.00919	0.04553
	A2	0.02235	0.02327	0.05797
	A2	0.00793	0.00886	0.04357
	B1	0.01420	0.01580	0.05094
	B1	0.00435	0.00591	0.04103
	B2	0.01578	0.01701	0.05013
	B2	0.00437	0.00557	0.03873
	C1	0.00811	0.01003	0.04299
	C1	0.00099	0.00286	0.03579
	C2	0.00958	0.01111	0.04323
	C2	0.00094	0.00246	0.03460
sky130_fd_sc_hs__a222oi_2	A1	0.03954	0.04215	0.11625
	A1	0.01360	0.01620	0.09023
	A2	0.04172	0.04386	0.11379
	A2	0.01361	0.01569	0.08565
	B1	0.02704	0.03047	0.10060
	B1	0.00708	0.01052	0.08064
	B2	0.02986	0.03245	0.09544
	B2	0.00760	0.01012	0.07312
	C1	0.01429	0.01846	0.08479
	C1	0.00072	0.00488	0.07113
	C2	0.01779	0.02130	0.08643
	C2	0.00059	0.00407	0.06915

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)**	0.00203	0.00203	0.00201
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00258	-0.00272	-0.00271
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00210	0.00203	0.00202
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00249	-0.00271	-0.00270
	(A2 * B1 * B2 * !C1 * !Y)	0.00210	0.00203	0.00202
	(A2 * B1 * B2 * !C1 * !Y)	-0.00249	-0.00271	-0.00270
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00218	0.00204	0.00202
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00235	-0.00264	-0.00266
	(A2 * !B1 * C1 * C2 * !Y)	0.00219	0.00204	0.00202
	(A2 * !B1 * C1 * C2 * !Y)	-0.00234	-0.00264	-0.00267
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00193	0.00194	0.00193
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00276	-0.00277	-0.00276
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00193	0.00194	0.00194
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00275	-0.00277	-0.00276
	(!A2 * B1 * B2 * !C1 * !Y)	0.00194	0.00195	0.00194
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00276	-0.00277	-0.00276
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00193	0.00194	0.00194
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00275	-0.00276	-0.00276
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00066	0.00066	0.00065
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00313	-0.00313	-0.00316
	(!A2 * B1 * !B2 * !C1 * Y)	0.00066	0.00066	0.00065
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00313	-0.00313	-0.00316
	(!A2 * !B1 * C1 * C2 * !Y)	0.00195	0.00196	0.00195
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00275	-0.00276	-0.00276
	(!A2 * !B1 * C1 * !C2 * Y)	0.00066	0.00066	0.00065
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00313	-0.00313	-0.00316
	(!A2 * !B1 * !C1 * Y)	0.00066	0.00066	0.00065
	(!A2 * !B1 * !C1 * Y)	-0.00313	-0.00313	-0.00316

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	0.00417	0.00420	0.00416
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00521	-0.00553	-0.00548
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00444	0.00420	0.00417
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00491	-0.00551	-0.00549
	(A2 * B1 * B2 * !C1 * !Y)	0.00444	0.00420	0.00417
	(A2 * B1 * B2 * !C1 * !Y)	-0.00491	-0.00548	-0.00549
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00453	0.00424	0.00418
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00469	-0.00537	-0.00539
	(A2 * !B1 * C1 * C2 * !Y)	0.00456	0.00424	0.00418
	(A2 * !B1 * C1 * C2 * !Y)	-0.00465	-0.00538	-0.00539
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00402	0.00403	0.00402
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00558	-0.00561	-0.00560
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00399	0.00403	0.00402
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00557	-0.00561	-0.00560
	(!A2 * B1 * B2 * !C1 * !Y)	0.00400	0.00401	0.00402
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00557	-0.00559	-0.00560
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00403	0.00404	0.00403
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00560	-0.00560	-0.00559
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00129	0.00130	0.00126
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00651	-0.00655	-0.00661
	(!A2 * B1 * !B2 * !C1 * Y)	0.00129	0.00130	0.00126
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00651	-0.00655	-0.00661
	(!A2 * !B1 * C1 * C2 * !Y)	0.00401	0.00405	0.00403
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00556	-0.00561	-0.00559
	(!A2 * !B1 * C1 * !C2 * Y)	0.00130	0.00130	0.00126
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00651	-0.00655	-0.00661
	(!A2 * !B1 * !C1 * Y)	0.00130	0.00130	0.00126
	(!A2 * !B1 * !C1 * Y)	-0.00651	-0.00655	-0.00661

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)	-0.00201	-0.00202	-0.00201
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00270	0.00274	0.00271
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00201	-0.00202	-0.00201
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00269	0.00273	0.00270
	(A2 * B1 * B2 * !C1 * !Y)	-0.00201	-0.00201	-0.00201
	(A2 * B1 * B2 * !C1 * !Y)	0.00270	0.00271	0.00270
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00200	-0.00201	-0.00199
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00266	0.00267	0.00266
	(A2 * !B1 * C1 * C2 * !Y)	-0.00200	-0.00201	-0.00200
	(A2 * !B1 * C1 * C2 * !Y)	0.00266	0.00268	0.00267
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00190	-0.00194	-0.00193
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00276	0.00280	0.00277
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00190	-0.00194	-0.00194
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00277	0.00281	0.00277
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00189	-0.00195	-0.00194
	(!A2 * B1 * B2 * !C1 * !Y)	0.00276	0.00279	0.00277
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00189	-0.00194	-0.00194
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00277	0.00280	0.00278
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00064	-0.00064	-0.00063
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00316	0.00319	0.00316
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00064	-0.00064	-0.00063
	(!A2 * B1 * !B2 * !C1 * Y)	0.00316	0.00319	0.00316
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00189	-0.00195	-0.00195
	(!A2 * !B1 * C1 * C2 * !Y)	0.00277	0.00280	0.00278
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00064	-0.00064	-0.00063
	(!A2 * !B1 * C1 * !C2 * Y)	0.00316	0.00319	0.00316
	(!A2 * !B1 * !C1 * Y)	-0.00064	-0.00064	-0.00063
	(!A2 * !B1 * !C1 * Y)	0.00316	0.00319	0.00316

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	-0.00416	-0.00418	-0.00416
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00550	0.00553	0.00548
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00416	-0.00417	-0.00415
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00550	0.00554	0.00549
	(A2 * B1 * B2 * !C1 * !Y)	-0.00416	-0.00415	-0.00415
	(A2 * B1 * B2 * !C1 * !Y)	0.00550	0.00548	0.00549
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00414	-0.00413	-0.00412
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00539	0.00537	0.00539
	(A2 * !B1 * C1 * C2 * !Y)	-0.00414	-0.00415	-0.00412
	(A2 * !B1 * C1 * C2 * !Y)	0.00539	0.00542	0.00539
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00391	-0.00403	-0.00402
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00558	0.00566	0.00562
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00393	-0.00403	-0.00402
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00564	0.00563	0.00562
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00392	-0.00401	-0.00402
	(!A2 * B1 * B2 * !C1 * !Y)	0.00563	0.00562	0.00562
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00390	-0.00404	-0.00403
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00562	0.00567	0.00563
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00124	-0.00125	-0.00124
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00660	0.00668	0.00663
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00124	-0.00125	-0.00124
	(!A2 * B1 * !B2 * !C1 * Y)	0.00660	0.00668	0.00663
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00390	-0.00404	-0.00403
	(!A2 * !B1 * C1 * C2 * !Y)	0.00562	0.00569	0.00563
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00124	-0.00125	-0.00124
	(!A2 * !B1 * C1 * !C2 * Y)	0.00660	0.00668	0.00663
	(!A2 * !B1 * !C1 * Y)	-0.00124	-0.00125	-0.00124
	(!A2 * !B1 * !C1 * Y)	0.00660	0.00668	0.00663

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)	0.00210	0.00210	0.00209
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00256	-0.00272	-0.00270
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00216	0.00211	0.00209
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00249	-0.00271	-0.00271
	(A1 * B1 * B2 * !C1 * !Y)	0.00216	0.00211	0.00209
	(A1 * B1 * B2 * !C1 * !Y)	-0.00249	-0.00271	-0.00271
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00224	0.00212	0.00209
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00236	-0.00264	-0.00266
	(A1 * !B1 * C1 * C2 * !Y)	0.00224	0.00212	0.00210
	(A1 * !B1 * C1 * C2 * !Y)	-0.00236	-0.00264	-0.00266
	(!A1 * B1 * B2 * !Y)	0.00203	0.00205	0.00204
	(!A1 * B1 * B2 * !Y)	-0.00275	-0.00276	-0.00276
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00200	0.00202	0.00201
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00274	-0.00276	-0.00275
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00200	0.00202	0.00201
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00274	-0.00276	-0.00275
	(!A1 * B1 * !B2 * !C1 * Y)	0.00200	0.00202	0.00201
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00274	-0.00276	-0.00275
	(!A1 * !B1 * C1 * !C2 * Y)	0.00200	0.00202	0.00201
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00274	-0.00276	-0.00275
	(!A1 * !B1 * !C1 * Y)	0.00200	0.00202	0.00201
	(!A1 * !B1 * !C1 * Y)	-0.00274	-0.00276	-0.00275

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	0.00393	0.00395	0.00392
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00486	-0.00515	-0.00513
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00405	0.00396	0.00393
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00470	-0.00515	-0.00513
	(A1 * B1 * B2 * !C1 * !Y)	0.00406	0.00396	0.00393
	(A1 * B1 * B2 * !C1 * !Y)	-0.00470	-0.00515	-0.00513
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00419	0.00398	0.00394
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00449	-0.00505	-0.00505
	(A1 * !B1 * C1 * C2 * !Y)	0.00420	0.00398	0.00394
	(A1 * !B1 * C1 * C2 * !Y)	-0.00447	-0.00503	-0.00505
	(!A1 * B1 * B2 * !Y)	0.00377	0.00379	0.00378
	(!A1 * B1 * B2 * !Y)	-0.00521	-0.00523	-0.00522
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00379	0.00382	0.00379
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00520	-0.00523	-0.00520
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00366	0.00367	0.00366
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00534	-0.00535	-0.00534
	(!A1 * B1 * !B2 * !C1 * Y)	0.00366	0.00367	0.00366
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00534	-0.00535	-0.00534
	(!A1 * !B1 * C1 * !C2 * Y)	0.00366	0.00367	0.00366
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00534	-0.00535	-0.00534
	(!A1 * !B1 * !C1 * Y)	0.00366	0.00367	0.00366
	(!A1 * !B1 * !C1 * Y)	-0.00534	-0.00535	-0.00534

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

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

sky130_fd_sc_hs__a222oi_1	**(A1 * B1 * B2 * C1 * C2 * !Y)**	-0.00208	-0.00210	-0.00209
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00269	0.00273	0.00270
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00208	-0.00210	-0.00208
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00269	0.00273	0.00271
	(A1 * B1 * B2 * !C1 * !Y)	-0.00208	-0.00210	-0.00208
	(A1 * B1 * B2 * !C1 * !Y)	0.00269	0.00273	0.00271
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00207	-0.00208	-0.00207
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00264	0.00267	0.00266
	(A1 * !B1 * C1 * C2 * !Y)	-0.00207	-0.00208	-0.00207
	(A1 * !B1 * C1 * C2 * !Y)	0.00264	0.00267	0.00266
	(!A1 * B1 * B2 * !Y)	-0.00198	-0.00203	-0.00203
	(!A1 * B1 * B2 * !Y)	0.00277	0.00278	0.00276
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00197	-0.00202	-0.00201
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00277	0.00278	0.00277
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00189	-0.00202	-0.00201
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00288	0.00278	0.00277
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00189	-0.00202	-0.00201
	(!A1 * B1 * !B2 * !C1 * Y)	0.00288	0.00278	0.00277
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00189	-0.00202	-0.00201
	(!A1 * !B1 * C1 * !C2 * Y)	0.00288	0.00278	0.00277
	(!A1 * !B1 * !C1 * Y)	-0.00189	-0.00202	-0.00201
	(!A1 * !B1 * !C1 * Y)	0.00288	0.00278	0.00277

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	-0.00392	-0.00392	-0.00391
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00513	0.00515	0.00513
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00389	-0.00393	-0.00391
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00509	0.00518	0.00513
	(A1 * B1 * B2 * !C1 * !Y)	-0.00389	-0.00393	-0.00391
	(A1 * B1 * B2 * !C1 * !Y)	0.00509	0.00518	0.00513
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00388	-0.00391	-0.00389
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00501	0.00506	0.00505
	(A1 * !B1 * C1 * C2 * !Y)	-0.00390	-0.00391	-0.00389
	(A1 * !B1 * C1 * C2 * !Y)	0.00505	0.00506	0.00505
	(!A1 * B1 * B2 * !Y)	-0.00368	-0.00379	-0.00378
	(!A1 * B1 * B2 * !Y)	0.00521	0.00525	0.00523
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00366	-0.00378	-0.00379
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00522	0.00527	0.00525
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00337	-0.00367	-0.00366
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00557	0.00537	0.00535
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00337	-0.00367	-0.00366
	(!A1 * B1 * !B2 * !C1 * Y)	0.00557	0.00537	0.00535
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00337	-0.00367	-0.00366
	(!A1 * !B1 * C1 * !C2 * Y)	0.00557	0.00537	0.00535
	(!A1 * !B1 * !C1 * Y)	-0.00337	-0.00367	-0.00366
	(!A1 * !B1 * !C1 * Y)	0.00557	0.00537	0.00535

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)**	0.00216	0.00214	0.00207
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00187	-0.00189	-0.00188
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00203	0.00204	0.00202
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00140	-0.00141	-0.00141
	(A1 * A2 * B2 * !C1 * !Y)	0.00203	0.00204	0.00202
	(A1 * A2 * B2 * !C1 * !Y)	-0.00140	-0.00141	-0.00141
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00200	0.00200	0.00198
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00178	-0.00180	-0.00178
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00196	0.00198	0.00196
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00139	-0.00141	-0.00140
	(A1 * A2 * !B2 * !C1 * !Y)	0.00196	0.00198	0.00196
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00139	-0.00141	-0.00140
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00262	0.00205	0.00201
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00202	-0.00267	-0.00268
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00194	0.00195	0.00195
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00269	-0.00271	-0.00270
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00061	0.00062	0.00060
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00310	-0.00312	-0.00314
	(A1 * !A2 * !B2 * !C1 * Y)	0.00061	0.00062	0.00060
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00310	-0.00312	-0.00314
	(!A1 * B2 * C1 * C2 * !Y)	0.00261	0.00204	0.00201
	(!A1 * B2 * C1 * C2 * !Y)	-0.00206	-0.00267	-0.00268
	(!A1 * !B2 * C1 * C2 * !Y)	0.00195	0.00197	0.00195
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00271	-0.00272	-0.00270
	(!A1 * !B2 * C1 * !C2 * Y)	0.00061	0.00061	0.00060
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00310	-0.00312	-0.00314
	(!A1 * !B2 * !C1 * Y)	0.00061	0.00061	0.00060
	(!A1 * !B2 * !C1 * Y)	-0.00310	-0.00312	-0.00314

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	0.00446	0.00453	0.00432
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00381	-0.00381	-0.00379
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00423	0.00424	0.00419
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00294	-0.00293	-0.00292
	(A1 * A2 * B2 * !C1 * !Y)	0.00423	0.00424	0.00419
	(A1 * A2 * B2 * !C1 * !Y)	-0.00294	-0.00293	-0.00292
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00415	0.00420	0.00409
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00357	-0.00361	-0.00359
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00407	0.00415	0.00405
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00287	-0.00293	-0.00290
	(A1 * A2 * !B2 * !C1 * !Y)	0.00408	0.00412	0.00406
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00287	-0.00291	-0.00290
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00547	0.00428	0.00416
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00416	-0.00545	-0.00551
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00399	0.00405	0.00401
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00554	-0.00560	-0.00556
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00126	0.00126	0.00122
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00655	-0.00658	-0.00662
	(A1 * !A2 * !B2 * !C1 * Y)	0.00126	0.00126	0.00122
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00655	-0.00658	-0.00662
	(!A1 * B2 * C1 * C2 * !Y)	0.00540	0.00426	0.00416
	(!A1 * B2 * C1 * C2 * !Y)	-0.00415	-0.00547	-0.00551
	(!A1 * !B2 * C1 * C2 * !Y)	0.00399	0.00405	0.00401
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00554	-0.00560	-0.00556
	(!A1 * !B2 * C1 * !C2 * Y)	0.00127	0.00126	0.00122
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00657	-0.00658	-0.00662
	(!A1 * !B2 * !C1 * Y)	0.00127	0.00126	0.00122
	(!A1 * !B2 * !C1 * Y)	-0.00657	-0.00658	-0.00662

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)	-0.00203	-0.00204	-0.00204
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00187	0.00189	0.00188
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00193	-0.00194	-0.00195
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00149	0.00150	0.00148
	(A1 * A2 * B2 * !C1 * !Y)	-0.00193	-0.00194	-0.00195
	(A1 * A2 * B2 * !C1 * !Y)	0.00149	0.00150	0.00148
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00192	-0.00198	-0.00198
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00178	0.00180	0.00178
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00190	-0.00196	-0.00196
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00141	0.00142	0.00141
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00190	-0.00196	-0.00196
	(A1 * A2 * !B2 * !C1 * !Y)	0.00141	0.00142	0.00141
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00199	-0.00199	-0.00197
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00269	0.00270	0.00269
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00187	-0.00194	-0.00193
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00271	0.00274	0.00272
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00059	-0.00059	-0.00059
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00314	0.00316	0.00314
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00059	-0.00060	-0.00059
	(A1 * !A2 * !B2 * !C1 * Y)	0.00314	0.00316	0.00314
	(!A1 * B2 * C1 * C2 * !Y)	-0.00197	-0.00199	-0.00197
	(!A1 * B2 * C1 * C2 * !Y)	0.00266	0.00270	0.00269
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00187	-0.00193	-0.00193
	(!A1 * !B2 * C1 * C2 * !Y)	0.00271	0.00274	0.00272
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00059	-0.00059	-0.00059
	(!A1 * !B2 * C1 * !C2 * Y)	0.00314	0.00317	0.00314
	(!A1 * !B2 * !C1 * Y)	-0.00059	-0.00059	-0.00059
	(!A1 * !B2 * !C1 * Y)	0.00314	0.00317	0.00314

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	-0.00421	-0.00422	-0.00420
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00381	0.00381	0.00379
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00403	-0.00407	-0.00405
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00303	0.00307	0.00305
	(A1 * A2 * B2 * !C1 * !Y)	-0.00404	-0.00407	-0.00405
	(A1 * A2 * B2 * !C1 * !Y)	0.00303	0.00307	0.00305
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00396	-0.00411	-0.00409
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00357	0.00361	0.00359
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00394	-0.00410	-0.00405
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00294	0.00293	0.00292
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00393	-0.00410	-0.00406
	(A1 * A2 * !B2 * !C1 * !Y)	0.00292	0.00293	0.00292
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00410	-0.00412	-0.00408
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00549	0.00553	0.00554
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00389	-0.00405	-0.00401
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00560	0.00562	0.00561
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00119	-0.00122	-0.00120
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00661	0.00671	0.00663
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00119	-0.00122	-0.00120
	(A1 * !A2 * !B2 * !C1 * Y)	0.00661	0.00671	0.00663
	(!A1 * B2 * C1 * C2 * !Y)	-0.00410	-0.00412	-0.00408
	(!A1 * B2 * C1 * C2 * !Y)	0.00549	0.00553	0.00553
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00388	-0.00402	-0.00401
	(!A1 * !B2 * C1 * C2 * !Y)	0.00559	0.00565	0.00561
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00119	-0.00122	-0.00120
	(!A1 * !B2 * C1 * !C2 * Y)	0.00660	0.00672	0.00663
	(!A1 * !B2 * !C1 * Y)	-0.00119	-0.00122	-0.00120
	(!A1 * !B2 * !C1 * Y)	0.00660	0.00672	0.00663

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)	0.00235	0.00232	0.00225
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00190	-0.00190	-0.00189
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00220	0.00222	0.00220
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00140	-0.00141	-0.00141
	(A1 * A2 * B1 * !C1 * !Y)	0.00221	0.00222	0.00220
	(A1 * A2 * B1 * !C1 * !Y)	-0.00140	-0.00141	-0.00141
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00215	0.00216	0.00214
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00179	-0.00178	-0.00178
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00214	0.00218	0.00213
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00139	-0.00142	-0.00141
	(A1 * A2 * !B1 * !C1 * !Y)	0.00214	0.00218	0.00213
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00139	-0.00142	-0.00141
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00282	0.00223	0.00218
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00203	-0.00268	-0.00269
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00211	0.00213	0.00211
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00270	-0.00272	-0.00271
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00187	0.00189	0.00188
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00295	-0.00296	-0.00295
	(A1 * !A2 * !B1 * !C1 * Y)	0.00187	0.00189	0.00188
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00295	-0.00296	-0.00295
	(!A1 * B1 * C1 * C2 * !Y)	0.00282	0.00223	0.00218
	(!A1 * B1 * C1 * C2 * !Y)	-0.00204	-0.00268	-0.00269
	(!A1 * !B1 * C1 * !C2 * Y)	0.00187	0.00189	0.00188
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00295	-0.00296	-0.00295
	(!A1 * !B1 * !C1 * Y)	0.00187	0.00189	0.00188
	(!A1 * !B1 * !C1 * Y)	-0.00295	-0.00296	-0.00295

	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00441	0.00442	0.00419
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00353	-0.00354	-0.00352
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00408	0.00413	0.00408
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00261	-0.00264	-0.00264
	(A1 * A2 * B1 * !C1 * !Y)	0.00409	0.00413	0.00408
	(A1 * A2 * B1 * !C1 * !Y)	-0.00261	-0.00264	-0.00264
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00401	0.00406	0.00397
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00332	-0.00336	-0.00334
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00395	0.00404	0.00395
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00259	-0.00266	-0.00263
	(A1 * A2 * !B1 * !C1 * !Y)	0.00395	0.00404	0.00395
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00259	-0.00266	-0.00263
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00546	0.00418	0.00407
sky130_fd_sc_hs__a222oi_2	**(A1 * !A2 * B1 * C1 * C2 * !Y)**	-0.00367	-0.00504	-0.00515
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00389	0.00396	0.00391
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00518	-0.00523	-0.00520
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00371	0.00376	0.00373
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00537	-0.00541	-0.00538
	(A1 * !A2 * !B1 * !C1 * Y)	0.00371	0.00376	0.00373
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00537	-0.00541	-0.00538
	(!A1 * B1 * C1 * C2 * !Y)	0.00545	0.00417	0.00406
	(!A1 * B1 * C1 * C2 * !Y)	-0.00369	-0.00504	-0.00515
	(!A1 * !B1 * C1 * !C2 * Y)	0.00371	0.00376	0.00373
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00537	-0.00541	-0.00538
	(!A1 * !B1 * !C1 * Y)	0.00371	0.00376	0.00373
	(!A1 * !B1 * !C1 * Y)	-0.00537	-0.00540	-0.00538

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)	-0.00222	-0.00222	-0.00221
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00190	0.00190	0.00189
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00210	-0.00212	-0.00213
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00149	0.00150	0.00148
	(A1 * A2 * B1 * !C1 * !Y)	-0.00210	-0.00212	-0.00213
	(A1 * A2 * B1 * !C1 * !Y)	0.00149	0.00150	0.00148
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00211	-0.00213	-0.00214
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00179	0.00178	0.00178
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00208	-0.00212	-0.00213
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00142	0.00142	0.00142
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00209	-0.00212	-0.00213
	(A1 * A2 * !B1 * !C1 * !Y)	0.00142	0.00142	0.00142
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00216	-0.00215	-0.00214
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00269	0.00269	0.00270
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00206	-0.00210	-0.00211
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00274	0.00276	0.00273
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00175	-0.00188	-0.00188
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00307	0.00297	0.00296
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00175	-0.00188	-0.00188
	(A1 * !A2 * !B1 * !C1 * Y)	0.00307	0.00297	0.00296
	(!A1 * B1 * C1 * C2 * !Y)	-0.00216	-0.00215	-0.00214
	(!A1 * B1 * C1 * C2 * !Y)	0.00269	0.00269	0.00270
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00175	-0.00188	-0.00188
	(!A1 * !B1 * C1 * !C2 * Y)	0.00307	0.00297	0.00296
	(!A1 * !B1 * !C1 * Y)	-0.00175	-0.00188	-0.00188
	(!A1 * !B1 * !C1 * Y)	0.00307	0.00297	0.00296

	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00410	-0.00411	-0.00410
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00353	0.00354	0.00352
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00392	-0.00394	-0.00395
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00275	0.00277	0.00277
	(A1 * A2 * B1 * !C1 * !Y)	-0.00392	-0.00394	-0.00395
	(A1 * A2 * B1 * !C1 * !Y)	0.00275	0.00277	0.00277
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00386	-0.00399	-0.00397
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00332	0.00336	0.00334
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00383	-0.00394	-0.00395
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00264	0.00266	0.00265
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00383	-0.00394	-0.00395
	(A1 * A2 * !B1 * !C1 * !Y)	0.00264	0.00266	0.00265
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00400	-0.00402	-0.00398
sky130_fd_sc_hs__a222oi_2	**(A1 * !A2 * B1 * C1 * C2 * !Y)**	0.00512	0.00516	0.00517
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00379	-0.00392	-0.00391
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00522	0.00528	0.00525
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00343	-0.00374	-0.00373
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00563	0.00544	0.00540
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00343	-0.00374	-0.00373
	(A1 * !A2 * !B1 * !C1 * Y)	0.00563	0.00544	0.00540
	(!A1 * B1 * C1 * C2 * !Y)	-0.00400	-0.00402	-0.00398
	(!A1 * B1 * C1 * C2 * !Y)	0.00512	0.00516	0.00517
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00343	-0.00375	-0.00373
	(!A1 * !B1 * C1 * !C2 * Y)	0.00563	0.00544	0.00540
	(!A1 * !B1 * !C1 * Y)	-0.00343	-0.00375	-0.00373
	(!A1 * !B1 * !C1 * Y)	0.00563	0.00544	0.00540

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)	0.00239	0.00241	0.00240
	(A1 * B1 * B2 * C2 * !Y)	-0.00124	-0.00125	-0.00124
	(A1 * B1 * B2 * !C2 * !Y)	0.00234	0.00236	0.00235
	(A1 * B1 * B2 * !C2 * !Y)	-0.00124	-0.00125	-0.00124
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00239	0.00241	0.00240
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00124	-0.00125	-0.00124
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00233	0.00236	0.00233
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00123	-0.00125	-0.00124
	(A1 * A2 * !B1 * C2 * !Y)	0.00239	0.00241	0.00240
	(A1 * A2 * !B1 * C2 * !Y)	-0.00124	-0.00125	-0.00124
	(A1 * A2 * !B1 * !C2 * !Y)	0.00232	0.00234	0.00232
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00123	-0.00125	-0.00124
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00069	0.00069	0.00068
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00318	-0.00319	-0.00321
	(A1 * !A2 * !B1 * !C2 * Y)	0.00069	0.00069	0.00068
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00318	-0.00319	-0.00321
	(!A1 * B1 * B2 * C2 * !Y)	0.00239	0.00241	0.00240
	(!A1 * B1 * B2 * C2 * !Y)	-0.00125	-0.00126	-0.00125
	(!A1 * B1 * B2 * !C2 * !Y)	0.00232	0.00234	0.00232
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00123	-0.00125	-0.00124
	(!A1 * B1 * !B2 * !C2 * Y)	0.00069	0.00069	0.00068
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00318	-0.00319	-0.00321
	(!A1 * !B1 * !C2 * Y)	0.00069	0.00069	0.00068
	(!A1 * !B1 * !C2 * Y)	-0.00318	-0.00319	-0.00321

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	0.00422	0.00427	0.00424
	(A1 * B1 * B2 * C2 * !Y)	-0.00241	-0.00244	-0.00242
	(A1 * B1 * B2 * !C2 * !Y)	0.00409	0.00417	0.00410
	(A1 * B1 * B2 * !C2 * !Y)	-0.00241	-0.00242	-0.00241
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00423	0.00427	0.00424
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00241	-0.00244	-0.00242
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00410	0.00415	0.00411
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00238	-0.00242	-0.00241
	(A1 * A2 * !B1 * C2 * !Y)	0.00423	0.00428	0.00424
	(A1 * A2 * !B1 * C2 * !Y)	-0.00241	-0.00244	-0.00242
	(A1 * A2 * !B1 * !C2 * !Y)	0.00410	0.00418	0.00410
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00239	-0.00241	-0.00241
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00121	0.00123	0.00118
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00592	-0.00598	-0.00602
	(A1 * !A2 * !B1 * !C2 * Y)	0.00121	0.00123	0.00118
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00592	-0.00598	-0.00602
	(!A1 * B1 * B2 * C2 * !Y)	0.00423	0.00428	0.00425
	(!A1 * B1 * B2 * C2 * !Y)	-0.00242	-0.00245	-0.00243
	(!A1 * B1 * B2 * !C2 * !Y)	0.00412	0.00414	0.00410
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00241	-0.00242	-0.00241
	(!A1 * B1 * !B2 * !C2 * Y)	0.00121	0.00123	0.00118
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00592	-0.00598	-0.00602
	(!A1 * !B1 * !C2 * Y)	0.00121	0.00123	0.00118
	(!A1 * !B1 * !C2 * Y)	-0.00592	-0.00598	-0.00602

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)**	-0.00226	-0.00227	-0.00238
	(A1 * B1 * B2 * C2 * !Y)	0.00137	0.00137	0.00127
	(A1 * B1 * B2 * !C2 * !Y)	-0.00229	-0.00234	-0.00234
	(A1 * B1 * B2 * !C2 * !Y)	0.00125	0.00125	0.00124
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00205	-0.00206	-0.00234
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00151	0.00151	0.00130
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00228	-0.00233	-0.00233
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00124	0.00125	0.00124
	(A1 * A2 * !B1 * C2 * !Y)	-0.00204	-0.00207	-0.00234
	(A1 * A2 * !B1 * C2 * !Y)	0.00150	0.00151	0.00130
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00228	-0.00233	-0.00232
	(A1 * A2 * !B1 * !C2 * !Y)	0.00124	0.00125	0.00124
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00066	-0.00068	-0.00066
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00320	0.00325	0.00322
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00066	-0.00068	-0.00066
	(A1 * !A2 * !B1 * !C2 * Y)	0.00320	0.00325	0.00322
	(!A1 * B1 * B2 * C2 * !Y)	-0.00224	-0.00226	-0.00238
	(!A1 * B1 * B2 * C2 * !Y)	0.00136	0.00137	0.00127
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00228	-0.00233	-0.00232
	(!A1 * B1 * B2 * !C2 * !Y)	0.00124	0.00125	0.00124
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00066	-0.00068	-0.00066
	(!A1 * B1 * !B2 * !C2 * Y)	0.00320	0.00325	0.00322
	(!A1 * !B1 * !C2 * Y)	-0.00066	-0.00068	-0.00066
	(!A1 * !B1 * !C2 * Y)	0.00320	0.00325	0.00322

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	-0.00395	-0.00398	-0.00421
	(A1 * B1 * B2 * C2 * !Y)	0.00265	0.00265	0.00248
	(A1 * B1 * B2 * !C2 * !Y)	-0.00401	-0.00416	-0.00410
	(A1 * B1 * B2 * !C2 * !Y)	0.00241	0.00242	0.00241
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00361	-0.00366	-0.00414
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00285	0.00287	0.00251
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00400	-0.00413	-0.00411
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00241	0.00244	0.00242
	(A1 * A2 * !B1 * C2 * !Y)	-0.00361	-0.00366	-0.00414
	(A1 * A2 * !B1 * C2 * !Y)	0.00285	0.00287	0.00251
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00400	-0.00410	-0.00410
	(A1 * A2 * !B1 * !C2 * !Y)	0.00241	0.00241	0.00242
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00116	-0.00116	-0.00116
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00601	0.00602	0.00603
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00116	-0.00116	-0.00116
	(A1 * !A2 * !B1 * !C2 * Y)	0.00601	0.00602	0.00603
	(!A1 * B1 * B2 * C2 * !Y)	-0.00395	-0.00399	-0.00421
	(!A1 * B1 * B2 * C2 * !Y)	0.00266	0.00267	0.00248
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00400	-0.00413	-0.00410
	(!A1 * B1 * B2 * !C2 * !Y)	0.00242	0.00244	0.00242
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00116	-0.00116	-0.00116
	(!A1 * B1 * !B2 * !C2 * Y)	0.00601	0.00602	0.00603
	(!A1 * !B1 * !C2 * Y)	-0.00116	-0.00116	-0.00116
	(!A1 * !B1 * !C2 * Y)	0.00600	0.00602	0.00603

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)**	0.00249	0.00251	0.00249
	(A1 * B1 * B2 * C1 * !Y)	-0.00126	-0.00128	-0.00127
	(A1 * B1 * B2 * !C1 * !Y)	0.00242	0.00243	0.00242
	(A1 * B1 * B2 * !C1 * !Y)	-0.00126	-0.00127	-0.00126
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00249	0.00251	0.00249
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00126	-0.00127	-0.00126
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00243	0.00244	0.00243
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00125	-0.00126	-0.00126
	(A1 * A2 * !B1 * C1 * !Y)	0.00250	0.00251	0.00249
	(A1 * A2 * !B1 * C1 * !Y)	-0.00127	-0.00128	-0.00126
	(A1 * A2 * !B1 * !C1 * !Y)	0.00243	0.00248	0.00243
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00125	-0.00127	-0.00126
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00190	0.00192	0.00191
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00300	-0.00302	-0.00301
	(A1 * !A2 * !B1 * !C1 * Y)	0.00190	0.00191	0.00191
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00300	-0.00302	-0.00301
	(!A1 * B1 * B2 * C1 * !Y)	0.00250	0.00251	0.00249
	(!A1 * B1 * B2 * C1 * !Y)	-0.00128	-0.00128	-0.00127
	(!A1 * B1 * B2 * !C1 * !Y)	0.00243	0.00248	0.00243
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00125	-0.00127	-0.00126
	(!A1 * B1 * !B2 * !C1 * Y)	0.00190	0.00191	0.00191
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00300	-0.00301	-0.00301
	(!A1 * !B1 * !C1 * Y)	0.00190	0.00192	0.00191
	(!A1 * !B1 * !C1 * Y)	-0.00301	-0.00302	-0.00301

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00498	0.00503	0.00499
	(A1 * B1 * B2 * C1 * !Y)	-0.00251	-0.00254	-0.00252
	(A1 * B1 * B2 * !C1 * !Y)	0.00483	0.00489	0.00485
	(A1 * B1 * B2 * !C1 * !Y)	-0.00250	-0.00252	-0.00251
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00498	0.00504	0.00499
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00251	-0.00254	-0.00251
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00486	0.00489	0.00486
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00248	-0.00250	-0.00250
	(A1 * A2 * !B1 * C1 * !Y)	0.00498	0.00504	0.00499
	(A1 * A2 * !B1 * C1 * !Y)	-0.00251	-0.00254	-0.00251
	(A1 * A2 * !B1 * !C1 * !Y)	0.00486	0.00496	0.00486
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00248	-0.00252	-0.00250
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00382	0.00384	0.00383
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00602	-0.00603	-0.00603
	(A1 * !A2 * !B1 * !C1 * Y)	0.00382	0.00388	0.00383
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00602	-0.00606	-0.00603
	(!A1 * B1 * B2 * C1 * !Y)	0.00497	0.00504	0.00499
	(!A1 * B1 * B2 * C1 * !Y)	-0.00252	-0.00255	-0.00252
	(!A1 * B1 * B2 * !C1 * !Y)	0.00486	0.00497	0.00486
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00249	-0.00253	-0.00251
	(!A1 * B1 * !B2 * !C1 * Y)	0.00382	0.00388	0.00383
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00602	-0.00606	-0.00603
	(!A1 * !B1 * !C1 * Y)	0.00382	0.00388	0.00383
	(!A1 * !B1 * !C1 * Y)	-0.00602	-0.00606	-0.00603

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)**	-0.00234	-0.00236	-0.00248
	(A1 * B1 * B2 * C1 * !Y)	0.00139	0.00139	0.00129
	(A1 * B1 * B2 * !C1 * !Y)	-0.00239	-0.00243	-0.00242
	(A1 * B1 * B2 * !C1 * !Y)	0.00127	0.00127	0.00126
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00214	-0.00216	-0.00243
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00152	0.00153	0.00132
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00238	-0.00243	-0.00243
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00126	0.00127	0.00126
	(A1 * A2 * !B1 * C1 * !Y)	-0.00214	-0.00216	-0.00243
	(A1 * A2 * !B1 * C1 * !Y)	0.00152	0.00153	0.00132
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00239	-0.00243	-0.00243
	(A1 * A2 * !B1 * !C1 * !Y)	0.00127	0.00127	0.00126
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00179	-0.00191	-0.00191
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00312	0.00305	0.00302
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00179	-0.00191	-0.00191
	(A1 * !A2 * !B1 * !C1 * Y)	0.00312	0.00305	0.00302
	(!A1 * B1 * B2 * C1 * !Y)	-0.00234	-0.00236	-0.00248
	(!A1 * B1 * B2 * C1 * !Y)	0.00140	0.00140	0.00130
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00239	-0.00243	-0.00243
	(!A1 * B1 * B2 * !C1 * !Y)	0.00127	0.00127	0.00127
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00179	-0.00191	-0.00191
	(!A1 * B1 * !B2 * !C1 * Y)	0.00312	0.00305	0.00302
	(!A1 * !B1 * !C1 * Y)	-0.00179	-0.00191	-0.00191
	(!A1 * !B1 * !C1 * Y)	0.00312	0.00305	0.00302

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00470	-0.00474	-0.00496
	(A1 * B1 * B2 * C1 * !Y)	0.00274	0.00276	0.00257
	(A1 * B1 * B2 * !C1 * !Y)	-0.00478	-0.00487	-0.00485
	(A1 * B1 * B2 * !C1 * !Y)	0.00252	0.00252	0.00251
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00436	-0.00440	-0.00489
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00295	0.00296	0.00261
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00478	-0.00486	-0.00486
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00252	0.00252	0.00251
	(A1 * A2 * !B1 * C1 * !Y)	-0.00435	-0.00440	-0.00489
	(A1 * A2 * !B1 * C1 * !Y)	0.00295	0.00296	0.00261
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00478	-0.00486	-0.00486
	(A1 * A2 * !B1 * !C1 * !Y)	0.00252	0.00252	0.00251
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00357	-0.00383	-0.00382
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00625	0.00607	0.00604
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00357	-0.00383	-0.00382
	(A1 * !A2 * !B1 * !C1 * Y)	0.00625	0.00607	0.00604
	(!A1 * B1 * B2 * C1 * !Y)	-0.00470	-0.00474	-0.00496
	(!A1 * B1 * B2 * C1 * !Y)	0.00275	0.00277	0.00258
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00478	-0.00486	-0.00486
	(!A1 * B1 * B2 * !C1 * !Y)	0.00253	0.00253	0.00252
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00357	-0.00383	-0.00382
	(!A1 * B1 * !B2 * !C1 * Y)	0.00625	0.00607	0.00604
	(!A1 * !B1 * !C1 * Y)	-0.00357	-0.00383	-0.00382
	(!A1 * !B1 * !C1 * Y)	0.00625	0.00607	0.00604

SKY130_FD_SC_HS__A222Ox

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00262	0.00268	0.00271	0.00262	0.00269	0.00275	1.44108
sky130_fd_sc_hs__a222o_2	0.00266	0.00252	0.00264	0.00261	0.00266	0.00281	2.35261

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222o_1	0.00000	0.32968	0.96804
sky130_fd_sc_hs__a222o_2	0.00000	0.41652	0.97948

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)	0.08166	0.52938	5.75783
	A2->X (RR)	0.08519	0.51458	5.57943
	B1->X (RR)	0.07558	0.50694	5.46353
	B2->X (RR)	0.07846	0.49487	5.35488
	C1->X (RR)	0.06386	0.47585	5.33403
	C2->X (RR)	0.06682	0.46703	5.25060
sky130_fd_sc_hs__a222o_2	A1->X (RR)	0.09776	0.49229	5.50827
	A2->X (RR)	0.10227	0.46547	5.43665
	B1->X (RR)	0.08530	0.45673	5.29428
	B2->X (RR)	0.08829	0.44295	5.22686
	C1->X (RR)	0.07201	0.42902	5.18966
	C2->X (RR)	0.07547	0.41579	5.07483

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222o_1	A1->X (FF)	0.21332	0.60906	5.31570
	A2->X (FF)	0.22638	0.62881	5.41199
	B1->X (FF)	0.19722	0.63609	5.74303
	B2->X (FF)	0.20512	0.65763	5.82371
	C1->X (FF)	0.14514	0.62802	5.80838
	C2->X (FF)	0.15517	0.64723	5.86485
sky130_fd_sc_hs__a222o_2	A1->X (FF)	0.25495	0.61198	5.05880
	A2->X (FF)	0.25600	0.62840	5.15750
	B1->X (FF)	0.23764	0.64898	5.37896
	B2->X (FF)	0.22572	0.64051	5.41602
	C1->X (FF)	0.17507	0.62471	5.29565
	C2->X (FF)	0.19317	0.65347	5.41532

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.02563	0.02804	0.12354
	A1	0.01233	0.01476	0.11045
	A2	0.02716	0.02856	0.10431
	A2	0.01235	0.01376	0.08997
	B1	0.01968	0.02351	0.10999
	B1	0.00925	0.01309	0.10004
	B2	0.02099	0.02421	0.10633
	B2	0.00939	0.01262	0.09511
	C1	0.01237	0.01766	0.11990
	C1	0.00489	0.01021	0.11291
	C2	0.01369	0.01851	0.11918
	C2	0.00493	0.00975	0.11076
sky130_fd_sc_hs__a222o_2	A1	0.03062	0.03359	0.09967
	A1	0.01770	0.02070	0.08767
	A2	0.03209	0.03446	0.12979
	A2	0.01758	0.01997	0.11596
	B1	0.02352	0.02733	0.10457
	B1	0.01359	0.01743	0.09554
	B2	0.02486	0.02805	0.10355
	B2	0.01357	0.01677	0.09228
	C1	0.01698	0.02126	0.10967
	C1	0.00992	0.01424	0.10263
	C2	0.01845	0.02192	0.10660
	C2	0.00985	0.01341	0.09801

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.00726	0.00823	0.08905
	A1	0.02072	0.02168	0.10137
	A2	0.00766	0.00815	0.08842
	A2	0.02257	0.02304	0.10164
	B1	0.00707	0.00929	0.10211
	B1	0.01756	0.01978	0.11010
	B2	0.00770	0.01002	0.10007
	B2	0.01930	0.02161	0.11020
	C1	0.00678	0.01249	0.12251
	C1	0.01426	0.01993	0.12740
	C2	0.00744	0.01361	0.12319
	C2	0.01615	0.02230	0.12972
sky130_fd_sc_hs__a222o_2	A1	0.01281	0.01102	0.09697
	A1	0.02586	0.02404	0.11001
	A2	0.01502	0.01395	0.10906
	A2	0.02958	0.02842	0.12358
	B1	0.01270	0.01343	0.10233
	B1	0.02267	0.02337	0.11085
	B2	0.01357	0.01430	0.10131
	B2	0.02484	0.02540	0.11253
	C1	0.01227	0.01641	0.10595
	C1	0.01931	0.02295	0.11141
	C2	0.01321	0.01693	0.10701
	C2	0.02176	0.02513	0.11546

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)**	0.00203	0.00204	0.00203
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00255	-0.00270	-0.00268
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00208	0.00205	0.00203
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00248	-0.00269	-0.00269
	(A2 * B1 * B2 * !C1 * X)	0.00208	0.00205	0.00203
	(A2 * B1 * B2 * !C1 * X)	-0.00248	-0.00269	-0.00269
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00216	0.00206	0.00204
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00236	-0.00262	-0.00264
	(A2 * !B1 * C1 * C2 * X)	0.00216	0.00206	0.00204
	(A2 * !B1 * C1 * C2 * X)	-0.00236	-0.00263	-0.00264
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00195	0.00196	0.00195
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00274	-0.00274	-0.00273
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00198	0.00198	0.00198
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00273	-0.00274	-0.00273
	(!A2 * B1 * B2 * !C1 * X)	0.00198	0.00198	0.00198
	(!A2 * B1 * B2 * !C1 * X)	-0.00273	-0.00274	-0.00273
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00198	0.00199	0.00198
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00273	-0.00273	-0.00272
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00064	0.00064	0.00063
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00312	-0.00313	-0.00316
	(!A2 * B1 * !B2 * !C1 * !X)	0.00064	0.00064	0.00063
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00312	-0.00313	-0.00316
	(!A2 * !B1 * C1 * C2 * X)	0.00199	0.00199	0.00199
	(!A2 * !B1 * C1 * C2 * X)	-0.00273	-0.00273	-0.00272
	(!A2 * !B1 * C1 * !C2 * !X)	0.00064	0.00064	0.00063
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00312	-0.00313	-0.00316
	(!A2 * !B1 * !C1 * !X)	0.00064	0.00064	0.00063
	(!A2 * !B1 * !C1 * !X)	-0.00312	-0.00313	-0.00316

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	0.00218	0.00219	0.00217
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00256	-0.00267	-0.00266
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00228	0.00220	0.00218
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00243	-0.00266	-0.00266
	(A2 * B1 * B2 * !C1 * X)	0.00228	0.00220	0.00218
	(A2 * B1 * B2 * !C1 * X)	-0.00243	-0.00266	-0.00266
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00234	0.00220	0.00218
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00231	-0.00260	-0.00261
	(A2 * !B1 * C1 * C2 * X)	0.00235	0.00220	0.00218
	(A2 * !B1 * C1 * C2 * X)	-0.00229	-0.00260	-0.00261
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00212	0.00213	0.00212
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00270	-0.00270	-0.00269
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00213	0.00213	0.00212
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00269	-0.00269	-0.00268
	(!A2 * B1 * B2 * !C1 * X)	0.00212	0.00213	0.00212
	(!A2 * B1 * B2 * !C1 * X)	-0.00269	-0.00269	-0.00268
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00213	0.00213	0.00213
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00271	-0.00271	-0.00270
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00075	0.00075	0.00071
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00320	-0.00320	-0.00326
	(!A2 * B1 * !B2 * !C1 * !X)	0.00075	0.00075	0.00071
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00320	-0.00320	-0.00326
	(!A2 * !B1 * C1 * C2 * X)	0.00213	0.00213	0.00212
	(!A2 * !B1 * C1 * C2 * X)	-0.00271	-0.00271	-0.00270
	(!A2 * !B1 * C1 * !C2 * !X)	0.00075	0.00075	0.00071
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00320	-0.00320	-0.00326
	(!A2 * !B1 * !C1 * !X)	0.00075	0.00075	0.00071
	(!A2 * !B1 * !C1 * !X)	-0.00320	-0.00320	-0.00326

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)	-0.00202	-0.00203	-0.00202
	(A2 * B1 * B2 * C1 * C2 * X)	0.00267	0.00270	0.00268
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00202	-0.00203	-0.00202
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00267	0.00270	0.00269
	(A2 * B1 * B2 * !C1 * X)	-0.00202	-0.00203	-0.00202
	(A2 * B1 * B2 * !C1 * X)	0.00267	0.00270	0.00269
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00201	-0.00202	-0.00201
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00262	0.00265	0.00264
	(A2 * !B1 * C1 * C2 * X)	-0.00201	-0.00202	-0.00201
	(A2 * !B1 * C1 * C2 * X)	0.00262	0.00265	0.00264
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00192	-0.00196	-0.00195
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00274	0.00275	0.00274
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00192	-0.00197	-0.00197
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00274	0.00278	0.00274
	(!A2 * B1 * B2 * !C1 * X)	-0.00191	-0.00197	-0.00197
	(!A2 * B1 * B2 * !C1 * X)	0.00273	0.00278	0.00274
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00191	-0.00197	-0.00196
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00274	0.00277	0.00275
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00061	-0.00062	-0.00061
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00315	0.00320	0.00317
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00061	-0.00062	-0.00061
	(!A2 * B1 * !B2 * !C1 * !X)	0.00315	0.00320	0.00317
	(!A2 * !B1 * C1 * C2 * X)	-0.00191	-0.00197	-0.00196
	(!A2 * !B1 * C1 * C2 * X)	0.00274	0.00277	0.00275
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00061	-0.00062	-0.00061
	(!A2 * !B1 * C1 * !C2 * !X)	0.00315	0.00320	0.00317
	(!A2 * !B1 * !C1 * !X)	-0.00061	-0.00062	-0.00061
	(!A2 * !B1 * !C1 * !X)	0.00315	0.00320	0.00317

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	-0.00217	-0.00218	-0.00217
	(A2 * B1 * B2 * C1 * C2 * X)	0.00265	0.00269	0.00266
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00217	-0.00218	-0.00217
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00265	0.00268	0.00266
	(A2 * B1 * B2 * !C1 * X)	-0.00217	-0.00218	-0.00217
	(A2 * B1 * B2 * !C1 * X)	0.00265	0.00268	0.00266
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00216	-0.00217	-0.00215
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00260	0.00263	0.00261
	(A2 * !B1 * C1 * C2 * X)	-0.00216	-0.00217	-0.00215
	(A2 * !B1 * C1 * C2 * X)	0.00260	0.00262	0.00261
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00204	-0.00212	-0.00212
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00270	0.00272	0.00270
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00203	-0.00213	-0.00212
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00270	0.00272	0.00269
	(!A2 * B1 * B2 * !C1 * X)	-0.00203	-0.00213	-0.00212
	(!A2 * B1 * B2 * !C1 * X)	0.00270	0.00272	0.00269
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00202	-0.00212	-0.00212
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00273	0.00275	0.00273
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00068	-0.00069	-0.00068
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00327	0.00331	0.00328
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00068	-0.00069	-0.00068
	(!A2 * B1 * !B2 * !C1 * !X)	0.00327	0.00331	0.00328
	(!A2 * !B1 * C1 * C2 * X)	-0.00201	-0.00212	-0.00212
	(!A2 * !B1 * C1 * C2 * X)	0.00272	0.00274	0.00273
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00068	-0.00069	-0.00068
	(!A2 * !B1 * C1 * !C2 * !X)	0.00327	0.00331	0.00328
	(!A2 * !B1 * !C1 * !X)	-0.00068	-0.00069	-0.00068
	(!A2 * !B1 * !C1 * !X)	0.00327	0.00331	0.00328

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)	0.00226	0.00227	0.00226
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00247	-0.00260	-0.00260
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00230	0.00228	0.00226
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00242	-0.00260	-0.00260
	(A1 * B1 * B2 * !C1 * X)	0.00230	0.00228	0.00226
	(A1 * B1 * B2 * !C1 * X)	-0.00242	-0.00260	-0.00260
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00237	0.00228	0.00227
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00230	-0.00253	-0.00256
	(A1 * !B1 * C1 * C2 * X)	0.00237	0.00228	0.00227
	(A1 * !B1 * C1 * C2 * X)	-0.00230	-0.00253	-0.00256
	(!A1 * B1 * B2 * X)	0.00219	0.00222	0.00221
	(!A1 * B1 * B2 * X)	-0.00263	-0.00264	-0.00264
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00220	0.00223	0.00222
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00262	-0.00264	-0.00263
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00186	0.00188	0.00188
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00294	-0.00296	-0.00295
	(!A1 * B1 * !B2 * !C1 * !X)	0.00186	0.00188	0.00188
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00294	-0.00296	-0.00295
	(!A1 * !B1 * C1 * !C2 * !X)	0.00186	0.00188	0.00188
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00294	-0.00296	-0.00295
	(!A1 * !B1 * !C1 * !X)	0.00186	0.00188	0.00188
	(!A1 * !B1 * !C1 * !X)	-0.00294	-0.00296	-0.00295

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * C2 * X)**	0.00213	0.00213	0.00212
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00257	-0.00267	-0.00266
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00219	0.00214	0.00213
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00248	-0.00266	-0.00267
	(A1 * B1 * B2 * !C1 * X)	0.00219	0.00214	0.00213
	(A1 * B1 * B2 * !C1 * X)	-0.00248	-0.00266	-0.00267
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00227	0.00215	0.00213
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00233	-0.00259	-0.00261
	(A1 * !B1 * C1 * C2 * X)	0.00224	0.00214	0.00213
	(A1 * !B1 * C1 * C2 * X)	-0.00234	-0.00258	-0.00261
	(!A1 * B1 * B2 * X)	0.00208	0.00209	0.00207
	(!A1 * B1 * B2 * X)	-0.00269	-0.00270	-0.00269
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00206	0.00208	0.00207
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00267	-0.00269	-0.00269
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00205	0.00207	0.00206
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00268	-0.00270	-0.00270
	(!A1 * B1 * !B2 * !C1 * !X)	0.00205	0.00207	0.00206
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00268	-0.00270	-0.00270
	(!A1 * !B1 * C1 * !C2 * !X)	0.00205	0.00208	0.00206
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00269	-0.00271	-0.00270
	(!A1 * !B1 * !C1 * !X)	0.00205	0.00207	0.00206
	(!A1 * !B1 * !C1 * !X)	-0.00269	-0.00270	-0.00270

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)**	-0.00225	-0.00226	-0.00225
	(A1 * B1 * B2 * C1 * C2 * X)	0.00259	0.00261	0.00260
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00225	-0.00226	-0.00225
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00259	0.00261	0.00260
	(A1 * B1 * B2 * !C1 * X)	-0.00225	-0.00226	-0.00225
	(A1 * B1 * B2 * !C1 * X)	0.00259	0.00261	0.00260
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00224	-0.00226	-0.00224
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00254	0.00257	0.00256
	(A1 * !B1 * C1 * C2 * X)	-0.00224	-0.00226	-0.00224
	(A1 * !B1 * C1 * C2 * X)	0.00254	0.00257	0.00256
	(!A1 * B1 * B2 * X)	-0.00215	-0.00221	-0.00220
	(!A1 * B1 * B2 * X)	0.00264	0.00266	0.00265
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00214	-0.00220	-0.00220
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00264	0.00267	0.00266
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00173	-0.00187	-0.00188
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00307	0.00300	0.00297
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00173	-0.00187	-0.00188
	(!A1 * B1 * !B2 * !C1 * !X)	0.00307	0.00300	0.00297
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00173	-0.00187	-0.00188
	(!A1 * !B1 * C1 * !C2 * !X)	0.00307	0.00300	0.00297
	(!A1 * !B1 * !C1 * !X)	-0.00173	-0.00187	-0.00188
	(!A1 * !B1 * !C1 * !X)	0.00307	0.00300	0.00297

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * C2 * X)**	-0.00212	-0.00213	-0.00212
	(A1 * B1 * B2 * C1 * C2 * X)	0.00267	0.00269	0.00266
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00212	-0.00213	-0.00212
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00267	0.00269	0.00267
	(A1 * B1 * B2 * !C1 * X)	-0.00212	-0.00213	-0.00212
	(A1 * B1 * B2 * !C1 * X)	0.00267	0.00269	0.00267
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00211	-0.00212	-0.00211
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00260	0.00262	0.00261
	(A1 * !B1 * C1 * C2 * X)	-0.00212	-0.00212	-0.00211
	(A1 * !B1 * C1 * C2 * X)	0.00261	0.00262	0.00261
	(!A1 * B1 * B2 * X)	-0.00197	-0.00205	-0.00207
	(!A1 * B1 * B2 * X)	0.00269	0.00270	0.00270
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00198	-0.00205	-0.00206
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00272	0.00273	0.00271
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00190	-0.00204	-0.00206
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00282	0.00275	0.00271
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00190	-0.00204	-0.00206
	(!A1 * B1 * !B2 * !C1 * !X)	0.00282	0.00275	0.00271
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00188	-0.00204	-0.00206
	(!A1 * !B1 * C1 * !C2 * !X)	0.00279	0.00275	0.00271
	(!A1 * !B1 * !C1 * !X)	-0.00188	-0.00204	-0.00206
	(!A1 * !B1 * !C1 * !X)	0.00279	0.00275	0.00271

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)**	0.00217	0.00223	0.00215
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00193	-0.00195	-0.00194
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00212	0.00213	0.00211
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00148	-0.00149	-0.00149
	(A1 * A2 * B2 * !C1 * X)	0.00212	0.00213	0.00211
	(A1 * A2 * B2 * !C1 * X)	-0.00148	-0.00149	-0.00149
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00208	0.00210	0.00207
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00186	-0.00188	-0.00186
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00204	0.00206	0.00203
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00147	-0.00149	-0.00148
	(A1 * A2 * !B2 * !C1 * X)	0.00205	0.00210	0.00205
	(A1 * A2 * !B2 * !C1 * X)	-0.00146	-0.00150	-0.00148
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00270	0.00215	0.00211
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00215	-0.00276	-0.00278
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00204	0.00207	0.00205
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00280	-0.00282	-0.00280
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00067	0.00067	0.00065
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00326	-0.00327	-0.00328
	(A1 * !A2 * !B2 * !C1 * !X)	0.00067	0.00067	0.00065
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00326	-0.00327	-0.00328
	(!A1 * B2 * C1 * C2 * X)	0.00270	0.00216	0.00211
	(!A1 * B2 * C1 * C2 * X)	-0.00215	-0.00276	-0.00278
	(!A1 * !B2 * C1 * C2 * X)	0.00204	0.00207	0.00205
	(!A1 * !B2 * C1 * C2 * X)	-0.00280	-0.00282	-0.00280
	(!A1 * !B2 * C1 * !C2 * !X)	0.00067	0.00067	0.00065
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00326	-0.00327	-0.00328
	(!A1 * !B2 * !C1 * !X)	0.00067	0.00067	0.00065
	(!A1 * !B2 * !C1 * !X)	-0.00326	-0.00327	-0.00328

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	0.00220	0.00219	0.00211
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00182	-0.00184	-0.00182
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00206	0.00208	0.00205
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00135	-0.00136	-0.00136
	(A1 * A2 * B2 * !C1 * X)	0.00206	0.00208	0.00205
	(A1 * A2 * B2 * !C1 * X)	-0.00135	-0.00136	-0.00136
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00201	0.00205	0.00199
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00174	-0.00175	-0.00173
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00199	0.00202	0.00198
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00134	-0.00138	-0.00136
	(A1 * A2 * !B2 * !C1 * X)	0.00198	0.00201	0.00197
	(A1 * A2 * !B2 * !C1 * X)	-0.00134	-0.00138	-0.00136
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00271	0.00208	0.00204
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00191	-0.00260	-0.00262
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00197	0.00197	0.00197
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00265	-0.00266	-0.00265
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00064	0.00064	0.00062
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00305	-0.00305	-0.00308
	(A1 * !A2 * !B2 * !C1 * !X)	0.00064	0.00064	0.00062
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00305	-0.00305	-0.00308
	(!A1 * B2 * C1 * C2 * X)	0.00268	0.00208	0.00204
	(!A1 * B2 * C1 * C2 * X)	-0.00195	-0.00261	-0.00262
	(!A1 * !B2 * C1 * C2 * X)	0.00196	0.00196	0.00197
	(!A1 * !B2 * C1 * C2 * X)	-0.00265	-0.00265	-0.00265
	(!A1 * !B2 * C1 * !C2 * !X)	0.00065	0.00065	0.00064
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00304	-0.00305	-0.00307
	(!A1 * !B2 * !C1 * !X)	0.00065	0.00065	0.00064
	(!A1 * !B2 * !C1 * !X)	-0.00304	-0.00305	-0.00307

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)	-0.00212	-0.00213	-0.00212
	(A1 * A2 * B2 * C1 * C2 * X)	0.00193	0.00195	0.00194
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00202	-0.00203	-0.00202
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00156	0.00157	0.00157
	(A1 * A2 * B2 * !C1 * X)	-0.00202	-0.00203	-0.00202
	(A1 * A2 * B2 * !C1 * X)	0.00156	0.00157	0.00157
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00202	-0.00207	-0.00207
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00186	0.00188	0.00186
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00199	-0.00205	-0.00203
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00149	0.00150	0.00149
	(A1 * A2 * !B2 * !C1 * X)	-0.00199	-0.00205	-0.00205
	(A1 * A2 * !B2 * !C1 * X)	0.00149	0.00150	0.00149
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00208	-0.00209	-0.00207
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00275	0.00278	0.00278
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00198	-0.00204	-0.00203
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00281	0.00284	0.00282
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00064	-0.00065	-0.00064
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00328	0.00331	0.00329
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00064	-0.00065	-0.00064
	(A1 * !A2 * !B2 * !C1 * !X)	0.00328	0.00331	0.00329
	(!A1 * B2 * C1 * C2 * X)	-0.00208	-0.00209	-0.00207
	(!A1 * B2 * C1 * C2 * X)	0.00275	0.00278	0.00278
	(!A1 * !B2 * C1 * C2 * X)	-0.00198	-0.00204	-0.00203
	(!A1 * !B2 * C1 * C2 * X)	0.00281	0.00284	0.00282
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00064	-0.00065	-0.00064
	(!A1 * !B2 * C1 * !C2 * !X)	0.00328	0.00331	0.00329
	(!A1 * !B2 * !C1 * !X)	-0.00064	-0.00065	-0.00064
	(!A1 * !B2 * !C1 * !X)	0.00328	0.00331	0.00329

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	-0.00206	-0.00207	-0.00206
	(A1 * A2 * B2 * C1 * C2 * X)	0.00182	0.00184	0.00182
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00198	-0.00198	-0.00198
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00145	0.00145	0.00143
	(A1 * A2 * B2 * !C1 * X)	-0.00197	-0.00198	-0.00198
	(A1 * A2 * B2 * !C1 * X)	0.00145	0.00145	0.00143
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00195	-0.00200	-0.00199
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00174	0.00175	0.00173
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00193	-0.00199	-0.00198
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00137	0.00138	0.00137
	(A1 * A2 * !B2 * !C1 * X)	-0.00193	-0.00199	-0.00197
	(A1 * A2 * !B2 * !C1 * X)	0.00137	0.00138	0.00137
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00201	-0.00201	-0.00200
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00260	0.00262	0.00263
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00191	-0.00196	-0.00196
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00268	0.00269	0.00268
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00061	-0.00061	-0.00061
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00308	0.00311	0.00309
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00061	-0.00061	-0.00061
	(A1 * !A2 * !B2 * !C1 * !X)	0.00308	0.00311	0.00309
	(!A1 * B2 * C1 * C2 * X)	-0.00201	-0.00202	-0.00200
	(!A1 * B2 * C1 * C2 * X)	0.00260	0.00263	0.00263
	(!A1 * !B2 * C1 * C2 * X)	-0.00191	-0.00196	-0.00196
	(!A1 * !B2 * C1 * C2 * X)	0.00268	0.00269	0.00268
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00062	-0.00063	-0.00062
	(!A1 * !B2 * C1 * !C2 * !X)	0.00308	0.00310	0.00308
	(!A1 * !B2 * !C1 * !X)	-0.00062	-0.00063	-0.00062
	(!A1 * !B2 * !C1 * !X)	0.00308	0.00310	0.00308

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)	0.00210	0.00214	0.00207
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00184	-0.00187	-0.00185
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00204	0.00206	0.00203
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00139	-0.00140	-0.00140
	(A1 * A2 * B1 * !C1 * X)	0.00205	0.00206	0.00203
	(A1 * A2 * B1 * !C1 * X)	-0.00140	-0.00140	-0.00140
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00201	0.00204	0.00200
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00178	-0.00178	-0.00178
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00198	0.00200	0.00197
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00138	-0.00140	-0.00139
	(A1 * A2 * !B1 * !C1 * X)	0.00198	0.00200	0.00197
	(A1 * A2 * !B1 * !C1 * X)	-0.00138	-0.00140	-0.00139
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00261	0.00206	0.00203
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00201	-0.00263	-0.00265
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00197	0.00199	0.00197
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00267	-0.00269	-0.00268
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00187	0.00189	0.00187
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00277	-0.00279	-0.00277
	(A1 * !A2 * !B1 * !C1 * !X)	0.00186	0.00189	0.00187
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00276	-0.00278	-0.00277
	(!A1 * B1 * C1 * C2 * X)	0.00261	0.00206	0.00203
	(!A1 * B1 * C1 * C2 * X)	-0.00201	-0.00263	-0.00265
	(!A1 * !B1 * C1 * !C2 * !X)	0.00187	0.00189	0.00187
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00277	-0.00279	-0.00277
	(!A1 * !B1 * !C1 * !X)	0.00186	0.00189	0.00187
	(!A1 * !B1 * !C1 * !X)	-0.00276	-0.00278	-0.00277

	(A1 * A2 * B1 * C1 * C2 * X)	0.00222	0.00222	0.00213
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00182	-0.00184	-0.00182
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00209	0.00210	0.00207
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00137	-0.00137	-0.00136
	(A1 * A2 * B1 * !C1 * X)	0.00209	0.00210	0.00207
	(A1 * A2 * B1 * !C1 * X)	-0.00137	-0.00137	-0.00136
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00205	0.00205	0.00202
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00172	-0.00175	-0.00172
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00201	0.00204	0.00200
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00135	-0.00137	-0.00136
	(A1 * A2 * !B1 * !C1 * X)	0.00201	0.00204	0.00200
	(A1 * A2 * !B1 * !C1 * X)	-0.00135	-0.00137	-0.00136
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00268	0.00210	0.00206
sky130_fd_sc_hs__a222o_2	**(A1 * !A2 * B1 * C1 * C2 * X)**	-0.00198	-0.00260	-0.00262
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00200	0.00201	0.00200
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00266	-0.00266	-0.00265
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00194	0.00196	0.00194
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00266	-0.00268	-0.00266
	(A1 * !A2 * !B1 * !C1 * !X)	0.00194	0.00197	0.00194
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00266	-0.00268	-0.00266
	(!A1 * B1 * C1 * C2 * X)	0.00272	0.00211	0.00206
	(!A1 * B1 * C1 * C2 * X)	-0.00193	-0.00260	-0.00262
	(!A1 * !B1 * C1 * !C2 * !X)	0.00199	0.00202	0.00200
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00265	-0.00267	-0.00265
	(!A1 * !B1 * !C1 * !X)	0.00199	0.00202	0.00200
	(!A1 * !B1 * !C1 * !X)	-0.00265	-0.00267	-0.00265

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)	-0.00204	-0.00205	-0.00204
	(A1 * A2 * B1 * C1 * C2 * X)	0.00184	0.00187	0.00185
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00194	-0.00195	-0.00194
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00146	0.00147	0.00148
	(A1 * A2 * B1 * !C1 * X)	-0.00195	-0.00195	-0.00194
	(A1 * A2 * B1 * !C1 * X)	0.00147	0.00147	0.00148
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00194	-0.00197	-0.00199
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00178	0.00178	0.00178
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00192	-0.00196	-0.00197
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00140	0.00140	0.00140
	(A1 * A2 * !B1 * !C1 * X)	-0.00192	-0.00196	-0.00197
	(A1 * A2 * !B1 * !C1 * X)	0.00140	0.00140	0.00140
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00200	-0.00201	-0.00200
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00263	0.00266	0.00266
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00191	-0.00195	-0.00196
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00270	0.00273	0.00270
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00174	-0.00187	-0.00187
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00290	0.00280	0.00278
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00174	-0.00187	-0.00187
	(A1 * !A2 * !B1 * !C1 * !X)	0.00290	0.00280	0.00278
	(!A1 * B1 * C1 * C2 * X)	-0.00200	-0.00201	-0.00200
	(!A1 * B1 * C1 * C2 * X)	0.00263	0.00266	0.00266
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00174	-0.00187	-0.00187
	(!A1 * !B1 * C1 * !C2 * !X)	0.00290	0.00280	0.00278
	(!A1 * !B1 * !C1 * !X)	-0.00174	-0.00187	-0.00187
	(!A1 * !B1 * !C1 * !X)	0.00290	0.00280	0.00278

	(A1 * A2 * B1 * C1 * C2 * X)	-0.00208	-0.00210	-0.00209
	(A1 * A2 * B1 * C1 * C2 * X)	0.00182	0.00184	0.00182
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00199	-0.00200	-0.00200
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00146	0.00146	0.00144
	(A1 * A2 * B1 * !C1 * X)	-0.00199	-0.00200	-0.00200
	(A1 * A2 * B1 * !C1 * X)	0.00146	0.00146	0.00144
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00197	-0.00203	-0.00202
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00172	0.00175	0.00172
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00195	-0.00199	-0.00200
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00136	0.00137	0.00137
	(A1 * A2 * !B1 * !C1 * X)	-0.00195	-0.00199	-0.00200
	(A1 * A2 * !B1 * !C1 * X)	0.00136	0.00137	0.00137
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00203	-0.00203	-0.00203
sky130_fd_sc_hs__a222o_2	**(A1 * !A2 * B1 * C1 * C2 * X)**	0.00261	0.00260	0.00263
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00192	-0.00198	-0.00198
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00266	0.00269	0.00268
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00178	-0.00193	-0.00193
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00279	0.00269	0.00268
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00178	-0.00193	-0.00193
	(A1 * !A2 * !B1 * !C1 * !X)	0.00279	0.00269	0.00268
	(!A1 * B1 * C1 * C2 * X)	-0.00203	-0.00204	-0.00202
	(!A1 * B1 * C1 * C2 * X)	0.00260	0.00263	0.00263
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00183	-0.00199	-0.00199
	(!A1 * !B1 * C1 * !C2 * !X)	0.00277	0.00268	0.00267
	(!A1 * !B1 * !C1 * !X)	-0.00183	-0.00199	-0.00199
	(!A1 * !B1 * !C1 * !X)	0.00277	0.00268	0.00267

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)	0.00242	0.00245	0.00243
	(A1 * B1 * B2 * C2 * X)	-0.00131	-0.00133	-0.00132
	(A1 * B1 * B2 * !C2 * X)	0.00238	0.00240	0.00238
	(A1 * B1 * B2 * !C2 * X)	-0.00131	-0.00132	-0.00131
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00243	0.00245	0.00243
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00131	-0.00133	-0.00131
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00239	0.00240	0.00238
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00130	-0.00131	-0.00131
	(A1 * A2 * !B1 * C2 * X)	0.00243	0.00245	0.00243
	(A1 * A2 * !B1 * C2 * X)	-0.00132	-0.00133	-0.00131
	(A1 * A2 * !B1 * !C2 * X)	0.00236	0.00240	0.00236
	(A1 * A2 * !B1 * !C2 * X)	-0.00130	-0.00132	-0.00131
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00071	0.00071	0.00069
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00329	-0.00330	-0.00332
	(A1 * !A2 * !B1 * !C2 * !X)	0.00071	0.00071	0.00069
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00329	-0.00330	-0.00332
	(!A1 * B1 * B2 * C2 * X)	0.00243	0.00245	0.00243
	(!A1 * B1 * B2 * C2 * X)	-0.00132	-0.00133	-0.00132
	(!A1 * B1 * B2 * !C2 * X)	0.00236	0.00238	0.00236
	(!A1 * B1 * B2 * !C2 * X)	-0.00130	-0.00132	-0.00131
	(!A1 * B1 * !B2 * !C2 * !X)	0.00071	0.00071	0.00069
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00329	-0.00330	-0.00332
	(!A1 * !B1 * !C2 * !X)	0.00071	0.00071	0.00069
	(!A1 * !B1 * !C2 * !X)	-0.00329	-0.00330	-0.00332

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	0.00236	0.00238	0.00237
	(A1 * B1 * B2 * C2 * X)	-0.00124	-0.00124	-0.00123
	(A1 * B1 * B2 * !C2 * X)	0.00229	0.00233	0.00230
	(A1 * B1 * B2 * !C2 * X)	-0.00123	-0.00124	-0.00123
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00236	0.00239	0.00237
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00124	-0.00124	-0.00123
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00231	0.00232	0.00232
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00122	-0.00123	-0.00123
	(A1 * A2 * !B1 * C2 * X)	0.00237	0.00239	0.00237
	(A1 * A2 * !B1 * C2 * X)	-0.00124	-0.00125	-0.00123
	(A1 * A2 * !B1 * !C2 * X)	0.00231	0.00232	0.00232
	(A1 * A2 * !B1 * !C2 * X)	-0.00122	-0.00123	-0.00123
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00070	0.00070	0.00068
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00314	-0.00315	-0.00317
	(A1 * !A2 * !B1 * !C2 * !X)	0.00070	0.00070	0.00068
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00314	-0.00314	-0.00317
	(!A1 * B1 * B2 * C2 * X)	0.00237	0.00239	0.00237
	(!A1 * B1 * B2 * C2 * X)	-0.00124	-0.00125	-0.00124
	(!A1 * B1 * B2 * !C2 * X)	0.00232	0.00233	0.00232
	(!A1 * B1 * B2 * !C2 * X)	-0.00123	-0.00124	-0.00123
	(!A1 * B1 * !B2 * !C2 * !X)	0.00070	0.00070	0.00068
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00314	-0.00314	-0.00317
	(!A1 * !B1 * !C2 * !X)	0.00070	0.00070	0.00068
	(!A1 * !B1 * !C2 * !X)	-0.00314	-0.00314	-0.00317

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)**	-0.00224	-0.00226	-0.00241
	(A1 * B1 * B2 * C2 * X)	0.00149	0.00148	0.00135
	(A1 * B1 * B2 * !C2 * X)	-0.00233	-0.00238	-0.00238
	(A1 * B1 * B2 * !C2 * X)	0.00132	0.00132	0.00131
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00207	-0.00209	-0.00237
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00158	0.00158	0.00137
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00232	-0.00236	-0.00237
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00131	0.00132	0.00131
	(A1 * A2 * !B1 * C2 * X)	-0.00207	-0.00209	-0.00237
	(A1 * A2 * !B1 * C2 * X)	0.00158	0.00158	0.00137
	(A1 * A2 * !B1 * !C2 * X)	-0.00232	-0.00236	-0.00236
	(A1 * A2 * !B1 * !C2 * X)	0.00131	0.00132	0.00131
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00069	-0.00070	-0.00068
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00333	0.00336	0.00333
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00069	-0.00070	-0.00068
	(A1 * !A2 * !B1 * !C2 * !X)	0.00333	0.00336	0.00333
	(!A1 * B1 * B2 * C2 * X)	-0.00224	-0.00226	-0.00241
	(!A1 * B1 * B2 * C2 * X)	0.00149	0.00149	0.00136
	(!A1 * B1 * B2 * !C2 * X)	-0.00232	-0.00237	-0.00236
	(!A1 * B1 * B2 * !C2 * X)	0.00132	0.00133	0.00132
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00069	-0.00070	-0.00068
	(!A1 * B1 * !B2 * !C2 * !X)	0.00333	0.00336	0.00333
	(!A1 * !B1 * !C2 * !X)	-0.00069	-0.00070	-0.00068
	(!A1 * !B1 * !C2 * !X)	0.00333	0.00336	0.00333

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	-0.00223	-0.00224	-0.00236
	(A1 * B1 * B2 * C2 * X)	0.00135	0.00135	0.00126
	(A1 * B1 * B2 * !C2 * X)	-0.00226	-0.00232	-0.00230
	(A1 * B1 * B2 * !C2 * X)	0.00124	0.00124	0.00123
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00204	-0.00206	-0.00231
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00149	0.00149	0.00129
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00226	-0.00230	-0.00231
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00124	0.00124	0.00123
	(A1 * A2 * !B1 * C2 * X)	-0.00204	-0.00206	-0.00231
	(A1 * A2 * !B1 * C2 * X)	0.00149	0.00149	0.00129
	(A1 * A2 * !B1 * !C2 * X)	-0.00225	-0.00232	-0.00231
	(A1 * A2 * !B1 * !C2 * X)	0.00123	0.00124	0.00123
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00068	-0.00068	-0.00067
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00319	0.00320	0.00318
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00068	-0.00068	-0.00067
	(A1 * !A2 * !B1 * !C2 * !X)	0.00319	0.00320	0.00318
	(!A1 * B1 * B2 * C2 * X)	-0.00222	-0.00224	-0.00235
	(!A1 * B1 * B2 * C2 * X)	0.00136	0.00136	0.00126
	(!A1 * B1 * B2 * !C2 * X)	-0.00226	-0.00230	-0.00231
	(!A1 * B1 * B2 * !C2 * X)	0.00123	0.00124	0.00123
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00068	-0.00068	-0.00067
	(!A1 * B1 * !B2 * !C2 * !X)	0.00319	0.00319	0.00318
	(!A1 * !B1 * !C2 * !X)	-0.00068	-0.00068	-0.00067
	(!A1 * !B1 * !C2 * !X)	0.00319	0.00320	0.00318

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)**	0.00244	0.00245	0.00243
	(A1 * B1 * B2 * C1 * X)	-0.00127	-0.00127	-0.00126
	(A1 * B1 * B2 * !C1 * X)	0.00235	0.00240	0.00236
	(A1 * B1 * B2 * !C1 * X)	-0.00125	-0.00126	-0.00126
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00244	0.00245	0.00243
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00127	-0.00127	-0.00126
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00236	0.00241	0.00236
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00125	-0.00126	-0.00125
	(A1 * A2 * !B1 * C1 * X)	0.00244	0.00245	0.00243
	(A1 * A2 * !B1 * C1 * X)	-0.00127	-0.00127	-0.00126
	(A1 * A2 * !B1 * !C1 * X)	0.00236	0.00241	0.00236
	(A1 * A2 * !B1 * !C1 * X)	-0.00125	-0.00126	-0.00125
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00189	0.00191	0.00190
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00293	-0.00295	-0.00294
	(A1 * !A2 * !B1 * !C1 * !X)	0.00189	0.00191	0.00190
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00293	-0.00295	-0.00294
	(!A1 * B1 * B2 * C1 * X)	0.00244	0.00245	0.00243
	(!A1 * B1 * B2 * C1 * X)	-0.00127	-0.00127	-0.00126
	(!A1 * B1 * B2 * !C1 * X)	0.00236	0.00241	0.00236
	(!A1 * B1 * B2 * !C1 * X)	-0.00125	-0.00126	-0.00126
	(!A1 * B1 * !B2 * !C1 * !X)	0.00189	0.00191	0.00190
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00293	-0.00295	-0.00294
	(!A1 * !B1 * !C1 * !X)	0.00189	0.00191	0.00190
	(!A1 * !B1 * !C1 * !X)	-0.00293	-0.00294	-0.00294

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	0.00251	0.00252	0.00250
	(A1 * B1 * B2 * C1 * X)	-0.00127	-0.00127	-0.00126
	(A1 * B1 * B2 * !C1 * X)	0.00245	0.00248	0.00246
	(A1 * B1 * B2 * !C1 * X)	-0.00125	-0.00127	-0.00126
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00251	0.00252	0.00250
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00127	-0.00127	-0.00126
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00245	0.00248	0.00246
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00124	-0.00126	-0.00125
	(A1 * A2 * !B1 * C1 * X)	0.00251	0.00252	0.00250
	(A1 * A2 * !B1 * C1 * X)	-0.00127	-0.00127	-0.00126
	(A1 * A2 * !B1 * !C1 * X)	0.00245	0.00248	0.00246
	(A1 * A2 * !B1 * !C1 * X)	-0.00124	-0.00126	-0.00125
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00189	0.00190	0.00189
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00305	-0.00306	-0.00306
	(A1 * !A2 * !B1 * !C1 * !X)	0.00188	0.00190	0.00189
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00305	-0.00307	-0.00306
	(!A1 * B1 * B2 * C1 * X)	0.00251	0.00252	0.00251
	(!A1 * B1 * B2 * C1 * X)	-0.00128	-0.00128	-0.00126
	(!A1 * B1 * B2 * !C1 * X)	0.00246	0.00248	0.00246
	(!A1 * B1 * B2 * !C1 * X)	-0.00125	-0.00126	-0.00126
	(!A1 * B1 * !B2 * !C1 * !X)	0.00188	0.00190	0.00189
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00305	-0.00306	-0.00306
	(!A1 * !B1 * !C1 * !X)	0.00188	0.00191	0.00189
	(!A1 * !B1 * !C1 * !X)	-0.00305	-0.00308	-0.00306

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)**	-0.00224	-0.00225	-0.00241
	(A1 * B1 * B2 * C1 * X)	0.00143	0.00143	0.00130
	(A1 * B1 * B2 * !C1 * X)	-0.00233	-0.00236	-0.00236
	(A1 * B1 * B2 * !C1 * X)	0.00126	0.00126	0.00126
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00207	-0.00209	-0.00237
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00153	0.00153	0.00131
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00233	-0.00236	-0.00236
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00126	0.00126	0.00126
	(A1 * A2 * !B1 * C1 * X)	-0.00207	-0.00209	-0.00237
	(A1 * A2 * !B1 * C1 * X)	0.00153	0.00153	0.00131
	(A1 * A2 * !B1 * !C1 * X)	-0.00233	-0.00236	-0.00236
	(A1 * A2 * !B1 * !C1 * X)	0.00126	0.00126	0.00126
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00178	-0.00191	-0.00190
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00307	0.00298	0.00295
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00178	-0.00191	-0.00190
	(A1 * !A2 * !B1 * !C1 * !X)	0.00307	0.00298	0.00295
	(!A1 * B1 * B2 * C1 * X)	-0.00223	-0.00225	-0.00241
	(!A1 * B1 * B2 * C1 * X)	0.00143	0.00143	0.00130
	(!A1 * B1 * B2 * !C1 * X)	-0.00233	-0.00236	-0.00236
	(!A1 * B1 * B2 * !C1 * X)	0.00127	0.00126	0.00126
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00178	-0.00191	-0.00190
	(!A1 * B1 * !B2 * !C1 * !X)	0.00307	0.00298	0.00295
	(!A1 * !B1 * !C1 * !X)	-0.00178	-0.00191	-0.00190
	(!A1 * !B1 * !C1 * !X)	0.00307	0.00298	0.00295

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00236	-0.00237	-0.00249
	(A1 * B1 * B2 * C1 * X)	0.00138	0.00138	0.00129
	(A1 * B1 * B2 * !C1 * X)	-0.00238	-0.00244	-0.00245
	(A1 * B1 * B2 * !C1 * X)	0.00125	0.00127	0.00126
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00218	-0.00219	-0.00245
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00152	0.00152	0.00132
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00238	-0.00244	-0.00245
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00125	0.00127	0.00126
	(A1 * A2 * !B1 * C1 * X)	-0.00218	-0.00219	-0.00245
	(A1 * A2 * !B1 * C1 * X)	0.00152	0.00152	0.00132
	(A1 * A2 * !B1 * !C1 * X)	-0.00238	-0.00244	-0.00245
	(A1 * A2 * !B1 * !C1 * X)	0.00125	0.00127	0.00126
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00174	-0.00188	-0.00188
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00319	0.00310	0.00307
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00174	-0.00188	-0.00188
	(A1 * !A2 * !B1 * !C1 * !X)	0.00319	0.00310	0.00307
	(!A1 * B1 * B2 * C1 * X)	-0.00236	-0.00237	-0.00249
	(!A1 * B1 * B2 * C1 * X)	0.00139	0.00139	0.00129
	(!A1 * B1 * B2 * !C1 * X)	-0.00238	-0.00244	-0.00245
	(!A1 * B1 * B2 * !C1 * X)	0.00125	0.00127	0.00126
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00174	-0.00188	-0.00188
	(!A1 * B1 * !B2 * !C1 * !X)	0.00319	0.00310	0.00307
	(!A1 * !B1 * !C1 * !X)	-0.00174	-0.00188	-0.00188
	(!A1 * !B1 * !C1 * !X)	0.00319	0.00310	0.00307

SKY130_FD_SC_HS__A22OIx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00284	0.00283	0.00294	0.00296	0.68331
sky130_fd_sc_hs__a22oi_2	0.00621	0.00547	0.00593	0.00543	1.17748
sky130_fd_sc_hs__a22oi_4	0.01092	0.01080	0.01102	0.01087	2.14932

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a22oi_1	0.00000	0.10922	0.38031
sky130_fd_sc_hs__a22oi_2	0.00000	0.21845	0.76062
sky130_fd_sc_hs__a22oi_4	0.00000	0.43689	1.52123

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)	0.07847	0.79438	9.37924
	A2->Y (FR)	0.09220	0.81288	9.43922
	B1->Y (FR)	0.05656	0.81112	9.95428
	B2->Y (FR)	0.07051	0.83633	10.11700
sky130_fd_sc_hs__a22oi_2	A1->Y (FR)	0.08323	0.67295	8.96738
	A2->Y (FR)	0.10042	0.70347	9.20500
	B1->Y (FR)	0.05824	0.70480	9.72728
	B2->Y (FR)	0.07715	0.74296	10.04080
sky130_fd_sc_hs__a22oi_4	A1->Y (FR)	0.07769	0.56939	8.70687
	A2->Y (FR)	0.09791	0.60082	8.95080
	B1->Y (FR)	0.05468	0.61081	9.54487
	B2->Y (FR)	0.07565	0.64926	9.90305

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22oi_1	A1->Y (RF)	0.02962	0.34596	3.91548
	A2->Y (RF)	0.03294	0.30816	3.39258
	B1->Y (RF)	0.01908	0.33100	3.95805
	B2->Y (RF)	0.02242	0.29735	3.47011
sky130_fd_sc_hs__a22oi_2	A1->Y (RF)	0.03050	0.28722	3.69639
	A2->Y (RF)	0.03378	0.26010	3.27383
	B1->Y (RF)	0.01865	0.26359	3.67284
	B2->Y (RF)	0.02313	0.23884	3.24141
sky130_fd_sc_hs__a22oi_4	A1->Y (RF)	0.03143	0.26221	3.96403
	A2->Y (RF)	0.03512	0.21019	3.11701
	B1->Y (RF)	0.01807	0.23457	3.96199
	B2->Y (RF)	0.02205	0.18395	3.06606

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	-0.00037	0.00082	0.03875
	A1	0.00991	0.01111	0.04912
	A2	0.00038	0.00152	0.04056
	A2	0.01242	0.01357	0.05266
	B1	-0.00052	0.00339	0.05371
	B1	0.00636	0.01028	0.05973
	B2	-0.00004	0.00374	0.05387
	B2	0.00861	0.01237	0.06263
sky130_fd_sc_hs__a22oi_2	A1	-0.00008	0.00261	0.07900
	A1	0.02155	0.02424	0.10079
	A2	0.00181	0.00449	0.08272
	A2	0.02573	0.02843	0.10693
	B1	-0.00059	0.00698	0.10914
	B1	0.01375	0.02132	0.12368
	B2	0.00185	0.00904	0.10906
	B2	0.01883	0.02603	0.12616
sky130_fd_sc_hs__a22oi_4	A1	-0.00279	0.00330	0.14333
	A1	0.03817	0.04430	0.18539
	A2	0.00129	0.00728	0.15357
	A2	0.04882	0.05490	0.20255
	B1	-0.00342	0.01161	0.18845
	B1	0.02348	0.03871	0.21693
	B2	0.00089	0.01483	0.19426
	B2	0.03433	0.04825	0.22776

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	0.01411	0.01567	0.04738
	A1	0.00393	0.00548	0.03679
	A2	0.01585	0.01711	0.04761
	A2	0.00385	0.00504	0.03535
	B1	0.00645	0.00842	0.03833
	B1	-0.00042	0.00151	0.03119
	B2	0.00833	0.00993	0.03814
	B2	-0.00038	0.00115	0.02911
sky130_fd_sc_hs__a22oi_2	A1	0.02833	0.03171	0.09449
	A1	0.00695	0.01023	0.07270
	A2	0.03083	0.03356	0.09302
	A2	0.00701	0.00965	0.06880
	B1	0.01376	0.01822	0.07954
	B1	-0.00055	0.00385	0.06503
	B2	0.01674	0.02017	0.07756
	B2	-0.00036	0.00306	0.06008
sky130_fd_sc_hs__a22oi_4	A1	0.05372	0.06041	0.17623
	A1	0.01321	0.01980	0.13470
	A2	0.06053	0.06662	0.18648
	A2	0.01303	0.01898	0.13777
	B1	0.02506	0.03393	0.14283
	B1	-0.00183	0.00697	0.11491
	B2	0.03224	0.03970	0.14921
	B2	-0.00156	0.00592	0.11478

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)	0.00269	0.00229	0.00226
	(A2 * B1 * B2 * !Y)	-0.00241	-0.00288	-0.00290
	(!A2 * B1 * B2 * !Y)	0.00219	0.00220	0.00220
	(!A2 * B1 * B2 * !Y)	-0.00293	-0.00294	-0.00294
	(!A2 * B1 * !B2 * Y)	0.00074	0.00073	0.00071
	(!A2 * B1 * !B2 * Y)	-0.00333	-0.00333	-0.00337
	(!A2 * !B1 * Y)	0.00074	0.00073	0.00071
	(!A2 * !B1 * Y)	-0.00333	-0.00334	-0.00337
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	0.00606	0.00501	0.00491
	(A2 * B1 * B2 * !Y)	-0.00487	-0.00614	-0.00616
	(!A2 * B1 * B2 * !Y)	0.00471	0.00474	0.00473
	(!A2 * B1 * B2 * !Y)	-0.00625	-0.00628	-0.00626
	(!A2 * B1 * !B2 * Y)	0.00146	0.00147	0.00142
	(!A2 * B1 * !B2 * Y)	-0.00741	-0.00746	-0.00751
	(!A2 * !B1 * Y)	0.00146	0.00147	0.00142
	(!A2 * !B1 * Y)	-0.00740	-0.00746	-0.00751
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	0.01122	0.00928	0.00914
	(A2 * B1 * B2 * !Y)	-0.00943	-0.01171	-0.01171
	(!A2 * B1 * B2 * !Y)	0.00874	0.00878	0.00876
	(!A2 * B1 * B2 * !Y)	-0.01187	-0.01192	-0.01190
	(!A2 * B1 * !B2 * Y)	0.00279	0.00280	0.00269
	(!A2 * B1 * !B2 * Y)	-0.01364	-0.01373	-0.01387
	(!A2 * !B1 * Y)	0.00280	0.00281	0.00270
	(!A2 * !B1 * Y)	-0.01364	-0.01373	-0.01387

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)	-0.00224	-0.00225	-0.00224
	(A2 * B1 * B2 * !Y)	0.00289	0.00291	0.00290
	(!A2 * B1 * B2 * !Y)	-0.00211	-0.00218	-0.00219
	(!A2 * B1 * B2 * !Y)	0.00294	0.00296	0.00295
	(!A2 * B1 * !B2 * Y)	-0.00069	-0.00071	-0.00070
	(!A2 * B1 * !B2 * Y)	0.00336	0.00343	0.00338
	(!A2 * !B1 * Y)	-0.00070	-0.00071	-0.00070
	(!A2 * !B1 * Y)	0.00337	0.00343	0.00338
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	-0.00490	-0.00491	-0.00487
	(A2 * B1 * B2 * !Y)	0.00616	0.00620	0.00616
	(!A2 * B1 * B2 * !Y)	-0.00461	-0.00474	-0.00473
	(!A2 * B1 * B2 * !Y)	0.00628	0.00632	0.00629
	(!A2 * B1 * !B2 * Y)	-0.00140	-0.00143	-0.00140
	(!A2 * B1 * !B2 * Y)	0.00750	0.00765	0.00753
	(!A2 * !B1 * Y)	-0.00140	-0.00143	-0.00140
	(!A2 * !B1 * Y)	0.00750	0.00765	0.00753
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	-0.00905	-0.00912	-0.00906
	(A2 * B1 * B2 * !Y)	0.01160	0.01178	0.01171
	(!A2 * B1 * B2 * !Y)	-0.00844	-0.00878	-0.00876
	(!A2 * B1 * B2 * !Y)	0.01187	0.01200	0.01195
	(!A2 * B1 * !B2 * Y)	-0.00264	-0.00262	-0.00263
	(!A2 * B1 * !B2 * Y)	0.01390	0.01387	0.01390
	(!A2 * !B1 * Y)	-0.00264	-0.00262	-0.00264
	(!A2 * !B1 * Y)	0.01385	0.01381	0.01390

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)	0.00283	0.00242	0.00238
	(A1 * B1 * B2 * !Y)	-0.00248	-0.00298	-0.00300
	(!A1 * B1 * B2 * !Y)	0.00230	0.00232	0.00231
	(!A1 * B1 * B2 * !Y)	-0.00304	-0.00305	-0.00305
	(!A1 * B1 * !B2 * Y)	0.00231	0.00234	0.00232
	(!A1 * B1 * !B2 * Y)	-0.00304	-0.00307	-0.00305
	(!A1 * !B1 * Y)	0.00230	0.00231	0.00230
	(!A1 * !B1 * Y)	-0.00305	-0.00306	-0.00305
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	0.00541	0.00459	0.00452
	(A1 * B1 * B2 * !Y)	-0.00471	-0.00572	-0.00573
	(!A1 * B1 * B2 * !Y)	0.00434	0.00436	0.00434
	(!A1 * B1 * B2 * !Y)	-0.00581	-0.00582	-0.00581
	(!A1 * B1 * !B2 * Y)	0.00419	0.00424	0.00421
	(!A1 * B1 * !B2 * Y)	-0.00593	-0.00598	-0.00595
	(!A1 * !B1 * Y)	0.00418	0.00423	0.00421
	(!A1 * !B1 * Y)	-0.00593	-0.00597	-0.00595
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	0.01123	0.00936	0.00920
	(A1 * B1 * B2 * !Y)	-0.00953	-0.01172	-0.01177
	(!A1 * B1 * B2 * !Y)	0.00876	0.00885	0.00881
	(!A1 * B1 * B2 * !Y)	-0.01189	-0.01197	-0.01194
	(!A1 * B1 * !B2 * Y)	0.00883	0.00891	0.00887
	(!A1 * B1 * !B2 * Y)	-0.01192	-0.01197	-0.01194
	(!A1 * !B1 * Y)	0.00884	0.00891	0.00887
	(!A1 * !B1 * Y)	-0.01192	-0.01197	-0.01194

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)	-0.00237	-0.00237	-0.00236
	(A1 * B1 * B2 * !Y)	0.00299	0.00301	0.00300
	(!A1 * B1 * B2 * !Y)	-0.00223	-0.00230	-0.00231
	(!A1 * B1 * B2 * !Y)	0.00304	0.00308	0.00306
	(!A1 * B1 * !B2 * Y)	-0.00216	-0.00231	-0.00231
	(!A1 * B1 * !B2 * Y)	0.00314	0.00307	0.00306
	(!A1 * !B1 * Y)	-0.00216	-0.00231	-0.00230
	(!A1 * !B1 * Y)	0.00314	0.00307	0.00306
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	-0.00448	-0.00451	-0.00449
	(A1 * B1 * B2 * !Y)	0.00568	0.00573	0.00573
	(!A1 * B1 * B2 * !Y)	-0.00422	-0.00436	-0.00434
	(!A1 * B1 * B2 * !Y)	0.00581	0.00588	0.00583
	(!A1 * B1 * !B2 * Y)	-0.00388	-0.00422	-0.00421
	(!A1 * B1 * !B2 * Y)	0.00620	0.00602	0.00597
	(!A1 * !B1 * Y)	-0.00388	-0.00422	-0.00421
	(!A1 * !B1 * Y)	0.00620	0.00602	0.00597
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	-0.00915	-0.00919	-0.00912
	(A1 * B1 * B2 * !Y)	0.01176	0.01187	0.01177
	(!A1 * B1 * B2 * !Y)	-0.00854	-0.00882	-0.00881
	(!A1 * B1 * B2 * !Y)	0.01195	0.01205	0.01199
	(!A1 * B1 * !B2 * Y)	-0.00809	-0.00891	-0.00887
	(!A1 * B1 * !B2 * Y)	0.01250	0.01202	0.01198
	(!A1 * !B1 * Y)	-0.00809	-0.00891	-0.00887
	(!A1 * !B1 * Y)	0.01250	0.01202	0.01198

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)	0.00258	0.00260	0.00258
	(A1 * A2 * B2 * !Y)	-0.00135	-0.00134	-0.00133
	(A1 * A2 * !B2 * !Y)	0.00248	0.00253	0.00249
	(A1 * A2 * !B2 * !Y)	-0.00132	-0.00133	-0.00133
	(A1 * !A2 * !B2 * Y)	0.00067	0.00067	0.00065
	(A1 * !A2 * !B2 * Y)	-0.00347	-0.00349	-0.00351
	(!A1 * !B2 * Y)	0.00067	0.00067	0.00065
	(!A1 * !B2 * Y)	-0.00347	-0.00349	-0.00351
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	0.00547	0.00555	0.00550
	(A1 * A2 * B2 * !Y)	-0.00256	-0.00260	-0.00258
	(A1 * A2 * !B2 * !Y)	0.00530	0.00535	0.00530
	(A1 * A2 * !B2 * !Y)	-0.00256	-0.00258	-0.00257
	(A1 * !A2 * !B2 * Y)	0.00159	0.00159	0.00153
	(A1 * !A2 * !B2 * Y)	-0.00693	-0.00696	-0.00702
	(!A1 * !B2 * Y)	0.00159	0.00159	0.00153
	(!A1 * !B2 * Y)	-0.00693	-0.00696	-0.00702
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	0.01019	0.01032	0.01023
	(A1 * A2 * B2 * !Y)	-0.00521	-0.00527	-0.00521
	(A1 * A2 * !B2 * !Y)	0.00985	0.00998	0.00989
	(A1 * A2 * !B2 * !Y)	-0.00515	-0.00522	-0.00520
	(A1 * !A2 * !B2 * Y)	0.00275	0.00278	0.00266
	(A1 * !A2 * !B2 * Y)	-0.01366	-0.01379	-0.01392
	(!A1 * !B2 * Y)	0.00276	0.00279	0.00267
	(!A1 * !B2 * Y)	-0.01368	-0.01379	-0.01392

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)	-0.00238	-0.00240	-0.00256
	(A1 * A2 * B2 * !Y)	0.00149	0.00149	0.00137
	(A1 * A2 * !B2 * !Y)	-0.00244	-0.00253	-0.00249
	(A1 * A2 * !B2 * !Y)	0.00133	0.00133	0.00133
	(A1 * !A2 * !B2 * Y)	-0.00064	-0.00065	-0.00064
	(A1 * !A2 * !B2 * Y)	0.00350	0.00356	0.00351
	(!A1 * !B2 * Y)	-0.00064	-0.00065	-0.00064
	(!A1 * !B2 * Y)	0.00350	0.00356	0.00351
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	-0.00515	-0.00518	-0.00547
	(A1 * A2 * B2 * !Y)	0.00285	0.00286	0.00264
	(A1 * A2 * !B2 * !Y)	-0.00519	-0.00535	-0.00530
	(A1 * A2 * !B2 * !Y)	0.00257	0.00258	0.00257
	(A1 * !A2 * !B2 * Y)	-0.00150	-0.00150	-0.00150
	(A1 * !A2 * !B2 * Y)	0.00699	0.00701	0.00702
	(!A1 * !B2 * Y)	-0.00150	-0.00150	-0.00150
	(!A1 * !B2 * Y)	0.00699	0.00700	0.00702
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	-0.00957	-0.00960	-0.01016
	(A1 * A2 * B2 * !Y)	0.00576	0.00574	0.00533
	(A1 * A2 * !B2 * !Y)	-0.00959	-0.00992	-0.00989
	(A1 * A2 * !B2 * !Y)	0.00519	0.00522	0.00520
	(A1 * !A2 * !B2 * Y)	-0.00260	-0.00262	-0.00260
	(A1 * !A2 * !B2 * Y)	0.01389	0.01397	0.01394
	(!A1 * !B2 * Y)	-0.00261	-0.00262	-0.00260
	(!A1 * !B2 * Y)	0.01389	0.01396	0.01394

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)	0.00279	0.00283	0.00280
	(A1 * A2 * B1 * !Y)	-0.00134	-0.00136	-0.00134
	(A1 * A2 * !B1 * !Y)	0.00274	0.00280	0.00275
	(A1 * A2 * !B1 * !Y)	-0.00133	-0.00135	-0.00134
	(A1 * !A2 * !B1 * Y)	0.00230	0.00232	0.00231
	(A1 * !A2 * !B1 * Y)	-0.00314	-0.00315	-0.00314
	(!A1 * !B1 * Y)	0.00230	0.00232	0.00231
	(!A1 * !B1 * Y)	-0.00314	-0.00315	-0.00314
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	0.00486	0.00492	0.00488
	(A1 * A2 * B1 * !Y)	-0.00258	-0.00262	-0.00259
	(A1 * A2 * !B1 * !Y)	0.00471	0.00476	0.00472
	(A1 * A2 * !B1 * !Y)	-0.00256	-0.00260	-0.00259
	(A1 * !A2 * !B1 * Y)	0.00418	0.00423	0.00418
	(A1 * !A2 * !B1 * Y)	-0.00591	-0.00594	-0.00590
	(!A1 * !B1 * Y)	0.00418	0.00423	0.00418
	(!A1 * !B1 * Y)	-0.00591	-0.00594	-0.00590
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	0.01019	0.01040	0.01022
	(A1 * A2 * B1 * !Y)	-0.00522	-0.00532	-0.00522
	(A1 * A2 * !B1 * !Y)	0.00988	0.01008	0.00989
	(A1 * A2 * !B1 * !Y)	-0.00518	-0.00523	-0.00520
	(A1 * !A2 * !B1 * Y)	0.00880	0.00882	0.00880
	(A1 * !A2 * !B1 * Y)	-0.01190	-0.01190	-0.01188
	(!A1 * !B1 * Y)	0.00878	0.00888	0.00877
	(!A1 * !B1 * Y)	-0.01189	-0.01195	-0.01187

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)	-0.00260	-0.00263	-0.00278
	(A1 * A2 * B1 * !Y)	0.00150	0.00151	0.00138
	(A1 * A2 * !B1 * !Y)	-0.00267	-0.00273	-0.00274
	(A1 * A2 * !B1 * !Y)	0.00134	0.00135	0.00134
	(A1 * !A2 * !B1 * Y)	-0.00216	-0.00232	-0.00231
	(A1 * !A2 * !B1 * Y)	0.00326	0.00317	0.00315
	(!A1 * !B1 * Y)	-0.00216	-0.00232	-0.00231
	(!A1 * !B1 * Y)	0.00326	0.00318	0.00315
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	-0.00452	-0.00457	-0.00484
	(A1 * A2 * B1 * !Y)	0.00286	0.00288	0.00265
	(A1 * A2 * !B1 * !Y)	-0.00458	-0.00473	-0.00472
	(A1 * A2 * !B1 * !Y)	0.00258	0.00260	0.00259
	(A1 * !A2 * !B1 * Y)	-0.00387	-0.00423	-0.00418
	(A1 * !A2 * !B1 * Y)	0.00613	0.00595	0.00592
	(!A1 * !B1 * Y)	-0.00387	-0.00423	-0.00418
	(!A1 * !B1 * Y)	0.00613	0.00596	0.00592
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	-0.00956	-0.00960	-0.01015
	(A1 * A2 * B1 * !Y)	0.00576	0.00575	0.00534
	(A1 * A2 * !B1 * !Y)	-0.00960	-0.00990	-0.00989
	(A1 * A2 * !B1 * !Y)	0.00519	0.00523	0.00521
	(A1 * !A2 * !B1 * Y)	-0.00809	-0.00882	-0.00880
	(A1 * !A2 * !B1 * Y)	0.01240	0.01198	0.01191
	(!A1 * !B1 * Y)	-0.00809	-0.00886	-0.00877
	(!A1 * !B1 * Y)	0.01240	0.01199	0.01191

SKY130_FD_SC_HS__A22Ox

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00276	0.00255	0.00269	0.00277	1.41304
sky130_fd_sc_hs__a22o_2	0.00288	0.00267	0.00283	0.00277	2.70225
sky130_fd_sc_hs__a22o_4	0.00491	0.00518	0.00492	0.00539	5.52203

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a22o_1	0.00000	0.36894	0.96806
sky130_fd_sc_hs__a22o_2	0.00000	0.47790	0.97951
sky130_fd_sc_hs__a22o_4	0.00000	0.96181	1.95900

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)	0.07162	0.50450	5.80548
	A2->X (RR)	0.07590	0.48815	5.71342
	B1->X (RR)	0.05751	0.46671	5.60782
	B2->X (RR)	0.06086	0.46116	5.53547
sky130_fd_sc_hs__a22o_2	A1->X (RR)	0.07084	0.42536	5.64986
	A2->X (RR)	0.07531	0.40377	5.52715
	B1->X (RR)	0.05857	0.39070	5.46052
	B2->X (RR)	0.06161	0.38122	5.38254
sky130_fd_sc_hs__a22o_4	A1->X (RR)	0.07021	0.34894	5.81171
	A2->X (RR)	0.07485	0.33959	5.69350
	B1->X (RR)	0.05818	0.31786	5.53109
	B2->X (RR)	0.06172	0.31153	5.50093

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22o_1	A1->X (FF)	0.10921	0.48269	5.07100
	A2->X (FF)	0.11815	0.50806	5.22701
	B1->X (FF)	0.09406	0.50819	5.33566
	B2->X (FF)	0.10003	0.52071	5.37692
sky130_fd_sc_hs__a22o_2	A1->X (FF)	0.13240	0.48470	5.05357
	A2->X (FF)	0.14222	0.51322	5.21983
	B1->X (FF)	0.11865	0.52072	5.32313
	B2->X (FF)	0.12345	0.53197	5.37294
sky130_fd_sc_hs__a22o_4	A1->X (FF)	0.12942	0.45764	5.36630
	A2->X (FF)	0.13730	0.47590	5.44845
	B1->X (FF)	0.11566	0.49412	5.51789
	B2->X (FF)	0.10847	0.48345	5.54889

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.01772	0.02192	0.10511
	A1	0.00831	0.01252	0.09588
	A2	0.01943	0.02363	0.12945
	A2	0.00832	0.01252	0.11863
	B1	0.01119	0.01760	0.13326
	B1	0.00494	0.01139	0.12743
	B2	0.01261	0.01842	0.13297
	B2	0.00486	0.01069	0.12568
sky130_fd_sc_hs__a22o_2	A1	0.02223	0.02650	0.11002
	A1	0.01250	0.01676	0.10087
	A2	0.02393	0.02798	0.13433
	A2	0.01238	0.01650	0.12376
	B1	0.01541	0.02155	0.13747
	B1	0.00882	0.01504	0.13184
	B2	0.01696	0.02273	0.13771
	B2	0.00878	0.01463	0.13025
sky130_fd_sc_hs__a22o_4	A1	0.04375	0.05352	0.27024
	A1	0.02550	0.03540	0.25267
	A2	0.04731	0.05566	0.26493
	A2	0.02555	0.03399	0.24436
	B1	0.03028	0.04174	0.27094
	B1	0.01843	0.03008	0.26088
	B2	0.03326	0.04423	0.28470
	B2	0.01794	0.02909	0.27130

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.00483	0.00827	0.10823
	A1	0.01428	0.01771	0.11730
	A2	0.00601	0.01026	0.11698
	A2	0.01707	0.02118	0.12706
	B1	0.00481	0.01252	0.13814
	B1	0.01107	0.01855	0.14426
	B2	0.00529	0.01287	0.13874
	B2	0.01300	0.02055	0.14547
sky130_fd_sc_hs__a22o_2	A1	0.00982	0.01257	0.11462
	A1	0.01962	0.02221	0.12177
	A2	0.01203	0.01524	0.12258
	A2	0.02352	0.02638	0.13225
	B1	0.00960	0.01652	0.14475
	B1	0.01619	0.02310	0.14944
	B2	0.01050	0.01743	0.14382
	B2	0.01862	0.02536	0.15188
sky130_fd_sc_hs__a22o_4	A1	0.02069	0.02615	0.23986
	A1	0.03908	0.04442	0.25500
	A2	0.02149	0.02665	0.24003
	A2	0.04323	0.04836	0.25657
	B1	0.02071	0.03124	0.23837
	B1	0.03256	0.04288	0.24896
	B2	0.02172	0.03390	0.26397
	B2	0.03689	0.04884	0.27609

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)	0.00284	0.00242	0.00237
	(A2 * B1 * B2 * X)	-0.00208	-0.00255	-0.00259
	(!A2 * B1 * B2 * X)	0.00230	0.00230	0.00230
	(!A2 * B1 * B2 * X)	-0.00262	-0.00262	-0.00261
	(!A2 * B1 * !B2 * !X)	0.00073	0.00072	0.00069
	(!A2 * B1 * !B2 * !X)	-0.00328	-0.00328	-0.00335
	(!A2 * !B1 * !X)	0.00073	0.00073	0.00069
	(!A2 * !B1 * !X)	-0.00328	-0.00328	-0.00335
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	0.00308	0.00266	0.00261
	(A2 * B1 * B2 * X)	-0.00205	-0.00252	-0.00256
	(!A2 * B1 * B2 * X)	0.00254	0.00255	0.00254
	(!A2 * B1 * B2 * X)	-0.00259	-0.00259	-0.00259
	(!A2 * B1 * !B2 * !X)	0.00080	0.00080	0.00075
	(!A2 * B1 * !B2 * !X)	-0.00329	-0.00329	-0.00337
	(!A2 * !B1 * !X)	0.00080	0.00080	0.00075
	(!A2 * !B1 * !X)	-0.00329	-0.00329	-0.00337
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	0.00485	0.00397	0.00386
	(A2 * B1 * B2 * X)	-0.00424	-0.00528	-0.00536
	(!A2 * B1 * B2 * X)	0.00369	0.00372	0.00370
	(!A2 * B1 * B2 * X)	-0.00542	-0.00546	-0.00543
	(!A2 * B1 * !B2 * !X)	0.00111	0.00111	0.00108
	(!A2 * B1 * !B2 * !X)	-0.00618	-0.00618	-0.00627
	(!A2 * !B1 * !X)	0.00111	0.00112	0.00108
	(!A2 * !B1 * !X)	-0.00618	-0.00620	-0.00627

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)	-0.00234	-0.00236	-0.00234
	(A2 * B1 * B2 * X)	0.00258	0.00262	0.00260
	(!A2 * B1 * B2 * X)	-0.00218	-0.00230	-0.00230
	(!A2 * B1 * B2 * X)	0.00263	0.00265	0.00264
	(!A2 * B1 * !B2 * !X)	-0.00067	-0.00069	-0.00067
	(!A2 * B1 * !B2 * !X)	0.00335	0.00342	0.00336
	(!A2 * !B1 * !X)	-0.00068	-0.00069	-0.00068
	(!A2 * !B1 * !X)	0.00335	0.00342	0.00336
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	-0.00258	-0.00260	-0.00258
	(A2 * B1 * B2 * X)	0.00256	0.00260	0.00258
	(!A2 * B1 * B2 * X)	-0.00242	-0.00254	-0.00254
	(!A2 * B1 * B2 * X)	0.00262	0.00263	0.00261
	(!A2 * B1 * !B2 * !X)	-0.00072	-0.00074	-0.00073
	(!A2 * B1 * !B2 * !X)	0.00337	0.00344	0.00339
	(!A2 * !B1 * !X)	-0.00073	-0.00074	-0.00073
	(!A2 * !B1 * !X)	0.00338	0.00344	0.00339
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	-0.00382	-0.00383	-0.00379
	(A2 * B1 * B2 * X)	0.00538	0.00542	0.00538
	(!A2 * B1 * B2 * X)	-0.00357	-0.00372	-0.00370
	(!A2 * B1 * B2 * X)	0.00545	0.00549	0.00547
	(!A2 * B1 * !B2 * !X)	-0.00104	-0.00106	-0.00105
	(!A2 * B1 * !B2 * !X)	0.00627	0.00635	0.00630
	(!A2 * !B1 * !X)	-0.00104	-0.00106	-0.00105
	(!A2 * !B1 * !X)	0.00628	0.00635	0.00630

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)	0.00279	0.00238	0.00233
	(A1 * B1 * B2 * X)	-0.00207	-0.00257	-0.00259
	(!A1 * B1 * B2 * X)	0.00226	0.00227	0.00225
	(!A1 * B1 * B2 * X)	-0.00262	-0.00263	-0.00262
	(!A1 * B1 * !B2 * !X)	0.00225	0.00226	0.00224
	(!A1 * B1 * !B2 * !X)	-0.00263	-0.00264	-0.00263
	(!A1 * !B1 * !X)	0.00225	0.00226	0.00224
	(!A1 * !B1 * !X)	-0.00263	-0.00264	-0.00263
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	0.00285	0.00245	0.00240
	(A1 * B1 * B2 * X)	-0.00215	-0.00263	-0.00267
	(!A1 * B1 * B2 * X)	0.00235	0.00235	0.00234
	(!A1 * B1 * B2 * X)	-0.00270	-0.00270	-0.00270
	(!A1 * B1 * !B2 * !X)	0.00231	0.00232	0.00231
	(!A1 * B1 * !B2 * !X)	-0.00271	-0.00272	-0.00271
	(!A1 * !B1 * !X)	0.00232	0.00235	0.00234
	(!A1 * !B1 * !X)	-0.00269	-0.00271	-0.00271
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	0.00562	0.00475	0.00468
	(A1 * B1 * B2 * X)	-0.00423	-0.00526	-0.00526
	(!A1 * B1 * B2 * X)	0.00455	0.00459	0.00456
	(!A1 * B1 * B2 * X)	-0.00531	-0.00535	-0.00532
	(!A1 * B1 * !B2 * !X)	0.00446	0.00448	0.00447
	(!A1 * B1 * !B2 * !X)	-0.00542	-0.00543	-0.00542
	(!A1 * !B1 * !X)	0.00446	0.00448	0.00446
	(!A1 * !B1 * !X)	-0.00542	-0.00544	-0.00542

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)	-0.00230	-0.00232	-0.00230
	(A1 * B1 * B2 * X)	0.00258	0.00262	0.00260
	(!A1 * B1 * B2 * X)	-0.00216	-0.00226	-0.00225
	(!A1 * B1 * B2 * X)	0.00263	0.00266	0.00264
	(!A1 * B1 * !B2 * !X)	-0.00210	-0.00224	-0.00224
	(!A1 * B1 * !B2 * !X)	0.00271	0.00265	0.00264
	(!A1 * !B1 * !X)	-0.00210	-0.00224	-0.00224
	(!A1 * !B1 * !X)	0.00271	0.00265	0.00264
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	-0.00238	-0.00239	-0.00237
	(A1 * B1 * B2 * X)	0.00269	0.00271	0.00269
	(!A1 * B1 * B2 * X)	-0.00222	-0.00231	-0.00232
	(!A1 * B1 * B2 * X)	0.00271	0.00273	0.00272
	(!A1 * B1 * !B2 * !X)	-0.00215	-0.00231	-0.00231
	(!A1 * B1 * !B2 * !X)	0.00278	0.00275	0.00272
	(!A1 * !B1 * !X)	-0.00215	-0.00231	-0.00232
	(!A1 * !B1 * !X)	0.00278	0.00275	0.00272
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	-0.00463	-0.00463	-0.00461
	(A1 * B1 * B2 * X)	0.00524	0.00527	0.00528
	(!A1 * B1 * B2 * X)	-0.00440	-0.00455	-0.00453
	(!A1 * B1 * B2 * X)	0.00535	0.00538	0.00537
	(!A1 * B1 * !B2 * !X)	-0.00416	-0.00447	-0.00444
	(!A1 * B1 * !B2 * !X)	0.00564	0.00547	0.00545
	(!A1 * !B1 * !X)	-0.00416	-0.00447	-0.00444
	(!A1 * !B1 * !X)	0.00564	0.00547	0.00545

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)	0.00226	0.00228	0.00227
	(A1 * A2 * B2 * X)	-0.00122	-0.00123	-0.00122
	(A1 * A2 * !B2 * X)	0.00222	0.00224	0.00222
	(A1 * A2 * !B2 * X)	-0.00120	-0.00122	-0.00121
	(A1 * !A2 * !B2 * !X)	0.00063	0.00063	0.00061
	(A1 * !A2 * !B2 * !X)	-0.00306	-0.00307	-0.00309
	(!A1 * !B2 * !X)	0.00066	0.00066	0.00064
	(!A1 * !B2 * !X)	-0.00305	-0.00307	-0.00309
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	0.00253	0.00256	0.00254
	(A1 * A2 * B2 * X)	-0.00121	-0.00121	-0.00120
	(A1 * A2 * !B2 * X)	0.00245	0.00250	0.00246
	(A1 * A2 * !B2 * X)	-0.00118	-0.00120	-0.00119
	(A1 * !A2 * !B2 * !X)	0.00069	0.00069	0.00066
	(A1 * !A2 * !B2 * !X)	-0.00312	-0.00312	-0.00315
	(!A1 * !B2 * !X)	0.00070	0.00070	0.00068
	(!A1 * !B2 * !X)	-0.00311	-0.00312	-0.00315
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	0.00423	0.00425	0.00422
	(A1 * A2 * B2 * X)	-0.00241	-0.00241	-0.00238
	(A1 * A2 * !B2 * X)	0.00409	0.00412	0.00409
	(A1 * A2 * !B2 * X)	-0.00236	-0.00239	-0.00237
	(A1 * !A2 * !B2 * !X)	0.00117	0.00118	0.00113
	(A1 * !A2 * !B2 * !X)	-0.00594	-0.00597	-0.00602
	(!A1 * !B2 * !X)	0.00117	0.00118	0.00113
	(!A1 * !B2 * !X)	-0.00594	-0.00597	-0.00602

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)	-0.00213	-0.00213	-0.00225
	(A1 * A2 * B2 * X)	0.00134	0.00133	0.00124
	(A1 * A2 * !B2 * X)	-0.00215	-0.00222	-0.00221
	(A1 * A2 * !B2 * X)	0.00121	0.00122	0.00121
	(A1 * !A2 * !B2 * !X)	-0.00060	-0.00061	-0.00060
	(A1 * !A2 * !B2 * !X)	0.00309	0.00314	0.00309
	(!A1 * !B2 * !X)	-0.00063	-0.00065	-0.00063
	(!A1 * !B2 * !X)	0.00309	0.00313	0.00309
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	-0.00239	-0.00240	-0.00252
	(A1 * A2 * B2 * X)	0.00133	0.00132	0.00123
	(A1 * A2 * !B2 * X)	-0.00240	-0.00249	-0.00246
	(A1 * A2 * !B2 * X)	0.00120	0.00120	0.00120
	(A1 * !A2 * !B2 * !X)	-0.00065	-0.00067	-0.00064
	(A1 * !A2 * !B2 * !X)	0.00316	0.00320	0.00316
	(!A1 * !B2 * !X)	-0.00066	-0.00068	-0.00066
	(!A1 * !B2 * !X)	0.00315	0.00320	0.00316
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	-0.00390	-0.00393	-0.00419
	(A1 * A2 * B2 * X)	0.00262	0.00263	0.00244
	(A1 * A2 * !B2 * X)	-0.00399	-0.00412	-0.00409
	(A1 * A2 * !B2 * X)	0.00240	0.00239	0.00238
	(A1 * !A2 * !B2 * !X)	-0.00109	-0.00113	-0.00109
	(A1 * !A2 * !B2 * !X)	0.00602	0.00611	0.00604
	(!A1 * !B2 * !X)	-0.00109	-0.00113	-0.00109
	(!A1 * !B2 * !X)	0.00602	0.00611	0.00604

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)	0.00238	0.00239	0.00237
	(A1 * A2 * B1 * X)	-0.00134	-0.00134	-0.00132
	(A1 * A2 * !B1 * X)	0.00233	0.00236	0.00232
	(A1 * A2 * !B1 * X)	-0.00131	-0.00132	-0.00132
	(A1 * !A2 * !B1 * !X)	0.00198	0.00199	0.00198
	(A1 * !A2 * !B1 * !X)	-0.00276	-0.00277	-0.00277
	(!A1 * !B1 * !X)	0.00210	0.00211	0.00210
	(!A1 * !B1 * !X)	-0.00276	-0.00276	-0.00275
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	0.00250	0.00251	0.00249
	(A1 * A2 * B1 * X)	-0.00127	-0.00127	-0.00126
	(A1 * A2 * !B1 * X)	0.00241	0.00247	0.00241
	(A1 * A2 * !B1 * X)	-0.00122	-0.00126	-0.00125
	(A1 * !A2 * !B1 * !X)	0.00221	0.00224	0.00222
	(A1 * !A2 * !B1 * !X)	-0.00265	-0.00267	-0.00266
	(!A1 * !B1 * !X)	0.00227	0.00230	0.00228
	(!A1 * !B1 * !X)	-0.00265	-0.00267	-0.00265
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	0.00460	0.00462	0.00459
	(A1 * A2 * B1 * X)	-0.00265	-0.00265	-0.00262
	(A1 * A2 * !B1 * X)	0.00451	0.00460	0.00448
	(A1 * A2 * !B1 * X)	-0.00256	-0.00262	-0.00260
	(A1 * !A2 * !B1 * !X)	0.00360	0.00365	0.00362
	(A1 * !A2 * !B1 * !X)	-0.00596	-0.00600	-0.00597
	(!A1 * !B1 * !X)	0.00366	0.00370	0.00367
	(!A1 * !B1 * !X)	-0.00597	-0.00600	-0.00597

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)	-0.00223	-0.00224	-0.00235
	(A1 * A2 * B1 * X)	0.00145	0.00145	0.00135
	(A1 * A2 * !B1 * X)	-0.00225	-0.00231	-0.00231
	(A1 * A2 * !B1 * X)	0.00132	0.00133	0.00132
	(A1 * !A2 * !B1 * !X)	-0.00182	-0.00196	-0.00198
	(A1 * !A2 * !B1 * !X)	0.00291	0.00282	0.00278
	(!A1 * !B1 * !X)	-0.00195	-0.00210	-0.00210
	(!A1 * !B1 * !X)	0.00288	0.00279	0.00276
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	-0.00235	-0.00236	-0.00247
	(A1 * A2 * B1 * X)	0.00138	0.00138	0.00129
	(A1 * A2 * !B1 * X)	-0.00235	-0.00242	-0.00241
	(A1 * A2 * !B1 * X)	0.00125	0.00126	0.00126
	(A1 * !A2 * !B1 * !X)	-0.00203	-0.00219	-0.00220
	(A1 * !A2 * !B1 * !X)	0.00279	0.00269	0.00267
	(!A1 * !B1 * !X)	-0.00209	-0.00225	-0.00226
	(!A1 * !B1 * !X)	0.00278	0.00269	0.00267
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	-0.00426	-0.00431	-0.00455
	(A1 * A2 * B1 * X)	0.00285	0.00288	0.00268
	(A1 * A2 * !B1 * X)	-0.00437	-0.00446	-0.00448
	(A1 * A2 * !B1 * X)	0.00263	0.00262	0.00262
	(A1 * !A2 * !B1 * !X)	-0.00333	-0.00363	-0.00362
	(A1 * !A2 * !B1 * !X)	0.00618	0.00604	0.00600
	(!A1 * !B1 * !X)	-0.00337	-0.00363	-0.00363
	(!A1 * !B1 * !X)	0.00622	0.00604	0.00600

SKY130_FD_SC_HS__A2BB2OIx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00239	0.00258	0.00279	0.00297	0.65302
sky130_fd_sc_hs__a2bb2oi_2	0.00262	0.00272	0.00544	0.00547	1.31258
sky130_fd_sc_hs__a2bb2oi_4	0.00414	0.00434	0.01081	0.01099	2.37700

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2bb2oi_1	0.00000	0.24342	0.61549
sky130_fd_sc_hs__a2bb2oi_2	0.00000	0.32106	0.75266
sky130_fd_sc_hs__a2bb2oi_4	0.00000	0.63180	1.50532

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)	0.08477	0.63488	5.78746
	A2_N->Y (RR)	0.07943	0.60979	5.62335
	B1->Y (FR)	0.07620	0.81441	9.53492
	B2->Y (FR)	0.05890	0.76086	9.10377
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (RR)	0.07787	0.49097	5.53073
	A2_N->Y (RR)	0.07333	0.47345	5.40730
	B1->Y (FR)	0.06976	0.67780	9.47542
	B2->Y (FR)	0.05159	0.65030	9.29165
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (RR)	0.09750	0.47381	6.07975
	A2_N->Y (RR)	0.08721	0.44453	5.90384
	B1->Y (FR)	0.06986	0.57920	9.28920
	B2->Y (FR)	0.05038	0.54789	8.98230

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)	0.08341	0.37757	3.34765
	A2_N->Y (FF)	0.07394	0.38818	3.37999
	B1->Y (RF)	0.02540	0.29125	3.23772
	B2->Y (RF)	0.02279	0.32775	3.74031
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (FF)	0.10489	0.40291	3.66649
	A2_N->Y (FF)	0.09436	0.41879	3.60916
	B1->Y (RF)	0.02622	0.26490	3.63691
	B2->Y (RF)	0.02149	0.30111	4.24145
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (FF)	0.10644	0.36261	3.02564
	A2_N->Y (FF)	0.09009	0.37560	3.37100
	B1->Y (RF)	0.02538	0.20665	3.39026
	B2->Y (RF)	0.02150	0.25720	4.27517

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	0.01313	0.01852	0.12088
	A1_N	0.00907	0.01431	0.11750
	A2_N	0.01058	0.01659	0.12888
	A2_N	0.00783	0.01375	0.12678
	B1	0.00247	0.00378	0.04121
	B1	0.01030	0.01162	0.04908
	B2	0.00156	0.00288	0.03963
	B2	0.00802	0.00934	0.04626
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.01832	0.02459	0.13984
	A1_N	0.01162	0.01792	0.13345
	A2_N	0.01540	0.02177	0.14292
	A2_N	0.01026	0.01663	0.13820
	B1	0.00566	0.00831	0.07534
	B1	0.02132	0.02396	0.09115
	B2	0.00317	0.00601	0.07124
	B2	0.01543	0.01836	0.08386
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.03404	0.04160	0.21148
	A1_N	0.02337	0.03095	0.20100
	A2_N	0.02777	0.03818	0.23432
	A2_N	0.01964	0.03021	0.22660
	B1	0.01042	0.01657	0.14901
	B1	0.04192	0.04818	0.18117
	B2	0.00612	0.01267	0.14081
	B2	0.03111	0.03774	0.16634

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	A1_N	0.00774	0.01260	0.11299
	A1_N	0.01263	0.01750	0.11803
	A2_N	0.00590	0.01293	0.11399
	A2_N	0.01119	0.01818	0.11929
	B1	0.00976	0.01097	0.03959
	B1	0.00193	0.00313	0.03172
	B2	0.00836	0.00992	0.04012
	B2	0.00195	0.00347	0.03350
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.01052	0.01505	0.12613
	A1_N	0.01724	0.02171	0.13284
	A2_N	0.01085	0.01743	0.11925
	A2_N	0.01602	0.02248	0.12431
	B1	0.01879	0.02121	0.07347
	B1	0.00312	0.00546	0.05744
	B2	0.01537	0.01852	0.07240
	B2	0.00317	0.00633	0.05876
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.02288	0.02835	0.16251
	A1_N	0.03361	0.03905	0.17320
	A2_N	0.02213	0.03247	0.22443
	A2_N	0.03023	0.04053	0.23250
	B1	0.03702	0.04290	0.14911
	B1	0.00542	0.01115	0.11651
	B2	0.03022	0.03717	0.13957
	B2	0.00547	0.01240	0.11307

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)	0.00228	0.00188	0.00182
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00224	-0.00267	-0.00270
	(!A2_N * B1 * B2 * !Y)	0.00928	0.01420	0.11494
	(!A2_N * B1 * B2 * !Y)	0.00207	0.00696	0.10775
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00286	0.00245	0.00241
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00217	-0.00261	-0.00262
	(!A2_N * B1 * B2 * !Y)	0.01158	0.01699	0.12943
	(!A2_N * B1 * B2 * !Y)	0.00374	0.00914	0.12163
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00367	0.00263	0.00255
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00420	-0.00531	-0.00536
	(!A2_N * B1 * B2 * !Y)	0.02040	0.02714	0.19810
	(!A2_N * B1 * B2 * !Y)	0.00736	0.01410	0.18519

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)	-0.00180	-0.00180	-0.00179
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00271	0.00271	0.00272
	(!A2_N * B1 * B2 * !Y)	0.00235	0.00722	0.10796
	(!A2_N * B1 * B2 * !Y)	0.00954	0.01444	0.11517
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00237	-0.00238	-0.00238
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00262	0.00264	0.00264
	(!A2_N * B1 * B2 * !Y)	0.00414	0.00912	0.12074
	(!A2_N * B1 * B2 * !Y)	0.01191	0.01694	0.12854
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00250	-0.00251	-0.00249
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00535	0.00540	0.00539
	(!A2_N * B1 * B2 * !Y)	0.00959	0.01652	0.18762
	(!A2_N * B1 * B2 * !Y)	0.02249	0.02942	0.20054

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)	0.00213	0.00215	0.00214
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00125	-0.00126	-0.00125
	(!A1_N * B1 * B2 * !Y)	0.00681	0.01272	0.12477
	(!A1_N * B1 * B2 * !Y)	0.00092	0.00680	0.11888
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00241	0.00243	0.00242
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00125	-0.00126	-0.00124
	(!A1_N * B1 * B2 * !Y)	0.00887	0.01485	0.13669
	(!A1_N * B1 * B2 * !Y)	0.00258	0.00856	0.13043
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00344	0.00347	0.00345
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00254	-0.00256	-0.00254
	(!A1_N * B1 * B2 * !Y)	0.01424	0.02307	0.21464
	(!A1_N * B1 * B2 * !Y)	0.00380	0.01261	0.20420

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)	-0.00207	-0.00209	-0.00213
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00130	0.00131	0.00127
	(!A1_N * B1 * B2 * !Y)	0.00224	0.00930	0.12117
	(!A1_N * B1 * B2 * !Y)	0.00814	0.01517	0.12705
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00236	-0.00236	-0.00240
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00130	0.00130	0.00126
	(!A1_N * B1 * B2 * !Y)	0.00440	0.01145	0.13246
	(!A1_N * B1 * B2 * !Y)	0.01066	0.01771	0.13871
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00325	-0.00327	-0.00342
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00272	0.00272	0.00259
	(!A1_N * B1 * B2 * !Y)	0.00881	0.02015	0.21248
	(!A1_N * B1 * B2 * !Y)	0.01920	0.03056	0.22286

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)	0.00231	0.00232	0.00231
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00295	-0.00295	-0.00295
	(!A1_N * !A2_N * B2 * !Y)	0.00287	0.00243	0.00239
	(!A1_N * !A2_N * B2 * !Y)	-0.00241	-0.00292	-0.00293
	(!A1_N * !A2_N * !B2 * !Y)	0.00230	0.00233	0.00231
	(!A1_N * !A2_N * !B2 * !Y)	-0.00294	-0.00296	-0.00295
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00443	0.00445	0.00443
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00597	-0.00598	-0.00597
	(!A1_N * !A2_N * B2 * !Y)	0.00558	0.00469	0.00462
	(!A1_N * !A2_N * B2 * !Y)	-0.00490	-0.00592	-0.00592
	(!A1_N * !A2_N * !B2 * !Y)	0.00443	0.00445	0.00443
	(!A1_N * !A2_N * !B2 * !Y)	-0.00596	-0.00598	-0.00597
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00890	0.00897	0.00893
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.01194	-0.01199	-0.01196
	(!A1_N * !A2_N * B2 * !Y)	0.01124	0.00939	0.00924
	(!A1_N * !A2_N * B2 * !Y)	-0.00977	-0.01185	-0.01186
	(!A1_N * !A2_N * !B2 * !Y)	0.00891	0.00899	0.00895
	(!A1_N * !A2_N * !B2 * !Y)	-0.01193	-0.01199	-0.01196

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)	-0.00216	-0.00232	-0.00231
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00305	0.00297	0.00296
	(!A1_N * !A2_N * B2 * !Y)	-0.00238	-0.00239	-0.00238
	(!A1_N * !A2_N * B2 * !Y)	0.00292	0.00294	0.00293
	(!A1_N * !A2_N * !B2 * !Y)	-0.00225	-0.00233	-0.00231
	(!A1_N * !A2_N * !B2 * !Y)	0.00294	0.00297	0.00296
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00409	-0.00445	-0.00443
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00622	0.00604	0.00599
	(!A1_N * !A2_N * B2 * !Y)	-0.00458	-0.00463	-0.00460
	(!A1_N * !A2_N * B2 * !Y)	0.00587	0.00598	0.00593
	(!A1_N * !A2_N * !B2 * !Y)	-0.00429	-0.00445	-0.00443
	(!A1_N * !A2_N * !B2 * !Y)	0.00596	0.00604	0.00599
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00814	-0.00897	-0.00893
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.01252	0.01204	0.01200
	(!A1_N * !A2_N * B2 * !Y)	-0.00917	-0.00922	-0.00919
	(!A1_N * !A2_N * B2 * !Y)	0.01178	0.01188	0.01186
	(!A1_N * !A2_N * !B2 * !Y)	-0.00860	-0.00891	-0.00893
	(!A1_N * !A2_N * !B2 * !Y)	0.01196	0.01210	0.01200

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)	0.00091	0.00092	0.00090
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00344	-0.00346	-0.00349
	(!A1_N * !A2_N * B1 * !Y)	0.00285	0.00242	0.00238
	(!A1_N * !A2_N * B1 * !Y)	-0.00259	-0.00311	-0.00311
	(!A1_N * !A2_N * !B1 * !Y)	0.00231	0.00233	0.00232
	(!A1_N * !A2_N * !B1 * !Y)	-0.00313	-0.00314	-0.00313
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00151	0.00152	0.00146
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00673	-0.00677	-0.00686
	(!A1_N * !A2_N * B1 * !Y)	0.00551	0.00467	0.00460
	(!A1_N * !A2_N * B1 * !Y)	-0.00486	-0.00587	-0.00588
	(!A1_N * !A2_N * !B1 * !Y)	0.00441	0.00444	0.00443
	(!A1_N * !A2_N * !B1 * !Y)	-0.00590	-0.00593	-0.00592
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00285	0.00285	0.00275
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.01377	-0.01381	-0.01397
	(!A1_N * !A2_N * B1 * !Y)	0.01114	0.00933	0.00918
	(!A1_N * !A2_N * B1 * !Y)	-0.00976	-0.01188	-0.01191
	(!A1_N * !A2_N * !B1 * !Y)	0.00878	0.00885	0.00882
	(!A1_N * !A2_N * !B1 * !Y)	-0.01197	-0.01203	-0.01200

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)	-0.00088	-0.00090	-0.00088
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00348	0.00355	0.00350
	(!A1_N * !A2_N * B1 * !Y)	-0.00238	-0.00238	-0.00237
	(!A1_N * !A2_N * B1 * !Y)	0.00311	0.00313	0.00311
	(!A1_N * !A2_N * !B1 * !Y)	-0.00224	-0.00232	-0.00231
	(!A1_N * !A2_N * !B1 * !Y)	0.00313	0.00316	0.00314
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00142	-0.00146	-0.00143
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00685	0.00699	0.00688
	(!A1_N * !A2_N * B1 * !Y)	-0.00460	-0.00460	-0.00458
	(!A1_N * !A2_N * B1 * !Y)	0.00588	0.00590	0.00588
	(!A1_N * !A2_N * !B1 * !Y)	-0.00429	-0.00444	-0.00443
	(!A1_N * !A2_N * !B1 * !Y)	0.00595	0.00594	0.00594
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00268	-0.00275	-0.00268
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.01394	0.01424	0.01400
	(!A1_N * !A2_N * B1 * !Y)	-0.00916	-0.00917	-0.00913
	(!A1_N * !A2_N * B1 * !Y)	0.01191	0.01194	0.01191
	(!A1_N * !A2_N * !B1 * !Y)	-0.00856	-0.00885	-0.00882
	(!A1_N * !A2_N * !B1 * !Y)	0.01207	0.01210	0.01205

SKY130_FD_SC_HS__A2BB2Ox

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00236	0.00244	0.00259	0.00251	1.42364
sky130_fd_sc_hs__a2bb2o_2	0.00249	0.00254	0.00272	0.00290	2.39037
sky130_fd_sc_hs__a2bb2o_4	0.00272	0.00288	0.00493	0.00495	5.19808

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2bb2o_1	0.00000	0.44860	0.81257
sky130_fd_sc_hs__a2bb2o_2	0.00000	0.55649	0.88151
sky130_fd_sc_hs__a2bb2o_4	0.00000	0.84560	1.03447

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)	0.12034	0.67432	8.28788
	A2_N->X (FR)	0.10969	0.68545	8.42259
	B1->X (RR)	0.06415	0.46877	5.64403
	B2->X (RR)	0.06048	0.47635	5.77735
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (FR)	0.12541	0.60028	8.05471
	A2_N->X (FR)	0.11454	0.60821	8.21009
	B1->X (RR)	0.06330	0.38753	5.25311
	B2->X (RR)	0.06086	0.39909	5.39229
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (FR)	0.15717	0.56757	8.32988
	A2_N->X (FR)	0.14778	0.58261	8.46356
	B1->X (RR)	0.07255	0.33471	5.58421
	B2->X (RR)	0.06798	0.34630	5.74371

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)	0.11640	0.32187	2.05658
	A2_N->X (RF)	0.10986	0.29972	1.86869
	B1->X (FF)	0.10779	0.48438	5.11594
	B2->X (FF)	0.09174	0.45706	4.99695
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (RF)	0.13781	0.30929	1.71155
	A2_N->X (RF)	0.13105	0.28219	1.46908
	B1->X (FF)	0.12853	0.48113	4.87450
	B2->X (FF)	0.11364	0.45494	4.75405
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (RF)	0.13637	0.28667	2.08258
	A2_N->X (RF)	0.12852	0.26322	1.85475
	B1->X (FF)	0.13194	0.45990	5.23084
	B2->X (FF)	0.11431	0.43017	5.09416

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	0.01152	0.01684	0.12300
	A1_N	0.01756	0.02288	0.12912
	A2_N	0.01136	0.01870	0.13975
	A2_N	0.01600	0.02335	0.14442
	B1	0.01489	0.01935	0.12101
	B1	0.00718	0.01166	0.11370
	B2	0.01324	0.01832	0.12386
	B2	0.00721	0.01230	0.11803
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.01563	0.02128	0.12682
	A1_N	0.02219	0.02786	0.13407
	A2_N	0.01563	0.02334	0.14705
	A2_N	0.02062	0.02832	0.15232
	B1	0.01951	0.02424	0.12829
	B1	0.01168	0.01642	0.12101
	B2	0.01806	0.02333	0.13097
	B2	0.01171	0.01703	0.12530
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.03036	0.03562	0.14974
	A1_N	0.03331	0.03944	0.15541
	A2_N	0.03017	0.03734	0.16539
	A2_N	0.03157	0.03956	0.17019
	B1	0.03656	0.04458	0.23855
	B1	0.02199	0.03007	0.22583
	B2	0.03352	0.04316	0.24474
	B2	0.02200	0.03175	0.23430

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	A1_N	0.01802	0.02328	0.12924
	A1_N	0.01452	0.01930	0.12198
	A2_N	0.01522	0.02141	0.13811
	A2_N	0.01305	0.01880	0.13300
	B1	0.00776	0.01176	0.11246
	B1	0.01541	0.01931	0.12010
	B2	0.00717	0.01128	0.11485
	B2	0.01324	0.01731	0.12061
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.02539	0.02852	0.12900
	A1_N	0.02035	0.02346	0.12363
	A2_N	0.02252	0.02664	0.13892
	A2_N	0.01904	0.02306	0.13521
	B1	0.01370	0.01643	0.12004
	B1	0.02148	0.02378	0.12648
	B2	0.01248	0.01545	0.12153
	B2	0.01887	0.02160	0.12597
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.03934	0.04466	0.18287
	A1_N	0.04064	0.04264	0.17003
	A2_N	0.04104	0.04446	0.17554
	A2_N	0.03861	0.04191	0.17310
	B1	0.02959	0.03288	0.22876
	B1	0.04409	0.04717	0.23796
	B2	0.02637	0.03098	0.23553
	B2	0.03790	0.04226	0.23689

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)	0.00242	0.00201	0.00195
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00209	-0.00253	-0.00256
	(!A2_N * B1 * B2 * X)	0.00899	0.01388	0.11404
	(!A2_N * B1 * B2 * X)	0.00202	0.00691	0.10710
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00250	0.00208	0.00202
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00220	-0.00267	-0.00269
	(!A2_N * B1 * B2 * X)	0.00919	0.01398	0.11211
	(!A2_N * B1 * B2 * X)	0.00190	0.00667	0.10484
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00274	0.00233	0.00228
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00244	-0.00289	-0.00290
	(!A2_N * B1 * B2 * X)	0.01181	0.01742	0.13164
	(!A2_N * B1 * B2 * X)	0.00361	0.00919	0.12347

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)	-0.00193	-0.00193	-0.00192
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00257	0.00258	0.00258
	(!A2_N * B1 * B2 * X)	0.00230	0.00715	0.10730
	(!A2_N * B1 * B2 * X)	0.00923	0.01410	0.11423
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00199	-0.00199	-0.00199
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00271	0.00272	0.00271
	(!A2_N * B1 * B2 * X)	0.00217	0.00690	0.10503
	(!A2_N * B1 * B2 * X)	0.00942	0.01418	0.11231
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00225	-0.00226	-0.00225
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00292	0.00294	0.00293
	(!A2_N * B1 * B2 * X)	0.00194	0.00715	0.12092
	(!A2_N * B1 * B2 * X)	0.01010	0.01531	0.12909

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)	0.00212	0.00214	0.00213
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00118	-0.00120	-0.00119
	(!A1_N * B1 * B2 * X)	0.00637	0.01229	0.12273
	(!A1_N * B1 * B2 * X)	0.00080	0.00672	0.11716
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00215	0.00217	0.00215
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00118	-0.00119	-0.00118
	(!A1_N * B1 * B2 * X)	0.00651	0.01239	0.12248
	(!A1_N * B1 * B2 * X)	0.00078	0.00664	0.11675
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00254	0.00257	0.00255
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00131	-0.00132	-0.00131
	(!A1_N * B1 * B2 * X)	0.00902	0.01553	0.13782
	(!A1_N * B1 * B2 * X)	0.00235	0.00883	0.13116

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)	-0.00207	-0.00208	-0.00212
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00124	0.00125	0.00121
	(!A1_N * B1 * B2 * X)	0.00222	0.00913	0.11939
	(!A1_N * B1 * B2 * X)	0.00777	0.01472	0.12497
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00209	-0.00210	-0.00214
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00124	0.00124	0.00120
	(!A1_N * B1 * B2 * X)	0.00218	0.00911	0.11898
	(!A1_N * B1 * B2 * X)	0.00788	0.01483	0.12468
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00248	-0.00249	-0.00253
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00138	0.00138	0.00134
	(!A1_N * B1 * B2 * X)	0.00187	0.00889	0.13087
	(!A1_N * B1 * B2 * X)	0.00849	0.01554	0.13751

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)	0.00240	0.00241	0.00240
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00267	-0.00268	-0.00267
	(!A1_N * !A2_N * B2 * X)	0.00292	0.00250	0.00246
	(!A1_N * !A2_N * B2 * X)	-0.00219	-0.00265	-0.00266
	(!A1_N * !A2_N * !B2 * X)	0.00241	0.00242	0.00241
	(!A1_N * !A2_N * !B2 * X)	-0.00267	-0.00268	-0.00267
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00234	0.00237	0.00235
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00272	-0.00274	-0.00272
	(!A1_N * !A2_N * B2 * X)	0.00288	0.00246	0.00241
	(!A1_N * !A2_N * B2 * X)	-0.00220	-0.00268	-0.00270
	(!A1_N * !A2_N * !B2 * X)	0.00231	0.00233	0.00231
	(!A1_N * !A2_N * !B2 * X)	-0.00272	-0.00273	-0.00272
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00391	0.00394	0.00391
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00545	-0.00547	-0.00545
	(!A1_N * !A2_N * B2 * X)	0.00514	0.00416	0.00408
	(!A1_N * !A2_N * B2 * X)	-0.00431	-0.00539	-0.00541
	(!A1_N * !A2_N * !B2 * X)	0.00392	0.00394	0.00392
	(!A1_N * !A2_N * !B2 * X)	-0.00545	-0.00546	-0.00545

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)	-0.00226	-0.00241	-0.00240
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00278	0.00271	0.00269
	(!A1_N * !A2_N * B2 * X)	-0.00244	-0.00245	-0.00244
	(!A1_N * !A2_N * B2 * X)	0.00265	0.00267	0.00267
	(!A1_N * !A2_N * !B2 * X)	-0.00234	-0.00241	-0.00240
	(!A1_N * !A2_N * !B2 * X)	0.00268	0.00271	0.00269
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00216	-0.00233	-0.00233
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00284	0.00275	0.00274
	(!A1_N * !A2_N * B2 * X)	-0.00239	-0.00240	-0.00239
	(!A1_N * !A2_N * B2 * X)	0.00270	0.00272	0.00271
	(!A1_N * !A2_N * !B2 * X)	-0.00226	-0.00232	-0.00231
	(!A1_N * !A2_N * !B2 * X)	0.00272	0.00275	0.00274
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00357	-0.00394	-0.00391
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00572	0.00551	0.00548
	(!A1_N * !A2_N * B2 * X)	-0.00405	-0.00405	-0.00403
	(!A1_N * !A2_N * B2 * X)	0.00542	0.00543	0.00543
	(!A1_N * !A2_N * !B2 * X)	-0.00378	-0.00392	-0.00392
	(!A1_N * !A2_N * !B2 * X)	0.00545	0.00551	0.00548

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)	0.00085	0.00084	0.00083
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00302	-0.00301	-0.00305
	(!A1_N * !A2_N * B1 * X)	0.00240	0.00198	0.00193
	(!A1_N * !A2_N * B1 * X)	-0.00236	-0.00285	-0.00288
	(!A1_N * !A2_N * !B1 * X)	0.00185	0.00186	0.00186
	(!A1_N * !A2_N * !B1 * X)	-0.00288	-0.00291	-0.00290
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00082	0.00082	0.00081
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00325	-0.00327	-0.00330
	(!A1_N * !A2_N * B1 * X)	0.00289	0.00243	0.00237
	(!A1_N * !A2_N * B1 * X)	-0.00231	-0.00283	-0.00286
	(!A1_N * !A2_N * !B1 * X)	0.00227	0.00229	0.00228
	(!A1_N * !A2_N * !B1 * X)	-0.00288	-0.00289	-0.00289
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00140	0.00140	0.00135
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00609	-0.00611	-0.00620
	(!A1_N * !A2_N * B1 * X)	0.00510	0.00416	0.00409
	(!A1_N * !A2_N * B1 * X)	-0.00431	-0.00538	-0.00540
	(!A1_N * !A2_N * !B1 * X)	0.00393	0.00393	0.00394
	(!A1_N * !A2_N * !B1 * X)	-0.00545	-0.00543	-0.00544

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)	-0.00081	-0.00082	-0.00081
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00306	0.00309	0.00306
	(!A1_N * !A2_N * B1 * X)	-0.00191	-0.00192	-0.00190
	(!A1_N * !A2_N * B1 * X)	0.00288	0.00291	0.00289
	(!A1_N * !A2_N * !B1 * X)	-0.00181	-0.00185	-0.00186
	(!A1_N * !A2_N * !B1 * X)	0.00292	0.00292	0.00291
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00079	-0.00080	-0.00079
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00330	0.00334	0.00331
	(!A1_N * !A2_N * B1 * X)	-0.00235	-0.00237	-0.00235
	(!A1_N * !A2_N * B1 * X)	0.00286	0.00288	0.00287
	(!A1_N * !A2_N * !B1 * X)	-0.00222	-0.00228	-0.00228
	(!A1_N * !A2_N * !B1 * X)	0.00288	0.00292	0.00290
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00131	-0.00133	-0.00131
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00620	0.00628	0.00623
	(!A1_N * !A2_N * B1 * X)	-0.00404	-0.00404	-0.00404
	(!A1_N * !A2_N * B1 * X)	0.00539	0.00539	0.00543
	(!A1_N * !A2_N * !B1 * X)	-0.00379	-0.00393	-0.00394
	(!A1_N * !A2_N * !B1 * X)	0.00548	0.00549	0.00547

SKY130_FD_SC_HS__A311OIx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00297	0.00303	0.00294	0.00310	0.00295	0.47472
sky130_fd_sc_hs__a311oi_2	0.00565	0.00546	0.00527	0.00452	0.00441	0.85770
sky130_fd_sc_hs__a311oi_4	0.01094	0.01066	0.01067	0.00850	0.00862	1.52545

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a311oi_1	0.00000	0.07322	0.19016
sky130_fd_sc_hs__a311oi_2	0.00000	0.14142	0.38031
sky130_fd_sc_hs__a311oi_4	0.00000	0.28285	0.76062

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)	0.11239	0.86942	8.91025
	A2->Y (FR)	0.14039	0.92529	9.23713
	A3->Y (FR)	0.15193	0.91904	9.04416
	B1->Y (FR)	0.12051	0.96290	10.09870
	C1->Y (FR)	0.09154	0.95609	10.32540
sky130_fd_sc_hs__a311oi_2	A1->Y (FR)	0.09626	0.71462	8.58872
	A2->Y (FR)	0.11977	0.74244	8.69377
	A3->Y (FR)	0.14215	0.76729	8.72794
	B1->Y (FR)	0.12087	0.80448	9.60118
	C1->Y (FR)	0.08519	0.79554	9.87039
sky130_fd_sc_hs__a311oi_4	A1->Y (FR)	0.09125	0.59632	8.23049
	A2->Y (FR)	0.11884	0.63008	8.44281
	A3->Y (FR)	0.14553	0.66705	8.63034
	B1->Y (FR)	0.12247	0.71033	9.61278
	C1->Y (FR)	0.08601	0.70611	9.92393

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311oi_1	A1->Y (RF)	0.03537	0.36401	3.56294
	A2->Y (RF)	0.04121	0.33800	3.20386
	A3->Y (RF)	0.04365	0.29415	2.64603
	B1->Y (RF)	0.02026	0.22899	2.17892
	C1->Y (RF)	0.01751	0.22180	2.16776
sky130_fd_sc_hs__a311oi_2	A1->Y (RF)	0.03311	0.34934	4.03149
	A2->Y (RF)	0.03881	0.29299	3.25072
	A3->Y (RF)	0.04310	0.25384	2.64873
	B1->Y (RF)	0.02940	0.31210	3.69631
	C1->Y (RF)	0.02051	0.29577	3.66139
sky130_fd_sc_hs__a311oi_4	A1->Y (RF)	0.03396	0.30552	4.03680
	A2->Y (RF)	0.04039	0.25267	3.22250
	A3->Y (RF)	0.04420	0.20313	2.44430
	B1->Y (RF)	0.02409	0.24065	3.39638
	C1->Y (RF)	0.01951	0.25352	3.68909

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311oi_1	A1	0.00078	0.00122	0.03617
	A1	0.01222	0.01265	0.04770
	A2	0.00172	0.00209	0.03805
	A2	0.01478	0.01515	0.05122
	A3	0.00211	0.00262	0.04060
	A3	0.01681	0.01732	0.05539
	B1	0.00043	0.00218	0.04690
	B1	0.01001	0.01178	0.05657
	C1	0.00025	0.00362	0.05806
	C1	0.00824	0.01160	0.06610
sky130_fd_sc_hs__a311oi_2	A1	-0.00006	0.00083	0.06494
	A1	0.02123	0.02212	0.08624
	A2	0.00182	0.00260	0.06968
	A2	0.02608	0.02690	0.09404
	A3	0.00393	0.00476	0.07280
	A3	0.03114	0.03204	0.10010
	B1	0.00104	0.00322	0.05965
	B1	0.01577	0.01798	0.07481
	C1	0.00074	0.00586	0.07906
	C1	0.01192	0.01706	0.09032

sky130_fd_sc_hs__a311oi_4	**A1**	-0.00106	0.00113	0.12182
	A1	0.04045	0.04300	0.16356
	A2	0.00280	0.00448	0.13125
	A2	0.05057	0.05235	0.17909
	A3	0.00640	0.00823	0.14020
	A3	0.06064	0.06261	0.19454
	B1	0.00114	0.00640	0.12038
	B1	0.02973	0.03511	0.14923
	C1	0.00066	0.01108	0.14561
	C1	0.02249	0.03298	0.16747

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311oi_1	**A1**	0.01517	0.01612	0.04468
	A1	0.00388	0.00482	0.03312
	A2	0.01682	0.01750	0.04435
	A2	0.00384	0.00443	0.03117
	A3	0.01846	0.01918	0.04982
	A3	0.00376	0.00441	0.03501
	B1	0.01086	0.01280	0.05176
	B1	0.00131	0.00323	0.04221
	C1	0.00773	0.00989	0.04567
	C1	-0.00024	0.00190	0.03769

sky130_fd_sc_hs__a311oi_2	**A1**	0.02858	0.03039	0.08037
	A1	0.00767	0.00939	0.05898
	A2	0.03175	0.03318	0.08573
	A2	0.00773	0.00912	0.06125
	A3	0.03489	0.03635	0.09586
	A3	0.00770	0.00907	0.06846
	B1	0.01687	0.01940	0.06945
	B1	0.00227	0.00470	0.05445
	C1	0.00909	0.01233	0.05891
	C1	-0.00207	0.00117	0.04733
sky130_fd_sc_hs__a311oi_4	**A1**	0.05519	0.05897	0.15402
	A1	0.01424	0.01800	0.11274
	A2	0.06157	0.06465	0.16456
	A2	0.01425	0.01717	0.11732
	A3	0.06837	0.07161	0.19032
	A3	0.01407	0.01724	0.13597
	B1	0.03202	0.03867	0.13791
	B1	0.00362	0.01014	0.10873
	C1	0.01755	0.02430	0.11099
	C1	-0.00426	0.00236	0.08851

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)**	0.00240	0.00241	0.00238
	(A2 * A3 * B1 * C1 * !Y)	-0.00272	-0.00286	-0.00286
	(A2 * A3 * B1 * !C1 * !Y)	0.00249	0.00241	0.00239
	(A2 * A3 * B1 * !C1 * !Y)	-0.00262	-0.00287	-0.00286
	(A2 * A3 * !B1 * C1 * !Y)	0.00251	0.00240	0.00238
	(A2 * A3 * !B1 * C1 * !Y)	-0.00246	-0.00280	-0.00279
	(A2 * !A3 * B1 * C1 * !Y)	0.00229	0.00229	0.00229
	(A2 * !A3 * B1 * C1 * !Y)	-0.00291	-0.00291	-0.00291
	(A2 * !A3 * B1 * !C1 * !Y)	0.00229	0.00230	0.00229
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00291	-0.00292	-0.00291
	(A2 * !A3 * !B1 * C1 * !Y)	0.00229	0.00230	0.00229
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00290	-0.00292	-0.00291
	(A2 * !A3 * !B1 * !C1 * Y)	0.00067	0.00067	0.00064
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00339	-0.00341	-0.00350
	(!A2 * B1 * C1 * !Y)	0.00232	0.00233	0.00233
	(!A2 * B1 * C1 * !Y)	-0.00290	-0.00292	-0.00291
	(!A2 * B1 * !C1 * !Y)	0.00232	0.00233	0.00233
	(!A2 * B1 * !C1 * !Y)	-0.00290	-0.00292	-0.00291
	(!A2 * !B1 * C1 * !Y)	0.00229	0.00231	0.00231
	(!A2 * !B1 * C1 * !Y)	-0.00289	-0.00292	-0.00291
	(!A2 * !B1 * !C1 * Y)	0.00071	0.00070	0.00068
	(!A2 * !B1 * !C1 * Y)	-0.00346	-0.00347	-0.00350

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	0.00466	0.00470	0.00467
	(A2 * A3 * B1 * C1 * !Y)	-0.00566	-0.00596	-0.00593
	(A2 * A3 * B1 * !C1 * !Y)	0.00474	0.00470	0.00467
	(A2 * A3 * B1 * !C1 * !Y)	-0.00555	-0.00595	-0.00593
	(A2 * A3 * !B1 * C1 * !Y)	0.00483	0.00470	0.00467
	(A2 * A3 * !B1 * C1 * !Y)	-0.00523	-0.00582	-0.00580
	(A2 * !A3 * B1 * C1 * !Y)	0.00448	0.00447	0.00447
	(A2 * !A3 * B1 * C1 * !Y)	-0.00607	-0.00605	-0.00605
	(A2 * !A3 * B1 * !C1 * !Y)	0.00447	0.00447	0.00447
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00607	-0.00606	-0.00605
	(A2 * !A3 * !B1 * C1 * !Y)	0.00447	0.00448	0.00447
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00607	-0.00607	-0.00605
	(A2 * !A3 * !B1 * !C1 * Y)	0.00149	0.00149	0.00139
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00681	-0.00684	-0.00704
	(!A2 * B1 * C1 * !Y)	0.00453	0.00456	0.00454
	(!A2 * B1 * C1 * !Y)	-0.00604	-0.00607	-0.00605
	(!A2 * B1 * !C1 * !Y)	0.00448	0.00449	0.00450
	(!A2 * B1 * !C1 * !Y)	-0.00604	-0.00605	-0.00605
	(!A2 * !B1 * C1 * !Y)	0.00450	0.00452	0.00451
	(!A2 * !B1 * C1 * !Y)	-0.00606	-0.00607	-0.00605
	(!A2 * !B1 * !C1 * Y)	0.00148	0.00149	0.00145
	(!A2 * !B1 * !C1 * Y)	-0.00695	-0.00700	-0.00707

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	0.00911	0.00921	0.00913
	(A2 * A3 * B1 * C1 * !Y)	-0.01121	-0.01183	-0.01172
	(A2 * A3 * B1 * !C1 * !Y)	0.00934	0.00921	0.00914
	(A2 * A3 * B1 * !C1 * !Y)	-0.01091	-0.01166	-0.01172
	(A2 * A3 * !B1 * C1 * !Y)	0.00952	0.00923	0.00915
	(A2 * A3 * !B1 * C1 * !Y)	-0.01033	-0.01167	-0.01146
	(A2 * !A3 * B1 * C1 * !Y)	0.00858	0.00861	0.00859
	(A2 * !A3 * B1 * C1 * !Y)	-0.01196	-0.01201	-0.01199
	(A2 * !A3 * B1 * !C1 * !Y)	0.00857	0.00863	0.00858
	(A2 * !A3 * B1 * !C1 * !Y)	-0.01196	-0.01204	-0.01199
	(A2 * !A3 * !B1 * C1 * !Y)	0.00854	0.00858	0.00856
	(A2 * !A3 * !B1 * C1 * !Y)	-0.01199	-0.01201	-0.01199
	(A2 * !A3 * !B1 * !C1 * Y)	0.00280	0.00281	0.00261
	(A2 * !A3 * !B1 * !C1 * Y)	-0.01346	-0.01355	-0.01390
	(!A2 * B1 * C1 * !Y)	0.00876	0.00883	0.00880
	(!A2 * B1 * C1 * !Y)	-0.01197	-0.01202	-0.01199
	(!A2 * B1 * !C1 * !Y)	0.00877	0.00884	0.00881
	(!A2 * B1 * !C1 * !Y)	-0.01196	-0.01201	-0.01199
	(!A2 * !B1 * C1 * !Y)	0.00877	0.00883	0.00881
	(!A2 * !B1 * C1 * !Y)	-0.01195	-0.01201	-0.01199
	(!A2 * !B1 * !C1 * Y)	0.00284	0.00284	0.00275
	(!A2 * !B1 * !C1 * Y)	-0.01375	-0.01379	-0.01395

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)**	-0.00238	-0.00238	-0.00238
	(A2 * A3 * B1 * C1 * !Y)	0.00285	0.00286	0.00286
	(A2 * A3 * B1 * !C1 * !Y)	-0.00238	-0.00240	-0.00239
	(A2 * A3 * B1 * !C1 * !Y)	0.00285	0.00289	0.00286
	(A2 * A3 * !B1 * C1 * !Y)	-0.00237	-0.00238	-0.00238
	(A2 * A3 * !B1 * C1 * !Y)	0.00278	0.00280	0.00279
	(A2 * !A3 * B1 * C1 * !Y)	-0.00208	-0.00228	-0.00229
	(A2 * !A3 * B1 * C1 * !Y)	0.00291	0.00294	0.00292
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00206	-0.00229	-0.00229
	(A2 * !A3 * B1 * !C1 * !Y)	0.00291	0.00294	0.00292
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00204	-0.00230	-0.00229
	(A2 * !A3 * !B1 * C1 * !Y)	0.00290	0.00293	0.00292
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00065	-0.00065	-0.00064
	(A2 * !A3 * !B1 * !C1 * Y)	0.00350	0.00354	0.00351
	(!A2 * B1 * C1 * !Y)	-0.00224	-0.00232	-0.00232
	(!A2 * B1 * C1 * !Y)	0.00290	0.00294	0.00292
	(!A2 * B1 * !C1 * !Y)	-0.00225	-0.00232	-0.00232
	(!A2 * B1 * !C1 * !Y)	0.00292	0.00294	0.00292
	(!A2 * !B1 * C1 * !Y)	-0.00225	-0.00231	-0.00231
	(!A2 * !B1 * C1 * !Y)	0.00292	0.00294	0.00292
	(!A2 * !B1 * !C1 * Y)	-0.00067	-0.00068	-0.00066
	(!A2 * !B1 * !C1 * Y)	0.00351	0.00356	0.00351

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	-0.00466	-0.00468	-0.00466
	(A2 * A3 * B1 * C1 * !Y)	0.00594	0.00600	0.00593
	(A2 * A3 * B1 * !C1 * !Y)	-0.00464	-0.00466	-0.00466
	(A2 * A3 * B1 * !C1 * !Y)	0.00591	0.00595	0.00593
	(A2 * A3 * !B1 * C1 * !Y)	-0.00465	-0.00468	-0.00465
	(A2 * A3 * !B1 * C1 * !Y)	0.00577	0.00584	0.00580
	(A2 * !A3 * B1 * C1 * !Y)	-0.00403	-0.00447	-0.00447
	(A2 * !A3 * B1 * C1 * !Y)	0.00608	0.00611	0.00607
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00397	-0.00447	-0.00447
	(A2 * !A3 * B1 * !C1 * !Y)	0.00608	0.00609	0.00607
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00393	-0.00448	-0.00447
	(A2 * !A3 * !B1 * C1 * !Y)	0.00608	0.00611	0.00607
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00138	-0.00140	-0.00137
	(A2 * !A3 * !B1 * !C1 * Y)	0.00705	0.00715	0.00707
	(!A2 * B1 * C1 * !Y)	-0.00438	-0.00453	-0.00454
	(!A2 * B1 * C1 * !Y)	0.00604	0.00610	0.00607
	(!A2 * B1 * !C1 * !Y)	-0.00439	-0.00449	-0.00450
	(!A2 * B1 * !C1 * !Y)	0.00608	0.00607	0.00607
	(!A2 * !B1 * C1 * !Y)	-0.00438	-0.00452	-0.00451
	(!A2 * !B1 * C1 * !Y)	0.00606	0.00610	0.00607
	(!A2 * !B1 * !C1 * Y)	-0.00142	-0.00144	-0.00142
	(!A2 * !B1 * !C1 * Y)	0.00706	0.00720	0.00708

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	-0.00909	-0.00916	-0.00911
	(A2 * A3 * B1 * C1 * !Y)	0.01166	0.01183	0.01172
	(A2 * A3 * B1 * !C1 * !Y)	-0.00909	-0.00909	-0.00911
	(A2 * A3 * B1 * !C1 * !Y)	0.01165	0.01166	0.01172
	(A2 * A3 * !B1 * C1 * !Y)	-0.00910	-0.00920	-0.00911
	(A2 * A3 * !B1 * C1 * !Y)	0.01140	0.01167	0.01146
	(A2 * !A3 * B1 * C1 * !Y)	-0.00770	-0.00861	-0.00859
	(A2 * !A3 * B1 * C1 * !Y)	0.01196	0.01207	0.01202
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00760	-0.00863	-0.00858
	(A2 * !A3 * B1 * !C1 * !Y)	0.01196	0.01209	0.01203
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00748	-0.00858	-0.00856
	(A2 * !A3 * !B1 * C1 * !Y)	0.01199	0.01215	0.01203
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00260	-0.00265	-0.00261
	(A2 * !A3 * !B1 * !C1 * Y)	0.01389	0.01412	0.01396
	(!A2 * B1 * C1 * !Y)	-0.00856	-0.00883	-0.00880
	(!A2 * B1 * C1 * !Y)	0.01197	0.01206	0.01203
	(!A2 * B1 * !C1 * !Y)	-0.00856	-0.00884	-0.00881
	(!A2 * B1 * !C1 * !Y)	0.01197	0.01208	0.01203
	(!A2 * !B1 * C1 * !Y)	-0.00855	-0.00883	-0.00881
	(!A2 * !B1 * C1 * !Y)	0.01197	0.01208	0.01203
	(!A2 * !B1 * !C1 * Y)	-0.00268	-0.00274	-0.00269
	(!A2 * !B1 * !C1 * Y)	0.01390	0.01421	0.01397

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)**	0.00250	0.00251	0.00249
	(A1 * A3 * B1 * C1 * !Y)	-0.00272	-0.00285	-0.00286
	(A1 * A3 * B1 * !C1 * !Y)	0.00259	0.00251	0.00249
	(A1 * A3 * B1 * !C1 * !Y)	-0.00262	-0.00288	-0.00286
	(A1 * A3 * !B1 * C1 * !Y)	0.00259	0.00250	0.00248
	(A1 * A3 * !B1 * C1 * !Y)	-0.00248	-0.00281	-0.00280
	(A1 * !A3 * B1 * C1 * !Y)	0.00241	0.00242	0.00242
	(A1 * !A3 * B1 * C1 * !Y)	-0.00290	-0.00291	-0.00291
	(A1 * !A3 * B1 * !C1 * !Y)	0.00238	0.00239	0.00239
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00290	-0.00292	-0.00291
	(A1 * !A3 * !B1 * C1 * !Y)	0.00239	0.00240	0.00240
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00290	-0.00291	-0.00291
	(A1 * !A3 * !B1 * !C1 * Y)	0.00082	0.00083	0.00083
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00319	-0.00320	-0.00320
	(!A1 * A3 * B1 * !Y)	0.00242	0.00243	0.00242
	(!A1 * A3 * B1 * !Y)	-0.00291	-0.00292	-0.00291
	(!A1 * A3 * !B1 * C1 * !Y)	0.00241	0.00243	0.00242
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00290	-0.00291	-0.00291
	(!A1 * A3 * !B1 * !C1 * Y)	0.00213	0.00214	0.00213
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00321	-0.00322	-0.00321
	(!A1 * !A3 * B1 * !Y)	0.00140	0.00141	0.00140
	(!A1 * !A3 * B1 * !Y)	-0.00291	-0.00292	-0.00291
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00140	0.00141	0.00140
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00290	-0.00292	-0.00291
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00100	0.00101	0.00100
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00321	-0.00323	-0.00321

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00459	0.00463	0.00459
	(A1 * A3 * B1 * C1 * !Y)	-0.00560	-0.00587	-0.00587
	(A1 * A3 * B1 * !C1 * !Y)	0.00468	0.00463	0.00460
	(A1 * A3 * B1 * !C1 * !Y)	-0.00549	-0.00590	-0.00588
	(A1 * A3 * !B1 * C1 * !Y)	0.00477	0.00463	0.00460
	(A1 * A3 * !B1 * C1 * !Y)	-0.00517	-0.00576	-0.00574
	(A1 * !A3 * B1 * C1 * !Y)	0.00444	0.00444	0.00445
	(A1 * !A3 * B1 * C1 * !Y)	-0.00599	-0.00599	-0.00600
	(A1 * !A3 * B1 * !C1 * !Y)	0.00443	0.00446	0.00444
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00599	-0.00601	-0.00600
	(A1 * !A3 * !B1 * C1 * !Y)	0.00441	0.00443	0.00441
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00600	-0.00601	-0.00599
	(A1 * !A3 * !B1 * !C1 * Y)	0.00186	0.00187	0.00186
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00601	-0.00602	-0.00601
	(!A1 * A3 * B1 * !Y)	0.00449	0.00450	0.00449
	(!A1 * A3 * B1 * !Y)	-0.00597	-0.00601	-0.00600
	(!A1 * A3 * !B1 * C1 * !Y)	0.00450	0.00451	0.00449
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00597	-0.00601	-0.00599
	(!A1 * A3 * !B1 * !C1 * Y)	0.00448	0.00449	0.00448
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00601	-0.00602	-0.00600
	(!A1 * !A3 * B1 * !Y)	0.00249	0.00250	0.00249
	(!A1 * !A3 * B1 * !Y)	-0.00599	-0.00601	-0.00600
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00249	0.00251	0.00250
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00599	-0.00601	-0.00600
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00226	0.00227	0.00226
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00605	-0.00606	-0.00605

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	0.00915	0.00923	0.00916
	(A1 * A3 * B1 * C1 * !Y)	-0.01115	-0.01172	-0.01168
	(A1 * A3 * B1 * !C1 * !Y)	0.00936	0.00923	0.00916
	(A1 * A3 * B1 * !C1 * !Y)	-0.01087	-0.01167	-0.01169
	(A1 * A3 * !B1 * C1 * !Y)	0.00953	0.00925	0.00917
	(A1 * A3 * !B1 * C1 * !Y)	-0.01031	-0.01151	-0.01142
	(A1 * !A3 * B1 * C1 * !Y)	0.00871	0.00872	0.00874
	(A1 * !A3 * B1 * C1 * !Y)	-0.01189	-0.01190	-0.01191
	(A1 * !A3 * B1 * !C1 * !Y)	0.00869	0.00877	0.00873
	(A1 * !A3 * B1 * !C1 * !Y)	-0.01188	-0.01195	-0.01191
	(A1 * !A3 * !B1 * C1 * !Y)	0.00869	0.00872	0.00874
	(A1 * !A3 * !B1 * C1 * !Y)	-0.01187	-0.01189	-0.01190
	(A1 * !A3 * !B1 * !C1 * Y)	0.00354	0.00356	0.00357
	(A1 * !A3 * !B1 * !C1 * Y)	-0.01190	-0.01193	-0.01191
	(!A1 * A3 * B1 * !Y)	0.00879	0.00889	0.00882
	(!A1 * A3 * B1 * !Y)	-0.01187	-0.01197	-0.01191
	(!A1 * A3 * !B1 * C1 * !Y)	0.00879	0.00886	0.00884
	(!A1 * A3 * !B1 * C1 * !Y)	-0.01187	-0.01193	-0.01190
	(!A1 * A3 * !B1 * !C1 * Y)	0.00878	0.00893	0.00883
	(!A1 * A3 * !B1 * !C1 * Y)	-0.01187	-0.01197	-0.01189
	(!A1 * !A3 * B1 * !Y)	0.00475	0.00476	0.00474
	(!A1 * !A3 * B1 * !Y)	-0.01191	-0.01193	-0.01191
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00476	0.00477	0.00475
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.01192	-0.01192	-0.01191
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00433	0.00430	0.00432
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.01201	-0.01196	-0.01200

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)**	-0.00249	-0.00248	-0.00249
	(A1 * A3 * B1 * C1 * !Y)	0.00287	0.00285	0.00286
	(A1 * A3 * B1 * !C1 * !Y)	-0.00249	-0.00250	-0.00249
	(A1 * A3 * B1 * !C1 * !Y)	0.00287	0.00289	0.00286
	(A1 * A3 * !B1 * C1 * !Y)	-0.00248	-0.00249	-0.00248
	(A1 * A3 * !B1 * C1 * !Y)	0.00279	0.00282	0.00280
	(A1 * !A3 * B1 * C1 * !Y)	-0.00234	-0.00242	-0.00241
	(A1 * !A3 * B1 * C1 * !Y)	0.00290	0.00294	0.00292
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00235	-0.00239	-0.00239
	(A1 * !A3 * B1 * !C1 * !Y)	0.00292	0.00293	0.00292
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00235	-0.00240	-0.00240
	(A1 * !A3 * !B1 * C1 * !Y)	0.00291	0.00292	0.00292
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00079	-0.00080	-0.00081
	(A1 * !A3 * !B1 * !C1 * Y)	0.00326	0.00329	0.00322
	(!A1 * A3 * B1 * !Y)	-0.00234	-0.00243	-0.00242
	(!A1 * A3 * B1 * !Y)	0.00291	0.00294	0.00292
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00234	-0.00243	-0.00242
	(!A1 * A3 * !B1 * C1 * !Y)	0.00291	0.00294	0.00292
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00192	-0.00213	-0.00212
	(!A1 * A3 * !B1 * !C1 * Y)	0.00336	0.00324	0.00322
	(!A1 * !A3 * B1 * !Y)	-0.00140	-0.00141	-0.00140
	(!A1 * !A3 * B1 * !Y)	0.00291	0.00295	0.00292
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00140	-0.00141	-0.00140
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00290	0.00295	0.00292
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00100	-0.00101	-0.00100
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00333	0.00336	0.00324

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00459	-0.00459	-0.00459
	(A1 * A3 * B1 * C1 * !Y)	0.00588	0.00587	0.00587
	(A1 * A3 * B1 * !C1 * !Y)	-0.00458	-0.00461	-0.00458
	(A1 * A3 * B1 * !C1 * !Y)	0.00585	0.00594	0.00588
	(A1 * A3 * !B1 * C1 * !Y)	-0.00459	-0.00460	-0.00458
	(A1 * A3 * !B1 * C1 * !Y)	0.00574	0.00577	0.00574
	(A1 * !A3 * B1 * C1 * !Y)	-0.00428	-0.00444	-0.00445
	(A1 * !A3 * B1 * C1 * !Y)	0.00600	0.00604	0.00601
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00429	-0.00443	-0.00444
	(A1 * !A3 * B1 * !C1 * !Y)	0.00602	0.00601	0.00601
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00429	-0.00443	-0.00441
	(A1 * !A3 * !B1 * C1 * !Y)	0.00602	0.00604	0.00602
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00177	-0.00179	-0.00181
	(A1 * !A3 * !B1 * !C1 * Y)	0.00613	0.00621	0.00606
	(!A1 * A3 * B1 * !Y)	-0.00430	-0.00450	-0.00448
	(!A1 * A3 * B1 * !Y)	0.00597	0.00603	0.00601
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00429	-0.00450	-0.00447
	(!A1 * A3 * !B1 * C1 * !Y)	0.00597	0.00603	0.00602
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00397	-0.00449	-0.00447
	(!A1 * A3 * !B1 * !C1 * Y)	0.00635	0.00604	0.00602
	(!A1 * !A3 * B1 * !Y)	-0.00249	-0.00250	-0.00249
	(!A1 * !A3 * B1 * !Y)	0.00599	0.00608	0.00602
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00249	-0.00251	-0.00250
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00601	0.00609	0.00602
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00226	-0.00227	-0.00226
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00632	0.00639	0.00613

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00910	-0.00916	-0.00914
	(A1 * A3 * B1 * C1 * !Y)	0.01160	0.01172	0.01168
	(A1 * A3 * B1 * !C1 * !Y)	-0.00910	-0.00913	-0.00914
	(A1 * A3 * B1 * !C1 * !Y)	0.01161	0.01167	0.01169
	(A1 * A3 * !B1 * C1 * !Y)	-0.00916	-0.00919	-0.00914
	(A1 * A3 * !B1 * C1 * !Y)	0.01143	0.01151	0.01142
	(A1 * !A3 * B1 * C1 * !Y)	-0.00852	-0.00872	-0.00874
	(A1 * !A3 * B1 * C1 * !Y)	0.01195	0.01200	0.01194
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00851	-0.00877	-0.00873
	(A1 * !A3 * B1 * !C1 * !Y)	0.01195	0.01201	0.01194
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00851	-0.00872	-0.00874
	(A1 * !A3 * !B1 * C1 * !Y)	0.01195	0.01202	0.01194
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00339	-0.00343	-0.00347
	(A1 * !A3 * !B1 * !C1 * Y)	0.01216	0.01231	0.01201
	(!A1 * A3 * B1 * !Y)	-0.00857	-0.00889	-0.00882
	(!A1 * A3 * B1 * !Y)	0.01187	0.01197	0.01194
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00856	-0.00886	-0.00884
	(!A1 * A3 * !B1 * C1 * !Y)	0.01187	0.01197	0.01194
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00782	-0.00893	-0.00883
	(!A1 * A3 * !B1 * !C1 * Y)	0.01273	0.01197	0.01194
	(!A1 * !A3 * B1 * !Y)	-0.00475	-0.00476	-0.00474
	(!A1 * !A3 * B1 * !Y)	0.01191	0.01208	0.01195
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00476	-0.00477	-0.00475
	(!A1 * !A3 * !B1 * C1 * !Y)	0.01198	0.01208	0.01195
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00433	-0.00430	-0.00432
	(!A1 * !A3 * !B1 * !C1 * Y)	0.01256	0.01265	0.01214

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)**	0.00265	0.00265	0.00263
	(A1 * A2 * B1 * C1 * !Y)	-0.00275	-0.00289	-0.00288
	(A1 * A2 * B1 * !C1 * !Y)	0.00271	0.00265	0.00263
	(A1 * A2 * B1 * !C1 * !Y)	-0.00267	-0.00289	-0.00288
	(A1 * A2 * !B1 * C1 * !Y)	0.00274	0.00265	0.00263
	(A1 * A2 * !B1 * C1 * !Y)	-0.00254	-0.00283	-0.00282
	(A1 * !A2 * !B1 * !C1 * Y)	0.00231	0.00232	0.00231
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00315	-0.00316	-0.00315
	(!A2 * B1 * !Y)	0.00254	0.00254	0.00253
	(!A2 * B1 * !Y)	-0.00291	-0.00292	-0.00292
	(!A2 * !B1 * C1 * !Y)	0.00254	0.00254	0.00254
	(!A2 * !B1 * C1 * !Y)	-0.00292	-0.00292	-0.00292
	(!A1 * A2 * B1 * !Y)	0.00252	0.00254	0.00253
	(!A1 * A2 * B1 * !Y)	-0.00291	-0.00293	-0.00292
	(!A1 * A2 * !B1 * C1 * !Y)	0.00252	0.00254	0.00253
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00291	-0.00293	-0.00292
	(!A1 * A2 * !B1 * !C1 * Y)	0.00228	0.00231	0.00229
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00314	-0.00317	-0.00315
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00232	0.00234	0.00233
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00315	-0.00316	-0.00315

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00451	0.00454	0.00451
	(A1 * A2 * B1 * C1 * !Y)	-0.00550	-0.00579	-0.00576
	(A1 * A2 * B1 * !C1 * !Y)	0.00457	0.00454	0.00451
	(A1 * A2 * B1 * !C1 * !Y)	-0.00541	-0.00579	-0.00576
	(A1 * A2 * !B1 * C1 * !Y)	0.00467	0.00455	0.00451
	(A1 * A2 * !B1 * C1 * !Y)	-0.00513	-0.00566	-0.00564
	(A1 * !A2 * !B1 * !C1 * Y)	0.00435	0.00439	0.00437
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00585	-0.00588	-0.00587
	(!A2 * B1 * !Y)	0.00434	0.00437	0.00434
	(!A2 * B1 * !Y)	-0.00586	-0.00590	-0.00587
	(!A2 * !B1 * C1 * !Y)	0.00435	0.00437	0.00434
	(!A2 * !B1 * C1 * !Y)	-0.00586	-0.00589	-0.00587
	(!A1 * A2 * B1 * !Y)	0.00432	0.00432	0.00431
	(!A1 * A2 * B1 * !Y)	-0.00588	-0.00588	-0.00587
	(!A1 * A2 * !B1 * C1 * !Y)	0.00429	0.00433	0.00432
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00584	-0.00588	-0.00586
	(!A1 * A2 * !B1 * !C1 * Y)	0.00433	0.00435	0.00431
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00588	-0.00590	-0.00587
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00434	0.00437	0.00433
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00586	-0.00590	-0.00587

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.00909	0.00921	0.00913
	(A1 * A2 * B1 * C1 * !Y)	-0.01106	-0.01162	-0.01163
	(A1 * A2 * B1 * !C1 * !Y)	0.00926	0.00921	0.00914
	(A1 * A2 * B1 * !C1 * !Y)	-0.01081	-0.01158	-0.01164
	(A1 * A2 * !B1 * C1 * !Y)	0.00942	0.00923	0.00915
	(A1 * A2 * !B1 * C1 * !Y)	-0.01028	-0.01148	-0.01138
	(A1 * !A2 * !B1 * !C1 * Y)	0.00880	0.00891	0.00884
	(A1 * !A2 * !B1 * !C1 * Y)	-0.01182	-0.01191	-0.01186
	(!A2 * B1 * !Y)	0.00874	0.00877	0.00874
	(!A2 * B1 * !Y)	-0.01187	-0.01189	-0.01185
	(!A2 * !B1 * C1 * !Y)	0.00868	0.00881	0.00874
	(!A2 * !B1 * C1 * !Y)	-0.01179	-0.01191	-0.01185
	(!A1 * A2 * B1 * !Y)	0.00870	0.00875	0.00868
	(!A1 * A2 * B1 * !Y)	-0.01182	-0.01191	-0.01185
	(!A1 * A2 * !B1 * C1 * !Y)	0.00874	0.00875	0.00872
	(!A1 * A2 * !B1 * C1 * !Y)	-0.01182	-0.01187	-0.01185
	(!A1 * A2 * !B1 * !C1 * Y)	0.00863	0.00874	0.00869
	(!A1 * A2 * !B1 * !C1 * Y)	-0.01179	-0.01190	-0.01185
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00882	0.00889	0.00886
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.01182	-0.01189	-0.01186

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)**	-0.00263	-0.00265	-0.00263
	(A1 * A2 * B1 * C1 * !Y)	0.00288	0.00291	0.00288
	(A1 * A2 * B1 * !C1 * !Y)	-0.00263	-0.00264	-0.00263
	(A1 * A2 * B1 * !C1 * !Y)	0.00288	0.00291	0.00288
	(A1 * A2 * !B1 * C1 * !Y)	-0.00262	-0.00263	-0.00262
	(A1 * A2 * !B1 * C1 * !Y)	0.00281	0.00284	0.00282
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00222	-0.00232	-0.00231
	(A1 * !A2 * !B1 * !C1 * Y)	0.00315	0.00319	0.00316
	(!A2 * B1 * !Y)	-0.00249	-0.00254	-0.00253
	(!A2 * B1 * !Y)	0.00291	0.00294	0.00293
	(!A2 * !B1 * C1 * !Y)	-0.00249	-0.00254	-0.00254
	(!A2 * !B1 * C1 * !Y)	0.00292	0.00294	0.00293
	(!A1 * A2 * B1 * !Y)	-0.00238	-0.00252	-0.00253
	(!A1 * A2 * B1 * !Y)	0.00293	0.00295	0.00293
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00237	-0.00252	-0.00253
	(!A1 * A2 * !B1 * C1 * !Y)	0.00293	0.00295	0.00293
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00214	-0.00229	-0.00229
	(!A1 * A2 * !B1 * !C1 * Y)	0.00317	0.00319	0.00316
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00224	-0.00232	-0.00232
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00315	0.00319	0.00316

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00450	-0.00451	-0.00450
	(A1 * A2 * B1 * C1 * !Y)	0.00576	0.00580	0.00576
	(A1 * A2 * B1 * !C1 * !Y)	-0.00450	-0.00451	-0.00450
	(A1 * A2 * B1 * !C1 * !Y)	0.00576	0.00579	0.00576
	(A1 * A2 * !B1 * C1 * !Y)	-0.00450	-0.00451	-0.00449
	(A1 * A2 * !B1 * C1 * !Y)	0.00564	0.00566	0.00564
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00412	-0.00438	-0.00437
	(A1 * !A2 * !B1 * !C1 * Y)	0.00586	0.00590	0.00589
	(!A2 * B1 * !Y)	-0.00420	-0.00435	-0.00434
	(!A2 * B1 * !Y)	0.00586	0.00590	0.00588
	(!A2 * !B1 * C1 * !Y)	-0.00420	-0.00435	-0.00434
	(!A2 * !B1 * C1 * !Y)	0.00586	0.00591	0.00589
	(!A1 * A2 * B1 * !Y)	-0.00394	-0.00430	-0.00431
	(!A1 * A2 * B1 * !Y)	0.00589	0.00593	0.00588
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00394	-0.00430	-0.00432
	(!A1 * A2 * !B1 * C1 * !Y)	0.00589	0.00593	0.00589
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00392	-0.00426	-0.00431
	(!A1 * A2 * !B1 * !C1 * Y)	0.00593	0.00596	0.00589
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00416	-0.00437	-0.00433
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00586	0.00590	0.00589

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00907	-0.00910	-0.00911
	(A1 * A2 * B1 * C1 * !Y)	0.01154	0.01162	0.01163
	(A1 * A2 * B1 * !C1 * !Y)	-0.00907	-0.00909	-0.00911
	(A1 * A2 * B1 * !C1 * !Y)	0.01155	0.01158	0.01164
	(A1 * A2 * !B1 * C1 * !Y)	-0.00912	-0.00916	-0.00911
	(A1 * A2 * !B1 * C1 * !Y)	0.01139	0.01148	0.01138
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00833	-0.00880	-0.00884
	(A1 * !A2 * !B1 * !C1 * Y)	0.01189	0.01198	0.01189
	(!A2 * B1 * !Y)	-0.00851	-0.00877	-0.00874
	(!A2 * B1 * !Y)	0.01188	0.01195	0.01189
	(!A2 * !B1 * C1 * !Y)	-0.00850	-0.00878	-0.00874
	(!A2 * !B1 * C1 * !Y)	0.01188	0.01195	0.01189
	(!A1 * A2 * B1 * !Y)	-0.00790	-0.00867	-0.00868
	(!A1 * A2 * B1 * !Y)	0.01182	0.01197	0.01189
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00789	-0.00866	-0.00872
	(!A1 * A2 * !B1 * C1 * !Y)	0.01182	0.01197	0.01189
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00784	-0.00862	-0.00869
	(!A1 * A2 * !B1 * !C1 * Y)	0.01190	0.01203	0.01189
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00840	-0.00880	-0.00884
	(!A1 * !A2 * !B1 * !C1 * Y)	0.01185	0.01198	0.01189

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)**	0.00295	0.00285	0.00272
	(A1 * A2 * A3 * C1 * !Y)	-0.00192	-0.00195	-0.00193
	(A1 * A2 * A3 * !C1 * !Y)	0.00259	0.00260	0.00255
	(A1 * A2 * A3 * !C1 * !Y)	-0.00142	-0.00142	-0.00142
	(A1 * A2 * !A3 * C1 * !Y)	0.00317	0.00258	0.00253
	(A1 * A2 * !A3 * C1 * !Y)	-0.00223	-0.00284	-0.00286
	(A1 * !A2 * C1 * !Y)	0.00317	0.00259	0.00253
	(A1 * !A2 * C1 * !Y)	-0.00223	-0.00284	-0.00286
	(!A1 * C1 * !Y)	0.00312	0.00257	0.00253
	(!A1 * C1 * !Y)	-0.00224	-0.00286	-0.00286
sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * A3 * C1 * !Y)**	0.00333	0.00313	0.00284
	(A1 * A2 * A3 * C1 * !Y)	-0.00404	-0.00402	-0.00402
	(A1 * A2 * A3 * !C1 * !Y)	0.00266	0.00268	0.00260
	(A1 * A2 * A3 * !C1 * !Y)	-0.00296	-0.00298	-0.00300
	(A1 * A2 * !A3 * C1 * !Y)	0.00399	0.00262	0.00255
	(A1 * A2 * !A3 * C1 * !Y)	-0.00447	-0.00583	-0.00592
	(A1 * !A2 * C1 * !Y)	0.00399	0.00261	0.00255
	(A1 * !A2 * C1 * !Y)	-0.00448	-0.00583	-0.00591
	(!A1 * C1 * !Y)	0.00397	0.00260	0.00255
	(!A1 * C1 * !Y)	-0.00449	-0.00582	-0.00591
sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	0.00650	0.00608	0.00549
	(A1 * A2 * A3 * C1 * !Y)	-0.00781	-0.00786	-0.00784
	(A1 * A2 * A3 * !C1 * !Y)	0.00513	0.00514	0.00498
	(A1 * A2 * A3 * !C1 * !Y)	-0.00581	-0.00581	-0.00585
	(A1 * A2 * !A3 * C1 * !Y)	0.00785	0.00504	0.00490
	(A1 * A2 * !A3 * C1 * !Y)	-0.00858	-0.01165	-0.01168
	(A1 * !A2 * C1 * !Y)	0.00781	0.00505	0.00490
	(A1 * !A2 * C1 * !Y)	-0.00863	-0.01164	-0.01169
	(!A1 * C1 * !Y)	0.00775	0.00506	0.00490
	(!A1 * C1 * !Y)	-0.00870	-0.01162	-0.01168

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)	-0.00257	-0.00259	-0.00257
	(A1 * A2 * A3 * C1 * !Y)	0.00192	0.00195	0.00193
	(A1 * A2 * A3 * !C1 * !Y)	-0.00251	-0.00253	-0.00252
	(A1 * A2 * A3 * !C1 * !Y)	0.00146	0.00148	0.00147
	(A1 * A2 * !A3 * C1 * !Y)	-0.00250	-0.00252	-0.00251
	(A1 * A2 * !A3 * C1 * !Y)	0.00284	0.00286	0.00287
	(A1 * !A2 * C1 * !Y)	-0.00252	-0.00252	-0.00250
	(A1 * !A2 * C1 * !Y)	0.00286	0.00288	0.00286
	(!A1 * C1 * !Y)	-0.00250	-0.00252	-0.00250
	(!A1 * C1 * !Y)	0.00284	0.00286	0.00286
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * A3 * C1 * !Y)	-0.00260	-0.00259	-0.00260
	(A1 * A2 * A3 * C1 * !Y)	0.00404	0.00402	0.00402
	(A1 * A2 * A3 * !C1 * !Y)	-0.00250	-0.00251	-0.00250
	(A1 * A2 * A3 * !C1 * !Y)	0.00309	0.00310	0.00311
	(A1 * A2 * !A3 * C1 * !Y)	-0.00253	-0.00255	-0.00253
	(A1 * A2 * !A3 * C1 * !Y)	0.00588	0.00593	0.00592
	(A1 * !A2 * C1 * !Y)	-0.00253	-0.00255	-0.00252
	(A1 * !A2 * C1 * !Y)	0.00587	0.00592	0.00591
	(!A1 * C1 * !Y)	-0.00254	-0.00255	-0.00252
	(!A1 * C1 * !Y)	0.00588	0.00593	0.00591

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	-0.00498	-0.00500	-0.00499
	(A1 * A2 * A3 * C1 * !Y)	0.00781	0.00786	0.00784
	(A1 * A2 * A3 * !C1 * !Y)	-0.00476	-0.00480	-0.00480
	(A1 * A2 * A3 * !C1 * !Y)	0.00601	0.00607	0.00606
	(A1 * A2 * !A3 * C1 * !Y)	-0.00486	-0.00489	-0.00484
	(A1 * A2 * !A3 * C1 * !Y)	0.01159	0.01169	0.01168
	(A1 * !A2 * C1 * !Y)	-0.00486	-0.00489	-0.00484
	(A1 * !A2 * C1 * !Y)	0.01160	0.01169	0.01169
	(!A1 * C1 * !Y)	-0.00487	-0.00489	-0.00484
	(!A1 * C1 * !Y)	0.01160	0.01170	0.01168

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)	0.00269	0.00270	0.00268
	(A1 * A2 * B1 * !Y)	-0.00136	-0.00136	-0.00135
	(A1 * A2 * A3 * !B1 * !Y)	0.00267	0.00270	0.00268
	(A1 * A2 * A3 * !B1 * !Y)	-0.00134	-0.00136	-0.00134
	(A1 * !A2 * B1 * !Y)	0.00269	0.00270	0.00268
	(A1 * !A2 * B1 * !Y)	-0.00137	-0.00136	-0.00135
	(!A1 * B1 * !Y)	0.00269	0.00270	0.00268
	(!A1 * B1 * !Y)	-0.00137	-0.00136	-0.00135
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	0.00301	0.00302	0.00300
	(A1 * A2 * B1 * !Y)	-0.00265	-0.00265	-0.00263
	(A1 * A2 * A3 * !B1 * !Y)	0.00298	0.00302	0.00300
	(A1 * A2 * A3 * !B1 * !Y)	-0.00260	-0.00264	-0.00262
	(A1 * !A2 * B1 * !Y)	0.00301	0.00302	0.00300
	(A1 * !A2 * B1 * !Y)	-0.00266	-0.00266	-0.00264
	(!A1 * B1 * !Y)	0.00301	0.00302	0.00300
	(!A1 * B1 * !Y)	-0.00266	-0.00266	-0.00264
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	0.00600	0.00601	0.00597
	(A1 * A2 * B1 * !Y)	-0.00527	-0.00526	-0.00521
	(A1 * A2 * A3 * !B1 * !Y)	0.00594	0.00602	0.00597
	(A1 * A2 * A3 * !B1 * !Y)	-0.00518	-0.00525	-0.00519
	(A1 * !A2 * B1 * !Y)	0.00600	0.00601	0.00597
	(A1 * !A2 * B1 * !Y)	-0.00528	-0.00527	-0.00522
	(!A1 * B1 * !Y)	0.00600	0.00601	0.00597
	(!A1 * B1 * !Y)	-0.00527	-0.00527	-0.00522

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)	-0.00260	-0.00262	-0.00267
	(A1 * A2 * B1 * !Y)	0.00141	0.00142	0.00137
	(A1 * A2 * A3 * !B1 * !Y)	-0.00244	-0.00246	-0.00265
	(A1 * A2 * A3 * !B1 * !Y)	0.00150	0.00151	0.00137
	(A1 * !A2 * B1 * !Y)	-0.00260	-0.00262	-0.00267
	(A1 * !A2 * B1 * !Y)	0.00141	0.00142	0.00137
	(!A1 * B1 * !Y)	-0.00260	-0.00262	-0.00267
	(!A1 * B1 * !Y)	0.00141	0.00142	0.00137
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	-0.00279	-0.00282	-0.00298
	(A1 * A2 * B1 * !Y)	0.00280	0.00282	0.00267
	(A1 * A2 * A3 * !B1 * !Y)	-0.00241	-0.00244	-0.00290
	(A1 * A2 * A3 * !B1 * !Y)	0.00301	0.00303	0.00269
	(A1 * !A2 * B1 * !Y)	-0.00278	-0.00282	-0.00298
	(A1 * !A2 * B1 * !Y)	0.00280	0.00283	0.00268
	(!A1 * B1 * !Y)	-0.00279	-0.00282	-0.00298
	(!A1 * B1 * !Y)	0.00281	0.00283	0.00268
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	-0.00559	-0.00565	-0.00594
	(A1 * A2 * B1 * !Y)	0.00551	0.00555	0.00530
	(A1 * A2 * A3 * !B1 * !Y)	-0.00487	-0.00492	-0.00578
	(A1 * A2 * A3 * !B1 * !Y)	0.00592	0.00594	0.00533
	(A1 * !A2 * B1 * !Y)	-0.00559	-0.00565	-0.00594
	(A1 * !A2 * B1 * !Y)	0.00551	0.00556	0.00531
	(!A1 * B1 * !Y)	-0.00560	-0.00563	-0.00594
	(!A1 * B1 * !Y)	0.00554	0.00554	0.00530

SKY130_FD_SC_HS__A311Ox

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00270	0.00257	0.00258	0.00265	0.00274	1.43335
sky130_fd_sc_hs__a311o_2	0.00279	0.00279	0.00294	0.00298	0.00283	2.36902
sky130_fd_sc_hs__a311o_4	0.00511	0.00478	0.00505	0.00492	0.00491	3.94960

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a311o_1	0.00000	0.21953	0.48975
sky130_fd_sc_hs__a311o_2	0.00000	0.26771	0.50120
sky130_fd_sc_hs__a311o_4	0.00000	0.54014	1.00238

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)	0.07513	0.50796	5.81500
	A2->X (RR)	0.08009	0.50304	5.70874
	A3->X (RR)	0.08352	0.48478	5.49281
	B1->X (RR)	0.05307	0.45070	5.20247
	C1->X (RR)	0.04861	0.43546	5.13324
sky130_fd_sc_hs__a311o_2	A1->X (RR)	0.08196	0.45016	5.51345
	A2->X (RR)	0.08723	0.44253	5.39460
	A3->X (RR)	0.09104	0.42130	5.10441
	B1->X (RR)	0.05644	0.38710	4.87615
	C1->X (RR)	0.05213	0.37472	4.81140
sky130_fd_sc_hs__a311o_4	A1->X (RR)	0.10396	0.43096	5.55443
	A2->X (RR)	0.11282	0.42775	5.45659
	A3->X (RR)	0.11615	0.37817	4.98859
	B1->X (RR)	0.05457	0.30843	4.57608
	C1->X (RR)	0.04962	0.29273	4.49715

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311o_1	A1->X (FF)	0.13949	0.50837	4.97255
	A2->X (FF)	0.15984	0.53849	5.10537
	A3->X (FF)	0.17418	0.55956	5.24004
	B1->X (FF)	0.15693	0.59090	5.71390
	C1->X (FF)	0.13293	0.59385	5.77841
sky130_fd_sc_hs__a311o_2	A1->X (FF)	0.18444	0.52607	4.67453
	A2->X (FF)	0.21194	0.56373	4.82207
	A3->X (FF)	0.22933	0.58756	4.94304
	B1->X (FF)	0.21168	0.62475	5.36042
	C1->X (FF)	0.18373	0.62959	5.42552
sky130_fd_sc_hs__a311o_4	A1->X (FF)	0.19892	0.47863	4.27879
	A2->X (FF)	0.22443	0.51356	4.38021
	A3->X (FF)	0.24519	0.54807	4.66411
	B1->X (FF)	0.22620	0.59732	5.05955
	C1->X (FF)	0.18611	0.59745	5.18602

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311o_1	A1	0.01836	0.02121	0.10867
	A1	0.00844	0.01130	0.09892
	A2	0.01947	0.02147	0.10552
	A2	0.00840	0.01126	0.09475
	A3	0.02092	0.02234	0.09453
	A3	0.00837	0.00980	0.08249
	B1	0.01404	0.01933	0.11705
	B1	0.00596	0.01128	0.10927
	C1	0.01168	0.01778	0.12604
	C1	0.00472	0.01083	0.11909
sky130_fd_sc_hs__a311o_2	A1	0.02400	0.02656	0.11381
	A1	0.01338	0.01600	0.10409
	A2	0.02554	0.02740	0.11109
	A2	0.01335	0.01525	0.09958
	A3	0.02743	0.02840	0.08225
	A3	0.01338	0.01435	0.06821
	B1	0.01964	0.02464	0.11195
	B1	0.01049	0.01552	0.10283
	C1	0.01684	0.02251	0.12048
	C1	0.00911	0.01488	0.11292

sky130_fd_sc_hs__a311o_4	**A1**	0.04881	0.05271	0.21635
	A1	0.02991	0.03391	0.19909
	A2	0.05136	0.05411	0.21425
	A2	0.02974	0.03258	0.19426
	A3	0.05479	0.05698	0.20002
	A3	0.03001	0.03230	0.17525
	B1	0.03723	0.04573	0.21280
	B1	0.02185	0.03040	0.19839
	C1	0.02992	0.04108	0.22855
	C1	0.01742	0.02868	0.21664

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311o_1	**A1**	0.00569	0.00738	0.07835
	A1	0.01571	0.01738	0.08825
	A2	0.00699	0.00842	0.08074
	A2	0.01808	0.01951	0.09113
	A3	0.00764	0.00852	0.08258
	A3	0.02013	0.02100	0.09399
	B1	0.00520	0.00949	0.11150
	B1	0.01328	0.01753	0.11716
	C1	0.00483	0.01111	0.12422
	C1	0.01178	0.01804	0.12909

sky130_fd_sc_hs__a311o_2	**A1**	0.01412	0.01270	0.08543
	A1	0.02480	0.02337	0.09594
	A2	0.01608	0.01362	0.08961
	A2	0.02828	0.02580	0.09997
	A3	0.01671	0.01273	0.08535
	A3	0.03067	0.02671	0.09736
	B1	0.01213	0.01407	0.11059
	B1	0.02127	0.02296	0.11744
	C1	0.01201	0.01610	0.12485
	C1	0.01971	0.02367	0.12956
sky130_fd_sc_hs__a311o_4	**A1**	0.02997	0.02492	0.17499
	A1	0.04904	0.04357	0.19117
	A2	0.03515	0.02782	0.17844
	A2	0.05679	0.04942	0.19781
	A3	0.03698	0.02773	0.18395
	A3	0.06164	0.05230	0.20679
	B1	0.02628	0.02764	0.18691
	B1	0.04166	0.04269	0.20035
	C1	0.02600	0.03147	0.22412
	C1	0.03847	0.04375	0.23341

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)**	0.00225	0.00225	0.00223
	(A2 * A3 * B1 * C1 * X)	-0.00249	-0.00258	-0.00259
	(A2 * A3 * B1 * !C1 * X)	0.00240	0.00225	0.00223
	(A2 * A3 * B1 * !C1 * X)	-0.00234	-0.00262	-0.00259
	(A2 * A3 * !B1 * C1 * X)	0.00240	0.00226	0.00224
	(A2 * A3 * !B1 * C1 * X)	-0.00223	-0.00257	-0.00254
	(A2 * !A3 * B1 * C1 * X)	0.00213	0.00215	0.00214
	(A2 * !A3 * B1 * C1 * X)	-0.00264	-0.00266	-0.00265
	(A2 * !A3 * B1 * !C1 * X)	0.00213	0.00215	0.00214
	(A2 * !A3 * B1 * !C1 * X)	-0.00264	-0.00266	-0.00265
	(A2 * !A3 * !B1 * C1 * X)	0.00214	0.00216	0.00215
	(A2 * !A3 * !B1 * C1 * X)	-0.00264	-0.00266	-0.00264
	(A2 * !A3 * !B1 * !C1 * !X)	0.00084	0.00084	0.00080
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00301	-0.00302	-0.00309
	(!A2 * B1 * C1 * X)	0.00217	0.00218	0.00217
	(!A2 * B1 * C1 * X)	-0.00264	-0.00265	-0.00265
	(!A2 * B1 * !C1 * X)	0.00217	0.00217	0.00216
	(!A2 * B1 * !C1 * X)	-0.00264	-0.00265	-0.00265
	(!A2 * !B1 * C1 * X)	0.00217	0.00218	0.00217
	(!A2 * !B1 * C1 * X)	-0.00264	-0.00265	-0.00264
	(!A2 * !B1 * !C1 * !X)	0.00085	0.00085	0.00083
	(!A2 * !B1 * !C1 * !X)	-0.00306	-0.00307	-0.00309

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	0.00238	0.00239	0.00237
	(A2 * A3 * B1 * C1 * X)	-0.00247	-0.00260	-0.00258
	(A2 * A3 * B1 * !C1 * X)	0.00252	0.00239	0.00237
	(A2 * A3 * B1 * !C1 * X)	-0.00231	-0.00259	-0.00258
	(A2 * A3 * !B1 * C1 * X)	0.00253	0.00239	0.00237
	(A2 * A3 * !B1 * C1 * X)	-0.00218	-0.00253	-0.00253
	(A2 * !A3 * B1 * C1 * X)	0.00227	0.00227	0.00227
	(A2 * !A3 * B1 * C1 * X)	-0.00263	-0.00263	-0.00263
	(A2 * !A3 * B1 * !C1 * X)	0.00227	0.00229	0.00227
	(A2 * !A3 * B1 * !C1 * X)	-0.00263	-0.00264	-0.00263
	(A2 * !A3 * !B1 * C1 * X)	0.00227	0.00227	0.00227
	(A2 * !A3 * !B1 * C1 * X)	-0.00263	-0.00263	-0.00262
	(A2 * !A3 * !B1 * !C1 * !X)	0.00069	0.00069	0.00065
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00309	-0.00309	-0.00318
	(!A2 * B1 * C1 * X)	0.00227	0.00230	0.00228
	(!A2 * B1 * C1 * X)	-0.00262	-0.00264	-0.00263
	(!A2 * B1 * !C1 * X)	0.00229	0.00231	0.00230
	(!A2 * B1 * !C1 * X)	-0.00261	-0.00263	-0.00263
	(!A2 * !B1 * C1 * X)	0.00228	0.00230	0.00229
	(!A2 * !B1 * C1 * X)	-0.00263	-0.00264	-0.00262
	(!A2 * !B1 * !C1 * !X)	0.00072	0.00072	0.00070
	(!A2 * !B1 * !C1 * !X)	-0.00315	-0.00315	-0.00319

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	0.00409	0.00411	0.00407
	(A2 * A3 * B1 * C1 * X)	-0.00516	-0.00542	-0.00537
	(A2 * A3 * B1 * !C1 * X)	0.00427	0.00411	0.00407
	(A2 * A3 * B1 * !C1 * X)	-0.00495	-0.00541	-0.00538
	(A2 * A3 * !B1 * C1 * X)	0.00434	0.00412	0.00408
	(A2 * A3 * !B1 * C1 * X)	-0.00471	-0.00530	-0.00528
	(A2 * !A3 * B1 * C1 * X)	0.00385	0.00386	0.00385
	(A2 * !A3 * B1 * C1 * X)	-0.00550	-0.00549	-0.00548
	(A2 * !A3 * B1 * !C1 * X)	0.00385	0.00386	0.00385
	(A2 * !A3 * B1 * !C1 * X)	-0.00550	-0.00550	-0.00548
	(A2 * !A3 * !B1 * C1 * X)	0.00387	0.00387	0.00387
	(A2 * !A3 * !B1 * C1 * X)	-0.00549	-0.00549	-0.00547
	(A2 * !A3 * !B1 * !C1 * !X)	0.00131	0.00131	0.00121
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00610	-0.00610	-0.00633
	(!A2 * B1 * C1 * X)	0.00393	0.00395	0.00394
	(!A2 * B1 * C1 * X)	-0.00546	-0.00550	-0.00548
	(!A2 * B1 * !C1 * X)	0.00395	0.00396	0.00395
	(!A2 * B1 * !C1 * X)	-0.00549	-0.00550	-0.00548
	(!A2 * !B1 * C1 * X)	0.00394	0.00397	0.00396
	(!A2 * !B1 * C1 * X)	-0.00546	-0.00549	-0.00547
	(!A2 * !B1 * !C1 * !X)	0.00143	0.00144	0.00136
	(!A2 * !B1 * !C1 * !X)	-0.00619	-0.00622	-0.00633

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)**	-0.00223	-0.00223	-0.00223
	(A2 * A3 * B1 * C1 * X)	0.00258	0.00258	0.00259
	(A2 * A3 * B1 * !C1 * X)	-0.00223	-0.00225	-0.00223
	(A2 * A3 * B1 * !C1 * X)	0.00258	0.00262	0.00259
	(A2 * A3 * !B1 * C1 * X)	-0.00222	-0.00224	-0.00222
	(A2 * A3 * !B1 * C1 * X)	0.00253	0.00257	0.00254
	(A2 * !A3 * B1 * C1 * X)	-0.00197	-0.00215	-0.00214
	(A2 * !A3 * B1 * C1 * X)	0.00264	0.00267	0.00265
	(A2 * !A3 * B1 * !C1 * X)	-0.00196	-0.00215	-0.00214
	(A2 * !A3 * B1 * !C1 * X)	0.00264	0.00267	0.00266
	(A2 * !A3 * !B1 * C1 * X)	-0.00194	-0.00216	-0.00215
	(A2 * !A3 * !B1 * C1 * X)	0.00264	0.00266	0.00266
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00079	-0.00081	-0.00080
	(A2 * !A3 * !B1 * !C1 * !X)	0.00308	0.00313	0.00310
	(!A2 * B1 * C1 * X)	-0.00212	-0.00218	-0.00217
	(!A2 * B1 * C1 * X)	0.00264	0.00267	0.00265
	(!A2 * B1 * !C1 * X)	-0.00211	-0.00217	-0.00216
	(!A2 * B1 * !C1 * X)	0.00264	0.00267	0.00266
	(!A2 * !B1 * C1 * X)	-0.00211	-0.00217	-0.00217
	(!A2 * !B1 * C1 * X)	0.00264	0.00267	0.00266
	(!A2 * !B1 * !C1 * !X)	-0.00081	-0.00083	-0.00081
	(!A2 * !B1 * !C1 * !X)	0.00308	0.00315	0.00310

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	-0.00236	-0.00238	-0.00237
	(A2 * A3 * B1 * C1 * X)	0.00258	0.00261	0.00258
	(A2 * A3 * B1 * !C1 * X)	-0.00237	-0.00238	-0.00237
	(A2 * A3 * B1 * !C1 * X)	0.00259	0.00261	0.00258
	(A2 * A3 * !B1 * C1 * X)	-0.00235	-0.00237	-0.00235
	(A2 * A3 * !B1 * C1 * X)	0.00252	0.00255	0.00253
	(A2 * !A3 * B1 * C1 * X)	-0.00208	-0.00225	-0.00227
	(A2 * !A3 * B1 * C1 * X)	0.00264	0.00265	0.00263
	(A2 * !A3 * B1 * !C1 * X)	-0.00206	-0.00225	-0.00227
	(A2 * !A3 * B1 * !C1 * X)	0.00264	0.00265	0.00264
	(A2 * !A3 * !B1 * C1 * X)	-0.00204	-0.00226	-0.00227
	(A2 * !A3 * !B1 * C1 * X)	0.00263	0.00266	0.00264
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00066	-0.00067	-0.00065
	(A2 * !A3 * !B1 * !C1 * !X)	0.00319	0.00323	0.00320
	(!A2 * B1 * C1 * X)	-0.00222	-0.00229	-0.00228
	(!A2 * B1 * C1 * X)	0.00262	0.00265	0.00263
	(!A2 * B1 * !C1 * X)	-0.00222	-0.00229	-0.00230
	(!A2 * B1 * !C1 * X)	0.00262	0.00265	0.00264
	(!A2 * !B1 * C1 * X)	-0.00223	-0.00229	-0.00229
	(!A2 * !B1 * C1 * X)	0.00264	0.00266	0.00264
	(!A2 * !B1 * !C1 * !X)	-0.00068	-0.00068	-0.00067
	(!A2 * !B1 * !C1 * !X)	0.00321	0.00323	0.00320

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	-0.00408	-0.00409	-0.00407
	(A2 * A3 * B1 * C1 * X)	0.00538	0.00542	0.00537
	(A2 * A3 * B1 * !C1 * X)	-0.00407	-0.00408	-0.00407
	(A2 * A3 * B1 * !C1 * X)	0.00539	0.00541	0.00538
	(A2 * A3 * !B1 * C1 * X)	-0.00406	-0.00406	-0.00404
	(A2 * A3 * !B1 * C1 * X)	0.00529	0.00530	0.00528
	(A2 * !A3 * B1 * C1 * X)	-0.00346	-0.00386	-0.00385
	(A2 * !A3 * B1 * C1 * X)	0.00551	0.00549	0.00550
	(A2 * !A3 * B1 * !C1 * X)	-0.00344	-0.00386	-0.00385
	(A2 * !A3 * B1 * !C1 * X)	0.00551	0.00551	0.00550
	(A2 * !A3 * !B1 * C1 * X)	-0.00343	-0.00387	-0.00387
	(A2 * !A3 * !B1 * C1 * X)	0.00552	0.00552	0.00551
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00122	-0.00123	-0.00121
	(A2 * !A3 * !B1 * !C1 * !X)	0.00635	0.00642	0.00636
	(!A2 * B1 * C1 * X)	-0.00378	-0.00395	-0.00394
	(!A2 * B1 * C1 * X)	0.00546	0.00554	0.00550
	(!A2 * B1 * !C1 * X)	-0.00380	-0.00396	-0.00395
	(!A2 * B1 * !C1 * X)	0.00551	0.00551	0.00550
	(!A2 * !B1 * C1 * X)	-0.00379	-0.00397	-0.00396
	(!A2 * !B1 * C1 * X)	0.00552	0.00550	0.00551
	(!A2 * !B1 * !C1 * !X)	-0.00131	-0.00133	-0.00132
	(!A2 * !B1 * !C1 * !X)	0.00635	0.00642	0.00636

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)**	0.00196	0.00196	0.00195
	(A1 * A3 * B1 * C1 * X)	-0.00256	-0.00267	-0.00266
	(A1 * A3 * B1 * !C1 * X)	0.00213	0.00196	0.00195
	(A1 * A3 * B1 * !C1 * X)	-0.00239	-0.00267	-0.00266
	(A1 * A3 * !B1 * C1 * X)	0.00212	0.00197	0.00195
	(A1 * A3 * !B1 * C1 * X)	-0.00226	-0.00260	-0.00261
	(A1 * !A3 * B1 * C1 * X)	0.00189	0.00190	0.00189
	(A1 * !A3 * B1 * C1 * X)	-0.00271	-0.00272	-0.00272
	(A1 * !A3 * B1 * !C1 * X)	0.00189	0.00189	0.00190
	(A1 * !A3 * B1 * !C1 * X)	-0.00271	-0.00271	-0.00272
	(A1 * !A3 * !B1 * C1 * X)	0.00189	0.00190	0.00190
	(A1 * !A3 * !B1 * C1 * X)	-0.00271	-0.00272	-0.00271
	(A1 * !A3 * !B1 * !C1 * !X)	0.00070	0.00069	0.00069
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00283	-0.00283	-0.00282
	(!A1 * A3 * B1 * X)	0.00188	0.00190	0.00189
	(!A1 * A3 * B1 * X)	-0.00271	-0.00272	-0.00272
	(!A1 * A3 * !B1 * C1 * X)	0.00189	0.00190	0.00190
	(!A1 * A3 * !B1 * C1 * X)	-0.00271	-0.00272	-0.00271
	(!A1 * A3 * !B1 * !C1 * !X)	0.00178	0.00179	0.00178
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00282	-0.00283	-0.00282
	(!A1 * !A3 * B1 * X)	0.00104	0.00105	0.00105
	(!A1 * !A3 * B1 * X)	-0.00271	-0.00272	-0.00272
	(!A1 * !A3 * !B1 * C1 * X)	0.00105	0.00105	0.00105
	(!A1 * !A3 * !B1 * C1 * X)	-0.00271	-0.00272	-0.00271
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00085	0.00085	0.00085
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00283	-0.00284	-0.00284

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	0.00236	0.00237	0.00235
	(A1 * A3 * B1 * C1 * X)	-0.00246	-0.00260	-0.00258
	(A1 * A3 * B1 * !C1 * X)	0.00250	0.00237	0.00235
	(A1 * A3 * B1 * !C1 * X)	-0.00231	-0.00259	-0.00258
	(A1 * A3 * !B1 * C1 * X)	0.00250	0.00237	0.00235
	(A1 * A3 * !B1 * C1 * X)	-0.00221	-0.00253	-0.00253
	(A1 * !A3 * B1 * C1 * X)	0.00224	0.00226	0.00225
	(A1 * !A3 * B1 * C1 * X)	-0.00262	-0.00263	-0.00263
	(A1 * !A3 * B1 * !C1 * X)	0.00227	0.00228	0.00228
	(A1 * !A3 * B1 * !C1 * X)	-0.00261	-0.00263	-0.00263
	(A1 * !A3 * !B1 * C1 * X)	0.00225	0.00227	0.00226
	(A1 * !A3 * !B1 * C1 * X)	-0.00262	-0.00263	-0.00262
	(A1 * !A3 * !B1 * !C1 * !X)	0.00084	0.00084	0.00084
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00278	-0.00278	-0.00278
	(!A1 * A3 * B1 * X)	0.00226	0.00227	0.00226
	(!A1 * A3 * B1 * X)	-0.00262	-0.00263	-0.00263
	(!A1 * A3 * !B1 * C1 * X)	0.00227	0.00228	0.00227
	(!A1 * A3 * !B1 * C1 * X)	-0.00263	-0.00263	-0.00262
	(!A1 * A3 * !B1 * !C1 * !X)	0.00211	0.00212	0.00212
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00278	-0.00278	-0.00277
	(!A1 * !A3 * B1 * X)	0.00127	0.00128	0.00127
	(!A1 * !A3 * B1 * X)	-0.00263	-0.00263	-0.00263
	(!A1 * !A3 * !B1 * C1 * X)	0.00127	0.00129	0.00128
	(!A1 * !A3 * !B1 * C1 * X)	-0.00262	-0.00264	-0.00262
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00101	0.00101	0.00101
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00279	-0.00280	-0.00280

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	0.00392	0.00393	0.00390
	(A1 * A3 * B1 * C1 * X)	-0.00509	-0.00534	-0.00531
	(A1 * A3 * B1 * !C1 * X)	0.00400	0.00394	0.00391
	(A1 * A3 * B1 * !C1 * X)	-0.00499	-0.00534	-0.00531
	(A1 * A3 * !B1 * C1 * X)	0.00410	0.00394	0.00391
	(A1 * A3 * !B1 * C1 * X)	-0.00476	-0.00524	-0.00523
	(A1 * !A3 * B1 * C1 * X)	0.00374	0.00376	0.00375
	(A1 * !A3 * B1 * C1 * X)	-0.00538	-0.00541	-0.00540
	(A1 * !A3 * B1 * !C1 * X)	0.00374	0.00376	0.00376
	(A1 * !A3 * B1 * !C1 * X)	-0.00538	-0.00541	-0.00540
	(A1 * !A3 * !B1 * C1 * X)	0.00375	0.00377	0.00376
	(A1 * !A3 * !B1 * C1 * X)	-0.00538	-0.00540	-0.00539
	(A1 * !A3 * !B1 * !C1 * !X)	0.00162	0.00164	0.00164
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00539	-0.00543	-0.00538
	(!A1 * A3 * B1 * X)	0.00376	0.00378	0.00376
	(!A1 * A3 * B1 * X)	-0.00537	-0.00541	-0.00540
	(!A1 * A3 * !B1 * C1 * X)	0.00375	0.00378	0.00377
	(!A1 * A3 * !B1 * C1 * X)	-0.00538	-0.00540	-0.00539
	(!A1 * A3 * !B1 * !C1 * !X)	0.00377	0.00380	0.00379
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00537	-0.00540	-0.00538
	(!A1 * !A3 * B1 * X)	0.00225	0.00225	0.00224
	(!A1 * !A3 * B1 * X)	-0.00540	-0.00541	-0.00540
	(!A1 * !A3 * !B1 * C1 * X)	0.00226	0.00226	0.00225
	(!A1 * !A3 * !B1 * C1 * X)	-0.00540	-0.00540	-0.00539
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00203	0.00203	0.00202
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00543	-0.00544	-0.00543

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)**	-0.00194	-0.00195	-0.00195
	(A1 * A3 * B1 * C1 * X)	0.00265	0.00268	0.00266
	(A1 * A3 * B1 * !C1 * X)	-0.00194	-0.00195	-0.00195
	(A1 * A3 * B1 * !C1 * X)	0.00266	0.00268	0.00266
	(A1 * A3 * !B1 * C1 * X)	-0.00193	-0.00194	-0.00193
	(A1 * A3 * !B1 * C1 * X)	0.00260	0.00262	0.00261
	(A1 * !A3 * B1 * C1 * X)	-0.00184	-0.00189	-0.00189
	(A1 * !A3 * B1 * C1 * X)	0.00273	0.00275	0.00272
	(A1 * !A3 * B1 * !C1 * X)	-0.00183	-0.00189	-0.00189
	(A1 * !A3 * B1 * !C1 * X)	0.00273	0.00275	0.00272
	(A1 * !A3 * !B1 * C1 * X)	-0.00183	-0.00190	-0.00189
	(A1 * !A3 * !B1 * C1 * X)	0.00273	0.00274	0.00273
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00066	-0.00067	-0.00067
	(A1 * !A3 * !B1 * !C1 * !X)	0.00287	0.00291	0.00284
	(!A1 * A3 * B1 * X)	-0.00183	-0.00190	-0.00189
	(!A1 * A3 * B1 * X)	0.00271	0.00274	0.00272
	(!A1 * A3 * !B1 * C1 * X)	-0.00182	-0.00189	-0.00189
	(!A1 * A3 * !B1 * C1 * X)	0.00271	0.00275	0.00273
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00158	-0.00178	-0.00178
	(!A1 * A3 * !B1 * !C1 * !X)	0.00298	0.00286	0.00284
	(!A1 * !A3 * B1 * X)	-0.00104	-0.00105	-0.00105
	(!A1 * !A3 * B1 * X)	0.00272	0.00275	0.00272
	(!A1 * !A3 * !B1 * C1 * X)	-0.00105	-0.00105	-0.00105
	(!A1 * !A3 * !B1 * C1 * X)	0.00273	0.00276	0.00273
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00085	-0.00085	-0.00085
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00295	0.00298	0.00287

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	-0.00235	-0.00236	-0.00235
	(A1 * A3 * B1 * C1 * X)	0.00259	0.00261	0.00258
	(A1 * A3 * B1 * !C1 * X)	-0.00235	-0.00236	-0.00235
	(A1 * A3 * B1 * !C1 * X)	0.00259	0.00261	0.00258
	(A1 * A3 * !B1 * C1 * X)	-0.00234	-0.00235	-0.00234
	(A1 * A3 * !B1 * C1 * X)	0.00253	0.00255	0.00253
	(A1 * !A3 * B1 * C1 * X)	-0.00221	-0.00226	-0.00225
	(A1 * !A3 * B1 * C1 * X)	0.00262	0.00266	0.00263
	(A1 * !A3 * B1 * !C1 * X)	-0.00220	-0.00228	-0.00228
	(A1 * !A3 * B1 * !C1 * X)	0.00262	0.00266	0.00264
	(A1 * !A3 * !B1 * C1 * X)	-0.00220	-0.00226	-0.00226
	(A1 * !A3 * !B1 * C1 * X)	0.00262	0.00265	0.00264
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00079	-0.00080	-0.00081
	(A1 * !A3 * !B1 * !C1 * !X)	0.00284	0.00287	0.00281
	(!A1 * A3 * B1 * X)	-0.00220	-0.00227	-0.00226
	(!A1 * A3 * B1 * X)	0.00262	0.00265	0.00263
	(!A1 * A3 * !B1 * C1 * X)	-0.00220	-0.00228	-0.00227
	(!A1 * A3 * !B1 * C1 * X)	0.00263	0.00266	0.00264
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00192	-0.00212	-0.00212
	(!A1 * A3 * !B1 * !C1 * !X)	0.00293	0.00281	0.00279
	(!A1 * !A3 * B1 * X)	-0.00127	-0.00128	-0.00127
	(!A1 * !A3 * B1 * X)	0.00263	0.00266	0.00264
	(!A1 * !A3 * !B1 * C1 * X)	-0.00127	-0.00129	-0.00128
	(!A1 * !A3 * !B1 * C1 * X)	0.00262	0.00267	0.00264
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00101	-0.00101	-0.00101
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00289	0.00295	0.00283

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	-0.00388	-0.00391	-0.00390
	(A1 * A3 * B1 * C1 * X)	0.00527	0.00534	0.00531
	(A1 * A3 * B1 * !C1 * X)	-0.00388	-0.00392	-0.00390
	(A1 * A3 * B1 * !C1 * X)	0.00527	0.00536	0.00531
	(A1 * A3 * !B1 * C1 * X)	-0.00389	-0.00389	-0.00388
	(A1 * A3 * !B1 * C1 * X)	0.00524	0.00524	0.00523
	(A1 * !A3 * B1 * C1 * X)	-0.00364	-0.00376	-0.00375
	(A1 * !A3 * B1 * C1 * X)	0.00538	0.00545	0.00541
	(A1 * !A3 * B1 * !C1 * X)	-0.00363	-0.00376	-0.00376
	(A1 * !A3 * B1 * !C1 * X)	0.00538	0.00547	0.00542
	(A1 * !A3 * !B1 * C1 * X)	-0.00365	-0.00377	-0.00376
	(A1 * !A3 * !B1 * C1 * X)	0.00543	0.00547	0.00542
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00151	-0.00153	-0.00157
	(A1 * !A3 * !B1 * !C1 * !X)	0.00555	0.00561	0.00546
	(!A1 * A3 * B1 * X)	-0.00361	-0.00378	-0.00376
	(!A1 * A3 * B1 * X)	0.00537	0.00544	0.00541
	(!A1 * A3 * !B1 * C1 * X)	-0.00360	-0.00378	-0.00377
	(!A1 * A3 * !B1 * C1 * X)	0.00538	0.00544	0.00542
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00325	-0.00380	-0.00379
	(!A1 * A3 * !B1 * !C1 * !X)	0.00580	0.00544	0.00542
	(!A1 * !A3 * B1 * X)	-0.00225	-0.00225	-0.00224
	(!A1 * !A3 * B1 * X)	0.00540	0.00548	0.00542
	(!A1 * !A3 * !B1 * C1 * X)	-0.00226	-0.00226	-0.00225
	(!A1 * !A3 * !B1 * C1 * X)	0.00541	0.00548	0.00542
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00203	-0.00203	-0.00202
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00567	0.00576	0.00551

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)**	0.00214	0.00215	0.00213
	(A1 * A2 * B1 * C1 * X)	-0.00250	-0.00262	-0.00262
	(A1 * A2 * B1 * !C1 * X)	0.00226	0.00215	0.00214
	(A1 * A2 * B1 * !C1 * X)	-0.00237	-0.00262	-0.00262
	(A1 * A2 * !B1 * C1 * X)	0.00227	0.00215	0.00214
	(A1 * A2 * !B1 * C1 * X)	-0.00226	-0.00257	-0.00258
	(A1 * !A2 * !B1 * !C1 * !X)	0.00180	0.00182	0.00181
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00292	-0.00293	-0.00293
	(!A2 * B1 * X)	0.00205	0.00207	0.00206
	(!A2 * B1 * X)	-0.00266	-0.00267	-0.00267
	(!A2 * !B1 * C1 * X)	0.00206	0.00207	0.00206
	(!A2 * !B1 * C1 * X)	-0.00265	-0.00267	-0.00266
	(!A1 * A2 * B1 * X)	0.00203	0.00203	0.00202
	(!A1 * A2 * B1 * X)	-0.00267	-0.00267	-0.00267
	(!A1 * A2 * !B1 * C1 * X)	0.00203	0.00204	0.00203
	(!A1 * A2 * !B1 * C1 * X)	-0.00266	-0.00267	-0.00266
	(!A1 * A2 * !B1 * !C1 * !X)	0.00176	0.00177	0.00176
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00293	-0.00293	-0.00293
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00179	0.00181	0.00180
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00292	-0.00294	-0.00293

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	0.00269	0.00269	0.00267
	(A1 * A2 * B1 * C1 * X)	-0.00245	-0.00257	-0.00257
	(A1 * A2 * B1 * !C1 * X)	0.00282	0.00269	0.00267
	(A1 * A2 * B1 * !C1 * X)	-0.00231	-0.00257	-0.00257
	(A1 * A2 * !B1 * C1 * X)	0.00282	0.00269	0.00267
	(A1 * A2 * !B1 * C1 * X)	-0.00220	-0.00252	-0.00252
	(A1 * !A2 * !B1 * !C1 * !X)	0.00216	0.00216	0.00216
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00305	-0.00306	-0.00305
	(!A2 * B1 * X)	0.00261	0.00262	0.00261
	(!A2 * B1 * X)	-0.00260	-0.00262	-0.00261
	(!A2 * !B1 * C1 * X)	0.00259	0.00258	0.00258
	(!A2 * !B1 * C1 * X)	-0.00261	-0.00260	-0.00261
	(!A1 * A2 * B1 * X)	0.00258	0.00258	0.00257
	(!A1 * A2 * B1 * X)	-0.00262	-0.00262	-0.00261
	(!A1 * A2 * !B1 * C1 * X)	0.00257	0.00258	0.00256
	(!A1 * A2 * !B1 * C1 * X)	-0.00261	-0.00262	-0.00261
	(!A1 * A2 * !B1 * !C1 * !X)	0.00213	0.00215	0.00213
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00305	-0.00307	-0.00305
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00216	0.00217	0.00216
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00305	-0.00306	-0.00305

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	0.00446	0.00449	0.00445
	(A1 * A2 * B1 * C1 * X)	-0.00493	-0.00520	-0.00516
	(A1 * A2 * B1 * !C1 * X)	0.00457	0.00449	0.00445
	(A1 * A2 * B1 * !C1 * X)	-0.00479	-0.00519	-0.00517
	(A1 * A2 * !B1 * C1 * X)	0.00465	0.00450	0.00445
	(A1 * A2 * !B1 * C1 * X)	-0.00454	-0.00510	-0.00508
	(A1 * !A2 * !B1 * !C1 * !X)	0.00381	0.00385	0.00383
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00569	-0.00572	-0.00571
	(!A2 * B1 * X)	0.00428	0.00431	0.00430
	(!A2 * B1 * X)	-0.00523	-0.00526	-0.00525
	(!A2 * !B1 * C1 * X)	0.00429	0.00433	0.00431
	(!A2 * !B1 * C1 * X)	-0.00523	-0.00525	-0.00524
	(!A1 * A2 * B1 * X)	0.00427	0.00428	0.00426
	(!A1 * A2 * B1 * X)	-0.00524	-0.00526	-0.00525
	(!A1 * A2 * !B1 * C1 * X)	0.00429	0.00430	0.00428
	(!A1 * A2 * !B1 * C1 * X)	-0.00524	-0.00526	-0.00524
	(!A1 * A2 * !B1 * !C1 * !X)	0.00383	0.00383	0.00382
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00571	-0.00571	-0.00570
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00381	0.00385	0.00383
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00569	-0.00572	-0.00571

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)**	-0.00213	-0.00214	-0.00213
	(A1 * A2 * B1 * C1 * X)	0.00261	0.00263	0.00262
	(A1 * A2 * B1 * !C1 * X)	-0.00213	-0.00214	-0.00213
	(A1 * A2 * B1 * !C1 * X)	0.00261	0.00263	0.00262
	(A1 * A2 * !B1 * C1 * X)	-0.00212	-0.00213	-0.00212
	(A1 * A2 * !B1 * C1 * X)	0.00257	0.00260	0.00258
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00171	-0.00182	-0.00181
	(A1 * !A2 * !B1 * !C1 * !X)	0.00292	0.00295	0.00294
	(!A2 * B1 * X)	-0.00201	-0.00207	-0.00206
	(!A2 * B1 * X)	0.00266	0.00269	0.00267
	(!A2 * !B1 * C1 * X)	-0.00201	-0.00207	-0.00206
	(!A2 * !B1 * C1 * X)	0.00266	0.00269	0.00268
	(!A1 * A2 * B1 * X)	-0.00192	-0.00203	-0.00202
	(!A1 * A2 * B1 * X)	0.00267	0.00270	0.00267
	(!A1 * A2 * !B1 * C1 * X)	-0.00191	-0.00204	-0.00203
	(!A1 * A2 * !B1 * C1 * X)	0.00267	0.00271	0.00268
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00164	-0.00177	-0.00176
	(!A1 * A2 * !B1 * !C1 * !X)	0.00295	0.00297	0.00294
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00173	-0.00181	-0.00180
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00292	0.00295	0.00294

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00267	-0.00267	-0.00267
	(A1 * A2 * B1 * C1 * X)	0.00256	0.00257	0.00257
	(A1 * A2 * B1 * !C1 * X)	-0.00266	-0.00267	-0.00267
	(A1 * A2 * B1 * !C1 * X)	0.00256	0.00257	0.00257
	(A1 * A2 * !B1 * C1 * X)	-0.00265	-0.00267	-0.00266
	(A1 * A2 * !B1 * C1 * X)	0.00251	0.00253	0.00252
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00204	-0.00213	-0.00215
	(A1 * !A2 * !B1 * !C1 * !X)	0.00305	0.00309	0.00307
	(!A2 * B1 * X)	-0.00253	-0.00259	-0.00260
	(!A2 * B1 * X)	0.00260	0.00263	0.00262
	(!A2 * !B1 * C1 * X)	-0.00252	-0.00258	-0.00258
	(!A2 * !B1 * C1 * X)	0.00261	0.00264	0.00262
	(!A1 * A2 * B1 * X)	-0.00242	-0.00256	-0.00257
	(!A1 * A2 * B1 * X)	0.00262	0.00263	0.00262
	(!A1 * A2 * !B1 * C1 * X)	-0.00241	-0.00256	-0.00256
	(!A1 * A2 * !B1 * C1 * X)	0.00262	0.00263	0.00262
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00195	-0.00211	-0.00213
	(!A1 * A2 * !B1 * !C1 * !X)	0.00307	0.00310	0.00307
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00206	-0.00214	-0.00215
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00305	0.00309	0.00307

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00445	-0.00447	-0.00444
	(A1 * A2 * B1 * C1 * X)	0.00517	0.00521	0.00516
	(A1 * A2 * B1 * !C1 * X)	-0.00442	-0.00447	-0.00444
	(A1 * A2 * B1 * !C1 * X)	0.00513	0.00521	0.00517
	(A1 * A2 * !B1 * C1 * X)	-0.00443	-0.00444	-0.00442
	(A1 * A2 * !B1 * C1 * X)	0.00508	0.00510	0.00508
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00368	-0.00385	-0.00383
	(A1 * !A2 * !B1 * !C1 * !X)	0.00571	0.00575	0.00574
	(!A2 * B1 * X)	-0.00420	-0.00431	-0.00430
	(!A2 * B1 * X)	0.00524	0.00529	0.00527
	(!A2 * !B1 * C1 * X)	-0.00419	-0.00431	-0.00431
	(!A2 * !B1 * C1 * X)	0.00525	0.00530	0.00527
	(!A1 * A2 * B1 * X)	-0.00402	-0.00428	-0.00426
	(!A1 * A2 * B1 * X)	0.00524	0.00530	0.00527
	(!A1 * A2 * !B1 * C1 * X)	-0.00401	-0.00427	-0.00428
	(!A1 * A2 * !B1 * C1 * X)	0.00524	0.00531	0.00527
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00354	-0.00380	-0.00382
	(!A1 * A2 * !B1 * !C1 * !X)	0.00572	0.00579	0.00573
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00370	-0.00385	-0.00383
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00571	0.00575	0.00574

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)**	0.00257	0.00246	0.00236
	(A1 * A2 * A3 * C1 * X)	-0.00171	-0.00178	-0.00177
	(A1 * A2 * A3 * !C1 * X)	0.00222	0.00227	0.00220
	(A1 * A2 * A3 * !C1 * X)	-0.00129	-0.00132	-0.00132
	(A1 * A2 * !A3 * C1 * X)	0.00279	0.00224	0.00218
	(A1 * A2 * !A3 * C1 * X)	-0.00199	-0.00257	-0.00259
	(A1 * !A2 * C1 * X)	0.00279	0.00224	0.00218
	(A1 * !A2 * C1 * X)	-0.00199	-0.00254	-0.00259
	(!A1 * C1 * X)	0.00277	0.00224	0.00218
	(!A1 * C1 * X)	-0.00201	-0.00257	-0.00259
sky130_fd_sc_hs__a311o_2	**(A1 * A2 * A3 * C1 * X)**	0.00294	0.00287	0.00275
	(A1 * A2 * A3 * C1 * X)	-0.00170	-0.00178	-0.00177
	(A1 * A2 * A3 * !C1 * X)	0.00260	0.00262	0.00257
	(A1 * A2 * A3 * !C1 * X)	-0.00130	-0.00131	-0.00131
	(A1 * A2 * !A3 * C1 * X)	0.00315	0.00261	0.00255
	(A1 * A2 * !A3 * C1 * X)	-0.00196	-0.00255	-0.00258
	(A1 * !A2 * C1 * X)	0.00315	0.00262	0.00255
	(A1 * !A2 * C1 * X)	-0.00196	-0.00255	-0.00258
	(!A1 * C1 * X)	0.00312	0.00260	0.00255
	(!A1 * C1 * X)	-0.00198	-0.00257	-0.00258
sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	0.00482	0.00465	0.00435
	(A1 * A2 * A3 * C1 * X)	-0.00370	-0.00388	-0.00386
	(A1 * A2 * A3 * !C1 * X)	0.00415	0.00420	0.00410
	(A1 * A2 * A3 * !C1 * X)	-0.00279	-0.00283	-0.00286
	(A1 * A2 * !A3 * C1 * X)	0.00548	0.00416	0.00406
	(A1 * A2 * !A3 * C1 * X)	-0.00391	-0.00534	-0.00538
	(A1 * !A2 * C1 * X)	0.00548	0.00416	0.00406
	(A1 * !A2 * C1 * X)	-0.00391	-0.00533	-0.00538
	(!A1 * C1 * X)	0.00547	0.00416	0.00406
	(!A1 * C1 * X)	-0.00391	-0.00533	-0.00538

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)	-0.00220	-0.00221	-0.00220
	(A1 * A2 * A3 * C1 * X)	0.00177	0.00178	0.00177
	(A1 * A2 * A3 * !C1 * X)	-0.00215	-0.00216	-0.00217
	(A1 * A2 * A3 * !C1 * X)	0.00136	0.00137	0.00136
	(A1 * A2 * !A3 * C1 * X)	-0.00216	-0.00216	-0.00215
	(A1 * A2 * !A3 * C1 * X)	0.00259	0.00260	0.00260
	(A1 * !A2 * C1 * X)	-0.00216	-0.00217	-0.00215
	(A1 * !A2 * C1 * X)	0.00259	0.00261	0.00260
	(!A1 * C1 * X)	-0.00216	-0.00217	-0.00215
	(!A1 * C1 * X)	0.00259	0.00261	0.00260
sky130_fd_sc_hs__a311o_2	(A1 * A2 * A3 * C1 * X)	-0.00258	-0.00260	-0.00259
	(A1 * A2 * A3 * C1 * X)	0.00176	0.00178	0.00177
	(A1 * A2 * A3 * !C1 * X)	-0.00253	-0.00255	-0.00254
	(A1 * A2 * A3 * !C1 * X)	0.00137	0.00137	0.00136
	(A1 * A2 * !A3 * C1 * X)	-0.00253	-0.00254	-0.00252
	(A1 * A2 * !A3 * C1 * X)	0.00260	0.00262	0.00260
	(A1 * !A2 * C1 * X)	-0.00251	-0.00254	-0.00252
	(A1 * !A2 * C1 * X)	0.00257	0.00262	0.00260
	(!A1 * C1 * X)	-0.00252	-0.00254	-0.00252
	(!A1 * C1 * X)	0.00259	0.00262	0.00260

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	-0.00408	-0.00411	-0.00410
	(A1 * A2 * A3 * C1 * X)	0.00384	0.00388	0.00386
	(A1 * A2 * A3 * !C1 * X)	-0.00399	-0.00403	-0.00400
	(A1 * A2 * A3 * !C1 * X)	0.00293	0.00297	0.00297
	(A1 * A2 * !A3 * C1 * X)	-0.00401	-0.00403	-0.00400
	(A1 * A2 * !A3 * C1 * X)	0.00535	0.00541	0.00540
	(A1 * !A2 * C1 * X)	-0.00401	-0.00403	-0.00400
	(A1 * !A2 * C1 * X)	0.00535	0.00541	0.00540
	(!A1 * C1 * X)	-0.00401	-0.00403	-0.00400
	(!A1 * C1 * X)	0.00535	0.00541	0.00540

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)	0.00263	0.00269	0.00264
	(A1 * A2 * B1 * X)	-0.00121	-0.00123	-0.00121
	(A1 * A2 * A3 * !B1 * X)	0.00264	0.00269	0.00264
	(A1 * A2 * A3 * !B1 * X)	-0.00120	-0.00123	-0.00120
	(A1 * !A2 * B1 * X)	0.00263	0.00269	0.00264
	(A1 * !A2 * B1 * X)	-0.00121	-0.00124	-0.00121
	(!A1 * B1 * X)	0.00263	0.00269	0.00264
	(!A1 * B1 * X)	-0.00121	-0.00124	-0.00121
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	0.00263	0.00264	0.00262
	(A1 * A2 * B1 * X)	-0.00130	-0.00130	-0.00129
	(A1 * A2 * A3 * !B1 * X)	0.00263	0.00265	0.00262
	(A1 * A2 * A3 * !B1 * X)	-0.00130	-0.00129	-0.00128
	(A1 * !A2 * B1 * X)	0.00263	0.00264	0.00262
	(A1 * !A2 * B1 * X)	-0.00131	-0.00130	-0.00129
	(!A1 * B1 * X)	0.00263	0.00264	0.00262
	(!A1 * B1 * X)	-0.00131	-0.00130	-0.00129
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	0.00430	0.00435	0.00432
	(A1 * A2 * B1 * X)	-0.00274	-0.00277	-0.00275
	(A1 * A2 * A3 * !B1 * X)	0.00430	0.00436	0.00432
	(A1 * A2 * A3 * !B1 * X)	-0.00273	-0.00276	-0.00274
	(A1 * !A2 * B1 * X)	0.00430	0.00435	0.00432
	(A1 * !A2 * B1 * X)	-0.00275	-0.00278	-0.00275
	(!A1 * B1 * X)	0.00430	0.00435	0.00432
	(!A1 * B1 * X)	-0.00274	-0.00278	-0.00275

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)	-0.00258	-0.00259	-0.00264
	(A1 * A2 * B1 * X)	0.00126	0.00126	0.00123
	(A1 * A2 * A3 * !B1 * X)	-0.00242	-0.00243	-0.00261
	(A1 * A2 * A3 * !B1 * X)	0.00135	0.00136	0.00124
	(A1 * !A2 * B1 * X)	-0.00258	-0.00259	-0.00263
	(A1 * !A2 * B1 * X)	0.00126	0.00126	0.00123
	(!A1 * B1 * X)	-0.00259	-0.00259	-0.00263
	(!A1 * B1 * X)	0.00126	0.00126	0.00123
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	-0.00257	-0.00258	-0.00261
	(A1 * A2 * B1 * X)	0.00134	0.00135	0.00130
	(A1 * A2 * A3 * !B1 * X)	-0.00241	-0.00243	-0.00259
	(A1 * A2 * A3 * !B1 * X)	0.00142	0.00144	0.00131
	(A1 * !A2 * B1 * X)	-0.00255	-0.00258	-0.00261
	(A1 * !A2 * B1 * X)	0.00133	0.00135	0.00130
	(!A1 * B1 * X)	-0.00255	-0.00258	-0.00261
	(!A1 * B1 * X)	0.00133	0.00135	0.00130
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	-0.00411	-0.00416	-0.00429
	(A1 * A2 * B1 * X)	0.00291	0.00294	0.00279
	(A1 * A2 * A3 * !B1 * X)	-0.00379	-0.00383	-0.00424
	(A1 * A2 * A3 * !B1 * X)	0.00311	0.00314	0.00281
	(A1 * !A2 * B1 * X)	-0.00411	-0.00416	-0.00429
	(A1 * !A2 * B1 * X)	0.00291	0.00294	0.00280
	(!A1 * B1 * X)	-0.00411	-0.00416	-0.00429
	(!A1 * B1 * X)	0.00291	0.00294	0.00280

SKY130_FD_SC_HS__A31OIx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00292	0.00301	0.00290	0.00296	0.71479
sky130_fd_sc_hs__a31oi_2	0.00559	0.00546	0.00580	0.00445	1.34064
sky130_fd_sc_hs__a31oi_4	0.01130	0.01076	0.01075	0.00897	2.20309

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a31oi_1	0.00000	0.10366	0.19797
sky130_fd_sc_hs__a31oi_2	0.00000	0.20231	0.39594
sky130_fd_sc_hs__a31oi_4	0.00000	0.40462	0.79188

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)	0.06215	0.76734	9.31858
	A2->Y (FR)	0.07961	0.80411	9.58052
	A3->Y (FR)	0.08807	0.80597	9.48548
	B1->Y (FR)	0.05863	0.82965	10.27940
sky130_fd_sc_hs__a31oi_2	A1->Y (FR)	0.05667	0.65909	9.38967
	A2->Y (FR)	0.06906	0.66605	9.33377
	A3->Y (FR)	0.07898	0.66414	9.11955
	B1->Y (FR)	0.04525	0.68900	10.00020
sky130_fd_sc_hs__a31oi_4	A1->Y (FR)	0.05756	0.56618	8.97129
	A2->Y (FR)	0.07365	0.56860	8.81118
	A3->Y (FR)	0.09075	0.59781	9.00139
	B1->Y (FR)	0.06583	0.63833	9.90466

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31oi_1	A1->Y (RF)	0.03141	0.41474	4.90150
	A2->Y (RF)	0.03727	0.38408	4.43470
	A3->Y (RF)	0.03959	0.33672	3.76038
	B1->Y (RF)	0.01528	0.25955	3.11061
sky130_fd_sc_hs__a31oi_2	A1->Y (RF)	0.03131	0.39161	5.49748
	A2->Y (RF)	0.03517	0.31823	4.38773
	A3->Y (RF)	0.03907	0.28324	3.80517
	B1->Y (RF)	0.01858	0.36388	5.37027
sky130_fd_sc_hs__a31oi_4	A1->Y (RF)	0.03362	0.34700	5.49351
	A2->Y (RF)	0.03978	0.28478	4.43624
	A3->Y (RF)	0.04338	0.23186	3.55132
	B1->Y (RF)	0.01706	0.26703	4.53568

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	-0.00004	0.00103	0.03213
	A1	0.00897	0.01005	0.04127
	A2	0.00095	0.00185	0.03358
	A2	0.01165	0.01256	0.04432
	A3	0.00138	0.00240	0.03543
	A3	0.01373	0.01475	0.04785
	B1	-0.00070	0.00378	0.06153
	B1	0.00656	0.01108	0.06917
sky130_fd_sc_hs__a31oi_2	A1	-0.00005	0.00210	0.05802
	A1	0.01699	0.01916	0.07526
	A2	0.00168	0.00386	0.06384
	A2	0.02175	0.02394	0.08419
	A3	0.00323	0.00534	0.06760
	A3	0.02674	0.02887	0.09104
	B1	0.00078	0.00694	0.08092
	B1	0.01125	0.01760	0.09216
sky130_fd_sc_hs__a31oi_4	A1	-0.00238	0.00218	0.10464
	A1	0.03250	0.03715	0.13978
	A2	0.00264	0.00674	0.11872
	A2	0.04350	0.04774	0.16014
	A3	0.00615	0.01062	0.12793
	A3	0.05357	0.05848	0.17559
	B1	-0.00062	0.01221	0.15729
	B1	0.02142	0.03425	0.18072

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	0.01150	0.01269	0.03790
	A1	0.00259	0.00372	0.02900
	A2	0.01324	0.01409	0.03771
	A2	0.00256	0.00342	0.02705
	A3	0.01485	0.01582	0.04295
	A3	0.00244	0.00334	0.03029
	B1	0.00706	0.00944	0.04547
	B1	-0.00022	0.00214	0.03815
sky130_fd_sc_hs__a31oi_2	A1	0.02130	0.02360	0.06634
	A1	0.00447	0.00670	0.04951
	A2	0.02435	0.02643	0.07416
	A2	0.00435	0.00633	0.05299
	A3	0.02809	0.03002	0.08327
	A3	0.00443	0.00637	0.05966
	B1	0.00805	0.01157	0.05776
	B1	-0.00243	0.00096	0.04453
sky130_fd_sc_hs__a31oi_4	A1	0.04306	0.04812	0.12851
	A1	0.00861	0.01346	0.09239
	A2	0.04908	0.05272	0.13964
	A2	0.00821	0.01177	0.09774
	A3	0.05592	0.05987	0.16283
	A3	0.00805	0.01193	0.11507
	B1	0.01721	0.02469	0.11735
	B1	-0.00484	0.00263	0.09260

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)**	0.00271	0.00238	0.00235
	(A2 * A3 * B1 * !Y)	-0.00242	-0.00286	-0.00287
	(A2 * !A3 * B1 * !Y)	0.00225	0.00226	0.00225
	(A2 * !A3 * B1 * !Y)	-0.00291	-0.00291	-0.00291
	(A2 * !A3 * !B1 * Y)	0.00069	0.00070	0.00066
	(A2 * !A3 * !B1 * Y)	-0.00333	-0.00336	-0.00344
	(!A2 * B1 * !Y)	0.00228	0.00230	0.00229
	(!A2 * B1 * !Y)	-0.00290	-0.00291	-0.00291
	(!A2 * !B1 * Y)	0.00073	0.00072	0.00070
	(!A2 * !B1 * Y)	-0.00340	-0.00342	-0.00345
sky130_fd_sc_hs__a31oi_2	**(A2 * A3 * B1 * !Y)**	0.00548	0.00479	0.00473
	(A2 * A3 * B1 * !Y)	-0.00494	-0.00586	-0.00584
	(A2 * !A3 * B1 * !Y)	0.00447	0.00449	0.00447
	(A2 * !A3 * B1 * !Y)	-0.00593	-0.00594	-0.00593
	(A2 * !A3 * !B1 * Y)	0.00136	0.00137	0.00128
	(A2 * !A3 * !B1 * Y)	-0.00684	-0.00689	-0.00707
	(!A2 * B1 * !Y)	0.00453	0.00456	0.00455
	(!A2 * B1 * !Y)	-0.00592	-0.00594	-0.00593
	(!A2 * !B1 * Y)	0.00134	0.00135	0.00130
	(!A2 * !B1 * Y)	-0.00699	-0.00704	-0.00711
sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	0.01144	0.00984	0.00978
	(A2 * A3 * B1 * !Y)	-0.00951	-0.01158	-0.01150
	(A2 * !A3 * B1 * !Y)	0.00920	0.00924	0.00922
	(A2 * !A3 * B1 * !Y)	-0.01168	-0.01172	-0.01170
	(A2 * !A3 * !B1 * Y)	0.00290	0.00292	0.00270
	(A2 * !A3 * !B1 * Y)	-0.01368	-0.01379	-0.01416
	(!A2 * B1 * !Y)	0.00941	0.00957	0.00947
	(!A2 * B1 * !Y)	-0.01165	-0.01177	-0.01170
	(!A2 * !B1 * Y)	0.00300	0.00300	0.00288
	(!A2 * !B1 * Y)	-0.01398	-0.01403	-0.01421

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)	-0.00234	-0.00236	-0.00234
	(A2 * A3 * B1 * !Y)	0.00286	0.00289	0.00287
	(A2 * !A3 * B1 * !Y)	-0.00203	-0.00225	-0.00225
	(A2 * !A3 * B1 * !Y)	0.00291	0.00294	0.00292
	(A2 * !A3 * !B1 * Y)	-0.00067	-0.00068	-0.00066
	(A2 * !A3 * !B1 * Y)	0.00344	0.00349	0.00345
	(!A2 * B1 * !Y)	-0.00221	-0.00229	-0.00228
	(!A2 * B1 * !Y)	0.00292	0.00294	0.00292
	(!A2 * !B1 * Y)	-0.00069	-0.00070	-0.00068
	(!A2 * !B1 * Y)	0.00345	0.00351	0.00345
sky130_fd_sc_hs__a31oi_2	(A2 * A3 * B1 * !Y)	-0.00472	-0.00474	-0.00471
	(A2 * A3 * B1 * !Y)	0.00584	0.00589	0.00584
	(A2 * !A3 * B1 * !Y)	-0.00399	-0.00449	-0.00447
	(A2 * !A3 * B1 * !Y)	0.00595	0.00597	0.00595
	(A2 * !A3 * !B1 * Y)	-0.00125	-0.00127	-0.00124
	(A2 * !A3 * !B1 * Y)	0.00708	0.00719	0.00712
	(!A2 * B1 * !Y)	-0.00442	-0.00456	-0.00455
	(!A2 * B1 * !Y)	0.00595	0.00597	0.00595
	(!A2 * !B1 * Y)	-0.00127	-0.00130	-0.00128
	(!A2 * !B1 * Y)	0.00710	0.00725	0.00713

sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	-0.00972	-0.00981	-0.00974
	(A2 * A3 * B1 * !Y)	0.01141	0.01161	0.01150
	(A2 * !A3 * B1 * !Y)	-0.00820	-0.00924	-0.00922
	(A2 * !A3 * B1 * !Y)	0.01168	0.01181	0.01174
	(A2 * !A3 * !B1 * Y)	-0.00271	-0.00274	-0.00270
	(A2 * !A3 * !B1 * Y)	0.01414	0.01429	0.01423
	(!A2 * B1 * !Y)	-0.00916	-0.00957	-0.00947
	(!A2 * B1 * !Y)	0.01169	0.01180	0.01174
	(!A2 * !B1 * Y)	-0.00280	-0.00284	-0.00282
	(!A2 * !B1 * Y)	0.01415	0.01431	0.01424

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)**	0.00286	0.00253	0.00250
	(A1 * A3 * B1 * !Y)	-0.00242	-0.00285	-0.00287
	(A1 * !A3 * B1 * !Y)	0.00243	0.00245	0.00244
	(A1 * !A3 * B1 * !Y)	-0.00289	-0.00291	-0.00290
	(A1 * !A3 * !B1 * Y)	0.00084	0.00084	0.00085
	(A1 * !A3 * !B1 * Y)	-0.00319	-0.00319	-0.00320
	(!A1 * A3 * B1 * !Y)	0.00245	0.00245	0.00244
	(!A1 * A3 * B1 * !Y)	-0.00290	-0.00291	-0.00290
	(!A1 * A3 * !B1 * Y)	0.00213	0.00214	0.00213
	(!A1 * A3 * !B1 * Y)	-0.00319	-0.00321	-0.00320
	(!A1 * !A3 * B1 * !Y)	0.00144	0.00144	0.00144
	(!A1 * !A3 * B1 * !Y)	-0.00290	-0.00291	-0.00290
	(!A1 * !A3 * !B1 * Y)	0.00103	0.00104	0.00103
	(!A1 * !A3 * !B1 * Y)	-0.00322	-0.00323	-0.00322

sky130_fd_sc_hs__a31oi_2	**(A1 * A3 * B1 * !Y)**	0.00508	0.00445	0.00439
	(A1 * A3 * B1 * !Y)	-0.00503	-0.00586	-0.00588
	(A1 * !A3 * B1 * !Y)	0.00419	0.00423	0.00422
	(A1 * !A3 * B1 * !Y)	-0.00594	-0.00598	-0.00596
	(A1 * !A3 * !B1 * Y)	0.00166	0.00167	0.00167
	(A1 * !A3 * !B1 * Y)	-0.00597	-0.00599	-0.00598
	(!A1 * A3 * B1 * !Y)	0.00424	0.00427	0.00426
	(!A1 * A3 * B1 * !Y)	-0.00595	-0.00598	-0.00596
	(!A1 * A3 * !B1 * Y)	0.00419	0.00421	0.00420
	(!A1 * A3 * !B1 * Y)	-0.00598	-0.00598	-0.00597
	(!A1 * !A3 * B1 * !Y)	0.00228	0.00229	0.00228
	(!A1 * !A3 * B1 * !Y)	-0.00595	-0.00597	-0.00596
	(!A1 * !A3 * !B1 * Y)	0.00202	0.00203	0.00203
	(!A1 * !A3 * !B1 * Y)	-0.00603	-0.00605	-0.00604
sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	0.01092	0.00942	0.00930
	(A1 * A3 * B1 * !Y)	-0.00988	-0.01179	-0.01177
	(A1 * !A3 * B1 * !Y)	0.00881	0.00889	0.00885
	(A1 * !A3 * B1 * !Y)	-0.01193	-0.01201	-0.01196
	(A1 * !A3 * !B1 * Y)	0.00362	0.00362	0.00367
	(A1 * !A3 * !B1 * Y)	-0.01204	-0.01202	-0.01205
	(!A1 * A3 * B1 * !Y)	0.00894	0.00901	0.00897
	(!A1 * A3 * B1 * !Y)	-0.01194	-0.01198	-0.01196
	(!A1 * A3 * !B1 * Y)	0.00885	0.00893	0.00890
	(!A1 * A3 * !B1 * Y)	-0.01200	-0.01206	-0.01203
	(!A1 * !A3 * B1 * !Y)	0.00505	0.00507	0.00504
	(!A1 * !A3 * B1 * !Y)	-0.01197	-0.01203	-0.01197
	(!A1 * !A3 * !B1 * Y)	0.00449	0.00450	0.00448
	(!A1 * !A3 * !B1 * Y)	-0.01216	-0.01220	-0.01214

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)	-0.00249	-0.00249	-0.00249
	(A1 * A3 * B1 * !Y)	0.00286	0.00285	0.00287
	(A1 * !A3 * B1 * !Y)	-0.00237	-0.00241	-0.00243
	(A1 * !A3 * B1 * !Y)	0.00292	0.00293	0.00292
	(A1 * !A3 * !B1 * Y)	-0.00081	-0.00082	-0.00083
	(A1 * !A3 * !B1 * Y)	0.00325	0.00330	0.00322
	(!A1 * A3 * B1 * !Y)	-0.00235	-0.00244	-0.00243
	(!A1 * A3 * B1 * !Y)	0.00290	0.00294	0.00292
	(!A1 * A3 * !B1 * Y)	-0.00193	-0.00214	-0.00213
	(!A1 * A3 * !B1 * Y)	0.00335	0.00323	0.00321
	(!A1 * !A3 * B1 * !Y)	-0.00144	-0.00144	-0.00144
	(!A1 * !A3 * B1 * !Y)	0.00290	0.00295	0.00292
	(!A1 * !A3 * !B1 * Y)	-0.00103	-0.00104	-0.00103
	(!A1 * !A3 * !B1 * Y)	0.00332	0.00337	0.00325
sky130_fd_sc_hs__a31oi_2	(A1 * A3 * B1 * !Y)	-0.00438	-0.00440	-0.00437
	(A1 * A3 * B1 * !Y)	0.00588	0.00593	0.00588
	(A1 * !A3 * B1 * !Y)	-0.00410	-0.00423	-0.00422
	(A1 * !A3 * B1 * !Y)	0.00599	0.00600	0.00598
	(A1 * !A3 * !B1 * Y)	-0.00158	-0.00160	-0.00162
	(A1 * !A3 * !B1 * Y)	0.00610	0.00618	0.00604
	(!A1 * A3 * B1 * !Y)	-0.00407	-0.00427	-0.00426
	(!A1 * A3 * B1 * !Y)	0.00596	0.00602	0.00598
	(!A1 * A3 * !B1 * Y)	-0.00381	-0.00421	-0.00420
	(!A1 * A3 * !B1 * Y)	0.00627	0.00602	0.00599
	(!A1 * !A3 * B1 * !Y)	-0.00228	-0.00229	-0.00228
	(!A1 * !A3 * B1 * !Y)	0.00596	0.00605	0.00598
	(!A1 * !A3 * !B1 * Y)	-0.00202	-0.00203	-0.00203
	(!A1 * !A3 * !B1 * Y)	0.00627	0.00636	0.00611

sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	-0.00923	-0.00929	-0.00926
	(A1 * A3 * B1 * !Y)	0.01167	0.01180	0.01177
	(A1 * !A3 * B1 * !Y)	-0.00862	-0.00889	-0.00885
	(A1 * !A3 * B1 * !Y)	0.01201	0.01207	0.01200
	(A1 * !A3 * !B1 * Y)	-0.00347	-0.00351	-0.00356
	(A1 * !A3 * !B1 * Y)	0.01232	0.01246	0.01216
	(!A1 * A3 * B1 * !Y)	-0.00872	-0.00901	-0.00897
	(!A1 * A3 * B1 * !Y)	0.01202	0.01203	0.01200
	(!A1 * A3 * !B1 * Y)	-0.00791	-0.00893	-0.00890
	(!A1 * A3 * !B1 * Y)	0.01295	0.01211	0.01207
	(!A1 * !A3 * B1 * !Y)	-0.00505	-0.00507	-0.00504
	(!A1 * !A3 * B1 * !Y)	0.01197	0.01214	0.01201
	(!A1 * !A3 * !B1 * Y)	-0.00449	-0.00450	-0.00448
	(!A1 * !A3 * !B1 * Y)	0.01262	0.01282	0.01230

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)**	0.00293	0.00262	0.00259
	(A1 * A2 * B1 * !Y)	-0.00254	-0.00294	-0.00295
	(A1 * !A2 * !B1 * Y)	0.00233	0.00233	0.00234
	(A1 * !A2 * !B1 * Y)	-0.00316	-0.00316	-0.00317
	(!A2 * B1 * !Y)	0.00250	0.00250	0.00249
	(!A2 * B1 * !Y)	-0.00298	-0.00299	-0.00299
	(!A1 * A2 * B1 * !Y)	0.00248	0.00251	0.00250
	(!A1 * A2 * B1 * !Y)	-0.00297	-0.00299	-0.00299
	(!A1 * A2 * !B1 * Y)	0.00227	0.00229	0.00229
	(!A1 * A2 * !B1 * Y)	-0.00315	-0.00317	-0.00316
	(!A1 * !A2 * !B1 * Y)	0.00234	0.00236	0.00235
	(!A1 * !A2 * !B1 * Y)	-0.00316	-0.00317	-0.00317

sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	0.00554	0.00490	0.00483
	(A1 * A2 * B1 * !Y)	-0.00497	-0.00582	-0.00582
	(A1 * !A2 * !B1 * Y)	0.00459	0.00462	0.00460
	(A1 * !A2 * !B1 * Y)	-0.00590	-0.00593	-0.00592
	(!A2 * B1 * !Y)	0.00469	0.00473	0.00471
	(!A2 * B1 * !Y)	-0.00589	-0.00592	-0.00590
	(!A1 * A2 * B1 * !Y)	0.00460	0.00464	0.00462
	(!A1 * A2 * B1 * !Y)	-0.00589	-0.00592	-0.00590
	(!A1 * A2 * !B1 * Y)	0.00460	0.00463	0.00461
	(!A1 * A2 * !B1 * Y)	-0.00590	-0.00593	-0.00591
	(!A1 * !A2 * !B1 * Y)	0.00461	0.00464	0.00462
	(!A1 * !A2 * !B1 * Y)	-0.00590	-0.00593	-0.00592
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	0.01070	0.00936	0.00924
	(A1 * A2 * B1 * !Y)	-0.00987	-0.01175	-0.01173
	(A1 * !A2 * !B1 * Y)	0.00877	0.00886	0.00882
	(A1 * !A2 * !B1 * Y)	-0.01188	-0.01196	-0.01192
	(!A2 * B1 * !Y)	0.00877	0.00887	0.00883
	(!A2 * B1 * !Y)	-0.01186	-0.01195	-0.01191
	(!A1 * A2 * B1 * !Y)	0.00881	0.00882	0.00880
	(!A1 * A2 * B1 * !Y)	-0.01193	-0.01193	-0.01191
	(!A1 * A2 * !B1 * Y)	0.00881	0.00883	0.00879
	(!A1 * A2 * !B1 * Y)	-0.01194	-0.01194	-0.01192
	(!A1 * !A2 * !B1 * Y)	0.00889	0.00900	0.00894
	(!A1 * !A2 * !B1 * Y)	-0.01187	-0.01198	-0.01192

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)**	-0.00257	-0.00259	-0.00258
	(A1 * A2 * B1 * !Y)	0.00293	0.00296	0.00295
	(A1 * !A2 * !B1 * Y)	-0.00223	-0.00233	-0.00234
	(A1 * !A2 * !B1 * Y)	0.00316	0.00319	0.00318
	(!A2 * B1 * !Y)	-0.00244	-0.00250	-0.00249
	(!A2 * B1 * !Y)	0.00298	0.00302	0.00300
	(!A1 * A2 * B1 * !Y)	-0.00233	-0.00248	-0.00250
	(!A1 * A2 * B1 * !Y)	0.00299	0.00302	0.00300
	(!A1 * A2 * !B1 * Y)	-0.00215	-0.00229	-0.00229
	(!A1 * A2 * !B1 * Y)	0.00317	0.00321	0.00317
	(!A1 * !A2 * !B1 * Y)	-0.00225	-0.00233	-0.00234
	(!A1 * !A2 * !B1 * Y)	0.00316	0.00320	0.00317
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	-0.00482	-0.00482	-0.00481
	(A1 * A2 * B1 * !Y)	0.00582	0.00583	0.00582
	(A1 * !A2 * !B1 * Y)	-0.00434	-0.00461	-0.00459
	(A1 * !A2 * !B1 * Y)	0.00593	0.00595	0.00593
	(!A2 * B1 * !Y)	-0.00454	-0.00467	-0.00470
	(!A2 * B1 * !Y)	0.00590	0.00596	0.00592
	(!A1 * A2 * B1 * !Y)	-0.00425	-0.00459	-0.00462
	(!A1 * A2 * B1 * !Y)	0.00593	0.00597	0.00593
	(!A1 * A2 * !B1 * Y)	-0.00422	-0.00455	-0.00461
	(!A1 * A2 * !B1 * Y)	0.00598	0.00600	0.00593
	(!A1 * !A2 * !B1 * Y)	-0.00442	-0.00462	-0.00462
	(!A1 * !A2 * !B1 * Y)	0.00591	0.00595	0.00593

sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	-0.00921	-0.00925	-0.00919
	(A1 * A2 * B1 * !Y)	0.01173	0.01184	0.01173
	(A1 * !A2 * !B1 * Y)	-0.00840	-0.00886	-0.00882
	(A1 * !A2 * !B1 * Y)	0.01192	0.01199	0.01195
	(!A2 * B1 * !Y)	-0.00855	-0.00885	-0.00883
	(!A2 * B1 * !Y)	0.01191	0.01202	0.01196
	(!A1 * A2 * B1 * !Y)	-0.00805	-0.00875	-0.00880
	(!A1 * A2 * B1 * !Y)	0.01197	0.01204	0.01196
	(!A1 * A2 * !B1 * Y)	-0.00800	-0.00872	-0.00879
	(!A1 * A2 * !B1 * Y)	0.01204	0.01209	0.01195
	(!A1 * !A2 * !B1 * Y)	-0.00848	-0.00895	-0.00891
	(!A1 * !A2 * !B1 * Y)	0.01192	0.01199	0.01195

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)**	0.00285	0.00286	0.00284
	(A1 * A2 * A3 * !Y)	-0.00130	-0.00131	-0.00129
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * A3 * !Y)**	0.00301	0.00304	0.00301
	(A1 * A2 * A3 * !Y)	-0.00256	-0.00259	-0.00256
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * A3 * !Y)**	0.00625	0.00633	0.00627
	(A1 * A2 * A3 * !Y)	-0.00524	-0.00531	-0.00525

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)	-0.00268	-0.00270	-0.00282
	(A1 * A2 * A3 * !Y)	0.00141	0.00142	0.00132
sky130_fd_sc_hs__a31oi_2	(A1 * A2 * A3 * !Y)	-0.00266	-0.00269	-0.00298
	(A1 * A2 * A3 * !Y)	0.00286	0.00286	0.00263
sky130_fd_sc_hs__a31oi_4	(A1 * A2 * A3 * !Y)	-0.00559	-0.00563	-0.00620
	(A1 * A2 * A3 * !Y)	0.00579	0.00579	0.00537

SKY130_FD_SC_HS__A31Ox

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00260	0.00258	0.00258	0.00279	1.42692
sky130_fd_sc_hs__a31o_2	0.00289	0.00280	0.00281	0.00272	2.73449
sky130_fd_sc_hs__a31o_4	0.00511	0.00499	0.00498	0.00510	5.39487

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a31o_1	0.00000	0.33899	0.48976
sky130_fd_sc_hs__a31o_2	0.00000	0.42590	0.50121
sky130_fd_sc_hs__a31o_4	0.00000	0.85724	1.00241

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)	0.06837	0.48880	5.83834
	A2->X (RR)	0.07341	0.48538	5.72383
	A3->X (RR)	0.07640	0.46829	5.50566
	B1->X (RR)	0.04703	0.43486	5.27998
sky130_fd_sc_hs__a31o_2	A1->X (RR)	0.07086	0.41357	5.63862
	A2->X (RR)	0.07572	0.40674	5.51781
	A3->X (RR)	0.07865	0.38795	5.33057
	B1->X (RR)	0.04552	0.35182	5.07946
sky130_fd_sc_hs__a31o_4	A1->X (RR)	0.08373	0.38454	5.99390
	A2->X (RR)	0.08923	0.36712	5.79949
	A3->X (RR)	0.09320	0.34558	5.60671
	B1->X (RR)	0.04535	0.29335	5.26485

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31o_1	A1->X (FF)	0.09062	0.45170	4.78609
	A2->X (FF)	0.10603	0.47837	4.91273
	A3->X (FF)	0.11435	0.49417	5.03845
	B1->X (FF)	0.09716	0.51527	5.39180
sky130_fd_sc_hs__a31o_2	A1->X (FF)	0.11814	0.46849	4.91190
	A2->X (FF)	0.13771	0.49901	5.04437
	A3->X (FF)	0.14267	0.50719	5.12265
	B1->X (FF)	0.11597	0.52712	5.46976
sky130_fd_sc_hs__a31o_4	A1->X (FF)	0.11755	0.42997	4.98490
	A2->X (FF)	0.13232	0.45660	5.14858
	A3->X (FF)	0.14622	0.48075	5.31485
	B1->X (FF)	0.12294	0.50691	5.57797

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.01491	0.01912	0.11712
	A1	0.00696	0.01117	0.10931
	A2	0.01624	0.01967	0.11375
	A2	0.00695	0.01039	0.10476
	A3	0.01769	0.02050	0.10197
	A3	0.00692	0.00974	0.09168
	B1	0.01121	0.01902	0.15555
	B1	0.00450	0.01233	0.14920
sky130_fd_sc_hs__a31o_2	A1	0.02012	0.02406	0.12126
	A1	0.01151	0.01549	0.11350
	A2	0.02161	0.02478	0.11838
	A2	0.01149	0.01473	0.10927
	A3	0.02327	0.02593	0.10900
	A3	0.01144	0.01423	0.09791
	B1	0.01551	0.02311	0.15821
	B1	0.00861	0.01632	0.15131
sky130_fd_sc_hs__a31o_4	A1	0.04009	0.04731	0.23297
	A1	0.02412	0.03140	0.22038
	A2	0.04292	0.04871	0.23111
	A2	0.02410	0.02995	0.21300
	A3	0.04596	0.05153	0.24411
	A3	0.02405	0.02971	0.22410
	B1	0.02780	0.04364	0.32367
	B1	0.01565	0.03157	0.31298

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.00526	0.00895	0.09564
	A1	0.01327	0.01686	0.10251
	A2	0.00620	0.00966	0.09421
	A2	0.01546	0.01890	0.10327
	A3	0.00656	0.00977	0.09537
	A3	0.01725	0.02034	0.10596
	B1	0.00413	0.01298	0.15367
	B1	0.01083	0.01952	0.16030
sky130_fd_sc_hs__a31o_2	A1	0.01094	0.01316	0.10046
	A1	0.01961	0.02158	0.10729
	A2	0.01270	0.01396	0.09992
	A2	0.02279	0.02402	0.10970
	A3	0.01325	0.01438	0.10303
	A3	0.02493	0.02586	0.11468
	B1	0.00924	0.01736	0.15659
	B1	0.01614	0.02422	0.16348
sky130_fd_sc_hs__a31o_4	A1	0.02274	0.02555	0.21668
	A1	0.03888	0.04131	0.22255
	A2	0.02554	0.02739	0.21361
	A2	0.04438	0.04617	0.22722
	A3	0.02836	0.02997	0.22731
	A3	0.05007	0.05107	0.24062
	B1	0.01944	0.03478	0.31706
	B1	0.03164	0.04671	0.32203

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)**	0.00242	0.00201	0.00197
	(A2 * A3 * B1 * X)	-0.00218	-0.00264	-0.00268
	(A2 * !A3 * B1 * X)	0.00186	0.00187	0.00187
	(A2 * !A3 * B1 * X)	-0.00271	-0.00272	-0.00271
	(A2 * !A3 * !B1 * !X)	0.00056	0.00055	0.00052
	(A2 * !A3 * !B1 * !X)	-0.00309	-0.00308	-0.00317
	(!A2 * B1 * X)	0.00191	0.00192	0.00192
	(!A2 * B1 * X)	-0.00271	-0.00272	-0.00271
	(!A2 * !B1 * !X)	0.00058	0.00058	0.00056
	(!A2 * !B1 * !X)	-0.00314	-0.00313	-0.00317
sky130_fd_sc_hs__a31o_2	**(A2 * A3 * B1 * X)**	0.00291	0.00252	0.00248
	(A2 * A3 * B1 * X)	-0.00209	-0.00257	-0.00259
	(A2 * !A3 * B1 * X)	0.00237	0.00237	0.00236
	(A2 * !A3 * B1 * X)	-0.00262	-0.00262	-0.00262
	(A2 * !A3 * !B1 * !X)	0.00071	0.00071	0.00068
	(A2 * !A3 * !B1 * !X)	-0.00316	-0.00317	-0.00326
	(!A2 * B1 * X)	0.00240	0.00241	0.00241
	(!A2 * B1 * X)	-0.00261	-0.00263	-0.00262
	(!A2 * !B1 * !X)	0.00074	0.00074	0.00072
	(!A2 * !B1 * !X)	-0.00323	-0.00324	-0.00327
sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	0.00506	0.00427	0.00420
	(A2 * A3 * B1 * X)	-0.00434	-0.00534	-0.00537
	(A2 * !A3 * B1 * X)	0.00403	0.00403	0.00403
	(A2 * !A3 * B1 * X)	-0.00546	-0.00546	-0.00544
	(A2 * !A3 * !B1 * !X)	0.00133	0.00133	0.00124
	(A2 * !A3 * !B1 * !X)	-0.00620	-0.00622	-0.00644
	(!A2 * B1 * X)	0.00407	0.00411	0.00410
	(!A2 * B1 * X)	-0.00542	-0.00546	-0.00544
	(!A2 * !B1 * !X)	0.00135	0.00134	0.00130
	(!A2 * !B1 * !X)	-0.00637	-0.00635	-0.00645

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)	-0.00195	-0.00196	-0.00195
	(A2 * A3 * B1 * X)	0.00266	0.00268	0.00268
	(A2 * !A3 * B1 * X)	-0.00169	-0.00187	-0.00187
	(A2 * !A3 * B1 * X)	0.00272	0.00275	0.00273
	(A2 * !A3 * !B1 * !X)	-0.00053	-0.00054	-0.00052
	(A2 * !A3 * !B1 * !X)	0.00317	0.00321	0.00318
	(!A2 * B1 * X)	-0.00185	-0.00190	-0.00191
	(!A2 * B1 * X)	0.00273	0.00274	0.00273
	(!A2 * !B1 * !X)	-0.00054	-0.00056	-0.00054
	(!A2 * !B1 * !X)	0.00318	0.00323	0.00318
sky130_fd_sc_hs__a31o_2	(A2 * A3 * B1 * X)	-0.00246	-0.00247	-0.00246
	(A2 * A3 * B1 * X)	0.00257	0.00259	0.00259
	(A2 * !A3 * B1 * X)	-0.00216	-0.00236	-0.00236
	(A2 * !A3 * B1 * X)	0.00262	0.00265	0.00263
	(A2 * !A3 * !B1 * !X)	-0.00068	-0.00069	-0.00068
	(A2 * !A3 * !B1 * !X)	0.00327	0.00331	0.00328
	(!A2 * B1 * X)	-0.00233	-0.00240	-0.00241
	(!A2 * B1 * X)	0.00264	0.00265	0.00263
	(!A2 * !B1 * !X)	-0.00069	-0.00071	-0.00069
	(!A2 * !B1 * !X)	0.00327	0.00333	0.00328

sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	-0.00416	-0.00419	-0.00416
	(A2 * A3 * B1 * X)	0.00534	0.00541	0.00537
	(A2 * !A3 * B1 * X)	-0.00364	-0.00402	-0.00403
	(A2 * !A3 * B1 * X)	0.00546	0.00552	0.00548
	(A2 * !A3 * !B1 * !X)	-0.00123	-0.00124	-0.00122
	(A2 * !A3 * !B1 * !X)	0.00647	0.00654	0.00648
	(!A2 * B1 * X)	-0.00392	-0.00406	-0.00407
	(!A2 * B1 * X)	0.00544	0.00552	0.00548
	(!A2 * !B1 * !X)	-0.00126	-0.00128	-0.00126
	(!A2 * !B1 * !X)	0.00647	0.00654	0.00648

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)**	0.00239	0.00198	0.00194
	(A1 * A3 * B1 * X)	-0.00217	-0.00263	-0.00267
	(A1 * !A3 * B1 * X)	0.00188	0.00189	0.00188
	(A1 * !A3 * B1 * X)	-0.00270	-0.00272	-0.00270
	(A1 * !A3 * !B1 * !X)	0.00069	0.00069	0.00069
	(A1 * !A3 * !B1 * !X)	-0.00280	-0.00280	-0.00279
	(!A1 * A3 * B1 * X)	0.00188	0.00189	0.00189
	(!A1 * A3 * B1 * X)	-0.00270	-0.00271	-0.00270
	(!A1 * A3 * !B1 * !X)	0.00179	0.00181	0.00180
	(!A1 * A3 * !B1 * !X)	-0.00279	-0.00281	-0.00279
	(!A1 * !A3 * B1 * X)	0.00102	0.00102	0.00102
	(!A1 * !A3 * B1 * X)	-0.00270	-0.00271	-0.00270
	(!A1 * !A3 * !B1 * !X)	0.00083	0.00084	0.00084
	(!A1 * !A3 * !B1 * !X)	-0.00280	-0.00281	-0.00280

sky130_fd_sc_hs__a31o_2	**(A1 * A3 * B1 * X)**	0.00283	0.00243	0.00239
	(A1 * A3 * B1 * X)	-0.00209	-0.00257	-0.00259
	(A1 * !A3 * B1 * X)	0.00228	0.00230	0.00229
	(A1 * !A3 * B1 * X)	-0.00261	-0.00262	-0.00262
	(A1 * !A3 * !B1 * !X)	0.00085	0.00086	0.00086
	(A1 * !A3 * !B1 * !X)	-0.00279	-0.00280	-0.00280
	(!A1 * A3 * B1 * X)	0.00232	0.00233	0.00233
	(!A1 * A3 * B1 * X)	-0.00261	-0.00262	-0.00262
	(!A1 * A3 * !B1 * !X)	0.00213	0.00215	0.00214
	(!A1 * A3 * !B1 * !X)	-0.00279	-0.00280	-0.00280
	(!A1 * !A3 * B1 * X)	0.00134	0.00134	0.00133
	(!A1 * !A3 * B1 * X)	-0.00262	-0.00262	-0.00262
	(!A1 * !A3 * !B1 * !X)	0.00104	0.00104	0.00104
	(!A1 * !A3 * !B1 * !X)	-0.00281	-0.00283	-0.00281
sky130_fd_sc_hs__a31o_4	**(A1 * A3 * B1 * X)**	0.00505	0.00422	0.00415
	(A1 * A3 * B1 * X)	-0.00435	-0.00538	-0.00541
	(A1 * !A3 * B1 * X)	0.00395	0.00398	0.00397
	(A1 * !A3 * B1 * X)	-0.00548	-0.00551	-0.00549
	(A1 * !A3 * !B1 * !X)	0.00173	0.00174	0.00175
	(A1 * !A3 * !B1 * !X)	-0.00552	-0.00554	-0.00553
	(!A1 * A3 * B1 * X)	0.00399	0.00403	0.00400
	(!A1 * A3 * B1 * X)	-0.00548	-0.00552	-0.00549
	(!A1 * A3 * !B1 * !X)	0.00398	0.00402	0.00400
	(!A1 * A3 * !B1 * !X)	-0.00548	-0.00551	-0.00549
	(!A1 * !A3 * B1 * X)	0.00232	0.00234	0.00233
	(!A1 * !A3 * B1 * X)	-0.00549	-0.00551	-0.00550
	(!A1 * !A3 * !B1 * !X)	0.00210	0.00211	0.00211
	(!A1 * !A3 * !B1 * !X)	-0.00556	-0.00558	-0.00557

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)	-0.00192	-0.00193	-0.00192
	(A1 * A3 * B1 * X)	0.00266	0.00267	0.00267
	(A1 * !A3 * B1 * X)	-0.00182	-0.00187	-0.00187
	(A1 * !A3 * B1 * X)	0.00273	0.00274	0.00272
	(A1 * !A3 * !B1 * !X)	-0.00065	-0.00066	-0.00067
	(A1 * !A3 * !B1 * !X)	0.00284	0.00288	0.00281
	(!A1 * A3 * B1 * X)	-0.00181	-0.00188	-0.00188
	(!A1 * A3 * B1 * X)	0.00271	0.00274	0.00272
	(!A1 * A3 * !B1 * !X)	-0.00160	-0.00179	-0.00179
	(!A1 * A3 * !B1 * !X)	0.00294	0.00283	0.00281
	(!A1 * !A3 * B1 * X)	-0.00102	-0.00102	-0.00102
	(!A1 * !A3 * B1 * X)	0.00272	0.00275	0.00272
	(!A1 * !A3 * !B1 * !X)	-0.00083	-0.00084	-0.00084
	(!A1 * !A3 * !B1 * !X)	0.00290	0.00294	0.00284
sky130_fd_sc_hs__a31o_2	(A1 * A3 * B1 * X)	-0.00237	-0.00238	-0.00237
	(A1 * A3 * B1 * X)	0.00258	0.00259	0.00259
	(A1 * !A3 * B1 * X)	-0.00225	-0.00230	-0.00229
	(A1 * !A3 * B1 * X)	0.00264	0.00265	0.00263
	(A1 * !A3 * !B1 * !X)	-0.00081	-0.00082	-0.00083
	(A1 * !A3 * !B1 * !X)	0.00286	0.00289	0.00283
	(!A1 * A3 * B1 * X)	-0.00223	-0.00232	-0.00232
	(!A1 * A3 * B1 * X)	0.00262	0.00265	0.00263
	(!A1 * A3 * !B1 * !X)	-0.00193	-0.00214	-0.00213
	(!A1 * A3 * !B1 * !X)	0.00294	0.00283	0.00281
	(!A1 * !A3 * B1 * X)	-0.00134	-0.00134	-0.00133
	(!A1 * !A3 * B1 * X)	0.00263	0.00266	0.00263
	(!A1 * !A3 * !B1 * !X)	-0.00104	-0.00104	-0.00104
	(!A1 * !A3 * !B1 * !X)	0.00292	0.00297	0.00285

sky130_fd_sc_hs__a31o_4	(A1 * A3 * B1 * X)	-0.00413	-0.00414	-0.00411
	(A1 * A3 * B1 * X)	0.00542	0.00546	0.00541
	(A1 * !A3 * B1 * X)	-0.00383	-0.00398	-0.00397
	(A1 * !A3 * B1 * X)	0.00552	0.00554	0.00553
	(A1 * !A3 * !B1 * !X)	-0.00166	-0.00167	-0.00168
	(A1 * !A3 * !B1 * !X)	0.00569	0.00572	0.00559
	(!A1 * A3 * B1 * X)	-0.00387	-0.00401	-0.00400
	(!A1 * A3 * B1 * X)	0.00550	0.00554	0.00552
	(!A1 * A3 * !B1 * !X)	-0.00358	-0.00400	-0.00400
	(!A1 * A3 * !B1 * !X)	0.00585	0.00556	0.00553
	(!A1 * !A3 * B1 * X)	-0.00232	-0.00234	-0.00233
	(!A1 * !A3 * B1 * X)	0.00551	0.00559	0.00553
	(!A1 * !A3 * !B1 * !X)	-0.00210	-0.00211	-0.00211
	(!A1 * !A3 * !B1 * !X)	0.00583	0.00590	0.00567

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)	0.00251	0.00216	0.00213
	(A1 * A2 * B1 * X)	-0.00218	-0.00260	-0.00263
	(A1 * !A2 * !B1 * !X)	0.00180	0.00182	0.00181
	(A1 * !A2 * !B1 * !X)	-0.00289	-0.00291	-0.00290
	(!A2 * B1 * X)	0.00205	0.00206	0.00205
	(!A2 * B1 * X)	-0.00267	-0.00267	-0.00266
	(!A1 * A2 * B1 * X)	0.00204	0.00204	0.00204
	(!A1 * A2 * B1 * X)	-0.00267	-0.00267	-0.00266
	(!A1 * A2 * !B1 * !X)	0.00177	0.00178	0.00177
	(!A1 * A2 * !B1 * !X)	-0.00290	-0.00291	-0.00290
	(!A1 * !A2 * !B1 * !X)	0.00179	0.00181	0.00181
	(!A1 * !A2 * !B1 * !X)	-0.00289	-0.00291	-0.00290

sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	0.00293	0.00259	0.00255
	(A1 * A2 * B1 * X)	-0.00212	-0.00253	-0.00256
	(A1 * !A2 * !B1 * !X)	0.00213	0.00215	0.00214
	(A1 * !A2 * !B1 * !X)	-0.00291	-0.00292	-0.00292
	(!A2 * B1 * X)	0.00247	0.00247	0.00246
	(!A2 * B1 * X)	-0.00259	-0.00259	-0.00258
	(!A1 * A2 * B1 * X)	0.00244	0.00244	0.00243
	(!A1 * A2 * B1 * X)	-0.00259	-0.00259	-0.00258
	(!A1 * A2 * !B1 * !X)	0.00212	0.00212	0.00212
	(!A1 * A2 * !B1 * !X)	-0.00291	-0.00292	-0.00291
	(!A1 * !A2 * !B1 * !X)	0.00213	0.00215	0.00214
	(!A1 * !A2 * !B1 * !X)	-0.00291	-0.00292	-0.00292
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	0.00501	0.00419	0.00411
	(A1 * A2 * B1 * X)	-0.00441	-0.00540	-0.00543
	(A1 * !A2 * !B1 * !X)	0.00397	0.00399	0.00398
	(A1 * !A2 * !B1 * !X)	-0.00551	-0.00553	-0.00552
	(!A2 * B1 * X)	0.00397	0.00400	0.00398
	(!A2 * B1 * X)	-0.00550	-0.00553	-0.00551
	(!A1 * A2 * B1 * X)	0.00393	0.00394	0.00392
	(!A1 * A2 * B1 * X)	-0.00552	-0.00552	-0.00551
	(!A1 * A2 * !B1 * !X)	0.00393	0.00395	0.00392
	(!A1 * A2 * !B1 * !X)	-0.00553	-0.00554	-0.00551
	(!A1 * !A2 * !B1 * !X)	0.00390	0.00394	0.00393
	(!A1 * !A2 * !B1 * !X)	-0.00550	-0.00553	-0.00552

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)**	-0.00211	-0.00212	-0.00211
	(A1 * A2 * B1 * X)	0.00262	0.00264	0.00263
	(A1 * !A2 * !B1 * !X)	-0.00174	-0.00181	-0.00181
	(A1 * !A2 * !B1 * !X)	0.00292	0.00294	0.00291
	(!A2 * B1 * X)	-0.00201	-0.00205	-0.00205
	(!A2 * B1 * X)	0.00268	0.00269	0.00268
	(!A1 * A2 * B1 * X)	-0.00190	-0.00203	-0.00204
	(!A1 * A2 * B1 * X)	0.00267	0.00269	0.00268
	(!A1 * A2 * !B1 * !X)	-0.00166	-0.00178	-0.00177
	(!A1 * A2 * !B1 * !X)	0.00292	0.00294	0.00291
	(!A1 * !A2 * !B1 * !X)	-0.00176	-0.00181	-0.00181
	(!A1 * !A2 * !B1 * !X)	0.00292	0.00294	0.00291
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	-0.00254	-0.00254	-0.00254
	(A1 * A2 * B1 * X)	0.00254	0.00256	0.00256
	(A1 * !A2 * !B1 * !X)	-0.00205	-0.00215	-0.00214
	(A1 * !A2 * !B1 * !X)	0.00294	0.00294	0.00293
	(!A2 * B1 * X)	-0.00242	-0.00246	-0.00246
	(!A2 * B1 * X)	0.00260	0.00261	0.00260
	(!A1 * A2 * B1 * X)	-0.00230	-0.00244	-0.00243
	(!A1 * A2 * B1 * X)	0.00259	0.00261	0.00260
	(!A1 * A2 * !B1 * !X)	-0.00196	-0.00212	-0.00212
	(!A1 * A2 * !B1 * !X)	0.00293	0.00295	0.00293
	(!A1 * !A2 * !B1 * !X)	-0.00207	-0.00214	-0.00214
	(!A1 * !A2 * !B1 * !X)	0.00294	0.00294	0.00293

sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	-0.00407	-0.00410	-0.00407
	(A1 * A2 * B1 * X)	0.00540	0.00547	0.00543
	(A1 * !A2 * !B1 * !X)	-0.00372	-0.00395	-0.00396
	(A1 * !A2 * !B1 * !X)	0.00553	0.00557	0.00555
	(!A2 * B1 * X)	-0.00379	-0.00394	-0.00396
	(!A2 * B1 * X)	0.00552	0.00557	0.00554
	(!A1 * A2 * B1 * X)	-0.00361	-0.00388	-0.00392
	(!A1 * A2 * B1 * X)	0.00555	0.00558	0.00554
	(!A1 * A2 * !B1 * !X)	-0.00358	-0.00387	-0.00392
	(!A1 * A2 * !B1 * !X)	0.00560	0.00561	0.00554
	(!A1 * !A2 * !B1 * !X)	-0.00376	-0.00394	-0.00393
	(!A1 * !A2 * !B1 * !X)	0.00553	0.00556	0.00555

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)**	0.00280	0.00286	0.00281
	(A1 * A2 * A3 * X)	-0.00121	-0.00124	-0.00122
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * A3 * X)**	0.00267	0.00270	0.00268
	(A1 * A2 * A3 * X)	-0.00119	-0.00120	-0.00119
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * A3 * X)**	0.00466	0.00468	0.00464
	(A1 * A2 * A3 * X)	-0.00261	-0.00260	-0.00258

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)	-0.00267	-0.00268	-0.00279
	(A1 * A2 * A3 * X)	0.00132	0.00132	0.00124
sky130_fd_sc_hs__a31o_2	(A1 * A2 * A3 * X)	-0.00254	-0.00255	-0.00266
	(A1 * A2 * A3 * X)	0.00130	0.00130	0.00121
sky130_fd_sc_hs__a31o_4	(A1 * A2 * A3 * X)	-0.00429	-0.00430	-0.00460
	(A1 * A2 * A3 * X)	0.00287	0.00286	0.00264

SKY130_FD_SC_HS__A32OIx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00298	0.00298	0.00271	0.00303	0.00282	0.69486
sky130_fd_sc_hs__a32oi_2	0.00561	0.00549	0.00539	0.00566	0.00553	1.26810
sky130_fd_sc_hs__a32oi_4	0.01111	0.01082	0.01078	0.01131	0.01096	2.00747

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a32oi_1	0.00000	0.11188	0.38031
sky130_fd_sc_hs__a32oi_2	0.00000	0.22376	0.76062
sky130_fd_sc_hs__a32oi_4	0.00000	0.44751	1.52123

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)	0.08802	0.80741	9.44420
	A2->Y (FR)	0.10038	0.81896	9.45257
	A3->Y (FR)	0.11008	0.82513	9.39208
	B1->Y (FR)	0.06191	0.82979	10.14210
	B2->Y (FR)	0.05905	0.82860	10.14870
sky130_fd_sc_hs__a32oi_2	A1->Y (FR)	0.07925	0.65963	8.93242
	A2->Y (FR)	0.10252	0.70764	9.36636
	A3->Y (FR)	0.11217	0.71132	9.24885
	B1->Y (FR)	0.05368	0.70394	9.94537
	B2->Y (FR)	0.07217	0.73007	10.09190
sky130_fd_sc_hs__a32oi_4	A1->Y (FR)	0.09248	0.59945	8.84060
	A2->Y (FR)	0.11065	0.61177	8.77710
	A3->Y (FR)	0.12535	0.62608	8.77576
	B1->Y (FR)	0.07545	0.63631	9.49884
	B2->Y (FR)	0.09940	0.67558	9.85265

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32oi_1	A1->Y (RF)	0.04132	0.42100	4.79115
	A2->Y (RF)	0.04600	0.39151	4.35704
	A3->Y (RF)	0.04852	0.34215	3.66033
	B1->Y (RF)	0.02048	0.32883	3.93084
	B2->Y (RF)	0.02305	0.29335	3.42460
sky130_fd_sc_hs__a32oi_2	A1->Y (RF)	0.04381	0.39876	5.29953
	A2->Y (RF)	0.05198	0.36932	4.78586
	A3->Y (RF)	0.05443	0.29060	3.63143
	B1->Y (RF)	0.01795	0.28652	4.13112
	B2->Y (RF)	0.02292	0.24970	3.50805
sky130_fd_sc_hs__a32oi_4	A1->Y (RF)	0.04426	0.33787	4.90664
	A2->Y (RF)	0.05151	0.30085	4.26562
	A3->Y (RF)	0.05391	0.22491	3.10292
	B1->Y (RF)	0.01859	0.22884	3.76621
	B2->Y (RF)	0.02274	0.17877	2.88346

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32oi_1	A1	0.00046	0.00138	0.03591
	A1	0.01128	0.01219	0.04673
	A2	0.00114	0.00199	0.03668
	A2	0.01358	0.01442	0.04914
	A3	0.00201	0.00301	0.03947
	A3	0.01582	0.01680	0.05325
	B1	0.00020	0.00421	0.05811
	B1	0.00748	0.01150	0.06586
	B2	0.00086	0.00486	0.05980
	B2	0.00965	0.01367	0.06880
sky130_fd_sc_hs__a32oi_2	A1	-0.00127	0.00083	0.06032
	A1	0.01993	0.02210	0.08230
	A2	0.00180	0.00325	0.06229
	A2	0.02627	0.02772	0.08700
	A3	0.00287	0.00479	0.06792
	A3	0.03049	0.03239	0.09574
	B1	-0.00178	0.00560	0.10082
	B1	0.01198	0.01933	0.11524
	B2	0.00089	0.00786	0.10451
	B2	0.01802	0.02504	0.12251

sky130_fd_sc_hs__a32oi_4	**A1**	-0.00227	0.00184	0.11884
	A1	0.04028	0.04431	0.16196
	A2	0.00243	0.00595	0.12965
	A2	0.05135	0.05476	0.18004
	A3	0.00482	0.00925	0.14479
	A3	0.06023	0.06456	0.20112
	B1	-0.00336	0.01164	0.19528
	B1	0.02468	0.03960	0.22325
	B2	0.00126	0.01487	0.19853
	B2	0.03569	0.04929	0.23465

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32oi_1	**A1**	0.01537	0.01673	0.04498
	A1	0.00466	0.00595	0.03391
	A2	0.01704	0.01800	0.04418
	A2	0.00465	0.00560	0.03180
	A3	0.01843	0.01955	0.05029
	A3	0.00458	0.00558	0.03545
	B1	0.00711	0.00920	0.04124
	B1	-0.00015	0.00190	0.03357
	B2	0.00867	0.01040	0.04088
	B2	-0.00016	0.00147	0.03199

sky130_fd_sc_hs__a32oi_2	**A1**	0.02992	0.03230	0.08246
	A1	0.00893	0.01134	0.06057
	A2	0.03337	0.03504	0.08115
	A2	0.00899	0.01055	0.05606
	A3	0.03666	0.03881	0.09643
	A3	0.00892	0.01090	0.06873
	B1	0.01292	0.01730	0.07584
	B1	-0.00083	0.00348	0.06153
	B2	0.01653	0.01990	0.07670
	B2	-0.00074	0.00261	0.05897
sky130_fd_sc_hs__a32oi_4	**A1**	0.05863	0.06283	0.15622
	A1	0.01658	0.02074	0.11217
	A2	0.06502	0.06841	0.15907
	A2	0.01630	0.01957	0.11048
	A3	0.07157	0.07588	0.19454
	A3	0.01597	0.02024	0.13799
	B1	0.02627	0.03510	0.14627
	B1	-0.00171	0.00699	0.11822
	B2	0.03341	0.04084	0.15465
	B2	-0.00138	0.00597	0.11913

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)**	0.00279	0.00247	0.00244
	(A2 * A3 * B1 * B2 * !Y)	-0.00245	-0.00285	-0.00286
	(A2 * !A3 * B1 * B2 * !Y)	0.00234	0.00234	0.00234
	(A2 * !A3 * B1 * B2 * !Y)	-0.00290	-0.00291	-0.00290
	(A2 * !A3 * B1 * !B2 * Y)	0.00074	0.00074	0.00070
	(A2 * !A3 * B1 * !B2 * Y)	-0.00339	-0.00340	-0.00349
	(A2 * !A3 * !B1 * Y)	0.00074	0.00074	0.00070
	(A2 * !A3 * !B1 * Y)	-0.00339	-0.00340	-0.00349
	(!A2 * B1 * B2 * !Y)	0.00237	0.00239	0.00238
	(!A2 * B1 * B2 * !Y)	-0.00290	-0.00291	-0.00290
	(!A2 * B1 * !B2 * Y)	0.00073	0.00073	0.00071
	(!A2 * B1 * !B2 * Y)	-0.00346	-0.00346	-0.00349
	(!A2 * !B1 * Y)	0.00073	0.00073	0.00071
	(!A2 * !B1 * Y)	-0.00346	-0.00346	-0.00349
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	0.00549	0.00489	0.00483
	(A2 * A3 * B1 * B2 * !Y)	-0.00487	-0.00571	-0.00572
	(A2 * !A3 * B1 * B2 * !Y)	0.00453	0.00457	0.00455
	(A2 * !A3 * B1 * B2 * !Y)	-0.00577	-0.00582	-0.00580
	(A2 * !A3 * B1 * !B2 * Y)	0.00153	0.00154	0.00143
	(A2 * !A3 * B1 * !B2 * Y)	-0.00666	-0.00671	-0.00691
	(A2 * !A3 * !B1 * Y)	0.00154	0.00154	0.00143
	(A2 * !A3 * !B1 * Y)	-0.00666	-0.00671	-0.00691
	(!A2 * B1 * B2 * !Y)	0.00466	0.00468	0.00467
	(!A2 * B1 * B2 * !Y)	-0.00580	-0.00581	-0.00580
	(!A2 * B1 * !B2 * Y)	0.00159	0.00160	0.00153
	(!A2 * B1 * !B2 * Y)	-0.00679	-0.00684	-0.00693
	(!A2 * !B1 * Y)	0.00160	0.00160	0.00153
	(!A2 * !B1 * Y)	-0.00679	-0.00684	-0.00693

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	0.01131	0.00967	0.00956
	(A2 * A3 * B1 * B2 * !Y)	-0.00935	-0.01148	-0.01145
	(A2 * !A3 * B1 * B2 * !Y)	0.00892	0.00896	0.00895
	(A2 * !A3 * B1 * B2 * !Y)	-0.01160	-0.01165	-0.01162
	(A2 * !A3 * B1 * !B2 * Y)	0.00275	0.00275	0.00256
	(A2 * !A3 * B1 * !B2 * Y)	-0.01355	-0.01363	-0.01399
	(A2 * !A3 * !B1 * Y)	0.00275	0.00276	0.00257
	(A2 * !A3 * !B1 * Y)	-0.01355	-0.01363	-0.01399
	(!A2 * B1 * B2 * !Y)	0.00918	0.00924	0.00921
	(!A2 * B1 * B2 * !Y)	-0.01163	-0.01167	-0.01162
	(!A2 * B1 * !B2 * Y)	0.00286	0.00286	0.00274
	(!A2 * B1 * !B2 * Y)	-0.01384	-0.01391	-0.01404
	(!A2 * !B1 * Y)	0.00286	0.00287	0.00275
	(!A2 * !B1 * Y)	-0.01383	-0.01390	-0.01404

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)**	-0.00243	-0.00244	-0.00243
	(A2 * A3 * B1 * B2 * !Y)	0.00285	0.00287	0.00286
	(A2 * !A3 * B1 * B2 * !Y)	-0.00208	-0.00234	-0.00234
	(A2 * !A3 * B1 * B2 * !Y)	0.00290	0.00291	0.00292
	(A2 * !A3 * B1 * !B2 * Y)	-0.00069	-0.00070	-0.00068
	(A2 * !A3 * B1 * !B2 * Y)	0.00348	0.00354	0.00350
	(A2 * !A3 * !B1 * Y)	-0.00069	-0.00070	-0.00068
	(A2 * !A3 * !B1 * Y)	0.00349	0.00354	0.00350
	(!A2 * B1 * B2 * !Y)	-0.00230	-0.00235	-0.00237
	(!A2 * B1 * B2 * !Y)	0.00291	0.00293	0.00292
	(!A2 * B1 * !B2 * Y)	-0.00069	-0.00071	-0.00070
	(!A2 * B1 * !B2 * Y)	0.00349	0.00356	0.00350
	(!A2 * !B1 * Y)	-0.00070	-0.00071	-0.00070
	(!A2 * !B1 * Y)	0.00349	0.00356	0.00350
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	-0.00481	-0.00482	-0.00480
	(A2 * A3 * B1 * B2 * !Y)	0.00571	0.00573	0.00572
	(A2 * !A3 * B1 * B2 * !Y)	-0.00402	-0.00457	-0.00455
	(A2 * !A3 * B1 * B2 * !Y)	0.00584	0.00588	0.00583
	(A2 * !A3 * B1 * !B2 * Y)	-0.00144	-0.00147	-0.00143
	(A2 * !A3 * B1 * !B2 * Y)	0.00692	0.00706	0.00694
	(A2 * !A3 * !B1 * Y)	-0.00145	-0.00148	-0.00143
	(A2 * !A3 * !B1 * Y)	0.00691	0.00706	0.00694
	(!A2 * B1 * B2 * !Y)	-0.00452	-0.00468	-0.00467
	(!A2 * B1 * B2 * !Y)	0.00583	0.00584	0.00583
	(!A2 * B1 * !B2 * Y)	-0.00149	-0.00152	-0.00149
	(!A2 * B1 * !B2 * Y)	0.00692	0.00707	0.00695
	(!A2 * !B1 * Y)	-0.00149	-0.00153	-0.00150
	(!A2 * !B1 * Y)	0.00692	0.00707	0.00695

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	-0.00952	-0.00955	-0.00949
	(A2 * A3 * B1 * B2 * !Y)	0.01144	0.01152	0.01145
	(A2 * !A3 * B1 * B2 * !Y)	-0.00786	-0.00896	-0.00895
	(A2 * !A3 * B1 * B2 * !Y)	0.01170	0.01178	0.01168
	(A2 * !A3 * B1 * !B2 * Y)	-0.00259	-0.00263	-0.00256
	(A2 * !A3 * B1 * !B2 * Y)	0.01400	0.01421	0.01405
	(A2 * !A3 * !B1 * Y)	-0.00260	-0.00264	-0.00257
	(A2 * !A3 * !B1 * Y)	0.01400	0.01421	0.01405
	(!A2 * B1 * B2 * !Y)	-0.00896	-0.00924	-0.00921
	(!A2 * B1 * B2 * !Y)	0.01169	0.01172	0.01168
	(!A2 * B1 * !B2 * Y)	-0.00268	-0.00273	-0.00268
	(!A2 * B1 * !B2 * Y)	0.01402	0.01430	0.01406
	(!A2 * !B1 * Y)	-0.00268	-0.00274	-0.00269
	(!A2 * !B1 * Y)	0.01401	0.01430	0.01407

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)**	0.00284	0.00255	0.00251
	(A1 * A3 * B1 * B2 * !Y)	-0.00244	-0.00285	-0.00287
	(A1 * !A3 * B1 * B2 * !Y)	0.00246	0.00246	0.00246
	(A1 * !A3 * B1 * B2 * !Y)	-0.00291	-0.00292	-0.00291
	(A1 * !A3 * B1 * !B2 * Y)	0.00101	0.00101	0.00100
	(A1 * !A3 * B1 * !B2 * Y)	-0.00306	-0.00306	-0.00305
	(A1 * !A3 * !B1 * Y)	0.00101	0.00101	0.00100
	(A1 * !A3 * !B1 * Y)	-0.00306	-0.00306	-0.00305
	(!A1 * A3 * B1 * B2 * !Y)	0.00244	0.00246	0.00245
	(!A1 * A3 * B1 * B2 * !Y)	-0.00290	-0.00292	-0.00291
	(!A1 * A3 * B1 * !B2 * Y)	0.00227	0.00229	0.00228
	(!A1 * A3 * B1 * !B2 * Y)	-0.00305	-0.00307	-0.00306
	(!A1 * A3 * !B1 * Y)	0.00229	0.00231	0.00230
	(!A1 * A3 * !B1 * Y)	-0.00305	-0.00307	-0.00306
	(!A1 * !A3 * B1 * B2 * !Y)	0.00143	0.00143	0.00142
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00291	-0.00292	-0.00291
	(!A1 * !A3 * B1 * !B2 * Y)	0.00119	0.00119	0.00118
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00307	-0.00308	-0.00306
	(!A1 * !A3 * !B1 * Y)	0.00119	0.00119	0.00118
	(!A1 * !A3 * !B1 * Y)	-0.00307	-0.00307	-0.00306

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	0.00551	0.00472	0.00465
	(A1 * A3 * B1 * B2 * !Y)	-0.00488	-0.00589	-0.00591
	(A1 * !A3 * B1 * B2 * !Y)	0.00442	0.00445	0.00444
	(A1 * !A3 * B1 * B2 * !Y)	-0.00600	-0.00602	-0.00601
	(A1 * !A3 * B1 * !B2 * Y)	0.00184	0.00185	0.00187
	(A1 * !A3 * B1 * !B2 * Y)	-0.00608	-0.00610	-0.00608
	(A1 * !A3 * !B1 * Y)	0.00184	0.00186	0.00187
	(A1 * !A3 * !B1 * Y)	-0.00608	-0.00610	-0.00608
	(!A1 * A3 * B1 * B2 * !Y)	0.00447	0.00451	0.00449
	(!A1 * A3 * B1 * B2 * !Y)	-0.00599	-0.00601	-0.00600
	(!A1 * A3 * B1 * !B2 * Y)	0.00440	0.00441	0.00442
	(!A1 * A3 * B1 * !B2 * Y)	-0.00605	-0.00606	-0.00607
	(!A1 * A3 * !B1 * Y)	0.00440	0.00444	0.00442
	(!A1 * A3 * !B1 * Y)	-0.00605	-0.00608	-0.00607
	(!A1 * !A3 * B1 * B2 * !Y)	0.00262	0.00262	0.00261
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00603	-0.00605	-0.00603
	(!A1 * !A3 * B1 * !B2 * Y)	0.00230	0.00230	0.00229
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00614	-0.00615	-0.00613
	(!A1 * !A3 * !B1 * Y)	0.00230	0.00231	0.00230
	(!A1 * !A3 * !B1 * Y)	-0.00614	-0.00615	-0.00613

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	0.01115	0.00945	0.00932
	(A1 * A3 * B1 * B2 * !Y)	-0.00958	-0.01174	-0.01174
	(A1 * !A3 * B1 * B2 * !Y)	0.00884	0.00887	0.00885
	(A1 * !A3 * B1 * B2 * !Y)	-0.01193	-0.01196	-0.01193
	(A1 * !A3 * B1 * !B2 * Y)	0.00354	0.00354	0.00356
	(A1 * !A3 * B1 * !B2 * Y)	-0.01208	-0.01210	-0.01205
	(A1 * !A3 * !B1 * Y)	0.00354	0.00354	0.00356
	(A1 * !A3 * !B1 * Y)	-0.01208	-0.01210	-0.01205
	(!A1 * A3 * B1 * B2 * !Y)	0.00896	0.00897	0.00898
	(!A1 * A3 * B1 * B2 * !Y)	-0.01192	-0.01192	-0.01193
	(!A1 * A3 * B1 * !B2 * Y)	0.00885	0.00890	0.00888
	(!A1 * A3 * B1 * !B2 * Y)	-0.01202	-0.01205	-0.01203
	(!A1 * A3 * !B1 * Y)	0.00885	0.00891	0.00888
	(!A1 * A3 * !B1 * Y)	-0.01202	-0.01205	-0.01203
	(!A1 * !A3 * B1 * B2 * !Y)	0.00490	0.00491	0.00489
	(!A1 * !A3 * B1 * B2 * !Y)	-0.01193	-0.01196	-0.01193
	(!A1 * !A3 * B1 * !B2 * Y)	0.00430	0.00432	0.00429
	(!A1 * !A3 * B1 * !B2 * Y)	-0.01214	-0.01221	-0.01214
	(!A1 * !A3 * !B1 * Y)	0.00430	0.00433	0.00430
	(!A1 * !A3 * !B1 * Y)	-0.01214	-0.01221	-0.01214

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)**	-0.00250	-0.00251	-0.00250
	(A1 * A3 * B1 * B2 * !Y)	0.00285	0.00289	0.00287
	(A1 * !A3 * B1 * B2 * !Y)	-0.00236	-0.00246	-0.00244
	(A1 * !A3 * B1 * B2 * !Y)	0.00292	0.00293	0.00292
	(A1 * !A3 * B1 * !B2 * Y)	-0.00096	-0.00097	-0.00098
	(A1 * !A3 * B1 * !B2 * Y)	0.00310	0.00314	0.00307
	(A1 * !A3 * !B1 * Y)	-0.00096	-0.00097	-0.00098
	(A1 * !A3 * !B1 * Y)	0.00310	0.00314	0.00307
	(!A1 * A3 * B1 * B2 * !Y)	-0.00236	-0.00244	-0.00244
	(!A1 * A3 * B1 * B2 * !Y)	0.00291	0.00295	0.00292
	(!A1 * A3 * B1 * !B2 * Y)	-0.00208	-0.00229	-0.00228
	(!A1 * A3 * B1 * !B2 * Y)	0.00322	0.00310	0.00307
	(!A1 * A3 * !B1 * Y)	-0.00208	-0.00229	-0.00229
	(!A1 * A3 * !B1 * Y)	0.00322	0.00310	0.00307
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00143	-0.00143	-0.00142
	(!A1 * !A3 * B1 * B2 * !Y)	0.00292	0.00296	0.00292
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00119	-0.00119	-0.00118
	(!A1 * !A3 * B1 * !B2 * Y)	0.00320	0.00322	0.00310
	(!A1 * !A3 * !B1 * Y)	-0.00119	-0.00119	-0.00118
	(!A1 * !A3 * !B1 * Y)	0.00320	0.00322	0.00310

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	-0.00463	-0.00464	-0.00461
	(A1 * A3 * B1 * B2 * !Y)	0.00591	0.00595	0.00591
	(A1 * !A3 * B1 * B2 * !Y)	-0.00431	-0.00445	-0.00444
	(A1 * !A3 * B1 * B2 * !Y)	0.00603	0.00603	0.00604
	(A1 * !A3 * B1 * !B2 * Y)	-0.00174	-0.00178	-0.00181
	(A1 * !A3 * B1 * !B2 * Y)	0.00620	0.00631	0.00614
	(A1 * !A3 * !B1 * Y)	-0.00177	-0.00178	-0.00181
	(A1 * !A3 * !B1 * Y)	0.00627	0.00630	0.00614
	(!A1 * A3 * B1 * B2 * !Y)	-0.00434	-0.00451	-0.00449
	(!A1 * A3 * B1 * B2 * !Y)	0.00604	0.00603	0.00603
	(!A1 * A3 * B1 * !B2 * Y)	-0.00389	-0.00441	-0.00442
	(!A1 * A3 * B1 * !B2 * Y)	0.00655	0.00608	0.00609
	(!A1 * A3 * !B1 * Y)	-0.00390	-0.00444	-0.00442
	(!A1 * A3 * !B1 * Y)	0.00654	0.00608	0.00609
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00262	-0.00262	-0.00261
	(!A1 * !A3 * B1 * B2 * !Y)	0.00603	0.00612	0.00606
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00230	-0.00230	-0.00229
	(!A1 * !A3 * B1 * !B2 * Y)	0.00638	0.00647	0.00621
	(!A1 * !A3 * !B1 * Y)	-0.00230	-0.00231	-0.00230
	(!A1 * !A3 * !B1 * Y)	0.00638	0.00647	0.00621

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	-0.00928	-0.00930	-0.00925
	(A1 * A3 * B1 * B2 * !Y)	0.01172	0.01179	0.01174
	(A1 * !A3 * B1 * B2 * !Y)	-0.00865	-0.00887	-0.00885
	(A1 * !A3 * B1 * B2 * !Y)	0.01200	0.01204	0.01199
	(A1 * !A3 * B1 * !B2 * Y)	-0.00336	-0.00341	-0.00346
	(A1 * !A3 * B1 * !B2 * Y)	0.01229	0.01246	0.01216
	(A1 * !A3 * !B1 * Y)	-0.00337	-0.00342	-0.00346
	(A1 * !A3 * !B1 * Y)	0.01229	0.01246	0.01216
	(!A1 * A3 * B1 * B2 * !Y)	-0.00867	-0.00897	-0.00898
	(!A1 * A3 * B1 * B2 * !Y)	0.01192	0.01205	0.01199
	(!A1 * A3 * B1 * !B2 * Y)	-0.00775	-0.00890	-0.00888
	(!A1 * A3 * B1 * !B2 * Y)	0.01296	0.01213	0.01207
	(!A1 * A3 * !B1 * Y)	-0.00775	-0.00891	-0.00888
	(!A1 * A3 * !B1 * Y)	0.01296	0.01213	0.01207
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00490	-0.00491	-0.00489
	(!A1 * !A3 * B1 * B2 * !Y)	0.01195	0.01212	0.01199
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00430	-0.00432	-0.00429
	(!A1 * !A3 * B1 * !B2 * Y)	0.01260	0.01279	0.01229
	(!A1 * !A3 * !B1 * Y)	-0.00430	-0.00433	-0.00430
	(!A1 * !A3 * !B1 * Y)	0.01260	0.01279	0.01229

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)**	0.00267	0.00239	0.00236
	(A1 * A2 * B1 * B2 * !Y)	-0.00250	-0.00288	-0.00290
	(A1 * !A2 * B1 * !B2 * Y)	0.00229	0.00230	0.00229
	(A1 * !A2 * B1 * !B2 * Y)	-0.00293	-0.00294	-0.00294
	(A1 * !A2 * !B1 * Y)	0.00229	0.00230	0.00229
	(A1 * !A2 * !B1 * Y)	-0.00293	-0.00294	-0.00294
	(!A2 * B1 * B2 * !Y)	0.00229	0.00229	0.00229
	(!A2 * B1 * B2 * !Y)	-0.00293	-0.00293	-0.00293
	(!A1 * A2 * B1 * B2 * !Y)	0.00227	0.00227	0.00226
	(!A1 * A2 * B1 * B2 * !Y)	-0.00294	-0.00294	-0.00293
	(!A1 * A2 * B1 * !B2 * Y)	0.00227	0.00227	0.00226
	(!A1 * A2 * B1 * !B2 * Y)	-0.00293	-0.00294	-0.00294
	(!A1 * A2 * !B1 * Y)	0.00227	0.00227	0.00226
	(!A1 * A2 * !B1 * Y)	-0.00293	-0.00294	-0.00294
	(!A1 * !A2 * B1 * !B2 * Y)	0.00230	0.00231	0.00230
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00293	-0.00294	-0.00294
	(!A1 * !A2 * !B1 * Y)	0.00230	0.00229	0.00230
	(!A1 * !A2 * !B1 * Y)	-0.00293	-0.00293	-0.00294

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	0.00550	0.00482	0.00475
	(A1 * A2 * B1 * B2 * !Y)	-0.00489	-0.00584	-0.00583
	(A1 * !A2 * B1 * !B2 * Y)	0.00456	0.00460	0.00457
	(A1 * !A2 * B1 * !B2 * Y)	-0.00593	-0.00596	-0.00594
	(A1 * !A2 * !B1 * Y)	0.00456	0.00460	0.00457
	(A1 * !A2 * !B1 * Y)	-0.00593	-0.00596	-0.00594
	(!A2 * B1 * B2 * !Y)	0.00454	0.00458	0.00456
	(!A2 * B1 * B2 * !Y)	-0.00592	-0.00595	-0.00594
	(!A1 * A2 * B1 * B2 * !Y)	0.00450	0.00453	0.00451
	(!A1 * A2 * B1 * B2 * !Y)	-0.00592	-0.00595	-0.00594
	(!A1 * A2 * B1 * !B2 * Y)	0.00450	0.00455	0.00452
	(!A1 * A2 * B1 * !B2 * Y)	-0.00593	-0.00597	-0.00594
	(!A1 * A2 * !B1 * Y)	0.00450	0.00455	0.00452
	(!A1 * A2 * !B1 * Y)	-0.00593	-0.00596	-0.00594
	(!A1 * !A2 * B1 * !B2 * Y)	0.00457	0.00460	0.00458
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00594	-0.00596	-0.00595
	(!A1 * !A2 * !B1 * Y)	0.00457	0.00460	0.00457
	(!A1 * !A2 * !B1 * Y)	-0.00594	-0.00596	-0.00594

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	0.01086	0.00937	0.00923
	(A1 * A2 * B1 * B2 * !Y)	-0.00978	-0.01178	-0.01180
	(A1 * !A2 * B1 * !B2 * Y)	0.00878	0.00883	0.00879
	(A1 * !A2 * B1 * !B2 * Y)	-0.01200	-0.01204	-0.01201
	(A1 * !A2 * !B1 * Y)	0.00878	0.00883	0.00879
	(A1 * !A2 * !B1 * Y)	-0.01200	-0.01204	-0.01201
	(!A2 * B1 * B2 * !Y)	0.00877	0.00884	0.00880
	(!A2 * B1 * B2 * !Y)	-0.01196	-0.01202	-0.01199
	(!A1 * A2 * B1 * B2 * !Y)	0.00871	0.00878	0.00875
	(!A1 * A2 * B1 * B2 * !Y)	-0.01195	-0.01201	-0.01199
	(!A1 * A2 * B1 * !B2 * Y)	0.00870	0.00882	0.00875
	(!A1 * A2 * B1 * !B2 * Y)	-0.01196	-0.01206	-0.01201
	(!A1 * A2 * !B1 * Y)	0.00870	0.00881	0.00875
	(!A1 * A2 * !B1 * Y)	-0.01197	-0.01206	-0.01201
	(!A1 * !A2 * B1 * !B2 * Y)	0.00876	0.00882	0.00878
	(!A1 * !A2 * B1 * !B2 * Y)	-0.01200	-0.01203	-0.01201
	(!A1 * !A2 * !B1 * Y)	0.00876	0.00882	0.00878
	(!A1 * !A2 * !B1 * Y)	-0.01200	-0.01203	-0.01201

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)**	-0.00234	-0.00236	-0.00235
	(A1 * A2 * B1 * B2 * !Y)	0.00288	0.00291	0.00290
	(A1 * !A2 * B1 * !B2 * Y)	-0.00220	-0.00230	-0.00229
	(A1 * !A2 * B1 * !B2 * Y)	0.00295	0.00296	0.00295
	(A1 * !A2 * !B1 * Y)	-0.00220	-0.00230	-0.00229
	(A1 * !A2 * !B1 * Y)	0.00295	0.00296	0.00295
	(!A2 * B1 * B2 * !Y)	-0.00223	-0.00228	-0.00229
	(!A2 * B1 * B2 * !Y)	0.00295	0.00297	0.00295
	(!A1 * A2 * B1 * B2 * !Y)	-0.00210	-0.00225	-0.00226
	(!A1 * A2 * B1 * B2 * !Y)	0.00294	0.00298	0.00295
	(!A1 * A2 * B1 * !B2 * Y)	-0.00210	-0.00226	-0.00226
	(!A1 * A2 * B1 * !B2 * Y)	0.00294	0.00298	0.00294
	(!A1 * A2 * !B1 * Y)	-0.00210	-0.00226	-0.00226
	(!A1 * A2 * !B1 * Y)	0.00294	0.00298	0.00294
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00222	-0.00230	-0.00230
	(!A1 * !A2 * B1 * !B2 * Y)	0.00295	0.00296	0.00295
	(!A1 * !A2 * !B1 * Y)	-0.00222	-0.00229	-0.00230
	(!A1 * !A2 * !B1 * Y)	0.00295	0.00296	0.00295

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	-0.00473	-0.00473	-0.00471
	(A1 * A2 * B1 * B2 * !Y)	0.00582	0.00584	0.00583
	(A1 * !A2 * B1 * !B2 * Y)	-0.00438	-0.00459	-0.00457
	(A1 * !A2 * B1 * !B2 * Y)	0.00593	0.00601	0.00596
	(A1 * !A2 * !B1 * Y)	-0.00439	-0.00459	-0.00457
	(A1 * !A2 * !B1 * Y)	0.00593	0.00601	0.00596
	(!A2 * B1 * B2 * !Y)	-0.00442	-0.00458	-0.00456
	(!A2 * B1 * B2 * !Y)	0.00594	0.00601	0.00597
	(!A1 * A2 * B1 * B2 * !Y)	-0.00422	-0.00453	-0.00451
	(!A1 * A2 * B1 * B2 * !Y)	0.00593	0.00601	0.00596
	(!A1 * A2 * B1 * !B2 * Y)	-0.00421	-0.00450	-0.00452
	(!A1 * A2 * B1 * !B2 * Y)	0.00594	0.00603	0.00596
	(!A1 * A2 * !B1 * Y)	-0.00421	-0.00451	-0.00452
	(!A1 * A2 * !B1 * Y)	0.00594	0.00603	0.00596
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00441	-0.00460	-0.00458
	(!A1 * !A2 * B1 * !B2 * Y)	0.00594	0.00601	0.00596
	(!A1 * !A2 * !B1 * Y)	-0.00441	-0.00460	-0.00457
	(!A1 * !A2 * !B1 * Y)	0.00594	0.00601	0.00596

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	-0.00914	-0.00921	-0.00915
	(A1 * A2 * B1 * B2 * !Y)	0.01171	0.01186	0.01180
	(A1 * !A2 * B1 * !B2 * Y)	-0.00842	-0.00883	-0.00879
	(A1 * !A2 * B1 * !B2 * Y)	0.01201	0.01208	0.01204
	(A1 * !A2 * !B1 * Y)	-0.00842	-0.00883	-0.00879
	(A1 * !A2 * !B1 * Y)	0.01201	0.01208	0.01204
	(!A2 * B1 * B2 * !Y)	-0.00855	-0.00882	-0.00880
	(!A2 * B1 * B2 * !Y)	0.01200	0.01209	0.01205
	(!A1 * A2 * B1 * B2 * !Y)	-0.00807	-0.00873	-0.00875
	(!A1 * A2 * B1 * B2 * !Y)	0.01199	0.01213	0.01205
	(!A1 * A2 * B1 * !B2 * Y)	-0.00804	-0.00871	-0.00875
	(!A1 * A2 * B1 * !B2 * Y)	0.01204	0.01218	0.01204
	(!A1 * A2 * !B1 * Y)	-0.00804	-0.00871	-0.00875
	(!A1 * A2 * !B1 * Y)	0.01204	0.01218	0.01204
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00849	-0.00882	-0.00878
	(!A1 * !A2 * B1 * !B2 * Y)	0.01200	0.01208	0.01204
	(!A1 * !A2 * !B1 * Y)	-0.00849	-0.00882	-0.00878
	(!A1 * !A2 * !B1 * Y)	0.01200	0.01208	0.01204

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)**	0.00274	0.00277	0.00274
	(A1 * A2 * A3 * B2 * !Y)	-0.00129	-0.00130	-0.00129
	(A1 * A2 * A3 * !B2 * !Y)	0.00265	0.00268	0.00265
	(A1 * A2 * A3 * !B2 * !Y)	-0.00128	-0.00129	-0.00128
	(A1 * A2 * !A3 * !B2 * Y)	0.00072	0.00072	0.00070
	(A1 * A2 * !A3 * !B2 * Y)	-0.00353	-0.00355	-0.00357
	(A1 * !A2 * !B2 * Y)	0.00072	0.00072	0.00070
	(A1 * !A2 * !B2 * Y)	-0.00353	-0.00355	-0.00357
	(!A1 * !B2 * Y)	0.00072	0.00072	0.00070
	(!A1 * !B2 * Y)	-0.00354	-0.00355	-0.00357
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B2 * !Y)**	0.00519	0.00526	0.00521
	(A1 * A2 * A3 * B2 * !Y)	-0.00258	-0.00261	-0.00258
	(A1 * A2 * A3 * !B2 * !Y)	0.00504	0.00509	0.00506
	(A1 * A2 * A3 * !B2 * !Y)	-0.00256	-0.00258	-0.00257
	(A1 * A2 * !A3 * !B2 * Y)	0.00151	0.00151	0.00144
	(A1 * A2 * !A3 * !B2 * Y)	-0.00684	-0.00687	-0.00695
	(A1 * !A2 * !B2 * Y)	0.00151	0.00151	0.00144
	(A1 * !A2 * !B2 * Y)	-0.00684	-0.00687	-0.00695
	(!A1 * !B2 * Y)	0.00152	0.00152	0.00145
	(!A1 * !B2 * Y)	-0.00684	-0.00687	-0.00695
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	0.01049	0.01070	0.01052
	(A1 * A2 * A3 * B2 * !Y)	-0.00524	-0.00534	-0.00524
	(A1 * A2 * A3 * !B2 * !Y)	0.01013	0.01031	0.01015
	(A1 * A2 * A3 * !B2 * !Y)	-0.00520	-0.00525	-0.00522
	(A1 * A2 * !A3 * !B2 * Y)	0.00288	0.00288	0.00275
	(A1 * A2 * !A3 * !B2 * Y)	-0.01392	-0.01397	-0.01411
	(A1 * !A2 * !B2 * Y)	0.00288	0.00288	0.00275
	(A1 * !A2 * !B2 * Y)	-0.01392	-0.01397	-0.01411
	(!A1 * !B2 * Y)	0.00289	0.00289	0.00276
	(!A1 * !B2 * Y)	-0.01392	-0.01397	-0.01411

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)	-0.00251	-0.00253	-0.00272
	(A1 * A2 * A3 * B2 * !Y)	0.00147	0.00147	0.00133
	(A1 * A2 * A3 * !B2 * !Y)	-0.00260	-0.00268	-0.00265
	(A1 * A2 * A3 * !B2 * !Y)	0.00128	0.00129	0.00129
	(A1 * A2 * !A3 * !B2 * Y)	-0.00069	-0.00071	-0.00069
	(A1 * A2 * !A3 * !B2 * Y)	0.00356	0.00363	0.00358
	(A1 * !A2 * !B2 * Y)	-0.00069	-0.00071	-0.00069
	(A1 * !A2 * !B2 * Y)	0.00356	0.00363	0.00358
	(!A1 * !B2 * Y)	-0.00069	-0.00071	-0.00069
	(!A1 * !B2 * Y)	0.00356	0.00363	0.00358
sky130_fd_sc_hs__a32oi_2	(A1 * A2 * A3 * B2 * !Y)	-0.00476	-0.00479	-0.00516
	(A1 * A2 * A3 * B2 * !Y)	0.00294	0.00294	0.00266
	(A1 * A2 * A3 * !B2 * !Y)	-0.00488	-0.00507	-0.00506
	(A1 * A2 * A3 * !B2 * !Y)	0.00257	0.00258	0.00258
	(A1 * A2 * !A3 * !B2 * Y)	-0.00141	-0.00141	-0.00141
	(A1 * A2 * !A3 * !B2 * Y)	0.00694	0.00697	0.00696
	(A1 * !A2 * !B2 * Y)	-0.00141	-0.00141	-0.00141
	(A1 * !A2 * !B2 * Y)	0.00694	0.00697	0.00696
	(!A1 * !B2 * Y)	-0.00141	-0.00142	-0.00141
	(!A1 * !B2 * Y)	0.00694	0.00696	0.00696

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	-0.00971	-0.00975	-0.01043
	(A1 * A2 * A3 * B2 * !Y)	0.00591	0.00589	0.00538
	(A1 * A2 * A3 * !B2 * !Y)	-0.00986	-0.01021	-0.01015
	(A1 * A2 * A3 * !B2 * !Y)	0.00521	0.00525	0.00523
	(A1 * A2 * !A3 * !B2 * Y)	-0.00269	-0.00271	-0.00269
	(A1 * A2 * !A3 * !B2 * Y)	0.01409	0.01418	0.01413
	(A1 * !A2 * !B2 * Y)	-0.00269	-0.00271	-0.00269
	(A1 * !A2 * !B2 * Y)	0.01409	0.01417	0.01413
	(!A1 * !B2 * Y)	-0.00270	-0.00272	-0.00270
	(!A1 * !B2 * Y)	0.01409	0.01417	0.01413

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)**	0.00265	0.00266	0.00263
	(A1 * A2 * A3 * B1 * !Y)	-0.00137	-0.00137	-0.00136
	(A1 * A2 * A3 * !B1 * !Y)	0.00255	0.00260	0.00255
	(A1 * A2 * A3 * !B1 * !Y)	-0.00135	-0.00136	-0.00135
	(A1 * A2 * !A3 * !B1 * Y)	0.00229	0.00232	0.00230
	(A1 * A2 * !A3 * !B1 * Y)	-0.00303	-0.00305	-0.00303
	(A1 * !A2 * !B1 * Y)	0.00229	0.00232	0.00230
	(A1 * !A2 * !B1 * Y)	-0.00303	-0.00305	-0.00303
	(!A1 * !B1 * Y)	0.00229	0.00232	0.00230
	(!A1 * !B1 * Y)	-0.00303	-0.00305	-0.00303

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00518	0.00529	0.00520
	(A1 * A2 * A3 * B1 * !Y)	-0.00264	-0.00270	-0.00265
	(A1 * A2 * A3 * !B1 * !Y)	0.00508	0.00512	0.00509
	(A1 * A2 * A3 * !B1 * !Y)	-0.00262	-0.00265	-0.00264
	(A1 * A2 * !A3 * !B1 * Y)	0.00449	0.00455	0.00451
	(A1 * A2 * !A3 * !B1 * Y)	-0.00594	-0.00598	-0.00595
	(A1 * !A2 * !B1 * Y)	0.00450	0.00456	0.00451
	(A1 * !A2 * !B1 * Y)	-0.00594	-0.00598	-0.00595
	(!A1 * !B1 * Y)	0.00449	0.00454	0.00451
	(!A1 * !B1 * Y)	-0.00594	-0.00598	-0.00595
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.01028	0.01049	0.01031
	(A1 * A2 * A3 * B1 * !Y)	-0.00526	-0.00536	-0.00527
	(A1 * A2 * A3 * !B1 * !Y)	0.00995	0.01004	0.00994
	(A1 * A2 * A3 * !B1 * !Y)	-0.00524	-0.00527	-0.00525
	(A1 * A2 * !A3 * !B1 * Y)	0.00883	0.00894	0.00890
	(A1 * A2 * !A3 * !B1 * Y)	-0.01185	-0.01194	-0.01190
	(A1 * !A2 * !B1 * Y)	0.00883	0.00894	0.00890
	(A1 * !A2 * !B1 * Y)	-0.01185	-0.01193	-0.01190
	(!A1 * !B1 * Y)	0.00884	0.00895	0.00890
	(!A1 * !B1 * Y)	-0.01186	-0.01193	-0.01190

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)**	-0.00241	-0.00243	-0.00261
	(A1 * A2 * A3 * B1 * !Y)	0.00155	0.00155	0.00140
	(A1 * A2 * A3 * !B1 * !Y)	-0.00251	-0.00256	-0.00255
	(A1 * A2 * A3 * !B1 * !Y)	0.00136	0.00136	0.00136
	(A1 * A2 * !A3 * !B1 * Y)	-0.00214	-0.00228	-0.00229
	(A1 * A2 * !A3 * !B1 * Y)	0.00316	0.00307	0.00304
	(A1 * !A2 * !B1 * Y)	-0.00215	-0.00229	-0.00229
	(A1 * !A2 * !B1 * Y)	0.00316	0.00306	0.00304
	(!A1 * !B1 * Y)	-0.00215	-0.00228	-0.00229
	(!A1 * !B1 * Y)	0.00316	0.00307	0.00304
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00474	-0.00478	-0.00515
	(A1 * A2 * A3 * B1 * !Y)	0.00301	0.00301	0.00273
	(A1 * A2 * A3 * !B1 * !Y)	-0.00488	-0.00504	-0.00507
	(A1 * A2 * A3 * !B1 * !Y)	0.00263	0.00265	0.00264
	(A1 * A2 * !A3 * !B1 * Y)	-0.00417	-0.00455	-0.00451
	(A1 * A2 * !A3 * !B1 * Y)	0.00619	0.00600	0.00597
	(A1 * !A2 * !B1 * Y)	-0.00417	-0.00455	-0.00451
	(A1 * !A2 * !B1 * Y)	0.00619	0.00600	0.00596
	(!A1 * !B1 * Y)	-0.00417	-0.00454	-0.00451
	(!A1 * !B1 * Y)	0.00619	0.00601	0.00597
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	-0.00949	-0.00953	-0.01021
	(A1 * A2 * A3 * B1 * !Y)	0.00594	0.00592	0.00541
	(A1 * A2 * A3 * !B1 * !Y)	-0.00967	-0.00997	-0.00994
	(A1 * A2 * A3 * !B1 * !Y)	0.00524	0.00527	0.00526
	(A1 * A2 * !A3 * !B1 * Y)	-0.00817	-0.00894	-0.00890
	(A1 * A2 * !A3 * !B1 * Y)	0.01243	0.01200	0.01193
	(A1 * !A2 * !B1 * Y)	-0.00817	-0.00894	-0.00890
	(A1 * !A2 * !B1 * Y)	0.01243	0.01200	0.01193
	(!A1 * !B1 * Y)	-0.00817	-0.00895	-0.00890
	(!A1 * !B1 * Y)	0.01243	0.01200	0.01193

SKY130_FD_SC_HS__A32Ox

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00265	0.00263	0.00271	0.00264	0.00246	1.42343
sky130_fd_sc_hs__a32o_2	0.00283	0.00279	0.00287	0.00278	0.00265	2.38814
sky130_fd_sc_hs__a32o_4	0.00487	0.00546	0.00493	0.00506	0.00576	5.24767

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a32o_1	0.00000	0.39555	0.96807
sky130_fd_sc_hs__a32o_2	0.00000	0.52146	0.97951
sky130_fd_sc_hs__a32o_4	0.00000	1.04854	1.95901

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)	0.08394	0.53058	6.03286
	A2->X (RR)	0.08911	0.52459	5.92283
	A3->X (RR)	0.09253	0.50454	5.69607
	B1->X (RR)	0.05950	0.47652	5.56843
	B2->X (RR)	0.06196	0.46602	5.44709
sky130_fd_sc_hs__a32o_2	A1->X (RR)	0.08378	0.45837	5.67559
	A2->X (RR)	0.08921	0.44936	5.56206
	A3->X (RR)	0.09283	0.42802	5.26474
	B1->X (RR)	0.06159	0.40539	5.18466
	B2->X (RR)	0.06473	0.39224	5.05813
sky130_fd_sc_hs__a32o_4	A1->X (RR)	0.09551	0.40755	6.08671
	A2->X (RR)	0.10292	0.40465	6.00923
	A3->X (RR)	0.10696	0.38071	5.80530
	B1->X (RR)	0.06096	0.33898	5.55434
	B2->X (RR)	0.06442	0.32909	5.46647

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32o_1	A1->X (FF)	0.12334	0.50647	4.93889
	A2->X (FF)	0.13650	0.53017	5.06544
	A3->X (FF)	0.14157	0.53825	5.15279
	B1->X (FF)	0.09694	0.52288	5.43807
	B2->X (FF)	0.10696	0.54671	5.53205
sky130_fd_sc_hs__a32o_2	A1->X (FF)	0.14830	0.50011	4.61585
	A2->X (FF)	0.16295	0.52561	4.74344
	A3->X (FF)	0.17336	0.54296	4.86447
	B1->X (FF)	0.13182	0.54002	5.09251
	B2->X (FF)	0.14528	0.56901	5.20880
sky130_fd_sc_hs__a32o_4	A1->X (FF)	0.13995	0.46020	5.02950
	A2->X (FF)	0.14704	0.47711	5.09176
	A3->X (FF)	0.16539	0.50616	5.27539
	B1->X (FF)	0.13091	0.51594	5.40287
	B2->X (FF)	0.13797	0.53000	5.47470

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32o_1	A1	0.01905	0.02221	0.11702
	A1	0.00928	0.01245	0.10805
	A2	0.02034	0.02271	0.11346
	A2	0.00925	0.01162	0.10319
	A3	0.02185	0.02360	0.09740
	A3	0.00922	0.01097	0.08503
	B1	0.01171	0.01829	0.14161
	B1	0.00511	0.01171	0.13526
	B2	0.01308	0.01888	0.13625
	B2	0.00510	0.01090	0.12873
sky130_fd_sc_hs__a32o_2	A1	0.02396	0.02708	0.12371
	A1	0.01387	0.01703	0.11417
	A2	0.02550	0.02789	0.12099
	A2	0.01386	0.01631	0.11021
	A3	0.02728	0.02874	0.09003
	A3	0.01386	0.01531	0.07724
	B1	0.01632	0.02256	0.14022
	B1	0.00940	0.01574	0.13397
	B2	0.01801	0.02352	0.13421
	B2	0.00939	0.01495	0.12560

sky130_fd_sc_hs__a32o_4	**A1**	0.04710	0.05381	0.24732
	A1	0.02835	0.03525	0.23169
	A2	0.05054	0.05557	0.24113
	A2	0.02836	0.03351	0.22218
	A3	0.05337	0.05808	0.25217
	A3	0.02840	0.03312	0.22785
	B1	0.03043	0.04283	0.28876
	B1	0.01793	0.03039	0.27742
	B2	0.03448	0.04608	0.29649
	B2	0.01773	0.02949	0.28143

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32o_1	**A1**	0.00579	0.00890	0.08804
	A1	0.01562	0.01862	0.09667
	A2	0.00667	0.00962	0.08828
	A2	0.01777	0.02071	0.09935
	A3	0.00692	0.00942	0.08974
	A3	0.01947	0.02197	0.10185
	B1	0.00543	0.01300	0.14297
	B1	0.01202	0.01948	0.14936
	B2	0.00591	0.01375	0.14030
	B2	0.01384	0.02162	0.14757

sky130_fd_sc_hs__a32o_2	**A1**	0.01059	0.01304	0.09365
	A1	0.02075	0.02286	0.10312
	A2	0.01200	0.01377	0.09729
	A2	0.02363	0.02532	0.10746
	A3	0.01225	0.01331	0.09261
	A3	0.02556	0.02625	0.10530
	B1	0.00960	0.01651	0.14674
	B1	0.01650	0.02333	0.15251
	B2	0.01075	0.01765	0.14416
	B2	0.01930	0.02593	0.15104
sky130_fd_sc_hs__a32o_4	**A1**	0.02121	0.02516	0.21824
	A1	0.04008	0.04368	0.23303
	A2	0.02302	0.02599	0.21891
	A2	0.04525	0.04817	0.23395
	A3	0.02618	0.02849	0.22753
	A3	0.05097	0.05318	0.24705
	B1	0.01955	0.03168	0.27030
	B1	0.03207	0.04413	0.27417
	B2	0.01972	0.03307	0.27908
	B2	0.03634	0.04967	0.28976

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)**	0.00257	0.00216	0.00211
	(A2 * A3 * B1 * B2 * X)	-0.00208	-0.00256	-0.00259
	(A2 * !A3 * B1 * B2 * X)	0.00202	0.00203	0.00202
	(A2 * !A3 * B1 * B2 * X)	-0.00263	-0.00263	-0.00262
	(A2 * !A3 * B1 * !B2 * !X)	0.00063	0.00064	0.00060
	(A2 * !A3 * B1 * !B2 * !X)	-0.00305	-0.00307	-0.00315
	(A2 * !A3 * !B1 * !X)	0.00063	0.00064	0.00060
	(A2 * !A3 * !B1 * !X)	-0.00305	-0.00307	-0.00315
	(!A2 * B1 * B2 * X)	0.00203	0.00205	0.00204
	(!A2 * B1 * B2 * X)	-0.00261	-0.00264	-0.00262
	(!A2 * B1 * !B2 * !X)	0.00066	0.00066	0.00064
	(!A2 * B1 * !B2 * !X)	-0.00312	-0.00312	-0.00315
	(!A2 * !B1 * !X)	0.00066	0.00066	0.00064
	(!A2 * !B1 * !X)	-0.00311	-0.00312	-0.00315
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	0.00285	0.00245	0.00241
	(A2 * A3 * B1 * B2 * X)	-0.00208	-0.00255	-0.00259
	(A2 * !A3 * B1 * B2 * X)	0.00231	0.00231	0.00231
	(A2 * !A3 * B1 * B2 * X)	-0.00262	-0.00262	-0.00261
	(A2 * !A3 * B1 * !B2 * !X)	0.00071	0.00070	0.00066
	(A2 * !A3 * B1 * !B2 * !X)	-0.00311	-0.00311	-0.00321
	(A2 * !A3 * !B1 * !X)	0.00071	0.00070	0.00066
	(A2 * !A3 * !B1 * !X)	-0.00311	-0.00311	-0.00321
	(!A2 * B1 * B2 * X)	0.00234	0.00236	0.00235
	(!A2 * B1 * B2 * X)	-0.00261	-0.00262	-0.00262
	(!A2 * B1 * !B2 * !X)	0.00073	0.00073	0.00071
	(!A2 * B1 * !B2 * !X)	-0.00317	-0.00317	-0.00322
	(!A2 * !B1 * !X)	0.00073	0.00073	0.00071
	(!A2 * !B1 * !X)	-0.00317	-0.00317	-0.00322

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	0.00459	0.00392	0.00385
	(A2 * A3 * B1 * B2 * X)	-0.00424	-0.00513	-0.00518
	(A2 * !A3 * B1 * B2 * X)	0.00364	0.00365	0.00365
	(A2 * !A3 * B1 * B2 * X)	-0.00524	-0.00525	-0.00523
	(A2 * !A3 * B1 * !B2 * !X)	0.00120	0.00120	0.00110
	(A2 * !A3 * B1 * !B2 * !X)	-0.00583	-0.00582	-0.00603
	(A2 * !A3 * !B1 * !X)	0.00119	0.00119	0.00110
	(A2 * !A3 * !B1 * !X)	-0.00581	-0.00582	-0.00603
	(!A2 * B1 * B2 * X)	0.00368	0.00371	0.00370
	(!A2 * B1 * B2 * X)	-0.00522	-0.00525	-0.00523
	(!A2 * B1 * !B2 * !X)	0.00116	0.00116	0.00112
	(!A2 * B1 * !B2 * !X)	-0.00596	-0.00597	-0.00606
	(!A2 * !B1 * !X)	0.00116	0.00116	0.00112
	(!A2 * !B1 * !X)	-0.00596	-0.00597	-0.00606

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)**	-0.00209	-0.00210	-0.00208
	(A2 * A3 * B1 * B2 * X)	0.00258	0.00261	0.00260
	(A2 * !A3 * B1 * B2 * X)	-0.00181	-0.00202	-0.00202
	(A2 * !A3 * B1 * B2 * X)	0.00263	0.00266	0.00264
	(A2 * !A3 * B1 * !B2 * !X)	-0.00061	-0.00062	-0.00060
	(A2 * !A3 * B1 * !B2 * !X)	0.00315	0.00319	0.00316
	(A2 * !A3 * !B1 * !X)	-0.00061	-0.00062	-0.00060
	(A2 * !A3 * !B1 * !X)	0.00315	0.00319	0.00316
	(!A2 * B1 * B2 * X)	-0.00198	-0.00205	-0.00204
	(!A2 * B1 * B2 * X)	0.00264	0.00266	0.00264
	(!A2 * B1 * !B2 * !X)	-0.00062	-0.00064	-0.00062
	(!A2 * B1 * !B2 * !X)	0.00315	0.00321	0.00316
	(!A2 * !B1 * !X)	-0.00062	-0.00064	-0.00062
	(!A2 * !B1 * !X)	0.00315	0.00321	0.00316
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	-0.00238	-0.00240	-0.00238
	(A2 * A3 * B1 * B2 * X)	0.00258	0.00261	0.00259
	(A2 * !A3 * B1 * B2 * X)	-0.00207	-0.00230	-0.00231
	(A2 * !A3 * B1 * B2 * X)	0.00263	0.00266	0.00264
	(A2 * !A3 * B1 * !B2 * !X)	-0.00066	-0.00068	-0.00066
	(A2 * !A3 * B1 * !B2 * !X)	0.00321	0.00326	0.00322
	(A2 * !A3 * !B1 * !X)	-0.00067	-0.00068	-0.00066
	(A2 * !A3 * !B1 * !X)	0.00322	0.00326	0.00322
	(!A2 * B1 * B2 * X)	-0.00226	-0.00234	-0.00233
	(!A2 * B1 * B2 * X)	0.00264	0.00266	0.00264
	(!A2 * B1 * !B2 * !X)	-0.00068	-0.00069	-0.00068
	(!A2 * B1 * !B2 * !X)	0.00321	0.00325	0.00323
	(!A2 * !B1 * !X)	-0.00068	-0.00069	-0.00068
	(!A2 * !B1 * !X)	0.00322	0.00325	0.00323

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	-0.00380	-0.00381	-0.00379
	(A2 * A3 * B1 * B2 * X)	0.00518	0.00520	0.00519
	(A2 * !A3 * B1 * B2 * X)	-0.00321	-0.00365	-0.00365
	(A2 * !A3 * B1 * B2 * X)	0.00529	0.00530	0.00528
	(A2 * !A3 * B1 * !B2 * !X)	-0.00104	-0.00105	-0.00103
	(A2 * !A3 * B1 * !B2 * !X)	0.00606	0.00613	0.00608
	(A2 * !A3 * !B1 * !X)	-0.00104	-0.00105	-0.00103
	(A2 * !A3 * !B1 * !X)	0.00606	0.00613	0.00608
	(!A2 * B1 * B2 * X)	-0.00356	-0.00371	-0.00370
	(!A2 * B1 * B2 * X)	0.00525	0.00528	0.00528
	(!A2 * B1 * !B2 * !X)	-0.00108	-0.00110	-0.00108
	(!A2 * B1 * !B2 * !X)	0.00606	0.00613	0.00608
	(!A2 * !B1 * !X)	-0.00108	-0.00110	-0.00108
	(!A2 * !B1 * !X)	0.00606	0.00613	0.00608

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)**	0.00251	0.00212	0.00207
	(A1 * A3 * B1 * B2 * X)	-0.00207	-0.00256	-0.00259
	(A1 * !A3 * B1 * B2 * X)	0.00201	0.00202	0.00202
	(A1 * !A3 * B1 * B2 * X)	-0.00261	-0.00263	-0.00262
	(A1 * !A3 * B1 * !B2 * !X)	0.00074	0.00075	0.00075
	(A1 * !A3 * B1 * !B2 * !X)	-0.00279	-0.00280	-0.00279
	(A1 * !A3 * !B1 * !X)	0.00074	0.00075	0.00075
	(A1 * !A3 * !B1 * !X)	-0.00279	-0.00280	-0.00279
	(!A1 * A3 * B1 * B2 * X)	0.00202	0.00203	0.00202
	(!A1 * A3 * B1 * B2 * X)	-0.00263	-0.00263	-0.00262
	(!A1 * A3 * B1 * !B2 * !X)	0.00185	0.00185	0.00185
	(!A1 * A3 * B1 * !B2 * !X)	-0.00279	-0.00279	-0.00279
	(!A1 * A3 * !B1 * !X)	0.00185	0.00185	0.00185
	(!A1 * A3 * !B1 * !X)	-0.00279	-0.00280	-0.00279
	(!A1 * !A3 * B1 * B2 * X)	0.00117	0.00117	0.00117
	(!A1 * !A3 * B1 * B2 * X)	-0.00262	-0.00263	-0.00262
	(!A1 * !A3 * B1 * !B2 * !X)	0.00090	0.00091	0.00090
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00280	-0.00282	-0.00281
	(!A1 * !A3 * !B1 * !X)	0.00090	0.00091	0.00090
	(!A1 * !A3 * !B1 * !X)	-0.00280	-0.00282	-0.00281

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	0.00281	0.00241	0.00237
	(A1 * A3 * B1 * B2 * X)	-0.00209	-0.00255	-0.00259
	(A1 * !A3 * B1 * B2 * X)	0.00230	0.00231	0.00231
	(A1 * !A3 * B1 * B2 * X)	-0.00262	-0.00262	-0.00262
	(A1 * !A3 * B1 * !B2 * !X)	0.00085	0.00085	0.00085
	(A1 * !A3 * B1 * !B2 * !X)	-0.00279	-0.00279	-0.00278
	(A1 * !A3 * !B1 * !X)	0.00085	0.00085	0.00085
	(A1 * !A3 * !B1 * !X)	-0.00279	-0.00279	-0.00278
	(!A1 * A3 * B1 * B2 * X)	0.00230	0.00232	0.00231
	(!A1 * A3 * B1 * B2 * X)	-0.00261	-0.00262	-0.00261
	(!A1 * A3 * B1 * !B2 * !X)	0.00213	0.00215	0.00214
	(!A1 * A3 * B1 * !B2 * !X)	-0.00278	-0.00280	-0.00279
	(!A1 * A3 * !B1 * !X)	0.00213	0.00216	0.00214
	(!A1 * A3 * !B1 * !X)	-0.00278	-0.00280	-0.00279
	(!A1 * !A3 * B1 * B2 * X)	0.00131	0.00132	0.00131
	(!A1 * !A3 * B1 * B2 * X)	-0.00261	-0.00262	-0.00262
	(!A1 * !A3 * B1 * !B2 * !X)	0.00103	0.00104	0.00103
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00280	-0.00281	-0.00280
	(!A1 * !A3 * !B1 * !X)	0.00103	0.00104	0.00103
	(!A1 * !A3 * !B1 * !X)	-0.00280	-0.00281	-0.00280

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	0.00514	0.00418	0.00408
	(A1 * A3 * B1 * B2 * X)	-0.00437	-0.00553	-0.00561
	(A1 * !A3 * B1 * B2 * X)	0.00395	0.00395	0.00395
	(A1 * !A3 * B1 * B2 * X)	-0.00570	-0.00571	-0.00569
	(A1 * !A3 * B1 * !B2 * !X)	0.00157	0.00158	0.00156
	(A1 * !A3 * B1 * !B2 * !X)	-0.00594	-0.00596	-0.00595
	(A1 * !A3 * !B1 * !X)	0.00157	0.00158	0.00156
	(A1 * !A3 * !B1 * !X)	-0.00594	-0.00596	-0.00595
	(!A1 * A3 * B1 * B2 * X)	0.00394	0.00400	0.00395
	(!A1 * A3 * B1 * B2 * X)	-0.00568	-0.00573	-0.00569
	(!A1 * A3 * B1 * !B2 * !X)	0.00366	0.00369	0.00368
	(!A1 * A3 * B1 * !B2 * !X)	-0.00592	-0.00595	-0.00593
	(!A1 * A3 * !B1 * !X)	0.00366	0.00369	0.00368
	(!A1 * A3 * !B1 * !X)	-0.00592	-0.00595	-0.00593
	(!A1 * !A3 * B1 * B2 * X)	0.00243	0.00243	0.00242
	(!A1 * !A3 * B1 * B2 * X)	-0.00571	-0.00571	-0.00569
	(!A1 * !A3 * B1 * !B2 * !X)	0.00198	0.00200	0.00198
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00598	-0.00603	-0.00599
	(!A1 * !A3 * !B1 * !X)	0.00198	0.00200	0.00198
	(!A1 * !A3 * !B1 * !X)	-0.00598	-0.00602	-0.00599

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)**	-0.00205	-0.00206	-0.00204
	(A1 * A3 * B1 * B2 * X)	0.00258	0.00261	0.00260
	(A1 * !A3 * B1 * B2 * X)	-0.00195	-0.00201	-0.00200
	(A1 * !A3 * B1 * B2 * X)	0.00265	0.00265	0.00265
	(A1 * !A3 * B1 * !B2 * !X)	-0.00071	-0.00072	-0.00073
	(A1 * !A3 * B1 * !B2 * !X)	0.00285	0.00288	0.00282
	(A1 * !A3 * !B1 * !X)	-0.00071	-0.00072	-0.00073
	(A1 * !A3 * !B1 * !X)	0.00285	0.00288	0.00282
	(!A1 * A3 * B1 * B2 * X)	-0.00193	-0.00201	-0.00200
	(!A1 * A3 * B1 * B2 * X)	0.00263	0.00267	0.00265
	(!A1 * A3 * B1 * !B2 * !X)	-0.00165	-0.00184	-0.00184
	(!A1 * A3 * B1 * !B2 * !X)	0.00294	0.00283	0.00280
	(!A1 * A3 * !B1 * !X)	-0.00165	-0.00185	-0.00184
	(!A1 * A3 * !B1 * !X)	0.00294	0.00283	0.00280
	(!A1 * !A3 * B1 * B2 * X)	-0.00117	-0.00117	-0.00117
	(!A1 * !A3 * B1 * B2 * X)	0.00264	0.00267	0.00265
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00090	-0.00091	-0.00090
	(!A1 * !A3 * B1 * !B2 * !X)	0.00291	0.00294	0.00284
	(!A1 * !A3 * !B1 * !X)	-0.00090	-0.00091	-0.00090
	(!A1 * !A3 * !B1 * !X)	0.00291	0.00294	0.00284

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	-0.00234	-0.00236	-0.00234
	(A1 * A3 * B1 * B2 * X)	0.00258	0.00261	0.00259
	(A1 * !A3 * B1 * B2 * X)	-0.00222	-0.00226	-0.00228
	(A1 * !A3 * B1 * B2 * X)	0.00265	0.00265	0.00264
	(A1 * !A3 * B1 * !B2 * !X)	-0.00080	-0.00082	-0.00082
	(A1 * !A3 * B1 * !B2 * !X)	0.00285	0.00288	0.00281
	(A1 * !A3 * !B1 * !X)	-0.00080	-0.00082	-0.00082
	(A1 * !A3 * !B1 * !X)	0.00285	0.00288	0.00281
	(!A1 * A3 * B1 * B2 * X)	-0.00221	-0.00230	-0.00229
	(!A1 * A3 * B1 * B2 * X)	0.00263	0.00266	0.00264
	(!A1 * A3 * B1 * !B2 * !X)	-0.00192	-0.00213	-0.00213
	(!A1 * A3 * B1 * !B2 * !X)	0.00295	0.00282	0.00280
	(!A1 * A3 * !B1 * !X)	-0.00192	-0.00213	-0.00213
	(!A1 * A3 * !B1 * !X)	0.00295	0.00282	0.00280
	(!A1 * !A3 * B1 * B2 * X)	-0.00131	-0.00132	-0.00131
	(!A1 * !A3 * B1 * B2 * X)	0.00264	0.00267	0.00264
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00103	-0.00104	-0.00103
	(!A1 * !A3 * B1 * !B2 * !X)	0.00292	0.00295	0.00284
	(!A1 * !A3 * !B1 * !X)	-0.00103	-0.00104	-0.00103
	(!A1 * !A3 * !B1 * !X)	0.00292	0.00295	0.00284

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	-0.00403	-0.00404	-0.00400
	(A1 * A3 * B1 * B2 * X)	0.00562	0.00565	0.00563
	(A1 * !A3 * B1 * B2 * X)	-0.00375	-0.00395	-0.00394
	(A1 * !A3 * B1 * B2 * X)	0.00573	0.00578	0.00574
	(A1 * !A3 * B1 * !B2 * !X)	-0.00146	-0.00149	-0.00150
	(A1 * !A3 * B1 * !B2 * !X)	0.00606	0.00614	0.00601
	(A1 * !A3 * !B1 * !X)	-0.00146	-0.00149	-0.00150
	(A1 * !A3 * !B1 * !X)	0.00606	0.00614	0.00601
	(!A1 * A3 * B1 * B2 * X)	-0.00379	-0.00394	-0.00393
	(!A1 * A3 * B1 * B2 * X)	0.00571	0.00577	0.00574
	(!A1 * A3 * B1 * !B2 * !X)	-0.00326	-0.00369	-0.00368
	(!A1 * A3 * B1 * !B2 * !X)	0.00629	0.00601	0.00597
	(!A1 * A3 * !B1 * !X)	-0.00326	-0.00369	-0.00368
	(!A1 * A3 * !B1 * !X)	0.00629	0.00601	0.00597
	(!A1 * !A3 * B1 * B2 * X)	-0.00243	-0.00243	-0.00242
	(!A1 * !A3 * B1 * B2 * X)	0.00572	0.00580	0.00574
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00198	-0.00200	-0.00198
	(!A1 * !A3 * B1 * !B2 * !X)	0.00629	0.00633	0.00610
	(!A1 * !A3 * !B1 * !X)	-0.00198	-0.00200	-0.00198
	(!A1 * !A3 * !B1 * !X)	0.00629	0.00633	0.00610

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)**	0.00269	0.00236	0.00232
	(A1 * A2 * B1 * B2 * X)	-0.00210	-0.00252	-0.00256
	(A1 * !A2 * B1 * !B2 * !X)	0.00184	0.00187	0.00185
	(A1 * !A2 * B1 * !B2 * !X)	-0.00296	-0.00299	-0.00298
	(A1 * !A2 * !B1 * !X)	0.00184	0.00187	0.00185
	(A1 * !A2 * !B1 * !X)	-0.00296	-0.00299	-0.00298
	(!A2 * B1 * B2 * X)	0.00225	0.00226	0.00224
	(!A2 * B1 * B2 * X)	-0.00259	-0.00259	-0.00258
	(!A1 * A2 * B1 * B2 * X)	0.00223	0.00224	0.00223
	(!A1 * A2 * B1 * B2 * X)	-0.00259	-0.00259	-0.00258
	(!A1 * A2 * B1 * !B2 * !X)	0.00183	0.00185	0.00183
	(!A1 * A2 * B1 * !B2 * !X)	-0.00297	-0.00299	-0.00297
	(!A1 * A2 * !B1 * !X)	0.00183	0.00184	0.00183
	(!A1 * A2 * !B1 * !X)	-0.00297	-0.00298	-0.00297
	(!A1 * !A2 * B1 * !B2 * !X)	0.00185	0.00186	0.00185
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00297	-0.00299	-0.00298
	(!A1 * !A2 * !B1 * !X)	0.00185	0.00186	0.00185
	(!A1 * !A2 * !B1 * !X)	-0.00297	-0.00298	-0.00298

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	0.00302	0.00266	0.00262
	(A1 * A2 * B1 * B2 * X)	-0.00208	-0.00253	-0.00257
	(A1 * !A2 * B1 * !B2 * !X)	0.00217	0.00218	0.00218
	(A1 * !A2 * B1 * !B2 * !X)	-0.00297	-0.00297	-0.00297
	(A1 * !A2 * !B1 * !X)	0.00218	0.00217	0.00218
	(A1 * !A2 * !B1 * !X)	-0.00298	-0.00297	-0.00297
	(!A2 * B1 * B2 * X)	0.00254	0.00257	0.00256
	(!A2 * B1 * B2 * X)	-0.00258	-0.00260	-0.00259
	(!A1 * A2 * B1 * B2 * X)	0.00250	0.00251	0.00250
	(!A1 * A2 * B1 * B2 * X)	-0.00260	-0.00260	-0.00259
	(!A1 * A2 * B1 * !B2 * !X)	0.00216	0.00217	0.00215
	(!A1 * A2 * B1 * !B2 * !X)	-0.00298	-0.00298	-0.00297
	(!A1 * A2 * !B1 * !X)	0.00216	0.00216	0.00216
	(!A1 * A2 * !B1 * !X)	-0.00298	-0.00298	-0.00297
	(!A1 * !A2 * B1 * !B2 * !X)	0.00215	0.00216	0.00215
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00298	-0.00298	-0.00297
	(!A1 * !A2 * !B1 * !X)	0.00215	0.00215	0.00215
	(!A1 * !A2 * !B1 * !X)	-0.00298	-0.00298	-0.00297

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	0.00501	0.00414	0.00404
	(A1 * A2 * B1 * B2 * X)	-0.00430	-0.00535	-0.00543
	(A1 * !A2 * B1 * !B2 * !X)	0.00392	0.00393	0.00392
	(A1 * !A2 * B1 * !B2 * !X)	-0.00552	-0.00552	-0.00551
	(A1 * !A2 * !B1 * !X)	0.00392	0.00393	0.00392
	(A1 * !A2 * !B1 * !X)	-0.00552	-0.00552	-0.00551
	(!A2 * B1 * B2 * X)	0.00394	0.00395	0.00394
	(!A2 * B1 * B2 * X)	-0.00550	-0.00551	-0.00550
	(!A1 * A2 * B1 * B2 * X)	0.00386	0.00387	0.00385
	(!A1 * A2 * B1 * B2 * X)	-0.00551	-0.00551	-0.00550
	(!A1 * A2 * B1 * !B2 * !X)	0.00384	0.00387	0.00384
	(!A1 * A2 * B1 * !B2 * !X)	-0.00551	-0.00554	-0.00551
	(!A1 * A2 * !B1 * !X)	0.00384	0.00387	0.00384
	(!A1 * A2 * !B1 * !X)	-0.00551	-0.00554	-0.00551
	(!A1 * !A2 * B1 * !B2 * !X)	0.00392	0.00393	0.00392
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00551	-0.00552	-0.00551
	(!A1 * !A2 * !B1 * !X)	0.00392	0.00393	0.00392
	(!A1 * !A2 * !B1 * !X)	-0.00552	-0.00552	-0.00551

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)**	-0.00229	-0.00231	-0.00229
	(A1 * A2 * B1 * B2 * X)	0.00254	0.00258	0.00256
	(A1 * !A2 * B1 * !B2 * !X)	-0.00176	-0.00186	-0.00185
	(A1 * !A2 * B1 * !B2 * !X)	0.00297	0.00301	0.00299
	(A1 * !A2 * !B1 * !X)	-0.00176	-0.00186	-0.00185
	(A1 * !A2 * !B1 * !X)	0.00297	0.00301	0.00299
	(!A2 * B1 * B2 * X)	-0.00218	-0.00223	-0.00224
	(!A2 * B1 * B2 * X)	0.00259	0.00262	0.00261
	(!A1 * A2 * B1 * B2 * X)	-0.00208	-0.00222	-0.00223
	(!A1 * A2 * B1 * B2 * X)	0.00260	0.00264	0.00261
	(!A1 * A2 * B1 * !B2 * !X)	-0.00169	-0.00183	-0.00183
	(!A1 * A2 * B1 * !B2 * !X)	0.00299	0.00302	0.00299
	(!A1 * A2 * !B1 * !X)	-0.00169	-0.00183	-0.00183
	(!A1 * A2 * !B1 * !X)	0.00299	0.00302	0.00299
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00179	-0.00186	-0.00185
	(!A1 * !A2 * B1 * !B2 * !X)	0.00297	0.00301	0.00299
	(!A1 * !A2 * !B1 * !X)	-0.00179	-0.00186	-0.00185
	(!A1 * !A2 * !B1 * !X)	0.00297	0.00301	0.00299

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	-0.00259	-0.00261	-0.00259
	(A1 * A2 * B1 * B2 * X)	0.00256	0.00259	0.00257
	(A1 * !A2 * B1 * !B2 * !X)	-0.00206	-0.00216	-0.00216
	(A1 * !A2 * B1 * !B2 * !X)	0.00298	0.00301	0.00299
	(A1 * !A2 * !B1 * !X)	-0.00206	-0.00216	-0.00216
	(A1 * !A2 * !B1 * !X)	0.00298	0.00301	0.00299
	(!A2 * B1 * B2 * X)	-0.00246	-0.00252	-0.00253
	(!A2 * B1 * B2 * X)	0.00261	0.00263	0.00262
	(!A1 * A2 * B1 * B2 * X)	-0.00235	-0.00250	-0.00250
	(!A1 * A2 * B1 * B2 * X)	0.00262	0.00263	0.00262
	(!A1 * A2 * B1 * !B2 * !X)	-0.00198	-0.00212	-0.00215
	(!A1 * A2 * B1 * !B2 * !X)	0.00300	0.00302	0.00299
	(!A1 * A2 * !B1 * !X)	-0.00198	-0.00212	-0.00215
	(!A1 * A2 * !B1 * !X)	0.00300	0.00302	0.00299
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00208	-0.00216	-0.00215
	(!A1 * !A2 * B1 * !B2 * !X)	0.00298	0.00301	0.00299
	(!A1 * !A2 * !B1 * !X)	-0.00208	-0.00215	-0.00215
	(!A1 * !A2 * !B1 * !X)	0.00298	0.00301	0.00299

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	-0.00400	-0.00401	-0.00398
	(A1 * A2 * B1 * B2 * X)	0.00543	0.00547	0.00544
	(A1 * !A2 * B1 * !B2 * !X)	-0.00365	-0.00390	-0.00390
	(A1 * !A2 * B1 * !B2 * !X)	0.00554	0.00555	0.00554
	(A1 * !A2 * !B1 * !X)	-0.00365	-0.00390	-0.00390
	(A1 * !A2 * !B1 * !X)	0.00554	0.00555	0.00554
	(!A2 * B1 * B2 * X)	-0.00373	-0.00388	-0.00390
	(!A2 * B1 * B2 * X)	0.00553	0.00559	0.00555
	(!A1 * A2 * B1 * B2 * X)	-0.00350	-0.00381	-0.00384
	(!A1 * A2 * B1 * B2 * X)	0.00554	0.00559	0.00555
	(!A1 * A2 * B1 * !B2 * !X)	-0.00347	-0.00380	-0.00384
	(!A1 * A2 * B1 * !B2 * !X)	0.00558	0.00560	0.00554
	(!A1 * A2 * !B1 * !X)	-0.00347	-0.00380	-0.00384
	(!A1 * A2 * !B1 * !X)	0.00558	0.00560	0.00554
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00369	-0.00391	-0.00390
	(!A1 * !A2 * B1 * !B2 * !X)	0.00552	0.00556	0.00554
	(!A1 * !A2 * !B1 * !X)	-0.00370	-0.00391	-0.00390
	(!A1 * !A2 * !B1 * !X)	0.00553	0.00556	0.00554

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)**	0.00227	0.00230	0.00228
	(A1 * A2 * A3 * B2 * X)	-0.00119	-0.00120	-0.00119
	(A1 * A2 * A3 * !B2 * X)	0.00223	0.00224	0.00223
	(A1 * A2 * A3 * !B2 * X)	-0.00118	-0.00119	-0.00118
	(A1 * A2 * !A3 * !B2 * !X)	0.00062	0.00063	0.00061
	(A1 * A2 * !A3 * !B2 * !X)	-0.00308	-0.00309	-0.00311
	(A1 * !A2 * !B2 * !X)	0.00062	0.00063	0.00061
	(A1 * !A2 * !B2 * !X)	-0.00308	-0.00309	-0.00311
	(!A1 * !B2 * !X)	0.00062	0.00063	0.00061
	(!A1 * !B2 * !X)	-0.00308	-0.00309	-0.00311
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B2 * X)**	0.00253	0.00255	0.00254
	(A1 * A2 * A3 * B2 * X)	-0.00121	-0.00122	-0.00120
	(A1 * A2 * A3 * !B2 * X)	0.00248	0.00252	0.00248
	(A1 * A2 * A3 * !B2 * X)	-0.00118	-0.00121	-0.00120
	(A1 * A2 * !A3 * !B2 * !X)	0.00077	0.00077	0.00075
	(A1 * A2 * !A3 * !B2 * !X)	-0.00307	-0.00308	-0.00312
	(A1 * !A2 * !B2 * !X)	0.00077	0.00077	0.00075
	(A1 * !A2 * !B2 * !X)	-0.00307	-0.00308	-0.00312
	(!A1 * !B2 * !X)	0.00077	0.00077	0.00075
	(!A1 * !B2 * !X)	-0.00307	-0.00308	-0.00312
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	0.00452	0.00458	0.00455
	(A1 * A2 * A3 * B2 * X)	-0.00238	-0.00243	-0.00240
	(A1 * A2 * A3 * !B2 * X)	0.00438	0.00440	0.00438
	(A1 * A2 * A3 * !B2 * X)	-0.00239	-0.00241	-0.00239
	(A1 * A2 * !A3 * !B2 * !X)	0.00115	0.00115	0.00111
	(A1 * A2 * !A3 * !B2 * !X)	-0.00623	-0.00624	-0.00629
	(A1 * !A2 * !B2 * !X)	0.00115	0.00115	0.00111
	(A1 * !A2 * !B2 * !X)	-0.00623	-0.00624	-0.00629
	(!A1 * !B2 * !X)	0.00115	0.00115	0.00111
	(!A1 * !B2 * !X)	-0.00623	-0.00624	-0.00629

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)	-0.00208	-0.00210	-0.00226
	(A1 * A2 * A3 * B2 * X)	0.00135	0.00135	0.00122
	(A1 * A2 * A3 * !B2 * X)	-0.00216	-0.00223	-0.00222
	(A1 * A2 * A3 * !B2 * X)	0.00118	0.00119	0.00119
	(A1 * A2 * !A3 * !B2 * !X)	-0.00060	-0.00061	-0.00059
	(A1 * A2 * !A3 * !B2 * !X)	0.00311	0.00316	0.00312
	(A1 * !A2 * !B2 * !X)	-0.00060	-0.00061	-0.00059
	(A1 * !A2 * !B2 * !X)	0.00311	0.00316	0.00312
	(!A1 * !B2 * !X)	-0.00060	-0.00061	-0.00059
	(!A1 * !B2 * !X)	0.00311	0.00316	0.00312
sky130_fd_sc_hs__a32o_2	(A1 * A2 * A3 * B2 * X)	-0.00235	-0.00236	-0.00251
	(A1 * A2 * A3 * B2 * X)	0.00137	0.00136	0.00124
	(A1 * A2 * A3 * !B2 * X)	-0.00240	-0.00249	-0.00248
	(A1 * A2 * A3 * !B2 * X)	0.00120	0.00121	0.00120
	(A1 * A2 * !A3 * !B2 * !X)	-0.00073	-0.00074	-0.00072
	(A1 * A2 * !A3 * !B2 * !X)	0.00312	0.00314	0.00312
	(A1 * !A2 * !B2 * !X)	-0.00073	-0.00074	-0.00072
	(A1 * !A2 * !B2 * !X)	0.00312	0.00314	0.00312
	(!A1 * !B2 * !X)	-0.00073	-0.00074	-0.00072
	(!A1 * !B2 * !X)	0.00312	0.00314	0.00312

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	-0.00413	-0.00417	-0.00450
	(A1 * A2 * A3 * B2 * X)	0.00272	0.00274	0.00247
	(A1 * A2 * A3 * !B2 * X)	-0.00429	-0.00440	-0.00438
	(A1 * A2 * A3 * !B2 * X)	0.00242	0.00241	0.00240
	(A1 * A2 * !A3 * !B2 * !X)	-0.00107	-0.00111	-0.00107
	(A1 * A2 * !A3 * !B2 * !X)	0.00629	0.00638	0.00631
	(A1 * !A2 * !B2 * !X)	-0.00107	-0.00111	-0.00107
	(A1 * !A2 * !B2 * !X)	0.00628	0.00639	0.00631
	(!A1 * !B2 * !X)	-0.00107	-0.00111	-0.00107
	(!A1 * !B2 * !X)	0.00628	0.00638	0.00631

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)**	0.00223	0.00225	0.00223
	(A1 * A2 * A3 * B1 * X)	-0.00125	-0.00126	-0.00125
	(A1 * A2 * A3 * !B1 * X)	0.00217	0.00221	0.00216
	(A1 * A2 * A3 * !B1 * X)	-0.00123	-0.00125	-0.00124
	(A1 * A2 * !A3 * !B1 * !X)	0.00197	0.00201	0.00199
	(A1 * A2 * !A3 * !B1 * !X)	-0.00265	-0.00267	-0.00266
	(A1 * !A2 * !B1 * !X)	0.00199	0.00201	0.00200
	(A1 * !A2 * !B1 * !X)	-0.00265	-0.00267	-0.00266
	(!A1 * !B1 * !X)	0.00197	0.00201	0.00199
	(!A1 * !B1 * !X)	-0.00265	-0.00267	-0.00266

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	0.00257	0.00258	0.00256
	(A1 * A2 * A3 * B1 * X)	-0.00128	-0.00128	-0.00127
	(A1 * A2 * A3 * !B1 * X)	0.00252	0.00254	0.00252
	(A1 * A2 * A3 * !B1 * X)	-0.00125	-0.00126	-0.00126
	(A1 * A2 * !A3 * !B1 * !X)	0.00235	0.00237	0.00235
	(A1 * A2 * !A3 * !B1 * !X)	-0.00268	-0.00269	-0.00267
	(A1 * !A2 * !B1 * !X)	0.00235	0.00237	0.00234
	(A1 * !A2 * !B1 * !X)	-0.00268	-0.00269	-0.00267
	(!A1 * !B1 * !X)	0.00235	0.00237	0.00235
	(!A1 * !B1 * !X)	-0.00268	-0.00269	-0.00267
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	0.00572	0.00574	0.00574
	(A1 * A2 * A3 * B1 * X)	-0.00250	-0.00251	-0.00251
	(A1 * A2 * A3 * !B1 * X)	0.00554	0.00563	0.00556
	(A1 * A2 * A3 * !B1 * X)	-0.00247	-0.00251	-0.00249
	(A1 * A2 * !A3 * !B1 * !X)	0.00490	0.00499	0.00494
	(A1 * A2 * !A3 * !B1 * !X)	-0.00561	-0.00566	-0.00563
	(A1 * !A2 * !B1 * !X)	0.00491	0.00499	0.00494
	(A1 * !A2 * !B1 * !X)	-0.00561	-0.00566	-0.00563
	(!A1 * !B1 * !X)	0.00491	0.00497	0.00494
	(!A1 * !B1 * !X)	-0.00561	-0.00564	-0.00563

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)**	-0.00203	-0.00205	-0.00221
	(A1 * A2 * A3 * B1 * X)	0.00141	0.00141	0.00128
	(A1 * A2 * A3 * !B1 * X)	-0.00212	-0.00216	-0.00216
	(A1 * A2 * A3 * !B1 * X)	0.00125	0.00125	0.00125
	(A1 * A2 * !A3 * !B1 * !X)	-0.00186	-0.00200	-0.00199
	(A1 * A2 * !A3 * !B1 * !X)	0.00278	0.00268	0.00267
	(A1 * !A2 * !B1 * !X)	-0.00186	-0.00200	-0.00199
	(A1 * !A2 * !B1 * !X)	0.00278	0.00268	0.00267
	(!A1 * !B1 * !X)	-0.00186	-0.00200	-0.00199
	(!A1 * !B1 * !X)	0.00278	0.00268	0.00267
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00237	-0.00239	-0.00254
	(A1 * A2 * A3 * B1 * X)	0.00143	0.00143	0.00131
	(A1 * A2 * A3 * !B1 * X)	-0.00244	-0.00249	-0.00250
	(A1 * A2 * A3 * !B1 * X)	0.00128	0.00128	0.00127
	(A1 * A2 * !A3 * !B1 * !X)	-0.00219	-0.00234	-0.00233
	(A1 * A2 * !A3 * !B1 * !X)	0.00279	0.00269	0.00269
	(A1 * !A2 * !B1 * !X)	-0.00219	-0.00234	-0.00233
	(A1 * !A2 * !B1 * !X)	0.00279	0.00269	0.00269
	(!A1 * !B1 * !X)	-0.00219	-0.00234	-0.00233
	(!A1 * !B1 * !X)	0.00279	0.00269	0.00269
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	-0.00532	-0.00533	-0.00569
	(A1 * A2 * A3 * B1 * X)	0.00283	0.00282	0.00258
	(A1 * A2 * A3 * !B1 * X)	-0.00548	-0.00563	-0.00556
	(A1 * A2 * A3 * !B1 * X)	0.00251	0.00251	0.00251
	(A1 * A2 * !A3 * !B1 * !X)	-0.00460	-0.00497	-0.00492
	(A1 * A2 * !A3 * !B1 * !X)	0.00593	0.00567	0.00566
	(A1 * !A2 * !B1 * !X)	-0.00461	-0.00498	-0.00493
	(A1 * !A2 * !B1 * !X)	0.00593	0.00567	0.00566
	(!A1 * !B1 * !X)	-0.00461	-0.00497	-0.00493
	(!A1 * !B1 * !X)	0.00593	0.00567	0.00566

SKY130_FD_SC_HS__A41OIx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00293	0.00297	0.00292	0.00295	0.00298	0.64830
sky130_fd_sc_hs__a41oi_2	0.00567	0.00556	0.00546	0.00545	0.00438	1.24127
sky130_fd_sc_hs__a41oi_4	0.01108	0.01077	0.01090	0.01079	0.00865	2.06086

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a41oi_1	0.00000	0.10456	0.25662
sky130_fd_sc_hs__a41oi_2	0.00000	0.20375	0.51323
sky130_fd_sc_hs__a41oi_4	0.00000	0.40749	1.02646

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)	0.07490	0.79643	9.27672
	A2->Y (FR)	0.09300	0.82866	9.46699
	A3->Y (FR)	0.10228	0.81793	9.21311
	A4->Y (FR)	0.10364	0.78400	8.79363
	B1->Y (FR)	0.06356	0.85686	10.28180
sky130_fd_sc_hs__a41oi_2	A1->Y (FR)	0.06222	0.68221	9.44937
	A2->Y (FR)	0.07764	0.67360	9.11625
	A3->Y (FR)	0.09103	0.69195	9.19974
	A4->Y (FR)	0.10473	0.71115	9.25269
	B1->Y (FR)	0.07334	0.72992	9.93168
sky130_fd_sc_hs__a41oi_4	A1->Y (FR)	0.05772	0.55641	8.61020
	A2->Y (FR)	0.07694	0.55755	8.37355
	A3->Y (FR)	0.09428	0.58438	8.56316
	A4->Y (FR)	0.11126	0.61525	8.79462
	B1->Y (FR)	0.08068	0.65778	9.78589

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41oi_1	A1->Y (RF)	0.03942	0.46048	5.23852
	A2->Y (RF)	0.04697	0.43666	4.85025
	A3->Y (RF)	0.05167	0.39719	4.25876
	A4->Y (RF)	0.05501	0.35995	3.67808
	B1->Y (RF)	0.01587	0.24837	2.81875
sky130_fd_sc_hs__a41oi_2	A1->Y (RF)	0.03815	0.44907	6.15645
	A2->Y (RF)	0.04873	0.42962	5.73098
	A3->Y (RF)	0.05430	0.36704	4.75305
	A4->Y (RF)	0.05876	0.33499	4.17878
	B1->Y (RF)	0.01827	0.34788	4.94398
sky130_fd_sc_hs__a41oi_4	A1->Y (RF)	0.03717	0.38185	5.88701
	A2->Y (RF)	0.04975	0.35928	5.38297
	A3->Y (RF)	0.05623	0.30475	4.46458
	A4->Y (RF)	0.05960	0.25997	3.71134
	B1->Y (RF)	0.01638	0.26373	4.40958

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41oi_1	A1	0.00039	0.00116	0.03043
	A1	0.01004	0.01084	0.04025
	A2	0.00153	0.00218	0.03187
	A2	0.01262	0.01329	0.04305
	A3	0.00246	0.00311	0.03425
	A3	0.01498	0.01566	0.04693
	A4	0.00298	0.00370	0.03579
	A4	0.01711	0.01785	0.04999
	B1	-0.00021	0.00475	0.06843
	B1	0.00717	0.01215	0.07580
sky130_fd_sc_hs__a41oi_2	A1	-0.00129	0.00055	0.04843
	A1	0.01640	0.01826	0.06632
	A2	0.00162	0.00287	0.05367
	A2	0.02259	0.02384	0.07497
	A3	0.00325	0.00458	0.05724
	A3	0.02709	0.02835	0.08141
	A4	0.00536	0.00664	0.06062
	A4	0.03250	0.03381	0.08805
	B1	-0.00043	0.00576	0.08343
	B1	0.01031	0.01653	0.09427

sky130_fd_sc_hs__a41oi_4	**A1**	-0.00354	0.00099	0.10456
	A1	0.03167	0.03635	0.13973
	A2	0.00309	0.00634	0.11693
	A2	0.04464	0.04806	0.16155
	A3	0.00626	0.00944	0.12429
	A3	0.05444	0.05759	0.17227
	A4	0.00953	0.01295	0.13158
	A4	0.06389	0.06721	0.18620
	B1	-0.00142	0.01243	0.17807
	B1	0.01976	0.03365	0.20033

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41oi_1	**A1**	0.01281	0.01369	0.03715
	A1	0.00327	0.00416	0.02723
	A2	0.01431	0.01497	0.03682
	A2	0.00326	0.00389	0.02525
	A3	0.01577	0.01642	0.04070
	A3	0.00321	0.00383	0.02793
	A4	0.01751	0.01816	0.04685
	A4	0.00326	0.00391	0.03216
	B1	0.00680	0.00938	0.04781
	B1	-0.00058	0.00195	0.04040

sky130_fd_sc_hs__a41oi_2	**A1**	0.02353	0.02549	0.06393
	A1	0.00607	0.00802	0.04601
	A2	0.02680	0.02789	0.06522
	A2	0.00595	0.00693	0.04371
	A3	0.02987	0.03099	0.07464
	A3	0.00591	0.00698	0.05029
	A4	0.03334	0.03444	0.08462
	A4	0.00584	0.00686	0.05628
	B1	0.00827	0.01188	0.05860
	B1	-0.00248	0.00109	0.04716
sky130_fd_sc_hs__a41oi_4	**A1**	0.04559	0.04976	0.13131
	A1	0.01078	0.01498	0.09611
	A2	0.05199	0.05467	0.13531
	A2	0.01059	0.01315	0.09280
	A3	0.05878	0.06150	0.15464
	A3	0.01039	0.01294	0.10550
	A4	0.06533	0.06825	0.18018
	A4	0.01026	0.01314	0.12352
	B1	0.01636	0.02536	0.13395
	B1	-0.00485	0.00409	0.11181

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)**	0.00273	0.00244	0.00242
	(A2 * A3 * A4 * B1 * !Y)	-0.00253	-0.00296	-0.00295
	(A2 * A3 * !A4 * B1 * !Y)	0.00231	0.00232	0.00231
	(A2 * A3 * !A4 * B1 * !Y)	-0.00301	-0.00303	-0.00301
	(A2 * A3 * !A4 * !B1 * Y)	0.00081	0.00082	0.00075
	(A2 * A3 * !A4 * !B1 * Y)	-0.00335	-0.00339	-0.00352
	(A2 * !A3 * B1 * !Y)	0.00233	0.00234	0.00233
	(A2 * !A3 * B1 * !Y)	-0.00301	-0.00302	-0.00301
	(A2 * !A3 * !B1 * Y)	0.00081	0.00081	0.00076
	(A2 * !A3 * !B1 * Y)	-0.00343	-0.00344	-0.00353
	(!A2 * B1 * !Y)	0.00235	0.00237	0.00236
	(!A2 * B1 * !Y)	-0.00301	-0.00302	-0.00301
	(!A2 * !B1 * Y)	0.00082	0.00081	0.00079
	(!A2 * !B1 * Y)	-0.00349	-0.00350	-0.00354
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	0.00547	0.00486	0.00481
	(A2 * A3 * A4 * B1 * !Y)	-0.00490	-0.00581	-0.00577
	(A2 * A3 * !A4 * B1 * !Y)	0.00451	0.00452	0.00451
	(A2 * A3 * !A4 * B1 * !Y)	-0.00589	-0.00589	-0.00588
	(A2 * A3 * !A4 * !B1 * Y)	0.00149	0.00150	0.00134
	(A2 * A3 * !A4 * !B1 * Y)	-0.00666	-0.00670	-0.00704
	(A2 * !A3 * B1 * !Y)	0.00454	0.00456	0.00454
	(A2 * !A3 * B1 * !Y)	-0.00589	-0.00590	-0.00588
	(A2 * !A3 * !B1 * Y)	0.00144	0.00145	0.00134
	(A2 * !A3 * !B1 * Y)	-0.00683	-0.00688	-0.00707
	(!A2 * B1 * !Y)	0.00463	0.00466	0.00465
	(!A2 * B1 * !Y)	-0.00588	-0.00589	-0.00588
	(!A2 * !B1 * Y)	0.00147	0.00148	0.00141
	(!A2 * !B1 * Y)	-0.00697	-0.00702	-0.00710

sky130_fd_sc_hs__a41oi_4	(A2 * A3 * A4 * B1 * !Y)	0.01095	0.00973	0.00964
	(A2 * A3 * A4 * B1 * !Y)	-0.00974	-0.01151	-0.01143
	(A2 * A3 * !A4 * B1 * !Y)	0.00899	0.00900	0.00898
	(A2 * A3 * !A4 * B1 * !Y)	-0.01167	-0.01167	-0.01165
	(A2 * A3 * !A4 * !B1 * Y)	0.00303	0.00302	0.00272
	(A2 * A3 * !A4 * !B1 * Y)	-0.01313	-0.01317	-0.01384
	(A2 * !A3 * B1 * !Y)	0.00900	0.00910	0.00904
	(A2 * !A3 * B1 * !Y)	-0.01162	-0.01170	-0.01165
	(A2 * !A3 * !B1 * Y)	0.00295	0.00294	0.00273
	(A2 * !A3 * !B1 * Y)	-0.01343	-0.01349	-0.01389
	(!A2 * B1 * !Y)	0.00928	0.00933	0.00930
	(!A2 * B1 * !Y)	-0.01166	-0.01167	-0.01165
	(!A2 * !B1 * Y)	0.00310	0.00310	0.00296
	(!A2 * !B1 * Y)	-0.01368	-0.01376	-0.01394

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)**	-0.00240	-0.00242	-0.00241
	(A2 * A3 * A4 * B1 * !Y)	0.00294	0.00298	0.00295
	(A2 * A3 * !A4 * B1 * !Y)	-0.00201	-0.00229	-0.00231
	(A2 * A3 * !A4 * B1 * !Y)	0.00301	0.00306	0.00302
	(A2 * A3 * !A4 * !B1 * Y)	-0.00076	-0.00077	-0.00075
	(A2 * A3 * !A4 * !B1 * Y)	0.00352	0.00358	0.00354
	(A2 * !A3 * B1 * !Y)	-0.00209	-0.00234	-0.00233
	(A2 * !A3 * B1 * !Y)	0.00301	0.00304	0.00302
	(A2 * !A3 * !B1 * Y)	-0.00076	-0.00077	-0.00076
	(A2 * !A3 * !B1 * Y)	0.00352	0.00358	0.00354
	(!A2 * B1 * !Y)	-0.00228	-0.00237	-0.00236
	(!A2 * B1 * !Y)	0.00302	0.00304	0.00302
	(!A2 * !B1 * Y)	-0.00077	-0.00079	-0.00078
	(!A2 * !B1 * Y)	0.00353	0.00360	0.00354
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	-0.00480	-0.00481	-0.00479
	(A2 * A3 * A4 * B1 * !Y)	0.00577	0.00581	0.00577
	(A2 * A3 * !A4 * B1 * !Y)	-0.00385	-0.00452	-0.00451
	(A2 * A3 * !A4 * B1 * !Y)	0.00591	0.00594	0.00590
	(A2 * A3 * !A4 * !B1 * Y)	-0.00133	-0.00136	-0.00133
	(A2 * A3 * !A4 * !B1 * Y)	0.00708	0.00723	0.00711
	(A2 * !A3 * B1 * !Y)	-0.00402	-0.00456	-0.00454
	(A2 * !A3 * B1 * !Y)	0.00591	0.00593	0.00590
	(A2 * !A3 * !B1 * Y)	-0.00134	-0.00137	-0.00134
	(A2 * !A3 * !B1 * Y)	0.00708	0.00723	0.00711
	(!A2 * B1 * !Y)	-0.00450	-0.00466	-0.00465
	(!A2 * B1 * !Y)	0.00590	0.00593	0.00590
	(!A2 * !B1 * Y)	-0.00138	-0.00140	-0.00138
	(!A2 * !B1 * Y)	0.00709	0.00724	0.00712

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	-0.00962	-0.00965	-0.00960
	(A2 * A3 * A4 * B1 * !Y)	0.01143	0.01151	0.01143
	(A2 * A3 * !A4 * B1 * !Y)	-0.00755	-0.00900	-0.00898
	(A2 * A3 * !A4 * B1 * !Y)	0.01170	0.01177	0.01169
	(A2 * A3 * !A4 * !B1 * Y)	-0.00278	-0.00282	-0.00272
	(A2 * A3 * !A4 * !B1 * Y)	0.01391	0.01411	0.01396
	(A2 * !A3 * B1 * !Y)	-0.00791	-0.00910	-0.00904
	(A2 * !A3 * B1 * !Y)	0.01170	0.01175	0.01169
	(A2 * !A3 * !B1 * Y)	-0.00279	-0.00283	-0.00273
	(A2 * !A3 * !B1 * Y)	0.01391	0.01411	0.01396
	(!A2 * B1 * !Y)	-0.00902	-0.00932	-0.00930
	(!A2 * B1 * !Y)	0.01169	0.01167	0.01169
	(!A2 * !B1 * Y)	-0.00289	-0.00295	-0.00289
	(!A2 * !B1 * Y)	0.01392	0.01420	0.01397

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)**	0.00263	0.00235	0.00233
	(A1 * A3 * A4 * B1 * !Y)	-0.00253	-0.00295	-0.00295
	(A1 * A3 * !A4 * B1 * !Y)	0.00223	0.00224	0.00223
	(A1 * A3 * !A4 * B1 * !Y)	-0.00301	-0.00301	-0.00301
	(A1 * A3 * !A4 * !B1 * Y)	0.00083	0.00083	0.00084
	(A1 * A3 * !A4 * !B1 * Y)	-0.00313	-0.00314	-0.00313
	(A1 * !A3 * B1 * !Y)	0.00226	0.00228	0.00227
	(A1 * !A3 * B1 * !Y)	-0.00300	-0.00301	-0.00301
	(A1 * !A3 * !B1 * Y)	0.00088	0.00089	0.00089
	(A1 * !A3 * !B1 * Y)	-0.00313	-0.00314	-0.00314
	(!A1 * A3 * A4 * B1 * !Y)	0.00224	0.00227	0.00225
	(!A1 * A3 * A4 * B1 * !Y)	-0.00300	-0.00302	-0.00301
	(!A1 * A3 * A4 * !B1 * Y)	0.00212	0.00213	0.00212
	(!A1 * A3 * A4 * !B1 * Y)	-0.00314	-0.00314	-0.00313
	(!A1 * A3 * !A4 * B1 * !Y)	0.00130	0.00130	0.00130
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00301	-0.00302	-0.00301
	(!A1 * A3 * !A4 * !B1 * Y)	0.00110	0.00110	0.00109
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00316	-0.00316	-0.00315
	(!A1 * !A3 * B1 * !Y)	0.00134	0.00135	0.00135
	(!A1 * !A3 * B1 * !Y)	-0.00299	-0.00301	-0.00301
	(!A1 * !A3 * !B1 * Y)	0.00110	0.00111	0.00110
	(!A1 * !A3 * !B1 * Y)	-0.00315	-0.00317	-0.00316

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00535	0.00475	0.00470
	(A1 * A3 * A4 * B1 * !Y)	-0.00503	-0.00589	-0.00588
	(A1 * A3 * !A4 * B1 * !Y)	0.00444	0.00445	0.00443
	(A1 * A3 * !A4 * B1 * !Y)	-0.00599	-0.00601	-0.00599
	(A1 * A3 * !A4 * !B1 * Y)	0.00184	0.00185	0.00187
	(A1 * A3 * !A4 * !B1 * Y)	-0.00604	-0.00606	-0.00605
	(A1 * !A3 * B1 * !Y)	0.00450	0.00451	0.00452
	(A1 * !A3 * B1 * !Y)	-0.00597	-0.00598	-0.00599
	(A1 * !A3 * !B1 * Y)	0.00194	0.00196	0.00196
	(A1 * !A3 * !B1 * Y)	-0.00605	-0.00607	-0.00606
	(!A1 * A3 * A4 * B1 * !Y)	0.00451	0.00454	0.00453
	(!A1 * A3 * A4 * B1 * !Y)	-0.00597	-0.00600	-0.00599
	(!A1 * A3 * A4 * !B1 * Y)	0.00448	0.00452	0.00451
	(!A1 * A3 * A4 * !B1 * Y)	-0.00603	-0.00607	-0.00605
	(!A1 * A3 * !A4 * B1 * !Y)	0.00261	0.00264	0.00263
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00596	-0.00601	-0.00599
	(!A1 * A3 * !A4 * !B1 * Y)	0.00241	0.00240	0.00240
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00610	-0.00609	-0.00609
	(!A1 * !A3 * B1 * !Y)	0.00271	0.00271	0.00270
	(!A1 * !A3 * B1 * !Y)	-0.00598	-0.00601	-0.00599
	(!A1 * !A3 * !B1 * Y)	0.00237	0.00238	0.00237
	(!A1 * !A3 * !B1 * Y)	-0.00611	-0.00614	-0.00611

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	0.01059	0.00939	0.00929
	(A1 * A3 * A4 * B1 * !Y)	-0.00998	-0.01169	-0.01167
	(A1 * A3 * !A4 * B1 * !Y)	0.00857	0.00864	0.00862
	(A1 * A3 * !A4 * B1 * !Y)	-0.01184	-0.01193	-0.01190
	(A1 * A3 * !A4 * !B1 * Y)	0.00350	0.00349	0.00360
	(A1 * A3 * !A4 * !B1 * Y)	-0.01192	-0.01191	-0.01192
	(A1 * !A3 * B1 * !Y)	0.00881	0.00889	0.00884
	(A1 * !A3 * B1 * !Y)	-0.01187	-0.01195	-0.01190
	(A1 * !A3 * !B1 * Y)	0.00364	0.00363	0.00370
	(A1 * !A3 * !B1 * Y)	-0.01193	-0.01191	-0.01193
	(!A1 * A3 * A4 * B1 * !Y)	0.00890	0.00898	0.00896
	(!A1 * A3 * A4 * B1 * !Y)	-0.01184	-0.01192	-0.01190
	(!A1 * A3 * A4 * !B1 * Y)	0.00882	0.00886	0.00889
	(!A1 * A3 * A4 * !B1 * Y)	-0.01189	-0.01194	-0.01195
	(!A1 * A3 * !A4 * B1 * !Y)	0.00496	0.00499	0.00498
	(!A1 * A3 * !A4 * B1 * !Y)	-0.01185	-0.01192	-0.01190
	(!A1 * A3 * !A4 * !B1 * Y)	0.00463	0.00462	0.00461
	(!A1 * A3 * !A4 * !B1 * Y)	-0.01202	-0.01200	-0.01200
	(!A1 * !A3 * B1 * !Y)	0.00506	0.00503	0.00504
	(!A1 * !A3 * B1 * !Y)	-0.01189	-0.01188	-0.01189
	(!A1 * !A3 * !B1 * Y)	0.00451	0.00453	0.00450
	(!A1 * !A3 * !B1 * Y)	-0.01203	-0.01208	-0.01202

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)**	-0.00232	-0.00232	-0.00232
	(A1 * A3 * A4 * B1 * !Y)	0.00294	0.00296	0.00295
	(A1 * A3 * !A4 * B1 * !Y)	-0.00196	-0.00224	-0.00223
	(A1 * A3 * !A4 * B1 * !Y)	0.00301	0.00302	0.00302
	(A1 * A3 * !A4 * !B1 * Y)	-0.00083	-0.00083	-0.00084
	(A1 * A3 * !A4 * !B1 * Y)	0.00319	0.00323	0.00316
	(A1 * !A3 * B1 * !Y)	-0.00219	-0.00228	-0.00227
	(A1 * !A3 * B1 * !Y)	0.00301	0.00302	0.00302
	(A1 * !A3 * !B1 * Y)	-0.00085	-0.00086	-0.00087
	(A1 * !A3 * !B1 * Y)	0.00320	0.00323	0.00316
	(!A1 * A3 * A4 * B1 * !Y)	-0.00219	-0.00227	-0.00225
	(!A1 * A3 * A4 * B1 * !Y)	0.00302	0.00303	0.00302
	(!A1 * A3 * A4 * !B1 * Y)	-0.00189	-0.00213	-0.00212
	(!A1 * A3 * A4 * !B1 * Y)	0.00335	0.00316	0.00315
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00130	-0.00130	-0.00130
	(!A1 * A3 * !A4 * B1 * !Y)	0.00301	0.00305	0.00302
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00110	-0.00110	-0.00109
	(!A1 * A3 * !A4 * !B1 * Y)	0.00331	0.00328	0.00317
	(!A1 * !A3 * B1 * !Y)	-0.00134	-0.00135	-0.00135
	(!A1 * !A3 * B1 * !Y)	0.00300	0.00305	0.00302
	(!A1 * !A3 * !B1 * Y)	-0.00110	-0.00111	-0.00110
	(!A1 * !A3 * !B1 * Y)	0.00329	0.00332	0.00319

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00467	-0.00470	-0.00468
	(A1 * A3 * A4 * B1 * !Y)	0.00585	0.00591	0.00588
	(A1 * A3 * !A4 * B1 * !Y)	-0.00390	-0.00445	-0.00443
	(A1 * A3 * !A4 * B1 * !Y)	0.00599	0.00604	0.00601
	(A1 * A3 * !A4 * !B1 * Y)	-0.00179	-0.00181	-0.00183
	(A1 * A3 * !A4 * !B1 * Y)	0.00621	0.00628	0.00612
	(A1 * !A3 * B1 * !Y)	-0.00440	-0.00451	-0.00452
	(A1 * !A3 * B1 * !Y)	0.00599	0.00600	0.00601
	(A1 * !A3 * !B1 * Y)	-0.00186	-0.00188	-0.00190
	(A1 * !A3 * !B1 * Y)	0.00621	0.00628	0.00612
	(!A1 * A3 * A4 * B1 * !Y)	-0.00438	-0.00454	-0.00453
	(!A1 * A3 * A4 * B1 * !Y)	0.00600	0.00607	0.00601
	(!A1 * A3 * A4 * !B1 * Y)	-0.00379	-0.00452	-0.00451
	(!A1 * A3 * A4 * !B1 * Y)	0.00665	0.00610	0.00607
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00261	-0.00264	-0.00263
	(!A1 * A3 * !A4 * B1 * !Y)	0.00602	0.00608	0.00601
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00241	-0.00240	-0.00240
	(!A1 * A3 * !A4 * !B1 * Y)	0.00645	0.00631	0.00611
	(!A1 * !A3 * B1 * !Y)	-0.00271	-0.00271	-0.00270
	(!A1 * !A3 * B1 * !Y)	0.00598	0.00608	0.00601
	(!A1 * !A3 * !B1 * Y)	-0.00237	-0.00238	-0.00237
	(!A1 * !A3 * !B1 * Y)	0.00640	0.00645	0.00618

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00924	-0.00929	-0.00924
	(A1 * A3 * A4 * B1 * !Y)	0.01162	0.01174	0.01167
	(A1 * A3 * !A4 * B1 * !Y)	-0.00756	-0.00864	-0.00862
	(A1 * A3 * !A4 * B1 * !Y)	0.01195	0.01203	0.01194
	(A1 * A3 * !A4 * !B1 * Y)	-0.00342	-0.00344	-0.00350
	(A1 * A3 * !A4 * !B1 * Y)	0.01227	0.01238	0.01206
	(A1 * !A3 * B1 * !Y)	-0.00864	-0.00889	-0.00884
	(A1 * !A3 * B1 * !Y)	0.01194	0.01199	0.01194
	(A1 * !A3 * !B1 * Y)	-0.00346	-0.00352	-0.00358
	(A1 * !A3 * !B1 * Y)	0.01220	0.01237	0.01206
	(!A1 * A3 * A4 * B1 * !Y)	-0.00867	-0.00898	-0.00896
	(!A1 * A3 * A4 * B1 * !Y)	0.01194	0.01198	0.01194
	(!A1 * A3 * A4 * !B1 * Y)	-0.00749	-0.00886	-0.00889
	(!A1 * A3 * A4 * !B1 * Y)	0.01324	0.01208	0.01199
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00496	-0.00499	-0.00498
	(!A1 * A3 * !A4 * B1 * !Y)	0.01196	0.01207	0.01194
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00463	-0.00462	-0.00461
	(!A1 * A3 * !A4 * !B1 * Y)	0.01272	0.01246	0.01205
	(!A1 * !A3 * B1 * !Y)	-0.00506	-0.00503	-0.00504
	(!A1 * !A3 * B1 * !Y)	0.01189	0.01207	0.01194
	(!A1 * !A3 * !B1 * Y)	-0.00451	-0.00453	-0.00450
	(!A1 * !A3 * !B1 * Y)	0.01247	0.01269	0.01217

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)**	0.00256	0.00231	0.00229
	(A1 * A2 * A4 * B1 * !Y)	-0.00257	-0.00295	-0.00295
	(A1 * A2 * !A4 * B1 * !Y)	0.00221	0.00222	0.00222
	(A1 * A2 * !A4 * B1 * !Y)	-0.00300	-0.00301	-0.00300
	(A1 * A2 * !A4 * !B1 * Y)	0.00086	0.00087	0.00088
	(A1 * A2 * !A4 * !B1 * Y)	-0.00305	-0.00307	-0.00306
	(A1 * !A2 * A4 * !B1 * Y)	0.00215	0.00216	0.00215
	(A1 * !A2 * A4 * !B1 * Y)	-0.00310	-0.00310	-0.00310
	(A1 * !A2 * !A4 * !B1 * Y)	0.00104	0.00105	0.00105
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00310	-0.00312	-0.00311
	(!A2 * A4 * B1 * !Y)	0.00223	0.00224	0.00224
	(!A2 * A4 * B1 * !Y)	-0.00300	-0.00301	-0.00300
	(!A2 * !A4 * B1 * !Y)	0.00123	0.00124	0.00124
	(!A2 * !A4 * B1 * !Y)	-0.00300	-0.00301	-0.00300
	(!A1 * A2 * A4 * B1 * !Y)	0.00220	0.00220	0.00220
	(!A1 * A2 * A4 * B1 * !Y)	-0.00301	-0.00301	-0.00300
	(!A1 * A2 * A4 * !B1 * Y)	0.00206	0.00207	0.00206
	(!A1 * A2 * A4 * !B1 * Y)	-0.00310	-0.00310	-0.00309
	(!A1 * A2 * !A4 * B1 * !Y)	0.00124	0.00125	0.00125
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00300	-0.00301	-0.00300
	(!A1 * A2 * !A4 * !B1 * Y)	0.00105	0.00105	0.00105
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00310	-0.00311	-0.00311
	(!A1 * !A2 * A4 * !B1 * Y)	0.00215	0.00216	0.00215
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00310	-0.00311	-0.00310
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00111	0.00112	0.00111
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00311	-0.00312	-0.00311

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	0.00524	0.00466	0.00461
	(A1 * A2 * A4 * B1 * !Y)	-0.00503	-0.00586	-0.00584
	(A1 * A2 * !A4 * B1 * !Y)	0.00440	0.00442	0.00441
	(A1 * A2 * !A4 * B1 * !Y)	-0.00596	-0.00597	-0.00596
	(A1 * A2 * !A4 * !B1 * Y)	0.00192	0.00193	0.00194
	(A1 * A2 * !A4 * !B1 * Y)	-0.00587	-0.00588	-0.00585
	(A1 * !A2 * A4 * !B1 * Y)	0.00444	0.00448	0.00445
	(A1 * !A2 * A4 * !B1 * Y)	-0.00596	-0.00597	-0.00596
	(A1 * !A2 * !A4 * !B1 * Y)	0.00232	0.00234	0.00232
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00596	-0.00600	-0.00596
	(!A2 * A4 * B1 * !Y)	0.00443	0.00446	0.00444
	(!A2 * A4 * B1 * !Y)	-0.00595	-0.00597	-0.00596
	(!A2 * !A4 * B1 * !Y)	0.00251	0.00251	0.00250
	(!A2 * !A4 * B1 * !Y)	-0.00595	-0.00597	-0.00596
	(!A1 * A2 * A4 * B1 * !Y)	0.00435	0.00439	0.00437
	(!A1 * A2 * A4 * B1 * !Y)	-0.00594	-0.00597	-0.00596
	(!A1 * A2 * A4 * !B1 * Y)	0.00436	0.00439	0.00438
	(!A1 * A2 * A4 * !B1 * Y)	-0.00594	-0.00598	-0.00596
	(!A1 * A2 * !A4 * B1 * !Y)	0.00252	0.00253	0.00252
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00595	-0.00598	-0.00596
	(!A1 * A2 * !A4 * !B1 * Y)	0.00231	0.00232	0.00232
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00598	-0.00599	-0.00599
	(!A1 * !A2 * A4 * !B1 * Y)	0.00444	0.00447	0.00445
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00596	-0.00597	-0.00596
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00244	0.00245	0.00244
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00596	-0.00599	-0.00596

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	0.01048	0.00930	0.00919
	(A1 * A2 * A4 * B1 * !Y)	-0.01008	-0.01181	-0.01179
	(A1 * A2 * !A4 * B1 * !Y)	0.00877	0.00883	0.00881
	(A1 * A2 * !A4 * B1 * !Y)	-0.01197	-0.01205	-0.01202
	(A1 * A2 * !A4 * !B1 * Y)	0.00361	0.00363	0.00363
	(A1 * A2 * !A4 * !B1 * Y)	-0.01184	-0.01187	-0.01180
	(A1 * !A2 * A4 * !B1 * Y)	0.00873	0.00878	0.00875
	(A1 * !A2 * A4 * !B1 * Y)	-0.01204	-0.01205	-0.01203
	(A1 * !A2 * !A4 * !B1 * Y)	0.00430	0.00434	0.00431
	(A1 * !A2 * !A4 * !B1 * Y)	-0.01201	-0.01208	-0.01203
	(!A2 * A4 * B1 * !Y)	0.00873	0.00880	0.00877
	(!A2 * A4 * B1 * !Y)	-0.01199	-0.01205	-0.01202
	(!A2 * !A4 * B1 * !Y)	0.00469	0.00471	0.00468
	(!A2 * !A4 * B1 * !Y)	-0.01202	-0.01209	-0.01202
	(!A1 * A2 * A4 * B1 * !Y)	0.00871	0.00875	0.00871
	(!A1 * A2 * A4 * B1 * !Y)	-0.01205	-0.01206	-0.01202
	(!A1 * A2 * A4 * !B1 * Y)	0.00872	0.00877	0.00871
	(!A1 * A2 * A4 * !B1 * Y)	-0.01205	-0.01208	-0.01203
	(!A1 * A2 * !A4 * B1 * !Y)	0.00483	0.00488	0.00485
	(!A1 * A2 * !A4 * B1 * !Y)	-0.01198	-0.01208	-0.01202
	(!A1 * A2 * !A4 * !B1 * Y)	0.00444	0.00450	0.00446
	(!A1 * A2 * !A4 * !B1 * Y)	-0.01204	-0.01213	-0.01206
	(!A1 * !A2 * A4 * !B1 * Y)	0.00872	0.00876	0.00874
	(!A1 * !A2 * A4 * !B1 * Y)	-0.01200	-0.01205	-0.01203
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00456	0.00457	0.00454
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.01201	-0.01208	-0.01203

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)**	-0.00228	-0.00229	-0.00228
	(A1 * A2 * A4 * B1 * !Y)	0.00294	0.00297	0.00295
	(A1 * A2 * !A4 * B1 * !Y)	-0.00215	-0.00222	-0.00222
	(A1 * A2 * !A4 * B1 * !Y)	0.00301	0.00303	0.00301
	(A1 * A2 * !A4 * !B1 * Y)	-0.00082	-0.00083	-0.00083
	(A1 * A2 * !A4 * !B1 * Y)	0.00315	0.00318	0.00313
	(A1 * !A2 * A4 * !B1 * Y)	-0.00201	-0.00214	-0.00214
	(A1 * !A2 * A4 * !B1 * Y)	0.00310	0.00313	0.00310
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00104	-0.00105	-0.00105
	(A1 * !A2 * !A4 * !B1 * Y)	0.00321	0.00324	0.00315
	(!A2 * A4 * B1 * !Y)	-0.00215	-0.00223	-0.00223
	(!A2 * A4 * B1 * !Y)	0.00300	0.00304	0.00301
	(!A2 * !A4 * B1 * !Y)	-0.00123	-0.00124	-0.00124
	(!A2 * !A4 * B1 * !Y)	0.00300	0.00305	0.00301
	(!A1 * A2 * A4 * B1 * !Y)	-0.00199	-0.00220	-0.00220
	(!A1 * A2 * A4 * B1 * !Y)	0.00301	0.00304	0.00301
	(!A1 * A2 * A4 * !B1 * Y)	-0.00188	-0.00207	-0.00206
	(!A1 * A2 * A4 * !B1 * Y)	0.00312	0.00314	0.00310
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00124	-0.00125	-0.00125
	(!A1 * A2 * !A4 * B1 * !Y)	0.00301	0.00304	0.00301
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00105	-0.00105	-0.00105
	(!A1 * A2 * !A4 * !B1 * Y)	0.00314	0.00320	0.00312
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00204	-0.00214	-0.00214
	(!A1 * !A2 * A4 * !B1 * Y)	0.00310	0.00313	0.00310
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00111	-0.00112	-0.00111
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00311	0.00315	0.00312

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	-0.00460	-0.00461	-0.00459
	(A1 * A2 * A4 * B1 * !Y)	0.00583	0.00586	0.00584
	(A1 * A2 * !A4 * B1 * !Y)	-0.00427	-0.00442	-0.00441
	(A1 * A2 * !A4 * B1 * !Y)	0.00598	0.00602	0.00598
	(A1 * A2 * !A4 * !B1 * Y)	-0.00180	-0.00183	-0.00183
	(A1 * A2 * !A4 * !B1 * Y)	0.00605	0.00613	0.00602
	(A1 * !A2 * A4 * !B1 * Y)	-0.00419	-0.00448	-0.00445
	(A1 * !A2 * A4 * !B1 * Y)	0.00597	0.00597	0.00598
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00232	-0.00234	-0.00232
	(A1 * !A2 * !A4 * !B1 * Y)	0.00623	0.00630	0.00607
	(!A2 * A4 * B1 * !Y)	-0.00432	-0.00446	-0.00444
	(!A2 * A4 * B1 * !Y)	0.00595	0.00597	0.00598
	(!A2 * !A4 * B1 * !Y)	-0.00251	-0.00251	-0.00250
	(!A2 * !A4 * B1 * !Y)	0.00596	0.00605	0.00598
	(!A1 * A2 * A4 * B1 * !Y)	-0.00396	-0.00439	-0.00437
	(!A1 * A2 * A4 * B1 * !Y)	0.00598	0.00598	0.00598
	(!A1 * A2 * A4 * !B1 * Y)	-0.00391	-0.00439	-0.00438
	(!A1 * A2 * A4 * !B1 * Y)	0.00606	0.00598	0.00598
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00252	-0.00253	-0.00252
	(!A1 * A2 * !A4 * B1 * !Y)	0.00598	0.00605	0.00598
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00231	-0.00232	-0.00232
	(!A1 * A2 * !A4 * !B1 * Y)	0.00604	0.00614	0.00601
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00426	-0.00447	-0.00445
	(!A1 * !A2 * A4 * !B1 * Y)	0.00596	0.00597	0.00598
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00244	-0.00245	-0.00244
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00596	0.00605	0.00598

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	-0.00917	-0.00918	-0.00914
	(A1 * A2 * A4 * B1 * !Y)	0.01180	0.01183	0.01179
	(A1 * A2 * !A4 * B1 * !Y)	-0.00856	-0.00883	-0.00881
	(A1 * A2 * !A4 * B1 * !Y)	0.01208	0.01215	0.01207
	(A1 * A2 * !A4 * !B1 * Y)	-0.00335	-0.00339	-0.00340
	(A1 * A2 * !A4 * !B1 * Y)	0.01229	0.01244	0.01216
	(A1 * !A2 * A4 * !B1 * Y)	-0.00816	-0.00878	-0.00875
	(A1 * !A2 * A4 * !B1 * Y)	0.01205	0.01208	0.01206
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00430	-0.00434	-0.00431
	(A1 * !A2 * !A4 * !B1 * Y)	0.01258	0.01271	0.01225
	(!A2 * A4 * B1 * !Y)	-0.00850	-0.00880	-0.00877
	(!A2 * A4 * B1 * !Y)	0.01199	0.01210	0.01207
	(!A2 * !A4 * B1 * !Y)	-0.00469	-0.00471	-0.00468
	(!A2 * !A4 * B1 * !Y)	0.01202	0.01220	0.01207
	(!A1 * A2 * A4 * B1 * !Y)	-0.00768	-0.00875	-0.00871
	(!A1 * A2 * A4 * B1 * !Y)	0.01208	0.01210	0.01206
	(!A1 * A2 * A4 * !B1 * Y)	-0.00752	-0.00877	-0.00871
	(!A1 * A2 * A4 * !B1 * Y)	0.01234	0.01209	0.01206
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00483	-0.00488	-0.00485
	(!A1 * A2 * !A4 * B1 * !Y)	0.01209	0.01220	0.01207
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00444	-0.00450	-0.00446
	(!A1 * A2 * !A4 * !B1 * Y)	0.01221	0.01240	0.01210
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00834	-0.00876	-0.00874
	(!A1 * !A2 * A4 * !B1 * Y)	0.01200	0.01209	0.01206
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00456	-0.00457	-0.00454
	(!A1 * !A2 * !A4 * !B1 * Y)	0.01201	0.01219	0.01206

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)**	0.00271	0.00246	0.00243
	(A1 * A2 * A3 * B1 * !Y)	-0.00255	-0.00293	-0.00294
	(A1 * A2 * !A3 * !B1 * Y)	0.00215	0.00216	0.00215
	(A1 * A2 * !A3 * !B1 * Y)	-0.00318	-0.00320	-0.00319
	(A1 * !A2 * A3 * !B1 * Y)	0.00213	0.00213	0.00212
	(A1 * !A2 * A3 * !B1 * Y)	-0.00319	-0.00320	-0.00319
	(A1 * !A2 * !A3 * !B1 * Y)	0.00216	0.00218	0.00217
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00318	-0.00320	-0.00319
	(!A3 * B1 * !Y)	0.00234	0.00234	0.00235
	(!A3 * B1 * !Y)	-0.00298	-0.00298	-0.00299
	(!A2 * A3 * B1 * !Y)	0.00235	0.00235	0.00234
	(!A2 * A3 * B1 * !Y)	-0.00300	-0.00299	-0.00299
	(!A1 * A2 * A3 * B1 * !Y)	0.00232	0.00233	0.00233
	(!A1 * A2 * A3 * B1 * !Y)	-0.00299	-0.00300	-0.00299
	(!A1 * A2 * A3 * !B1 * Y)	0.00213	0.00215	0.00213
	(!A1 * A2 * A3 * !B1 * Y)	-0.00319	-0.00321	-0.00319
	(!A1 * !A3 * !B1 * Y)	0.00217	0.00219	0.00218
	(!A1 * !A3 * !B1 * Y)	-0.00318	-0.00320	-0.00319
	(!A1 * !A2 * A3 * !B1 * Y)	0.00216	0.00216	0.00215
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00320	-0.00320	-0.00319

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00524	0.00470	0.00465
	(A1 * A2 * A3 * B1 * !Y)	-0.00508	-0.00588	-0.00587
	(A1 * A2 * !A3 * !B1 * Y)	0.00444	0.00448	0.00445
	(A1 * A2 * !A3 * !B1 * Y)	-0.00596	-0.00600	-0.00597
	(A1 * !A2 * A3 * !B1 * Y)	0.00440	0.00443	0.00440
	(A1 * !A2 * A3 * !B1 * Y)	-0.00598	-0.00600	-0.00597
	(A1 * !A2 * !A3 * !B1 * Y)	0.00443	0.00447	0.00444
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00596	-0.00599	-0.00597
	(!A3 * B1 * !Y)	0.00445	0.00447	0.00445
	(!A3 * B1 * !Y)	-0.00597	-0.00599	-0.00597
	(!A2 * A3 * B1 * !Y)	0.00439	0.00441	0.00439
	(!A2 * A3 * B1 * !Y)	-0.00598	-0.00599	-0.00597
	(!A1 * A2 * A3 * B1 * !Y)	0.00436	0.00438	0.00436
	(!A1 * A2 * A3 * B1 * !Y)	-0.00598	-0.00599	-0.00597
	(!A1 * A2 * A3 * !B1 * Y)	0.00437	0.00436	0.00437
	(!A1 * A2 * A3 * !B1 * Y)	-0.00598	-0.00597	-0.00598
	(!A1 * !A3 * !B1 * Y)	0.00444	0.00446	0.00444
	(!A1 * !A3 * !B1 * Y)	-0.00596	-0.00599	-0.00597
	(!A1 * !A2 * A3 * !B1 * Y)	0.00442	0.00444	0.00442
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00598	-0.00599	-0.00598

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.01039	0.00933	0.00921
	(A1 * A2 * A3 * B1 * !Y)	-0.01006	-0.01175	-0.01172
	(A1 * A2 * !A3 * !B1 * Y)	0.00888	0.00895	0.00892
	(A1 * A2 * !A3 * !B1 * Y)	-0.01192	-0.01198	-0.01195
	(A1 * !A2 * A3 * !B1 * Y)	0.00874	0.00876	0.00872
	(A1 * !A2 * A3 * !B1 * Y)	-0.01190	-0.01199	-0.01195
	(A1 * !A2 * !A3 * !B1 * Y)	0.00890	0.00898	0.00895
	(A1 * !A2 * !A3 * !B1 * Y)	-0.01191	-0.01198	-0.01195
	(!A3 * B1 * !Y)	0.00879	0.00887	0.00884
	(!A3 * B1 * !Y)	-0.01190	-0.01198	-0.01195
	(!A2 * A3 * B1 * !Y)	0.00878	0.00879	0.00876
	(!A2 * A3 * B1 * !Y)	-0.01191	-0.01197	-0.01195
	(!A1 * A2 * A3 * B1 * !Y)	0.00869	0.00872	0.00868
	(!A1 * A2 * A3 * B1 * !Y)	-0.01193	-0.01198	-0.01195
	(!A1 * A2 * A3 * !B1 * Y)	0.00871	0.00870	0.00869
	(!A1 * A2 * A3 * !B1 * Y)	-0.01194	-0.01195	-0.01195
	(!A1 * !A3 * !B1 * Y)	0.00881	0.00887	0.00884
	(!A1 * !A3 * !B1 * Y)	-0.01193	-0.01197	-0.01195
	(!A1 * !A2 * A3 * !B1 * Y)	0.00879	0.00884	0.00877
	(!A1 * !A2 * A3 * !B1 * Y)	-0.01190	-0.01201	-0.01195

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)**	-0.00242	-0.00244	-0.00242
	(A1 * A2 * A3 * B1 * !Y)	0.00293	0.00296	0.00294
	(A1 * A2 * !A3 * !B1 * Y)	-0.00206	-0.00216	-0.00215
	(A1 * A2 * !A3 * !B1 * Y)	0.00318	0.00323	0.00320
	(A1 * !A2 * A3 * !B1 * Y)	-0.00199	-0.00213	-0.00212
	(A1 * !A2 * A3 * !B1 * Y)	0.00319	0.00323	0.00320
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00208	-0.00217	-0.00217
	(A1 * !A2 * !A3 * !B1 * Y)	0.00318	0.00321	0.00320
	(!A3 * B1 * !Y)	-0.00229	-0.00234	-0.00235
	(!A3 * B1 * !Y)	0.00298	0.00303	0.00300
	(!A2 * A3 * B1 * !Y)	-0.00220	-0.00233	-0.00234
	(!A2 * A3 * B1 * !Y)	0.00300	0.00302	0.00300
	(!A1 * A2 * A3 * B1 * !Y)	-0.00215	-0.00233	-0.00233
	(!A1 * A2 * A3 * B1 * !Y)	0.00299	0.00303	0.00300
	(!A1 * A2 * A3 * !B1 * Y)	-0.00195	-0.00212	-0.00213
	(!A1 * A2 * A3 * !B1 * Y)	0.00319	0.00323	0.00320
	(!A1 * !A3 * !B1 * Y)	-0.00208	-0.00217	-0.00217
	(!A1 * !A3 * !B1 * Y)	0.00318	0.00321	0.00320
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00200	-0.00213	-0.00215
	(!A1 * !A2 * A3 * !B1 * Y)	0.00320	0.00323	0.00320

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00463	-0.00465	-0.00462
	(A1 * A2 * A3 * B1 * !Y)	0.00587	0.00592	0.00587
	(A1 * A2 * !A3 * !B1 * Y)	-0.00423	-0.00448	-0.00445
	(A1 * A2 * !A3 * !B1 * Y)	0.00596	0.00600	0.00599
	(A1 * !A2 * A3 * !B1 * Y)	-0.00403	-0.00438	-0.00440
	(A1 * !A2 * A3 * !B1 * Y)	0.00600	0.00606	0.00599
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00427	-0.00447	-0.00444
	(A1 * !A2 * !A3 * !B1 * Y)	0.00596	0.00600	0.00599
	(!A3 * B1 * !Y)	-0.00431	-0.00447	-0.00445
	(!A3 * B1 * !Y)	0.00597	0.00604	0.00599
	(!A2 * A3 * B1 * !Y)	-0.00404	-0.00441	-0.00439
	(!A2 * A3 * B1 * !Y)	0.00600	0.00604	0.00599
	(!A1 * A2 * A3 * B1 * !Y)	-0.00395	-0.00435	-0.00436
	(!A1 * A2 * A3 * B1 * !Y)	0.00600	0.00607	0.00599
	(!A1 * A2 * A3 * !B1 * Y)	-0.00394	-0.00435	-0.00437
	(!A1 * A2 * A3 * !B1 * Y)	0.00601	0.00606	0.00599
	(!A1 * !A3 * !B1 * Y)	-0.00426	-0.00446	-0.00444
	(!A1 * !A3 * !B1 * Y)	0.00596	0.00600	0.00599
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00403	-0.00438	-0.00442
	(!A1 * !A2 * A3 * !B1 * Y)	0.00600	0.00606	0.00599

sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * B1 * !Y)	-0.00919	-0.00921	-0.00917
	(A1 * A2 * A3 * B1 * !Y)	0.01172	0.01177	0.01172
	(A1 * A2 * !A3 * !B1 * Y)	-0.00837	-0.00895	-0.00891
	(A1 * A2 * !A3 * !B1 * Y)	0.01194	0.01202	0.01198
	(A1 * !A2 * A3 * !B1 * Y)	-0.00792	-0.00867	-0.00872
	(A1 * !A2 * A3 * !B1 * Y)	0.01190	0.01212	0.01198
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00849	-0.00888	-0.00892
	(A1 * !A2 * !A3 * !B1 * Y)	0.01194	0.01208	0.01198
	(!A3 * B1 * !Y)	-0.00858	-0.00886	-0.00884
	(!A3 * B1 * !Y)	0.01194	0.01205	0.01199
	(!A2 * A3 * B1 * !Y)	-0.00793	-0.00871	-0.00876
	(!A2 * A3 * B1 * !Y)	0.01191	0.01207	0.01199
	(!A1 * A2 * A3 * B1 * !Y)	-0.00783	-0.00864	-0.00868
	(!A1 * A2 * A3 * B1 * !Y)	0.01193	0.01204	0.01199
	(!A1 * A2 * A3 * !B1 * Y)	-0.00782	-0.00865	-0.00869
	(!A1 * A2 * A3 * !B1 * Y)	0.01194	0.01204	0.01198
	(!A1 * !A3 * !B1 * Y)	-0.00848	-0.00887	-0.00884
	(!A1 * !A3 * !B1 * Y)	0.01194	0.01202	0.01198
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00792	-0.00867	-0.00877
	(!A1 * !A2 * A3 * !B1 * Y)	0.01190	0.01212	0.01198

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)	0.00284	0.00286	0.00283
	(A1 * A2 * A3 * A4 * !Y)	-0.00132	-0.00132	-0.00131
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	0.00303	0.00304	0.00302
	(A1 * A2 * A3 * A4 * !Y)	-0.00270	-0.00270	-0.00268
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	0.00594	0.00602	0.00596
	(A1 * A2 * A3 * A4 * !Y)	-0.00526	-0.00533	-0.00528

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)	-0.00261	-0.00264	-0.00281
	(A1 * A2 * A3 * A4 * !Y)	0.00147	0.00148	0.00135
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	-0.00257	-0.00261	-0.00297
	(A1 * A2 * A3 * A4 * !Y)	0.00302	0.00303	0.00275
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	-0.00512	-0.00520	-0.00588
	(A1 * A2 * A3 * A4 * !Y)	0.00591	0.00594	0.00542

SKY130_FD_SC_HS__A41Ox

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00275	0.00272	0.00275	0.00269	0.00282	1.45487
sky130_fd_sc_hs__a41o_2	0.00270	0.00278	0.00285	0.00268	0.00284	2.74285
sky130_fd_sc_hs__a41o_4	0.00533	0.00519	0.00535	0.00516	0.00527	4.44622

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a41o_1	0.00000	0.34571	0.60994
sky130_fd_sc_hs__a41o_2	0.00000	0.44093	0.62139
sky130_fd_sc_hs__a41o_4	0.00000	0.88185	1.24277

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)	0.08070	0.51334	5.97691
	A2->X (RR)	0.08753	0.51404	5.89367
	A3->X (RR)	0.09285	0.50385	5.77519
	A4->X (RR)	0.09590	0.48827	5.62036
	B1->X (RR)	0.04785	0.43697	5.28603
sky130_fd_sc_hs__a41o_2	A1->X (RR)	0.08519	0.45171	5.93826
	A2->X (RR)	0.09295	0.44937	5.84347
	A3->X (RR)	0.09808	0.43594	5.71634
	A4->X (RR)	0.10069	0.41713	5.55307
	B1->X (RR)	0.04543	0.36325	5.22086
sky130_fd_sc_hs__a41o_4	A1->X (RR)	0.10102	0.43012	5.95110
	A2->X (RR)	0.11155	0.43226	5.98015
	A3->X (RR)	0.11652	0.39611	5.68993
	A4->X (RR)	0.12025	0.37885	5.52178
	B1->X (RR)	0.04283	0.30324	5.03894

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41o_1	A1->X (FF)	0.09990	0.46230	4.91944
	A2->X (FF)	0.11811	0.49079	5.03319
	A3->X (FF)	0.13053	0.51246	5.15953
	A4->X (FF)	0.14279	0.53537	5.30685
	B1->X (FF)	0.11894	0.55810	5.44485
sky130_fd_sc_hs__a41o_2	A1->X (FF)	0.11656	0.45787	4.84200
	A2->X (FF)	0.13586	0.48690	4.96148
	A3->X (FF)	0.14681	0.50634	5.07711
	A4->X (FF)	0.15749	0.52580	5.21272
	B1->X (FF)	0.13476	0.55467	5.37151
sky130_fd_sc_hs__a41o_4	A1->X (FF)	0.12278	0.41938	4.43573
	A2->X (FF)	0.14062	0.44742	4.53463
	A3->X (FF)	0.15377	0.47235	4.77276
	A4->X (FF)	0.16776	0.49572	4.92442
	B1->X (FF)	0.14182	0.53672	5.19323

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41o_1	A1	0.01831	0.02240	0.11908
	A1	0.00988	0.01401	0.11152
	A2	0.01994	0.02331	0.11666
	A2	0.00991	0.01329	0.10670
	A3	0.02151	0.02469	0.12215
	A3	0.00989	0.01307	0.11074
	A4	0.02317	0.02627	0.12823
	A4	0.00987	0.01296	0.11537
	B1	0.01242	0.02058	0.16886
	B1	0.00597	0.01415	0.16278
sky130_fd_sc_hs__a41o_2	A1	0.02185	0.02546	0.12224
	A1	0.01344	0.01709	0.11384
	A2	0.02355	0.02641	0.11944
	A2	0.01347	0.01635	0.10963
	A3	0.02519	0.02791	0.12527
	A3	0.01345	0.01617	0.11413
	A4	0.02675	0.02937	0.13089
	A4	0.01342	0.01606	0.11854
	B1	0.01524	0.02314	0.17127
	B1	0.00875	0.01675	0.16548

sky130_fd_sc_hs__a41o_4	**A1**	0.04335	0.04842	0.19911
	A1	0.02649	0.03175	0.18526
	A2	0.04652	0.05050	0.22193
	A2	0.02651	0.03060	0.20490
	A3	0.05010	0.05393	0.24141
	A3	0.02648	0.03047	0.21908
	A4	0.05327	0.05698	0.25399
	A4	0.02643	0.03018	0.22885
	B1	0.02805	0.04288	0.30570
	B1	0.01557	0.03045	0.29323

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41o_1	**A1**	0.00538	0.00858	0.10515
	A1	0.01388	0.01705	0.11254
	A2	0.00639	0.00938	0.10261
	A2	0.01641	0.01930	0.11248
	A3	0.00747	0.01025	0.10773
	A3	0.01901	0.02175	0.11915
	A4	0.00832	0.01107	0.11277
	A4	0.02141	0.02412	0.12548
	B1	0.00475	0.01401	0.14682
	B1	0.01121	0.02026	0.15249

sky130_fd_sc_hs__a41o_2	**A1**	0.01088	0.01281	0.10892
	A1	0.01939	0.02108	0.11550
	A2	0.01262	0.01371	0.10825
	A2	0.02270	0.02373	0.11614
	A3	0.01389	0.01461	0.11288
	A3	0.02555	0.02617	0.12286
	A4	0.01497	0.01530	0.11609
	A4	0.02808	0.02840	0.12893
	B1	0.00919	0.01781	0.15167
	B1	0.01569	0.02415	0.15571
sky130_fd_sc_hs__a41o_4	**A1**	0.02172	0.02327	0.19182
	A1	0.03874	0.04006	0.20685
	A2	0.02601	0.02673	0.20215
	A2	0.04599	0.04638	0.21757
	A3	0.02834	0.02847	0.21714
	A3	0.05172	0.05161	0.23752
	A4	0.03180	0.03065	0.22810
	A4	0.05810	0.05691	0.25216
	B1	0.01852	0.03397	0.28881
	B1	0.03100	0.04632	0.30117

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)**	0.00258	0.00228	0.00225
	(A2 * A3 * A4 * B1 * X)	-0.00227	-0.00266	-0.00268
	(A2 * A3 * !A4 * B1 * X)	0.00213	0.00215	0.00214
	(A2 * A3 * !A4 * B1 * X)	-0.00272	-0.00273	-0.00272
	(A2 * A3 * !A4 * !B1 * !X)	0.00073	0.00073	0.00066
	(A2 * A3 * !A4 * !B1 * !X)	-0.00300	-0.00301	-0.00316
	(A2 * !A3 * B1 * X)	0.00216	0.00217	0.00216
	(A2 * !A3 * B1 * X)	-0.00273	-0.00273	-0.00272
	(A2 * !A3 * !B1 * !X)	0.00070	0.00070	0.00066
	(A2 * !A3 * !B1 * !X)	-0.00307	-0.00306	-0.00317
	(!A2 * B1 * X)	0.00216	0.00217	0.00217
	(!A2 * B1 * X)	-0.00272	-0.00273	-0.00272
	(!A2 * !B1 * !X)	0.00070	0.00070	0.00068
	(!A2 * !B1 * !X)	-0.00313	-0.00312	-0.00317
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	0.00257	0.00226	0.00223
	(A2 * A3 * A4 * B1 * X)	-0.00227	-0.00267	-0.00269
	(A2 * A3 * !A4 * B1 * X)	0.00212	0.00213	0.00213
	(A2 * A3 * !A4 * B1 * X)	-0.00273	-0.00274	-0.00274
	(A2 * A3 * !A4 * !B1 * !X)	0.00074	0.00074	0.00067
	(A2 * A3 * !A4 * !B1 * !X)	-0.00298	-0.00299	-0.00314
	(A2 * !A3 * B1 * X)	0.00213	0.00215	0.00214
	(A2 * !A3 * B1 * X)	-0.00273	-0.00275	-0.00274
	(A2 * !A3 * !B1 * !X)	0.00073	0.00073	0.00068
	(A2 * !A3 * !B1 * !X)	-0.00304	-0.00305	-0.00315
	(!A2 * B1 * X)	0.00217	0.00218	0.00218
	(!A2 * B1 * X)	-0.00273	-0.00274	-0.00274
	(!A2 * !B1 * !X)	0.00074	0.00074	0.00072
	(!A2 * !B1 * !X)	-0.00311	-0.00311	-0.00315

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	0.00533	0.00477	0.00471
	(A2 * A3 * A4 * B1 * X)	-0.00464	-0.00544	-0.00546
	(A2 * A3 * !A4 * B1 * X)	0.00438	0.00440	0.00439
	(A2 * A3 * !A4 * B1 * X)	-0.00555	-0.00557	-0.00555
	(A2 * A3 * !A4 * !B1 * !X)	0.00161	0.00162	0.00146
	(A2 * A3 * !A4 * !B1 * !X)	-0.00605	-0.00609	-0.00642
	(A2 * !A3 * B1 * X)	0.00441	0.00442	0.00441
	(A2 * !A3 * B1 * X)	-0.00555	-0.00557	-0.00555
	(A2 * !A3 * !B1 * !X)	0.00154	0.00155	0.00145
	(A2 * !A3 * !B1 * !X)	-0.00621	-0.00625	-0.00645
	(!A2 * B1 * X)	0.00451	0.00454	0.00453
	(!A2 * B1 * X)	-0.00555	-0.00557	-0.00555
	(!A2 * !B1 * !X)	0.00161	0.00162	0.00156
	(!A2 * !B1 * !X)	-0.00634	-0.00638	-0.00648

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)**	-0.00223	-0.00225	-0.00223
	(A2 * A3 * A4 * B1 * X)	0.00267	0.00270	0.00268
	(A2 * A3 * !A4 * B1 * X)	-0.00188	-0.00212	-0.00214
	(A2 * A3 * !A4 * B1 * X)	0.00273	0.00279	0.00274
	(A2 * A3 * !A4 * !B1 * !X)	-0.00065	-0.00066	-0.00065
	(A2 * A3 * !A4 * !B1 * !X)	0.00317	0.00321	0.00318
	(A2 * !A3 * B1 * X)	-0.00194	-0.00215	-0.00216
	(A2 * !A3 * B1 * X)	0.00273	0.00276	0.00274
	(A2 * !A3 * !B1 * !X)	-0.00065	-0.00066	-0.00065
	(A2 * !A3 * !B1 * !X)	0.00317	0.00321	0.00318
	(!A2 * B1 * X)	-0.00210	-0.00217	-0.00217
	(!A2 * B1 * X)	0.00272	0.00276	0.00274
	(!A2 * !B1 * !X)	-0.00066	-0.00068	-0.00066
	(!A2 * !B1 * !X)	0.00317	0.00323	0.00318
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	-0.00221	-0.00223	-0.00221
	(A2 * A3 * A4 * B1 * X)	0.00268	0.00271	0.00269
	(A2 * A3 * !A4 * B1 * X)	-0.00187	-0.00209	-0.00213
	(A2 * A3 * !A4 * B1 * X)	0.00274	0.00278	0.00275
	(A2 * A3 * !A4 * !B1 * !X)	-0.00068	-0.00069	-0.00067
	(A2 * A3 * !A4 * !B1 * !X)	0.00316	0.00319	0.00316
	(A2 * !A3 * B1 * X)	-0.00194	-0.00213	-0.00214
	(A2 * !A3 * B1 * X)	0.00274	0.00277	0.00275
	(A2 * !A3 * !B1 * !X)	-0.00068	-0.00069	-0.00068
	(A2 * !A3 * !B1 * !X)	0.00316	0.00319	0.00316
	(!A2 * B1 * X)	-0.00209	-0.00215	-0.00217
	(!A2 * B1 * X)	0.00276	0.00277	0.00275
	(!A2 * !B1 * !X)	-0.00069	-0.00070	-0.00069
	(!A2 * !B1 * !X)	0.00316	0.00319	0.00317

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	-0.00469	-0.00470	-0.00467
	(A2 * A3 * A4 * B1 * X)	0.00546	0.00549	0.00546
	(A2 * A3 * !A4 * B1 * X)	-0.00377	-0.00440	-0.00439
	(A2 * A3 * !A4 * B1 * X)	0.00555	0.00560	0.00558
	(A2 * A3 * !A4 * !B1 * !X)	-0.00145	-0.00148	-0.00145
	(A2 * A3 * !A4 * !B1 * !X)	0.00647	0.00656	0.00650
	(A2 * !A3 * B1 * X)	-0.00390	-0.00442	-0.00441
	(A2 * !A3 * B1 * X)	0.00555	0.00562	0.00558
	(A2 * !A3 * !B1 * !X)	-0.00146	-0.00148	-0.00145
	(A2 * !A3 * !B1 * !X)	0.00647	0.00656	0.00650
	(!A2 * B1 * X)	-0.00437	-0.00454	-0.00453
	(!A2 * B1 * X)	0.00555	0.00559	0.00558
	(!A2 * !B1 * !X)	-0.00151	-0.00154	-0.00151
	(!A2 * !B1 * !X)	0.00648	0.00660	0.00650

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)**	0.00261	0.00232	0.00229
	(A1 * A3 * A4 * B1 * X)	-0.00223	-0.00265	-0.00266
	(A1 * A3 * !A4 * B1 * X)	0.00220	0.00220	0.00220
	(A1 * A3 * !A4 * B1 * X)	-0.00271	-0.00271	-0.00271
	(A1 * A3 * !A4 * !B1 * !X)	0.00090	0.00090	0.00090
	(A1 * A3 * !A4 * !B1 * !X)	-0.00271	-0.00272	-0.00271
	(A1 * !A3 * B1 * X)	0.00222	0.00224	0.00224
	(A1 * !A3 * B1 * X)	-0.00269	-0.00272	-0.00271
	(A1 * !A3 * !B1 * !X)	0.00093	0.00094	0.00094
	(A1 * !A3 * !B1 * !X)	-0.00271	-0.00272	-0.00271
	(!A1 * A3 * A4 * B1 * X)	0.00219	0.00222	0.00220
	(!A1 * A3 * A4 * B1 * X)	-0.00270	-0.00272	-0.00271
	(!A1 * A3 * A4 * !B1 * !X)	0.00220	0.00223	0.00222
	(!A1 * A3 * A4 * !B1 * !X)	-0.00271	-0.00273	-0.00273
	(!A1 * A3 * !A4 * B1 * X)	0.00125	0.00125	0.00125
	(!A1 * A3 * !A4 * B1 * X)	-0.00271	-0.00271	-0.00271
	(!A1 * A3 * !A4 * !B1 * !X)	0.00117	0.00118	0.00117
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00272	-0.00273	-0.00273
	(!A1 * !A3 * B1 * X)	0.00124	0.00125	0.00124
	(!A1 * !A3 * B1 * X)	-0.00270	-0.00271	-0.00271
	(!A1 * !A3 * !B1 * !X)	0.00113	0.00114	0.00113
	(!A1 * !A3 * !B1 * !X)	-0.00272	-0.00273	-0.00273

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	0.00265	0.00234	0.00231
	(A1 * A3 * A4 * B1 * X)	-0.00223	-0.00265	-0.00267
	(A1 * A3 * !A4 * B1 * X)	0.00222	0.00222	0.00222
	(A1 * A3 * !A4 * B1 * X)	-0.00272	-0.00273	-0.00272
	(A1 * A3 * !A4 * !B1 * !X)	0.00091	0.00093	0.00094
	(A1 * A3 * !A4 * !B1 * !X)	-0.00272	-0.00274	-0.00272
	(A1 * !A3 * B1 * X)	0.00223	0.00224	0.00224
	(A1 * !A3 * B1 * X)	-0.00271	-0.00273	-0.00272
	(A1 * !A3 * !B1 * !X)	0.00097	0.00098	0.00098
	(A1 * !A3 * !B1 * !X)	-0.00271	-0.00273	-0.00272
	(!A1 * A3 * A4 * B1 * X)	0.00224	0.00224	0.00223
	(!A1 * A3 * A4 * B1 * X)	-0.00272	-0.00272	-0.00272
	(!A1 * A3 * A4 * !B1 * !X)	0.00222	0.00223	0.00223
	(!A1 * A3 * A4 * !B1 * !X)	-0.00272	-0.00274	-0.00273
	(!A1 * A3 * !A4 * B1 * X)	0.00127	0.00128	0.00127
	(!A1 * A3 * !A4 * B1 * X)	-0.00272	-0.00273	-0.00272
	(!A1 * A3 * !A4 * !B1 * !X)	0.00119	0.00119	0.00119
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00273	-0.00273	-0.00273
	(!A1 * !A3 * B1 * X)	0.00131	0.00132	0.00132
	(!A1 * !A3 * B1 * X)	-0.00271	-0.00272	-0.00272
	(!A1 * !A3 * !B1 * !X)	0.00120	0.00120	0.00120
	(!A1 * !A3 * !B1 * !X)	-0.00273	-0.00274	-0.00274

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	0.00519	0.00465	0.00459
	(A1 * A3 * A4 * B1 * X)	-0.00457	-0.00535	-0.00537
	(A1 * A3 * !A4 * B1 * X)	0.00429	0.00430	0.00429
	(A1 * A3 * !A4 * B1 * X)	-0.00548	-0.00548	-0.00547
	(A1 * A3 * !A4 * !B1 * !X)	0.00174	0.00175	0.00178
	(A1 * A3 * !A4 * !B1 * !X)	-0.00546	-0.00547	-0.00546
	(A1 * !A3 * B1 * X)	0.00435	0.00437	0.00437
	(A1 * !A3 * B1 * X)	-0.00546	-0.00548	-0.00547
	(A1 * !A3 * !B1 * !X)	0.00178	0.00179	0.00181
	(A1 * !A3 * !B1 * !X)	-0.00546	-0.00548	-0.00546
	(!A1 * A3 * A4 * B1 * X)	0.00440	0.00443	0.00442
	(!A1 * A3 * A4 * B1 * X)	-0.00546	-0.00548	-0.00547
	(!A1 * A3 * A4 * !B1 * !X)	0.00442	0.00448	0.00445
	(!A1 * A3 * A4 * !B1 * !X)	-0.00545	-0.00550	-0.00547
	(!A1 * A3 * !A4 * B1 * X)	0.00243	0.00245	0.00244
	(!A1 * A3 * !A4 * B1 * X)	-0.00545	-0.00548	-0.00547
	(!A1 * A3 * !A4 * !B1 * !X)	0.00229	0.00232	0.00230
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00549	-0.00552	-0.00550
	(!A1 * !A3 * B1 * X)	0.00243	0.00242	0.00243
	(!A1 * !A3 * B1 * X)	-0.00548	-0.00547	-0.00548
	(!A1 * !A3 * !B1 * !X)	0.00220	0.00220	0.00219
	(!A1 * !A3 * !B1 * !X)	-0.00552	-0.00554	-0.00551

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)**	-0.00227	-0.00228	-0.00227
	(A1 * A3 * A4 * B1 * X)	0.00265	0.00268	0.00266
	(A1 * A3 * !A4 * B1 * X)	-0.00194	-0.00220	-0.00220
	(A1 * A3 * !A4 * B1 * X)	0.00271	0.00274	0.00272
	(A1 * A3 * !A4 * !B1 * !X)	-0.00088	-0.00089	-0.00089
	(A1 * A3 * !A4 * !B1 * !X)	0.00277	0.00280	0.00274
	(A1 * !A3 * B1 * X)	-0.00215	-0.00222	-0.00222
	(A1 * !A3 * B1 * X)	0.00273	0.00274	0.00272
	(A1 * !A3 * !B1 * !X)	-0.00090	-0.00091	-0.00091
	(A1 * !A3 * !B1 * !X)	0.00277	0.00281	0.00274
	(!A1 * A3 * A4 * B1 * X)	-0.00215	-0.00220	-0.00220
	(!A1 * A3 * A4 * B1 * X)	0.00273	0.00273	0.00272
	(!A1 * A3 * A4 * !B1 * !X)	-0.00196	-0.00219	-0.00220
	(!A1 * A3 * A4 * !B1 * !X)	0.00295	0.00275	0.00274
	(!A1 * A3 * !A4 * B1 * X)	-0.00125	-0.00125	-0.00125
	(!A1 * A3 * !A4 * B1 * X)	0.00271	0.00275	0.00272
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00117	-0.00118	-0.00117
	(!A1 * A3 * !A4 * !B1 * !X)	0.00289	0.00286	0.00275
	(!A1 * !A3 * B1 * X)	-0.00124	-0.00125	-0.00124
	(!A1 * !A3 * B1 * X)	0.00270	0.00275	0.00272
	(!A1 * !A3 * !B1 * !X)	-0.00113	-0.00114	-0.00113
	(!A1 * !A3 * !B1 * !X)	0.00287	0.00289	0.00277

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	-0.00229	-0.00231	-0.00229
	(A1 * A3 * A4 * B1 * X)	0.00266	0.00270	0.00267
	(A1 * A3 * !A4 * B1 * X)	-0.00195	-0.00222	-0.00222
	(A1 * A3 * !A4 * B1 * X)	0.00272	0.00275	0.00273
	(A1 * A3 * !A4 * !B1 * !X)	-0.00091	-0.00092	-0.00093
	(A1 * A3 * !A4 * !B1 * !X)	0.00279	0.00282	0.00275
	(A1 * !A3 * B1 * X)	-0.00217	-0.00224	-0.00224
	(A1 * !A3 * B1 * X)	0.00274	0.00276	0.00273
	(A1 * !A3 * !B1 * !X)	-0.00093	-0.00094	-0.00095
	(A1 * !A3 * !B1 * !X)	0.00279	0.00282	0.00275
	(!A1 * A3 * A4 * B1 * X)	-0.00216	-0.00223	-0.00223
	(!A1 * A3 * A4 * B1 * X)	0.00273	0.00274	0.00273
	(!A1 * A3 * A4 * !B1 * !X)	-0.00197	-0.00222	-0.00223
	(!A1 * A3 * A4 * !B1 * !X)	0.00295	0.00276	0.00275
	(!A1 * A3 * !A4 * B1 * X)	-0.00127	-0.00128	-0.00127
	(!A1 * A3 * !A4 * B1 * X)	0.00272	0.00276	0.00273
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00119	-0.00119	-0.00119
	(!A1 * A3 * !A4 * !B1 * !X)	0.00290	0.00287	0.00276
	(!A1 * !A3 * B1 * X)	-0.00131	-0.00132	-0.00132
	(!A1 * !A3 * B1 * X)	0.00272	0.00276	0.00273
	(!A1 * !A3 * !B1 * !X)	-0.00120	-0.00120	-0.00120
	(!A1 * !A3 * !B1 * !X)	0.00288	0.00290	0.00278

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	-0.00457	-0.00459	-0.00456
	(A1 * A3 * A4 * B1 * X)	0.00537	0.00541	0.00537
	(A1 * A3 * !A4 * B1 * X)	-0.00379	-0.00430	-0.00429
	(A1 * A3 * !A4 * B1 * X)	0.00551	0.00554	0.00550
	(A1 * A3 * !A4 * !B1 * !X)	-0.00164	-0.00167	-0.00169
	(A1 * A3 * !A4 * !B1 * !X)	0.00561	0.00569	0.00554
	(A1 * !A3 * B1 * X)	-0.00426	-0.00437	-0.00437
	(A1 * !A3 * B1 * X)	0.00551	0.00555	0.00550
	(A1 * !A3 * !B1 * !X)	-0.00169	-0.00171	-0.00174
	(A1 * !A3 * !B1 * !X)	0.00561	0.00568	0.00554
	(!A1 * A3 * A4 * B1 * X)	-0.00427	-0.00443	-0.00442
	(!A1 * A3 * A4 * B1 * X)	0.00550	0.00556	0.00550
	(!A1 * A3 * A4 * !B1 * !X)	-0.00377	-0.00447	-0.00445
	(!A1 * A3 * A4 * !B1 * !X)	0.00606	0.00553	0.00550
	(!A1 * A3 * !A4 * B1 * X)	-0.00243	-0.00245	-0.00244
	(!A1 * A3 * !A4 * B1 * X)	0.00551	0.00557	0.00551
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00229	-0.00232	-0.00230
	(!A1 * A3 * !A4 * !B1 * !X)	0.00588	0.00571	0.00553
	(!A1 * !A3 * B1 * X)	-0.00243	-0.00242	-0.00243
	(!A1 * !A3 * B1 * X)	0.00549	0.00557	0.00551
	(!A1 * !A3 * !B1 * !X)	-0.00220	-0.00220	-0.00219
	(!A1 * !A3 * !B1 * !X)	0.00576	0.00585	0.00560

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)**	0.00260	0.00228	0.00225
	(A1 * A2 * A4 * B1 * X)	-0.00227	-0.00269	-0.00271
	(A1 * A2 * !A4 * B1 * X)	0.00219	0.00220	0.00219
	(A1 * A2 * !A4 * B1 * X)	-0.00276	-0.00277	-0.00276
	(A1 * A2 * !A4 * !B1 * !X)	0.00095	0.00096	0.00096
	(A1 * A2 * !A4 * !B1 * !X)	-0.00271	-0.00273	-0.00271
	(A1 * !A2 * A4 * !B1 * !X)	0.00219	0.00220	0.00220
	(A1 * !A2 * A4 * !B1 * !X)	-0.00275	-0.00277	-0.00276
	(A1 * !A2 * !A4 * !B1 * !X)	0.00116	0.00117	0.00116
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00276	-0.00276	-0.00276
	(!A2 * A4 * B1 * X)	0.00219	0.00220	0.00220
	(!A2 * A4 * B1 * X)	-0.00275	-0.00277	-0.00276
	(!A2 * !A4 * B1 * X)	0.00125	0.00125	0.00125
	(!A2 * !A4 * B1 * X)	-0.00275	-0.00277	-0.00276
	(!A1 * A2 * A4 * B1 * X)	0.00216	0.00217	0.00216
	(!A1 * A2 * A4 * B1 * X)	-0.00277	-0.00277	-0.00276
	(!A1 * A2 * A4 * !B1 * !X)	0.00217	0.00217	0.00216
	(!A1 * A2 * A4 * !B1 * !X)	-0.00277	-0.00277	-0.00276
	(!A1 * A2 * !A4 * B1 * X)	0.00123	0.00123	0.00122
	(!A1 * A2 * !A4 * B1 * X)	-0.00276	-0.00277	-0.00276
	(!A1 * A2 * !A4 * !B1 * !X)	0.00114	0.00114	0.00114
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00277	-0.00277	-0.00276
	(!A1 * !A2 * A4 * !B1 * !X)	0.00219	0.00221	0.00220
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00275	-0.00277	-0.00276
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00122	0.00123	0.00123
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00276	-0.00277	-0.00276

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	0.00269	0.00238	0.00234
	(A1 * A2 * A4 * B1 * X)	-0.00225	-0.00267	-0.00269
	(A1 * A2 * !A4 * B1 * X)	0.00227	0.00229	0.00228
	(A1 * A2 * !A4 * B1 * X)	-0.00273	-0.00274	-0.00274
	(A1 * A2 * !A4 * !B1 * !X)	0.00100	0.00100	0.00101
	(A1 * A2 * !A4 * !B1 * !X)	-0.00269	-0.00270	-0.00269
	(A1 * !A2 * A4 * !B1 * !X)	0.00228	0.00230	0.00229
	(A1 * !A2 * A4 * !B1 * !X)	-0.00273	-0.00275	-0.00274
	(A1 * !A2 * !A4 * !B1 * !X)	0.00118	0.00118	0.00118
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00274	-0.00273	-0.00274
	(!A2 * A4 * B1 * X)	0.00228	0.00230	0.00229
	(!A2 * A4 * B1 * X)	-0.00273	-0.00275	-0.00274
	(!A2 * !A4 * B1 * X)	0.00127	0.00127	0.00126
	(!A2 * !A4 * B1 * X)	-0.00274	-0.00275	-0.00274
	(!A1 * A2 * A4 * B1 * X)	0.00226	0.00227	0.00225
	(!A1 * A2 * A4 * B1 * X)	-0.00274	-0.00275	-0.00274
	(!A1 * A2 * A4 * !B1 * !X)	0.00226	0.00227	0.00226
	(!A1 * A2 * A4 * !B1 * !X)	-0.00274	-0.00275	-0.00274
	(!A1 * A2 * !A4 * B1 * X)	0.00129	0.00130	0.00129
	(!A1 * A2 * !A4 * B1 * X)	-0.00274	-0.00275	-0.00274
	(!A1 * A2 * !A4 * !B1 * !X)	0.00119	0.00120	0.00120
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00273	-0.00274	-0.00274
	(!A1 * !A2 * A4 * !B1 * !X)	0.00228	0.00230	0.00229
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00273	-0.00275	-0.00274
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00125	0.00124	0.00124
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00274	-0.00275	-0.00274

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	0.00532	0.00475	0.00468
	(A1 * A2 * A4 * B1 * X)	-0.00461	-0.00540	-0.00543
	(A1 * A2 * !A4 * B1 * X)	0.00446	0.00449	0.00448
	(A1 * A2 * !A4 * B1 * X)	-0.00551	-0.00555	-0.00554
	(A1 * A2 * !A4 * !B1 * !X)	0.00192	0.00193	0.00190
	(A1 * A2 * !A4 * !B1 * !X)	-0.00548	-0.00550	-0.00544
	(A1 * !A2 * A4 * !B1 * !X)	0.00446	0.00444	0.00446
	(A1 * !A2 * A4 * !B1 * !X)	-0.00555	-0.00553	-0.00554
	(A1 * !A2 * !A4 * !B1 * !X)	0.00229	0.00229	0.00228
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00556	-0.00556	-0.00555
	(!A2 * A4 * B1 * X)	0.00448	0.00453	0.00451
	(!A2 * A4 * B1 * X)	-0.00552	-0.00555	-0.00554
	(!A2 * !A4 * B1 * X)	0.00246	0.00248	0.00247
	(!A2 * !A4 * B1 * X)	-0.00554	-0.00556	-0.00555
	(!A1 * A2 * A4 * B1 * X)	0.00444	0.00447	0.00445
	(!A1 * A2 * A4 * B1 * X)	-0.00554	-0.00555	-0.00554
	(!A1 * A2 * A4 * !B1 * !X)	0.00445	0.00449	0.00446
	(!A1 * A2 * A4 * !B1 * !X)	-0.00554	-0.00556	-0.00554
	(!A1 * A2 * !A4 * B1 * X)	0.00249	0.00249	0.00248
	(!A1 * A2 * !A4 * B1 * X)	-0.00556	-0.00556	-0.00555
	(!A1 * A2 * !A4 * !B1 * !X)	0.00230	0.00231	0.00229
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00558	-0.00560	-0.00557
	(!A1 * !A2 * A4 * !B1 * !X)	0.00445	0.00447	0.00445
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00555	-0.00555	-0.00554
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00240	0.00241	0.00239
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00556	-0.00557	-0.00555

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)**	-0.00223	-0.00224	-0.00223
	(A1 * A2 * A4 * B1 * X)	0.00270	0.00274	0.00271
	(A1 * A2 * !A4 * B1 * X)	-0.00210	-0.00219	-0.00218
	(A1 * A2 * !A4 * B1 * X)	0.00277	0.00278	0.00278
	(A1 * A2 * !A4 * !B1 * !X)	-0.00089	-0.00091	-0.00091
	(A1 * A2 * !A4 * !B1 * !X)	0.00280	0.00284	0.00279
	(A1 * !A2 * A4 * !B1 * !X)	-0.00205	-0.00219	-0.00218
	(A1 * !A2 * A4 * !B1 * !X)	0.00277	0.00279	0.00277
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00116	-0.00117	-0.00116
	(A1 * !A2 * !A4 * !B1 * !X)	0.00286	0.00290	0.00280
	(!A2 * A4 * B1 * X)	-0.00209	-0.00218	-0.00218
	(!A2 * A4 * B1 * X)	0.00276	0.00280	0.00278
	(!A2 * !A4 * B1 * X)	-0.00125	-0.00125	-0.00125
	(!A2 * !A4 * B1 * X)	0.00276	0.00281	0.00278
	(!A1 * A2 * A4 * B1 * X)	-0.00193	-0.00212	-0.00216
	(!A1 * A2 * A4 * B1 * X)	0.00277	0.00281	0.00278
	(!A1 * A2 * A4 * !B1 * !X)	-0.00191	-0.00213	-0.00216
	(!A1 * A2 * A4 * !B1 * !X)	0.00279	0.00280	0.00277
	(!A1 * A2 * !A4 * B1 * X)	-0.00123	-0.00123	-0.00122
	(!A1 * A2 * !A4 * B1 * X)	0.00276	0.00280	0.00278
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00114	-0.00114	-0.00114
	(!A1 * A2 * !A4 * !B1 * !X)	0.00279	0.00285	0.00278
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00208	-0.00219	-0.00218
	(!A1 * !A2 * A4 * !B1 * !X)	0.00276	0.00279	0.00277
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00122	-0.00123	-0.00123
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00277	0.00280	0.00277

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	-0.00233	-0.00234	-0.00232
	(A1 * A2 * A4 * B1 * X)	0.00268	0.00271	0.00269
	(A1 * A2 * !A4 * B1 * X)	-0.00221	-0.00229	-0.00227
	(A1 * A2 * !A4 * B1 * X)	0.00276	0.00275	0.00275
	(A1 * A2 * !A4 * !B1 * !X)	-0.00096	-0.00096	-0.00096
	(A1 * A2 * !A4 * !B1 * !X)	0.00281	0.00283	0.00277
	(A1 * !A2 * A4 * !B1 * !X)	-0.00214	-0.00228	-0.00227
	(A1 * !A2 * A4 * !B1 * !X)	0.00274	0.00277	0.00275
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00118	-0.00118	-0.00118
	(A1 * !A2 * !A4 * !B1 * !X)	0.00285	0.00287	0.00279
	(!A2 * A4 * B1 * X)	-0.00219	-0.00228	-0.00227
	(!A2 * A4 * B1 * X)	0.00274	0.00278	0.00275
	(!A2 * !A4 * B1 * X)	-0.00127	-0.00127	-0.00126
	(!A2 * !A4 * B1 * X)	0.00274	0.00278	0.00275
	(!A1 * A2 * A4 * B1 * X)	-0.00203	-0.00224	-0.00225
	(!A1 * A2 * A4 * B1 * X)	0.00274	0.00277	0.00275
	(!A1 * A2 * A4 * !B1 * !X)	-0.00201	-0.00222	-0.00225
	(!A1 * A2 * A4 * !B1 * !X)	0.00277	0.00278	0.00275
	(!A1 * A2 * !A4 * B1 * X)	-0.00129	-0.00130	-0.00129
	(!A1 * A2 * !A4 * B1 * X)	0.00274	0.00278	0.00275
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00119	-0.00120	-0.00120
	(!A1 * A2 * !A4 * !B1 * !X)	0.00278	0.00284	0.00276
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00217	-0.00228	-0.00227
	(!A1 * !A2 * A4 * !B1 * !X)	0.00274	0.00277	0.00275
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00125	-0.00124	-0.00124
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00275	0.00278	0.00275

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	-0.00466	-0.00464	-0.00464
	(A1 * A2 * A4 * B1 * X)	0.00544	0.00540	0.00543
	(A1 * A2 * !A4 * B1 * X)	-0.00433	-0.00449	-0.00448
	(A1 * A2 * !A4 * B1 * X)	0.00558	0.00560	0.00557
	(A1 * A2 * !A4 * !B1 * !X)	-0.00174	-0.00176	-0.00177
	(A1 * A2 * !A4 * !B1 * !X)	0.00570	0.00576	0.00562
	(A1 * !A2 * A4 * !B1 * !X)	-0.00420	-0.00444	-0.00446
	(A1 * !A2 * A4 * !B1 * !X)	0.00556	0.00559	0.00557
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00229	-0.00229	-0.00228
	(A1 * !A2 * !A4 * !B1 * !X)	0.00586	0.00591	0.00567
	(!A2 * A4 * B1 * X)	-0.00433	-0.00453	-0.00450
	(!A2 * A4 * B1 * X)	0.00555	0.00559	0.00557
	(!A2 * !A4 * B1 * X)	-0.00246	-0.00248	-0.00247
	(!A2 * !A4 * B1 * X)	0.00556	0.00564	0.00558
	(!A1 * A2 * A4 * B1 * X)	-0.00398	-0.00447	-0.00445
	(!A1 * A2 * A4 * B1 * X)	0.00558	0.00560	0.00557
	(!A1 * A2 * A4 * !B1 * !X)	-0.00393	-0.00441	-0.00446
	(!A1 * A2 * A4 * !B1 * !X)	0.00566	0.00557	0.00557
	(!A1 * A2 * !A4 * B1 * X)	-0.00249	-0.00249	-0.00248
	(!A1 * A2 * !A4 * B1 * X)	0.00559	0.00564	0.00558
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00230	-0.00231	-0.00229
	(!A1 * A2 * !A4 * !B1 * !X)	0.00565	0.00574	0.00560
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00427	-0.00447	-0.00445
	(!A1 * !A2 * A4 * !B1 * !X)	0.00555	0.00559	0.00557
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00240	-0.00241	-0.00239
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00557	0.00564	0.00558

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)**	0.00273	0.00242	0.00239
	(A1 * A2 * A3 * B1 * X)	-0.00228	-0.00268	-0.00271
	(A1 * A2 * !A3 * !B1 * !X)	0.00234	0.00234	0.00233
	(A1 * A2 * !A3 * !B1 * !X)	-0.00274	-0.00276	-0.00275
	(A1 * !A2 * A3 * !B1 * !X)	0.00228	0.00231	0.00229
	(A1 * !A2 * A3 * !B1 * !X)	-0.00274	-0.00276	-0.00275
	(A1 * !A2 * !A3 * !B1 * !X)	0.00231	0.00232	0.00231
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00274	-0.00276	-0.00275
	(!A3 * B1 * X)	0.00230	0.00232	0.00231
	(!A3 * B1 * X)	-0.00274	-0.00276	-0.00275
	(!A2 * A3 * B1 * X)	0.00228	0.00230	0.00229
	(!A2 * A3 * B1 * X)	-0.00274	-0.00275	-0.00275
	(!A1 * A2 * A3 * B1 * X)	0.00225	0.00225	0.00224
	(!A1 * A2 * A3 * B1 * X)	-0.00275	-0.00276	-0.00275
	(!A1 * A2 * A3 * !B1 * !X)	0.00231	0.00231	0.00230
	(!A1 * A2 * A3 * !B1 * !X)	-0.00275	-0.00276	-0.00275
	(!A1 * !A3 * !B1 * !X)	0.00233	0.00233	0.00232
	(!A1 * !A3 * !B1 * !X)	-0.00274	-0.00276	-0.00275
	(!A1 * !A2 * A3 * !B1 * !X)	0.00226	0.00228	0.00227
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00274	-0.00276	-0.00275

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	0.00272	0.00241	0.00237
	(A1 * A2 * A3 * B1 * X)	-0.00228	-0.00268	-0.00271
	(A1 * A2 * !A3 * !B1 * !X)	0.00230	0.00232	0.00231
	(A1 * A2 * !A3 * !B1 * !X)	-0.00274	-0.00276	-0.00275
	(A1 * !A2 * A3 * !B1 * !X)	0.00226	0.00228	0.00227
	(A1 * !A2 * A3 * !B1 * !X)	-0.00274	-0.00276	-0.00275
	(A1 * !A2 * !A3 * !B1 * !X)	0.00230	0.00232	0.00231
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00274	-0.00276	-0.00275
	(!A3 * B1 * X)	0.00231	0.00232	0.00231
	(!A3 * B1 * X)	-0.00274	-0.00276	-0.00275
	(!A2 * A3 * B1 * X)	0.00226	0.00227	0.00227
	(!A2 * A3 * B1 * X)	-0.00274	-0.00275	-0.00275
	(!A1 * A2 * A3 * B1 * X)	0.00224	0.00225	0.00224
	(!A1 * A2 * A3 * B1 * X)	-0.00275	-0.00276	-0.00275
	(!A1 * A2 * A3 * !B1 * !X)	0.00225	0.00226	0.00225
	(!A1 * A2 * A3 * !B1 * !X)	-0.00275	-0.00276	-0.00275
	(!A1 * !A3 * !B1 * !X)	0.00231	0.00234	0.00232
	(!A1 * !A3 * !B1 * !X)	-0.00274	-0.00276	-0.00275
	(!A1 * !A2 * A3 * !B1 * !X)	0.00223	0.00226	0.00224
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00274	-0.00276	-0.00275

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A3 * B1 * X)**	0.00516	0.00469	0.00463
	(A1 * A2 * A3 * B1 * X)	-0.00461	-0.00530	-0.00533
	(A1 * A2 * !A3 * !B1 * !X)	0.00444	0.00446	0.00444
	(A1 * A2 * !A3 * !B1 * !X)	-0.00542	-0.00542	-0.00541
	(A1 * !A2 * A3 * !B1 * !X)	0.00438	0.00438	0.00437
	(A1 * !A2 * A3 * !B1 * !X)	-0.00542	-0.00542	-0.00541
	(A1 * !A2 * !A3 * !B1 * !X)	0.00443	0.00445	0.00444
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00542	-0.00543	-0.00541
	(!A3 * B1 * X)	0.00444	0.00447	0.00444
	(!A3 * B1 * X)	-0.00542	-0.00544	-0.00541
	(!A2 * A3 * B1 * X)	0.00437	0.00439	0.00436
	(!A2 * A3 * B1 * X)	-0.00542	-0.00543	-0.00541
	(!A1 * A2 * A3 * B1 * X)	0.00434	0.00435	0.00433
	(!A1 * A2 * A3 * B1 * X)	-0.00542	-0.00543	-0.00541
	(!A1 * A2 * A3 * !B1 * !X)	0.00433	0.00436	0.00434
	(!A1 * A2 * A3 * !B1 * !X)	-0.00541	-0.00543	-0.00541
	(!A1 * !A3 * !B1 * !X)	0.00443	0.00445	0.00444
	(!A1 * !A3 * !B1 * !X)	-0.00542	-0.00543	-0.00541
	(!A1 * !A2 * A3 * !B1 * !X)	0.00438	0.00438	0.00437
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00541	-0.00543	-0.00541

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)**	-0.00237	-0.00239	-0.00237
	(A1 * A2 * A3 * B1 * X)	0.00269	0.00273	0.00271
	(A1 * A2 * !A3 * !B1 * !X)	-0.00222	-0.00233	-0.00232
	(A1 * A2 * !A3 * !B1 * !X)	0.00274	0.00277	0.00276
	(A1 * !A2 * A3 * !B1 * !X)	-0.00214	-0.00229	-0.00229
	(A1 * !A2 * A3 * !B1 * !X)	0.00275	0.00279	0.00276
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00223	-0.00232	-0.00231
	(A1 * !A2 * !A3 * !B1 * !X)	0.00274	0.00277	0.00276
	(!A3 * B1 * X)	-0.00226	-0.00231	-0.00231
	(!A3 * B1 * X)	0.00277	0.00278	0.00277
	(!A2 * A3 * B1 * X)	-0.00214	-0.00228	-0.00229
	(!A2 * A3 * B1 * X)	0.00276	0.00278	0.00277
	(!A1 * A2 * A3 * B1 * X)	-0.00209	-0.00225	-0.00224
	(!A1 * A2 * A3 * B1 * X)	0.00275	0.00278	0.00277
	(!A1 * A2 * A3 * !B1 * !X)	-0.00209	-0.00228	-0.00229
	(!A1 * A2 * A3 * !B1 * !X)	0.00275	0.00277	0.00276
	(!A1 * !A3 * !B1 * !X)	-0.00223	-0.00233	-0.00232
	(!A1 * !A3 * !B1 * !X)	0.00274	0.00277	0.00276
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00215	-0.00228	-0.00227
	(!A1 * !A2 * A3 * !B1 * !X)	0.00275	0.00279	0.00276

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00235	-0.00237	-0.00235
	(A1 * A2 * A3 * B1 * X)	0.00269	0.00273	0.00271
	(A1 * A2 * !A3 * !B1 * !X)	-0.00219	-0.00231	-0.00230
	(A1 * A2 * !A3 * !B1 * !X)	0.00275	0.00277	0.00276
	(A1 * !A2 * A3 * !B1 * !X)	-0.00212	-0.00227	-0.00227
	(A1 * !A2 * A3 * !B1 * !X)	0.00276	0.00279	0.00277
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00221	-0.00230	-0.00230
	(A1 * !A2 * !A3 * !B1 * !X)	0.00275	0.00278	0.00277
	(!A3 * B1 * X)	-0.00222	-0.00229	-0.00230
	(!A3 * B1 * X)	0.00275	0.00278	0.00277
	(!A2 * A3 * B1 * X)	-0.00212	-0.00226	-0.00227
	(!A2 * A3 * B1 * X)	0.00276	0.00278	0.00277
	(!A1 * A2 * A3 * B1 * X)	-0.00207	-0.00225	-0.00224
	(!A1 * A2 * A3 * B1 * X)	0.00276	0.00278	0.00277
	(!A1 * A2 * A3 * !B1 * !X)	-0.00207	-0.00226	-0.00225
	(!A1 * A2 * A3 * !B1 * !X)	0.00275	0.00278	0.00277
	(!A1 * !A3 * !B1 * !X)	-0.00221	-0.00230	-0.00230
	(!A1 * !A3 * !B1 * !X)	0.00275	0.00278	0.00277
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00212	-0.00226	-0.00224
	(!A1 * !A2 * A3 * !B1 * !X)	0.00276	0.00279	0.00277

sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * B1 * X)	-0.00461	-0.00462	-0.00459
	(A1 * A2 * A3 * B1 * X)	0.00533	0.00537	0.00533
	(A1 * A2 * !A3 * !B1 * !X)	-0.00421	-0.00446	-0.00444
	(A1 * A2 * !A3 * !B1 * !X)	0.00542	0.00547	0.00544
	(A1 * !A2 * A3 * !B1 * !X)	-0.00401	-0.00434	-0.00437
	(A1 * !A2 * A3 * !B1 * !X)	0.00542	0.00550	0.00544
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00425	-0.00445	-0.00444
	(A1 * !A2 * !A3 * !B1 * !X)	0.00542	0.00547	0.00544
	(!A3 * B1 * X)	-0.00429	-0.00447	-0.00444
	(!A3 * B1 * X)	0.00542	0.00549	0.00544
	(!A2 * A3 * B1 * X)	-0.00402	-0.00439	-0.00436
	(!A2 * A3 * B1 * X)	0.00542	0.00548	0.00544
	(!A1 * A2 * A3 * B1 * X)	-0.00394	-0.00435	-0.00433
	(!A1 * A2 * A3 * B1 * X)	0.00542	0.00548	0.00544
	(!A1 * A2 * A3 * !B1 * !X)	-0.00394	-0.00431	-0.00434
	(!A1 * A2 * A3 * !B1 * !X)	0.00542	0.00546	0.00544
	(!A1 * !A3 * !B1 * !X)	-0.00425	-0.00445	-0.00444
	(!A1 * !A3 * !B1 * !X)	0.00542	0.00547	0.00544
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00401	-0.00434	-0.00437
	(!A1 * !A2 * A3 * !B1 * !X)	0.00541	0.00551	0.00544

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)	0.00269	0.00270	0.00268
	(A1 * A2 * A3 * A4 * X)	-0.00125	-0.00125	-0.00123
sky130_fd_sc_hs__a41o_2	(A1 * A2 * A3 * A4 * X)	0.00272	0.00273	0.00271
	(A1 * A2 * A3 * A4 * X)	-0.00128	-0.00127	-0.00126
sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * A4 * X)	0.00508	0.00519	0.00510
	(A1 * A2 * A3 * A4 * X)	-0.00257	-0.00263	-0.00258

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)	-0.00246	-0.00248	-0.00265
	(A1 * A2 * A3 * A4 * X)	0.00139	0.00140	0.00127
sky130_fd_sc_hs__a41o_2	(A1 * A2 * A3 * A4 * X)	-0.00250	-0.00251	-0.00268
	(A1 * A2 * A3 * A4 * X)	0.00143	0.00142	0.00129
sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * A4 * X)	-0.00465	-0.00468	-0.00505
	(A1 * A2 * A3 * A4 * X)	0.00292	0.00293	0.00265

SKY130_FD_SC_HS__AND2Bx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00262	0.00249	1.46720
sky130_fd_sc_hs__and2b_2	0.00237	0.00289	2.38381
sky130_fd_sc_hs__and2b_4	0.00265	0.00521	5.24042

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2b_1	0.00000	1.30656	2.31865
sky130_fd_sc_hs__and2b_2	0.00000	1.11400	1.54215
sky130_fd_sc_hs__and2b_4	0.00000	1.99444	4.66337

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)	0.08840	0.63886	8.14903
	B->X (RR)	0.05207	0.43273	5.67209
sky130_fd_sc_hs__and2b_2	A_N->X (FR)	0.09770	0.57725	7.97116
	B->X (RR)	0.05547	0.36230	5.21169
sky130_fd_sc_hs__and2b_4	A_N->X (FR)	0.09738	0.50907	8.14308
	B->X (RR)	0.05636	0.29790	5.61576

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)	0.07614	0.26773	2.18814
	B->X (FF)	0.05818	0.43542	4.94094
sky130_fd_sc_hs__and2b_2	A_N->X (RF)	0.08527	0.22752	1.72561
	B->X (FF)	0.06633	0.41111	4.54840
sky130_fd_sc_hs__and2b_4	A_N->X (RF)	0.08425	0.20601	1.98055
	B->X (FF)	0.06774	0.39260	4.99225

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	0.00914	0.01820	0.16913
	A_N	0.01459	0.02367	0.17480
	B	0.01168	0.01736	0.13514
	B	0.00621	0.01191	0.12996
sky130_fd_sc_hs__and2b_2	A_N	0.01443	0.02330	0.17387
	A_N	0.01933	0.02823	0.17957
	B	0.01653	0.02126	0.11297
	B	0.01011	0.01490	0.10655
sky130_fd_sc_hs__and2b_4	A_N	0.02734	0.03817	0.21558
	A_N	0.03257	0.04358	0.22162
	B	0.03160	0.04402	0.29811
	B	0.02031	0.03291	0.28847

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	A_N	0.01611	0.02372	0.17242
	A_N	0.01068	0.01824	0.16690
	B	0.00522	0.01410	0.13168
	B	0.01065	0.01936	0.13711
sky130_fd_sc_hs__and2b_2	A_N	0.02042	0.02734	0.17177
	A_N	0.01551	0.02243	0.16640
	B	0.00920	0.01689	0.14275
	B	0.01558	0.02313	0.14623
sky130_fd_sc_hs__and2b_4	A_N	0.03249	0.04142	0.22014
	A_N	0.02724	0.03609	0.21341
	B	0.01892	0.03509	0.30146
	B	0.03019	0.04619	0.30836

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	0.00912	0.01694	0.15694
	(!B * !X)	0.00308	0.01088	0.15092
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00885	0.01628	0.15353
	(!B * !X)	0.00321	0.01062	0.14789
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.01112	0.01962	0.17833
	(!B * !X)	0.00467	0.01316	0.17187

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	-0.00016	0.00868	0.14892
	(!B * !X)	0.00590	0.01474	0.15498
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00023	0.00877	0.14594
	(!B * !X)	0.00589	0.01444	0.15160
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.00059	0.01013	0.16836
	(!B * !X)	0.00707	0.01661	0.17483

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	0.00207	0.00208	0.00208
	(A_N * !X)	-0.00257	-0.00258	-0.00258
sky130_fd_sc_hs__and2b_2	(A_N * !X)	0.00253	0.00254	0.00253
	(A_N * !X)	-0.00292	-0.00293	-0.00292
sky130_fd_sc_hs__and2b_4	(A_N * !X)	0.00443	0.00445	0.00443
	(A_N * !X)	-0.00521	-0.00522	-0.00521

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	-0.00192	-0.00205	-0.00206
	(A_N * !X)	0.00271	0.00265	0.00261
sky130_fd_sc_hs__and2b_2	(A_N * !X)	-0.00239	-0.00251	-0.00251
	(A_N * !X)	0.00307	0.00297	0.00296
sky130_fd_sc_hs__and2b_4	(A_N * !X)	-0.00418	-0.00442	-0.00441
	(A_N * !X)	0.00541	0.00529	0.00524

SKY130_FD_SC_HS__AND2x

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00255	0.00249	1.41424
sky130_fd_sc_hs__and2_2	0.00277	0.00305	2.65624
sky130_fd_sc_hs__and2_4	0.00452	0.00501	5.33272

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2_1	0.00000	0.72816	2.31223
sky130_fd_sc_hs__and2_2	0.00000	0.53559	0.97952
sky130_fd_sc_hs__and2_4	0.00000	1.74726	4.64734

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)	0.04837	0.44533	5.86470
	B->X (RR)	0.05226	0.43612	5.59121
sky130_fd_sc_hs__and2_2	A->X (RR)	0.05033	0.37148	5.69005
	B->X (RR)	0.05448	0.35938	5.41346
sky130_fd_sc_hs__and2_4	A->X (RR)	0.04994	0.30478	5.83498
	B->X (RR)	0.05618	0.30065	5.68194

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and2_1	A->X (FF)	0.05305	0.41380	4.71201
	B->X (FF)	0.06009	0.43536	4.85588
sky130_fd_sc_hs__and2_2	A->X (FF)	0.05698	0.39233	4.63060
	B->X (FF)	0.06484	0.41460	4.78842
sky130_fd_sc_hs__and2_4	A->X (FF)	0.06222	0.37651	4.91673
	B->X (FF)	0.06915	0.39230	4.98975

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.01077	0.01832	0.15865
	A	0.00485	0.01243	0.15291
	B	0.01187	0.01696	0.12429
	B	0.00485	0.00995	0.11773
sky130_fd_sc_hs__and2_2	A	0.01500	0.02226	0.16923
	A	0.00852	0.01588	0.16336
	B	0.01693	0.02203	0.13253
	B	0.00863	0.01380	0.12496
sky130_fd_sc_hs__and2_4	A	0.02804	0.04298	0.32722
	A	0.01778	0.03291	0.31790
	B	0.03167	0.04449	0.30215
	B	0.01763	0.03063	0.28922

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.00412	0.01283	0.13031
	A	0.01005	0.01858	0.13558
	B	0.00515	0.01338	0.12594
	B	0.01210	0.02029	0.13282
sky130_fd_sc_hs__and2_2	A	0.00877	0.01764	0.14108
	A	0.01524	0.02403	0.14753
	B	0.00927	0.01744	0.13921
	B	0.01751	0.02566	0.14554
sky130_fd_sc_hs__and2_4	A	0.01760	0.03417	0.30411
	A	0.02789	0.04430	0.31125
	B	0.01849	0.03550	0.30547
	B	0.03241	0.04926	0.31873

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	0.00110	0.00109	0.00107
	(!B * !X)	-0.00271	-0.00272	-0.00276
sky130_fd_sc_hs__and2_2	(!B * !X)	0.00078	0.00077	0.00076
	(!B * !X)	-0.00319	-0.00319	-0.00323
sky130_fd_sc_hs__and2_4	(!B * !X)	0.00116	0.00116	0.00111
	(!B * !X)	-0.00528	-0.00529	-0.00537

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	-0.00107	-0.00108	-0.00106
	(!B * !X)	0.00276	0.00281	0.00277
sky130_fd_sc_hs__and2_2	(!B * !X)	-0.00074	-0.00075	-0.00074
	(!B * !X)	0.00323	0.00327	0.00324
sky130_fd_sc_hs__and2_4	(!B * !X)	-0.00107	-0.00109	-0.00108
	(!B * !X)	0.00536	0.00544	0.00539

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	0.00184	0.00186	0.00185
	(!A * !X)	-0.00260	-0.00261	-0.00260
sky130_fd_sc_hs__and2_2	(!A * !X)	0.00215	0.00215	0.00216
	(!A * !X)	-0.00314	-0.00314	-0.00314
sky130_fd_sc_hs__and2_4	(!A * !X)	0.00428	0.00431	0.00429
	(!A * !X)	-0.00485	-0.00486	-0.00485

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	-0.00172	-0.00185	-0.00185
	(!A * !X)	0.00272	0.00263	0.00262
sky130_fd_sc_hs__and2_2	(!A * !X)	-0.00198	-0.00214	-0.00215
	(!A * !X)	0.00326	0.00320	0.00315
sky130_fd_sc_hs__and2_4	(!A * !X)	-0.00403	-0.00431	-0.00429
	(!A * !X)	0.00507	0.00492	0.00488

SKY130_FD_SC_HS__AND3Bx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00231	0.00244	0.00244	1.41342
sky130_fd_sc_hs__and3b_2	0.00239	0.00292	0.00281	2.38624
sky130_fd_sc_hs__and3b_4	0.00268	0.00502	0.00516	5.24190

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__and3b_1	0.00000	1.18328	3.46899
sky130_fd_sc_hs__and3b_2	0.00000	1.09766	1.54215
sky130_fd_sc_hs__and3b_4	0.00000	1.28851	2.93171

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)	0.09837	0.65527	8.13834
	B->X (RR)	0.06618	0.47765	5.95849
	C->X (RR)	0.06978	0.46115	5.70179
sky130_fd_sc_hs__and3b_2	A_N->X (FR)	0.10934	0.59094	7.94318
	B->X (RR)	0.07144	0.41247	5.72354
	C->X (RR)	0.07538	0.39072	5.32348
sky130_fd_sc_hs__and3b_4	A_N->X (FR)	0.12187	0.54716	8.24699
	B->X (RR)	0.08455	0.37310	6.25182
	C->X (RR)	0.08784	0.33837	5.92097

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)	0.07977	0.26093	2.00490
	B->X (FF)	0.06610	0.44160	4.75494
	C->X (FF)	0.06943	0.45302	4.86638
sky130_fd_sc_hs__and3b_2	A_N->X (RF)	0.08429	0.22129	1.55268
	B->X (FF)	0.06818	0.40673	4.30337
	C->X (FF)	0.07640	0.43098	4.49754
sky130_fd_sc_hs__and3b_4	A_N->X (RF)	0.08280	0.20343	1.92186
	B->X (FF)	0.06546	0.37436	4.59787
	C->X (FF)	0.06919	0.39178	4.86113

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	0.01130	0.02043	0.17143
	A_N	0.01582	0.02499	0.17616
	B	0.01317	0.01890	0.14906
	B	0.00759	0.01334	0.14428
	C	0.01459	0.01902	0.12628
	C	0.00776	0.01220	0.11973
sky130_fd_sc_hs__and3b_2	A_N	0.01647	0.02521	0.17230
	A_N	0.02121	0.02994	0.17796
	B	0.01875	0.02407	0.16020
	B	0.01222	0.01754	0.15417
	C	0.02039	0.02392	0.11243
	C	0.01249	0.01607	0.10518
sky130_fd_sc_hs__and3b_4	A_N	0.03092	0.04059	0.21653
	A_N	0.03559	0.04525	0.22188
	B	0.03540	0.04449	0.29583
	B	0.02381	0.03295	0.28689
	C	0.03856	0.04764	0.30537
	C	0.02392	0.03311	0.29073

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	A_N	0.01514	0.02331	0.17465
	A_N	0.01062	0.01876	0.16964
	B	0.00554	0.01366	0.13402
	B	0.01111	0.01900	0.13953
	C	0.00595	0.01379	0.13636
	C	0.01267	0.02044	0.14205
sky130_fd_sc_hs__and3b_2	A_N	0.02006	0.02767	0.17494
	A_N	0.01532	0.02288	0.17003
	B	0.00958	0.01738	0.14362
	B	0.01611	0.02388	0.14877
	C	0.01025	0.01700	0.13618
	C	0.01805	0.02456	0.14331
sky130_fd_sc_hs__and3b_4	A_N	0.03391	0.04268	0.21892
	A_N	0.02924	0.03794	0.21255
	B	0.02054	0.03465	0.27449
	B	0.03212	0.04606	0.28601
	C	0.02150	0.03603	0.30424
	C	0.03593	0.05041	0.31450

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)	0.00789	0.01589	0.15688
	(B * !C * !X)	0.00245	0.01044	0.15144
	(!B * !X)	0.00787	0.01586	0.15684
	(!B * !X)	0.00246	0.01044	0.15142
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00859	0.01614	0.15375
	(B * !C * !X)	0.00294	0.01048	0.14811
	(!B * !X)	0.00857	0.01611	0.15373
	(!B * !X)	0.00294	0.01048	0.14811
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.01189	0.02029	0.17881
	(B * !C * !X)	0.00563	0.01402	0.17256
	(!B * !X)	0.01183	0.02023	0.17875
	(!B * !X)	0.00563	0.01401	0.17255

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)	-0.00007	0.00893	0.14978
	(B * !C * !X)	0.00544	0.01448	0.15530
	(!B * !X)	-0.00008	0.00893	0.14979
	(!B * !X)	0.00533	0.01437	0.15521
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00011	0.00870	0.14619
	(B * !C * !X)	0.00586	0.01447	0.15191
	(!B * !X)	0.00009	0.00870	0.14621
	(!B * !X)	0.00573	0.01435	0.15182
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.00041	0.00975	0.16774
	(B * !C * !X)	0.00688	0.01625	0.17418
	(!B * !X)	0.00047	0.00981	0.16784
	(!B * !X)	0.00668	0.01602	0.17406

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)	0.00208	0.00209	0.00209
	(A_N * C * !X)	-0.00239	-0.00239	-0.00239
	(A_N * !C * !X)	0.00126	0.00125	0.00125
	(A_N * !C * !X)	-0.00241	-0.00241	-0.00240
	(!A_N * !C * !X)	0.00074	0.00074	0.00074
	(!A_N * !C * !X)	-0.00272	-0.00272	-0.00274
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	0.00257	0.00259	0.00258
	(A_N * C * !X)	-0.00283	-0.00284	-0.00284
	(A_N * !C * !X)	0.00157	0.00158	0.00158
	(A_N * !C * !X)	-0.00283	-0.00284	-0.00284
	(!A_N * !C * !X)	0.00100	0.00100	0.00099
	(!A_N * !C * !X)	-0.00321	-0.00321	-0.00322
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	0.00404	0.00407	0.00406
	(A_N * C * !X)	-0.00543	-0.00546	-0.00544
	(A_N * !C * !X)	0.00236	0.00238	0.00237
	(A_N * !C * !X)	-0.00550	-0.00551	-0.00550
	(!A_N * !C * !X)	0.00162	0.00161	0.00163
	(!A_N * !C * !X)	-0.00582	-0.00582	-0.00583

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)	-0.00190	-0.00207	-0.00206
	(A_N * C * !X)	0.00256	0.00244	0.00242
	(A_N * !C * !X)	-0.00126	-0.00125	-0.00125
	(A_N * !C * !X)	0.00254	0.00256	0.00246
	(!A_N * !C * !X)	-0.00070	-0.00071	-0.00071
	(!A_N * !C * !X)	0.00277	0.00281	0.00276
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	-0.00236	-0.00255	-0.00255
	(A_N * C * !X)	0.00303	0.00290	0.00287
	(A_N * !C * !X)	-0.00157	-0.00158	-0.00158
	(A_N * !C * !X)	0.00300	0.00302	0.00290
	(!A_N * !C * !X)	-0.00095	-0.00096	-0.00096
	(!A_N * !C * !X)	0.00326	0.00331	0.00325
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	-0.00361	-0.00406	-0.00405
	(A_N * C * !X)	0.00589	0.00548	0.00548
	(A_N * !C * !X)	-0.00236	-0.00238	-0.00237
	(A_N * !C * !X)	0.00574	0.00584	0.00560
	(!A_N * !C * !X)	-0.00151	-0.00154	-0.00156
	(!A_N * !C * !X)	0.00592	0.00600	0.00589

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)	0.00183	0.00184	0.00183
	(A_N * B * !X)	-0.00249	-0.00249	-0.00249
	(A_N * !B * !X)	0.00188	0.00189	0.00187
	(A_N * !B * !X)	-0.00249	-0.00250	-0.00249
	(!A_N * !B * !X)	0.00186	0.00187	0.00186
	(!A_N * !B * !X)	-0.00250	-0.00250	-0.00250
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	0.00232	0.00233	0.00232
	(A_N * B * !X)	-0.00283	-0.00284	-0.00283
	(A_N * !B * !X)	0.00234	0.00235	0.00234
	(A_N * !B * !X)	-0.00284	-0.00285	-0.00283
	(!A_N * !B * !X)	0.00233	0.00234	0.00233
	(!A_N * !B * !X)	-0.00285	-0.00285	-0.00284
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	0.00386	0.00390	0.00388
	(A_N * B * !X)	-0.00560	-0.00563	-0.00563
	(A_N * !B * !X)	0.00388	0.00391	0.00389
	(A_N * !B * !X)	-0.00563	-0.00564	-0.00563
	(!A_N * !B * !X)	0.00388	0.00391	0.00389
	(!A_N * !B * !X)	-0.00562	-0.00564	-0.00563

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)	-0.00172	-0.00184	-0.00183
	(A_N * B * !X)	0.00253	0.00255	0.00252
	(A_N * !B * !X)	-0.00180	-0.00186	-0.00185
	(A_N * !B * !X)	0.00253	0.00253	0.00252
	(!A_N * !B * !X)	-0.00178	-0.00186	-0.00186
	(!A_N * !B * !X)	0.00255	0.00252	0.00251
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	-0.00215	-0.00228	-0.00229
	(A_N * B * !X)	0.00287	0.00290	0.00287
	(A_N * !B * !X)	-0.00222	-0.00230	-0.00230
	(A_N * !B * !X)	0.00285	0.00288	0.00287
	(!A_N * !B * !X)	-0.00220	-0.00231	-0.00231
	(!A_N * !B * !X)	0.00287	0.00287	0.00286
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	-0.00365	-0.00386	-0.00388
	(A_N * B * !X)	0.00570	0.00573	0.00566
	(A_N * !B * !X)	-0.00376	-0.00390	-0.00389
	(A_N * !B * !X)	0.00565	0.00571	0.00566
	(!A_N * !B * !X)	-0.00371	-0.00390	-0.00389
	(!A_N * !B * !X)	0.00571	0.00571	0.00566

SKY130_FD_SC_HS__AND3x

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00262	0.00242	0.00239	1.46369
sky130_fd_sc_hs__and3_2	0.00259	0.00239	0.00242	2.78393
sky130_fd_sc_hs__and3_4	0.00473	0.00461	0.00476	5.18833

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and3_1	0.00000	0.60487	3.46257
sky130_fd_sc_hs__and3_2	0.00000	0.77269	3.47402
sky130_fd_sc_hs__and3_4	0.00000	1.54538	6.94804

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)	0.05811	0.46836	6.00901
	B->X (RR)	0.06323	0.46582	5.89619
	C->X (RR)	0.06627	0.45227	5.73050
sky130_fd_sc_hs__and3_2	A->X (RR)	0.06605	0.41379	6.04160
	B->X (RR)	0.07111	0.40820	5.92329
	C->X (RR)	0.07411	0.38879	5.65174
sky130_fd_sc_hs__and3_4	A->X (RR)	0.07321	0.37230	6.23054
	B->X (RR)	0.08111	0.36982	6.14203
	C->X (RR)	0.08454	0.33453	5.78383

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and3_1	A->X (FF)	0.05801	0.42134	4.72906
	B->X (FF)	0.06548	0.44346	4.84510
	C->X (FF)	0.06689	0.45127	4.93887
sky130_fd_sc_hs__and3_2	A->X (FF)	0.06946	0.41423	4.68282
	B->X (FF)	0.07628	0.43419	4.79871
	C->X (FF)	0.07937	0.44465	4.91531
sky130_fd_sc_hs__and3_4	A->X (FF)	0.06460	0.36762	4.52425
	B->X (FF)	0.07226	0.38732	4.62926
	C->X (FF)	0.07706	0.40681	4.89504

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.01211	0.01890	0.15061
	A	0.00590	0.01270	0.14494
	B	0.01291	0.01861	0.14824
	B	0.00593	0.01164	0.14129
	C	0.01430	0.01941	0.14339
	C	0.00585	0.01098	0.13520
sky130_fd_sc_hs__and3_2	A	0.01655	0.02239	0.15439
	A	0.01035	0.01624	0.14933
	B	0.01730	0.02246	0.15155
	B	0.01038	0.01556	0.14463
	C	0.01879	0.02294	0.13005
	C	0.01035	0.01459	0.12243
sky130_fd_sc_hs__and3_4	A	0.03183	0.04279	0.29577
	A	0.02038	0.03143	0.28648
	B	0.03471	0.04402	0.29514
	B	0.02047	0.02981	0.28309
	C	0.03789	0.04685	0.29547
	C	0.02047	0.02956	0.27890

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.00394	0.01198	0.13054
	A	0.01018	0.01802	0.13571
	B	0.00545	0.01338	0.13209
	B	0.01237	0.02015	0.13834
	C	0.00591	0.01422	0.13916
	C	0.01421	0.02243	0.14743
sky130_fd_sc_hs__and3_2	A	0.00857	0.01591	0.13775
	A	0.01479	0.02207	0.14134
	B	0.01027	0.01737	0.13926
	B	0.01714	0.02422	0.14441
	C	0.01051	0.01763	0.13887
	C	0.01880	0.02574	0.14663
sky130_fd_sc_hs__and3_4	A	0.01835	0.03205	0.27542
	A	0.02980	0.04349	0.28364
	B	0.02117	0.03458	0.28197
	B	0.03529	0.04855	0.29034
	C	0.02238	0.03601	0.29934
	C	0.03946	0.05300	0.31365

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	0.00117	0.00117	0.00114
	(B * !C * !X)	-0.00265	-0.00266	-0.00274
	(!B * !X)	0.00118	0.00119	0.00117
	(!B * !X)	-0.00270	-0.00271	-0.00275
sky130_fd_sc_hs__and3_2	(B * !C * !X)	0.00119	0.00119	0.00116
	(B * !C * !X)	-0.00262	-0.00263	-0.00270
	(!B * !X)	0.00121	0.00122	0.00119
	(!B * !X)	-0.00266	-0.00267	-0.00271
sky130_fd_sc_hs__and3_4	(B * !C * !X)	0.00134	0.00133	0.00123
	(B * !C * !X)	-0.00541	-0.00541	-0.00561
	(!B * !X)	0.00140	0.00139	0.00132
	(!B * !X)	-0.00554	-0.00554	-0.00564

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	-0.00114	-0.00115	-0.00113
	(B * !C * !X)	0.00274	0.00278	0.00275
	(!B * !X)	-0.00115	-0.00117	-0.00115
	(!B * !X)	0.00274	0.00280	0.00275
sky130_fd_sc_hs__and3_2	(B * !C * !X)	-0.00116	-0.00117	-0.00116
	(B * !C * !X)	0.00271	0.00274	0.00272
	(!B * !X)	-0.00118	-0.00120	-0.00117
	(!B * !X)	0.00271	0.00276	0.00272
sky130_fd_sc_hs__and3_4	(B * !C * !X)	-0.00124	-0.00126	-0.00123
	(B * !C * !X)	0.00565	0.00575	0.00566
	(!B * !X)	-0.00128	-0.00131	-0.00128
	(!B * !X)	0.00565	0.00575	0.00566

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	0.00072	0.00072	0.00072
	(A * !C * !X)	-0.00239	-0.00239	-0.00239
	(!A * C * !X)	0.00178	0.00180	0.00179
	(!A * C * !X)	-0.00239	-0.00240	-0.00239
	(!A * !C * !X)	0.00090	0.00089	0.00089
	(!A * !C * !X)	-0.00241	-0.00240	-0.00240
sky130_fd_sc_hs__and3_2	(A * !C * !X)	0.00070	0.00069	0.00070
	(A * !C * !X)	-0.00235	-0.00235	-0.00234
	(!A * C * !X)	0.00178	0.00180	0.00179
	(!A * C * !X)	-0.00235	-0.00236	-0.00235
	(!A * !C * !X)	0.00085	0.00086	0.00085
	(!A * !C * !X)	-0.00235	-0.00236	-0.00236
sky130_fd_sc_hs__and3_4	(A * !C * !X)	0.00169	0.00169	0.00170
	(A * !C * !X)	-0.00468	-0.00468	-0.00466
	(!A * C * !X)	0.00392	0.00395	0.00393
	(!A * C * !X)	-0.00466	-0.00468	-0.00466
	(!A * !C * !X)	0.00206	0.00207	0.00207
	(!A * !C * !X)	-0.00470	-0.00471	-0.00470

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	-0.00068	-0.00069	-0.00070
	(A * !C * !X)	0.00244	0.00247	0.00241
	(!A * C * !X)	-0.00162	-0.00180	-0.00179
	(!A * C * !X)	0.00256	0.00243	0.00241
	(!A * !C * !X)	-0.00090	-0.00089	-0.00089
	(!A * !C * !X)	0.00251	0.00254	0.00243
sky130_fd_sc_hs__and3_2	(A * !C * !X)	-0.00066	-0.00067	-0.00067
	(A * !C * !X)	0.00240	0.00243	0.00237
	(!A * C * !X)	-0.00160	-0.00179	-0.00179
	(!A * C * !X)	0.00250	0.00239	0.00237
	(!A * !C * !X)	-0.00085	-0.00086	-0.00085
	(!A * !C * !X)	0.00245	0.00249	0.00239
sky130_fd_sc_hs__and3_4	(A * !C * !X)	-0.00159	-0.00161	-0.00164
	(A * !C * !X)	0.00481	0.00486	0.00473
	(!A * C * !X)	-0.00343	-0.00393	-0.00391
	(!A * C * !X)	0.00510	0.00470	0.00469
	(!A * !C * !X)	-0.00206	-0.00207	-0.00207
	(!A * !C * !X)	0.00493	0.00501	0.00479

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	0.00185	0.00186	0.00186
	(A * !B * !X)	-0.00245	-0.00247	-0.00246
	(!A * B * !X)	0.00180	0.00181	0.00180
	(!A * B * !X)	-0.00246	-0.00246	-0.00246
	(!A * !B * !X)	0.00185	0.00186	0.00186
	(!A * !B * !X)	-0.00245	-0.00246	-0.00246
sky130_fd_sc_hs__and3_2	(A * !B * !X)	0.00182	0.00183	0.00183
	(A * !B * !X)	-0.00247	-0.00247	-0.00247
	(!A * B * !X)	0.00182	0.00182	0.00181
	(!A * B * !X)	-0.00248	-0.00248	-0.00247
	(!A * !B * !X)	0.00182	0.00184	0.00183
	(!A * !B * !X)	-0.00247	-0.00248	-0.00247
sky130_fd_sc_hs__and3_4	(A * !B * !X)	0.00388	0.00392	0.00389
	(A * !B * !X)	-0.00489	-0.00492	-0.00490
	(!A * B * !X)	0.00385	0.00388	0.00385
	(!A * B * !X)	-0.00490	-0.00493	-0.00491
	(!A * !B * !X)	0.00386	0.00388	0.00386
	(!A * !B * !X)	-0.00490	-0.00491	-0.00490

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	-0.00178	-0.00186	-0.00186
	(A * !B * !X)	0.00248	0.00248	0.00247
	(!A * B * !X)	-0.00169	-0.00181	-0.00180
	(!A * B * !X)	0.00247	0.00250	0.00247
	(!A * !B * !X)	-0.00179	-0.00186	-0.00186
	(!A * !B * !X)	0.00248	0.00248	0.00247
sky130_fd_sc_hs__and3_2	(A * !B * !X)	-0.00175	-0.00183	-0.00183
	(A * !B * !X)	0.00249	0.00250	0.00249
	(!A * B * !X)	-0.00166	-0.00181	-0.00181
	(!A * B * !X)	0.00249	0.00251	0.00249
	(!A * !B * !X)	-0.00177	-0.00183	-0.00183
	(!A * !B * !X)	0.00249	0.00250	0.00249
sky130_fd_sc_hs__and3_4	(A * !B * !X)	-0.00369	-0.00389	-0.00388
	(A * !B * !X)	0.00492	0.00495	0.00493
	(!A * B * !X)	-0.00356	-0.00381	-0.00385
	(!A * B * !X)	0.00497	0.00499	0.00493
	(!A * !B * !X)	-0.00371	-0.00388	-0.00386
	(!A * !B * !X)	0.00491	0.00495	0.00493

SKY130_FD_SC_HS__AND4BBx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00237	0.00239	0.00252	0.00247	1.25169
sky130_fd_sc_hs__and4bb_2	0.00239	0.00228	0.00278	0.00283	2.67128
sky130_fd_sc_hs__and4bb_4	0.00259	0.00275	0.00514	0.00499	5.09564

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__and4bb_1	0.00000	1.62736	4.62576
sky130_fd_sc_hs__and4bb_2	0.00000	1.63743	2.68222
sky130_fd_sc_hs__and4bb_4	0.00000	1.45741	3.90436

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)	0.11744	0.69383	8.10219
	B_N->X (FR)	0.12146	0.69281	7.95714
	C->X (RR)	0.08863	0.51590	5.94800
	D->X (RR)	0.09163	0.50186	5.79368
sky130_fd_sc_hs__and4bb_2	A_N->X (FR)	0.11460	0.59075	8.06147
	B_N->X (FR)	0.12627	0.60350	8.07201
	C->X (RR)	0.09098	0.42886	5.97422
	D->X (RR)	0.09512	0.40979	5.66628
sky130_fd_sc_hs__and4bb_4	A_N->X (FR)	0.14679	0.58224	8.22209
	B_N->X (FR)	0.16229	0.60110	8.24760
	C->X (RR)	0.11660	0.39918	6.30584
	D->X (RR)	0.12034	0.37214	5.99316

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)	0.08481	0.26194	1.87972
	B_N->X (RF)	0.08817	0.26898	1.81152
	C->X (FF)	0.07382	0.44963	4.59644
	D->X (FF)	0.07953	0.46595	4.75207
sky130_fd_sc_hs__and4bb_2	A_N->X (RF)	0.08560	0.23945	2.05159
	B_N->X (RF)	0.09445	0.25809	2.17219
	C->X (FF)	0.07644	0.44132	4.76745
	D->X (FF)	0.08157	0.45675	4.91731
sky130_fd_sc_hs__and4bb_4	A_N->X (RF)	0.09375	0.21916	1.89817
	B_N->X (RF)	0.09569	0.22621	1.90802
	C->X (FF)	0.07032	0.38466	4.53670
	D->X (FF)	0.07431	0.40286	4.77115

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	0.01215	0.02081	0.16710
	A_N	0.01679	0.02589	0.17199
	B_N	0.01326	0.02227	0.16941
	B_N	0.01846	0.02793	0.17499
	C	0.01515	0.02037	0.15191
	C	0.00963	0.01486	0.14640
	D	0.01645	0.02166	0.15971
	D	0.00982	0.01502	0.15327
sky130_fd_sc_hs__and4bb_2	A_N	0.01690	0.02541	0.17423
	A_N	0.02131	0.02984	0.17933
	B_N	0.01934	0.02697	0.16919
	B_N	0.02392	0.03154	0.17440
	C	0.02104	0.02468	0.15514
	C	0.01464	0.01828	0.15040
	D	0.02281	0.02538	0.13057
	D	0.01487	0.01748	0.12321
sky130_fd_sc_hs__and4bb_4	A_N	0.03623	0.04375	0.21347
	A_N	0.04022	0.04785	0.21800
	B_N	0.03954	0.04672	0.21636
	B_N	0.04425	0.05142	0.22181
	C	0.04298	0.04880	0.29746
	C	0.03104	0.03696	0.28746
	D	0.04573	0.05102	0.29368
	D	0.03114	0.03646	0.28230

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4bb_1	A_N	0.01629	0.02319	0.16670
	A_N	0.01166	0.01854	0.16181
	B_N	0.01674	0.02477	0.17480
	B_N	0.01155	0.01953	0.16931
	C	0.00715	0.01483	0.14773
	C	0.01267	0.02025	0.15258
	D	0.00782	0.01573	0.15487
	D	0.01436	0.02224	0.16092
sky130_fd_sc_hs__and4bb_2	A_N	0.01993	0.02713	0.17576
	A_N	0.01550	0.02266	0.17051
	B_N	0.02111	0.02802	0.17025
	B_N	0.01652	0.02342	0.16503
	C	0.01109	0.01837	0.13487
	C	0.01750	0.02450	0.14061
	D	0.01163	0.01815	0.14041
	D	0.01945	0.02578	0.14260
sky130_fd_sc_hs__and4bb_4	A_N	0.03441	0.04301	0.21450
	A_N	0.03041	0.03892	0.21026
	B_N	0.03709	0.04551	0.22026
	B_N	0.03239	0.04070	0.21524
	C	0.02154	0.03372	0.27292
	C	0.03347	0.04559	0.28463
	D	0.02354	0.03546	0.29074
	D	0.03789	0.04968	0.30459

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)	0.00791	0.01551	0.15298
	(B_N * !X)	0.00270	0.01029	0.14778
	(!B_N * C * !D * !X)	0.00825	0.01586	0.15333
	(!B_N * C * !D * !X)	0.00302	0.01061	0.14810
	(!B_N * !C * !X)	0.00825	0.01586	0.15333
	(!B_N * !C * !X)	0.00303	0.01063	0.14811
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00804	0.01582	0.15670
	(B_N * !X)	0.00280	0.01054	0.15142
	(!B_N * C * !D * !X)	0.00836	0.01614	0.15699
	(!B_N * C * !D * !X)	0.00308	0.01083	0.15171
	(!B_N * !C * !X)	0.00836	0.01614	0.15701
	(!B_N * !C * !X)	0.00310	0.01085	0.15172
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.01129	0.01943	0.17467
	(B_N * !X)	0.00581	0.01393	0.16919
	(!B_N * C * !D * !X)	0.01194	0.02005	0.17530
	(!B_N * C * !D * !X)	0.00641	0.01450	0.16977
	(!B_N * !C * !X)	0.01193	0.02004	0.17529
	(!B_N * !C * !X)	0.00643	0.01453	0.16979

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)	0.00047	0.00914	0.14649
	(B_N * !X)	0.00568	0.01436	0.15170
	(!B_N * C * !D * !X)	0.00015	0.00881	0.14613
	(!B_N * C * !D * !X)	0.00550	0.01417	0.15146
	(!B_N * !C * !X)	0.00013	0.00880	0.14612
	(!B_N * !C * !X)	0.00538	0.01405	0.15137
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00027	0.00922	0.15000
	(B_N * !X)	0.00553	0.01451	0.15527
	(!B_N * C * !D * !X)	-0.00003	0.00892	0.14965
	(!B_N * C * !D * !X)	0.00540	0.01436	0.15505
	(!B_N * !C * !X)	-0.00005	0.00890	0.14964
	(!B_N * !C * !X)	0.00526	0.01422	0.15495
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.00167	0.01064	0.16531
	(B_N * !X)	0.00716	0.01610	0.17078
	(!B_N * C * !D * !X)	0.00107	0.01003	0.16467
	(!B_N * C * !D * !X)	0.00685	0.01583	0.17038
	(!B_N * !C * !X)	0.00102	0.00997	0.16466
	(!B_N * !C * !X)	0.00658	0.01557	0.17019

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)	0.00797	0.01537	0.15539
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00218	0.00956	0.14960
	(!C * !X)	0.00808	0.01572	0.15586
	(!C * !X)	0.00216	0.00978	0.14995
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00809	0.01527	0.15512
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00266	0.00983	0.14968
	(!C * !X)	0.00820	0.01571	0.15571
	(!C * !X)	0.00261	0.01011	0.15014
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.01135	0.01880	0.17583
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00517	0.01259	0.16964
	(!C * !X)	0.01151	0.01955	0.17696
	(!C * !X)	0.00506	0.01307	0.17049

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)	0.00149	0.01026	0.15039
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00727	0.01607	0.15617
	(!C * !X)	0.00066	0.00954	0.14974
	(!C * !X)	0.00655	0.01545	0.15563
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00221	0.01086	0.15087
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00762	0.01631	0.15629
	(!C * !X)	0.00123	0.00995	0.15006
	(!C * !X)	0.00676	0.01552	0.15562
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00454	0.01360	0.17040
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.01075	0.01981	0.17660
	(!C * !X)	0.00276	0.01190	0.16903
	(!C * !X)	0.00919	0.01835	0.17546

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)**	0.00232	0.00235	0.00234
	(A_N * B_N * D * !X)	-0.00231	-0.00233	-0.00232
	(A_N * B_N * !D * !X)	0.00161	0.00161	0.00161
	(A_N * B_N * !D * !X)	-0.00232	-0.00232	-0.00232
	(A_N * !B_N * D * !X)	0.00185	0.00187	0.00185
	(A_N * !B_N * D * !X)	-0.00282	-0.00283	-0.00282
	(A_N * !B_N * !D * !X)	0.00101	0.00101	0.00100
	(A_N * !B_N * !D * !X)	-0.00310	-0.00312	-0.00310
	(!A_N * B_N * D * !X)	0.00232	0.00234	0.00233
	(!A_N * B_N * D * !X)	-0.00232	-0.00234	-0.00233
	(!A_N * B_N * !D * !X)	0.00154	0.00155	0.00154
	(!A_N * B_N * !D * !X)	-0.00234	-0.00234	-0.00233
	(!A_N * !B_N * !D * !X)	0.00080	0.00080	0.00080
	(!A_N * !B_N * !D * !X)	-0.00286	-0.00288	-0.00287
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	0.00249	0.00251	0.00250
	(A_N * B_N * D * !X)	-0.00273	-0.00274	-0.00273
	(A_N * B_N * !D * !X)	0.00163	0.00163	0.00162
	(A_N * B_N * !D * !X)	-0.00273	-0.00274	-0.00273
	(A_N * !B_N * D * !X)	0.00212	0.00214	0.00212
	(A_N * !B_N * D * !X)	-0.00313	-0.00313	-0.00312
	(A_N * !B_N * !D * !X)	0.00112	0.00113	0.00111
	(A_N * !B_N * !D * !X)	-0.00346	-0.00348	-0.00346
	(!A_N * B_N * D * !X)	0.00248	0.00251	0.00249
	(!A_N * B_N * D * !X)	-0.00274	-0.00275	-0.00274
	(!A_N * B_N * !D * !X)	0.00153	0.00156	0.00155
	(!A_N * B_N * !D * !X)	-0.00273	-0.00276	-0.00274
	(!A_N * !B_N * !D * !X)	0.00087	0.00088	0.00088
	(!A_N * !B_N * !D * !X)	-0.00318	-0.00319	-0.00318

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * D * !X)**	0.00416	0.00418	0.00416
	(A_N * B_N * D * !X)	-0.00568	-0.00569	-0.00567
	(A_N * B_N * !D * !X)	0.00259	0.00260	0.00258
	(A_N * B_N * !D * !X)	-0.00571	-0.00572	-0.00570
	(A_N * !B_N * D * !X)	0.00398	0.00401	0.00400
	(A_N * !B_N * D * !X)	-0.00586	-0.00589	-0.00588
	(A_N * !B_N * !D * !X)	0.00221	0.00223	0.00221
	(A_N * !B_N * !D * !X)	-0.00648	-0.00653	-0.00649
	(!A_N * B_N * D * !X)	0.00416	0.00418	0.00416
	(!A_N * B_N * D * !X)	-0.00568	-0.00569	-0.00568
	(!A_N * B_N * !D * !X)	0.00246	0.00247	0.00246
	(!A_N * B_N * !D * !X)	-0.00570	-0.00572	-0.00571
	(!A_N * !B_N * !D * !X)	0.00178	0.00178	0.00179
	(!A_N * !B_N * !D * !X)	-0.00595	-0.00597	-0.00598

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)**	-0.00227	-0.00231	-0.00230
	(A_N * B_N * D * !X)	0.00238	0.00239	0.00237
	(A_N * B_N * !D * !X)	-0.00161	-0.00161	-0.00161
	(A_N * B_N * !D * !X)	0.00238	0.00240	0.00237
	(A_N * !B_N * D * !X)	-0.00166	-0.00181	-0.00183
	(A_N * !B_N * D * !X)	0.00298	0.00291	0.00285
	(A_N * !B_N * !D * !X)	-0.00101	-0.00101	-0.00100
	(A_N * !B_N * !D * !X)	0.00320	0.00327	0.00319
	(!A_N * B_N * D * !X)	-0.00224	-0.00232	-0.00231
	(!A_N * B_N * D * !X)	0.00242	0.00238	0.00236
	(!A_N * B_N * !D * !X)	-0.00154	-0.00155	-0.00154
	(!A_N * B_N * !D * !X)	0.00245	0.00248	0.00238
	(!A_N * !B_N * !D * !X)	-0.00075	-0.00076	-0.00076
	(!A_N * !B_N * !D * !X)	0.00292	0.00295	0.00290
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	-0.00241	-0.00246	-0.00245
	(A_N * B_N * D * !X)	0.00278	0.00280	0.00279
	(A_N * B_N * !D * !X)	-0.00163	-0.00163	-0.00162
	(A_N * B_N * !D * !X)	0.00279	0.00282	0.00279
	(A_N * !B_N * D * !X)	-0.00190	-0.00207	-0.00209
	(A_N * !B_N * D * !X)	0.00330	0.00322	0.00315
	(A_N * !B_N * !D * !X)	-0.00112	-0.00113	-0.00111
	(A_N * !B_N * !D * !X)	0.00354	0.00364	0.00355
	(!A_N * B_N * D * !X)	-0.00238	-0.00247	-0.00246
	(!A_N * B_N * D * !X)	0.00282	0.00279	0.00277
	(!A_N * B_N * !D * !X)	-0.00153	-0.00156	-0.00155
	(!A_N * B_N * !D * !X)	0.00288	0.00291	0.00280
	(!A_N * !B_N * !D * !X)	-0.00082	-0.00083	-0.00083
	(!A_N * !B_N * !D * !X)	0.00324	0.00328	0.00323

sky130_fd_sc_hs__and4bb_4	(A_N * B_N * D * !X)	-0.00407	-0.00417	-0.00415
	(A_N * B_N * D * !X)	0.00571	0.00572	0.00572
	(A_N * B_N * !D * !X)	-0.00259	-0.00260	-0.00258
	(A_N * B_N * !D * !X)	0.00572	0.00581	0.00574
	(A_N * !B_N * D * !X)	-0.00360	-0.00397	-0.00399
	(A_N * !B_N * D * !X)	0.00626	0.00590	0.00590
	(A_N * !B_N * !D * !X)	-0.00221	-0.00223	-0.00221
	(A_N * !B_N * !D * !X)	0.00661	0.00678	0.00664
	(!A_N * B_N * D * !X)	-0.00399	-0.00417	-0.00415
	(!A_N * B_N * D * !X)	0.00581	0.00572	0.00572
	(!A_N * B_N * !D * !X)	-0.00246	-0.00247	-0.00246
	(!A_N * B_N * !D * !X)	0.00597	0.00604	0.00583
	(!A_N * !B_N * !D * !X)	-0.00165	-0.00168	-0.00168
	(!A_N * !B_N * !D * !X)	0.00609	0.00617	0.00608

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)	0.00212	0.00212	0.00211
	(A_N * B_N * C * !X)	-0.00227	-0.00227	-0.00227
	(A_N * !C * !X)	0.00215	0.00216	0.00215
	(A_N * !C * !X)	-0.00227	-0.00227	-0.00227
	(A_N * !B_N * C * !X)	0.00184	0.00186	0.00185
	(A_N * !B_N * C * !X)	-0.00256	-0.00257	-0.00257
	(!A_N * B_N * C * !X)	0.00210	0.00212	0.00210
	(!A_N * B_N * C * !X)	-0.00228	-0.00229	-0.00228
	(!A_N * B_N * !C * !X)	0.00214	0.00214	0.00214
	(!A_N * B_N * !C * !X)	-0.00228	-0.00228	-0.00228
	(!A_N * !B_N * !C * !X)	0.00187	0.00188	0.00187
	(!A_N * !B_N * !C * !X)	-0.00253	-0.00254	-0.00254

sky130_fd_sc_hs__and4bb_2	(A_N * B_N * C * !X)	0.00228	0.00228	0.00228
	(A_N * B_N * C * !X)	-0.00290	-0.00289	-0.00289
	(A_N * !C * !X)	0.00228	0.00229	0.00228
	(A_N * !C * !X)	-0.00289	-0.00290	-0.00289
	(A_N * !B_N * C * !X)	0.00214	0.00215	0.00214
	(A_N * !B_N * C * !X)	-0.00303	-0.00304	-0.00303
	(!A_N * B_N * C * !X)	0.00226	0.00227	0.00226
	(!A_N * B_N * C * !X)	-0.00291	-0.00291	-0.00290
	(!A_N * B_N * !C * !X)	0.00225	0.00228	0.00227
	(!A_N * B_N * !C * !X)	-0.00289	-0.00291	-0.00290
	(!A_N * !B_N * !C * !X)	0.00215	0.00218	0.00217
	(!A_N * !B_N * !C * !X)	-0.00299	-0.00301	-0.00300
sky130_fd_sc_hs__and4bb_4	(A_N * B_N * C * !X)	0.00377	0.00382	0.00379
	(A_N * B_N * C * !X)	-0.00560	-0.00565	-0.00562
	(A_N * !C * !X)	0.00376	0.00381	0.00378
	(A_N * !C * !X)	-0.00560	-0.00565	-0.00562
	(A_N * !B_N * C * !X)	0.00375	0.00377	0.00374
	(A_N * !B_N * C * !X)	-0.00572	-0.00574	-0.00572
	(!A_N * B_N * C * !X)	0.00375	0.00379	0.00378
	(!A_N * B_N * C * !X)	-0.00561	-0.00564	-0.00563
	(!A_N * B_N * !C * !X)	0.00375	0.00381	0.00378
	(!A_N * B_N * !C * !X)	-0.00560	-0.00565	-0.00563
	(!A_N * !B_N * !C * !X)	0.00375	0.00379	0.00378
	(!A_N * !B_N * !C * !X)	-0.00561	-0.00564	-0.00563

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)**	-0.00198	-0.00210	-0.00210
	(A_N * B_N * C * !X)	0.00231	0.00234	0.00232
	(A_N * !C * !X)	-0.00205	-0.00211	-0.00211
	(A_N * !C * !X)	0.00232	0.00233	0.00232
	(A_N * !B_N * C * !X)	-0.00169	-0.00184	-0.00185
	(A_N * !B_N * C * !X)	0.00265	0.00260	0.00259
	(!A_N * B_N * C * !X)	-0.00199	-0.00211	-0.00210
	(!A_N * B_N * C * !X)	0.00230	0.00233	0.00231
	(!A_N * B_N * !C * !X)	-0.00206	-0.00212	-0.00212
	(!A_N * B_N * !C * !X)	0.00231	0.00232	0.00231
	(!A_N * !B_N * !C * !X)	-0.00180	-0.00188	-0.00187
	(!A_N * !B_N * !C * !X)	0.00258	0.00256	0.00255
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	-0.00208	-0.00221	-0.00222
	(A_N * B_N * C * !X)	0.00294	0.00297	0.00294
	(A_N * !C * !X)	-0.00215	-0.00223	-0.00223
	(A_N * !C * !X)	0.00293	0.00295	0.00294
	(A_N * !B_N * C * !X)	-0.00194	-0.00211	-0.00212
	(A_N * !B_N * C * !X)	0.00313	0.00310	0.00306
	(!A_N * B_N * C * !X)	-0.00209	-0.00222	-0.00223
	(!A_N * B_N * C * !X)	0.00293	0.00296	0.00293
	(!A_N * B_N * !C * !X)	-0.00216	-0.00224	-0.00224
	(!A_N * B_N * !C * !X)	0.00292	0.00294	0.00293
	(!A_N * !B_N * !C * !X)	-0.00205	-0.00216	-0.00216
	(!A_N * !B_N * !C * !X)	0.00304	0.00303	0.00302

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	-0.00354	-0.00374	-0.00378
	(A_N * B_N * C * !X)	0.00568	0.00573	0.00567
	(A_N * !C * !X)	-0.00363	-0.00380	-0.00378
	(A_N * !C * !X)	0.00565	0.00568	0.00567
	(A_N * !B_N * C * !X)	-0.00345	-0.00372	-0.00374
	(A_N * !B_N * C * !X)	0.00588	0.00582	0.00573
	(!A_N * B_N * C * !X)	-0.00354	-0.00375	-0.00378
	(!A_N * B_N * C * !X)	0.00568	0.00573	0.00566
	(!A_N * B_N * !C * !X)	-0.00364	-0.00381	-0.00378
	(!A_N * B_N * !C * !X)	0.00565	0.00568	0.00566
	(!A_N * !B_N * !C * !X)	-0.00359	-0.00379	-0.00378
	(!A_N * !B_N * !C * !X)	0.00570	0.00568	0.00566

SKY130_FD_SC_HS__AND4Bx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00250	0.00264	0.00254	0.00246	1.37408
sky130_fd_sc_hs__and4b_2	0.00233	0.00282	0.00282	0.00290	2.37808
sky130_fd_sc_hs__and4b_4	0.00255	0.00522	0.00560	0.00521	4.44552

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4b_1	0.00000	1.04896	4.61935
sky130_fd_sc_hs__and4b_2	0.00000	1.05902	1.94256
sky130_fd_sc_hs__and4b_4	0.00000	1.21023	3.88832

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)	0.10741	0.66492	8.06247
	B->X (RR)	0.07966	0.51016	6.14557
	C->X (RR)	0.08427	0.50124	6.02915
	D->X (RR)	0.08846	0.48244	5.71285
sky130_fd_sc_hs__and4b_2	A_N->X (FR)	0.12200	0.60996	8.00347
	B->X (RR)	0.08369	0.44010	5.87032
	C->X (RR)	0.08909	0.42855	5.73952
	D->X (RR)	0.09264	0.40792	5.36447
sky130_fd_sc_hs__and4b_4	A_N->X (FR)	0.15072	0.59925	8.21421
	B->X (RR)	0.09912	0.40975	6.16729
	C->X (RR)	0.11069	0.39619	5.89501
	D->X (RR)	0.11082	0.37779	5.79352

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)	0.07954	0.26454	2.01492
	B->X (FF)	0.06701	0.43826	4.52656
	C->X (FF)	0.07316	0.45571	4.66903
	D->X (FF)	0.07831	0.47339	4.83387
sky130_fd_sc_hs__and4b_2	A_N->X (RF)	0.09124	0.23707	1.71637
	B->X (FF)	0.07400	0.41786	4.30234
	C->X (FF)	0.08104	0.43597	4.44720
	D->X (FF)	0.08468	0.44816	4.57422
sky130_fd_sc_hs__and4b_4	A_N->X (RF)	0.10259	0.22844	1.54162
	B->X (FF)	0.07321	0.37736	4.15551
	C->X (FF)	0.07980	0.39601	4.31769
	D->X (FF)	0.09152	0.42784	4.56641

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	0.01149	0.02030	0.16963
	A_N	0.01590	0.02473	0.17436
	B	0.01396	0.01847	0.13968
	B	0.00752	0.01205	0.13379
	C	0.01543	0.01981	0.14666
	C	0.00782	0.01221	0.13956
	D	0.01658	0.01958	0.12254
	D	0.00780	0.01081	0.11404
sky130_fd_sc_hs__and4b_2	A_N	0.01692	0.02509	0.16965
	A_N	0.02111	0.02926	0.17459
	B	0.01890	0.02320	0.14746
	B	0.01203	0.01647	0.14077
	C	0.02044	0.02447	0.15457
	C	0.01231	0.01634	0.14694
	D	0.02221	0.02485	0.11290
	D	0.01228	0.01494	0.10363
sky130_fd_sc_hs__and4b_4	A_N	0.03529	0.04393	0.21588
	A_N	0.04002	0.04864	0.22117
	B	0.03843	0.04626	0.28030
	B	0.02583	0.03379	0.27040
	C	0.04248	0.04879	0.25823
	C	0.02657	0.03304	0.24267
	D	0.04460	0.05121	0.29970
	D	0.02673	0.03356	0.28256

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4b_1	A_N	0.01510	0.02272	0.17154
	A_N	0.01069	0.01826	0.16679
	B	0.00563	0.01274	0.11894
	B	0.01203	0.01909	0.12444
	C	0.00599	0.01330	0.12491
	C	0.01351	0.02079	0.13191
	D	0.00692	0.01369	0.12555
	D	0.01552	0.02221	0.13299
sky130_fd_sc_hs__and4b_2	A_N	0.02096	0.02760	0.16847
	A_N	0.01678	0.02340	0.16385
	B	0.01041	0.01730	0.13317
	B	0.01723	0.02396	0.13996
	C	0.01153	0.01819	0.13983
	C	0.01956	0.02618	0.14780
	D	0.01160	0.01754	0.13866
	D	0.02131	0.02707	0.14537
sky130_fd_sc_hs__and4b_4	A_N	0.03718	0.04447	0.20901
	A_N	0.03246	0.03970	0.20367
	B	0.01993	0.03242	0.27037
	B	0.03251	0.04494	0.28218
	C	0.02149	0.03319	0.27839
	C	0.03713	0.04865	0.29192
	D	0.02525	0.03598	0.28608
	D	0.04269	0.05323	0.30338

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)	0.00808	0.01592	0.15698
	(B * C * !D * !X)	0.00222	0.01004	0.15113
	(B * !C * !X)	0.00808	0.01592	0.15701
	(B * !C * !X)	0.00222	0.01003	0.15113
	(!B * !X)	0.00806	0.01589	0.15697
	(!B * !X)	0.00222	0.01004	0.15114
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00898	0.01642	0.15371
	(B * C * !D * !X)	0.00339	0.01081	0.14812
	(B * !C * !X)	0.00898	0.01641	0.15371
	(B * !C * !X)	0.00339	0.01081	0.14812
	(!B * !X)	0.00895	0.01639	0.15368
	(!B * !X)	0.00339	0.01081	0.14812
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.01395	0.02183	0.17493
	(B * C * !D * !X)	0.00721	0.01508	0.16820
	(B * !C * !X)	0.01394	0.02181	0.17492
	(B * !C * !X)	0.00721	0.01507	0.16820
	(!B * !X)	0.01385	0.02172	0.17482
	(!B * !X)	0.00722	0.01507	0.16819

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)	0.00003	0.00901	0.14992
	(B * C * !D * !X)	0.00606	0.01504	0.15590
	(B * !C * !X)	-0.00000	0.00898	0.14990
	(B * !C * !X)	0.00598	0.01496	0.15586
	(!B * !X)	0.00002	0.00901	0.14996
	(!B * !X)	0.00589	0.01487	0.15582
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00020	0.00872	0.14588
	(B * C * !D * !X)	0.00594	0.01449	0.15162
	(B * !C * !X)	0.00019	0.00871	0.14589
	(B * !C * !X)	0.00587	0.01442	0.15158
	(!B * !X)	0.00020	0.00872	0.14593
	(!B * !X)	0.00575	0.01431	0.15150
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.00067	0.00942	0.16183
	(B * C * !D * !X)	0.00772	0.01650	0.16879
	(B * !C * !X)	0.00066	0.00941	0.16184
	(B * !C * !X)	0.00758	0.01636	0.16871
	(!B * !X)	0.00069	0.00945	0.16194
	(!B * !X)	0.00733	0.01612	0.16857

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)**	0.00216	0.00217	0.00216
	(A_N * C * D * !X)	-0.00263	-0.00263	-0.00262
	(A_N * C * !D * !X)	0.00134	0.00135	0.00134
	(A_N * C * !D * !X)	-0.00263	-0.00264	-0.00264
	(A_N * !C * !X)	0.00129	0.00129	0.00130
	(A_N * !C * !X)	-0.00262	-0.00263	-0.00264
	(!A_N * C * !D * !X)	0.00078	0.00079	0.00079
	(!A_N * C * !D * !X)	-0.00294	-0.00296	-0.00297
	(!A_N * !C * !X)	0.00079	0.00079	0.00079
	(!A_N * !C * !X)	-0.00297	-0.00297	-0.00298
sky130_fd_sc_hs__and4b_2	**(A_N * C * D * !X)**	0.00246	0.00247	0.00246
	(A_N * C * D * !X)	-0.00275	-0.00276	-0.00275
	(A_N * C * !D * !X)	0.00149	0.00149	0.00148
	(A_N * C * !D * !X)	-0.00278	-0.00278	-0.00277
	(A_N * !C * !X)	0.00151	0.00151	0.00151
	(A_N * !C * !X)	-0.00277	-0.00278	-0.00277
	(!A_N * C * !D * !X)	0.00083	0.00083	0.00084
	(!A_N * C * !D * !X)	-0.00314	-0.00314	-0.00317
	(!A_N * !C * !X)	0.00089	0.00088	0.00088
	(!A_N * !C * !X)	-0.00317	-0.00317	-0.00318
sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	0.00499	0.00499	0.00501
	(A_N * C * D * !X)	-0.00527	-0.00525	-0.00526
	(A_N * C * !D * !X)	0.00332	0.00335	0.00333
	(A_N * C * !D * !X)	-0.00528	-0.00531	-0.00529
	(A_N * !C * !X)	0.00342	0.00344	0.00343
	(A_N * !C * !X)	-0.00528	-0.00531	-0.00530
	(!A_N * C * !D * !X)	0.00192	0.00194	0.00193
	(!A_N * C * !D * !X)	-0.00613	-0.00616	-0.00622
	(!A_N * !C * !X)	0.00202	0.00204	0.00202
	(!A_N * !C * !X)	-0.00619	-0.00622	-0.00624

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)	-0.00193	-0.00214	-0.00214
	(A_N * C * D * !X)	0.00284	0.00267	0.00266
	(A_N * C * !D * !X)	-0.00134	-0.00135	-0.00134
	(A_N * C * !D * !X)	0.00281	0.00278	0.00268
	(A_N * !C * !X)	-0.00129	-0.00129	-0.00130
	(A_N * !C * !X)	0.00275	0.00279	0.00269
	(!A_N * C * !D * !X)	-0.00075	-0.00076	-0.00076
	(!A_N * C * !D * !X)	0.00301	0.00305	0.00300
	(!A_N * !C * !X)	-0.00076	-0.00076	-0.00077
	(!A_N * !C * !X)	0.00301	0.00305	0.00300
sky130_fd_sc_hs__and4b_2	(A_N * C * D * !X)	-0.00223	-0.00245	-0.00244
	(A_N * C * D * !X)	0.00299	0.00281	0.00279
	(A_N * C * !D * !X)	-0.00149	-0.00149	-0.00148
	(A_N * C * !D * !X)	0.00295	0.00293	0.00282
	(A_N * !C * !X)	-0.00151	-0.00151	-0.00151
	(A_N * !C * !X)	0.00293	0.00296	0.00284
	(!A_N * C * !D * !X)	-0.00081	-0.00083	-0.00083
	(!A_N * C * !D * !X)	0.00322	0.00326	0.00320
	(!A_N * !C * !X)	-0.00083	-0.00085	-0.00085
	(!A_N * !C * !X)	0.00322	0.00326	0.00321

sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	-0.00462	-0.00499	-0.00499
	(A_N * C * D * !X)	0.00563	0.00534	0.00530
	(A_N * C * !D * !X)	-0.00332	-0.00335	-0.00333
	(A_N * C * !D * !X)	0.00557	0.00551	0.00534
	(A_N * !C * !X)	-0.00342	-0.00344	-0.00343
	(A_N * !C * !X)	0.00561	0.00563	0.00541
	(!A_N * C * !D * !X)	-0.00189	-0.00190	-0.00192
	(!A_N * C * !D * !X)	0.00633	0.00637	0.00629
	(!A_N * !C * !X)	-0.00193	-0.00195	-0.00196
	(!A_N * !C * !X)	0.00634	0.00639	0.00630

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)**	0.00218	0.00219	0.00218
	(A_N * B * D * !X)	-0.00237	-0.00238	-0.00238
	(A_N * B * !D * !X)	0.00139	0.00140	0.00139
	(A_N * B * !D * !X)	-0.00239	-0.00240	-0.00239
	(A_N * !B * D * !X)	0.00221	0.00222	0.00221
	(A_N * !B * D * !X)	-0.00238	-0.00238	-0.00238
	(A_N * !B * !D * !X)	0.00138	0.00139	0.00139
	(A_N * !B * !D * !X)	-0.00238	-0.00239	-0.00239
	(!A_N * B * !D * !X)	0.00115	0.00115	0.00114
	(!A_N * B * !D * !X)	-0.00240	-0.00241	-0.00239
	(!A_N * !B * D * !X)	0.00218	0.00220	0.00218
	(!A_N * !B * D * !X)	-0.00240	-0.00242	-0.00240
	(!A_N * !B * !D * !X)	0.00131	0.00132	0.00131
	(!A_N * !B * !D * !X)	-0.00241	-0.00243	-0.00242

sky130_fd_sc_hs__and4b_2	**(A_N * B * D * !X)**	0.00216	0.00217	0.00216
	(A_N * B * D * !X)	-0.00273	-0.00273	-0.00273
	(A_N * B * !D * !X)	0.00115	0.00115	0.00115
	(A_N * B * !D * !X)	-0.00273	-0.00274	-0.00274
	(A_N * !B * D * !X)	0.00218	0.00219	0.00218
	(A_N * !B * D * !X)	-0.00273	-0.00274	-0.00273
	(A_N * !B * !D * !X)	0.00113	0.00114	0.00114
	(A_N * !B * !D * !X)	-0.00274	-0.00275	-0.00274
	(!A_N * B * !D * !X)	0.00087	0.00087	0.00087
	(!A_N * B * !D * !X)	-0.00276	-0.00277	-0.00275
	(!A_N * !B * D * !X)	0.00214	0.00215	0.00214
	(!A_N * !B * D * !X)	-0.00277	-0.00277	-0.00277
	(!A_N * !B * !D * !X)	0.00104	0.00104	0.00104
	(!A_N * !B * !D * !X)	-0.00277	-0.00279	-0.00278
sky130_fd_sc_hs__and4b_4	**(A_N * B * D * !X)**	0.00467	0.00471	0.00470
	(A_N * B * D * !X)	-0.00557	-0.00559	-0.00558
	(A_N * B * !D * !X)	0.00304	0.00306	0.00305
	(A_N * B * !D * !X)	-0.00559	-0.00561	-0.00560
	(A_N * !B * D * !X)	0.00471	0.00473	0.00472
	(A_N * !B * D * !X)	-0.00558	-0.00559	-0.00558
	(A_N * !B * !D * !X)	0.00310	0.00313	0.00311
	(A_N * !B * !D * !X)	-0.00558	-0.00562	-0.00560
	(!A_N * B * !D * !X)	0.00251	0.00253	0.00254
	(!A_N * B * !D * !X)	-0.00563	-0.00566	-0.00562
	(!A_N * !B * D * !X)	0.00464	0.00466	0.00465
	(!A_N * !B * D * !X)	-0.00565	-0.00566	-0.00565
	(!A_N * !B * !D * !X)	0.00288	0.00289	0.00288
	(!A_N * !B * !D * !X)	-0.00569	-0.00571	-0.00569

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)	-0.00198	-0.00217	-0.00218
	(A_N * B * D * !X)	0.00245	0.00240	0.00241
	(A_N * B * !D * !X)	-0.00139	-0.00140	-0.00139
	(A_N * B * !D * !X)	0.00245	0.00251	0.00243
	(A_N * !B * D * !X)	-0.00213	-0.00218	-0.00219
	(A_N * !B * D * !X)	0.00240	0.00241	0.00241
	(A_N * !B * !D * !X)	-0.00138	-0.00139	-0.00139
	(A_N * !B * !D * !X)	0.00241	0.00245	0.00242
	(!A_N * B * !D * !X)	-0.00108	-0.00110	-0.00109
	(!A_N * B * !D * !X)	0.00246	0.00250	0.00244
	(!A_N * !B * D * !X)	-0.00207	-0.00218	-0.00218
	(!A_N * !B * D * !X)	0.00247	0.00243	0.00241
	(!A_N * !B * !D * !X)	-0.00131	-0.00132	-0.00131
	(!A_N * !B * !D * !X)	0.00253	0.00255	0.00245
sky130_fd_sc_hs__and4b_2	(A_N * B * D * !X)	-0.00194	-0.00212	-0.00214
	(A_N * B * D * !X)	0.00279	0.00279	0.00276
	(A_N * B * !D * !X)	-0.00115	-0.00115	-0.00115
	(A_N * B * !D * !X)	0.00280	0.00286	0.00278
	(A_N * !B * D * !X)	-0.00206	-0.00216	-0.00215
	(A_N * !B * D * !X)	0.00275	0.00278	0.00276
	(A_N * !B * !D * !X)	-0.00113	-0.00114	-0.00114
	(A_N * !B * !D * !X)	0.00277	0.00280	0.00278
	(!A_N * B * !D * !X)	-0.00081	-0.00082	-0.00082
	(!A_N * B * !D * !X)	0.00283	0.00287	0.00281
	(!A_N * !B * D * !X)	-0.00200	-0.00214	-0.00213
	(!A_N * !B * D * !X)	0.00281	0.00280	0.00278
	(!A_N * !B * !D * !X)	-0.00104	-0.00104	-0.00104
	(!A_N * !B * !D * !X)	0.00288	0.00291	0.00282

sky130_fd_sc_hs__and4b_4	(A_N * B * D * !X)	-0.00435	-0.00471	-0.00470
	(A_N * B * D * !X)	0.00567	0.00567	0.00562
	(A_N * B * !D * !X)	-0.00304	-0.00306	-0.00305
	(A_N * B * !D * !X)	0.00567	0.00575	0.00564
	(A_N * !B * D * !X)	-0.00454	-0.00473	-0.00472
	(A_N * !B * D * !X)	0.00561	0.00563	0.00562
	(A_N * !B * !D * !X)	-0.00310	-0.00313	-0.00311
	(A_N * !B * !D * !X)	0.00562	0.00567	0.00563
	(!A_N * B * !D * !X)	-0.00240	-0.00244	-0.00245
	(!A_N * B * !D * !X)	0.00578	0.00584	0.00574
	(!A_N * !B * D * !X)	-0.00441	-0.00466	-0.00465
	(!A_N * !B * D * !X)	0.00576	0.00569	0.00568
	(!A_N * !B * !D * !X)	-0.00288	-0.00289	-0.00288
	(!A_N * !B * !D * !X)	0.00594	0.00601	0.00580

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)	0.00180	0.00182	0.00181
	(A_N * B * C * !X)	-0.00256	-0.00258	-0.00257
	(A_N * !C * !X)	0.00187	0.00188	0.00187
	(A_N * !C * !X)	-0.00257	-0.00258	-0.00257
	(A_N * !B * C * !X)	0.00183	0.00184	0.00182
	(A_N * !B * C * !X)	-0.00258	-0.00258	-0.00257
	(!A_N * B * !C * !X)	0.00186	0.00187	0.00186
	(!A_N * B * !C * !X)	-0.00258	-0.00259	-0.00258
	(!A_N * !B * C * !X)	0.00181	0.00182	0.00181
	(!A_N * !B * C * !X)	-0.00258	-0.00259	-0.00258
	(!A_N * !B * !C * !X)	0.00186	0.00187	0.00186
	(!A_N * !B * !C * !X)	-0.00258	-0.00259	-0.00258

sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	0.00217	0.00217	0.00216
	(A_N * B * C * !X)	-0.00294	-0.00295	-0.00294
	(A_N * !C * !X)	0.00217	0.00219	0.00218
	(A_N * !C * !X)	-0.00293	-0.00295	-0.00294
	(A_N * !B * C * !X)	0.00219	0.00219	0.00218
	(A_N * !B * C * !X)	-0.00295	-0.00294	-0.00294
	(!A_N * B * !C * !X)	0.00215	0.00217	0.00216
	(!A_N * B * !C * !X)	-0.00297	-0.00299	-0.00298
	(!A_N * !B * C * !X)	0.00214	0.00215	0.00214
	(!A_N * !B * C * !X)	-0.00298	-0.00298	-0.00298
	(!A_N * !B * !C * !X)	0.00214	0.00215	0.00214
	(!A_N * !B * !C * !X)	-0.00297	-0.00298	-0.00298
sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	0.00393	0.00394	0.00393
	(A_N * B * C * !X)	-0.00555	-0.00556	-0.00555
	(A_N * !C * !X)	0.00388	0.00390	0.00388
	(A_N * !C * !X)	-0.00555	-0.00557	-0.00555
	(A_N * !B * C * !X)	0.00394	0.00398	0.00396
	(A_N * !B * C * !X)	-0.00553	-0.00557	-0.00555
	(!A_N * B * !C * !X)	0.00384	0.00386	0.00384
	(!A_N * B * !C * !X)	-0.00562	-0.00564	-0.00563
	(!A_N * !B * C * !X)	0.00387	0.00390	0.00388
	(!A_N * !B * C * !X)	-0.00560	-0.00563	-0.00562
	(!A_N * !B * !C * !X)	0.00382	0.00384	0.00382
	(!A_N * !B * !C * !X)	-0.00562	-0.00564	-0.00562

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)**	-0.00166	-0.00182	-0.00181
	(A_N * B * C * !X)	0.00260	0.00261	0.00260
	(A_N * !C * !X)	-0.00178	-0.00185	-0.00185
	(A_N * !C * !X)	0.00261	0.00261	0.00260
	(A_N * !B * C * !X)	-0.00169	-0.00181	-0.00182
	(A_N * !B * C * !X)	0.00260	0.00263	0.00260
	(!A_N * B * !C * !X)	-0.00177	-0.00186	-0.00186
	(!A_N * B * !C * !X)	0.00260	0.00260	0.00259
	(!A_N * !B * C * !X)	-0.00169	-0.00182	-0.00181
	(!A_N * !B * C * !X)	0.00259	0.00262	0.00259
	(!A_N * !B * !C * !X)	-0.00179	-0.00186	-0.00186
	(!A_N * !B * !C * !X)	0.00260	0.00260	0.00259
sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	-0.00197	-0.00214	-0.00215
	(A_N * B * C * !X)	0.00297	0.00300	0.00297
	(A_N * !C * !X)	-0.00208	-0.00217	-0.00217
	(A_N * !C * !X)	0.00296	0.00298	0.00297
	(A_N * !B * C * !X)	-0.00199	-0.00213	-0.00215
	(A_N * !B * C * !X)	0.00298	0.00300	0.00297
	(!A_N * B * !C * !X)	-0.00204	-0.00214	-0.00215
	(!A_N * B * !C * !X)	0.00298	0.00302	0.00299
	(!A_N * !B * C * !X)	-0.00198	-0.00211	-0.00213
	(!A_N * !B * C * !X)	0.00300	0.00302	0.00299
	(!A_N * !B * !C * !X)	-0.00206	-0.00215	-0.00214
	(!A_N * !B * !C * !X)	0.00297	0.00300	0.00299

sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	-0.00354	-0.00390	-0.00393
	(A_N * B * C * !X)	0.00561	0.00561	0.00559
	(A_N * !C * !X)	-0.00373	-0.00389	-0.00388
	(A_N * !C * !X)	0.00557	0.00563	0.00559
	(A_N * !B * C * !X)	-0.00359	-0.00389	-0.00394
	(A_N * !B * C * !X)	0.00560	0.00565	0.00559
	(!A_N * B * !C * !X)	-0.00362	-0.00383	-0.00381
	(!A_N * B * !C * !X)	0.00566	0.00567	0.00565
	(!A_N * !B * C * !X)	-0.00352	-0.00382	-0.00388
	(!A_N * !B * C * !X)	0.00567	0.00571	0.00565
	(!A_N * !B * !C * !X)	-0.00369	-0.00384	-0.00382
	(!A_N * !B * !C * !X)	0.00563	0.00569	0.00565

SKY130_FD_SC_HS__AND4x

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00266	0.00262	0.00253	0.00255	1.40683
sky130_fd_sc_hs__and4_2	0.00286	0.00294	0.00279	0.00276	2.37644
sky130_fd_sc_hs__and4_4	0.00496	0.00513	0.00561	0.00502	5.23769

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4_1	0.00000	0.47056	4.61293
sky130_fd_sc_hs__and4_2	0.00000	0.48061	1.93615
sky130_fd_sc_hs__and4_4	0.00000	0.96305	3.87229

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)	0.07161	0.51029	6.27832
	B->X (RR)	0.07797	0.51020	6.18971
	C->X (RR)	0.08171	0.49960	6.06688
	D->X (RR)	0.08641	0.48193	5.76948
sky130_fd_sc_hs__and4_2	A->X (RR)	0.07751	0.45139	6.05752
	B->X (RR)	0.08442	0.44848	5.94935
	C->X (RR)	0.08903	0.43618	5.82058
	D->X (RR)	0.09277	0.41442	5.40125
sky130_fd_sc_hs__and4_4	A->X (RR)	0.08372	0.39500	6.42358
	B->X (RR)	0.09351	0.39978	6.41732
	C->X (RR)	0.10344	0.38688	6.18931
	D->X (RR)	0.10323	0.36909	6.12488

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and4_1	A->X (FF)	0.05988	0.41499	4.45650
	B->X (FF)	0.06689	0.43510	4.56011
	C->X (FF)	0.07248	0.45236	4.69831
	D->X (FF)	0.07800	0.46870	4.84563
sky130_fd_sc_hs__and4_2	A->X (FF)	0.06346	0.38701	4.07215
	B->X (FF)	0.07183	0.40920	4.19910
	C->X (FF)	0.07756	0.42667	4.34502
	D->X (FF)	0.08551	0.44934	4.53300
sky130_fd_sc_hs__and4_4	A->X (FF)	0.06410	0.36808	4.57243
	B->X (FF)	0.06830	0.37494	4.57706
	C->X (FF)	0.07435	0.39361	4.74437
	D->X (FF)	0.07599	0.40601	4.89691

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.01299	0.01874	0.14545
	A	0.00654	0.01228	0.13962
	B	0.01421	0.01914	0.14326
	B	0.00657	0.01152	0.13617
	C	0.01553	0.02033	0.14977
	C	0.00659	0.01138	0.14135
	D	0.01707	0.02062	0.12753
	D	0.00659	0.01014	0.11729
sky130_fd_sc_hs__and4_2	A	0.01815	0.02331	0.15353
	A	0.01098	0.01619	0.14787
	B	0.01979	0.02412	0.15069
	B	0.01117	0.01555	0.14363
	C	0.02122	0.02530	0.15823
	C	0.01119	0.01534	0.14848
	D	0.02298	0.02550	0.11277
	D	0.01124	0.01376	0.10171
sky130_fd_sc_hs__and4_4	A	0.03483	0.04431	0.28626
	A	0.02247	0.03206	0.27559
	B	0.03795	0.04619	0.28883
	B	0.02234	0.03097	0.27492
	C	0.04185	0.04886	0.27844
	C	0.02248	0.02962	0.26195
	D	0.04360	0.05093	0.31982
	D	0.02252	0.02985	0.30174

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.00488	0.01229	0.12828
	A	0.01135	0.01867	0.13306
	B	0.00565	0.01315	0.12814
	B	0.01323	0.02054	0.13470
	C	0.00622	0.01378	0.13456
	C	0.01502	0.02247	0.14178
	D	0.00671	0.01361	0.13356
	D	0.01696	0.02384	0.14294
sky130_fd_sc_hs__and4_2	A	0.00895	0.01628	0.13529
	A	0.01614	0.02343	0.14065
	B	0.00994	0.01688	0.13409
	B	0.01850	0.02541	0.14256
	C	0.01107	0.01820	0.14120
	C	0.02094	0.02787	0.15097
	D	0.01156	0.01734	0.13620
	D	0.02302	0.02866	0.14580
sky130_fd_sc_hs__and4_4	A	0.01814	0.03136	0.27381
	A	0.03048	0.04362	0.28507
	B	0.01910	0.03277	0.27899
	B	0.03462	0.04808	0.29355
	C	0.02061	0.03361	0.28823
	C	0.03967	0.05243	0.30604
	D	0.02359	0.03653	0.31521
	D	0.04417	0.05705	0.32814

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)	0.00069	0.00069	0.00064
	(B * C * !D * !X)	-0.00284	-0.00286	-0.00297
	(B * !C * !X)	0.00066	0.00066	0.00063
	(B * !C * !X)	-0.00290	-0.00290	-0.00297
	(!B * !X)	0.00067	0.00066	0.00065
	(!B * !X)	-0.00295	-0.00295	-0.00298
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	0.00083	0.00084	0.00077
	(B * C * !D * !X)	-0.00320	-0.00323	-0.00337
	(B * !C * !X)	0.00081	0.00081	0.00077
	(B * !C * !X)	-0.00328	-0.00328	-0.00338
	(!B * !X)	0.00080	0.00080	0.00078
	(!B * !X)	-0.00335	-0.00335	-0.00338
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	0.00116	0.00117	0.00105
	(B * C * !D * !X)	-0.00592	-0.00597	-0.00622
	(B * !C * !X)	0.00115	0.00114	0.00106
	(B * !C * !X)	-0.00604	-0.00605	-0.00625
	(!B * !X)	0.00111	0.00112	0.00108
	(!B * !X)	-0.00617	-0.00620	-0.00626

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)	-0.00063	-0.00063	-0.00062
	(B * C * !D * !X)	0.00298	0.00302	0.00298
	(B * !C * !X)	-0.00063	-0.00063	-0.00062
	(B * !C * !X)	0.00298	0.00302	0.00298
	(!B * !X)	-0.00064	-0.00065	-0.00063
	(!B * !X)	0.00298	0.00304	0.00299
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	-0.00074	-0.00076	-0.00075
	(B * C * !D * !X)	0.00337	0.00342	0.00339
	(B * !C * !X)	-0.00074	-0.00076	-0.00075
	(B * !C * !X)	0.00337	0.00342	0.00339
	(!B * !X)	-0.00076	-0.00077	-0.00076
	(!B * !X)	0.00339	0.00342	0.00339
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	-0.00100	-0.00101	-0.00099
	(B * C * !D * !X)	0.00627	0.00635	0.00629
	(B * !C * !X)	-0.00101	-0.00102	-0.00100
	(B * !C * !X)	0.00627	0.00635	0.00629
	(!B * !X)	-0.00104	-0.00106	-0.00105
	(!B * !X)	0.00626	0.00635	0.00629

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)**	0.00075	0.00076	0.00075
	(A * C * !D * !X)	-0.00243	-0.00244	-0.00243
	(A * !C * !X)	0.00076	0.00076	0.00076
	(A * !C * !X)	-0.00243	-0.00243	-0.00243
	(!A * C * D * !X)	0.00187	0.00188	0.00188
	(!A * C * D * !X)	-0.00243	-0.00244	-0.00243
	(!A * C * !D * !X)	0.00096	0.00097	0.00096
	(!A * C * !D * !X)	-0.00243	-0.00244	-0.00244
	(!A * !C * !X)	0.00090	0.00090	0.00090
	(!A * !C * !X)	-0.00244	-0.00244	-0.00244
sky130_fd_sc_hs__and4_2	**(A * C * !D * !X)**	0.00089	0.00089	0.00088
	(A * C * !D * !X)	-0.00289	-0.00289	-0.00289
	(A * !C * !X)	0.00092	0.00092	0.00092
	(A * !C * !X)	-0.00289	-0.00289	-0.00289
	(!A * C * D * !X)	0.00216	0.00218	0.00217
	(!A * C * D * !X)	-0.00289	-0.00290	-0.00289
	(!A * C * !D * !X)	0.00114	0.00115	0.00114
	(!A * C * !D * !X)	-0.00289	-0.00291	-0.00290
	(!A * !C * !X)	0.00111	0.00111	0.00110
	(!A * !C * !X)	-0.00290	-0.00291	-0.00290
sky130_fd_sc_hs__and4_4	**(A * C * !D * !X)**	0.00189	0.00191	0.00189
	(A * C * !D * !X)	-0.00545	-0.00550	-0.00546
	(A * !C * !X)	0.00199	0.00201	0.00199
	(A * !C * !X)	-0.00547	-0.00552	-0.00548
	(!A * C * D * !X)	0.00418	0.00417	0.00419
	(!A * C * D * !X)	-0.00545	-0.00544	-0.00544
	(!A * C * !D * !X)	0.00234	0.00234	0.00233
	(!A * C * !D * !X)	-0.00549	-0.00550	-0.00550
	(!A * !C * !X)	0.00235	0.00237	0.00236
	(!A * !C * !X)	-0.00551	-0.00554	-0.00552

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)	-0.00072	-0.00073	-0.00073
	(A * C * !D * !X)	0.00248	0.00250	0.00245
	(A * !C * !X)	-0.00073	-0.00074	-0.00074
	(A * !C * !X)	0.00248	0.00250	0.00245
	(!A * C * D * !X)	-0.00165	-0.00186	-0.00188
	(!A * C * D * !X)	0.00263	0.00247	0.00245
	(!A * C * !D * !X)	-0.00096	-0.00097	-0.00096
	(!A * C * !D * !X)	0.00262	0.00258	0.00247
	(!A * !C * !X)	-0.00090	-0.00090	-0.00090
	(!A * !C * !X)	0.00254	0.00257	0.00247
sky130_fd_sc_hs__and4_2	(A * C * !D * !X)	-0.00086	-0.00087	-0.00087
	(A * C * !D * !X)	0.00294	0.00298	0.00291
	(A * !C * !X)	-0.00087	-0.00088	-0.00088
	(A * !C * !X)	0.00294	0.00298	0.00291
	(!A * C * D * !X)	-0.00195	-0.00217	-0.00217
	(!A * C * D * !X)	0.00312	0.00293	0.00291
	(!A * C * !D * !X)	-0.00114	-0.00115	-0.00114
	(!A * C * !D * !X)	0.00308	0.00304	0.00293
	(!A * !C * !X)	-0.00111	-0.00111	-0.00110
	(!A * !C * !X)	0.00304	0.00306	0.00294

sky130_fd_sc_hs__and4_4	**(A * C * !D * !X)**	-0.00184	-0.00187	-0.00187
	(A * C * !D * !X)	0.00556	0.00563	0.00553
	(A * !C * !X)	-0.00188	-0.00191	-0.00192
	(A * !C * !X)	0.00557	0.00562	0.00553
	(!A * C * D * !X)	-0.00376	-0.00417	-0.00419
	(!A * C * D * !X)	0.00583	0.00552	0.00548
	(!A * C * !D * !X)	-0.00234	-0.00234	-0.00233
	(!A * C * !D * !X)	0.00582	0.00574	0.00555
	(!A * !C * !X)	-0.00235	-0.00237	-0.00236
	(!A * !C * !X)	0.00581	0.00583	0.00563

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)**	0.00089	0.00089	0.00089
	(A * B * !D * !X)	-0.00233	-0.00232	-0.00231
	(A * !B * D * !X)	0.00195	0.00196	0.00195
	(A * !B * D * !X)	-0.00235	-0.00236	-0.00235
	(A * !B * !D * !X)	0.00105	0.00104	0.00104
	(A * !B * !D * !X)	-0.00236	-0.00235	-0.00235
	(!A * B * D * !X)	0.00195	0.00196	0.00196
	(!A * B * D * !X)	-0.00235	-0.00236	-0.00235
	(!A * B * !D * !X)	0.00103	0.00103	0.00102
	(!A * B * !D * !X)	-0.00236	-0.00236	-0.00235
	(!A * !B * D * !X)	0.00195	0.00197	0.00195
	(!A * !B * D * !X)	-0.00235	-0.00237	-0.00235
	(!A * !B * !D * !X)	0.00108	0.00109	0.00109
	(!A * !B * !D * !X)	-0.00235	-0.00236	-0.00235

sky130_fd_sc_hs__and4_2	**(A * B * !D * !X)**	0.00095	0.00096	0.00096
	(A * B * !D * !X)	-0.00267	-0.00270	-0.00268
	(A * !B * D * !X)	0.00220	0.00222	0.00221
	(A * !B * D * !X)	-0.00272	-0.00273	-0.00273
	(A * !B * !D * !X)	0.00116	0.00117	0.00116
	(A * !B * !D * !X)	-0.00272	-0.00273	-0.00273
	(!A * B * D * !X)	0.00218	0.00218	0.00217
	(!A * B * D * !X)	-0.00273	-0.00273	-0.00273
	(!A * B * !D * !X)	0.00111	0.00113	0.00112
	(!A * B * !D * !X)	-0.00272	-0.00274	-0.00273
	(!A * !B * D * !X)	0.00220	0.00222	0.00221
	(!A * !B * D * !X)	-0.00272	-0.00273	-0.00273
	(!A * !B * !D * !X)	0.00122	0.00123	0.00123
	(!A * !B * !D * !X)	-0.00272	-0.00273	-0.00273
sky130_fd_sc_hs__and4_4	**(A * B * !D * !X)**	0.00250	0.00252	0.00253
	(A * B * !D * !X)	-0.00558	-0.00562	-0.00557
	(A * !B * D * !X)	0.00467	0.00470	0.00468
	(A * !B * D * !X)	-0.00564	-0.00566	-0.00565
	(A * !B * !D * !X)	0.00285	0.00286	0.00285
	(A * !B * !D * !X)	-0.00568	-0.00569	-0.00568
	(!A * B * D * !X)	0.00464	0.00469	0.00466
	(!A * B * D * !X)	-0.00563	-0.00566	-0.00564
	(!A * B * !D * !X)	0.00279	0.00282	0.00280
	(!A * B * !D * !X)	-0.00567	-0.00570	-0.00568
	(!A * !B * D * !X)	0.00467	0.00470	0.00468
	(!A * !B * D * !X)	-0.00564	-0.00566	-0.00565
	(!A * !B * !D * !X)	0.00297	0.00299	0.00297
	(!A * !B * !D * !X)	-0.00568	-0.00571	-0.00568

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)	-0.00084	-0.00085	-0.00085
	(A * B * !D * !X)	0.00240	0.00243	0.00238
	(A * !B * D * !X)	-0.00183	-0.00196	-0.00195
	(A * !B * D * !X)	0.00237	0.00238	0.00236
	(A * !B * !D * !X)	-0.00105	-0.00104	-0.00104
	(A * !B * !D * !X)	0.00245	0.00247	0.00239
	(!A * B * D * !X)	-0.00171	-0.00191	-0.00194
	(!A * B * D * !X)	0.00241	0.00239	0.00236
	(!A * B * !D * !X)	-0.00103	-0.00103	-0.00102
	(!A * B * !D * !X)	0.00243	0.00247	0.00238
	(!A * !B * D * !X)	-0.00187	-0.00196	-0.00195
	(!A * !B * D * !X)	0.00235	0.00238	0.00236
	(!A * !B * !D * !X)	-0.00108	-0.00109	-0.00109
	(!A * !B * !D * !X)	0.00238	0.00240	0.00237
sky130_fd_sc_hs__and4_2	(A * B * !D * !X)	-0.00090	-0.00091	-0.00091
	(A * B * !D * !X)	0.00278	0.00281	0.00276
	(A * !B * D * !X)	-0.00205	-0.00220	-0.00219
	(A * !B * D * !X)	0.00273	0.00276	0.00274
	(A * !B * !D * !X)	-0.00116	-0.00117	-0.00116
	(A * !B * !D * !X)	0.00284	0.00287	0.00277
	(!A * B * D * !X)	-0.00192	-0.00214	-0.00217
	(!A * B * D * !X)	0.00276	0.00277	0.00274
	(!A * B * !D * !X)	-0.00111	-0.00113	-0.00112
	(!A * B * !D * !X)	0.00277	0.00283	0.00275
	(!A * !B * D * !X)	-0.00209	-0.00220	-0.00219
	(!A * !B * D * !X)	0.00273	0.00276	0.00274
	(!A * !B * !D * !X)	-0.00122	-0.00123	-0.00123
	(!A * !B * !D * !X)	0.00273	0.00277	0.00274

sky130_fd_sc_hs__and4_4	(A * B * !D * !X)	-0.00239	-0.00242	-0.00244
	(A * B * !D * !X)	0.00577	0.00583	0.00573
	(A * !B * D * !X)	-0.00442	-0.00467	-0.00468
	(A * !B * D * !X)	0.00568	0.00568	0.00567
	(A * !B * !D * !X)	-0.00285	-0.00286	-0.00285
	(A * !B * !D * !X)	0.00591	0.00597	0.00578
	(!A * B * D * !X)	-0.00420	-0.00464	-0.00466
	(!A * B * D * !X)	0.00574	0.00571	0.00567
	(!A * B * !D * !X)	-0.00279	-0.00282	-0.00280
	(!A * B * !D * !X)	0.00577	0.00585	0.00572
	(!A * !B * D * !X)	-0.00448	-0.00467	-0.00468
	(!A * !B * D * !X)	0.00567	0.00568	0.00567
	(!A * !B * !D * !X)	-0.00297	-0.00299	-0.00297
	(!A * !B * !D * !X)	0.00571	0.00575	0.00571

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)	0.00190	0.00192	0.00192
	(A * B * !C * !X)	-0.00258	-0.00259	-0.00259
	(A * !B * C * !X)	0.00189	0.00189	0.00188
	(A * !B * C * !X)	-0.00260	-0.00260	-0.00259
	(A * !B * !C * !X)	0.00191	0.00193	0.00192
	(A * !B * !C * !X)	-0.00258	-0.00260	-0.00259
	(!A * B * C * !X)	0.00188	0.00189	0.00188
	(!A * B * C * !X)	-0.00259	-0.00260	-0.00259
	(!A * !C * !X)	0.00192	0.00193	0.00192
	(!A * !C * !X)	-0.00259	-0.00260	-0.00259
	(!A * !B * C * !X)	0.00189	0.00189	0.00188
	(!A * !B * C * !X)	-0.00260	-0.00260	-0.00259

sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	0.00225	0.00226	0.00224
	(A * B * !C * !X)	-0.00282	-0.00282	-0.00282
	(A * !B * C * !X)	0.00217	0.00221	0.00219
	(A * !B * C * !X)	-0.00280	-0.00283	-0.00282
	(A * !B * !C * !X)	0.00225	0.00225	0.00224
	(A * !B * !C * !X)	-0.00282	-0.00282	-0.00282
	(!A * B * C * !X)	0.00217	0.00218	0.00217
	(!A * B * C * !X)	-0.00282	-0.00282	-0.00281
	(!A * !C * !X)	0.00225	0.00225	0.00224
	(!A * !C * !X)	-0.00282	-0.00282	-0.00282
	(!A * !B * C * !X)	0.00218	0.00219	0.00218
	(!A * !B * C * !X)	-0.00282	-0.00282	-0.00282
sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	0.00367	0.00371	0.00369
	(A * B * !C * !X)	-0.00551	-0.00553	-0.00552
	(A * !B * C * !X)	0.00370	0.00371	0.00372
	(A * !B * C * !X)	-0.00550	-0.00552	-0.00552
	(A * !B * !C * !X)	0.00369	0.00372	0.00369
	(A * !B * !C * !X)	-0.00552	-0.00554	-0.00552
	(!A * B * C * !X)	0.00369	0.00371	0.00369
	(!A * B * C * !X)	-0.00552	-0.00553	-0.00552
	(!A * !C * !X)	0.00367	0.00370	0.00368
	(!A * !C * !X)	-0.00552	-0.00554	-0.00552
	(!A * !B * C * !X)	0.00371	0.00375	0.00373
	(!A * !B * C * !X)	-0.00550	-0.00553	-0.00552

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)**	-0.00183	-0.00191	-0.00191
	(A * B * !C * !X)	0.00261	0.00261	0.00260
	(A * !B * C * !X)	-0.00175	-0.00188	-0.00188
	(A * !B * C * !X)	0.00260	0.00263	0.00260
	(A * !B * !C * !X)	-0.00185	-0.00191	-0.00191
	(A * !B * !C * !X)	0.00261	0.00261	0.00260
	(!A * B * C * !X)	-0.00170	-0.00187	-0.00188
	(!A * B * C * !X)	0.00259	0.00263	0.00260
	(!A * !C * !X)	-0.00184	-0.00191	-0.00191
	(!A * !C * !X)	0.00261	0.00261	0.00260
	(!A * !B * C * !X)	-0.00175	-0.00188	-0.00188
	(!A * !B * C * !X)	0.00260	0.00263	0.00260
sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	-0.00215	-0.00224	-0.00224
	(A * B * !C * !X)	0.00283	0.00284	0.00283
	(A * !B * C * !X)	-0.00206	-0.00220	-0.00219
	(A * !B * C * !X)	0.00282	0.00284	0.00283
	(A * !B * !C * !X)	-0.00216	-0.00224	-0.00224
	(A * !B * !C * !X)	0.00283	0.00284	0.00283
	(!A * B * C * !X)	-0.00199	-0.00218	-0.00217
	(!A * B * C * !X)	0.00282	0.00284	0.00283
	(!A * !C * !X)	-0.00216	-0.00224	-0.00224
	(!A * !C * !X)	0.00283	0.00284	0.00283
	(!A * !B * C * !X)	-0.00206	-0.00219	-0.00218
	(!A * !B * C * !X)	0.00282	0.00284	0.00283

sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	-0.00351	-0.00370	-0.00369
	(A * B * !C * !X)	0.00553	0.00559	0.00555
	(A * !B * C * !X)	-0.00338	-0.00367	-0.00372
	(A * !B * C * !X)	0.00556	0.00561	0.00555
	(A * !B * !C * !X)	-0.00357	-0.00372	-0.00369
	(A * !B * !C * !X)	0.00553	0.00556	0.00555
	(!A * B * C * !X)	-0.00328	-0.00367	-0.00369
	(!A * B * C * !X)	0.00557	0.00561	0.00555
	(!A * !C * !X)	-0.00354	-0.00370	-0.00368
	(!A * !C * !X)	0.00552	0.00556	0.00555
	(!A * !B * C * !X)	-0.00339	-0.00367	-0.00373
	(!A * !B * C * !X)	0.00556	0.00561	0.00555

SKY130_FD_SC_HS__BUFx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00255	1.39925
sky130_fd_sc_hs__buf_16	0.01666	21.41960
sky130_fd_sc_hs__buf_2	0.00274	2.52390
sky130_fd_sc_hs__buf_4	0.00377	5.32328
sky130_fd_sc_hs__buf_8	0.00853	9.96490
sky130_fd_sc_hs__bufbuf_16	0.00305	21.38282
sky130_fd_sc_hs__bufbuf_8	0.00239	10.16419

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__buf_1	0.00000	0.67921	1.16184
sky130_fd_sc_hs__buf_16	0.00000	2.21761	3.11117
sky130_fd_sc_hs__buf_2	0.00000	0.44878	0.50121
sky130_fd_sc_hs__buf_4	0.00000	1.55932	2.34656
sky130_fd_sc_hs__buf_8	0.00000	1.10881	1.55559
sky130_fd_sc_hs__bufbuf_16	0.00000	2.62081	3.69309
sky130_fd_sc_hs__bufbuf_8	0.00000	1.78801	1.82387

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)	0.04265	0.43219	5.64318
sky130_fd_sc_hs__buf_16	A->X (RR)	0.04449	0.19412	5.68725
sky130_fd_sc_hs__buf_2	A->X (RR)	0.04482	0.35006	5.23035
sky130_fd_sc_hs__buf_4	A->X (RR)	0.05421	0.33774	6.11420
sky130_fd_sc_hs__buf_8	A->X (RR)	0.04430	0.23692	5.50252
sky130_fd_sc_hs__bufbuf_16	A->X (RR)	0.12996	0.28584	5.59674
sky130_fd_sc_hs__bufbuf_8	A->X (RR)	0.13625	0.31137	5.44972

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__buf_1	A->X (FF)	0.05019	0.40096	4.63667
sky130_fd_sc_hs__buf_16	A->X (FF)	0.06006	0.33321	4.98745
sky130_fd_sc_hs__buf_2	A->X (FF)	0.05897	0.39443	4.51710
sky130_fd_sc_hs__buf_4	A->X (FF)	0.05865	0.35507	4.50697
sky130_fd_sc_hs__buf_8	A->X (FF)	0.06088	0.35950	5.00557
sky130_fd_sc_hs__bufbuf_16	A->X (FF)	0.15187	0.42432	4.83660
sky130_fd_sc_hs__bufbuf_8	A->X (FF)	0.13564	0.39970	4.67595

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	A	0.00995	0.01604	0.12657
	A	0.00436	0.01046	0.12135
sky130_fd_sc_hs__buf_16	A	0.10247	0.15199	1.02208
	A	0.06587	0.11541	0.99004
sky130_fd_sc_hs__buf_2	A	0.01479	0.02060	0.11719
	A	0.00878	0.01463	0.11173
sky130_fd_sc_hs__buf_4	A	0.02448	0.03560	0.25510
	A	0.01620	0.02747	0.24905
sky130_fd_sc_hs__buf_8	A	0.05189	0.07525	0.49488
	A	0.03314	0.05660	0.47975
sky130_fd_sc_hs__bufbuf_16	A	0.12381	0.13872	0.33367
	A	0.11713	0.13217	0.33398
sky130_fd_sc_hs__bufbuf_8	A	0.06240	0.07109	0.21971
	A	0.05715	0.06588	0.21815

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	A	0.00446	0.01301	0.13446
	A	0.01007	0.01851	0.13845
sky130_fd_sc_hs__buf_16	A	0.07455	0.12537	0.99071
	A	0.11128	0.16205	1.02720
sky130_fd_sc_hs__buf_2	A	0.00849	0.01628	0.13157
	A	0.01449	0.02221	0.13649
sky130_fd_sc_hs__buf_4	A	0.01856	0.03238	0.23601
	A	0.02682	0.04057	0.24096
sky130_fd_sc_hs__buf_8	A	0.03614	0.06121	0.49322
	A	0.05488	0.07987	0.49945
sky130_fd_sc_hs__bufbuf_16	A	0.12482	0.13634	0.32646
	A	0.13153	0.14271	0.33281
sky130_fd_sc_hs__bufbuf_8	A	0.05799	0.06746	0.21996
	A	0.06324	0.07249	0.21928

SKY130_FD_SC_HS__CLKBUFx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00271	1.42808
sky130_fd_sc_hs__clkbuf_16	0.00919	21.87241
sky130_fd_sc_hs__clkbuf_2	0.00272	2.34453
sky130_fd_sc_hs__clkbuf_4	0.00250	5.24174
sky130_fd_sc_hs__clkbuf_8	0.00471	10.07934

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__clkbuf_1	0.00000	0.19318	0.19318
sky130_fd_sc_hs__clkbuf_16	0.00000	1.93178	3.05459
sky130_fd_sc_hs__clkbuf_2	0.00000	0.28977	0.38334
sky130_fd_sc_hs__clkbuf_4	0.00000	0.48295	0.76365
sky130_fd_sc_hs__clkbuf_8	0.00000	0.96589	1.52730

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)	0.04549	0.45956	6.05269
sky130_fd_sc_hs__clkbuf_16	A->X (RR)	0.06201	0.27736	6.35626
sky130_fd_sc_hs__clkbuf_2	A->X (RR)	0.05083	0.39707	5.63931
sky130_fd_sc_hs__clkbuf_4	A->X (RR)	0.06529	0.37573	6.13011
sky130_fd_sc_hs__clkbuf_8	A->X (RR)	0.06159	0.31485	6.07122

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkbuf_1	A->X (FF)	0.04811	0.51176	6.66872
sky130_fd_sc_hs__clkbuf_16	A->X (FF)	0.07181	0.39155	7.08177
sky130_fd_sc_hs__clkbuf_2	A->X (FF)	0.05546	0.44900	5.88041
sky130_fd_sc_hs__clkbuf_4	A->X (FF)	0.07134	0.46159	6.64423
sky130_fd_sc_hs__clkbuf_8	A->X (FF)	0.06895	0.41371	6.63377

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00965	0.01494	0.11103
	A	0.00373	0.00903	0.10587
sky130_fd_sc_hs__clkbuf_16	A	0.08222	0.10396	0.55473
	A	0.06199	0.08394	0.54206
sky130_fd_sc_hs__clkbuf_2	A	0.01328	0.01759	0.09523
	A	0.00749	0.01184	0.09015
sky130_fd_sc_hs__clkbuf_4	A	0.02150	0.02632	0.12706
	A	0.01600	0.02085	0.12468
sky130_fd_sc_hs__clkbuf_8	A	0.04127	0.05207	0.27157
	A	0.03090	0.04184	0.26754

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00353	0.01070	0.12419
	A	0.00949	0.01664	0.12965
sky130_fd_sc_hs__clkbuf_16	A	0.05726	0.08323	0.54535
	A	0.07748	0.10304	0.56435
sky130_fd_sc_hs__clkbuf_2	A	0.00603	0.01231	0.11410
	A	0.01182	0.01802	0.11714
sky130_fd_sc_hs__clkbuf_4	A	0.01396	0.02081	0.12934
	A	0.01945	0.02611	0.13214
sky130_fd_sc_hs__clkbuf_8	A	0.02770	0.04144	0.27828
	A	0.03804	0.05135	0.28067

SKY130_FD_SC_HS__CLKDLYINVx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00257	1.43696
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00261	1.43394
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00263	1.44865
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00256	1.43030
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00260	1.43656
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00263	1.43346

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__clkdlyinv3sd1_1	0.00000	0.43385	0.48436
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00000	0.19414	0.38185
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00000	0.19728	0.38185
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00000	0.91519	0.96571
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00000	0.19607	0.38378
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00000	0.20549	0.39006

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)**	0.07309	0.59714	7.63532
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A->Y (FR)**	0.08170	0.61149	7.61320
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A->Y (FR)**	0.09489	0.63917	7.71698
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A->Y (FR)**	0.13235	0.65451	7.66379
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A->Y (FR)**	0.17659	0.70781	7.74170
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A->Y (FR)**	0.27577	0.81979	7.87059

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A->Y (RF)**	0.07318	0.41758	4.80280
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A->Y (RF)**	0.09455	0.45610	4.93604
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A->Y (RF)**	0.13929	0.53106	5.16949
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A->Y (RF)**	0.13217	0.47475	4.80889
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A->Y (RF)**	0.19152	0.55387	5.02712
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A->Y (RF)**	0.32747	0.71880	5.31296

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	A	0.00772	0.01566	0.15029
	A	0.01337	0.02146	0.15662
sky130_fd_sc_hs__clkdlyinv3sd2_1	A	0.00828	0.01555	0.14448
	A	0.01399	0.02129	0.15091
sky130_fd_sc_hs__clkdlyinv3sd3_1	A	0.00935	0.01580	0.14214
	A	0.01516	0.02163	0.14857
sky130_fd_sc_hs__clkdlyinv5sd1_1	A	0.01716	0.02468	0.15989
	A	0.02278	0.03036	0.16623
sky130_fd_sc_hs__clkdlyinv5sd2_1	A	0.01910	0.02583	0.15438
	A	0.02480	0.03152	0.16078
sky130_fd_sc_hs__clkdlyinv5sd3_1	A	0.02329	0.02912	0.15507
	A	0.02909	0.03495	0.16142

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A**	0.01312	0.02056	0.15423
	A	0.00747	0.01482	0.14859
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A**	0.01416	0.02089	0.14883
	A	0.00844	0.01517	0.14234
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A**	0.01687	0.02269	0.14857
	A	0.01108	0.01688	0.14231
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A**	0.02226	0.02939	0.16338
	A	0.01663	0.02372	0.15776
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A**	0.02466	0.03103	0.15888
	A	0.01897	0.02530	0.15240
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A**	0.03087	0.03622	0.16238
	A	0.02509	0.03042	0.15518

SKY130_FD_SC_HS__CLKINVx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00331	1.88490
sky130_fd_sc_hs__clkinv_16	0.04907	27.49315
sky130_fd_sc_hs__clkinv_2	0.00631	3.69973
sky130_fd_sc_hs__clkinv_4	0.01251	7.13684
sky130_fd_sc_hs__clkinv_8	0.02503	13.01167

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__clkinv_1	0.00000	1.15190	2.30078
sky130_fd_sc_hs__clkinv_16	0.00000	2.30605	4.56376
sky130_fd_sc_hs__clkinv_2	0.00000	0.28826	0.57047
sky130_fd_sc_hs__clkinv_4	0.00000	0.57651	1.14094
sky130_fd_sc_hs__clkinv_8	0.00000	1.15303	2.28188

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)	0.01734	0.58505	9.42343
sky130_fd_sc_hs__clkinv_16	A->Y (FR)	0.01255	0.32572	9.22742
sky130_fd_sc_hs__clkinv_2	A->Y (FR)	0.01611	0.52904	9.84150
sky130_fd_sc_hs__clkinv_4	A->Y (FR)	0.01423	0.45233	9.68753
sky130_fd_sc_hs__clkinv_8	A->Y (FR)	0.01459	0.38618	9.40361

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkinv_1	A->Y (RF)	0.02072	0.61062	10.02720
sky130_fd_sc_hs__clkinv_16	A->Y (RF)	0.01474	0.29136	9.75266
sky130_fd_sc_hs__clkinv_2	A->Y (RF)	0.01831	0.50801	9.88892
sky130_fd_sc_hs__clkinv_4	A->Y (RF)	0.01615	0.42437	9.80849
sky130_fd_sc_hs__clkinv_8	A->Y (RF)	0.01659	0.34735	9.42190

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	-0.00057	0.00386	0.04838
	A	0.00670	0.01114	0.05601
sky130_fd_sc_hs__clkinv_16	A	-0.01922	0.06517	0.54500
	A	0.08830	0.17279	0.66142
sky130_fd_sc_hs__clkinv_2	A	-0.00166	0.00533	0.06674
	A	0.01216	0.01948	0.08087
sky130_fd_sc_hs__clkinv_4	A	-0.00374	0.01300	0.14323
	A	0.02368	0.04068	0.16902
sky130_fd_sc_hs__clkinv_8	A	-0.00731	0.03157	0.33946
	A	0.04749	0.08743	0.39766

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	0.00525	0.00709	0.02663
	A	-0.00199	-0.00016	0.01934
sky130_fd_sc_hs__clkinv_16	A	0.07266	0.12437	0.39384
	A	-0.03494	0.01615	0.30436
sky130_fd_sc_hs__clkinv_2	A	0.01038	0.01442	0.05002
	A	-0.00344	0.00051	0.03613
sky130_fd_sc_hs__clkinv_4	A	0.01887	0.02899	0.08908
	A	-0.00853	0.00103	0.07774
sky130_fd_sc_hs__clkinv_8	A	0.03712	0.06012	0.24726
	A	-0.01775	0.00522	0.19101

SKY130_FD_SC_HS__CONB

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00163	1.43707
sky130_fd_sc_hs__dlymetal6s4s_1	0.00163	1.44065
sky130_fd_sc_hs__dlymetal6s6s_1	0.00163	1.43913

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlymetal6s2s_1	0.00000	0.34574	0.57954
sky130_fd_sc_hs__dlymetal6s4s_1	0.00000	0.34574	0.57954
sky130_fd_sc_hs__dlymetal6s6s_1	0.00000	0.34574	0.57954

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)**	0.05164	0.43397	5.32284
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (RR)**	0.10163	0.48479	5.31719
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (RR)**	0.14548	0.52608	5.35404

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlymetal6s2s_1	**A->X (FF)**	0.07408	0.48263	5.20279
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (FF)**	0.14570	0.54431	5.22732
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (FF)**	0.21210	0.61247	5.29199

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.02540	0.03043	0.13362
	A	0.02182	0.02687	0.13044
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.02540	0.03173	0.16222
	A	0.02182	0.02817	0.15899
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.02542	0.02890	0.09764
	A	0.02184	0.02535	0.09445

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.02194	0.02634	0.09737
	A	0.02551	0.02989	0.09967
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.02197	0.02736	0.12345
	A	0.02554	0.03092	0.12471
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.02193	0.02599	0.09344
	A	0.02550	0.02955	0.09565

SKY130_FD_SC_HS__DFBBNx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00177	0.00176	0.00554	0.00305	1.42875	1.32351
sky130_fd_sc_hs__dfbbn_2	0.00177	0.00178	0.00550	0.00305	2.67390	2.64460

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfbbn_1	0.00000	2.71672	5.70460
sky130_fd_sc_hs__dfbbn_2	0.00000	2.52028	5.23412

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)	0.28397	0.85635	8.39863
	SET_B->Q (FR)	0.14489	0.74651	8.46756
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FR)	0.31722	0.79217	8.25328
	SET_B->Q (FR)	0.16570	0.68027	8.33163

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)	0.28365	0.65930	5.03776
	RESET_B->Q (FF)	0.18003	0.57692	5.00920
	SET_B->Q (RF)	0.10812	0.32058	2.10408
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FF)	0.31139	0.63962	4.85090
	RESET_B->Q (FF)	0.20559	0.55794	4.84983
	SET_B->Q (RF)	0.13310	0.31422	2.00667

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)	0.25899	0.85770	8.47977
	RESET_B->Q_N (FR)	0.15654	0.77965	8.45745
	SET_B->Q_N (RR)	0.08381	0.52612	5.87732
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FR)	0.26463	0.76639	8.35448
	RESET_B->Q_N (FR)	0.16077	0.68688	8.37031
	SET_B->Q_N (RR)	0.08785	0.44474	5.79117

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)	0.23044	0.64698	4.85815
	SET_B->Q_N (FF)	0.09561	0.54108	5.14415
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FF)	0.25057	0.63817	4.78838
	SET_B->Q_N (FF)	0.10481	0.52489	5.09640

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)	0.00078	0.07319	2.87376
	setup	CLK_N (F)	0.07089	-0.01286	-2.86580
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.00105	0.07198	2.88305
	setup	CLK_N (F)	0.06470	-0.01851	-2.87576

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)	-0.10004	-0.14577	-0.71057
	setup	CLK_N (F)	0.11255	0.15586	0.72192
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.10080	-0.14461	-0.71242
	setup	CLK_N (F)	0.11161	0.15562	0.72315

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)	0.00078	0.07319	2.87376
	setup	CLK_N (F)	0.07089	-0.01286	-2.86580
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.00105	0.07198	2.88305
	setup	CLK_N (F)	0.06470	-0.01851	-2.87576

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)	-0.10004	-0.14577	-0.71057
	setup	CLK_N (F)	0.11255	0.15586	0.72192
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.10080	-0.14461	-0.71242
	setup	CLK_N (F)	0.11161	0.15562	0.72315

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)	0.06618	-0.01790	-2.65334
	removal	CLK_N (F)	0.01477	0.08730	2.66760
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.06469	-0.02209	-2.66203
	removal	CLK_N (F)	0.01313	0.08676	2.67625

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)	0.06618	-0.01790	-2.65334
	removal	CLK_N (F)	0.01477	0.08730	2.66760
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.06469	-0.02209	-2.66203
	removal	CLK_N (F)	0.01313	0.08676	2.67625

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 ()	0.14855	0.60669	16.50020
	min_pulse_width	RESET_B ()	0.13488	0.60669	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	RESET_B ()	0.15995	0.60669	16.50020
	min_pulse_width	RESET_B ()	0.13944	0.60669	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)	-0.01606	-0.11535	-2.56624
	removal	CLK_N (F)	0.02703	0.12347	2.68697
	hold	RESET_B (R)	-0.03670	-0.06359	-0.34738
	setup	RESET_B (R)	0.07736	0.09923	0.62238
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.01953	-0.11535	-2.37098
	removal	CLK_N (F)	0.02703	0.12347	2.68990
	hold	RESET_B (R)	-0.05605	-0.08221	-0.47031
	setup	RESET_B (R)	0.08656	0.11814	0.63723

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)	-0.01606	-0.11535	-2.56624
	removal	CLK_N (F)	0.02703	0.12347	2.68697
	hold	RESET_B (R)	-0.03670	-0.06359	-0.34738
	hold	RESET_B (R)	-0.03840	-0.06500	-0.34917
	setup	RESET_B (R)	0.07736	0.09923	0.46406
	setup	RESET_B (R)	0.06160	0.08651	0.62238
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.01953	-0.11535	-2.37098
	removal	CLK_N (F)	0.02703	0.12347	2.68990
	hold	RESET_B (R)	-0.05747	-0.09197	-0.47124
	hold	RESET_B (R)	-0.05605	-0.08221	-0.47031
	setup	RESET_B (R)	0.08656	0.11814	0.57505
	setup	RESET_B (R)	0.06539	0.10631	0.63723

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 ()	0.10981	0.60669	16.50020
	min_pulse_width	SET_B ()	0.09841	0.60669	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	SET_B ()	0.12804	0.60669	16.50020
	min_pulse_width	SET_B ()	0.10981	0.60669	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 ()	0.12120	0.60669	16.50020
	min_pulse_width	CLK_N ()	0.10981	0.60669	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.11892	0.60669	16.50020
	min_pulse_width	CLK_N ()	0.10981	0.60669	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 ()	0.11892	0.60669	16.50020
	min_pulse_width	CLK_N ()	0.14627	0.60669	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.13716	0.60669	16.50020
	min_pulse_width	CLK_N ()	0.15539	0.60669	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	0.02047	0.02486	0.11347
	CLK_N	0.02378	0.02817	0.11323
	SET_B	0.02119	0.02876	0.17154
	SET_B	0.02735	0.03489	0.17766
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.02705	0.03002	0.11573
	CLK_N	0.03040	0.03336	0.11820
	SET_B	0.02699	0.03387	0.17936
	SET_B	0.03311	0.03995	0.18374

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.02192	0.02680	0.10862
	CLK_N	0.02496	0.02983	0.11157
	RESET_B	0.02610	0.02913	0.07857
	RESET_B	0.02786	0.03089	0.08031
	SET_B	0.02734	0.03186	0.17213
	SET_B	0.02120	0.02572	0.16597
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.02694	0.03161	0.11420
	CLK_N	0.02995	0.03460	0.11658
	RESET_B	0.03113	0.03397	0.08534
	RESET_B	0.03289	0.03573	0.08644
	SET_B	0.03230	0.03661	0.17703
	SET_B	0.02616	0.03046	0.17085

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.02195	0.02683	0.10978
	CLK_N	0.02500	0.02986	0.11238
	RESET_B	0.02611	0.02902	0.07949
	RESET_B	0.02788	0.03078	0.08096
	SET_B	0.02737	0.03189	0.17277
	SET_B	0.02122	0.02574	0.16661
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.02698	0.03166	0.11428
	CLK_N	0.02999	0.03466	0.11722
	RESET_B	0.02755	0.03043	0.09547
	RESET_B	0.03291	0.03569	0.08686
	SET_B	0.03233	0.03661	0.17760
	SET_B	0.02619	0.03048	0.17147

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.02043	0.02482	0.10938
	CLK_N	0.02374	0.02812	0.11224
	SET_B	0.02113	0.02871	0.17065
	SET_B	0.02729	0.03483	0.17669
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.02702	0.02998	0.11539
	CLK_N	0.03037	0.03331	0.11745
	SET_B	0.02693	0.03377	0.17653
	SET_B	0.03305	0.03988	0.18239

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)	0.01547	0.01790	0.07985
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01230	0.01473	0.07668
	(CLK_N * !SET_B * Q * !Q_N)	0.01006	0.01242	0.06827
	(CLK_N * !SET_B * Q * !Q_N)	0.00611	0.00845	0.06433
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00841	0.01074	0.06649
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00451	0.00682	0.06261
	!CLK_N	0.00529	0.00806	0.06550
	!CLK_N	0.00139	0.00416	0.06160
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01553	0.01794	0.08002
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01234	0.01475	0.07683
	(CLK_N * !SET_B * Q * !Q_N)	0.01009	0.01246	0.06844
	(CLK_N * !SET_B * Q * !Q_N)	0.00613	0.00849	0.06450
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00838	0.01071	0.06661
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00447	0.00679	0.06271
	!CLK_N	0.00528	0.00807	0.06563
	!CLK_N	0.00137	0.00416	0.06173

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)	0.01509	0.01793	0.07840
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01826	0.02110	0.08155
	(CLK_N * !SET_B * Q * !Q_N)	0.00394	0.00652	0.06154
	(CLK_N * !SET_B * Q * !Q_N)	0.00788	0.01048	0.06550
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00527	0.00792	0.06318
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00915	0.01183	0.06707
	!CLK_N	0.00198	0.00513	0.06204
	!CLK_N	0.00589	0.00905	0.06594
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01504	0.01790	0.07846
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01824	0.02109	0.08165
	(CLK_N * !SET_B * Q * !Q_N)	0.00383	0.00642	0.06157
	(CLK_N * !SET_B * Q * !Q_N)	0.00777	0.01039	0.06553
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00523	0.00790	0.06328
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00912	0.01182	0.06719
	!CLK_N	0.00194	0.00511	0.06214
	!CLK_N	0.00585	0.00903	0.06605

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)	0.01740	0.02112	0.11927
	(CLK_N * D * SET_B * !Q * Q_N)	0.01358	0.01731	0.11545
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.01038	0.01427	0.10712
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00583	0.00971	0.10258
	(!SET_B * Q * !Q_N)	0.01036	0.01452	0.10792
	(!SET_B * Q * !Q_N)	0.00573	0.00987	0.10328
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.01747	0.02122	0.12008
	(CLK_N * D * SET_B * !Q * Q_N)	0.01358	0.01735	0.11620
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.01036	0.01429	0.10788
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00575	0.00968	0.10329
	(!SET_B * Q * !Q_N)	0.01037	0.01456	0.10839
	(!SET_B * Q * !Q_N)	0.00569	0.00986	0.10369

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)	0.01519	0.02042	0.11894
	(CLK_N * D * SET_B * !Q * Q_N)	0.01900	0.02425	0.12275
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00506	0.01003	0.10278
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00961	0.01458	0.10732
	(!SET_B * Q * !Q_N)	0.00315	0.00823	0.10146
	(!SET_B * Q * !Q_N)	0.00782	0.01290	0.10611
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.01524	0.02050	0.11970
	(CLK_N * D * SET_B * !Q * Q_N)	0.01912	0.02440	0.12358
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00509	0.01011	0.10357
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00970	0.01471	0.10816
	(!SET_B * Q * !Q_N)	0.00315	0.00825	0.10186
	(!SET_B * Q * !Q_N)	0.00787	0.01298	0.10657

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)	0.00497	0.00500	0.00498
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00571	-0.00573	-0.00572
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.01603	0.02073	0.14710
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00439	0.00901	0.13542
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00491	0.00495	0.00493
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00568	-0.00570	-0.00569
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.01602	0.02072	0.14689
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00449	0.00912	0.13532

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)	-0.00483	-0.00496	-0.00494
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00587	0.00584	0.00578
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00174	0.00866	0.13650
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.01343	0.02036	0.14818
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00478	-0.00487	-0.00489
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00584	0.00573	0.00574
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00168	0.00859	0.13628
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.01328	0.02017	0.14787

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)**	0.02904	0.03677	0.20314
	(D * RESET_B * SET_B * !Q * Q_N)	0.02343	0.03113	0.19753
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01834	0.02575	0.19040
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01200	0.01942	0.18405
	(D * !RESET_B * SET_B * !Q * Q_N)	0.02185	0.02956	0.19579
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01551	0.02318	0.18944
	(!D * SET_B * !Q * Q_N)	0.01738	0.02486	0.18974
	(!D * SET_B * !Q * Q_N)	0.01104	0.01852	0.18339
	(!D * RESET_B * SET_B * Q * !Q_N)	0.03059	0.03800	0.20567
	(!D * RESET_B * SET_B * Q * !Q_N)	0.02351	0.03090	0.19858
	(!D * !SET_B * Q * !Q_N)	0.01929	0.02677	0.19426
	(!D * !SET_B * Q * !Q_N)	0.01299	0.02045	0.18795

sky130_fd_sc_hs__dfbbn_2	**(D * RESET_B * SET_B * !Q * Q_N)**	0.02912	0.03686	0.20325
	(D * RESET_B * SET_B * !Q * Q_N)	0.02350	0.03120	0.19760
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01832	0.02573	0.19037
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01198	0.01939	0.18402
	(D * !RESET_B * SET_B * !Q * Q_N)	0.02187	0.02957	0.19579
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01552	0.02320	0.18944
	(!D * SET_B * !Q * Q_N)	0.01740	0.02488	0.18975
	(!D * SET_B * !Q * Q_N)	0.01106	0.01853	0.18341
	(!D * RESET_B * SET_B * Q * !Q_N)	0.03060	0.03800	0.20568
	(!D * RESET_B * SET_B * Q * !Q_N)	0.02353	0.03092	0.19861
	(!D * !SET_B * Q * !Q_N)	0.01921	0.02669	0.19419
	(!D * !SET_B * Q * !Q_N)	0.01291	0.02036	0.18787

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)	0.01359	0.02305	0.18688
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01995	0.02942	0.19324
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01940	0.02859	0.19154
	(D * !RESET_B * SET_B * !Q * Q_N)	0.02576	0.03493	0.19790
	(!D * SET_B * !Q * Q_N)	0.01491	0.02422	0.18792
	(!D * SET_B * !Q * Q_N)	0.02127	0.03055	0.19429
	(!D * !SET_B * Q * !Q_N)	0.01906	0.02867	0.19546
	(!D * !SET_B * Q * !Q_N)	0.02538	0.03501	0.20178
sky130_fd_sc_hs__dfbbn_2	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01360	0.02306	0.18690
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01996	0.02942	0.19326
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01935	0.02853	0.19148
	(D * !RESET_B * SET_B * !Q * Q_N)	0.02570	0.03488	0.19785
	(!D * SET_B * !Q * Q_N)	0.01489	0.02420	0.18790
	(!D * SET_B * !Q * Q_N)	0.02125	0.03052	0.19427
	(!D * !SET_B * Q * !Q_N)	0.01912	0.02873	0.19554
	(!D * !SET_B * Q * !Q_N)	0.02544	0.03507	0.20187

SKY130_FD_SC_HS__DFBBP

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00156	0.00192	0.00634	0.00302	1.44638	1.30537

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfbbp_1	0.00000	2.71672	5.70460

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)	0.27473	0.67511	5.68884
	SET_B->Q (FR)	0.13154	0.73055	8.48341

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbp_1	CLK->Q (RF)	0.21636	0.42010	2.28872
	RESET_B->Q (FF)	0.17559	0.57252	5.06600
	SET_B->Q (RF)	0.11035	0.31665	2.16954

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)	0.19288	0.61507	5.64516
	RESET_B->Q_N (FR)	0.15279	0.77330	8.42854
	SET_B->Q_N (RR)	0.08773	0.52105	5.84293

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)	0.22273	0.45750	2.00590
	SET_B->Q_N (FF)	0.08564	0.51275	5.01108

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)	-0.02945	-0.05322	-0.21713
	setup	CLK (R)	0.05201	0.07008	0.23267

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)	-0.06266	-0.18199	-3.38262
	setup	CLK (R)	0.09338	0.21274	3.39010

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)	-0.02945	-0.05322	-0.21713
	setup	CLK (R)	0.05201	0.07008	0.23267

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)	-0.06266	-0.18199	-3.38262
	setup	CLK (R)	0.09338	0.21274	3.39010

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)	0.05718	0.06467	0.15369
	removal	CLK (R)	-0.03081	-0.03852	-0.09818

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)	0.05718	0.06467	0.15369
	removal	CLK (R)	-0.03081	-0.03852	-0.09818

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 ()	0.13260	0.60669	16.50020
	min_pulse_width	RESET_B ()	0.13716	0.60669	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)	0.00247	0.00400	0.74893
	removal	CLK (R)	0.03942	0.06072	-0.01207
	hold	RESET_B (R)	-0.04034	-0.06805	-0.39825
	setup	RESET_B (R)	0.07176	0.09671	0.64322

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)	0.00247	0.00400	0.74893
	removal	CLK (R)	0.03942	0.06072	-0.01207
	hold	RESET_B (R)	-0.04185	-0.06849	-0.40079
	hold	RESET_B (R)	-0.04034	-0.06805	-0.39825
	setup	RESET_B (R)	0.07176	0.09671	0.64322
	setup	RESET_B (R)	0.07046	0.09516	0.50186

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 ()	0.08701	0.60669	16.50020
	min_pulse_width	SET_B ()	0.09385	0.60669	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 ()	0.07334	0.60669	16.50020
	min_pulse_width	CLK ()	0.09613	0.60669	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 ()	0.10981	0.60669	16.50020
	min_pulse_width	CLK ()	0.14627	0.60669	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	0.02397	0.02779	0.11394
	CLK	0.02077	0.02455	0.11069
	SET_B	0.02077	0.02885	0.17572
	SET_B	0.02745	0.03552	0.18238

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.02362	0.02818	0.11690
	CLK	0.02012	0.02458	0.11337
	RESET_B	0.02406	0.02705	0.07692
	RESET_B	0.02587	0.02886	0.07842
	SET_B	0.02611	0.03046	0.17350
	SET_B	0.01941	0.02377	0.16675

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.02366	0.02816	0.11786
	CLK	0.02016	0.02461	0.11439
	RESET_B	0.02408	0.02696	0.07738
	RESET_B	0.02589	0.02878	0.07901
	SET_B	0.02613	0.03055	0.17405
	SET_B	0.01943	0.02379	0.16735

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.02392	0.02769	0.11294
	CLK	0.02073	0.02450	0.10979
	SET_B	0.02071	0.02879	0.17537
	SET_B	0.02738	0.03545	0.18153

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.00355	0.00714	0.06672
	CLK	0.00012	0.00369	0.06330
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.01460	0.01747	0.08060
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.01153	0.01438	0.07752
	(!CLK * !SET_B * Q * !Q_N)	0.00858	0.01133	0.06900
	(!CLK * !SET_B * Q * !Q_N)	0.00476	0.00751	0.06518
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00675	0.00949	0.06707
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00296	0.00569	0.06328

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	-0.00028	0.00359	0.06291
	CLK	0.00314	0.00704	0.06635
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.01150	0.01468	0.07731
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.01458	0.01777	0.08039
	(!CLK * !SET_B * Q * !Q_N)	0.00261	0.00552	0.06258
	(!CLK * !SET_B * Q * !Q_N)	0.00642	0.00935	0.06640
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00405	0.00704	0.06436
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00782	0.01084	0.06815

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)	0.00950	0.01352	0.10700
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00519	0.00920	0.10271
	(!SET_B * Q * !Q_N)	0.01017	0.01449	0.10848
	(!SET_B * Q * !Q_N)	0.00580	0.01008	0.10409
	(!CLK * D * SET_B * !Q * Q_N)	0.01751	0.02127	0.11984
	(!CLK * D * SET_B * !Q * Q_N)	0.01393	0.01768	0.11627

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)	0.00490	0.00987	0.10313
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00920	0.01417	0.10743
	(!SET_B * Q * !Q_N)	0.00226	0.00740	0.10114
	(!SET_B * Q * !Q_N)	0.00668	0.01182	0.10554
	(!CLK * D * SET_B * !Q * Q_N)	0.01296	0.01807	0.11696
	(!CLK * D * SET_B * !Q * Q_N)	0.01653	0.02165	0.12053

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)	0.00503	0.00505	0.00502
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	-0.00715	-0.00715	-0.00714
	(!CLK * !D * RESET_B * Q * !Q_N)	0.01345	0.01826	0.14418
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00036	0.00510	0.13107

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)	-0.00486	-0.00499	-0.00497
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	0.00724	0.00722	0.00720
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00312	0.01034	0.13725
	(!CLK * !D * RESET_B * Q * !Q_N)	0.01617	0.02346	0.15036

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)	0.02107	0.02886	0.19804
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01438	0.02214	0.19134
	(D * !RESET_B * SET_B * !Q * Q_N)	0.02548	0.03331	0.20561
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01915	0.02697	0.19927
	(!D * SET_B * !Q * Q_N)	0.02149	0.02935	0.19882
	(!D * SET_B * !Q * Q_N)	0.01480	0.02264	0.19213
	(!D * !SET_B * Q * !Q_N)	0.02674	0.03474	0.20401
	(!D * !SET_B * Q * !Q_N)	0.01967	0.02764	0.19693

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)	0.02232	0.03239	0.20437
	(D * RESET_B * SET_B * !Q * Q_N)	0.02935	0.03943	0.21142
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01101	0.02109	0.18987
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01770	0.02779	0.19657
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01402	0.02418	0.19668
	(D * !RESET_B * SET_B * !Q * Q_N)	0.02034	0.03051	0.20303
	(!D * SET_B * !Q * Q_N)	0.01097	0.02093	0.18988
	(!D * SET_B * !Q * Q_N)	0.01765	0.02764	0.19657
	(!D * RESET_B * SET_B * Q * !Q_N)	0.02398	0.03438	0.20586
	(!D * RESET_B * SET_B * Q * !Q_N)	0.03034	0.04076	0.21223
	(!D * !SET_B * Q * !Q_N)	0.01498	0.02539	0.19609
	(!D * !SET_B * Q * !Q_N)	0.02205	0.03248	0.20317

SKY130_FD_SC_HS__DFRBPx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00184	0.00568	0.00308	1.47823	1.44655
sky130_fd_sc_hs__dfrbp_2	0.00169	0.00547	0.00308	2.84492	2.81648

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrbp_1	0.00000	1.27270	2.58411
sky130_fd_sc_hs__dfrbp_2	0.00000	1.25439	2.10902

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)	0.16830	0.56765	5.60870
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RR)	0.19471	0.51701	5.98649

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrbp_1	CLK->Q (RF)	0.16111	0.35754	2.07525
	RESET_B->Q (FF)	0.22568	0.64685	5.36579
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RF)	0.18387	0.34538	2.13937
	RESET_B->Q (FF)	0.26655	0.65892	5.49324

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)	0.13713	0.55126	5.59274
	RESET_B->Q_N (FR)	0.20115	0.83586	8.86722
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RR)	0.13470	0.45995	5.46622
	RESET_B->Q_N (FR)	0.21745	0.77106	8.81169

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)	0.12755	0.36845	2.06869
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RF)	0.12723	0.35340	2.12113

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)	-0.04385	-0.10116	-0.57725
	setup	CLK (R)	0.07757	0.12549	0.59191
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.04633	-0.10525	-0.61057
	setup	CLK (R)	0.08950	0.13474	0.62453

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)	-0.06100	-0.18175	-3.39715
	setup	CLK (R)	0.10685	0.23748	3.42705
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.06664	-0.19709	-3.42230
	setup	CLK (R)	0.11831	0.25138	3.45248

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)	-0.04385	-0.10116	-0.57725
	setup	CLK (R)	0.07757	0.12549	0.59191
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.04633	-0.10525	-0.61057
	setup	CLK (R)	0.08950	0.13474	0.62453

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)	-0.06100	-0.18175	-3.39715
	setup	CLK (R)	0.10685	0.23748	3.42705
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.06664	-0.19709	-3.42230
	setup	CLK (R)	0.11831	0.25138	3.45248

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)	0.08566	0.12345	0.99862
	removal	CLK (R)	-0.06943	-0.11335	-0.99518
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.10162	0.13154	0.99938
	removal	CLK (R)	-0.07672	-0.11942	-0.99497

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)	0.08566	0.12345	0.99862
	removal	CLK (R)	-0.06943	-0.11335	-0.99518
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.10162	0.13154	0.99938
	removal	CLK (R)	-0.07672	-0.11942	-0.99497

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 ()	0.11664	0.60669	16.50020
	min_pulse_width	RESET_B ()	0.09841	0.60669	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	RESET_B ()	0.12576	0.60669	16.50020
	min_pulse_width	RESET_B ()	0.10753	0.60669	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 ()	0.09157	0.60669	16.50020
	min_pulse_width	CLK ()	0.06422	0.60669	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.11436	0.60669	16.50020
	min_pulse_width	CLK ()	0.07334	0.60669	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 ()	0.11436	0.60669	16.50020
	min_pulse_width	CLK ()	0.13944	0.60669	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.13260	0.60669	16.50020
	min_pulse_width	CLK ()	0.14172	0.60669	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	0.02235	0.02584	0.10950
	CLK	0.01899	0.02237	0.10609
sky130_fd_sc_hs__dfrbp_2	CLK	0.02669	0.02918	0.11263
	CLK	0.02337	0.02587	0.10924

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.02222	0.02610	0.10744
	CLK	0.01878	0.02260	0.10397
	RESET_B	0.01724	0.02192	0.09687
	RESET_B	0.02391	0.02853	0.10163
sky130_fd_sc_hs__dfrbp_2	CLK	0.02582	0.02970	0.11054
	CLK	0.02250	0.02635	0.10719
	RESET_B	0.02267	0.02734	0.10328
	RESET_B	0.02883	0.03351	0.10727

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.02223	0.02620	0.10801
	CLK	0.01879	0.02263	0.10456
	RESET_B	0.01725	0.02194	0.09740
	RESET_B	0.02392	0.02858	0.10252
sky130_fd_sc_hs__dfrbp_2	CLK	0.02584	0.02974	0.11155
	CLK	0.02252	0.02638	0.10819
	RESET_B	0.02269	0.02737	0.10421
	RESET_B	0.02886	0.03355	0.10816

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.02234	0.02573	0.10890
	CLK	0.01897	0.02233	0.10552
sky130_fd_sc_hs__dfrbp_2	CLK	0.02670	0.02925	0.11105
	CLK	0.02338	0.02588	0.10770

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00559	0.00820	0.06258
	(CLK * RESET_B)	0.00116	0.00375	0.05815
	(CLK * !RESET_B)	0.00059	0.00060	0.00058
	(CLK * !RESET_B)	-0.00192	-0.00193	-0.00195
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01621	0.01926	0.08361
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01157	0.01461	0.07897
	(!CLK * !RESET_B)	0.00059	0.00060	0.00058
	(!CLK * !RESET_B)	-0.00193	-0.00193	-0.00195
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00642	0.00887	0.06290
	(CLK * RESET_B)	0.00253	0.00496	0.05901
	(CLK * !RESET_B)	0.00068	0.00068	0.00067
	(CLK * !RESET_B)	-0.00166	-0.00166	-0.00168
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01967	0.02266	0.08678
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01601	0.01899	0.08312
	(!CLK * !RESET_B)	0.00068	0.00068	0.00067
	(!CLK * !RESET_B)	-0.00166	-0.00166	-0.00168

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00069	0.00362	0.05779
	(CLK * RESET_B)	0.00515	0.00807	0.06223
	(CLK * !RESET_B)	-0.00056	-0.00057	-0.00056
	(CLK * !RESET_B)	0.00196	0.00201	0.00197
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01106	0.01462	0.07867
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01571	0.01928	0.08331
	(!CLK * !RESET_B)	-0.00056	-0.00057	-0.00056
	(!CLK * !RESET_B)	0.00197	0.00199	0.00197
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00121	0.00393	0.05777
	(CLK * RESET_B)	0.00512	0.00784	0.06167
	(CLK * !RESET_B)	-0.00064	-0.00065	-0.00064
	(CLK * !RESET_B)	0.00170	0.00174	0.00171
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01292	0.01649	0.07793
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01659	0.02015	0.08160
	(!CLK * !RESET_B)	-0.00064	-0.00065	-0.00064
	(!CLK * !RESET_B)	0.00170	0.00172	0.00171

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)	0.01060	0.01296	0.06684
	(CLK * D * !Q * Q_N)	-0.00237	-0.00011	0.05383
	(CLK * !D * !Q * Q_N)	0.00513	0.00515	0.00514
	(CLK * !D * !Q * Q_N)	-0.00576	-0.00577	-0.00576
	(!CLK * D * !Q * Q_N)	0.02174	0.02501	0.11601
	(!CLK * D * !Q * Q_N)	0.00858	0.01177	0.10280
	(!CLK * !D * !Q * Q_N)	0.00500	0.00503	0.00501
	(!CLK * !D * !Q * Q_N)	-0.00587	-0.00589	-0.00588
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	0.01183	0.01411	0.06816
	(CLK * D * !Q * Q_N)	-0.00058	0.00161	0.05571
	(CLK * !D * !Q * Q_N)	0.00555	0.00559	0.00556
	(CLK * !D * !Q * Q_N)	-0.00508	-0.00510	-0.00509
	(!CLK * D * !Q * Q_N)	0.02556	0.02859	0.11881
	(!CLK * D * !Q * Q_N)	0.01341	0.01636	0.10664
	(!CLK * !D * !Q * Q_N)	0.00547	0.00551	0.00549
	(!CLK * !D * !Q * Q_N)	-0.00515	-0.00517	-0.00516

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)	-0.00298	-0.00021	0.05373
	(CLK * D * !Q * Q_N)	0.01001	0.01283	0.06672
	(CLK * !D * !Q * Q_N)	-0.00493	-0.00513	-0.00511
	(CLK * !D * !Q * Q_N)	0.00588	0.00580	0.00579
	(!CLK * D * !Q * Q_N)	0.00787	0.01171	0.10551
	(!CLK * D * !Q * Q_N)	0.02105	0.02495	0.11874
	(!CLK * !D * !Q * Q_N)	-0.00482	-0.00497	-0.00499
	(!CLK * !D * !Q * Q_N)	0.00599	0.00591	0.00590
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	-0.00298	-0.00019	0.05400
	(CLK * D * !Q * Q_N)	0.00942	0.01225	0.06643
	(CLK * !D * !Q * Q_N)	-0.00537	-0.00559	-0.00556
	(CLK * !D * !Q * Q_N)	0.00521	0.00515	0.00512
	(!CLK * D * !Q * Q_N)	0.00953	0.01306	0.10440
	(!CLK * D * !Q * Q_N)	0.02176	0.02526	0.11660
	(!CLK * !D * !Q * Q_N)	-0.00529	-0.00551	-0.00548
	(!CLK * !D * !Q * Q_N)	0.00528	0.00522	0.00520

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)	0.02036	0.02710	0.18533
	(D * RESET_B * Q * !Q_N)	0.01355	0.02027	0.17851
	(D * !RESET_B * !Q * Q_N)	0.02083	0.02758	0.18567
	(D * !RESET_B * !Q * Q_N)	0.01402	0.02074	0.17888
	(!D * !Q * Q_N)	0.02083	0.02757	0.18572
	(!D * !Q * Q_N)	0.01402	0.02073	0.17890
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.01853	0.02539	0.18266
	(D * RESET_B * Q * !Q_N)	0.01188	0.01871	0.17601
	(D * !RESET_B * !Q * Q_N)	0.01849	0.02530	0.18244
	(D * !RESET_B * !Q * Q_N)	0.01184	0.01865	0.17580
	(!D * !Q * Q_N)	0.01849	0.02529	0.18247
	(!D * !Q * Q_N)	0.01184	0.01865	0.17582

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)	0.01103	0.02001	0.17850
	(D * RESET_B * Q * !Q_N)	0.01785	0.02682	0.18531
	(D * RESET_B * !Q * Q_N)	0.02059	0.02978	0.19334
	(D * RESET_B * !Q * Q_N)	0.02721	0.03640	0.19993
	(D * !RESET_B * !Q * Q_N)	0.01026	0.01924	0.17801
	(D * !RESET_B * !Q * Q_N)	0.01708	0.02606	0.18482
	(!D * RESET_B * Q * !Q_N)	0.02275	0.03205	0.19348
	(!D * RESET_B * Q * !Q_N)	0.02978	0.03905	0.20049
	(!D * !Q * Q_N)	0.01026	0.01924	0.17803
	(!D * !Q * Q_N)	0.01708	0.02606	0.18485
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.01112	0.01997	0.17792
	(D * RESET_B * Q * !Q_N)	0.01778	0.02663	0.18457
	(D * RESET_B * !Q * Q_N)	0.02496	0.03388	0.19574
	(D * RESET_B * !Q * Q_N)	0.03182	0.04075	0.20259
	(D * !RESET_B * !Q * Q_N)	0.01102	0.01987	0.17768
	(D * !RESET_B * !Q * Q_N)	0.01768	0.02655	0.18433
	(!D * RESET_B * Q * !Q_N)	0.02445	0.03380	0.19484
	(!D * RESET_B * Q * !Q_N)	0.03089	0.04022	0.20128
	(!D * !Q * Q_N)	0.01102	0.01989	0.17770
	(!D * !Q * Q_N)	0.01768	0.02656	0.18435

SKY130_FD_SC_HS__DFRTN

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00181	0.00546	0.00295	1.38023

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrtn_1	0.00000	1.19939	2.38934

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)	0.18039	0.77004	8.38106

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)	0.15035	0.52422	4.76476
	RESET_B->Q (FF)	0.20661	0.61832	5.12880

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)	0.01064	0.07065	2.58859
	setup	CLK_N (F)	0.04484	-0.01619	-2.53903

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)	-0.04715	-0.08634	-0.40868
	setup	CLK_N (F)	0.11900	0.14125	0.43833

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)	0.01064	0.07065	2.58859
	setup	CLK_N (F)	0.04484	-0.01619	-2.53903

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)	-0.04715	-0.08634	-0.40868
	setup	CLK_N (F)	0.11900	0.14125	0.43833

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)	0.05438	-0.02839	-2.25830
	removal	CLK_N (F)	-0.02672	0.04048	2.26306

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)	0.05438	-0.02839	-2.25830
	removal	CLK_N (F)	-0.02672	0.04048	2.26306

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 ()	0.08929	0.60669	16.50020
	min_pulse_width	RESET_B ()	0.11436	0.60669	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 ()	0.09157	0.60669	16.50020
	min_pulse_width	CLK_N ()	0.12804	0.60669	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 ()	0.10297	0.60669	16.50020
	min_pulse_width	CLK_N ()	0.09385	0.60669	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	0.03429	0.04409	0.21063
	CLK_N	0.04067	0.05046	0.21988

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtn_1	CLK_N	0.03127	0.04065	0.20935
	CLK_N	0.03750	0.04686	0.21424
	RESET_B	0.03049	0.03936	0.18494
	RESET_B	0.04284	0.05168	0.19706

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)	0.01609	0.01918	0.08335
	(CLK_N * RESET_B)	0.01201	0.01508	0.07927
	(CLK_N * !RESET_B)	0.00060	0.00060	0.00059
	(CLK_N * !RESET_B)	-0.00191	-0.00192	-0.00193
	(!CLK_N * RESET_B)	0.00544	0.00803	0.06243
	(!CLK_N * RESET_B)	0.00123	0.00383	0.05822
	(!CLK_N * !RESET_B)	0.00060	0.00059	0.00059
	(!CLK_N * !RESET_B)	-0.00191	-0.00191	-0.00193

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)	0.01250	0.01603	0.07985
	(CLK_N * RESET_B)	0.01659	0.02013	0.08394
	(CLK_N * !RESET_B)	-0.00057	-0.00057	-0.00057
	(CLK_N * !RESET_B)	0.00195	0.00197	0.00195
	(!CLK_N * RESET_B)	0.00083	0.00373	0.05792
	(!CLK_N * RESET_B)	0.00505	0.00794	0.06212
	(!CLK_N * !RESET_B)	-0.00057	-0.00058	-0.00057
	(!CLK_N * !RESET_B)	0.00195	0.00199	0.00195

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)	0.02160	0.02490	0.11533
	(CLK_N * D * !Q)	0.00931	0.01258	0.10305
	(CLK_N * !D * !Q)	0.00535	0.00539	0.00537
	(CLK_N * !D * !Q)	-0.00512	-0.00514	-0.00513
	(!CLK_N * D * !Q)	0.01017	0.01253	0.06635
	(!CLK_N * D * !Q)	-0.00227	0.00005	0.05391
	(!CLK_N * !D * !Q)	0.00523	0.00527	0.00525
	(!CLK_N * !D * !Q)	-0.00525	-0.00527	-0.00525

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)	0.00909	0.01292	0.10673
	(CLK_N * D * !Q)	0.02142	0.02523	0.11904
	(CLK_N * !D * !Q)	-0.00519	-0.00539	-0.00537
	(CLK_N * !D * !Q)	0.00524	0.00518	0.00516
	(!CLK_N * D * !Q)	-0.00267	0.00027	0.05404
	(!CLK_N * D * !Q)	0.00974	0.01274	0.06646
	(!CLK_N * !D * !Q)	-0.00506	-0.00524	-0.00525
	(!CLK_N * !D * !Q)	0.00537	0.00530	0.00529

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)	0.01949	0.02711	0.18916
	(D * RESET_B * Q)	0.01317	0.02077	0.18284
	(D * RESET_B * !Q)	0.03056	0.03835	0.20277
	(D * RESET_B * !Q)	0.02437	0.03216	0.19659
	(D * !RESET_B * !Q)	0.01916	0.02679	0.18886
	(D * !RESET_B * !Q)	0.01284	0.02047	0.18254
	(!D * RESET_B * Q)	0.03037	0.03794	0.20383
	(!D * RESET_B * Q)	0.02393	0.03150	0.19739
	(!D * !Q)	0.01915	0.02679	0.18858
	(!D * !Q)	0.01284	0.02044	0.18225

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)	0.01393	0.02299	0.18481
	(D * RESET_B * Q)	0.02025	0.02933	0.19114
	(D * !RESET_B * !Q)	0.01404	0.02311	0.18515
	(D * !RESET_B * !Q)	0.02037	0.02943	0.19148
	(!D * !Q)	0.01401	0.02323	0.18477
	(!D * !Q)	0.02034	0.02957	0.19109

SKY130_FD_SC_HS__DFRTPx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00182	0.00566	0.00309	1.47811
sky130_fd_sc_hs__dfrtp_2	0.00181	0.00557	0.00308	2.76346
sky130_fd_sc_hs__dfrtp_4	0.00183	0.00575	0.00308	5.54079

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dfrtp_1	0.00000	1.19939	2.38934
sky130_fd_sc_hs__dfrtp_2	0.00000	1.33333	2.40078
sky130_fd_sc_hs__dfrtp_4	0.00000	1.97797	3.57413

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)	0.14904	0.54766	5.55064
sky130_fd_sc_hs__dfrtp_2	CLK->Q (RR)	0.14763	0.45234	5.35872
sky130_fd_sc_hs__dfrtp_4	CLK->Q (RR)	0.19108	0.43550	5.52981

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrtp_1	CLK->Q (RF)	0.15377	0.35073	2.07313
	RESET_B->Q (FF)	0.21206	0.63311	5.35234
sky130_fd_sc_hs__dfrtp_2	CLK->Q (RF)	0.17016	0.33048	1.90608
	RESET_B->Q (FF)	0.22726	0.61121	5.18095
sky130_fd_sc_hs__dfrtp_4	CLK->Q (RF)	0.17115	0.30828	2.13227
	RESET_B->Q (FF)	0.23438	0.59401	5.41078

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)	-0.04784	-0.10728	-0.59267
	setup	CLK (R)	0.08706	0.13572	0.60495
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.04775	-0.10728	-0.58974
	setup	CLK (R)	0.08397	0.13154	0.59849
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.05051	-0.10525	-0.58883
	setup	CLK (R)	0.08344	0.13240	0.59861

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)	-0.05525	-0.17627	-3.40295
	setup	CLK (R)	0.10344	0.23864	3.43134
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.05509	-0.17619	-3.40097
	setup	CLK (R)	0.10215	0.23464	3.42736
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.06707	-0.18497	-3.40583
	setup	CLK (R)	0.11266	0.24363	3.44261

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)	-0.04784	-0.10728	-0.59267
	setup	CLK (R)	0.08706	0.13572	0.60495
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.04775	-0.10728	-0.58974
	setup	CLK (R)	0.08397	0.13154	0.59849
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.05051	-0.10525	-0.58883
	setup	CLK (R)	0.08344	0.13240	0.59861

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)	-0.05525	-0.17627	-3.40295
	setup	CLK (R)	0.10344	0.23864	3.43134
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.05509	-0.17619	-3.40097
	setup	CLK (R)	0.10215	0.23464	3.42736
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.06707	-0.18497	-3.40583
	setup	CLK (R)	0.11266	0.24363	3.44261

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)	0.09552	0.12954	1.00387
	removal	CLK (R)	-0.07099	-0.11537	-1.00195
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.09344	0.12754	1.00179
	removal	CLK (R)	-0.06988	-0.11335	-1.00104
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.09508	0.12754	1.00143
	removal	CLK (R)	-0.07506	-0.11537	-0.99795

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)	0.09552	0.12954	1.00387
	removal	CLK (R)	-0.07099	-0.11537	-1.00195
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.09344	0.12754	1.00179
	removal	CLK (R)	-0.06988	-0.11335	-1.00104
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.09508	0.12754	1.00143
	removal	CLK (R)	-0.07506	-0.11537	-0.99795

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 ()	0.11436	0.60669	16.50020
	min_pulse_width	RESET_B ()	0.08929	0.60669	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	RESET_B ()	0.11436	0.60669	16.50020
	min_pulse_width	RESET_B ()	0.09385	0.60669	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	RESET_B ()	0.12120	0.60669	16.50020
	min_pulse_width	RESET_B ()	0.09385	0.60669	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 ()	0.07106	0.60669	16.50020
	min_pulse_width	CLK ()	0.05738	0.60669	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.07334	0.60669	16.50020
	min_pulse_width	CLK ()	0.05966	0.60669	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.10069	0.60669	16.50020
	min_pulse_width	CLK ()	0.06422	0.60669	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 ()	0.12576	0.60669	16.50020
	min_pulse_width	CLK ()	0.13716	0.60669	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.12348	0.60669	16.50020
	min_pulse_width	CLK ()	0.13716	0.60669	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.13032	0.60669	16.50020
	min_pulse_width	CLK ()	0.14855	0.60669	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	0.03882	0.04657	0.21381
	CLK	0.03211	0.03988	0.20758
sky130_fd_sc_hs__dfrtp_2	CLK	0.04320	0.05112	0.21842
	CLK	0.03651	0.04448	0.21250
sky130_fd_sc_hs__dfrtp_4	CLK	0.05596	0.06353	0.23103
	CLK	0.04902	0.05687	0.22606

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	CLK	0.04137	0.04908	0.21156
	CLK	0.03429	0.04187	0.20425
	RESET_B	0.03080	0.03998	0.18762
	RESET_B	0.04405	0.05313	0.19906
sky130_fd_sc_hs__dfrtp_2	CLK	0.04544	0.05254	0.21548
	CLK	0.03842	0.04551	0.20756
	RESET_B	0.03508	0.04394	0.18993
	RESET_B	0.04813	0.05688	0.20271
sky130_fd_sc_hs__dfrtp_4	CLK	0.05940	0.06658	0.22847
	CLK	0.05213	0.05917	0.22107
	RESET_B	0.04826	0.05718	0.20955
	RESET_B	0.06169	0.07041	0.21683

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00553	0.00816	0.06256
	(CLK * RESET_B)	0.00112	0.00374	0.05815
	(CLK * !RESET_B)	0.00058	0.00058	0.00057
	(CLK * !RESET_B)	-0.00189	-0.00190	-0.00192
	(!CLK * RESET_B)	0.01660	0.01971	0.08436
	(!CLK * RESET_B)	0.01194	0.01504	0.07969
	(!CLK * !RESET_B)	0.00058	0.00058	0.00057
	(!CLK * !RESET_B)	-0.00190	-0.00190	-0.00192
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00539	0.00804	0.06248
	(CLK * RESET_B)	0.00104	0.00368	0.05813
	(CLK * !RESET_B)	0.00058	0.00058	0.00057
	(CLK * !RESET_B)	-0.00189	-0.00190	-0.00192
	(!CLK * RESET_B)	0.01602	0.01916	0.08403
	(!CLK * RESET_B)	0.01145	0.01460	0.07946
	(!CLK * !RESET_B)	0.00058	0.00058	0.00057
	(!CLK * !RESET_B)	-0.00190	-0.00190	-0.00192
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00558	0.00819	0.06255
	(CLK * RESET_B)	0.00118	0.00378	0.05815
	(CLK * !RESET_B)	0.00060	0.00060	0.00059
	(CLK * !RESET_B)	-0.00190	-0.00191	-0.00192
	(!CLK * RESET_B)	0.01801	0.02095	0.08478
	(!CLK * RESET_B)	0.01336	0.01629	0.08014
	(!CLK * !RESET_B)	0.00060	0.00060	0.00059
	(!CLK * !RESET_B)	-0.00190	-0.00191	-0.00192

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00067	0.00359	0.05780
	(CLK * RESET_B)	0.00509	0.00799	0.06220
	(CLK * !RESET_B)	-0.00055	-0.00056	-0.00055
	(CLK * !RESET_B)	0.00193	0.00197	0.00194
	(!CLK * RESET_B)	0.01160	0.01520	0.07954
	(!CLK * RESET_B)	0.01627	0.01988	0.08421
	(!CLK * !RESET_B)	-0.00055	-0.00056	-0.00055
	(!CLK * !RESET_B)	0.00193	0.00196	0.00194
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00067	0.00361	0.05787
	(CLK * RESET_B)	0.00504	0.00796	0.06222
	(CLK * !RESET_B)	-0.00055	-0.00056	-0.00055
	(CLK * !RESET_B)	0.00194	0.00198	0.00194
	(!CLK * RESET_B)	0.01165	0.01547	0.07975
	(!CLK * RESET_B)	0.01622	0.02004	0.08432
	(!CLK * !RESET_B)	-0.00055	-0.00055	-0.00055
	(!CLK * !RESET_B)	0.00194	0.00196	0.00194
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00070	0.00363	0.05777
	(CLK * RESET_B)	0.00511	0.00802	0.06217
	(CLK * !RESET_B)	-0.00055	-0.00057	-0.00055
	(CLK * !RESET_B)	0.00195	0.00199	0.00195
	(!CLK * RESET_B)	0.01185	0.01532	0.07904
	(!CLK * RESET_B)	0.01651	0.01998	0.08368
	(!CLK * !RESET_B)	-0.00055	-0.00056	-0.00055
	(!CLK * !RESET_B)	0.00195	0.00197	0.00195

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)	0.01057	0.01292	0.06683
	(CLK * D * !Q)	-0.00237	-0.00012	0.05384
	(CLK * !D * !Q)	0.00512	0.00515	0.00513
	(CLK * !D * !Q)	-0.00573	-0.00574	-0.00573
	(!CLK * D * !Q)	0.02222	0.02550	0.11633
	(!CLK * D * !Q)	0.00903	0.01229	0.10313
	(!CLK * !D * !Q)	0.00494	0.00497	0.00495
	(!CLK * !D * !Q)	-0.00590	-0.00591	-0.00590
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	0.01037	0.01274	0.06669
	(CLK * D * !Q)	-0.00243	-0.00012	0.05388
	(CLK * !D * !Q)	0.00508	0.00511	0.00509
	(CLK * !D * !Q)	-0.00565	-0.00566	-0.00565
	(!CLK * D * !Q)	0.02152	0.02485	0.11591
	(!CLK * D * !Q)	0.00855	0.01191	0.10291
	(!CLK * !D * !Q)	0.00489	0.00492	0.00490
	(!CLK * !D * !Q)	-0.00580	-0.00581	-0.00580
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	0.01087	0.01321	0.06707
	(CLK * D * !Q)	-0.00228	0.00000	0.05391
	(CLK * !D * !Q)	0.00540	0.00543	0.00541
	(CLK * !D * !Q)	-0.00564	-0.00565	-0.00564
	(!CLK * D * !Q)	0.02346	0.02663	0.11708
	(!CLK * D * !Q)	0.01011	0.01322	0.10373
	(!CLK * !D * !Q)	0.00497	0.00501	0.00498
	(!CLK * !D * !Q)	-0.00605	-0.00608	-0.00606

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)	-0.00300	-0.00020	0.05372
	(CLK * D * !Q)	0.00996	0.01282	0.06668
	(CLK * !D * !Q)	-0.00492	-0.00512	-0.00510
	(CLK * !D * !Q)	0.00585	0.00577	0.00575
	(!CLK * D * !Q)	0.00820	0.01206	0.10619
	(!CLK * D * !Q)	0.02141	0.02534	0.11941
	(!CLK * !D * !Q)	-0.00476	-0.00495	-0.00493
	(!CLK * !D * !Q)	0.00601	0.00595	0.00592
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	-0.00294	-0.00008	0.05383
	(CLK * D * !Q)	0.00983	0.01276	0.06663
	(CLK * !D * !Q)	-0.00488	-0.00509	-0.00505
	(CLK * !D * !Q)	0.00578	0.00569	0.00568
	(!CLK * D * !Q)	0.00825	0.01217	0.10645
	(!CLK * D * !Q)	0.02123	0.02523	0.11945
	(!CLK * !D * !Q)	-0.00473	-0.00492	-0.00490
	(!CLK * !D * !Q)	0.00592	0.00585	0.00583
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	-0.00324	-0.00047	0.05344
	(CLK * D * !Q)	0.00988	0.01275	0.06657
	(CLK * !D * !Q)	-0.00519	-0.00540	-0.00537
	(CLK * !D * !Q)	0.00578	0.00569	0.00568
	(!CLK * D * !Q)	0.00866	0.01240	0.10587
	(!CLK * D * !Q)	0.02202	0.02581	0.11927
	(!CLK * !D * !Q)	-0.00478	-0.00498	-0.00495
	(!CLK * !D * !Q)	0.00618	0.00612	0.00610

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)	0.02102	0.02768	0.18583
	(D * RESET_B * Q)	0.01412	0.02077	0.17893
	(D * !RESET_B * !Q)	0.02176	0.02843	0.18645
	(D * !RESET_B * !Q)	0.01486	0.02150	0.17955
	(!D * !Q)	0.02175	0.02842	0.18647
	(!D * !Q)	0.01486	0.02149	0.17957
sky130_fd_sc_hs__dfrtp_2	(D * RESET_B * Q)	0.02090	0.02757	0.18568
	(D * RESET_B * Q)	0.01404	0.02069	0.17882
	(D * !RESET_B * !Q)	0.02164	0.02830	0.18630
	(D * !RESET_B * !Q)	0.01477	0.02142	0.17943
	(!D * !Q)	0.02163	0.02829	0.18632
	(!D * !Q)	0.01477	0.02141	0.17946
sky130_fd_sc_hs__dfrtp_4	(D * RESET_B * Q)	0.02205	0.02859	0.18636
	(D * RESET_B * Q)	0.01494	0.02147	0.17925
	(D * !RESET_B * !Q)	0.02262	0.02917	0.18681
	(D * !RESET_B * !Q)	0.01551	0.02203	0.17969
	(!D * !Q)	0.02262	0.02914	0.18679
	(!D * !Q)	0.01551	0.02203	0.17967

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)**	0.01110	0.02020	0.17842
	(D * RESET_B * Q)	0.01801	0.02711	0.18532
	(D * RESET_B * !Q)	0.02116	0.03031	0.19375
	(D * RESET_B * !Q)	0.02782	0.03695	0.20041
	(D * !RESET_B * !Q)	0.01021	0.01920	0.17757
	(D * !RESET_B * !Q)	0.01712	0.02612	0.18448
	(!D * RESET_B * Q)	0.02342	0.03273	0.19390
	(!D * RESET_B * Q)	0.03058	0.03987	0.20105
	(!D * !Q)	0.01021	0.01920	0.17759
	(!D * !Q)	0.01712	0.02612	0.18448
sky130_fd_sc_hs__dfrtp_2	**(D * RESET_B * Q)**	0.01113	0.02008	0.17842
	(D * RESET_B * Q)	0.01801	0.02694	0.18528
	(D * RESET_B * !Q)	0.02075	0.02990	0.19339
	(D * RESET_B * !Q)	0.02741	0.03656	0.20004
	(D * !RESET_B * !Q)	0.01025	0.01918	0.17776
	(D * !RESET_B * !Q)	0.01713	0.02605	0.18463
	(!D * RESET_B * Q)	0.02349	0.03275	0.19396
	(!D * RESET_B * Q)	0.03058	0.03985	0.20104
	(!D * !Q)	0.01024	0.01918	0.17778
	(!D * !Q)	0.01712	0.02604	0.18465
sky130_fd_sc_hs__dfrtp_4	**(D * RESET_B * Q)**	0.01157	0.02045	0.17851
	(D * RESET_B * Q)	0.01869	0.02759	0.18561
	(D * RESET_B * !Q)	0.02317	0.03224	0.19500
	(D * RESET_B * !Q)	0.03005	0.03912	0.20184
	(D * !RESET_B * !Q)	0.01083	0.01971	0.17799
	(D * !RESET_B * !Q)	0.01796	0.02685	0.18511
	(!D * RESET_B * Q)	0.02398	0.03321	0.19432
	(!D * RESET_B * Q)	0.03136	0.04059	0.20170
	(!D * !Q)	0.01083	0.01971	0.17801
	(!D * !Q)	0.01796	0.02684	0.18512

SKY130_FD_SC_HS__DFSBPx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00179	0.00336	0.00305	1.40119	1.33534
sky130_fd_sc_hs__dfsbp_2	0.00180	0.00331	0.00306	2.81369	2.74437

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfsbp_1	0.00000	1.33452	1.66010
sky130_fd_sc_hs__dfsbp_2	0.00000	1.09127	1.18962

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)	0.19620	0.59137	5.51892
	SET_B->Q (FR)	0.19766	0.84505	8.88722
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RR)	0.23268	0.52245	5.43259
	SET_B->Q (FR)	0.24101	0.79169	8.84215

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfsbp_1	CLK->Q (RF)	0.18454	0.37291	1.92598
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RF)	0.20756	0.35818	1.97132

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)	0.16055	0.58591	5.59136
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RR)	0.16154	0.48492	5.49976

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)	0.14992	0.38938	1.94068
	SET_B->Q_N (FF)	0.14651	0.64308	5.30228
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RF)	0.16305	0.37627	2.01412
	SET_B->Q_N (FF)	0.16464	0.64343	5.42213

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)	-0.04549	-0.09716	-0.43647
	setup	CLK (R)	0.06454	0.11335	0.42937
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.04217	-0.09716	-0.42994
	setup	CLK (R)	0.06205	0.10935	0.42281

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)	-0.04871	-0.17300	-3.59578
	setup	CLK (R)	0.11720	0.25451	3.60184
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.05571	-0.17910	-3.58937
	setup	CLK (R)	0.11514	0.25017	3.59297

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)	-0.04549	-0.09716	-0.43647
	setup	CLK (R)	0.06454	0.11335	0.42937
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.04217	-0.09716	-0.42994
	setup	CLK (R)	0.06205	0.10935	0.42281

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)	-0.04871	-0.17300	-3.59578
	setup	CLK (R)	0.11720	0.25451	3.60184
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.05571	-0.17910	-3.58937
	setup	CLK (R)	0.11514	0.25017	3.59297

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)	-0.07180	-0.10620	-0.35521
	removal	CLK (R)	0.09037	0.12549	0.43564
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.07522	-0.10558	-0.37218
	removal	CLK (R)	0.09174	0.12752	0.41604

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)	-0.07180	-0.10620	-0.35521
	removal	CLK (R)	0.09037	0.12549	0.43564
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.07522	-0.10558	-0.37218
	removal	CLK (R)	0.09174	0.12752	0.41604

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 ()	0.15311	0.60669	16.50020
	min_pulse_width	SET_B ()	0.15311	0.60669	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	SET_B ()	0.16223	0.60669	16.50020
	min_pulse_width	SET_B ()	0.18958	0.60669	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 ()	0.11436	0.60669	16.50020
	min_pulse_width	CLK ()	0.08018	0.60669	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.14627	0.60669	16.50020
	min_pulse_width	CLK ()	0.09157	0.60669	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 ()	0.11436	0.60669	16.50020
	min_pulse_width	CLK ()	0.15995	0.60669	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.11209	0.60669	16.50020
	min_pulse_width	CLK ()	0.15539	0.60669	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	0.02362	0.02659	0.11044
	CLK	0.02027	0.02324	0.10708
	SET_B	0.01418	0.01663	0.07147
	SET_B	0.01782	0.02027	0.07365
sky130_fd_sc_hs__dfsbp_2	CLK	0.02986	0.03122	0.11505
	CLK	0.02647	0.02783	0.11168
	SET_B	0.02125	0.02170	0.07893
	SET_B	0.02487	0.02531	0.07959

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.02344	0.02701	0.10723
	CLK	0.02026	0.02384	0.10405
sky130_fd_sc_hs__dfsbp_2	CLK	0.02811	0.03165	0.11212
	CLK	0.02486	0.02835	0.10888

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.02346	0.02707	0.10805
	CLK	0.02027	0.02386	0.10495
sky130_fd_sc_hs__dfsbp_2	CLK	0.02813	0.03173	0.11303
	CLK	0.02488	0.02841	0.10986

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.02359	0.02656	0.10974
	CLK	0.02024	0.02321	0.10645
	SET_B	0.01418	0.01661	0.06982
	SET_B	0.01781	0.02024	0.07293
sky130_fd_sc_hs__dfsbp_2	CLK	0.02983	0.03120	0.11442
	CLK	0.02644	0.02781	0.11107
	SET_B	0.02125	0.02165	0.07628
	SET_B	0.02487	0.02534	0.07875

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00500	0.00808	0.06643
	CLK	0.00104	0.00411	0.06247
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01501	0.01749	0.07612
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01069	0.01314	0.07178
	(!CLK * !SET_B * Q * !Q_N)	0.01185	0.01414	0.06946
	(!CLK * !SET_B * Q * !Q_N)	0.00732	0.00961	0.06495
sky130_fd_sc_hs__dfsbp_2	CLK	0.00498	0.00807	0.06642
	CLK	0.00101	0.00409	0.06245
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01487	0.01738	0.07615
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01040	0.01287	0.07166
	(!CLK * !SET_B * Q * !Q_N)	0.01181	0.01413	0.06950
	(!CLK * !SET_B * Q * !Q_N)	0.00721	0.00948	0.06487

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00030	0.00365	0.06165
	CLK	0.00428	0.00762	0.06562
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01108	0.01390	0.07219
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01540	0.01825	0.07653
	(!CLK * !SET_B * Q * !Q_N)	0.00609	0.00856	0.06308
	(!CLK * !SET_B * Q * !Q_N)	0.01060	0.01308	0.06759
sky130_fd_sc_hs__dfsbp_2	CLK	0.00029	0.00365	0.06166
	CLK	0.00428	0.00762	0.06563
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01066	0.01348	0.07181
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01513	0.01797	0.07629
	(!CLK * !SET_B * Q * !Q_N)	0.00587	0.00836	0.06294
	(!CLK * !SET_B * Q * !Q_N)	0.01050	0.01301	0.06757

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)	0.00382	0.00385	0.00384
	(CLK * Q * !Q_N)	-0.00327	-0.00328	-0.00327
	(!CLK * D * Q * !Q_N)	0.00418	0.00423	0.00419
	(!CLK * D * Q * !Q_N)	-0.00291	-0.00293	-0.00292
	(!CLK * !D * Q * !Q_N)	0.00799	0.01041	0.06409
	(!CLK * !D * Q * !Q_N)	0.00062	0.00301	0.05670
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	0.00387	0.00391	0.00388
	(CLK * Q * !Q_N)	-0.00318	-0.00320	-0.00319
	(!CLK * D * Q * !Q_N)	0.00414	0.00417	0.00415
	(!CLK * D * Q * !Q_N)	-0.00291	-0.00293	-0.00292
	(!CLK * !D * Q * !Q_N)	0.00769	0.01015	0.06391
	(!CLK * !D * Q * !Q_N)	0.00039	0.00281	0.05659

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)	-0.00371	-0.00382	-0.00380
	(CLK * Q * !Q_N)	0.00334	0.00332	0.00331
	(!CLK * D * Q * !Q_N)	-0.00405	-0.00417	-0.00416
	(!CLK * D * Q * !Q_N)	0.00300	0.00297	0.00295
	(!CLK * !D * Q * !Q_N)	-0.00044	0.00251	0.05633
	(!CLK * !D * Q * !Q_N)	0.00694	0.00993	0.06369
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	-0.00376	-0.00387	-0.00385
	(CLK * Q * !Q_N)	0.00324	0.00323	0.00322
	(!CLK * D * Q * !Q_N)	-0.00402	-0.00414	-0.00412
	(!CLK * D * Q * !Q_N)	0.00299	0.00296	0.00295
	(!CLK * !D * Q * !Q_N)	-0.00039	0.00264	0.05647
	(!CLK * !D * Q * !Q_N)	0.00691	0.01000	0.06378

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)	0.02175	0.02831	0.18750
	(D * Q * !Q_N)	0.01522	0.02177	0.18096
	(!D * SET_B * !Q * Q_N)	0.02127	0.02783	0.18697
	(!D * SET_B * !Q * Q_N)	0.01474	0.02127	0.18044
	(!D * !SET_B * Q * !Q_N)	0.04084	0.04784	0.20844
	(!D * !SET_B * Q * !Q_N)	0.03376	0.04074	0.20137
sky130_fd_sc_hs__dfsbp_2	(D * Q * !Q_N)	0.02150	0.02809	0.18739
	(D * Q * !Q_N)	0.01487	0.02144	0.18076
	(!D * SET_B * !Q * Q_N)	0.02116	0.02773	0.18701
	(!D * SET_B * !Q * Q_N)	0.01453	0.02110	0.18038
	(!D * !SET_B * Q * !Q_N)	0.04018	0.04720	0.20806
	(!D * !SET_B * Q * !Q_N)	0.03289	0.03988	0.20075

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)	0.02157	0.03084	0.19592
	(D * SET_B * !Q * Q_N)	0.02773	0.03698	0.20207
	(D * Q * !Q_N)	0.01218	0.02173	0.18152
	(D * Q * !Q_N)	0.01872	0.02823	0.18804
	(!D * SET_B * Q * !Q_N)	0.02532	0.03524	0.19711
	(!D * SET_B * Q * !Q_N)	0.03225	0.04213	0.20400
	(!D * SET_B * !Q * Q_N)	0.01241	0.02170	0.18191
	(!D * SET_B * !Q * Q_N)	0.01895	0.02826	0.18843
	(!D * !SET_B * Q * !Q_N)	0.02031	0.03020	0.19188
	(!D * !SET_B * Q * !Q_N)	0.02741	0.03728	0.19897
sky130_fd_sc_hs__dfsbp_2	(D * SET_B * !Q * Q_N)	0.02122	0.03067	0.19572
	(D * SET_B * !Q * Q_N)	0.02735	0.03679	0.20183
	(D * Q * !Q_N)	0.01199	0.02155	0.18150
	(D * Q * !Q_N)	0.01864	0.02817	0.18812
	(!D * SET_B * Q * !Q_N)	0.02464	0.03457	0.19666
	(!D * SET_B * Q * !Q_N)	0.03180	0.04175	0.20379
	(!D * SET_B * !Q * Q_N)	0.01211	0.02137	0.18177
	(!D * SET_B * !Q * Q_N)	0.01875	0.02804	0.18839
	(!D * !SET_B * Q * !Q_N)	0.01984	0.02974	0.19157
	(!D * !SET_B * Q * !Q_N)	0.02715	0.03707	0.19886

SKY130_FD_SC_HS__DFSTPx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00179	0.00348	0.00304	1.45206
sky130_fd_sc_hs__dfstp_2	0.00179	0.00328	0.00306	2.85063
sky130_fd_sc_hs__dfstp_4	0.00178	0.00332	0.00307	5.37884

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfstp_1	0.00000	1.20393	1.46995
sky130_fd_sc_hs__dfstp_2	0.00000	0.83010	1.16024
sky130_fd_sc_hs__dfstp_4	0.00000	2.18558	2.65467

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)	0.16336	0.55525	5.47340
	SET_B->Q (FR)	0.16231	0.79197	8.77198
sky130_fd_sc_hs__dfstp_2	CLK->Q (RR)	0.17042	0.47187	5.47154
	SET_B->Q (FR)	0.17062	0.71266	8.78257
sky130_fd_sc_hs__dfstp_4	CLK->Q (RR)	0.20251	0.44094	5.53205
	SET_B->Q (FR)	0.20370	0.69103	8.87557

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfstp_1	CLK->Q (RF)	0.17064	0.36159	2.02436
sky130_fd_sc_hs__dfstp_2	CLK->Q (RF)	0.18036	0.33506	2.00935
sky130_fd_sc_hs__dfstp_4	CLK->Q (RF)	0.18634	0.31132	1.95523

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)	-0.04253	-0.09716	-0.42309
	setup	CLK (R)	0.06401	0.11335	0.41558
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.04390	-0.09716	-0.43584
	setup	CLK (R)	0.06211	0.11335	0.42633
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.04294	-0.09316	-0.42473
	setup	CLK (R)	0.06066	0.10925	0.41572

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)	-0.04907	-0.17163	-3.58814
	setup	CLK (R)	0.11360	0.25100	3.59063
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.05062	-0.17371	-3.59438
	setup	CLK (R)	0.11383	0.25159	3.59847
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.05119	-0.17811	-3.58823
	setup	CLK (R)	0.11109	0.25000	3.59359

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)	-0.04253	-0.09716	-0.42309
	setup	CLK (R)	0.06401	0.11335	0.41558
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.04390	-0.09716	-0.43584
	setup	CLK (R)	0.06211	0.11335	0.42633
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.04294	-0.09316	-0.42473
	setup	CLK (R)	0.06066	0.10925	0.41572

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)	-0.04907	-0.17163	-3.58814
	setup	CLK (R)	0.11360	0.25100	3.59063
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.05062	-0.17371	-3.59438
	setup	CLK (R)	0.11383	0.25159	3.59847
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.05119	-0.17811	-3.58823
	setup	CLK (R)	0.11109	0.25000	3.59359

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)	-0.07234	-0.10935	-0.35878
	removal	CLK (R)	0.09070	0.12347	0.49544
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.07462	-0.10935	-0.35771
	removal	CLK (R)	0.09027	0.12549	0.46892
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.07285	-0.10576	-0.34676
	removal	CLK (R)	0.09032	0.12145	0.43090

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)	-0.07234	-0.10935	-0.35878
	removal	CLK (R)	0.09070	0.12347	0.49544
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.07462	-0.10935	-0.35771
	removal	CLK (R)	0.09027	0.12549	0.46892
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.07285	-0.10576	-0.34676
	removal	CLK (R)	0.09032	0.12145	0.43090

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 ()	0.13716	0.60669	16.50020
	min_pulse_width	SET_B ()	0.11892	0.60669	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	SET_B ()	0.14172	0.60669	16.50020
	min_pulse_width	SET_B ()	0.12576	0.60669	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	SET_B ()	0.14627	0.60669	16.50020
	min_pulse_width	SET_B ()	0.14172	0.60669	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 ()	0.08473	0.60669	16.50020
	min_pulse_width	CLK ()	0.06878	0.60669	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.08929	0.60669	16.50020
	min_pulse_width	CLK ()	0.07106	0.60669	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.11209	0.60669	16.50020
	min_pulse_width	CLK ()	0.07562	0.60669	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 ()	0.11209	0.60669	16.50020
	min_pulse_width	CLK ()	0.15539	0.60669	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.11209	0.60669	16.50020
	min_pulse_width	CLK ()	0.15767	0.60669	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.10981	0.60669	16.50020
	min_pulse_width	CLK ()	0.15311	0.60669	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	0.03884	0.04577	0.21344
	CLK	0.03240	0.03936	0.20750
	SET_B	0.01954	0.02588	0.13123
	SET_B	0.02726	0.03362	0.13918
sky130_fd_sc_hs__dfstp_2	CLK	0.04416	0.05125	0.21900
	CLK	0.03744	0.04459	0.21328
	SET_B	0.02519	0.03159	0.13808
	SET_B	0.03239	0.03880	0.14573
sky130_fd_sc_hs__dfstp_4	CLK	0.05600	0.06267	0.23106
	CLK	0.04922	0.05613	0.22620
	SET_B	0.03708	0.04320	0.15198
	SET_B	0.04429	0.05051	0.16045

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.04176	0.04871	0.20942
	CLK	0.03503	0.04188	0.20216
sky130_fd_sc_hs__dfstp_2	CLK	0.04645	0.05342	0.21377
	CLK	0.03992	0.04682	0.20725
sky130_fd_sc_hs__dfstp_4	CLK	0.05884	0.06605	0.22728
	CLK	0.05228	0.05940	0.21996

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00501	0.00808	0.06640
	CLK	0.00106	0.00412	0.06245
	(!CLK * SET_B)	0.01485	0.01734	0.07613
	(!CLK * SET_B)	0.01054	0.01300	0.07180
	(!CLK * !SET_B * Q)	0.01175	0.01407	0.06946
	(!CLK * !SET_B * Q)	0.00725	0.00952	0.06493
sky130_fd_sc_hs__dfstp_2	CLK	0.00504	0.00810	0.06642
	CLK	0.00108	0.00413	0.06246
	(!CLK * SET_B)	0.01484	0.01732	0.07602
	(!CLK * SET_B)	0.01052	0.01297	0.07169
	(!CLK * !SET_B * Q)	0.01174	0.01404	0.06937
	(!CLK * !SET_B * Q)	0.00722	0.00948	0.06483
sky130_fd_sc_hs__dfstp_4	CLK	0.00504	0.00810	0.06641
	CLK	0.00110	0.00415	0.06246
	(!CLK * SET_B)	0.01480	0.01727	0.07605
	(!CLK * SET_B)	0.01042	0.01290	0.07169
	(!CLK * !SET_B * Q)	0.01165	0.01395	0.06937
	(!CLK * !SET_B * Q)	0.00710	0.00939	0.06483

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00042	0.00375	0.06171
	CLK	0.00439	0.00771	0.06566
	(!CLK * SET_B)	0.01063	0.01347	0.07180
	(!CLK * SET_B)	0.01497	0.01781	0.07613
	(!CLK * !SET_B * Q)	0.00588	0.00836	0.06296
	(!CLK * !SET_B * Q)	0.01040	0.01290	0.06749
sky130_fd_sc_hs__dfstp_2	CLK	0.00039	0.00372	0.06168
	CLK	0.00437	0.00769	0.06564
	(!CLK * SET_B)	0.01094	0.01377	0.07200
	(!CLK * SET_B)	0.01528	0.01811	0.07634
	(!CLK * !SET_B * Q)	0.00618	0.00865	0.06317
	(!CLK * !SET_B * Q)	0.01073	0.01322	0.06772
sky130_fd_sc_hs__dfstp_4	CLK	0.00044	0.00377	0.06171
	CLK	0.00441	0.00772	0.06566
	(!CLK * SET_B)	0.01050	0.01335	0.07167
	(!CLK * SET_B)	0.01488	0.01772	0.07603
	(!CLK * !SET_B * Q)	0.00587	0.00836	0.06298
	(!CLK * !SET_B * Q)	0.01040	0.01291	0.06753

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	0.00367	0.00369	0.00367
	(CLK * Q)	-0.00355	-0.00357	-0.00356
	(!CLK * D * Q)	0.00395	0.00396	0.00396
	(!CLK * D * Q)	-0.00326	-0.00326	-0.00326
	(!CLK * !D * Q)	0.00764	0.01008	0.06375
	(!CLK * !D * Q)	0.00010	0.00249	0.05620
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	0.00358	0.00360	0.00359
	(CLK * Q)	-0.00328	-0.00330	-0.00329
	(!CLK * D * Q)	0.00386	0.00389	0.00388
	(!CLK * D * Q)	-0.00300	-0.00301	-0.00300
	(!CLK * !D * Q)	0.00757	0.00999	0.06369
	(!CLK * !D * Q)	0.00036	0.00275	0.05647
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	0.00379	0.00383	0.00380
	(CLK * Q)	-0.00319	-0.00321	-0.00319
	(!CLK * D * Q)	0.00405	0.00408	0.00406
	(!CLK * D * Q)	-0.00293	-0.00294	-0.00293
	(!CLK * !D * Q)	0.00763	0.01007	0.06377
	(!CLK * !D * Q)	0.00035	0.00276	0.05648

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	-0.00355	-0.00366	-0.00364
	(CLK * Q)	0.00363	0.00362	0.00359
	(!CLK * D * Q)	-0.00384	-0.00395	-0.00394
	(!CLK * D * Q)	0.00335	0.00333	0.00330
	(!CLK * !D * Q)	-0.00028	0.00274	0.05653
	(!CLK * !D * Q)	0.00729	0.01031	0.06405
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	-0.00349	-0.00359	-0.00358
	(CLK * Q)	0.00334	0.00333	0.00331
	(!CLK * D * Q)	-0.00377	-0.00388	-0.00387
	(!CLK * D * Q)	0.00306	0.00304	0.00302
	(!CLK * !D * Q)	-0.00014	0.00280	0.05661
	(!CLK * !D * Q)	0.00704	0.01006	0.06380
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	-0.00366	-0.00377	-0.00376
	(CLK * Q)	0.00328	0.00326	0.00325
	(!CLK * D * Q)	-0.00391	-0.00403	-0.00402
	(!CLK * D * Q)	0.00303	0.00300	0.00299
	(!CLK * !D * Q)	-0.00023	0.00275	0.05656
	(!CLK * !D * Q)	0.00708	0.01008	0.06383

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(D * Q)	0.02151	0.02804	0.18717
	(D * Q)	0.01494	0.02147	0.18061
	(!D * SET_B * !Q)	0.02123	0.02778	0.18685
	(!D * SET_B * !Q)	0.01466	0.02118	0.18028
	(!D * !SET_B * Q)	0.03994	0.04697	0.20759
	(!D * !SET_B * Q)	0.03279	0.03979	0.20044
sky130_fd_sc_hs__dfstp_2	(D * Q)	0.02181	0.02835	0.18765
	(D * Q)	0.01519	0.02173	0.18102
	(!D * SET_B * !Q)	0.02132	0.02788	0.18711
	(!D * SET_B * !Q)	0.01470	0.02123	0.18049
	(!D * !SET_B * Q)	0.04038	0.04738	0.20804
	(!D * !SET_B * Q)	0.03317	0.04014	0.20082
sky130_fd_sc_hs__dfstp_4	(D * Q)	0.02157	0.02814	0.18745
	(D * Q)	0.01490	0.02146	0.18078
	(!D * SET_B * !Q)	0.02133	0.02788	0.18716
	(!D * SET_B * !Q)	0.01466	0.02122	0.18049
	(!D * !SET_B * Q)	0.03981	0.04687	0.20771
	(!D * !SET_B * Q)	0.03255	0.03958	0.20044

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)**	0.02147	0.03084	0.19568
	(D * SET_B * !Q)	0.02770	0.03706	0.20188
	(D * Q)	0.01223	0.02176	0.18144
	(D * Q)	0.01881	0.02833	0.18800
	(!D * SET_B * Q)	0.02467	0.03456	0.19635
	(!D * SET_B * Q)	0.03163	0.04152	0.20327
	(!D * SET_B * !Q)	0.01227	0.02150	0.18163
	(!D * SET_B * !Q)	0.01885	0.02809	0.18818
	(!D * !SET_B * Q)	0.01990	0.02975	0.19135
	(!D * !SET_B * Q)	0.02706	0.03693	0.19852
sky130_fd_sc_hs__dfstp_2	**(D * SET_B * !Q)**	0.02134	0.03077	0.19580
	(D * SET_B * !Q)	0.02760	0.03702	0.20207
	(D * Q)	0.01202	0.02156	0.18150
	(D * Q)	0.01864	0.02816	0.18811
	(!D * SET_B * Q)	0.02483	0.03474	0.19690
	(!D * SET_B * Q)	0.03184	0.04176	0.20391
	(!D * SET_B * !Q)	0.01227	0.02153	0.18191
	(!D * SET_B * !Q)	0.01890	0.02817	0.18852
	(!D * !SET_B * Q)	0.02005	0.02995	0.19179
	(!D * !SET_B * Q)	0.02728	0.03717	0.19901
sky130_fd_sc_hs__dfstp_4	**(D * SET_B * !Q)**	0.02125	0.03067	0.19581
	(D * SET_B * !Q)	0.02750	0.03692	0.20204
	(D * Q)	0.01211	0.02167	0.18163
	(D * Q)	0.01879	0.02831	0.18829
	(!D * SET_B * Q)	0.02434	0.03427	0.19633
	(!D * SET_B * Q)	0.03143	0.04137	0.20341
	(!D * SET_B * !Q)	0.01211	0.02136	0.18178
	(!D * SET_B * !Q)	0.01878	0.02805	0.18843
	(!D * !SET_B * Q)	0.01969	0.02960	0.19147
	(!D * !SET_B * Q)	0.02697	0.03686	0.19875

SKY130_FD_SC_HS__DFXBPx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00182	0.00305	1.40220	1.39772
sky130_fd_sc_hs__dfxbp_2	0.00177	0.00305	2.38676	2.76181

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxbp_1	0.00000	2.14174	3.21066
sky130_fd_sc_hs__dfxbp_2	0.00000	2.91627	5.23497

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)	0.15394	0.55723	5.56253
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RR)	0.17818	0.50322	5.36430

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxbp_1	CLK->Q (RF)	0.16512	0.37694	2.12390
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RF)	0.16148	0.31694	1.59920

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)	0.19661	0.60240	5.60019
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RR)	0.20828	0.51590	5.48181

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)	0.18010	0.37308	2.02134
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RF)	0.21921	0.37756	2.07077

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)	-0.01772	-0.04453	-0.19172
	setup	CLK (R)	0.05577	0.07822	0.20473
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.01329	-0.03843	-0.17086
	setup	CLK (R)	0.03879	0.06077	0.18186

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)	-0.03902	-0.14898	-3.38516
	setup	CLK (R)	0.08171	0.20295	3.41090
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.04061	-0.14755	-3.37592
	setup	CLK (R)	0.07991	0.19880	3.40280

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 ()	0.07334	0.60669	16.50020
	min_pulse_width	CLK ()	0.05966	0.60669	16.50020
sky130_fd_sc_hs__dfxbp_2	min_pulse_width	CLK ()	0.09385	0.60669	16.50020
	min_pulse_width	CLK ()	0.05966	0.60669	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 ()	0.10525	0.60669	16.50020
	min_pulse_width	CLK ()	0.13032	0.60669	16.50020
sky130_fd_sc_hs__dfxbp_2	min_pulse_width	CLK ()	0.09613	0.60669	16.50020
	min_pulse_width	CLK ()	0.13260	0.60669	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	0.02144	0.02520	0.11259
	CLK	0.01833	0.02196	0.10952
sky130_fd_sc_hs__dfxbp_2	CLK	0.02698	0.03073	0.11845
	CLK	0.02382	0.02757	0.11547

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.02222	0.02613	0.11078
	CLK	0.01911	0.02302	0.10765
sky130_fd_sc_hs__dfxbp_2	CLK	0.02797	0.03208	0.11659
	CLK	0.02481	0.02892	0.11376

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.02225	0.02619	0.11183
	CLK	0.01914	0.02305	0.10868
sky130_fd_sc_hs__dfxbp_2	CLK	0.02800	0.03207	0.11805
	CLK	0.02484	0.02893	0.11489

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.02143	0.02508	0.11141
	CLK	0.01831	0.02193	0.10833
sky130_fd_sc_hs__dfxbp_2	CLK	0.02695	0.03068	0.11706
	CLK	0.02380	0.02754	0.11391

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00365	0.00702	0.06460
	CLK	-0.00036	0.00298	0.06058
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.01328	0.01663	0.08131
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00926	0.01259	0.07729
sky130_fd_sc_hs__dfxbp_2	CLK	0.00345	0.00685	0.06426
	CLK	-0.00045	0.00295	0.06036
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.01305	0.01643	0.08096
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00915	0.01250	0.07706

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	-0.00031	0.00327	0.06069
	CLK	0.00370	0.00731	0.06469
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00830	0.01190	0.07566
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.01231	0.01593	0.07968
sky130_fd_sc_hs__dfxbp_2	CLK	-0.00030	0.00332	0.06054
	CLK	0.00360	0.00723	0.06445
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00779	0.01142	0.07498
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.01169	0.01533	0.07889

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)	0.01926	0.02651	0.19106
	(D * Q * !Q_N)	0.01304	0.02026	0.18485
	(!D * !Q * Q_N)	0.01955	0.02679	0.19134
	(!D * !Q * Q_N)	0.01332	0.02053	0.18512
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.01941	0.02663	0.19129
	(D * Q * !Q_N)	0.01310	0.02030	0.18499
	(!D * !Q * Q_N)	0.01947	0.02669	0.19134
	(!D * !Q * Q_N)	0.01316	0.02034	0.18502

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)	0.01431	0.02378	0.18709
	(D * Q * !Q_N)	0.02052	0.03003	0.19332
	(D * !Q * Q_N)	0.02311	0.03276	0.20137
	(D * !Q * Q_N)	0.02933	0.03901	0.20759
	(!D * Q * !Q_N)	0.02508	0.03485	0.20114
	(!D * Q * !Q_N)	0.03129	0.04109	0.20738
	(!D * !Q * Q_N)	0.01379	0.02325	0.18668
	(!D * !Q * Q_N)	0.02000	0.02948	0.19291
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.01431	0.02374	0.18727
	(D * Q * !Q_N)	0.02061	0.03008	0.19359
	(D * !Q * Q_N)	0.02328	0.03291	0.20167
	(D * !Q * Q_N)	0.02958	0.03925	0.20799
	(!D * Q * !Q_N)	0.02441	0.03416	0.20081
	(!D * Q * !Q_N)	0.03071	0.04048	0.20712
	(!D * !Q * Q_N)	0.01397	0.02340	0.18703
	(!D * !Q * Q_N)	0.02027	0.02974	0.19335

SKY130_FD_SC_HS__DFXTPx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00178	0.00305	1.42202
sky130_fd_sc_hs__dfxtp_2	0.00183	0.00305	2.83356
sky130_fd_sc_hs__dfxtp_4	0.00182	0.00305	5.20256

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxtp_1	0.00000	1.79377	3.67663
sky130_fd_sc_hs__dfxtp_2	0.00000	1.55852	3.01591
sky130_fd_sc_hs__dfxtp_4	0.00000	2.66909	4.86151

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)**	0.13934	0.54642	5.61636
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RR)**	0.14871	0.46021	5.54742
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RR)**	0.17817	0.42631	5.50724

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxtp_1	**CLK->Q (RF)**	0.15722	0.36625	2.14081
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RF)**	0.16187	0.33289	2.13395
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RF)**	0.16779	0.30803	2.06300

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)	-0.01713	-0.04251	-0.17559
	setup	CLK (R)	0.05735	0.07690	0.18853
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.01683	-0.04048	-0.18268
	setup	CLK (R)	0.05213	0.07248	0.19377
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.01652	-0.03648	-0.17576
	setup	CLK (R)	0.04282	0.06877	0.18913

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)	-0.04239	-0.15336	-3.40849
	setup	CLK (R)	0.08637	0.20834	3.43421
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.03545	-0.14467	-3.38242
	setup	CLK (R)	0.08148	0.19956	3.40781
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.03632	-0.14421	-3.36835
	setup	CLK (R)	0.08068	0.20061	3.40196

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 ()	0.06422	0.60669	16.50020
	min_pulse_width	CLK ()	0.05738	0.60669	16.50020
sky130_fd_sc_hs__dfxtp_2	min_pulse_width	CLK ()	0.07334	0.60669	16.50020
	min_pulse_width	CLK ()	0.05966	0.60669	16.50020
sky130_fd_sc_hs__dfxtp_4	min_pulse_width	CLK ()	0.09613	0.60669	16.50020
	min_pulse_width	CLK ()	0.06194	0.60669	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 ()	0.10981	0.60669	16.50020
	min_pulse_width	CLK ()	0.13488	0.60669	16.50020
sky130_fd_sc_hs__dfxtp_2	min_pulse_width	CLK ()	0.10525	0.60669	16.50020
	min_pulse_width	CLK ()	0.13260	0.60669	16.50020
sky130_fd_sc_hs__dfxtp_4	min_pulse_width	CLK ()	0.09841	0.60669	16.50020
	min_pulse_width	CLK ()	0.13260	0.60669	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	0.03311	0.04047	0.21551
	CLK	0.02682	0.03420	0.20961
sky130_fd_sc_hs__dfxtp_2	CLK	0.03780	0.04519	0.22004
	CLK	0.03148	0.03893	0.21469
sky130_fd_sc_hs__dfxtp_4	CLK	0.04878	0.05569	0.23025
	CLK	0.04253	0.04961	0.22587

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.03477	0.04271	0.21242
	CLK	0.02848	0.03625	0.20555
sky130_fd_sc_hs__dfxtp_2	CLK	0.03943	0.04724	0.21699
	CLK	0.03310	0.04078	0.21009
sky130_fd_sc_hs__dfxtp_4	CLK	0.05178	0.05957	0.23008
	CLK	0.04553	0.05323	0.22241

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00339	0.00673	0.06431
	CLK	-0.00053	0.00279	0.06039
	!CLK	0.01310	0.01645	0.08118
	!CLK	0.00917	0.01250	0.07724
sky130_fd_sc_hs__dfxtp_2	CLK	0.00360	0.00700	0.06462
	CLK	-0.00042	0.00296	0.06060
	!CLK	0.01297	0.01631	0.08105
	!CLK	0.00893	0.01227	0.07702
sky130_fd_sc_hs__dfxtp_4	CLK	0.00342	0.00685	0.06442
	CLK	-0.00057	0.00283	0.06042
	!CLK	0.01299	0.01632	0.08100
	!CLK	0.00898	0.01230	0.07699

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00019	0.00373	0.06107
	CLK	0.00411	0.00767	0.06500
	!CLK	0.00882	0.01241	0.07614
	!CLK	0.01275	0.01635	0.08006
sky130_fd_sc_hs__dfxtp_2	CLK	-0.00041	0.00323	0.06068
	CLK	0.00362	0.00726	0.06469
	!CLK	0.00840	0.01216	0.07578
	!CLK	0.01242	0.01620	0.07980
sky130_fd_sc_hs__dfxtp_4	CLK	-0.00030	0.00334	0.06074
	CLK	0.00370	0.00736	0.06474
	!CLK	0.00830	0.01206	0.07557
	!CLK	0.01230	0.01605	0.07957

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.01936	0.02653	0.19114
	(D * Q)	0.01308	0.02021	0.18483
	(!D * !Q)	0.01992	0.02710	0.19169
	(!D * !Q)	0.01364	0.02077	0.18538
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.01943	0.02660	0.19127
	(D * Q)	0.01310	0.02025	0.18492
	(!D * !Q)	0.01984	0.02703	0.19167
	(!D * !Q)	0.01352	0.02066	0.18532
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.01930	0.02646	0.19080
	(D * Q)	0.01305	0.02017	0.18452
	(!D * !Q)	0.01972	0.02688	0.19121
	(!D * !Q)	0.01347	0.02058	0.18493

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.01489	0.02407	0.18769
	(D * Q)	0.02118	0.03040	0.19398
	(D * !Q)	0.02356	0.03332	0.20175
	(D * !Q)	0.02987	0.03965	0.20805
	(!D * Q)	0.02559	0.03504	0.20180
	(!D * Q)	0.03188	0.04134	0.20811
	(!D * !Q)	0.01405	0.02362	0.18695
	(!D * !Q)	0.02036	0.02991	0.19326
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.01457	0.02377	0.18744
	(D * Q)	0.02092	0.03014	0.19377
	(D * !Q)	0.02302	0.03282	0.20126
	(D * !Q)	0.02936	0.03919	0.20760
	(!D * Q)	0.02539	0.03494	0.20174
	(!D * Q)	0.03173	0.04129	0.20809
	(!D * !Q)	0.01390	0.02348	0.18687
	(!D * !Q)	0.02025	0.02982	0.19321
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.01517	0.02430	0.18748
	(D * Q)	0.02142	0.03060	0.19375
	(D * !Q)	0.02365	0.03341	0.20131
	(D * !Q)	0.02992	0.03971	0.20758
	(!D * Q)	0.02598	0.03549	0.20174
	(!D * Q)	0.03224	0.04177	0.20802
	(!D * !Q)	0.01444	0.02359	0.18686
	(!D * !Q)	0.02072	0.02989	0.19314

SKY130_FD_SC_HS__DIODE_2

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00268	0.00459	1.45875
sky130_fd_sc_hs__dlclkp_2	0.00268	0.00494	2.78971
sky130_fd_sc_hs__dlclkp_4	0.00266	0.00518	5.49468

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlclkp_1	0.00000	2.29153	3.97502
sky130_fd_sc_hs__dlclkp_2	0.00000	1.97197	2.64232
sky130_fd_sc_hs__dlclkp_4	0.00000	2.04103	2.14269

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)**	0.05280	0.43619	5.70641
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (RR)**	0.05461	0.35567	5.50798
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (RR)**	0.07650	0.34898	5.78858

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlclkp_1	**CLK->GCLK (FF)**	0.06016	0.43798	5.07477
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (FF)**	0.06519	0.42169	5.05710
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (FF)**	0.08555	0.44146	5.12305

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)	-0.02597	-0.05465	-0.55566
	setup	CLK (R)	0.09709	0.15831	0.59036
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.02527	-0.05263	-0.56061
	setup	CLK (R)	0.10604	0.15298	0.59913
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.02448	-0.05060	-0.52461
	setup	CLK (R)	0.10261	0.12954	0.55876

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)	-0.03185	-0.11335	-2.77897
	setup	CLK (R)	0.07550	0.17407	2.90418
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.02975	-0.10930	-2.74368
	setup	CLK (R)	0.06984	0.15990	2.87972
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.03191	-0.10873	-2.75090
	setup	CLK (R)	0.05288	0.12907	2.87323

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 ()	0.03687	0.60669	16.50020
sky130_fd_sc_hs__dlclkp_2	min_pulse_width	CLK ()	0.04143	0.60669	16.50020
sky130_fd_sc_hs__dlclkp_4	min_pulse_width	CLK ()	0.06422	0.60669	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 ()	0.13716	0.60669	16.50020
	min_pulse_width	CLK ()	0.11664	0.60669	16.50020
sky130_fd_sc_hs__dlclkp_2	min_pulse_width	CLK ()	0.14627	0.60669	16.50020
	min_pulse_width	CLK ()	0.11892	0.60669	16.50020
sky130_fd_sc_hs__dlclkp_4	min_pulse_width	CLK ()	0.14172	0.60669	16.50020
	min_pulse_width	CLK ()	0.11892	0.60669	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	0.02449	0.04030	0.34553
	CLK	0.01439	0.03019	0.33568
sky130_fd_sc_hs__dlclkp_2	CLK	0.02961	0.04508	0.35438
	CLK	0.01873	0.03425	0.34449
sky130_fd_sc_hs__dlclkp_4	CLK	0.03993	0.05330	0.35008
	CLK	0.02875	0.04224	0.33975

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.01491	0.03450	0.33729
	CLK	0.02496	0.04431	0.34727
sky130_fd_sc_hs__dlclkp_2	CLK	0.01981	0.03892	0.34535
	CLK	0.03057	0.04956	0.35598
sky130_fd_sc_hs__dlclkp_4	CLK	0.03188	0.04723	0.34841
	CLK	0.04300	0.05816	0.35495

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.00288	0.00248	0.00242
	CLK	-0.00231	-0.00275	-0.00278
	(!CLK * !GCLK)	0.01760	0.02217	0.13089
	(!CLK * !GCLK)	0.01201	0.01655	0.12530
sky130_fd_sc_hs__dlclkp_2	CLK	0.00211	0.00214	0.00212
	CLK	-0.00307	-0.00310	-0.00309
	(!CLK * !GCLK)	0.01777	0.02232	0.13091
	(!CLK * !GCLK)	0.01222	0.01674	0.12535
sky130_fd_sc_hs__dlclkp_4	CLK	0.00206	0.00208	0.00207
	CLK	-0.00305	-0.00309	-0.00308
	(!CLK * !GCLK)	0.01737	0.02187	0.13031
	(!CLK * !GCLK)	0.01209	0.01657	0.12505

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	-0.00233	-0.00236	-0.00235
	CLK	0.00286	0.00289	0.00287
	(!CLK * !GCLK)	0.01210	0.01688	0.12386
	(!CLK * !GCLK)	0.01768	0.02251	0.12945
sky130_fd_sc_hs__dlclkp_2	CLK	-0.00196	-0.00208	-0.00209
	CLK	0.00324	0.00315	0.00312
	(!CLK * !GCLK)	0.01261	0.01740	0.12438
	(!CLK * !GCLK)	0.01814	0.02299	0.12994
sky130_fd_sc_hs__dlclkp_4	CLK	-0.00190	-0.00202	-0.00203
	CLK	0.00324	0.00315	0.00312
	(!CLK * !GCLK)	0.01351	0.01824	0.12503
	(!CLK * !GCLK)	0.01879	0.02355	0.13032

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(!GATE * !GCLK)	0.01521	0.02438	0.19494
	(!GATE * !GCLK)	0.00555	0.01466	0.18525
sky130_fd_sc_hs__dlclkp_2	(!GATE * !GCLK)	0.01601	0.02517	0.19574
	(!GATE * !GCLK)	0.00561	0.01474	0.18535
sky130_fd_sc_hs__dlclkp_4	(!GATE * !GCLK)	0.01595	0.02467	0.19137
	(!GATE * !GCLK)	0.00519	0.01389	0.18062

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(GATE * !GCLK)	0.02065	0.03157	0.22762
	(GATE * !GCLK)	0.03036	0.04130	0.23731
	(!GATE * !GCLK)	0.00710	0.01749	0.18643
	(!GATE * !GCLK)	0.01678	0.02723	0.19614
sky130_fd_sc_hs__dlclkp_2	(GATE * !GCLK)	0.02127	0.03238	0.22916
	(GATE * !GCLK)	0.03176	0.04286	0.23961
	(!GATE * !GCLK)	0.00747	0.01788	0.18688
	(!GATE * !GCLK)	0.01783	0.02832	0.19729
sky130_fd_sc_hs__dlclkp_4	(GATE * !GCLK)	0.02063	0.03129	0.22414
	(GATE * !GCLK)	0.03159	0.04235	0.23512
	(!GATE * !GCLK)	0.00704	0.01686	0.18247
	(!GATE * !GCLK)	0.01777	0.02765	0.19322

SKY130_FD_SC_HS__DLRBNx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00239	0.00264	0.00293	1.42832	1.42900
sky130_fd_sc_hs__dlrbn_2	0.00240	0.00263	0.00303	2.33741	2.72551

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrbn_1	0.00000	3.01434	4.16519
sky130_fd_sc_hs__dlrbn_2	0.00000	2.74836	3.69469

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)	0.18868	0.57691	5.70413
	GATE_N->Q (-R)	0.22084	0.80358	8.59772
	RESET_B->Q (RR)	0.06711	0.47406	5.72880
sky130_fd_sc_hs__dlrbn_2	D->Q (RR)	0.19540	0.50141	5.27694
	GATE_N->Q (-R)	0.23009	0.73492	8.24524
	RESET_B->Q (RR)	0.07338	0.41115	5.28397

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbn_1	D->Q (FF)	0.14872	0.50588	4.65681
	GATE_N->Q (-F)	0.15955	0.54652	4.99736
	RESET_B->Q (FF)	0.06847	0.46658	4.90179
sky130_fd_sc_hs__dlrbn_2	D->Q (FF)	0.16278	0.47951	4.21683
	GATE_N->Q (-F)	0.17395	0.52044	4.55009
	RESET_B->Q (FF)	0.07892	0.45001	4.51178

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)	0.18285	0.73308	8.11665
	GATE_N->Q_N (-R)	0.19379	0.77365	8.45686
	RESET_B->Q_N (FR)	0.10489	0.68298	8.21061
sky130_fd_sc_hs__dlrbn_2	D->Q_N (FR)	0.21395	0.68198	8.28724
	GATE_N->Q_N (-R)	0.22525	0.72261	8.62064
	RESET_B->Q_N (FR)	0.13322	0.64341	8.42900

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)	0.21427	0.38999	2.14439
	GATE_N->Q_N (-F)	0.24644	0.61659	5.03916
	RESET_B->Q_N (RF)	0.09276	0.28281	1.95265
sky130_fd_sc_hs__dlrbn_2	D->Q_N (RF)	0.24488	0.39777	2.36508
	GATE_N->Q_N (-F)	0.27966	0.63090	5.33292
	RESET_B->Q_N (RF)	0.12256	0.30620	2.23417

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 ()**	0.08473	0.60669	16.50020
sky130_fd_sc_hs__dlrbn_2	**min_pulse_width**	**RESET_B ()**	0.10525	0.60669	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	0.01844	0.02209	0.09698
	D	0.01572	0.01930	0.09423
	GATE_N	0.01876	0.02371	0.10698
	GATE_N	0.02138	0.02631	0.10958
	RESET_B	0.01209	0.01482	0.07229
	RESET_B	0.00887	0.01157	0.06904
sky130_fd_sc_hs__dlrbn_2	D	0.02289	0.02644	0.09960
	D	0.02020	0.02371	0.09693
	GATE_N	0.02322	0.02806	0.11036
	GATE_N	0.02582	0.03066	0.11218
	RESET_B	0.01682	0.01912	0.06680
	RESET_B	0.01353	0.01583	0.06362

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.01437	0.01905	0.09403
	D	0.01709	0.02176	0.09599
	GATE_N	0.01739	0.02298	0.10955
	GATE_N	0.02033	0.02589	0.11205
	RESET_B	0.00774	0.01189	0.07805
	RESET_B	0.01093	0.01508	0.08066
sky130_fd_sc_hs__dlrbn_2	D	0.01931	0.02402	0.09687
	D	0.02200	0.02660	0.09914
	GATE_N	0.02234	0.02793	0.11243
	GATE_N	0.02523	0.03069	0.11492
	RESET_B	0.01229	0.01611	0.07954
	RESET_B	0.01556	0.01932	0.08277

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.01441	0.01910	0.09450
	D	0.01713	0.02173	0.09651
	GATE_N	0.01743	0.02297	0.11016
	GATE_N	0.02036	0.02589	0.11271
	RESET_B	0.00778	0.01193	0.07862
	RESET_B	0.01097	0.01511	0.08129
sky130_fd_sc_hs__dlrbn_2	D	0.01934	0.02386	0.09710
	D	0.02203	0.02654	0.09950
	GATE_N	0.02237	0.02794	0.11314
	GATE_N	0.02526	0.03072	0.11528
	RESET_B	0.01231	0.01609	0.08028
	RESET_B	0.01558	0.01933	0.08326

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.01842	0.02198	0.09621
	D	0.01570	0.01926	0.09348
	GATE_N	0.01873	0.02374	0.10651
	GATE_N	0.02135	0.02634	0.10899
	RESET_B	0.01206	0.01475	0.07188
	RESET_B	0.00885	0.01154	0.06870
sky130_fd_sc_hs__dlrbn_2	D	0.02286	0.02638	0.09886
	D	0.02017	0.02367	0.09605
	GATE_N	0.02320	0.02810	0.11010
	GATE_N	0.02580	0.03069	0.11159
	RESET_B	0.01679	0.01911	0.06633
	RESET_B	0.01350	0.01581	0.06289

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)	0.00807	0.01544	0.15679
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00295	0.01030	0.15165
	(!GATE_N * !RESET_B * !Q * Q_N)	0.01478	0.02198	0.16959
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00995	0.01715	0.16476
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)	0.00803	0.01523	0.15321
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00295	0.01013	0.14810
	(!GATE_N * !RESET_B * !Q * Q_N)	0.01402	0.02107	0.16527
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00923	0.01627	0.16049

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)	0.00218	0.01095	0.15241
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00729	0.01610	0.15754
	(!GATE_N * !RESET_B * !Q * Q_N)	0.01097	0.01971	0.16759
	(!GATE_N * !RESET_B * !Q * Q_N)	0.01579	0.02456	0.17243
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)	0.00205	0.01060	0.14863
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00715	0.01571	0.15371
	(!GATE_N * !RESET_B * !Q * Q_N)	0.01123	0.01977	0.16420
	(!GATE_N * !RESET_B * !Q * Q_N)	0.01604	0.02457	0.16900

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)	0.01386	0.02268	0.19153
	(D * RESET_B * Q * !Q_N)	0.00834	0.01712	0.18598
	(D * !RESET_B * !Q * Q_N)	0.02174	0.03044	0.19867
	(D * !RESET_B * !Q * Q_N)	0.01593	0.02459	0.19284
	(!D * !Q * Q_N)	0.01466	0.02341	0.19205
	(!D * !Q * Q_N)	0.00915	0.01785	0.18650
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.01392	0.02252	0.18745
	(D * RESET_B * Q * !Q_N)	0.00842	0.01700	0.18195
	(D * !RESET_B * !Q * Q_N)	0.02203	0.03050	0.19471
	(D * !RESET_B * !Q * Q_N)	0.01623	0.02469	0.18891
	(!D * !Q * Q_N)	0.01452	0.02306	0.18775
	(!D * !Q * Q_N)	0.00902	0.01755	0.18227

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)	0.01086	0.02101	0.18841
	(D * RESET_B * Q * !Q_N)	0.01640	0.02657	0.19396
	(D * !RESET_B * !Q * Q_N)	0.01544	0.02545	0.19074
	(D * !RESET_B * !Q * Q_N)	0.02128	0.03130	0.19659
	(!D * !Q * Q_N)	0.00978	0.02002	0.18766
	(!D * !Q * Q_N)	0.01531	0.02558	0.19320
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.01073	0.02062	0.18415
	(D * RESET_B * Q * !Q_N)	0.01623	0.02613	0.18966
	(D * !RESET_B * !Q * Q_N)	0.01474	0.02451	0.18575
	(D * !RESET_B * !Q * Q_N)	0.02055	0.03031	0.19156
	(!D * !Q * Q_N)	0.00979	0.01979	0.18357
	(!D * !Q * Q_N)	0.01528	0.02530	0.18907

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)	0.00241	0.00243	0.00242
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00314	-0.00315	-0.00314
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00257	0.00257	0.00256
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00318	-0.00319	-0.00318

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)	-0.00223	-0.00235	-0.00235
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00334	0.00325	0.00323
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00238	-0.00251	-0.00250
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00337	0.00327	0.00326

SKY130_FD_SC_HS__DLRBPx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00222	0.00253	0.00301	1.41071	1.40664
sky130_fd_sc_hs__dlrbp_2	0.00223	0.00252	0.00302	2.79537	2.85743

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrbp_1	0.00000	3.01433	4.16519
sky130_fd_sc_hs__dlrbp_2	0.00000	2.74836	3.69471

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)	0.18377	0.56718	5.61811
	GATE->Q (-R)	0.16375	0.54674	5.37421
	RESET_B->Q (RR)	0.06815	0.47616	5.70073
sky130_fd_sc_hs__dlrbp_2	D->Q (RR)	0.19002	0.48245	5.54976
	GATE->Q (-R)	0.16849	0.45924	5.30080
	RESET_B->Q (RR)	0.07196	0.40275	5.72001

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbp_1	D->Q (FF)	0.14755	0.50535	4.66487
	GATE->Q (-F)	0.15983	0.33913	1.79533
	RESET_B->Q (FF)	0.06950	0.46852	4.88037
sky130_fd_sc_hs__dlrbp_2	D->Q (FF)	0.16133	0.49366	4.75800
	GATE->Q (-F)	0.17319	0.32605	1.88121
	RESET_B->Q (FF)	0.07564	0.45637	4.99830

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)	0.18352	0.74078	8.21228
	GATE->Q_N (-R)	0.19586	0.57430	5.34515
	RESET_B->Q_N (FR)	0.10788	0.69314	8.27395
sky130_fd_sc_hs__dlrbp_2	D->Q_N (FR)	0.21092	0.66758	8.19268
	GATE->Q_N (-R)	0.22289	0.49989	5.31715
	RESET_B->Q_N (FR)	0.12595	0.62177	8.26730

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)	0.21060	0.37929	2.03465
	GATE->Q_N (-F)	0.19058	0.35875	1.79089
	RESET_B->Q_N (RF)	0.09503	0.28396	1.90302
sky130_fd_sc_hs__dlrbp_2	D->Q_N (RF)	0.23364	0.36871	2.16090
	GATE->Q_N (-F)	0.21217	0.34547	1.91272
	RESET_B->Q_N (RF)	0.11526	0.28647	2.12495

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 ()**	0.08473	0.60669	16.50020
sky130_fd_sc_hs__dlrbp_2	**min_pulse_width**	**RESET_B ()**	0.09841	0.60669	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	0.01749	0.02112	0.09412
	D	0.01493	0.01844	0.09153
	GATE	0.01973	0.02410	0.11098
	GATE	0.01686	0.02113	0.10817
	RESET_B	0.01216	0.01481	0.07211
	RESET_B	0.00885	0.01148	0.06885
sky130_fd_sc_hs__dlrbp_2	D	0.02242	0.02598	0.09931
	D	0.01986	0.02338	0.09675
	GATE	0.02460	0.02894	0.11610
	GATE	0.02174	0.02604	0.11323
	RESET_B	0.01690	0.01969	0.08293
	RESET_B	0.01359	0.01637	0.07964

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.01489	0.01951	0.09228
	D	0.01745	0.02205	0.09434
	GATE	0.02026	0.02492	0.10744
	GATE	0.01776	0.02241	0.10497
	RESET_B	0.00798	0.01212	0.07758
	RESET_B	0.01127	0.01541	0.08087
sky130_fd_sc_hs__dlrbp_2	D	0.01988	0.02433	0.09717
	D	0.02243	0.02684	0.09911
	GATE	0.02523	0.02975	0.11244
	GATE	0.02271	0.02721	0.10991
	RESET_B	0.01280	0.01692	0.08616
	RESET_B	0.01609	0.02018	0.08843

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.01492	0.01958	0.09268
	D	0.01748	0.02203	0.09486
	GATE	0.02029	0.02500	0.10815
	GATE	0.01780	0.02245	0.10570
	RESET_B	0.00801	0.01216	0.07863
	RESET_B	0.01130	0.01544	0.08158
sky130_fd_sc_hs__dlrbp_2	D	0.01991	0.02430	0.09800
	D	0.02246	0.02681	0.09968
	GATE	0.02526	0.02980	0.11301
	GATE	0.02273	0.02725	0.11050
	RESET_B	0.01283	0.01705	0.08644
	RESET_B	0.01612	0.02023	0.08905

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.01746	0.02096	0.09320
	D	0.01491	0.01840	0.09065
	GATE	0.01970	0.02400	0.11064
	GATE	0.01683	0.02109	0.10781
	RESET_B	0.01213	0.01475	0.07181
	RESET_B	0.00882	0.01145	0.06849
sky130_fd_sc_hs__dlrbp_2	D	0.02239	0.02588	0.09826
	D	0.01983	0.02332	0.09563
	GATE	0.02457	0.02889	0.11547
	GATE	0.02171	0.02600	0.11261
	RESET_B	0.01687	0.01965	0.08239
	RESET_B	0.01356	0.01633	0.07902

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)	0.01283	0.01997	0.16396
	(GATE * !RESET_B * !Q * Q_N)	0.00840	0.01554	0.15953
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00782	0.01513	0.15293
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00308	0.01037	0.14820
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.01293	0.02005	0.16406
	(GATE * !RESET_B * !Q * Q_N)	0.00850	0.01561	0.15963
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00783	0.01510	0.15294
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00306	0.01031	0.14816

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)	0.01145	0.02005	0.16425
	(GATE * !RESET_B * !Q * Q_N)	0.01588	0.02449	0.16869
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00167	0.01030	0.14819
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00640	0.01507	0.15293
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.01158	0.02017	0.16440
	(GATE * !RESET_B * !Q * Q_N)	0.01601	0.02461	0.16884
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00180	0.01043	0.14836
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00657	0.01523	0.15314

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)	0.01447	0.02309	0.18840
	(D * RESET_B * Q * !Q_N)	0.00909	0.01770	0.18302
	(D * !RESET_B * !Q * Q_N)	0.01681	0.02563	0.19789
	(D * !RESET_B * !Q * Q_N)	0.01176	0.02057	0.19284
	(!D * !Q * Q_N)	0.01433	0.02304	0.18793
	(!D * !Q * Q_N)	0.00895	0.01765	0.18255
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.01449	0.02313	0.18852
	(D * RESET_B * Q * !Q_N)	0.00909	0.01772	0.18312
	(D * !RESET_B * !Q * Q_N)	0.01677	0.02562	0.19773
	(D * !RESET_B * !Q * Q_N)	0.01172	0.02057	0.19268
	(!D * !Q * Q_N)	0.01429	0.02303	0.18798
	(!D * !Q * Q_N)	0.00889	0.01762	0.18258

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)	0.00902	0.01902	0.18274
	(D * RESET_B * Q * !Q_N)	0.01440	0.02441	0.18810
	(D * !RESET_B * !Q * Q_N)	0.01558	0.02593	0.19581
	(D * !RESET_B * !Q * Q_N)	0.02065	0.03098	0.20089
	(!D * !Q * Q_N)	0.00881	0.01884	0.18296
	(!D * !Q * Q_N)	0.01419	0.02420	0.18832
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.00898	0.01896	0.18272
	(D * RESET_B * Q * !Q_N)	0.01438	0.02438	0.18811
	(D * !RESET_B * !Q * Q_N)	0.01549	0.02581	0.19569
	(D * !RESET_B * !Q * Q_N)	0.02056	0.03089	0.20075
	(!D * !Q * Q_N)	0.00882	0.01884	0.18301
	(!D * !Q * Q_N)	0.01423	0.02423	0.18840

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)	0.00245	0.00247	0.00246
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00321	-0.00323	-0.00322
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00247	0.00250	0.00248
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00320	-0.00323	-0.00321

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)	-0.00227	-0.00238	-0.00239
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00342	0.00334	0.00330
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00230	-0.00242	-0.00242
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00340	0.00331	0.00329

SKY130_FD_SC_HS__DLRTNx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00221	0.00256	0.00287	1.44811
sky130_fd_sc_hs__dlrtn_2	0.00223	0.00253	0.00297	2.81917
sky130_fd_sc_hs__dlrtn_4	0.00223	0.00255	0.00483	5.20527

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dlrtn_1	0.00000	2.31497	3.29342
sky130_fd_sc_hs__dlrtn_2	0.00000	2.27861	3.19350
sky130_fd_sc_hs__dlrtn_4	0.00000	3.82623	6.97267

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)	0.17374	0.55669	5.65406
	GATE_N->Q (-R)	0.19902	0.77074	8.46595
	RESET_B->Q (RR)	0.05845	0.44738	5.64357
sky130_fd_sc_hs__dlrtn_2	D->Q (RR)	0.18197	0.47893	5.66487
	GATE_N->Q (-R)	0.20718	0.69246	8.47543
	RESET_B->Q (RR)	0.06271	0.37764	5.65098
sky130_fd_sc_hs__dlrtn_4	D->Q (RR)	0.20053	0.43312	5.60276
	GATE_N->Q (-R)	0.22598	0.64744	8.41047
	RESET_B->Q (RR)	0.06777	0.32312	5.75164

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtn_1	D->Q (FF)	0.13894	0.49217	4.67068
	GATE_N->Q (-F)	0.14513	0.52496	4.97369
	RESET_B->Q (FF)	0.06282	0.44827	4.92433
sky130_fd_sc_hs__dlrtn_2	D->Q (FF)	0.14398	0.45798	4.58234
	GATE_N->Q (-F)	0.14995	0.49072	4.88624
	RESET_B->Q (FF)	0.06685	0.42683	4.92057
sky130_fd_sc_hs__dlrtn_4	D->Q (FF)	0.15464	0.44342	4.60198
	GATE_N->Q (-F)	0.16356	0.48122	4.92117
	RESET_B->Q (FF)	0.07264	0.40339	4.98867

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 ()**	0.07562	0.60669	16.50020
sky130_fd_sc_hs__dlrtn_2	**min_pulse_width**	**RESET_B ()**	0.08929	0.60669	16.50020
sky130_fd_sc_hs__dlrtn_4	**min_pulse_width**	**RESET_B ()**	0.10525	0.60669	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	0.02576	0.03287	0.18095
	D	0.02070	0.02785	0.17620
	GATE_N	0.02622	0.03603	0.20255
	GATE_N	0.03130	0.04121	0.20772
	RESET_B	0.01527	0.02062	0.14297
	RESET_B	0.00896	0.01433	0.13704
sky130_fd_sc_hs__dlrtn_2	D	0.03003	0.03740	0.18542
	D	0.02501	0.03240	0.18102
	GATE_N	0.03059	0.04069	0.20737
	GATE_N	0.03566	0.04583	0.21271
	RESET_B	0.01930	0.02436	0.13525
	RESET_B	0.01278	0.01794	0.12948
sky130_fd_sc_hs__dlrtn_4	D	0.04402	0.05197	0.20122
	D	0.03869	0.04691	0.19764
	GATE_N	0.04457	0.05527	0.22250
	GATE_N	0.04936	0.06005	0.22743
	RESET_B	0.03430	0.04548	0.29594
	RESET_B	0.02370	0.03490	0.28627

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	D	0.02078	0.02994	0.17814
	D	0.02583	0.03498	0.18204
	GATE_N	0.02494	0.03609	0.20835
	GATE_N	0.03070	0.04185	0.21410
	RESET_B	0.00640	0.01491	0.14582
	RESET_B	0.01267	0.02114	0.15146
sky130_fd_sc_hs__dlrtn_2	D	0.02571	0.03502	0.18404
	D	0.03072	0.03995	0.18690
	GATE_N	0.03005	0.04122	0.21473
	GATE_N	0.03568	0.04684	0.21920
	RESET_B	0.01113	0.01882	0.15109
	RESET_B	0.01761	0.02528	0.15739
sky130_fd_sc_hs__dlrtn_4	D	0.03804	0.04744	0.19713
	D	0.04336	0.05241	0.19999
	GATE_N	0.04252	0.05377	0.22846
	GATE_N	0.04849	0.05941	0.23338
	RESET_B	0.02168	0.03638	0.31339
	RESET_B	0.03226	0.04688	0.32083

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)	0.00755	0.01491	0.15463
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00286	0.01020	0.14994
	(!GATE_N * !RESET_B * !Q)	0.01258	0.01979	0.16600
	(!GATE_N * !RESET_B * !Q)	0.00819	0.01540	0.16160
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00761	0.01496	0.15470
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00287	0.01019	0.14997
	(!GATE_N * !RESET_B * !Q)	0.01263	0.01983	0.16602
	(!GATE_N * !RESET_B * !Q)	0.00821	0.01540	0.16160
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00762	0.01500	0.15484
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00290	0.01025	0.15013
	(!GATE_N * !RESET_B * !Q)	0.01327	0.02048	0.16644
	(!GATE_N * !RESET_B * !Q)	0.00889	0.01610	0.16206

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)	0.00229	0.01103	0.15092
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00698	0.01574	0.15562
	(!GATE_N * !RESET_B * !Q)	0.01208	0.02078	0.16727
	(!GATE_N * !RESET_B * !Q)	0.01647	0.02519	0.17167
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00225	0.01098	0.15090
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00699	0.01574	0.15565
	(!GATE_N * !RESET_B * !Q)	0.01221	0.02091	0.16742
	(!GATE_N * !RESET_B * !Q)	0.01663	0.02535	0.17186
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00222	0.01097	0.15098
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00693	0.01570	0.15572
	(!GATE_N * !RESET_B * !Q)	0.01405	0.02276	0.16908
	(!GATE_N * !RESET_B * !Q)	0.01844	0.02717	0.17347

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)	0.01366	0.02250	0.19101
	(D * RESET_B * Q)	0.00825	0.01706	0.18557
	(D * !RESET_B * !Q)	0.02150	0.03032	0.19817
	(D * !RESET_B * !Q)	0.01579	0.02457	0.19245
	(!D * !Q)	0.01354	0.02246	0.19067
	(!D * !Q)	0.00811	0.01701	0.18524
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.01359	0.02245	0.19102
	(D * RESET_B * Q)	0.00824	0.01707	0.18565
	(D * !RESET_B * !Q)	0.02161	0.03044	0.19842
	(D * !RESET_B * !Q)	0.01595	0.02474	0.19273
	(!D * !Q)	0.01345	0.02238	0.19065
	(!D * !Q)	0.00811	0.01698	0.18528
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.01375	0.02257	0.19117
	(D * RESET_B * Q)	0.00839	0.01718	0.18577
	(D * !RESET_B * !Q)	0.02353	0.03235	0.20048
	(D * !RESET_B * !Q)	0.01783	0.02662	0.19477
	(!D * !Q)	0.01349	0.02240	0.19071
	(!D * !Q)	0.00814	0.01699	0.18532

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)	0.00919	0.01934	0.18656
	(D * RESET_B * Q)	0.01463	0.02478	0.19197
	(D * !RESET_B * !Q)	0.01300	0.02306	0.18815
	(D * !RESET_B * !Q)	0.01875	0.02881	0.19389
	(!D * !Q)	0.00896	0.01922	0.18663
	(!D * !Q)	0.01440	0.02468	0.19206
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.00930	0.01946	0.18673
	(D * RESET_B * Q)	0.01468	0.02484	0.19209
	(D * !RESET_B * !Q)	0.01314	0.02320	0.18833
	(D * !RESET_B * !Q)	0.01884	0.02891	0.19403
	(!D * !Q)	0.00911	0.01938	0.18685
	(!D * !Q)	0.01449	0.02478	0.19223
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.00938	0.01951	0.18682
	(D * RESET_B * Q)	0.01477	0.02491	0.19221
	(D * !RESET_B * !Q)	0.01380	0.02389	0.18904
	(D * !RESET_B * !Q)	0.01955	0.02964	0.19478
	(!D * !Q)	0.00923	0.01947	0.18697
	(!D * !Q)	0.01462	0.02488	0.19236

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)	0.00244	0.00246	0.00244
	(D * GATE_N * !Q) + (!D * !Q)	-0.00295	-0.00296	-0.00295
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	0.00249	0.00251	0.00250
	(D * GATE_N * !Q) + (!D * !Q)	-0.00317	-0.00319	-0.00318
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	0.00421	0.00422	0.00420
	(D * GATE_N * !Q) + (!D * !Q)	-0.00489	-0.00490	-0.00488

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)	-0.00227	-0.00239	-0.00239
	(D * GATE_N * !Q) + (!D * !Q)	0.00313	0.00303	0.00301
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	-0.00233	-0.00244	-0.00244
	(D * GATE_N * !Q) + (!D * !Q)	0.00335	0.00327	0.00325
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	-0.00385	-0.00415	-0.00413
	(D * GATE_N * !Q) + (!D * !Q)	0.00518	0.00499	0.00496

SKY130_FD_SC_HS__DLRTPx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00237	0.00257	0.00292	1.45855
sky130_fd_sc_hs__dlrtp_2	0.00234	0.00252	0.00303	2.79456
sky130_fd_sc_hs__dlrtp_4	0.00233	0.00251	0.00461	5.17772

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dlrtp_1	0.00000	2.31497	3.29339
sky130_fd_sc_hs__dlrtp_2	0.00000	2.27861	3.19350
sky130_fd_sc_hs__dlrtp_4	0.00000	3.82623	6.97263

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)	0.17270	0.55135	5.62173
	GATE->Q (-R)	0.15224	0.52997	5.37068
	RESET_B->Q (RR)	0.05891	0.44836	5.67959
sky130_fd_sc_hs__dlrtp_2	D->Q (RR)	0.18151	0.47154	5.52574
	GATE->Q (-R)	0.16032	0.44855	5.27972
	RESET_B->Q (RR)	0.06239	0.37692	5.64657
sky130_fd_sc_hs__dlrtp_4	D->Q (RR)	0.20002	0.42860	5.49024
	GATE->Q (-R)	0.18095	0.40910	5.26245
	RESET_B->Q (RR)	0.06756	0.32144	5.70318

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtp_1	D->Q (FF)	0.14504	0.51053	4.88496
	GATE->Q (-F)	0.15705	0.34623	2.03161
	RESET_B->Q (FF)	0.06342	0.45492	4.99308
sky130_fd_sc_hs__dlrtp_2	D->Q (FF)	0.15101	0.47377	4.72382
	GATE->Q (-F)	0.16139	0.30498	1.84626
	RESET_B->Q (FF)	0.06490	0.42350	4.90100
sky130_fd_sc_hs__dlrtp_4	D->Q (FF)	0.16003	0.45221	4.63982
	GATE->Q (-F)	0.17025	0.28746	1.81024
	RESET_B->Q (FF)	0.07189	0.40199	4.96788

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 ()**	0.07562	0.60669	16.50020
sky130_fd_sc_hs__dlrtp_2	**min_pulse_width**	**RESET_B ()**	0.08473	0.60669	16.50020
sky130_fd_sc_hs__dlrtp_4	**min_pulse_width**	**RESET_B ()**	0.10297	0.60669	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	0.02588	0.03255	0.17838
	D	0.02031	0.02701	0.17323
	GATE	0.03063	0.03897	0.21300
	GATE	0.02475	0.03311	0.20749
	RESET_B	0.01470	0.01964	0.13820
	RESET_B	0.00829	0.01323	0.13207
sky130_fd_sc_hs__dlrtp_2	D	0.03085	0.03787	0.18348
	D	0.02528	0.03233	0.17891
	GATE	0.03515	0.04378	0.21760
	GATE	0.02931	0.03799	0.21240
	RESET_B	0.01933	0.02451	0.14480
	RESET_B	0.01267	0.01794	0.13892
sky130_fd_sc_hs__dlrtp_4	D	0.04446	0.05216	0.19774
	D	0.03879	0.04676	0.19397
	GATE	0.04869	0.05809	0.23209
	GATE	0.04275	0.05226	0.22617
	RESET_B	0.03396	0.04544	0.30408
	RESET_B	0.02383	0.03536	0.29507

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtp_1	D	0.02023	0.02921	0.17467
	D	0.02581	0.03476	0.17959
	GATE	0.03150	0.04071	0.20609
	GATE	0.02635	0.03542	0.20086
	RESET_B	0.00681	0.01519	0.13678
	RESET_B	0.01321	0.02155	0.14255
sky130_fd_sc_hs__dlrtp_2	D	0.02486	0.03390	0.17837
	D	0.03044	0.03936	0.18389
	GATE	0.03568	0.04483	0.21031
	GATE	0.03063	0.03973	0.20493
	RESET_B	0.01094	0.01896	0.14820
	RESET_B	0.01756	0.02556	0.15470
sky130_fd_sc_hs__dlrtp_4	D	0.03781	0.04638	0.19516
	D	0.04349	0.05203	0.19632
	GATE	0.04829	0.05714	0.22202
	GATE	0.04335	0.05212	0.21640
	RESET_B	0.02221	0.03776	0.31661
	RESET_B	0.03233	0.04767	0.32403

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)	0.01334	0.02038	0.16438
	(GATE * !RESET_B * !Q)	0.00848	0.01551	0.15951
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00820	0.01541	0.15319
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00298	0.01016	0.14796
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.01351	0.02052	0.16440
	(GATE * !RESET_B * !Q)	0.00865	0.01565	0.15954
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00825	0.01542	0.15318
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00307	0.01021	0.14801
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.01392	0.02085	0.16335
	(GATE * !RESET_B * !Q)	0.00908	0.01599	0.15849
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00824	0.01534	0.15197
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00308	0.01014	0.14679

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)	0.01124	0.01976	0.16400
	(GATE * !RESET_B * !Q)	0.01612	0.02464	0.16888
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00163	0.01019	0.14807
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00685	0.01543	0.15329
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.01154	0.02006	0.16420
	(GATE * !RESET_B * !Q)	0.01642	0.02493	0.16908
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00171	0.01027	0.14813
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00690	0.01547	0.15332
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.01332	0.02174	0.16469
	(GATE * !RESET_B * !Q)	0.01818	0.02662	0.16957
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00169	0.01016	0.14691
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00686	0.01534	0.15208

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)	0.01510	0.02378	0.18931
	(D * RESET_B * Q)	0.00957	0.01823	0.18379
	(D * !RESET_B * !Q)	0.01752	0.02631	0.19912
	(D * !RESET_B * !Q)	0.01235	0.02111	0.19394
	(!D * !Q)	0.01475	0.02342	0.18863
	(!D * !Q)	0.00922	0.01787	0.18310
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.01477	0.02349	0.18870
	(D * RESET_B * Q)	0.00932	0.01803	0.18325
	(D * !RESET_B * !Q)	0.01729	0.02609	0.19846
	(D * !RESET_B * !Q)	0.01217	0.02094	0.19334
	(!D * !Q)	0.01440	0.02310	0.18804
	(!D * !Q)	0.00895	0.01764	0.18258
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.01460	0.02320	0.18707
	(D * RESET_B * Q)	0.00917	0.01774	0.18163
	(D * !RESET_B * !Q)	0.01772	0.02631	0.19703
	(D * !RESET_B * !Q)	0.01261	0.02117	0.19190
	(!D * !Q)	0.01427	0.02285	0.18644
	(!D * !Q)	0.00884	0.01740	0.18099

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)	0.00898	0.01896	0.18315
	(D * RESET_B * Q)	0.01450	0.02451	0.18868
	(D * !RESET_B * !Q)	0.01553	0.02587	0.19644
	(D * !RESET_B * !Q)	0.02071	0.03107	0.20161
	(!D * !Q)	0.00895	0.01898	0.18358
	(!D * !Q)	0.01447	0.02453	0.18910
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.00907	0.01899	0.18270
	(D * RESET_B * Q)	0.01451	0.02446	0.18813
	(D * !RESET_B * !Q)	0.01588	0.02615	0.19614
	(D * !RESET_B * !Q)	0.02100	0.03130	0.20128
	(!D * !Q)	0.00907	0.01905	0.18316
	(!D * !Q)	0.01452	0.02451	0.18859
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.00898	0.01889	0.18161
	(D * RESET_B * Q)	0.01441	0.02433	0.18704
	(D * !RESET_B * !Q)	0.01765	0.02781	0.19662
	(D * !RESET_B * !Q)	0.02277	0.03297	0.20177
	(!D * !Q)	0.00887	0.01885	0.18161
	(!D * !Q)	0.01432	0.02429	0.18706

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)	0.00244	0.00246	0.00245
	(D * !GATE * !Q) + (!D * !Q)	-0.00303	-0.00304	-0.00303
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	0.00244	0.00246	0.00246
	(D * !GATE * !Q) + (!D * !Q)	-0.00323	-0.00325	-0.00324
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	0.00410	0.00411	0.00409
	(D * !GATE * !Q) + (!D * !Q)	-0.00468	-0.00468	-0.00467

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)	-0.00225	-0.00239	-0.00239
	(D * !GATE * !Q) + (!D * !Q)	0.00320	0.00314	0.00309
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	-0.00226	-0.00240	-0.00240
	(D * !GATE * !Q) + (!D * !Q)	0.00340	0.00334	0.00331
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	-0.00375	-0.00403	-0.00402
	(D * !GATE * !Q) + (!D * !Q)	0.00496	0.00476	0.00475

SKY130_FD_SC_HS__DLXBNx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00236	0.00258	1.41823	1.42752
sky130_fd_sc_hs__dlxbn_2	0.00224	0.00255	2.37043	2.71859

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbn_1	0.00000	2.74477	4.16519
sky130_fd_sc_hs__dlxbn_2	0.00000	2.61514	3.69471

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)	0.17572	0.56935	5.71161
	GATE_N->Q (-R)	0.20209	0.78512	8.52648
sky130_fd_sc_hs__dlxbn_2	D->Q (RR)	0.18206	0.49062	5.38439
	GATE_N->Q (-R)	0.20803	0.70545	8.19301

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbn_1	D->Q (FF)	0.14713	0.50970	4.75092
	GATE_N->Q (-F)	0.15402	0.54424	5.06017
sky130_fd_sc_hs__dlxbn_2	D->Q (FF)	0.15236	0.46291	4.20345
	GATE_N->Q (-F)	0.15962	0.49752	4.51376

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)	0.18315	0.76547	8.64443
	GATE_N->Q_N (-R)	0.19014	0.80005	8.95404
sky130_fd_sc_hs__dlxbn_2	D->Q_N (FR)	0.20180	0.66617	8.21915
	GATE_N->Q_N (-R)	0.20915	0.70103	8.52894

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)	0.20235	0.38906	2.33059
	GATE_N->Q_N (-F)	0.22868	0.60467	5.14590
sky130_fd_sc_hs__dlxbn_2	D->Q_N (RF)	0.22839	0.38321	2.37870
	GATE_N->Q_N (-F)	0.25441	0.59782	5.18750

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.01752	0.02177	0.09623
	D	0.01502	0.01921	0.09371
	GATE_N	0.01767	0.02321	0.10669
	GATE_N	0.02042	0.02595	0.10942
sky130_fd_sc_hs__dlxbn_2	D	0.02209	0.02635	0.10096
	D	0.01970	0.02396	0.09866
	GATE_N	0.02228	0.02796	0.11232
	GATE_N	0.02501	0.03065	0.11432

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.01507	0.02004	0.09405
	D	0.01757	0.02253	0.09617
	GATE_N	0.01740	0.02339	0.10982
	GATE_N	0.02014	0.02611	0.11231
sky130_fd_sc_hs__dlxbn_2	D	0.01974	0.02482	0.09863
	D	0.02213	0.02708	0.10073
	GATE_N	0.02206	0.02789	0.11399
	GATE_N	0.02479	0.03061	0.11664

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.01510	0.02000	0.09471
	D	0.01760	0.02247	0.09671
	GATE_N	0.01743	0.02324	0.11107
	GATE_N	0.02018	0.02596	0.11286
sky130_fd_sc_hs__dlxbn_2	D	0.01978	0.02465	0.09958
	D	0.02217	0.02702	0.10134
	GATE_N	0.02209	0.02815	0.11460
	GATE_N	0.02483	0.03054	0.11732

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.01750	0.02168	0.09556
	D	0.01500	0.01917	0.09299
	GATE_N	0.01765	0.02334	0.10633
	GATE_N	0.02040	0.02607	0.10891
sky130_fd_sc_hs__dlxbn_2	D	0.02207	0.02639	0.10027
	D	0.01968	0.02396	0.09768
	GATE_N	0.02226	0.02802	0.11199
	GATE_N	0.02499	0.03075	0.11356

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)	0.00797	0.01529	0.15530
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00297	0.01028	0.15030
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00781	0.01517	0.15519
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00301	0.01036	0.15039

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)	0.00195	0.01066	0.15082
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00694	0.01569	0.15584
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00203	0.01078	0.15098
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00681	0.01559	0.15578

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)	0.01413	0.02290	0.19139
	(D * Q * !Q_N)	0.00865	0.01739	0.18590
	(!D * !Q * Q_N)	0.01389	0.02273	0.19093
	(!D * !Q * Q_N)	0.00842	0.01723	0.18544
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.01408	0.02287	0.19136
	(D * Q * !Q_N)	0.00863	0.01738	0.18589
	(!D * !Q * Q_N)	0.01385	0.02270	0.19090
	(!D * !Q * Q_N)	0.00841	0.01722	0.18543

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)	0.00930	0.01948	0.18676
	(D * Q * !Q_N)	0.01478	0.02498	0.19225
	(!D * !Q * Q_N)	0.00924	0.01949	0.18697
	(!D * !Q * Q_N)	0.01472	0.02500	0.19246
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.00925	0.01941	0.18670
	(D * Q * !Q_N)	0.01470	0.02488	0.19216
	(!D * !Q * Q_N)	0.00917	0.01941	0.18689
	(!D * !Q * Q_N)	0.01462	0.02488	0.19235

SKY130_FD_SC_HS__DLXBP

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00234	0.00259	1.42021	1.43389

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbp_1	0.00000	2.74476	4.16519

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)	0.17272	0.56257	5.64725
	GATE->Q (-R)	0.15234	0.54049	5.39628

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbp_1	D->Q (FF)	0.15246	0.52108	4.82621
	GATE->Q (-F)	0.16080	0.34988	1.94378

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)	0.18902	0.77615	8.74573
	GATE->Q_N (-R)	0.19741	0.60510	5.86622

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)	0.19949	0.38285	2.27428
	GATE->Q_N (-F)	0.17910	0.36070	2.02336

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.01753	0.02168	0.09479
	D	0.01504	0.01919	0.09227
	GATE	0.01960	0.02459	0.11165
	GATE	0.01685	0.02180	0.10891

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.01483	0.01973	0.09224
	D	0.01731	0.02218	0.09457
	GATE	0.02009	0.02507	0.10766
	GATE	0.01736	0.02228	0.10490

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.01486	0.01964	0.09343
	D	0.01735	0.02211	0.09510
	GATE	0.02013	0.02510	0.10811
	GATE	0.01739	0.02232	0.10537

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.01751	0.02164	0.09406
	D	0.01502	0.01916	0.09156
	GATE	0.01957	0.02456	0.11130
	GATE	0.01683	0.02177	0.10854

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)	0.00816	0.01537	0.15320
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00320	0.01039	0.14822

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)	0.00173	0.01029	0.14819
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00668	0.01528	0.15316

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)	0.01435	0.02299	0.18833
	(D * Q * !Q_N)	0.00888	0.01746	0.18283
	(!D * !Q * Q_N)	0.01429	0.02290	0.18791
	(!D * !Q * Q_N)	0.00879	0.01739	0.18241

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)	0.00882	0.01878	0.18252
	(D * Q * !Q_N)	0.01433	0.02429	0.18803
	(!D * !Q * Q_N)	0.00853	0.01853	0.18267
	(!D * !Q * Q_N)	0.01403	0.02403	0.18816

SKY130_FD_SC_HS__DLXTNx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00234	0.00261	1.43922
sky130_fd_sc_hs__dlxtn_2	0.00239	0.00261	2.62319
sky130_fd_sc_hs__dlxtn_4	0.00238	0.00260	5.31315

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtn_1	0.00000	2.21194	3.00794
sky130_fd_sc_hs__dlxtn_2	0.00000	2.16636	3.19350
sky130_fd_sc_hs__dlxtn_4	0.00000	3.43360	4.67192

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)	0.16346	0.54796	5.61987
	GATE_N->Q (-R)	0.18969	0.76250	8.43299
sky130_fd_sc_hs__dlxtn_2	D->Q (RR)	0.16639	0.45665	5.35491
	GATE_N->Q (-R)	0.19145	0.66934	8.16321
sky130_fd_sc_hs__dlxtn_4	D->Q (RR)	0.18411	0.41380	5.66245
	GATE_N->Q (-R)	0.20801	0.62529	8.46414

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtn_1	D->Q (FF)	0.13642	0.48719	4.62748
	GATE_N->Q (-F)	0.14453	0.52302	4.93529
sky130_fd_sc_hs__dlxtn_2	D->Q (FF)	0.14098	0.44954	4.40343
	GATE_N->Q (-F)	0.14813	0.48399	4.71141
sky130_fd_sc_hs__dlxtn_4	D->Q (FF)	0.15345	0.44484	4.72254
	GATE_N->Q (-F)	0.16342	0.48441	5.04572

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.02489	0.03248	0.18108
	D	0.01971	0.02734	0.17632
	GATE_N	0.02505	0.03536	0.20208
	GATE_N	0.03067	0.04098	0.20775
sky130_fd_sc_hs__dlxtn_2	D	0.02932	0.03711	0.18572
	D	0.02405	0.03190	0.18119
	GATE_N	0.02935	0.03998	0.20675
	GATE_N	0.03494	0.04556	0.21279
sky130_fd_sc_hs__dlxtn_4	D	0.04255	0.05025	0.19924
	D	0.03731	0.04501	0.19516
	GATE_N	0.04251	0.05304	0.21982
	GATE_N	0.04811	0.05875	0.22582

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.02046	0.02967	0.17794
	D	0.02562	0.03474	0.18200
	GATE_N	0.02507	0.03620	0.20879
	GATE_N	0.03070	0.04173	0.21425
sky130_fd_sc_hs__dlxtn_2	D	0.02478	0.03419	0.18306
	D	0.03004	0.03910	0.18638
	GATE_N	0.02934	0.04071	0.21267
	GATE_N	0.03493	0.04602	0.21823
sky130_fd_sc_hs__dlxtn_4	D	0.03731	0.04642	0.19685
	D	0.04256	0.05155	0.19952
	GATE_N	0.04199	0.05367	0.23143
	GATE_N	0.04755	0.05848	0.23278

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00799	0.01519	0.15485
	GATE_N	0.00282	0.01002	0.14967
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00801	0.01522	0.15498
	GATE_N	0.00275	0.00993	0.14973
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.00805	0.01523	0.15496
	GATE_N	0.00279	0.00997	0.14969

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00240	0.01100	0.15088
	GATE_N	0.00756	0.01619	0.15604
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00236	0.01098	0.15093
	GATE_N	0.00762	0.01626	0.15618
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.00241	0.01103	0.15099
	GATE_N	0.00767	0.01630	0.15623

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.01472	0.02348	0.19186
	(D * Q)	0.00910	0.01784	0.18624
	(!D * !Q)	0.01444	0.02317	0.19132
	(!D * !Q)	0.00881	0.01754	0.18571
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.01437	0.02322	0.19157
	(D * Q)	0.00882	0.01761	0.18599
	(!D * !Q)	0.01405	0.02285	0.19098
	(!D * !Q)	0.00846	0.01726	0.18540
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.01451	0.02332	0.19168
	(D * Q)	0.00896	0.01771	0.18609
	(!D * !Q)	0.01417	0.02294	0.19108
	(!D * !Q)	0.00858	0.01734	0.18549

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.00941	0.01949	0.18679
	(D * Q)	0.01503	0.02511	0.19241
	(!D * !Q)	0.00936	0.01953	0.18702
	(!D * !Q)	0.01498	0.02515	0.19264
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.00929	0.01941	0.18666
	(D * Q)	0.01487	0.02499	0.19225
	(!D * !Q)	0.00932	0.01951	0.18696
	(!D * !Q)	0.01491	0.02509	0.19254
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.00938	0.01947	0.18677
	(D * Q)	0.01498	0.02506	0.19236
	(!D * !Q)	0.00938	0.01956	0.18704
	(!D * !Q)	0.01498	0.02515	0.19262

SKY130_FD_SC_HS__DLXTP

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00230	0.00266	1.39814

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtp_1	0.00000	2.06423	3.00335

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)	0.19502	0.58074	5.65666
	GATE->Q (-R)	0.15650	0.54086	5.41745

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtp_1	D->Q (FF)	0.14802	0.50634	4.72330
	GATE->Q (-F)	0.15876	0.34797	1.99597

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.02725	0.03485	0.18323
	D	0.02192	0.02954	0.17830
	GATE	0.03179	0.03956	0.17643
	GATE	0.02595	0.03374	0.17096

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.02326	0.03248	0.17959
	D	0.02857	0.03776	0.18487
	GATE	0.03378	0.04264	0.21035
	GATE	0.02846	0.03727	0.20473

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00752	0.01507	0.15559
	!GATE	0.00246	0.00999	0.15052

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00212	0.01072	0.15117
	!GATE	0.00716	0.01580	0.15624

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.01550	0.02446	0.19300
	(D * Q)	0.00996	0.01886	0.18742
	(!D * !Q)	0.01488	0.02377	0.19210
	(!D * !Q)	0.00930	0.01817	0.18652

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.00776	0.01799	0.18511
	(D * Q)	0.01335	0.02357	0.19069
	(!D * !Q)	0.00825	0.01849	0.18582
	(!D * !Q)	0.01384	0.02408	0.19140

SKY130_FD_SC_HS__DLYGATE4SDx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00184	1.43364
sky130_fd_sc_hs__dlygate4sd2_1	0.00185	1.44168
sky130_fd_sc_hs__dlygate4sd3_1	0.00187	1.42655

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlygate4sd1_1	0.00000	0.12276	0.20070
sky130_fd_sc_hs__dlygate4sd2_1	0.00000	0.11717	0.19511
sky130_fd_sc_hs__dlygate4sd3_1	0.00000	0.12345	0.20139

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)**	0.11733	0.49508	5.27232
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (RR)**	0.14435	0.53179	5.39920
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (RR)**	0.23205	0.63582	5.55431

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlygate4sd1_1	**A->X (FF)**	0.14317	0.54199	5.24271
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (FF)**	0.17204	0.58232	5.31620
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (FF)**	0.24848	0.68734	5.43760

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.01851	0.02076	0.08228
	A	0.01447	0.01690	0.07874
sky130_fd_sc_hs__dlygate4sd2_1	A	0.01953	0.02163	0.08097
	A	0.01547	0.01758	0.07724
sky130_fd_sc_hs__dlygate4sd3_1	A	0.02277	0.02447	0.08208
	A	0.01866	0.02036	0.07846

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.01386	0.01711	0.08059
	A	0.01789	0.02114	0.08165
sky130_fd_sc_hs__dlygate4sd2_1	A	0.01492	0.01812	0.07764
	A	0.01898	0.02217	0.08027
sky130_fd_sc_hs__dlygate4sd3_1	A	0.01874	0.02103	0.07810
	A	0.02285	0.02512	0.08066

SKY130_FD_SC_HS__EBUFNx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00239	0.00445	0.75848
sky130_fd_sc_hs__ebufn_2	0.00261	0.00587	1.23995
sky130_fd_sc_hs__ebufn_4	0.00287	0.00904	2.43209
sky130_fd_sc_hs__ebufn_8	0.00553	0.01506	4.13242

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__ebufn_1	0.00000	1.38208	2.30185
sky130_fd_sc_hs__ebufn_2	0.00000	0.64063	0.95881
sky130_fd_sc_hs__ebufn_4	0.00000	0.36985	0.78351
sky130_fd_sc_hs__ebufn_8	0.00000	0.60911	1.55556

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)	0.05801	0.56423	5.80304
	TE_B->Z (RR)	0.02356	0.39651	5.55663
	TE_B->Z (FR)	0.04497	0.74613	9.30639
sky130_fd_sc_hs__ebufn_2	A->Z (RR)	0.05484	0.48002	5.71428
	TE_B->Z (RR)	0.02566	0.39732	5.55739
	TE_B->Z (FR)	0.04553	0.65527	9.25527
sky130_fd_sc_hs__ebufn_4	A->Z (RR)	0.06194	0.41045	5.68935
	TE_B->Z (RR)	0.03343	0.39936	5.55937
	TE_B->Z (FR)	0.04322	0.53986	9.07357
sky130_fd_sc_hs__ebufn_8	A->Z (RR)	0.06696	0.35205	5.67182
	TE_B->Z (RR)	0.05743	0.40378	5.56364
	TE_B->Z (FR)	0.04923	0.45953	8.74917

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ebufn_1	A->Z (FF)	0.05888	0.41449	4.20958
	TE_B->Z (RF)	0.02340	0.39648	5.55664
	TE_B->Z (FF)	0.04702	0.38522	4.07494
sky130_fd_sc_hs__ebufn_2	A->Z (FF)	0.06620	0.40585	4.17939
	TE_B->Z (RF)	0.02549	0.39729	5.55743
	TE_B->Z (FF)	0.05000	0.36195	4.02435
sky130_fd_sc_hs__ebufn_4	A->Z (FF)	0.08654	0.43821	4.45954
	TE_B->Z (RF)	0.03335	0.39925	5.55942
	TE_B->Z (FF)	0.05810	0.36776	4.23983
sky130_fd_sc_hs__ebufn_8	A->Z (FF)	0.08599	0.41291	4.54317
	TE_B->Z (RF)	0.05645	0.40354	5.56371
	TE_B->Z (FF)	0.07986	0.39582	4.42688

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.01043	0.01811	0.15699
	A	0.00505	0.01275	0.15176
	TE_B	0.00476	0.01360	0.15199
	TE_B	0.01439	0.02329	0.16185
sky130_fd_sc_hs__ebufn_2	A	0.01499	0.02376	0.17997
	A	0.00922	0.01800	0.17460
	TE_B	0.00934	0.01871	0.17298
	TE_B	0.02202	0.03148	0.18601
sky130_fd_sc_hs__ebufn_4	A	0.02435	0.03307	0.18899
	A	0.01800	0.02673	0.18346
	TE_B	0.01894	0.02781	0.18213
	TE_B	0.03861	0.04758	0.20190
sky130_fd_sc_hs__ebufn_8	A	0.04742	0.06557	0.38149
	A	0.03502	0.05320	0.37068
	TE_B	0.03898	0.04695	0.19850
	TE_B	0.07184	0.07993	0.23285

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.00505	0.01405	0.15139
	A	0.01044	0.01937	0.15644
	TE_B	0.00525	0.01441	0.15281
	TE_B	0.01474	0.02382	0.16177
sky130_fd_sc_hs__ebufn_2	A	0.00964	0.01934	0.17263
	A	0.01539	0.02503	0.17785
	TE_B	0.01045	0.02012	0.17433
	TE_B	0.02264	0.03230	0.18587
sky130_fd_sc_hs__ebufn_4	A	0.01981	0.02850	0.18220
	A	0.02618	0.03474	0.18722
	TE_B	0.02085	0.02997	0.18348
	TE_B	0.03978	0.04889	0.20234
sky130_fd_sc_hs__ebufn_8	A	0.03872	0.05666	0.36637
	A	0.05110	0.06902	0.37867
	TE_B	0.04260	0.05103	0.20412
	TE_B	0.07406	0.08235	0.23385

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00689	0.01457	0.15160
	(TE_B * Z)	0.00144	0.00910	0.14615
	(TE_B * !Z)	0.00666	0.01428	0.15127
	(TE_B * !Z)	0.00124	0.00884	0.14585
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00959	0.01785	0.17145
	(TE_B * Z)	0.00361	0.01183	0.16546
	(TE_B * !Z)	0.00884	0.01693	0.17043
	(TE_B * !Z)	0.00291	0.01099	0.16451
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.01409	0.02137	0.17477
	(TE_B * Z)	0.00744	0.01469	0.16810
	(TE_B * !Z)	0.01283	0.01996	0.17304
	(TE_B * !Z)	0.00627	0.01338	0.16648
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.02609	0.04152	0.35256
	(TE_B * Z)	0.01314	0.02851	0.33960
	(TE_B * !Z)	0.02360	0.03860	0.34909
	(TE_B * !Z)	0.01085	0.02579	0.33632

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00075	0.00958	0.14643
	(TE_B * Z)	0.00623	0.01507	0.15192
	(TE_B * !Z)	0.00087	0.00985	0.14678
	(TE_B * !Z)	0.00630	0.01527	0.15221
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00169	0.01087	0.16387
	(TE_B * Z)	0.00774	0.01696	0.16995
	(TE_B * !Z)	0.00223	0.01167	0.16500
	(TE_B * !Z)	0.00815	0.01760	0.17092
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.00336	0.01220	0.16464
	(TE_B * Z)	0.01015	0.01902	0.17149
	(TE_B * !Z)	0.00433	0.01340	0.16645
	(TE_B * !Z)	0.01087	0.01995	0.17299
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.00560	0.02362	0.33351
	(TE_B * Z)	0.01882	0.03693	0.34685
	(TE_B * !Z)	0.00758	0.02607	0.33714
	(TE_B * !Z)	0.02026	0.03883	0.34987

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00586	0.01341	0.15098
	(A * Z)	-0.00365	0.00388	0.14146
	(!A * !Z)	0.00592	0.01340	0.15098
	(!A * !Z)	-0.00358	0.00385	0.14146
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00662	0.01436	0.16777
	(A * Z)	-0.00559	0.00202	0.15546
	(!A * !Z)	0.00689	0.01444	0.16787
	(!A * !Z)	-0.00535	0.00214	0.15559
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00836	0.01449	0.16762
	(A * Z)	-0.01052	-0.00452	0.14864
	(!A * !Z)	0.00856	0.01455	0.16764
	(!A * !Z)	-0.01034	-0.00446	0.14866
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.01137	0.01515	0.16456
	(A * Z)	-0.02001	-0.01649	0.13296
	(!A * !Z)	0.01133	0.01522	0.16536
	(!A * !Z)	-0.02008	-0.01639	0.13378

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00131	0.01070	0.14820
	(A * Z)	0.01081	0.02026	0.15768
	(!A * !Z)	0.00129	0.01043	0.14812
	(!A * !Z)	0.01080	0.01999	0.15765
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00330	0.01319	0.16656
	(A * Z)	0.01558	0.02552	0.17887
	(!A * !Z)	0.00324	0.01303	0.16649
	(!A * !Z)	0.01551	0.02535	0.17879
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00714	0.01641	0.17009
	(A * Z)	0.02609	0.03549	0.18910
	(!A * !Z)	0.00718	0.01637	0.17007
	(!A * !Z)	0.02610	0.03543	0.18896
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.01496	0.02379	0.17438
	(A * Z)	0.04648	0.05533	0.20585
	(!A * !Z)	0.01547	0.02394	0.17567
	(!A * !Z)	0.04693	0.05555	0.20723

SKY130_FD_SC_HS__EDFXBP

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00187	0.00371	0.00300	1.43725	1.46428

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxbp_1	0.00000	1.69122	2.77258

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)	0.14560	0.54645	5.45548

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxbp_1	CLK->Q (RF)	0.13173	0.36934	2.15233

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)	0.19465	0.58685	5.58093

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)	0.19330	0.39826	2.11031

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)	-0.07179	-0.13988	-0.45416
	setup	CLK (R)	0.08799	0.15383	0.45008

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)	-0.20435	-0.34399	-4.02007
	setup	CLK (R)	0.25265	0.38976	4.04019

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)	-0.07179	-0.13988	-0.45416
	setup	CLK (R)	0.08799	0.15383	0.45008

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)	-0.20435	-0.34399	-4.02007
	setup	CLK (R)	0.25265	0.38976	4.04019

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)	0.00002	0.01012	0.46731
	setup	CLK (R)	0.27965	0.29528	0.45735

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)	-0.11941	-0.23310	-3.11654
	setup	CLK (R)	0.23180	0.34545	3.86745

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)	0.00002	0.01012	0.46731
	hold	CLK (R)	-0.11585	-0.14049	-0.31873
	setup	CLK (R)	0.08938	0.13562	0.39480
	setup	CLK (R)	0.27965	0.29528	0.45735

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)	-0.21856	-0.33242	-3.86120
	hold	CLK (R)	-0.11941	-0.23310	-3.11654
	setup	CLK (R)	0.23180	0.34545	3.86745
	setup	CLK (R)	0.12839	0.23734	3.12101

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 ()	0.06878	0.60669	16.50020
	min_pulse_width	CLK ()	0.10297	0.60669	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 ()	0.11436	0.60669	16.50020
	min_pulse_width	CLK ()	0.16679	0.60669	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	0.02369	0.02772	0.11037
	CLK	0.02055	0.02447	0.10726

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.02372	0.02711	0.11256
	CLK	0.02035	0.02374	0.10918

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.02375	0.02719	0.11351
	CLK	0.02038	0.02378	0.11006

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.02365	0.02756	0.10958
	CLK	0.02050	0.02443	0.10643

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.00885	0.01044	0.05162
	(CLK * DE)	0.00453	0.00610	0.04728
	(CLK * !DE)	0.00179	0.00180	0.00180
	(CLK * !DE)	-0.00096	-0.00096	-0.00096
	(!CLK * DE * Q * !Q_N)	0.02032	0.02260	0.07312
	(!CLK * DE * Q * !Q_N)	0.01597	0.01826	0.06878
	(!CLK * DE * !Q * Q_N)	0.01927	0.02154	0.07218
	(!CLK * DE * !Q * Q_N)	0.01488	0.01715	0.06780
	(!CLK * !DE)	0.00178	0.00178	0.00178
	(!CLK * !DE)	-0.00096	-0.00096	-0.00096

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.00317	0.00492	0.04528
	(CLK * DE)	0.00757	0.00931	0.04967
	(CLK * !DE)	-0.00052	-0.00053	-0.00051
	(CLK * !DE)	0.00222	0.00225	0.00222
	(!CLK * DE * Q * !Q_N)	0.01717	0.01933	0.06851
	(!CLK * DE * Q * !Q_N)	0.02151	0.02366	0.07283
	(!CLK * DE * !Q * Q_N)	0.01811	0.02041	0.07034
	(!CLK * DE * !Q * Q_N)	0.02250	0.02480	0.07473
	(!CLK * !DE)	-0.00052	-0.00053	-0.00051
	(!CLK * !DE)	0.00222	0.00223	0.00222

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01413	0.02046	0.15594
	CLK	0.00422	0.01052	0.14602
	(!CLK * D * Q * !Q_N)	0.00792	0.01275	0.10784
	(!CLK * D * Q * !Q_N)	-0.00014	0.00464	0.09979
	(!CLK * D * !Q * Q_N)	0.02538	0.03220	0.17537
	(!CLK * D * !Q * Q_N)	0.01548	0.02226	0.16545
	(!CLK * !D * Q * !Q_N)	0.02681	0.03148	0.12901
	(!CLK * !D * Q * !Q_N)	0.02038	0.02502	0.12256
	(!CLK * !D * !Q * Q_N)	0.00790	0.01282	0.10791
	(!CLK * !D * !Q * Q_N)	-0.00013	0.00477	0.09990

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00437	0.01132	0.14662
	CLK	0.01427	0.02126	0.15652
	(!CLK * D * Q * !Q_N)	-0.00027	0.00540	0.10050
	(!CLK * D * Q * !Q_N)	0.00781	0.01350	0.10859
	(!CLK * D * !Q * Q_N)	0.01912	0.02634	0.16862
	(!CLK * D * !Q * Q_N)	0.02902	0.03623	0.17852
	(!CLK * !D * Q * !Q_N)	0.01967	0.02521	0.12179
	(!CLK * !D * Q * !Q_N)	0.02609	0.03163	0.12823
	(!CLK * !D * !Q * Q_N)	-0.00031	0.00540	0.10050
	(!CLK * !D * !Q * Q_N)	0.00768	0.01342	0.10855

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)	0.02209	0.02967	0.19260
	(D * Q * !Q_N)	0.01557	0.02317	0.18608
	(D * !DE * !Q * Q_N)	0.02164	0.02931	0.19288
	(D * !DE * !Q * Q_N)	0.01512	0.02276	0.18635
	(!D * !Q * Q_N)	0.02164	0.02928	0.19288
	(!D * !Q * Q_N)	0.01512	0.02273	0.18635
	(!D * !DE * Q * !Q_N)	0.02209	0.02966	0.19260
	(!D * !DE * Q * !Q_N)	0.01557	0.02316	0.18607

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)	0.01131	0.02086	0.18280
	(D * Q * !Q_N)	0.01783	0.02740	0.18932
	(D * DE * !Q * Q_N)	0.02296	0.03255	0.19788
	(D * DE * !Q * Q_N)	0.02948	0.03907	0.20441
	(D * !DE * !Q * Q_N)	0.01200	0.02144	0.18323
	(D * !DE * !Q * Q_N)	0.01852	0.02798	0.18974
	(!D * DE * Q * !Q_N)	0.02700	0.03691	0.20120
	(!D * DE * Q * !Q_N)	0.03352	0.04345	0.20772
	(!D * !Q * Q_N)	0.01201	0.02144	0.18323
	(!D * !Q * Q_N)	0.01853	0.02798	0.18974
	(!D * !DE * Q * !Q_N)	0.01130	0.02085	0.18279
	(!D * !DE * Q * !Q_N)	0.01782	0.02739	0.18931

SKY130_FD_SC_HS__EDFXTP

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00191	0.00357	0.00294	1.43592

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxtp_1	0.00000	1.67595	2.94521

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)	0.13811	0.53703	5.43925

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxtp_1	CLK->Q (RF)	0.12266	0.34760	2.03636

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)	-0.07128	-0.14083	-0.45514
	setup	CLK (R)	0.08859	0.15383	0.44912

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)	-0.19869	-0.34434	-4.00904
	setup	CLK (R)	0.25180	0.39213	4.02972

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)	-0.00195	0.00810	0.46641
	setup	CLK (R)	0.27468	0.29518	0.45251

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)	-0.11613	-0.23409	-3.12770
	setup	CLK (R)	0.23086	0.34397	3.85844

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)	-0.00195	0.00810	0.46641
	hold	CLK (R)	-0.11502	-0.13166	-0.30588
	setup	CLK (R)	0.08584	0.13359	0.39325
	setup	CLK (R)	0.27468	0.29518	0.45251

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)	-0.21617	-0.33496	-3.85663
	hold	CLK (R)	-0.11613	-0.23409	-3.12770
	setup	CLK (R)	0.23086	0.34397	3.85844
	setup	CLK (R)	0.12898	0.23825	3.13255

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 ()	0.06194	0.60669	16.50020
	min_pulse_width	CLK ()	0.09385	0.60669	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 ()	0.10981	0.60669	16.50020
	min_pulse_width	CLK ()	0.16907	0.60669	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	0.03962	0.04797	0.21307
	CLK	0.03344	0.04181	0.20727

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.03912	0.04686	0.21783
	CLK	0.03254	0.04024	0.21095

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.00859	0.01024	0.05144
	(CLK * DE)	0.00423	0.00586	0.04707
	(CLK * !DE)	0.00180	0.00182	0.00181
	(CLK * !DE)	-0.00098	-0.00099	-0.00098
	(!CLK * DE * Q)	0.02002	0.02233	0.07299
	(!CLK * DE * Q)	0.01567	0.01795	0.06861
	(!CLK * DE * !Q)	0.01896	0.02133	0.07203
	(!CLK * DE * !Q)	0.01453	0.01692	0.06761
	(!CLK * !DE)	0.00179	0.00180	0.00179
	(!CLK * !DE)	-0.00098	-0.00099	-0.00098

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.00305	0.00498	0.04526
	(CLK * DE)	0.00749	0.00940	0.04968
	(CLK * !DE)	-0.00049	-0.00050	-0.00049
	(CLK * !DE)	0.00227	0.00228	0.00227
	(!CLK * DE * Q)	0.01647	0.01863	0.06795
	(!CLK * DE * Q)	0.02085	0.02300	0.07232
	(!CLK * DE * !Q)	0.01745	0.01975	0.06981
	(!CLK * DE * !Q)	0.02188	0.02417	0.07423
	(!CLK * !DE)	-0.00050	-0.00051	-0.00049
	(!CLK * !DE)	0.00227	0.00229	0.00227

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.01370	0.02015	0.15560
	CLK	0.00409	0.01052	0.14598
	(!CLK * D * Q)	0.00771	0.01257	0.10777
	(!CLK * D * Q)	-0.00008	0.00476	0.09997
	(!CLK * D * !Q)	0.02485	0.03179	0.17497
	(!CLK * D * !Q)	0.01524	0.02214	0.16535
	(!CLK * !D * Q)	0.02586	0.03060	0.12831
	(!CLK * !D * Q)	0.01973	0.02444	0.12217
	(!CLK * !D * !Q)	0.00770	0.01263	0.10786
	(!CLK * !D * !Q)	-0.00003	0.00489	0.10013

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.00430	0.01123	0.14645
	CLK	0.01391	0.02084	0.15605
	(!CLK * D * Q)	-0.00019	0.00544	0.10057
	(!CLK * D * Q)	0.00757	0.01324	0.10835
	(!CLK * D * !Q)	0.01853	0.02573	0.16805
	(!CLK * D * !Q)	0.02813	0.03533	0.17765
	(!CLK * !D * Q)	0.01944	0.02494	0.12161
	(!CLK * !D * Q)	0.02553	0.03110	0.12776
	(!CLK * !D * !Q)	-0.00028	0.00541	0.10055
	(!CLK * !D * !Q)	0.00743	0.01317	0.10829

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.02118	0.02889	0.19179
	(D * Q)	0.01478	0.02251	0.18539
	(D * !DE * !Q)	0.02141	0.02916	0.19293
	(D * !DE * !Q)	0.01501	0.02277	0.18654
	(!D * !Q)	0.02141	0.02917	0.19295
	(!D * !Q)	0.01502	0.02278	0.18655
	(!D * !DE * Q)	0.02117	0.02889	0.19178
	(!D * !DE * Q)	0.01478	0.02250	0.18538

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.01135	0.02096	0.18305
	(D * Q)	0.01771	0.02737	0.18945
	(D * DE * !Q)	0.02227	0.03197	0.19769
	(D * DE * !Q)	0.02863	0.03838	0.20406
	(D * !DE * !Q)	0.01135	0.02085	0.18279
	(D * !DE * !Q)	0.01771	0.02727	0.18918
	(!D * DE * Q)	0.02640	0.03634	0.20060
	(!D * DE * Q)	0.03276	0.04276	0.20698
	(!D * !Q)	0.01136	0.02086	0.18279
	(!D * !Q)	0.01772	0.02727	0.18918
	(!D * !DE * Q)	0.01134	0.02095	0.18305
	(!D * !DE * Q)	0.01771	0.02737	0.18945

SKY130_FD_SC_HS__EINVNx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00292	0.00329	0.74899
sky130_fd_sc_hs__einvn_2	0.00549	0.00499	1.34120
sky130_fd_sc_hs__einvn_4	0.01096	0.00899	2.53864
sky130_fd_sc_hs__einvn_8	0.02192	0.01501	4.33882

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__einvn_1	0.00000	0.47722	0.66436
sky130_fd_sc_hs__einvn_2	0.00000	0.51184	0.66632
sky130_fd_sc_hs__einvn_4	0.00000	0.26905	0.77207
sky130_fd_sc_hs__einvn_8	0.00000	0.40751	1.53268

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)	0.03685	0.78592	10.04180
	TE_B->Z (RR)	0.02430	0.39618	5.55630
	TE_B->Z (FR)	0.04413	0.74412	9.24595
sky130_fd_sc_hs__einvn_2	A->Z (FR)	0.02564	0.67172	9.97551
	TE_B->Z (RR)	0.03238	0.39793	5.55802
	TE_B->Z (FR)	0.04035	0.63027	9.13954
sky130_fd_sc_hs__einvn_4	A->Z (FR)	0.02392	0.58623	9.96204
	TE_B->Z (RR)	0.03420	0.39938	5.55944
	TE_B->Z (FR)	0.03885	0.52136	8.89929
sky130_fd_sc_hs__einvn_8	A->Z (FR)	0.02557	0.51682	9.75460
	TE_B->Z (RR)	0.05591	0.40586	5.56569
	TE_B->Z (FR)	0.04645	0.43927	8.44594

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvn_1	A->Z (RF)	0.01726	0.33482	4.15493
	TE_B->Z (RF)	0.02413	0.39616	5.55631
	TE_B->Z (FF)	0.04580	0.37956	3.87974
sky130_fd_sc_hs__einvn_2	A->Z (RF)	0.01452	0.28552	4.25791
	TE_B->Z (RF)	0.03193	0.39789	5.55804
	TE_B->Z (FF)	0.05191	0.37233	4.08148
sky130_fd_sc_hs__einvn_4	A->Z (RF)	0.01405	0.23433	4.28866
	TE_B->Z (RF)	0.03379	0.39934	5.55949
	TE_B->Z (FF)	0.05306	0.34780	4.16117
sky130_fd_sc_hs__einvn_8	A->Z (RF)	0.01593	0.20817	4.48099
	TE_B->Z (RF)	0.05521	0.40562	5.56582
	TE_B->Z (FF)	0.07264	0.37448	4.36957

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	-0.00086	0.00247	0.04624
	A	0.00536	0.00869	0.05244
	TE_B	0.00305	0.00909	0.10680
	TE_B	0.01248	0.01855	0.11644
sky130_fd_sc_hs__einvn_2	A	-0.00316	0.00363	0.08446
	A	0.00889	0.01537	0.09649
	TE_B	0.00476	0.01061	0.10843
	TE_B	0.02017	0.02609	0.12424
sky130_fd_sc_hs__einvn_4	A	-0.00624	0.00792	0.15893
	A	0.01776	0.03196	0.18295
	TE_B	0.00985	0.01943	0.18105
	TE_B	0.03858	0.04901	0.21018
sky130_fd_sc_hs__einvn_8	A	-0.01177	0.01576	0.28911
	A	0.03631	0.06399	0.33729
	TE_B	0.02073	0.02946	0.18890
	TE_B	0.07182	0.08069	0.24036

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	0.00569	0.00753	0.03379
	A	-0.00052	0.00132	0.02758
	TE_B	0.00592	0.01190	0.10166
	TE_B	0.01086	0.01684	0.10632
sky130_fd_sc_hs__einvn_2	A	0.00946	0.01357	0.06362
	A	-0.00255	0.00154	0.05011
	TE_B	0.01020	0.01618	0.11351
	TE_B	0.01680	0.02277	0.12008
sky130_fd_sc_hs__einvn_4	A	0.01917	0.02823	0.12223
	A	-0.00481	0.00416	0.09659
	TE_B	0.02106	0.03072	0.19362
	TE_B	0.03187	0.04153	0.20259
sky130_fd_sc_hs__einvn_8	A	0.03822	0.05612	0.23190
	A	-0.00980	0.00786	0.18141
	TE_B	0.04272	0.05160	0.20993
	TE_B	0.05762	0.06640	0.22479

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	0.00121	0.00122	0.00121
	(TE_B * Z)	-0.00200	-0.00201	-0.00200
	(TE_B * !Z)	0.00135	0.00136	0.00135
	(TE_B * !Z)	-0.00176	-0.00178	-0.00176
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	0.00225	0.00227	0.00220
	(TE_B * Z)	-0.00391	-0.00399	-0.00394
	(TE_B * !Z)	0.00276	0.00279	0.00277
	(TE_B * !Z)	-0.00312	-0.00316	-0.00313
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	0.00410	0.00414	0.00401
	(TE_B * Z)	-0.00777	-0.00788	-0.00779
	(TE_B * !Z)	0.00502	0.00504	0.00502
	(TE_B * !Z)	-0.00644	-0.00648	-0.00640
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	0.00784	0.00795	0.00769
	(TE_B * Z)	-0.01530	-0.01552	-0.01533
	(TE_B * !Z)	0.00976	0.00984	0.00980
	(TE_B * !Z)	-0.01271	-0.01284	-0.01266

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	-0.00118	-0.00119	-0.00118
	(TE_B * Z)	0.00200	0.00201	0.00200
	(TE_B * !Z)	-0.00135	-0.00136	-0.00135
	(TE_B * !Z)	0.00179	0.00180	0.00178
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	-0.00216	-0.00220	-0.00217
	(TE_B * Z)	0.00391	0.00399	0.00394
	(TE_B * !Z)	-0.00276	-0.00279	-0.00277
	(TE_B * !Z)	0.00323	0.00325	0.00314
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	-0.00396	-0.00402	-0.00397
	(TE_B * Z)	0.00777	0.00788	0.00779
	(TE_B * !Z)	-0.00502	-0.00504	-0.00502
	(TE_B * !Z)	0.00659	0.00660	0.00640
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	-0.00765	-0.00776	-0.00766
	(TE_B * Z)	0.01530	0.01552	0.01533
	(TE_B * !Z)	-0.00976	-0.00984	-0.00980
	(TE_B * !Z)	0.01292	0.01306	0.01266

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00419	0.00949	0.10805
	(A * !Z)	-0.00272	0.00239	0.10098
	(!A * Z)	0.00399	0.00954	0.10801
	(!A * Z)	-0.00275	0.00252	0.10100
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00516	0.00948	0.10640
	(A * !Z)	-0.00545	-0.00140	0.09562
	(!A * Z)	0.00460	0.00928	0.10627
	(!A * Z)	-0.00554	-0.00132	0.09565
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00858	0.01533	0.17558
	(A * !Z)	-0.01027	-0.00408	0.15630
	(!A * Z)	0.00747	0.01490	0.17531
	(!A * Z)	-0.01050	-0.00396	0.15639
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.01041	0.01534	0.17210
	(A * !Z)	-0.02052	-0.01672	0.14018
	(!A * Z)	0.00842	0.01463	0.17165
	(!A * Z)	-0.02084	-0.01636	0.14046

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00198	0.00834	0.10701
	(A * !Z)	0.00906	0.01546	0.11410
	(!A * Z)	0.00201	0.00849	0.10711
	(!A * Z)	0.00898	0.01549	0.11408
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00347	0.00949	0.10673
	(A * !Z)	0.01433	0.02033	0.11762
	(!A * Z)	0.00364	0.00989	0.10694
	(!A * Z)	0.01417	0.02046	0.11747
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00707	0.01676	0.17777
	(A * !Z)	0.02641	0.03619	0.19718
	(!A * Z)	0.00737	0.01719	0.17818
	(!A * Z)	0.02603	0.03591	0.19692
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.01517	0.02421	0.18272
	(A * !Z)	0.04710	0.05626	0.21483
	(!A * Z)	0.01557	0.02513	0.18340
	(!A * Z)	0.04623	0.05587	0.21426

SKY130_FD_SC_HS__EINVPx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00292	0.00288	0.66939
sky130_fd_sc_hs__einvp_2	0.00542	0.00447	1.36874
sky130_fd_sc_hs__einvp_4	0.01095	0.00808	2.53162
sky130_fd_sc_hs__einvp_8	0.02194	0.01273	4.31087

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__einvp_1	0.00000	0.09336	0.50418
sky130_fd_sc_hs__einvp_2	0.00000	0.29205	1.04271
sky130_fd_sc_hs__einvp_4	0.00000	0.20948	0.95078
sky130_fd_sc_hs__einvp_8	0.00000	0.34794	1.71139

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)	0.04027	0.80644	9.97791
	TE->Z (FR)	0.07492	0.39607	5.55622
	TE->Z (RR)	0.06279	0.55849	5.15169
sky130_fd_sc_hs__einvp_2	A->Z (FR)	0.02525	0.66795	9.93911
	TE->Z (FR)	0.07185	0.39714	5.55728
	TE->Z (RR)	0.06199	0.45900	5.52093
sky130_fd_sc_hs__einvp_4	A->Z (FR)	0.02412	0.58417	9.91646
	TE->Z (FR)	0.08303	0.39897	5.55904
	TE->Z (RR)	0.06110	0.36567	5.37418
sky130_fd_sc_hs__einvp_8	A->Z (FR)	0.02572	0.51985	9.79712
	TE->Z (FR)	0.14287	0.40557	5.56464
	TE->Z (RR)	0.07742	0.34836	5.35937

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvp_1	A->Z (RF)	0.01748	0.31760	3.78089
	TE->Z (FF)	0.07618	0.39603	5.55619
	TE->Z (RF)	0.01765	0.27567	3.18560
sky130_fd_sc_hs__einvp_2	A->Z (RF)	0.01403	0.27423	4.12232
	TE->Z (FF)	0.07297	0.39704	5.55719
	TE->Z (RF)	0.01651	0.22838	3.38909
sky130_fd_sc_hs__einvp_4	A->Z (RF)	0.01428	0.23772	4.33241
	TE->Z (FF)	0.08459	0.39872	5.55887
	TE->Z (RF)	0.01769	0.17400	3.22828
sky130_fd_sc_hs__einvp_8	A->Z (RF)	0.01607	0.21670	4.63577
	TE->Z (FF)	0.14426	0.40500	5.56403
	TE->Z (RF)	0.02238	0.12855	2.93642

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	-0.00118	0.00208	0.05069
	A	0.00518	0.00843	0.05703
	TE	0.01022	0.01300	0.06744
	TE	0.00662	0.00938	0.06384
sky130_fd_sc_hs__einvp_2	A	-0.00311	0.00382	0.08590
	A	0.00876	0.01571	0.09778
	TE	0.01623	0.02135	0.11865
	TE	0.01160	0.01673	0.11435
sky130_fd_sc_hs__einvp_4	A	-0.00599	0.00843	0.15994
	A	0.01807	0.03248	0.18403
	TE	0.03089	0.03876	0.19903
	TE	0.02369	0.03161	0.19186
sky130_fd_sc_hs__einvp_8	A	-0.01157	0.01491	0.27270
	A	0.03654	0.06307	0.32095
	TE	0.05430	0.06085	0.21821
	TE	0.04753	0.05408	0.21142

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	0.00587	0.00770	0.03459
	A	-0.00046	0.00134	0.02789
	TE	0.01307	0.01603	0.07503
	TE	0.00463	0.00754	0.06631
sky130_fd_sc_hs__einvp_2	A	0.00953	0.01368	0.06432
	A	-0.00232	0.00182	0.05188
	TE	0.02111	0.02621	0.12415
	TE	0.00737	0.01235	0.10951
sky130_fd_sc_hs__einvp_4	A	0.01885	0.02767	0.12151
	A	-0.00510	0.00350	0.09739
	TE	0.04058	0.04856	0.20915
	TE	0.01474	0.02258	0.18278
sky130_fd_sc_hs__einvp_8	A	0.03809	0.05535	0.22121
	A	-0.00997	0.00704	0.17245
	TE	0.07367	0.08032	0.24032
	TE	0.02927	0.03591	0.19305

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	0.00102	0.00102	0.00102
	(!TE * Z)	-0.00205	-0.00204	-0.00204
	(!TE * !Z)	0.00117	0.00119	0.00117
	(!TE * !Z)	-0.00180	-0.00183	-0.00180
sky130_fd_sc_hs__einvp_2	(!TE * Z)	0.00185	0.00187	0.00181
	(!TE * Z)	-0.00417	-0.00424	-0.00419
	(!TE * !Z)	0.00229	0.00230	0.00228
	(!TE * !Z)	-0.00335	-0.00337	-0.00334
sky130_fd_sc_hs__einvp_4	(!TE * Z)	0.00353	0.00355	0.00346
	(!TE * Z)	-0.00822	-0.00831	-0.00826
	(!TE * !Z)	0.00443	0.00447	0.00444
	(!TE * !Z)	-0.00664	-0.00672	-0.00665
sky130_fd_sc_hs__einvp_8	(!TE * Z)	0.00691	0.00688	0.00678
	(!TE * Z)	-0.01581	-0.01611	-0.01592
	(!TE * !Z)	0.00866	0.00868	0.00863
	(!TE * !Z)	-0.01290	-0.01297	-0.01280

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	-0.00102	-0.00102	-0.00102
	(!TE * Z)	0.00205	0.00204	0.00204
	(!TE * !Z)	-0.00117	-0.00119	-0.00117
	(!TE * !Z)	0.00181	0.00183	0.00180
sky130_fd_sc_hs__einvp_2	(!TE * Z)	-0.00181	-0.00184	-0.00181
	(!TE * Z)	0.00417	0.00424	0.00419
	(!TE * !Z)	-0.00229	-0.00230	-0.00228
	(!TE * !Z)	0.00346	0.00348	0.00335
sky130_fd_sc_hs__einvp_4	(!TE * Z)	-0.00346	-0.00350	-0.00346
	(!TE * Z)	0.00822	0.00831	0.00826
	(!TE * !Z)	-0.00443	-0.00447	-0.00444
	(!TE * !Z)	0.00685	0.00690	0.00665
sky130_fd_sc_hs__einvp_8	(!TE * Z)	-0.00678	-0.00688	-0.00678
	(!TE * Z)	0.01581	0.01611	0.01592
	(!TE * !Z)	-0.00866	-0.00868	-0.00863
	(!TE * !Z)	0.01312	0.01325	0.01280

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	0.00922	0.01225	0.07161
	(A * !Z)	0.00338	0.00638	0.06573
	(!A * Z)	0.00912	0.01217	0.07142
	(!A * Z)	0.00316	0.00618	0.06545
sky130_fd_sc_hs__einvp_2	(A * !Z)	0.01446	0.01974	0.11654
	(A * !Z)	0.00543	0.01065	0.10751
	(!A * Z)	0.01437	0.01960	0.11636
	(!A * Z)	0.00505	0.01020	0.10701
sky130_fd_sc_hs__einvp_4	(A * !Z)	0.02736	0.03542	0.19536
	(A * !Z)	0.01127	0.01918	0.17921
	(!A * Z)	0.02724	0.03522	0.19501
	(!A * Z)	0.01049	0.01834	0.17822
sky130_fd_sc_hs__einvp_8	(A * !Z)	0.04746	0.05423	0.21121
	(A * !Z)	0.02272	0.02931	0.18635
	(!A * Z)	0.04733	0.05407	0.21075
	(!A * Z)	0.02142	0.02805	0.18472

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	-0.00197	0.00095	0.05965
	(A * !Z)	0.00382	0.00684	0.06550
	(!A * Z)	-0.00205	0.00094	0.05965
	(!A * Z)	0.00389	0.00692	0.06557
sky130_fd_sc_hs__einvp_2	(A * !Z)	-0.00454	0.00068	0.09719
	(A * !Z)	0.00435	0.00966	0.10610
	(!A * Z)	-0.00493	0.00055	0.09707
	(!A * Z)	0.00440	0.00985	0.10623
sky130_fd_sc_hs__einvp_4	(A * !Z)	-0.00832	-0.00050	0.15880
	(A * !Z)	0.00754	0.01569	0.17478
	(!A * Z)	-0.00899	-0.00078	0.15863
	(!A * Z)	0.00771	0.01595	0.17503
sky130_fd_sc_hs__einvp_8	(A * !Z)	-0.01573	-0.00908	0.14619
	(A * !Z)	0.00843	0.01578	0.17080
	(!A * Z)	-0.01673	-0.00969	0.14586
	(!A * Z)	0.00897	0.01620	0.17136

SKY130_FD_SC_HS__FAHCIN

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00299	0.00716	0.00526	0.73309	1.44913

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcin_1	0.00000	5.47624	6.16273

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)	0.13069	0.55663	3.83991
	B->COUT (RR)	0.11418	0.49370	3.88148
	CIN->COUT (FR)	0.05539	0.66897	8.15298

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fahcin_1	A->COUT (FF)	0.13352	0.58237	4.41674
	B->COUT (FF)	0.13210	0.55244	4.49466
	CIN->COUT (RF)	0.03242	0.34828	4.01673

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)	-	0.17354	0.78400	8.62659
	B->SUM (-R)	-	0.17442	0.78491	8.71699
	CIN->SUM (RR)	(A * !B) + (!A * B)	0.07294	0.51010	5.90797
	CIN->SUM (FR)	(A * B) + (!A * !B)	0.11074	0.67946	8.32246

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)	-	0.21468	0.64951	5.19957
	B->SUM (-F)	-	0.17077	0.58728	5.14531
	CIN->SUM (FF)	(A * !B) + (!A * B)	0.09116	0.54984	5.48456
	CIN->SUM (RF)	(A * B) + (!A * !B)	0.09669	0.30589	2.11923

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.02320	0.02680	0.11306
	A	0.02034	0.02393	0.11008
	B	0.02516	0.03075	0.17217
	B	0.01728	0.02284	0.16438
	CIN	0.01012	0.01725	0.13209
	CIN	0.01592	0.02294	0.13802

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.02098	0.02519	0.11003
	A	0.02406	0.02828	0.11311
	B	0.01784	0.02624	0.18384
	B	0.02573	0.03413	0.19173
	CIN	0.01617	0.02257	0.13794
	CIN	0.01039	0.01678	0.13204

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.04621	0.05276	0.22220
	A	-	0.04009	0.04729	0.21836
	B	-	0.04705	0.06082	0.40709
	B	-	0.03128	0.04503	0.39120
	CIN	(A * B) + (!A * !B)	0.01435	0.03300	0.34396
	CIN	(A * B) + (!A * !B)	0.02590	0.04457	0.35551
	CIN	(A * !B) + (!A * B)	0.01620	0.02257	0.13659
	CIN	(A * !B) + (!A * B)	0.01042	0.01681	0.13052

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.04332	0.05244	0.22354
	A	-	0.04947	0.05860	0.22643
	B	-	0.03308	0.05412	0.38161
	B	-	0.04887	0.06989	0.39201
	CIN	(A * B) + (!A * !B)	0.02853	0.04570	0.35688
	CIN	(A * B) + (!A * !B)	0.01697	0.03417	0.34512
	CIN	(A * !B) + (!A * B)	0.01010	0.01680	0.12448
	CIN	(A * !B) + (!A * B)	0.01590	0.02257	0.12953

SKY130_FD_SC_HS__FAHCON

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00297	0.00913	0.00529	0.74907	1.38211

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcon_1	0.00000	5.47625	6.34140

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)	0.16992	0.70576	6.32411
	B->COUT_N (FR)	0.11972	0.70700	8.43155
	CI->COUT_N (FR)	0.05020	0.65334	8.09099

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)	0.12472	0.36725	1.58058
	B->COUT_N (RF)	0.08006	0.39203	4.37328
	CI->COUT_N (RF)	0.03181	0.34726	4.09643

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)	-	0.15688	0.75481	8.31797
	B->SUM (-R)	-	0.14203	0.73379	8.35562
	CI->SUM (RR)	(A * B) + (!A * !B)	0.07054	0.49862	5.69306
	CI->SUM (FR)	(A * !B) + (!A * B)	0.10981	0.68128	8.25894

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)	-	0.19855	0.62275	5.04657
	B->SUM (-F)	-	0.14849	0.54317	4.88874
	CI->SUM (FF)	(A * B) + (!A * !B)	0.08807	0.52399	5.22469
	CI->SUM (RF)	(A * !B) + (!A * B)	0.10233	0.30752	2.06852

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	0.02077	0.02434	0.10949
	A	0.02393	0.02753	0.11311
	B	0.01380	0.02519	0.23781
	B	0.02375	0.03517	0.24796
	CI	0.00951	0.01652	0.13500
	CI	0.01530	0.02240	0.14138

Internal switching power(pJ) to COUT_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcon_1	A	0.02185	0.02478	0.11082
	A	0.01869	0.02158	0.10759
	B	0.02355	0.03415	0.24833
	B	0.01361	0.02421	0.23808
	CI	0.01642	0.02303	0.14183
	CI	0.01061	0.01716	0.13566

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.04064	0.04766	0.21848
	A	-	0.03432	0.04136	0.21259
	B	-	0.04784	0.07867	0.57044
	B	-	0.02798	0.05877	0.55031
	CI	(A * B) + (!A * !B)	0.02780	0.04577	0.36687
	CI	(A * B) + (!A * !B)	0.01617	0.03416	0.35552
	CI	(A * !B) + (!A * B)	0.00951	0.01623	0.12887
	CI	(A * !B) + (!A * B)	0.01530	0.02204	0.13480

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.04027	0.05009	0.21882
	A	-	0.04644	0.05570	0.22323
	B	-	0.02992	0.06177	0.54218
	B	-	0.04985	0.08164	0.56214
	CI	(A * B) + (!A * !B)	0.01725	0.03640	0.35926
	CI	(A * B) + (!A * !B)	0.02886	0.04800	0.36762
	CI	(A * !B) + (!A * B)	0.01642	0.02290	0.13933
	CI	(A * !B) + (!A * B)	0.01061	0.01706	0.13319

SKY130_FD_SC_HS__FAHx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00499	0.00718	0.00263	1.22574	1.39339
sky130_fd_sc_hs__fah_2	0.00502	0.00812	0.00276	2.39707	2.68447
sky130_fd_sc_hs__fah_4	0.00494	0.00739	0.00265	4.40354	5.28218

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__fah_1	0.00000	5.47624	6.52001
sky130_fd_sc_hs__fah_2	0.00000	5.67783	6.72157
sky130_fd_sc_hs__fah_4	0.00000	6.08107	7.12487

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)	0.18663	0.62240	5.83134
	B->COUT (RR)	0.14826	0.62873	5.87664
	CI->COUT (RR)	0.10023	0.59978	6.36506
sky130_fd_sc_hs__fah_2	A->COUT (RR)	0.18887	0.51076	5.43186
	B->COUT (RR)	0.13626	0.50548	6.02024
	CI->COUT (RR)	0.09023	0.46522	5.64852
sky130_fd_sc_hs__fah_4	A->COUT (RR)	0.20018	0.47183	5.73746
	B->COUT (RR)	0.16116	0.47154	5.77845
	CI->COUT (RR)	0.11600	0.46174	6.28983

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fah_1	A->COUT (FF)	0.18755	0.57342	4.68250
	B->COUT (FF)	0.17422	0.59564	5.04682
	CI->COUT (FF)	0.11326	0.57329	5.17095
sky130_fd_sc_hs__fah_2	A->COUT (FF)	0.19493	0.55737	4.44132
	B->COUT (FF)	0.18465	0.58277	5.05520
	CI->COUT (FF)	0.11511	0.54011	4.86773
sky130_fd_sc_hs__fah_4	A->COUT (FF)	0.21177	0.58425	4.61538
	B->COUT (FF)	0.19212	0.59237	5.19308
	CI->COUT (FF)	0.13600	0.55557	5.09722

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)	-	0.18362	0.81913	8.91074
	B->SUM (-R)	-	0.17435	0.79636	8.88298
	CI->SUM (RR)	(A * B) + (!A * !B)	0.09744	0.54943	5.81848
	CI->SUM (FR)	(A * !B) + (!A * B)	0.18491	0.83147	8.95705
sky130_fd_sc_hs__fah_2	A->SUM (-R)	-	0.18951	0.70349	8.32259
	B->SUM (-R)	-	0.17826	0.69613	8.45960
	CI->SUM (RR)	(A * B) + (!A * !B)	0.09146	0.45932	5.74758
	CI->SUM (FR)	(A * !B) + (!A * B)	0.18062	0.70542	8.41875
sky130_fd_sc_hs__fah_4	A->SUM (-R)	-	0.20351	0.66206	8.80942
	B->SUM (-R)	-	0.19140	0.65554	8.88810
	CI->SUM (RR)	(A * B) + (!A * !B)	0.12120	0.45049	5.94429
	CI->SUM (FR)	(A * !B) + (!A * B)	0.23532	0.73004	8.99037

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)	-	0.18613	0.58338	4.91073
	B->SUM (-F)	-	0.18167	0.61360	6.21914
	CI->SUM (FF)	(A * B) + (!A * !B)	0.11369	0.57450	5.11144
	CI->SUM (RF)	(A * !B) + (!A * B)	0.16209	0.46081	2.66727
sky130_fd_sc_hs__fah_2	A->SUM (-F)	-	0.20332	0.57201	4.72921
	B->SUM (-F)	-	0.18983	0.58779	4.91765
	CI->SUM (FF)	(A * B) + (!A * !B)	0.12065	0.54903	5.17958
	CI->SUM (RF)	(A * !B) + (!A * B)	0.14151	0.38806	2.18182
sky130_fd_sc_hs__fah_4	A->SUM (-F)	-	0.21097	0.59197	4.95334
	B->SUM (-F)	-	0.20142	0.60916	6.22918
	CI->SUM (FF)	(A * B) + (!A * !B)	0.14452	0.56704	5.24558
	CI->SUM (RF)	(A * !B) + (!A * B)	0.21307	0.49661	2.88658

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.03021	0.03791	0.20310
	A	0.02489	0.03252	0.19781
	B	0.02593	0.03312	0.21391
	B	0.01834	0.02550	0.20644
	CI	0.01895	0.02224	0.09891
	CI	0.01640	0.01966	0.09637
sky130_fd_sc_hs__fah_2	A	0.03553	0.04192	0.20266
	A	0.02992	0.03624	0.19714
	B	0.03287	0.03779	0.20979
	B	0.02423	0.02913	0.20150
	CI	0.02118	0.02312	0.09947
	CI	0.01815	0.02002	0.09660
sky130_fd_sc_hs__fah_4	A	0.04764	0.04960	0.21379
	A	0.04234	0.04430	0.20868
	B	0.04465	0.04543	0.22334
	B	0.03676	0.03749	0.21588
	CI	0.03729	0.03616	0.11449
	CI	0.03463	0.03351	0.11181

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.02517	0.03392	0.19724
	A	0.03027	0.03902	0.20195
	B	0.01995	0.02932	0.19641
	B	0.02730	0.03667	0.20333
	CI	0.01612	0.02049	0.09752
	CI	0.01868	0.02305	0.10006
sky130_fd_sc_hs__fah_2	A	0.03014	0.03812	0.19854
	A	0.03576	0.04369	0.20414
	B	0.02305	0.03090	0.18909
	B	0.03171	0.03956	0.19721
	CI	0.01898	0.02176	0.09808
	CI	0.02201	0.02474	0.10004
sky130_fd_sc_hs__fah_4	A	0.04099	0.04504	0.20687
	A	0.04617	0.05018	0.21145
	B	0.03664	0.04062	0.20311
	B	0.04445	0.04840	0.21086
	CI	0.03435	0.03377	0.11076
	CI	0.03701	0.03641	0.11317

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.05295	0.06713	0.39201
	A	-	0.04209	0.05626	0.38156
	B	-	0.04845	0.06603	0.45188
	B	-	0.03309	0.05069	0.43697
	CI	(A * B) + (!A * !B)	0.02545	0.03112	0.15574
	CI	(A * B) + (!A * !B)	0.01968	0.02538	0.15009
	CI	(A * !B) + (!A * B)	0.01616	0.02036	0.09845
	CI	(A * !B) + (!A * B)	0.01871	0.02292	0.10032
sky130_fd_sc_hs__fah_2	A	-	0.05737	0.07066	0.38931
	A	-	0.04612	0.05943	0.37897
	B	-	0.05301	0.07022	0.43155
	B	-	0.03570	0.05293	0.41441
	CI	(A * B) + (!A * !B)	0.02685	0.03432	0.19299
	CI	(A * B) + (!A * !B)	0.02076	0.02830	0.18512
	CI	(A * !B) + (!A * B)	0.01903	0.02178	0.09796
	CI	(A * !B) + (!A * B)	0.02205	0.02477	0.10065
sky130_fd_sc_hs__fah_4	A	-	0.06393	0.07643	0.40121
	A	-	0.05305	0.06570	0.39222
	B	-	0.06142	0.07983	0.45962
	B	-	0.04533	0.06378	0.44558
	CI	(A * B) + (!A * !B)	0.04118	0.04669	0.18299
	CI	(A * B) + (!A * !B)	0.03538	0.04100	0.18042
	CI	(A * !B) + (!A * B)	0.03436	0.03359	0.11344
	CI	(A * !B) + (!A * B)	0.03702	0.03627	0.11303

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.04031	0.05709	0.37705
	A	-	0.05160	0.06840	0.38801
	B	-	0.03575	0.05852	0.58394
	B	-	0.05155	0.07434	0.59879
	CI	(A * B) + (!A * !B)	0.01974	0.02711	0.15978
	CI	(A * B) + (!A * !B)	0.02549	0.03286	0.16500
	CI	(A * !B) + (!A * B)	0.01891	0.02217	0.09803
	CI	(A * !B) + (!A * B)	0.01636	0.01959	0.09534
sky130_fd_sc_hs__fah_2	A	-	0.04769	0.06201	0.37811
	A	-	0.05896	0.07324	0.38752
	B	-	0.03741	0.05722	0.38013
	B	-	0.05477	0.07452	0.39426
	CI	(A * B) + (!A * !B)	0.02512	0.03150	0.18926
	CI	(A * B) + (!A * !B)	0.03119	0.03753	0.19495
	CI	(A * !B) + (!A * B)	0.02113	0.02299	0.09875
	CI	(A * !B) + (!A * B)	0.01810	0.01997	0.09566
sky130_fd_sc_hs__fah_4	A	-	0.05966	0.06870	0.39665
	A	-	0.07071	0.07978	0.39737
	B	-	0.05841	0.07631	0.59052
	B	-	0.07472	0.09263	0.59881
	CI	(A * B) + (!A * !B)	0.04284	0.04277	0.18623
	CI	(A * B) + (!A * !B)	0.04865	0.04857	0.18507
	CI	(A * !B) + (!A * B)	0.03725	0.03616	0.11256
	CI	(A * !B) + (!A * B)	0.03459	0.03342	0.10926

SKY130_FD_SC_HS__FAx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.01049	0.01017	0.00742	1.44180	1.45437
sky130_fd_sc_hs__fa_2	0.01113	0.01058	0.00790	2.37186	2.61422
sky130_fd_sc_hs__fa_4	0.01107	0.01098	0.00775	5.24611	5.26591

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fa_1	0.00000	0.81696	1.18665
sky130_fd_sc_hs__fa_2	0.00000	1.01124	1.38042
sky130_fd_sc_hs__fa_4	0.00000	1.41444	1.78363

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)	0.08224	0.50317	5.65883
	B->COUT (RR)	0.09606	0.53134	5.81059
	CIN->COUT (RR)	0.07531	0.51561	5.83118
sky130_fd_sc_hs__fa_2	A->COUT (RR)	0.08640	0.43032	5.35112
	B->COUT (RR)	0.09414	0.45816	5.48005
	CIN->COUT (RR)	0.08038	0.45101	5.47872
sky130_fd_sc_hs__fa_4	A->COUT (RR)	0.12025	0.41969	5.63183
	B->COUT (RR)	0.10257	0.42816	5.78253
	CIN->COUT (RR)	0.10187	0.43291	5.78398

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->COUT (FF)	0.14682	0.56888	5.43047
	B->COUT (FF)	0.16120	0.60240	5.58434
	CIN->COUT (FF)	0.11365	0.57803	5.53405
sky130_fd_sc_hs__fa_2	A->COUT (FF)	0.17279	0.56298	5.13625
	B->COUT (FF)	0.18189	0.60336	5.29678
	CIN->COUT (FF)	0.15442	0.58764	5.25530
sky130_fd_sc_hs__fa_4	A->COUT (FF)	0.23681	0.63574	5.65199
	B->COUT (FF)	0.21291	0.64360	5.75750
	CIN->COUT (FF)	0.21213	0.65427	5.78299

Delay(ns) to SUM rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-R)	0.21475	0.78213	8.58544
	B->SUM (-R)	0.22739	0.81269	8.74350
	CIN->SUM (-R)	0.19577	0.78692	8.60020
sky130_fd_sc_hs__fa_2	A->SUM (-R)	0.27739	0.75795	8.65740
	B->SUM (-R)	0.27937	0.79444	8.83115
	CIN->SUM (-R)	0.25726	0.77684	8.73879
sky130_fd_sc_hs__fa_4	A->SUM (-R)	0.39454	0.81454	8.95325
	B->SUM (-R)	0.35836	0.81915	9.05997
	CIN->SUM (-R)	0.36871	0.82920	9.04797

Delay(ns) to SUM falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-F)	0.16355	0.54704	5.46440
	B->SUM (-F)	0.17011	0.59862	5.69429
	CIN->SUM (-F)	0.13223	0.57967	5.73682
sky130_fd_sc_hs__fa_2	A->SUM (-F)	0.20406	0.57141	5.32736
	B->SUM (-F)	0.21646	0.62555	5.55290
	CIN->SUM (-F)	0.17978	0.61254	5.60256
sky130_fd_sc_hs__fa_4	A->SUM (-F)	0.28931	0.65006	5.70227
	B->SUM (-F)	0.25657	0.66384	5.90710
	CIN->SUM (-F)	0.24057	0.67361	5.99738

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.01826	0.02001	0.07402
	A	0.00681	0.00856	0.06249
	B	0.01613	0.01865	0.07603
	B	0.00537	0.00754	0.06518
	CIN	0.01533	0.01762	0.07697
	CIN	0.00854	0.01080	0.07027
sky130_fd_sc_hs__fa_2	A	0.02459	0.02417	0.07639
	A	0.01232	0.01177	0.06416
	B	0.02270	0.02258	0.08013
	B	0.01134	0.01121	0.06897
	CIN	0.02228	0.02196	0.07925
	CIN	0.01401	0.01357	0.07197
sky130_fd_sc_hs__fa_4	A	0.03906	0.03539	0.08865
	A	0.02604	0.02194	0.07526
	B	0.03947	0.03581	0.08922
	B	0.02867	0.02456	0.07828
	CIN	0.03713	0.03305	0.08992
	CIN	0.02931	0.02485	0.08275

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00738	0.00909	0.06288
	A	0.01876	0.02051	0.07364
	B	0.00901	0.01095	0.06975
	B	0.01977	0.02176	0.07972
	CIN	0.01012	0.01277	0.07221
	CIN	0.01693	0.01961	0.07771
sky130_fd_sc_hs__fa_2	A	0.01377	0.01291	0.06387
	A	0.02616	0.02533	0.07628
	B	0.01522	0.01502	0.07266
	B	0.02657	0.02640	0.08377
	CIN	0.01621	0.01678	0.07453
	CIN	0.02388	0.02447	0.08156
sky130_fd_sc_hs__fa_4	A	0.03092	0.02373	0.07515
	A	0.04384	0.03666	0.08729
	B	0.03218	0.02599	0.08622
	B	0.04299	0.03679	0.09432
	CIN	0.03420	0.02813	0.08600
	CIN	0.04146	0.03534	0.09041

Internal switching power(pJ) to SUM rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.02478	0.02638	0.11918
	A	0.00078	0.00224	0.09543
	B	0.02310	0.02582	0.11538
	B	0.00061	0.00334	0.09305
	CIN	0.02016	0.02289	0.11488
	CIN	0.00528	0.00800	0.10001
sky130_fd_sc_hs__fa_2	A	0.03113	0.03350	0.13225
	A	0.00591	0.00818	0.10546
	B	0.02918	0.03227	0.12684
	B	0.00628	0.00938	0.10280
	CIN	0.02624	0.02948	0.12629
	CIN	0.01053	0.01375	0.10907
sky130_fd_sc_hs__fa_4	A	0.04088	0.04135	0.13493
	A	0.01356	0.01411	0.10801
	B	0.04078	0.04214	0.13280
	B	0.01801	0.01945	0.11051
	CIN	0.03666	0.03805	0.13269
	CIN	0.02084	0.02229	0.11933

Internal switching power(pJ) to SUM falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00181	0.00481	0.08622
	A	0.02599	0.02899	0.10922
	B	0.00235	0.00587	0.08406
	B	0.02391	0.02742	0.10400
	CIN	0.00583	0.00931	0.10186
	CIN	0.02149	0.02506	0.11438
sky130_fd_sc_hs__fa_2	A	0.00825	0.00961	0.10908
	A	0.03359	0.03483	0.13252
	B	0.00925	0.01110	0.10485
	B	0.03118	0.03218	0.12593
	CIN	0.01515	0.01476	0.10950
	CIN	0.03129	0.03107	0.12187
sky130_fd_sc_hs__fa_4	A	0.02704	0.02050	0.10837
	A	0.05447	0.04793	0.13295
	B	0.02690	0.01976	0.10502
	B	0.04883	0.04162	0.12147
	CIN	0.03704	0.02500	0.10880
	CIN	0.05331	0.04126	0.12554

SKY130_FD_SC_HS__HAx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00500	0.00454	1.37953	1.30072
sky130_fd_sc_hs__ha_2	0.00507	0.00518	2.33316	2.48261
sky130_fd_sc_hs__ha_4	0.00966	0.00864	4.41628	5.20547

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__ha_1	0.00000	1.57730	2.51843
sky130_fd_sc_hs__ha_2	0.00000	1.14671	1.37128
sky130_fd_sc_hs__ha_4	0.00000	3.64714	5.44001

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)	0.06365	0.46761	5.57514
	B->COUT (RR)	0.05947	0.47907	5.85409
sky130_fd_sc_hs__ha_2	A->COUT (RR)	0.06885	0.40759	5.41818
	B->COUT (RR)	0.06593	0.42039	5.57223
sky130_fd_sc_hs__ha_4	A->COUT (RR)	0.08559	0.35814	5.46868
	B->COUT (RR)	0.07385	0.36453	5.68965

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ha_1	A->COUT (FF)	0.07523	0.47152	4.86617
	B->COUT (FF)	0.06631	0.44786	4.72614
sky130_fd_sc_hs__ha_2	A->COUT (FF)	0.08694	0.46117	4.67487
	B->COUT (FF)	0.08029	0.44199	4.54358
sky130_fd_sc_hs__ha_4	A->COUT (FF)	0.10376	0.44446	4.70231
	B->COUT (FF)	0.08800	0.41555	4.57586

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	0.06623	0.48042	5.68114
	A->SUM (FR)	B	0.12212	0.71876	8.36095
	B->SUM (RR)	!A	0.05623	0.45745	5.52701
	B->SUM (FR)	A	0.12217	0.70541	8.15390
sky130_fd_sc_hs__ha_2	A->SUM (RR)	!B	0.07084	0.38882	5.27110
	A->SUM (FR)	B	0.15893	0.66591	8.20977
	B->SUM (RR)	!A	0.06295	0.37230	5.16002
	B->SUM (FR)	A	0.15821	0.65291	8.02587
sky130_fd_sc_hs__ha_4	A->SUM (RR)	!B	0.07977	0.34684	5.70641
	A->SUM (FR)	B	0.18168	0.61723	8.47714
	B->SUM (RR)	!A	0.06805	0.32292	5.55440
	B->SUM (FR)	A	0.17209	0.59760	8.27398

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	0.09945	0.47081	4.92802
	A->SUM (RF)	B	0.09574	0.28133	1.73135
	B->SUM (FF)	!A	0.08693	0.48564	5.08809
	B->SUM (RF)	A	0.09183	0.29230	1.96249
sky130_fd_sc_hs__ha_2	A->SUM (FF)	!B	0.13001	0.49658	5.06415
	A->SUM (RF)	B	0.11500	0.28324	1.79780
	B->SUM (FF)	!A	0.11739	0.51728	5.20919
	B->SUM (RF)	A	0.11254	0.29633	1.97614
sky130_fd_sc_hs__ha_4	A->SUM (FF)	!B	0.13376	0.46899	5.27714
	A->SUM (RF)	B	0.14426	0.29468	2.10606
	B->SUM (FF)	!A	0.11799	0.48823	5.44551
	B->SUM (RF)	A	0.13286	0.30175	2.31987

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.01214	0.01493	0.07360
	A	0.00585	0.00860	0.06733
	B	0.01140	0.01513	0.09351
	B	0.00648	0.01020	0.08867
sky130_fd_sc_hs__ha_2	A	0.01719	0.02004	0.09541
	A	0.01081	0.01365	0.08914
	B	0.01670	0.01975	0.09672
	B	0.01125	0.01431	0.09147
sky130_fd_sc_hs__ha_4	A	0.03316	0.03825	0.16285
	A	0.02149	0.02658	0.15133
	B	0.03121	0.03731	0.18610
	B	0.02243	0.02855	0.17767

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.00629	0.01079	0.07549
	A	0.01259	0.01706	0.08167
	B	0.00765	0.01211	0.08094
	B	0.01250	0.01688	0.08521
sky130_fd_sc_hs__ha_2	A	0.01262	0.01631	0.09131
	A	0.01898	0.02258	0.09742
	B	0.01328	0.01623	0.09016
	B	0.01865	0.02155	0.09510
sky130_fd_sc_hs__ha_4	A	0.02353	0.03048	0.17343
	A	0.03519	0.04205	0.18443
	B	0.02582	0.03252	0.17988
	B	0.03428	0.04097	0.18773

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	0.00631	0.01086	0.07600
	A	B	0.01261	0.01709	0.08228
	A	!B	0.01809	0.02276	0.12651
	A	!B	0.00585	0.01053	0.11453
	B	A	0.00768	0.01210	0.08123
	B	A	0.01252	0.01689	0.08563
	B	!A	0.01339	0.01892	0.13348
	B	!A	0.00407	0.00963	0.12460
sky130_fd_sc_hs__ha_2	A	B	0.01262	0.01620	0.09234
	A	B	0.01898	0.02256	0.09801
	A	!B	0.02341	0.02751	0.12824
	A	!B	0.01122	0.01538	0.11665
	B	A	0.01329	0.01635	0.09196
	B	A	0.01866	0.02158	0.09589
	B	!A	0.01933	0.02419	0.13552
	B	!A	0.00921	0.01408	0.12538
sky130_fd_sc_hs__ha_4	A	B	0.02355	0.03062	0.17313
	A	B	0.03523	0.04214	0.18477
	A	!B	0.04757	0.05506	0.24841
	A	!B	0.02245	0.03000	0.22432
	B	A	0.02587	0.03256	0.18074
	B	A	0.03433	0.04101	0.18842
	B	!A	0.03723	0.04655	0.25858
	B	!A	0.01848	0.02783	0.24159

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	0.01211	0.01492	0.07314
	A	B	0.00583	0.00859	0.06686
	A	!B	0.00385	0.00829	0.11215
	A	!B	0.01585	0.02029	0.12323
	B	A	0.01139	0.01514	0.09267
	B	A	0.00646	0.01020	0.08792
	B	!A	0.00553	0.01227	0.12794
	B	!A	0.01502	0.02163	0.13573
sky130_fd_sc_hs__ha_2	A	B	0.01718	0.02008	0.09489
	A	B	0.01080	0.01368	0.08849
	A	!B	0.01072	0.01299	0.11228
	A	!B	0.02261	0.02468	0.12430
	B	A	0.01669	0.01980	0.09559
	B	A	0.01124	0.01434	0.09024
	B	!A	0.01166	0.01618	0.12991
	B	!A	0.02206	0.02635	0.13752
sky130_fd_sc_hs__ha_4	A	B	0.03314	0.03829	0.16219
	A	B	0.02148	0.02661	0.15013
	A	!B	0.02151	0.02505	0.22316
	A	!B	0.04617	0.04936	0.24064
	B	A	0.03115	0.03731	0.18448
	B	A	0.02238	0.02854	0.17556
	B	!A	0.02521	0.03314	0.24715
	B	!A	0.04456	0.05223	0.26382

SKY130_FD_SC_HS__INVx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00852	21.41836
sky130_fd_sc_hs__bufinv_8	0.00291	8.39655
sky130_fd_sc_hs__inv_1	0.00296	1.36227
sky130_fd_sc_hs__inv_16	0.04493	20.51181
sky130_fd_sc_hs__inv_2	0.00545	2.64343
sky130_fd_sc_hs__inv_4	0.01100	4.97238
sky130_fd_sc_hs__inv_8	0.02179	9.69581

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__bufinv_16	0.00000	2.52001	3.68164
sky130_fd_sc_hs__bufinv_8	0.00000	1.20961	1.74574
sky130_fd_sc_hs__inv_1	0.00000	0.10080	0.19016
sky130_fd_sc_hs__inv_16	0.00000	1.61281	3.04251
sky130_fd_sc_hs__inv_2	0.00000	0.20160	0.38031
sky130_fd_sc_hs__inv_4	0.00000	0.40320	0.76063
sky130_fd_sc_hs__inv_8	0.00000	0.80640	1.52125

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)	0.09703	0.41526	8.21719
sky130_fd_sc_hs__bufinv_8	A->Y (FR)	0.12396	0.51688	8.15395
sky130_fd_sc_hs__inv_1	A->Y (FR)	0.02195	0.66757	9.95396
sky130_fd_sc_hs__inv_16	A->Y (FR)	0.01507	0.38703	9.94356
sky130_fd_sc_hs__inv_2	A->Y (FR)	0.01726	0.57483	9.88747
sky130_fd_sc_hs__inv_4	A->Y (FR)	0.01594	0.50585	9.89305
sky130_fd_sc_hs__inv_8	A->Y (FR)	0.01579	0.44150	9.83984

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__bufinv_16	A->Y (RF)	0.08580	0.16372	1.95127
sky130_fd_sc_hs__bufinv_8	A->Y (RF)	0.10336	0.22090	1.60319
sky130_fd_sc_hs__inv_1	A->Y (RF)	0.01317	0.34465	5.21588
sky130_fd_sc_hs__inv_16	A->Y (RF)	0.00987	0.13544	5.19232
sky130_fd_sc_hs__inv_2	A->Y (RF)	0.01087	0.27441	5.10324
sky130_fd_sc_hs__inv_4	A->Y (RF)	0.01019	0.22610	5.16442
sky130_fd_sc_hs__inv_8	A->Y (RF)	0.01029	0.17774	5.11964

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	A	0.09960	0.13355	0.64551
	A	0.11837	0.15294	0.66631
sky130_fd_sc_hs__bufinv_8	A	0.05266	0.06452	0.25656
	A	0.05904	0.07120	0.26454
sky130_fd_sc_hs__inv_1	A	-0.00135	0.00325	0.05158
	A	0.00514	0.00977	0.05807
sky130_fd_sc_hs__inv_16	A	-0.02685	0.08540	0.79197
	A	0.07165	0.18585	0.89053
sky130_fd_sc_hs__inv_2	A	-0.00324	0.00775	0.10248
	A	0.00873	0.01980	0.11451
sky130_fd_sc_hs__inv_4	A	-0.00638	0.01379	0.19000
	A	0.01772	0.03823	0.21455
sky130_fd_sc_hs__inv_8	A	-0.01259	0.03600	0.42295
	A	0.03522	0.08428	0.47180

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	A	0.12661	0.15082	0.66281
	A	0.10788	0.13206	0.64411
sky130_fd_sc_hs__bufinv_8	A	0.06143	0.06805	0.25684
	A	0.05504	0.06165	0.24865
sky130_fd_sc_hs__inv_1	A	0.00563	0.00801	0.03482
	A	-0.00085	0.00143	0.02695
sky130_fd_sc_hs__inv_16	A	0.07463	0.13853	0.56638
	A	-0.02383	0.03965	0.43079
sky130_fd_sc_hs__inv_2	A	0.00917	0.01432	0.06978
	A	-0.00280	0.00230	0.05287
sky130_fd_sc_hs__inv_4	A	0.01859	0.03027	0.13982
	A	-0.00554	0.00603	0.10435
sky130_fd_sc_hs__inv_8	A	0.03636	0.06486	0.30728
	A	-0.01139	0.01685	0.23734

SKY130_FD_SC_HS__MAJ3x

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00547	0.00514	0.00535	1.43735
sky130_fd_sc_hs__maj3_2	0.00581	0.00554	0.00568	2.76915
sky130_fd_sc_hs__maj3_4	0.01067	0.01009	0.01050	5.21360

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__maj3_1	0.00000	0.37017	0.98579
sky130_fd_sc_hs__maj3_2	0.00000	0.46796	0.99724
sky130_fd_sc_hs__maj3_4	0.00000	0.94195	1.99447

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)	0.07660	0.49247	5.58604
	B->X (RR)	0.06950	0.48737	5.59460
	C->X (RR)	0.07795	0.50961	5.78036
sky130_fd_sc_hs__maj3_2	A->X (RR)	0.08337	0.41312	5.42533
	B->X (RR)	0.06999	0.40875	5.43352
	C->X (RR)	0.07674	0.42568	5.58391
sky130_fd_sc_hs__maj3_4	A->X (RR)	0.07847	0.34730	5.54378
	B->X (RR)	0.07396	0.35394	5.57552
	C->X (RR)	0.07526	0.36049	5.63526

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__maj3_1	A->X (FF)	0.11444	0.52603	5.32694
	B->X (FF)	0.10564	0.53319	5.39171
	C->X (FF)	0.12217	0.55196	5.49976
sky130_fd_sc_hs__maj3_2	A->X (FF)	0.13395	0.52128	5.23648
	B->X (FF)	0.11891	0.53550	5.30138
	C->X (FF)	0.14773	0.55842	5.41329
sky130_fd_sc_hs__maj3_4	A->X (FF)	0.14113	0.48423	5.26503
	B->X (FF)	0.10674	0.48428	5.36459
	C->X (FF)	0.13478	0.50973	5.42424

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.02411	0.02739	0.11121
	A	0.00663	0.00991	0.09420
	B	0.02012	0.02339	0.13380
	B	0.00655	0.00982	0.12060
	C	0.01906	0.02333	0.13552
	C	0.00387	0.00814	0.12080
sky130_fd_sc_hs__maj3_2	A	0.02759	0.03145	0.13385
	A	0.00873	0.01268	0.11571
	B	0.02581	0.02998	0.14438
	B	0.01120	0.01540	0.13044
	C	0.02518	0.02909	0.14235
	C	0.00850	0.01252	0.12641
sky130_fd_sc_hs__maj3_4	A	0.05450	0.06076	0.25780
	A	0.02119	0.02748	0.22634
	B	0.04431	0.05288	0.27970
	B	0.01821	0.02676	0.25528
	C	0.04517	0.05231	0.25376
	C	0.01553	0.02268	0.22553

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.00377	0.00710	0.10686
	A	0.02111	0.02444	0.12242
	B	0.00598	0.01054	0.12281
	B	0.01928	0.02391	0.13383
	C	0.00673	0.01173	0.12531
	C	0.02168	0.02645	0.13809
sky130_fd_sc_hs__maj3_2	A	0.01121	0.01281	0.11744
	A	0.02968	0.03128	0.13201
	B	0.01275	0.01509	0.13238
	B	0.02729	0.02970	0.14105
	C	0.01383	0.01626	0.13151
	C	0.03019	0.03268	0.14538
sky130_fd_sc_hs__maj3_4	A	0.02350	0.02594	0.22375
	A	0.05636	0.05848	0.25274
	B	0.02262	0.02900	0.25044
	B	0.04853	0.05468	0.27438
	C	0.02623	0.03163	0.24655
	C	0.05537	0.06056	0.27573

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	0.00613	0.00533	0.00524
	(B * C * X)	-0.00419	-0.00513	-0.00513
	(!B * !C * !X)	0.00473	0.00478	0.00476
	(!B * !C * !X)	-0.00552	-0.00555	-0.00553
sky130_fd_sc_hs__maj3_2	(B * C * X)	0.00593	0.00516	0.00508
	(B * C * X)	-0.00496	-0.00577	-0.00587
	(!B * !C * !X)	0.00438	0.00443	0.00439
	(!B * !C * !X)	-0.00642	-0.00646	-0.00642
sky130_fd_sc_hs__maj3_4	(B * C * X)	0.01109	0.00959	0.00936
	(B * C * X)	-0.00858	-0.01034	-0.01043
	(!B * !C * !X)	0.00838	0.00842	0.00840
	(!B * !C * !X)	-0.01124	-0.01126	-0.01124

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	-0.00519	-0.00521	-0.00519
	(B * C * X)	0.00513	0.00518	0.00517
	(!B * !C * !X)	-0.00446	-0.00474	-0.00476
	(!B * !C * !X)	0.00576	0.00559	0.00555
sky130_fd_sc_hs__maj3_2	(B * C * X)	-0.00503	-0.00504	-0.00502
	(B * C * X)	0.00587	0.00591	0.00590
	(!B * !C * !X)	-0.00411	-0.00441	-0.00439
	(!B * !C * !X)	0.00666	0.00650	0.00645
sky130_fd_sc_hs__maj3_4	(B * C * X)	-0.00925	-0.00930	-0.00925
	(B * C * X)	0.01041	0.01050	0.01049
	(!B * !C * !X)	-0.00786	-0.00842	-0.00840
	(!B * !C * !X)	0.01157	0.01131	0.01128

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	0.00435	0.00444	0.00437
	(A * C * X)	-0.00241	-0.00247	-0.00242
	(!A * !C * !X)	0.00105	0.00106	0.00103
	(!A * !C * !X)	-0.00618	-0.00620	-0.00626
sky130_fd_sc_hs__maj3_2	(A * C * X)	0.00511	0.00522	0.00514
	(A * C * X)	-0.00231	-0.00237	-0.00232
	(!A * !C * !X)	0.00131	0.00131	0.00126
	(!A * !C * !X)	-0.00632	-0.00633	-0.00638
sky130_fd_sc_hs__maj3_4	(A * C * X)	0.00860	0.00876	0.00862
	(A * C * X)	-0.00486	-0.00495	-0.00486
	(!A * !C * !X)	0.00247	0.00247	0.00237
	(!A * !C * !X)	-0.01203	-0.01208	-0.01225

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	-0.00424	-0.00426	-0.00436
	(A * C * X)	0.00251	0.00252	0.00245
	(!A * !C * !X)	-0.00101	-0.00101	-0.00101
	(!A * !C * !X)	0.00625	0.00626	0.00627
sky130_fd_sc_hs__maj3_2	(A * C * X)	-0.00500	-0.00502	-0.00512
	(A * C * X)	0.00242	0.00243	0.00235
	(!A * !C * !X)	-0.00122	-0.00126	-0.00123
	(!A * !C * !X)	0.00636	0.00649	0.00639
sky130_fd_sc_hs__maj3_4	(A * C * X)	-0.00833	-0.00834	-0.00858
	(A * C * X)	0.00513	0.00512	0.00493
	(!A * !C * !X)	-0.00232	-0.00232	-0.00230
	(!A * !C * !X)	0.01228	0.01230	0.01228

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	0.00499	0.00460	0.00452
	(A * B * X)	-0.00338	-0.00381	-0.00382
	(!A * !B * !X)	0.00237	0.00241	0.00237
	(!A * !B * !X)	-0.00612	-0.00617	-0.00617
sky130_fd_sc_hs__maj3_2	(A * B * X)	0.00568	0.00529	0.00520
	(A * B * X)	-0.00331	-0.00375	-0.00376
	(!A * !B * !X)	0.00287	0.00292	0.00287
	(!A * !B * !X)	-0.00603	-0.00610	-0.00610
sky130_fd_sc_hs__maj3_4	(A * B * X)	0.00988	0.00905	0.00897
	(A * B * X)	-0.00661	-0.00756	-0.00759
	(!A * !B * !X)	0.00534	0.00538	0.00529
	(!A * !B * !X)	-0.01168	-0.01173	-0.01176

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	-0.00444	-0.00445	-0.00448
	(A * B * X)	0.00388	0.00389	0.00385
	(!A * !B * !X)	-0.00220	-0.00234	-0.00236
	(!A * !B * !X)	0.00628	0.00621	0.00619
sky130_fd_sc_hs__maj3_2	(A * B * X)	-0.00512	-0.00513	-0.00516
	(A * B * X)	0.00382	0.00383	0.00379
	(!A * !B * !X)	-0.00270	-0.00288	-0.00286
	(!A * !B * !X)	0.00621	0.00616	0.00612
sky130_fd_sc_hs__maj3_4	(A * B * X)	-0.00878	-0.00885	-0.00891
	(A * B * X)	0.00768	0.00779	0.00765
	(!A * !B * !X)	-0.00499	-0.00529	-0.00526
	(!A * !B * !X)	0.01192	0.01181	0.01180

SKY130_FD_SC_HS__MUX2Ix

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00295	0.00279	0.00518	0.68003
sky130_fd_sc_hs__mux2i_2	0.00555	0.00585	0.00842	1.10065
sky130_fd_sc_hs__mux2i_4	0.01098	0.01095	0.01470	1.88551

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__mux2i_1	0.00000	0.70350	1.41359
sky130_fd_sc_hs__mux2i_2	0.00000	0.49737	1.00470
sky130_fd_sc_hs__mux2i_4	0.00000	1.65650	3.35354

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)	-	0.06663	0.82875	10.01930
	A1->Y (FR)	-	0.05963	0.82134	10.01200
	S->Y (RR)	(A0 * !A1)	0.09580	0.60858	5.57731
	S->Y (FR)	(!A0 * A1)	0.07735	0.79120	9.33962
sky130_fd_sc_hs__mux2i_2	A0->Y (FR)	-	0.07630	0.74429	9.94885
	A1->Y (FR)	-	0.06914	0.70823	9.50142
	S->Y (RR)	(A0 * !A1)	0.10348	0.49444	4.93422
	S->Y (FR)	(!A0 * A1)	0.08395	0.68654	9.00861
sky130_fd_sc_hs__mux2i_4	A0->Y (FR)	-	0.07111	0.63944	9.54786
	A1->Y (FR)	-	0.07100	0.65214	9.80068
	S->Y (RR)	(A0 * !A1)	0.12047	0.49689	5.76971
	S->Y (FR)	(!A0 * A1)	0.08023	0.57268	8.46730

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)	-	0.02502	0.34442	3.95060
	A1->Y (RF)	-	0.02671	0.37054	4.28842
	S->Y (FF)	(A0 * !A1)	0.06821	0.40562	3.85311
	S->Y (RF)	(!A0 * A1)	0.03094	0.31342	3.51888
sky130_fd_sc_hs__mux2i_2	A0->Y (RF)	-	0.03233	0.33487	4.31657
	A1->Y (RF)	-	0.03076	0.32108	4.15548
	S->Y (FF)	(A0 * !A1)	0.08246	0.41262	3.98833
	S->Y (RF)	(!A0 * A1)	0.03272	0.23997	3.02015
sky130_fd_sc_hs__mux2i_4	A0->Y (RF)	-	0.02992	0.26834	4.00948
	A1->Y (RF)	-	0.03475	0.30543	4.52667
	S->Y (FF)	(A0 * !A1)	0.08383	0.36296	3.54302
	S->Y (RF)	(!A0 * A1)	0.03601	0.19085	2.81102

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	-	0.00171	0.00431	0.04813
	A0	-	0.01041	0.01298	0.05678
	A1	-	0.00119	0.00394	0.04523
	A1	-	0.00918	0.01194	0.05321
	S	(A0 * !A1)	0.01422	0.02166	0.16280
	S	(A0 * !A1)	0.00740	0.01480	0.15611
	S	(!A0 * A1)	0.00272	0.01251	0.18967
	S	(!A0 * A1)	0.01857	0.02843	0.20570
sky130_fd_sc_hs__mux2i_2	A0	-	0.00380	0.00802	0.07977
	A0	-	0.02070	0.02492	0.09660
	A1	-	0.00350	0.00800	0.08350
	A1	-	0.02027	0.02471	0.10029
	S	(A0 * !A1)	0.02394	0.03064	0.16823
	S	(A0 * !A1)	0.01554	0.02217	0.16023
	S	(!A0 * A1)	0.00662	0.01804	0.24336
	S	(!A0 * A1)	0.03380	0.04524	0.27058
sky130_fd_sc_hs__mux2i_4	A0	-	0.00440	0.01362	0.15433
	A0	-	0.03793	0.04716	0.18791
	A1	-	0.00467	0.01255	0.13608
	A1	-	0.03648	0.04445	0.16795
	S	(A0 * !A1)	0.04131	0.05209	0.29671
	S	(A0 * !A1)	0.02845	0.03915	0.28429
	S	(!A0 * A1)	0.01083	0.03047	0.40099
	S	(!A0 * A1)	0.06026	0.07998	0.45053

Internal switching power(pJ) to Y falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2i_1	A0	-	0.01104	0.01258	0.03908
	A0	-	0.00251	0.00402	0.03009
	A1	-	0.01074	0.01227	0.03822
	A1	-	0.00232	0.00379	0.02836
	S	(A0 * !A1)	0.00896	0.01779	0.15824
	S	(A0 * !A1)	0.01578	0.02456	0.16503
	S	(!A0 * A1)	0.02023	0.02880	0.19759
	S	(!A0 * A1)	0.00431	0.01283	0.18126
sky130_fd_sc_hs__mux2i_2	A0	-	0.02256	0.02515	0.06940
	A0	-	0.00608	0.00868	0.05243
	A1	-	0.02178	0.02455	0.07200
	A1	-	0.00439	0.00715	0.05366
	S	(A0 * !A1)	0.01899	0.02711	0.16158
	S	(A0 * !A1)	0.02729	0.03541	0.16953
	S	(!A0 * A1)	0.03601	0.04605	0.26043
	S	(!A0 * A1)	0.00872	0.01874	0.23245
sky130_fd_sc_hs__mux2i_4	A0	-	0.04191	0.04877	0.13585
	A0	-	0.00906	0.01580	0.10186
	A1	-	0.04176	0.04687	0.12633
	A1	-	0.00840	0.01342	0.09159
	S	(A0 * !A1)	0.03659	0.05027	0.29868
	S	(A0 * !A1)	0.04920	0.06290	0.31107
	S	(!A0 * A1)	0.06692	0.08321	0.43943
	S	(!A0 * A1)	0.01731	0.03343	0.38937

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	0.00281	0.00284	0.00282
	(A1 * S * !Y)	-0.00139	-0.00141	-0.00139
	(!A1 * S * Y)	0.00116	0.00114	0.00109
	(!A1 * S * Y)	-0.00336	-0.00345	-0.00348
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	0.00513	0.00517	0.00514
	(A1 * S * !Y)	-0.00259	-0.00260	-0.00257
	(!A1 * S * Y)	0.00169	0.00169	0.00161
	(!A1 * S * Y)	-0.00666	-0.00677	-0.00683
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	0.00998	0.01018	0.01003
	(A1 * S * !Y)	-0.00525	-0.00538	-0.00528
	(!A1 * S * Y)	0.00324	0.00325	0.00309
	(!A1 * S * Y)	-0.01341	-0.01365	-0.01373

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	-0.00266	-0.00271	-0.00280
	(A1 * S * !Y)	0.00152	0.00152	0.00144
	(!A1 * S * Y)	-0.00108	-0.00108	-0.00107
	(!A1 * S * Y)	0.00348	0.00348	0.00348
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	-0.00486	-0.00501	-0.00514
	(A1 * S * !Y)	0.00270	0.00273	0.00262
	(!A1 * S * Y)	-0.00157	-0.00158	-0.00156
	(!A1 * S * Y)	0.00683	0.00686	0.00683
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	-0.00952	-0.00970	-0.01000
	(A1 * S * !Y)	0.00565	0.00565	0.00540
	(!A1 * S * Y)	-0.00297	-0.00302	-0.00298
	(!A1 * S * Y)	0.01367	0.01379	0.01373

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	0.00260	0.00261	0.00260
	(A0 * !S * !Y)	-0.00141	-0.00142	-0.00140
	(!A0 * !S * Y)	0.00091	0.00091	0.00086
	(!A0 * !S * Y)	-0.00337	-0.00341	-0.00347
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	0.00533	0.00536	0.00533
	(A0 * !S * !Y)	-0.00289	-0.00290	-0.00288
	(!A0 * !S * Y)	0.00182	0.00182	0.00175
	(!A0 * !S * Y)	-0.00684	-0.00691	-0.00700
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	0.00981	0.00989	0.00985
	(A0 * !S * !Y)	-0.00533	-0.00537	-0.00533
	(!A0 * !S * Y)	0.00287	0.00289	0.00274
	(!A0 * !S * Y)	-0.01345	-0.01366	-0.01381

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	-0.00230	-0.00246	-0.00258
	(A0 * !S * !Y)	0.00156	0.00154	0.00144
	(!A0 * !S * Y)	-0.00085	-0.00085	-0.00084
	(!A0 * !S * Y)	0.00347	0.00349	0.00347
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	-0.00495	-0.00512	-0.00533
	(A0 * !S * !Y)	0.00307	0.00306	0.00293
	(!A0 * !S * Y)	-0.00171	-0.00173	-0.00171
	(!A0 * !S * Y)	0.00698	0.00703	0.00700
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	-0.00917	-0.00957	-0.00985
	(A0 * !S * !Y)	0.00567	0.00570	0.00543
	(!A0 * !S * Y)	-0.00270	-0.00268	-0.00268
	(!A0 * !S * Y)	0.01381	0.01377	0.01381

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	0.01087	0.01822	0.15831
	(A0 * A1 * !Y)	-0.00015	0.00711	0.14721
	(!A0 * !A1 * Y)	0.01087	0.01827	0.15831
	(!A0 * !A1 * Y)	-0.00024	0.00713	0.14719
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	0.01746	0.02427	0.18002
	(A0 * A1 * !Y)	0.00016	0.00685	0.16267
	(!A0 * !A1 * Y)	0.01644	0.02415	0.17988
	(!A0 * !A1 * Y)	-0.00075	0.00684	0.16269
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	0.03098	0.03999	0.28605
	(A0 * A1 * !Y)	0.00084	0.00971	0.25580
	(!A0 * !A1 * Y)	0.02920	0.03987	0.28576
	(!A0 * !A1 * Y)	-0.00077	0.00977	0.25575

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	-0.00060	0.00821	0.14814
	(A0 * A1 * !Y)	0.01047	0.01934	0.15922
	(!A0 * !A1 * Y)	-0.00087	0.00789	0.14817
	(!A0 * !A1 * Y)	0.01023	0.01902	0.15925
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	-0.00077	0.00785	0.16333
	(A0 * A1 * !Y)	0.01650	0.02521	0.18060
	(!A0 * !A1 * Y)	-0.00089	0.00769	0.16330
	(!A0 * !A1 * Y)	0.01632	0.02493	0.18064
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	-0.00014	0.01357	0.26039
	(A0 * A1 * !Y)	0.02993	0.04372	0.29052
	(!A0 * !A1 * Y)	-0.00069	0.01277	0.26037
	(!A0 * !A1 * Y)	0.02924	0.04300	0.29053

SKY130_FD_SC_HS__MUX2x

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00284	0.00331	0.00478	1.47191
sky130_fd_sc_hs__mux2_2	0.00263	0.00297	0.00560	2.35344
sky130_fd_sc_hs__mux2_4	0.00506	0.00508	0.00849	4.44697

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__mux2_1	0.00000	0.97450	1.81364
sky130_fd_sc_hs__mux2_2	0.00000	1.07530	1.82508
sky130_fd_sc_hs__mux2_4	0.00000	1.24727	1.82769

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)	-	0.05791	0.46150	5.57802
	A1->X (RR)	-	0.05792	0.46078	5.51774
	S->X (RR)	(!A0 * A1)	0.06035	0.45208	5.48036
	S->X (FR)	(A0 * !A1)	0.10951	0.66781	8.24089
sky130_fd_sc_hs__mux2_2	A0->X (RR)	-	0.07091	0.42371	5.32018
	A1->X (RR)	-	0.06766	0.40974	5.20107
	S->X (RR)	(!A0 * A1)	0.06915	0.39628	5.21966
	S->X (FR)	(A0 * !A1)	0.11922	0.59905	7.87875
sky130_fd_sc_hs__mux2_4	A0->X (RR)	-	0.10076	0.40623	5.47315
	A1->X (RR)	-	0.10194	0.41244	5.58377
	S->X (RR)	(!A0 * A1)	0.10403	0.37134	5.36850
	S->X (FR)	(A0 * !A1)	0.15902	0.60274	8.13450

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)	-	0.08867	0.52975	5.39245
	A1->X (FF)	-	0.08617	0.52637	5.57629
	S->X (FF)	(!A0 * A1)	0.11795	0.52763	5.56698
	S->X (RF)	(A0 * !A1)	0.13532	0.34486	2.33027
sky130_fd_sc_hs__mux2_2	A0->X (FF)	-	0.11219	0.52135	4.98776
	A1->X (FF)	-	0.11469	0.53079	5.07249
	S->X (FF)	(!A0 * A1)	0.14036	0.49513	4.87562
	S->X (RF)	(A0 * !A1)	0.16773	0.33400	1.75679
sky130_fd_sc_hs__mux2_4	A0->X (FF)	-	0.13875	0.51940	4.90095
	A1->X (FF)	-	0.14006	0.52231	4.84637
	S->X (FF)	(!A0 * A1)	0.16358	0.48369	4.71208
	S->X (RF)	(A0 * !A1)	0.18830	0.33424	1.55817

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	-	0.01375	0.01875	0.12768
	A0	-	0.00515	0.01018	0.11954
	A1	-	0.01607	0.02076	0.11808
	A1	-	0.00709	0.01182	0.10958
	S	(A0 * !A1)	0.01405	0.02194	0.16552
	S	(A0 * !A1)	0.01947	0.02741	0.17108
	S	(!A0 * A1)	0.02514	0.03622	0.26382
	S	(!A0 * A1)	0.01006	0.02117	0.24923
sky130_fd_sc_hs__mux2_2	A0	-	0.01844	0.02340	0.12816
	A0	-	0.00996	0.01494	0.12032
	A1	-	0.01849	0.02354	0.13015
	A1	-	0.01005	0.01512	0.12172
	S	(A0 * !A1)	0.01853	0.02749	0.16833
	S	(A0 * !A1)	0.02511	0.03414	0.17617
	S	(!A0 * A1)	0.03050	0.03955	0.22673
	S	(!A0 * A1)	0.01423	0.02332	0.21050
sky130_fd_sc_hs__mux2_4	A0	-	0.03681	0.04380	0.20210
	A0	-	0.02147	0.02859	0.18845
	A1	-	0.03548	0.04267	0.22950
	A1	-	0.02097	0.02832	0.21666
	S	(A0 * !A1)	0.03622	0.04462	0.21062
	S	(A0 * !A1)	0.04563	0.05405	0.22115
	S	(!A0 * A1)	0.05532	0.06641	0.32460
	S	(!A0 * A1)	0.02924	0.04035	0.29976

Internal switching power(pJ) to X falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2_1	A0	-	0.00592	0.01197	0.10792
	A0	-	0.01422	0.02026	0.11514
	A1	-	0.00577	0.01195	0.12521
	A1	-	0.01475	0.02092	0.13246
	S	(A0 * !A1)	0.02136	0.02769	0.17131
	S	(A0 * !A1)	0.01586	0.02210	0.16573
	S	(!A0 * A1)	0.00818	0.01995	0.24852
	S	(!A0 * A1)	0.02316	0.03490	0.26162
sky130_fd_sc_hs__mux2_2	A0	-	0.01225	0.01563	0.12102
	A0	-	0.02045	0.02380	0.12688
	A1	-	0.01238	0.01583	0.12201
	A1	-	0.02100	0.02441	0.12881
	S	(A0 * !A1)	0.02773	0.03173	0.16517
	S	(A0 * !A1)	0.02104	0.02490	0.15788
	S	(!A0 * A1)	0.01386	0.02241	0.23743
	S	(!A0 * A1)	0.03004	0.03859	0.25103
sky130_fd_sc_hs__mux2_4	A0	-	0.02994	0.03324	0.21173
	A0	-	0.04498	0.04764	0.22477
	A1	-	0.03120	0.03426	0.21270
	A1	-	0.04652	0.04933	0.22397
	S	(A0 * !A1)	0.05292	0.05370	0.20659
	S	(A0 * !A1)	0.04335	0.04391	0.19635
	S	(!A0 * A1)	0.03342	0.04091	0.34187
	S	(!A0 * A1)	0.05935	0.06597	0.36748

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	0.00265	0.00268	0.00266
	(A1 * S * X)	-0.00115	-0.00117	-0.00116
	(!A1 * S * !X)	0.00096	0.00095	0.00090
	(!A1 * S * !X)	-0.00304	-0.00309	-0.00315
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	0.00254	0.00255	0.00254
	(A1 * S * X)	-0.00126	-0.00126	-0.00125
	(!A1 * S * !X)	0.00107	0.00108	0.00101
	(!A1 * S * !X)	-0.00287	-0.00294	-0.00302
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	0.00452	0.00454	0.00453
	(A1 * S * X)	-0.00249	-0.00250	-0.00248
	(!A1 * S * !X)	0.00160	0.00161	0.00153
	(!A1 * S * !X)	-0.00601	-0.00613	-0.00619

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	-0.00249	-0.00256	-0.00263
	(A1 * S * X)	0.00127	0.00127	0.00121
	(!A1 * S * !X)	-0.00086	-0.00087	-0.00086
	(!A1 * S * !X)	0.00314	0.00316	0.00316
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	-0.00232	-0.00240	-0.00250
	(A1 * S * X)	0.00139	0.00140	0.00131
	(!A1 * S * !X)	-0.00095	-0.00096	-0.00096
	(!A1 * S * !X)	0.00301	0.00302	0.00302
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	-0.00428	-0.00436	-0.00451
	(A1 * S * X)	0.00265	0.00266	0.00254
	(!A1 * S * !X)	-0.00149	-0.00152	-0.00149
	(!A1 * S * !X)	0.00617	0.00621	0.00619

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	0.00294	0.00297	0.00296
	(A0 * !S * X)	-0.00140	-0.00142	-0.00141
	(!A0 * !S * !X)	0.00083	0.00084	0.00082
	(!A0 * !S * !X)	-0.00358	-0.00362	-0.00365
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	0.00270	0.00272	0.00271
	(A0 * !S * X)	-0.00121	-0.00123	-0.00121
	(!A0 * !S * !X)	0.00075	0.00076	0.00073
	(!A0 * !S * !X)	-0.00327	-0.00331	-0.00333
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	0.00459	0.00461	0.00459
	(A0 * !S * X)	-0.00250	-0.00250	-0.00248
	(!A0 * !S * !X)	0.00130	0.00130	0.00124
	(!A0 * !S * !X)	-0.00629	-0.00633	-0.00641

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	-0.00280	-0.00289	-0.00293
	(A0 * !S * X)	0.00148	0.00149	0.00144
	(!A0 * !S * !X)	-0.00079	-0.00081	-0.00080
	(!A0 * !S * !X)	0.00362	0.00367	0.00365
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	-0.00256	-0.00265	-0.00271
	(A0 * !S * X)	0.00132	0.00132	0.00125
	(!A0 * !S * !X)	-0.00071	-0.00073	-0.00071
	(!A0 * !S * !X)	0.00332	0.00335	0.00333
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	-0.00422	-0.00440	-0.00457
	(A0 * !S * X)	0.00265	0.00264	0.00253
	(!A0 * !S * !X)	-0.00119	-0.00123	-0.00120
	(!A0 * !S * !X)	0.00638	0.00644	0.00641

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	0.01121	0.01798	0.15572
	(A0 * A1 * X)	0.00113	0.00787	0.14562
	(!A0 * !A1 * !X)	0.01108	0.01832	0.15606
	(!A0 * !A1 * !X)	0.00105	0.00827	0.14603
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	0.01130	0.01833	0.15533
	(A0 * A1 * X)	0.00002	0.00697	0.14401
	(!A0 * !A1 * !X)	0.01054	0.01785	0.15449
	(!A0 * !A1 * !X)	-0.00073	0.00657	0.14325
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	0.01773	0.02446	0.17791
	(A0 * A1 * X)	0.00043	0.00708	0.16059
	(!A0 * !A1 * !X)	0.01734	0.02458	0.17702
	(!A0 * !A1 * !X)	0.00005	0.00725	0.15972

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	-0.00005	0.00838	0.14603
	(A0 * A1 * X)	0.01003	0.01848	0.15612
	(!A0 * !A1 * !X)	-0.00050	0.00788	0.14586
	(!A0 * !A1 * !X)	0.00951	0.01793	0.15593
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	-0.00096	0.00750	0.14456
	(A0 * A1 * X)	0.01030	0.01884	0.15586
	(!A0 * !A1 * !X)	-0.00074	0.00761	0.14447
	(!A0 * !A1 * !X)	0.01048	0.01887	0.15577
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	-0.00053	0.00781	0.16062
	(A0 * A1 * X)	0.01675	0.02514	0.17792
	(!A0 * !A1 * !X)	-0.00115	0.00760	0.15941
	(!A0 * !A1 * !X)	0.01609	0.02492	0.17672

SKY130_FD_SC_HS__MUX4x

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00248	0.00260	0.00258	0.00285	0.00866	0.00554	1.37290
sky130_fd_sc_hs__mux4_2	0.00280	0.00266	0.00276	0.00270	0.00979	0.00573	2.75136
sky130_fd_sc_hs__mux4_4	0.00495	0.00476	0.00494	0.00495	0.01374	0.00856	5.23457

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux4_1	0.00000	1.29330	2.32178
sky130_fd_sc_hs__mux4_2	0.00000	1.38611	2.49939
sky130_fd_sc_hs__mux4_4	0.00000	2.00107	3.49092

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)	0.10246	0.53764	5.69238
	A1->X (RR)	0.10385	0.53814	5.65855
	A2->X (RR)	0.10360	0.54254	5.67131
	A3->X (RR)	0.10171	0.53624	5.63724
	S0->X (-R)	0.15629	0.73605	8.24282
	S1->X (-R)	0.09159	0.65872	8.20255
sky130_fd_sc_hs__mux4_2	A0->X (RR)	0.10940	0.45651	5.56386
	A1->X (RR)	0.10502	0.45495	5.56728
	A2->X (RR)	0.10148	0.44675	5.53802
	A3->X (RR)	0.09655	0.44240	5.53299
	S0->X (-R)	0.15019	0.64729	8.22303
	S1->X (-R)	0.09888	0.57879	8.11274
sky130_fd_sc_hs__mux4_4	A0->X (RR)	0.12698	0.41055	5.77569
	A1->X (RR)	0.13098	0.41390	5.80978
	A2->X (RR)	0.13178	0.41591	5.75228
	A3->X (RR)	0.12537	0.41206	5.75556
	S0->X (-R)	0.21122	0.66965	8.46572
	S1->X (-R)	0.11580	0.55675	8.33482

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__mux4_1	A0->X (FF)	0.14987	0.57653	5.18159
	A1->X (FF)	0.15804	0.59261	5.24403
	A2->X (FF)	0.16176	0.60152	5.26058
	A3->X (FF)	0.16149	0.60037	5.26957
	S0->X (-F)	0.14954	0.61826	5.36906
	S1->X (-F)	0.07208	0.49111	5.23057
sky130_fd_sc_hs__mux4_2	A0->X (FF)	0.18685	0.61321	5.42642
	A1->X (FF)	0.18551	0.60736	5.40925
	A2->X (FF)	0.18515	0.60908	5.42855
	A3->X (FF)	0.17927	0.59745	5.39914
	S0->X (-F)	0.15699	0.61296	5.51045
	S1->X (-F)	0.08612	0.49505	5.37972
sky130_fd_sc_hs__mux4_4	A0->X (FF)	0.19222	0.56825	5.44350
	A1->X (FF)	0.18776	0.56175	5.41618
	A2->X (FF)	0.21070	0.59074	5.50627
	A3->X (FF)	0.19982	0.57789	5.46950
	S0->X (-F)	0.18942	0.62996	5.68738
	S1->X (-F)	0.09293	0.47781	5.42547

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux4_1	A0	0.02473	0.02857	0.12910
	A0	0.01486	0.01871	0.11952
	A1	0.02245	0.02611	0.12344
	A1	0.01271	0.01639	0.11407
	A2	0.02222	0.02593	0.12298
	A2	0.01266	0.01639	0.11372
	A3	0.02048	0.02427	0.12250
	A3	0.01062	0.01440	0.11300
	S0	0.03907	0.05825	0.43960
	S0	0.01561	0.03478	0.41639
	S1	0.01830	0.03046	0.24163
	S1	0.00618	0.01834	0.22994
sky130_fd_sc_hs__mux4_2	A0	0.03081	0.03435	0.13550
	A0	0.01985	0.02340	0.12553
	A1	0.02864	0.03224	0.13424
	A1	0.01780	0.02146	0.12439
	A2	0.02696	0.03056	0.12910
	A2	0.01661	0.02024	0.11976
	A3	0.02527	0.02911	0.13043
	A3	0.01512	0.01899	0.12127
	S0	0.04692	0.06565	0.45425
	S0	0.02262	0.04140	0.43079
	S1	0.02273	0.03494	0.25054
	S1	0.01019	0.02245	0.23871

sky130_fd_sc_hs__mux4_4	**A0**	0.05808	0.06373	0.25683
	A0	0.03869	0.04450	0.23819
	A1	0.05373	0.05917	0.25494
	A1	0.03482	0.04041	0.23658
	A2	0.05393	0.05888	0.24679
	A2	0.03507	0.04016	0.22879
	A3	0.05072	0.05620	0.24878
	A3	0.03185	0.03745	0.23076
	S0	0.08120	0.10509	0.65357
	S0	0.04390	0.06781	0.61936
	S1	0.04259	0.05608	0.33863
	S1	0.02377	0.03734	0.32037

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__mux4_1	**A0**	0.00914	0.01195	0.11331
	A0	0.01902	0.02182	0.12200
	A1	0.01179	0.01439	0.11112
	A1	0.02146	0.02411	0.12076
	A2	0.01335	0.01574	0.11224
	A2	0.02290	0.02528	0.12178
	A3	0.01501	0.01750	0.11515
	A3	0.02483	0.02733	0.12492
	S0	0.01400	0.03509	0.41280
	S0	0.03720	0.05828	0.43598
	S1	0.00448	0.01869	0.24312
	S1	0.01659	0.03072	0.25522

sky130_fd_sc_hs__mux4_2	**A0**	0.02060	0.01946	0.12169
	A0	0.03153	0.03045	0.13068
	A1	0.02255	0.02157	0.12802
	A1	0.03333	0.03233	0.13339
	A2	0.02218	0.02096	0.12047
	A2	0.03251	0.03131	0.12881
	A3	0.02340	0.02257	0.12810
	A3	0.03347	0.03265	0.13298
	S0	0.02279	0.04058	0.42670
	S0	0.04719	0.06491	0.44812
	S1	0.01265	0.02449	0.25601
	S1	0.02520	0.03696	0.26422
sky130_fd_sc_hs__mux4_4	**A0**	0.03959	0.03608	0.23526
	A0	0.05892	0.05543	0.24589
	A1	0.04436	0.04084	0.23733
	A1	0.06319	0.05986	0.25342
	A2	0.04627	0.04025	0.23477
	A2	0.06512	0.05945	0.24462
	A3	0.04868	0.04430	0.23467
	A3	0.06743	0.06308	0.25329
	S0	0.04567	0.06514	0.61049
	S0	0.08237	0.10182	0.64247
	S1	0.02739	0.03900	0.32976
	S1	0.04609	0.05718	0.34596

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)**	0.01299	0.01733	0.11956
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00519	0.00948	0.11176
	(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)	0.00262	0.00221	0.00217
	(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)	-0.00213	-0.00258	-0.00261
sky130_fd_sc_hs__mux4_2	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.01442	0.01869	0.12258
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00555	0.00978	0.11373
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00285	0.00243	0.00238
	(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)	-0.00210	-0.00252	-0.00257
sky130_fd_sc_hs__mux4_4	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.02437	0.03279	0.23044
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00901	0.01740	0.21513
	(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)	0.00508	0.00421	0.00407
	(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)	-0.00438	-0.00531	-0.00541

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)	0.00193	0.00644	0.10880
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00973	0.01428	0.11659
	(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)	-0.00211	-0.00213	-0.00213
	(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)	0.00263	0.00265	0.00265
sky130_fd_sc_hs__mux4_2	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00306	0.00759	0.11128
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.01193	0.01646	0.12015
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00231	-0.00235	-0.00234
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00260	0.00261	0.00261

sky130_fd_sc_hs__mux4_4	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.00435	0.01291	0.21088
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.01967	0.02828	0.22621
	(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)	-0.00394	-0.00404	-0.00402
	(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)	0.00544	0.00551	0.00547

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)**	0.01072	0.01489	0.11394
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00309	0.00723	0.10630
	(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)	0.00247	0.00201	0.00197
	(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)	-0.00239	-0.00283	-0.00288

sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.01230	0.01662	0.12127
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00358	0.00788	0.11255
	(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)	0.00257	0.00217	0.00213
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00230	-0.00274	-0.00276
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.01980	0.02823	0.22914
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00503	0.01343	0.21438
	(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)	0.00490	0.00398	0.00388
	(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)	-0.00434	-0.00528	-0.00537

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)**	0.00439	0.00870	0.10756
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.01203	0.01635	0.11518
	(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)	-0.00188	-0.00195	-0.00195
	(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)	0.00290	0.00292	0.00292
sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00515	0.00961	0.11424
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.01388	0.01836	0.12294
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00206	-0.00211	-0.00212
	(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)	0.00278	0.00280	0.00280
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00941	0.01798	0.21914
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.02421	0.03283	0.23386
	(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)	-0.00374	-0.00387	-0.00386
	(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)	0.00537	0.00542	0.00541

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)	0.00277	0.00233	0.00228
	(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	-0.00250	-0.00253
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01329	0.01736	0.11601
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00542	0.00947	0.10815
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)	0.00310	0.00265	0.00260
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00206	-0.00251	-0.00256
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01369	0.01777	0.11869
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00517	0.00925	0.11020

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)**	0.00520	0.00432	0.00422
	(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)	-0.00417	-0.00507	-0.00517
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.02464	0.03263	0.22549
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00907	0.01698	0.20993

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)**	-0.00222	-0.00225	-0.00224
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00256	0.00259	0.00258
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00314	0.00738	0.10600
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01099	0.01527	0.11387

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)**	-0.00253	-0.00257	-0.00256
	(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)	0.00258	0.00260	0.00260
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00328	0.00762	0.10833
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01177	0.01612	0.11682
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)**	-0.00412	-0.00418	-0.00417
	(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)	0.00519	0.00523	0.00522
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00421	0.01255	0.20536
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01979	0.02816	0.22095

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)**	0.01158	0.01569	0.11559
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00344	0.00751	0.10743
	(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)	0.00300	0.00259	0.00253
	(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)	-0.00229	-0.00276	-0.00279
sky130_fd_sc_hs__mux4_2	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.01206	0.01634	0.11982
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00379	0.00805	0.11155
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00274	0.00231	0.00227
	(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	-0.00265	-0.00268
sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.02168	0.02990	0.22788
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00620	0.01435	0.21238
	(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)	0.00507	0.00419	0.00410
	(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)	-0.00418	-0.00513	-0.00519

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)	0.00481	0.00908	0.10891
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.01297	0.01727	0.11705
	(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)	-0.00247	-0.00252	-0.00251
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00283	0.00286	0.00283
sky130_fd_sc_hs__mux4_2	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00474	0.00922	0.11281
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.01302	0.01751	0.12105
	(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	-0.00225	-0.00226
	(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)	0.00270	0.00273	0.00272

sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00810	0.01643	0.21439
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.02363	0.03201	0.22984
	(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)	-0.00395	-0.00408	-0.00409
	(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)	0.00523	0.00527	0.00525

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)**	0.01417	0.02189	0.17913
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00176	0.00585	0.16314
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.02120	0.02867	0.19381
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00764	0.01504	0.18034
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.02024	0.03436	0.30477
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00165	0.01568	0.28611
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01479	0.02253	0.17985
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00143	0.00621	0.16355
	(A0 * !A1 * A2 * A3 * S1 * X)	0.02003	0.02780	0.19288
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00635	0.01405	0.17929
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01979	0.02772	0.19301
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00580	0.01368	0.17914
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01967	0.03381	0.30068
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00107	0.01512	0.28203
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.02109	0.03514	0.30212
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00223	0.01628	0.28323
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.02089	0.02843	0.19374
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00696	0.01442	0.17988
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.02167	0.03567	0.30606
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00267	0.01659	0.28703

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.01575	0.02393	0.18205
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00005	0.00807	0.16625
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.02274	0.02972	0.19634
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00978	0.01669	0.18347
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.02184	0.03567	0.30900
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00316	0.01704	0.29030
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01565	0.02376	0.18213
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00023	0.00783	0.16621
	(A0 * !A1 * A2 * A3 * S1 * X)	0.02345	0.02979	0.19555
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01106	0.01728	0.18320
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.02281	0.02923	0.19532
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01025	0.01660	0.18283
	(!A0 * A1 * A2 * A3 * S1 * X)	0.02195	0.03593	0.30962
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00279	0.01666	0.29040
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.02244	0.03650	0.31026
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00318	0.01717	0.29096
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.02164	0.02868	0.19568
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00860	0.01555	0.18270
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.02341	0.03738	0.31071
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00463	0.01855	0.29189

sky130_fd_sc_hs__mux4_4	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.02209	0.02940	0.18845
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00051	0.00669	0.16579
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.03477	0.04042	0.21135
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01704	0.02260	0.19385
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.03308	0.05040	0.39842
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00525	0.02254	0.37050
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.02242	0.02983	0.18902
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00059	0.00677	0.16596
	(A0 * !A1 * A2 * A3 * S1 * X)	0.03511	0.04138	0.21213
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01655	0.02276	0.19389
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.03411	0.04059	0.21210
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01513	0.02161	0.19335
	(!A0 * A1 * A2 * A3 * S1 * X)	0.03170	0.04994	0.40893
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00434	0.02246	0.38151
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.03326	0.05162	0.41076
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00552	0.02380	0.38291
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.03456	0.04028	0.21228
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01621	0.02195	0.19410
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.03565	0.05294	0.40115
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00718	0.02439	0.37257

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)**	0.00078	0.00986	0.16681
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.01671	0.02583	0.18279
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01008	0.01928	0.18456
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.02363	0.03287	0.19786
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00340	0.01895	0.28955
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.02202	0.03762	0.30822
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00042	0.00913	0.16615
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01666	0.02545	0.18246
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00968	0.01890	0.18298
	(A0 * !A1 * A2 * A3 * S1 * X)	0.02336	0.03264	0.19631
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01014	0.01924	0.18301
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.02415	0.03331	0.19668
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00221	0.01766	0.28485
	(!A0 * A1 * A2 * A3 * S1 * X)	0.02081	0.03629	0.30350
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00103	0.01667	0.28338
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01991	0.03562	0.30233
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01070	0.01968	0.18479
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.02467	0.03365	0.19848
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00223	0.01844	0.28821
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.02124	0.03754	0.30728

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	-0.00171	0.00763	0.16599
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.01401	0.02342	0.18178
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00783	0.01709	0.18401
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.02080	0.03011	0.19664
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00114	0.01750	0.28995
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01978	0.03622	0.30864
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00145	0.00780	0.16593
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01440	0.02376	0.18184
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00864	0.01792	0.18501
	(A0 * !A1 * A2 * A3 * S1 * X)	0.02109	0.03041	0.19712
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00951	0.01857	0.18524
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.02213	0.03122	0.19750
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00029	0.01673	0.28974
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01948	0.03595	0.30896
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	-0.00003	0.01632	0.28915
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01924	0.03562	0.30847
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00908	0.01817	0.18470
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.02219	0.03133	0.19745
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	-0.00032	0.01610	0.28832
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01851	0.03488	0.30714

sky130_fd_sc_hs__mux4_4	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	-0.00242	0.00701	0.16664
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.02012	0.02960	0.18929
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01598	0.02519	0.19828
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.03369	0.04296	0.21509
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00137	0.02144	0.36968
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.02920	0.04931	0.39759
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00228	0.00694	0.16629
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.02066	0.02998	0.18936
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01418	0.02427	0.19383
	(A0 * !A1 * A2 * A3 * S1 * X)	0.03273	0.04277	0.21167
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01577	0.02546	0.19461
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.03475	0.04455	0.21291
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00076	0.02304	0.38347
	(!A0 * A1 * A2 * A3 * S1 * X)	0.02811	0.05043	0.41087
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	-0.00041	0.02160	0.38185
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.02732	0.04949	0.40969
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01694	0.02581	0.19830
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.03537	0.04428	0.21575
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	-0.00065	0.01916	0.36710
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.02783	0.04779	0.39568

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)	0.00940	0.01854	0.17631
	(A1 * A3 * S0 * X)	-0.00070	0.00837	0.16616
	(A0 * A2 * !S0 * X)	0.00940	0.01854	0.17630
	(A0 * A2 * !S0 * X)	-0.00071	0.00836	0.16615
	(!A1 * !A3 * S0 * !X)	0.00987	0.01904	0.17680
	(!A1 * !A3 * S0 * !X)	-0.00061	0.00850	0.16628
	(!A0 * !A2 * !S0 * !X)	0.00986	0.01903	0.17680
	(!A0 * !A2 * !S0 * !X)	-0.00061	0.00850	0.16628
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	0.00988	0.01890	0.17596
	(A1 * A3 * S0 * X)	-0.00068	0.00832	0.16538
	(A0 * A2 * !S0 * X)	0.00987	0.01889	0.17596
	(A0 * A2 * !S0 * X)	-0.00068	0.00832	0.16538
	(!A1 * !A3 * S0 * !X)	0.00997	0.01915	0.17619
	(!A1 * !A3 * S0 * !X)	-0.00083	0.00832	0.16537
	(!A0 * !A2 * !S0 * !X)	0.00997	0.01914	0.17618
	(!A0 * !A2 * !S0 * !X)	-0.00083	0.00832	0.16537
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	0.01434	0.02292	0.18291
	(A1 * A3 * S0 * X)	-0.00053	0.00791	0.16797
	(A0 * A2 * !S0 * X)	0.01434	0.02292	0.18291
	(A0 * A2 * !S0 * X)	-0.00053	0.00794	0.16797
	(!A1 * !A3 * S0 * !X)	0.01457	0.02324	0.18327
	(!A1 * !A3 * S0 * !X)	-0.00105	0.00751	0.16756
	(!A0 * !A2 * !S0 * !X)	0.01457	0.02324	0.18324
	(!A0 * !A2 * !S0 * !X)	-0.00105	0.00751	0.16760

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)	-0.00143	0.00886	0.16650
	(A1 * A3 * S0 * X)	0.00869	0.01901	0.17664
	(A0 * A2 * !S0 * X)	-0.00144	0.00886	0.16650
	(A0 * A2 * !S0 * X)	0.00869	0.01901	0.17664
	(!A1 * !A3 * S0 * !X)	-0.00151	0.00876	0.16604
	(!A1 * !A3 * S0 * !X)	0.00900	0.01932	0.17656
	(!A0 * !A2 * !S0 * !X)	-0.00152	0.00875	0.16603
	(!A0 * !A2 * !S0 * !X)	0.00900	0.01931	0.17656
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	-0.00158	0.00861	0.16561
	(A1 * A3 * S0 * X)	0.00897	0.01920	0.17618
	(A0 * A2 * !S0 * X)	-0.00158	0.00861	0.16560
	(A0 * A2 * !S0 * X)	0.00897	0.01920	0.17617
	(!A1 * !A3 * S0 * !X)	-0.00148	0.00851	0.16541
	(!A1 * !A3 * S0 * !X)	0.00933	0.01936	0.17620
	(!A0 * !A2 * !S0 * !X)	-0.00148	0.00851	0.16541
	(!A0 * !A2 * !S0 * !X)	0.00932	0.01936	0.17620
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	-0.00220	0.00767	0.16810
	(A1 * A3 * S0 * X)	0.01275	0.02260	0.18303
	(A0 * A2 * !S0 * X)	-0.00220	0.00768	0.16810
	(A0 * A2 * !S0 * X)	0.01275	0.02261	0.18303
	(!A1 * !A3 * S0 * !X)	-0.00167	0.00843	0.16785
	(!A1 * !A3 * S0 * !X)	0.01405	0.02418	0.18357
	(!A0 * !A2 * !S0 * !X)	-0.00167	0.00843	0.16785
	(!A0 * !A2 * !S0 * !X)	0.01405	0.02418	0.18357

SKY130_FD_SC_HS__NAND2Bx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00241	0.00288	1.30834
sky130_fd_sc_hs__nand2b_2	0.00270	0.00549	2.26362
sky130_fd_sc_hs__nand2b_4	0.00399	0.00836	2.78524

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand2b_1	0.00000	0.67896	1.16184
sky130_fd_sc_hs__nand2b_2	0.00000	0.44829	0.77666
sky130_fd_sc_hs__nand2b_4	0.00000	1.36818	2.34657

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)	0.04750	0.45504	5.81833
	B->Y (FR)	0.02991	0.67283	9.85776
sky130_fd_sc_hs__nand2b_2	A_N->Y (RR)	0.04719	0.34292	4.85560
	B->Y (FR)	0.02860	0.59170	9.66403
sky130_fd_sc_hs__nand2b_4	A_N->Y (RR)	0.05706	0.37933	5.76691
	B->Y (FR)	0.03591	0.59722	10.04280

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)	0.05786	0.47320	5.65602
	B->Y (RF)	0.02140	0.38721	5.69334
sky130_fd_sc_hs__nand2b_2	A_N->Y (FF)	0.06248	0.44585	5.72910
	B->Y (RF)	0.02164	0.31069	5.37658
sky130_fd_sc_hs__nand2b_4	A_N->Y (FF)	0.04907	0.32842	4.09093
	B->Y (RF)	0.01839	0.19391	3.66773

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	0.01080	0.01862	0.16057
	A_N	0.00541	0.01328	0.15534
	B	0.00013	0.00429	0.04572
	B	0.00624	0.01013	0.05202
sky130_fd_sc_hs__nand2b_2	A_N	0.01456	0.02198	0.14702
	A_N	0.00898	0.01647	0.14184
	B	-0.00012	0.00724	0.08682
	B	0.01185	0.01921	0.09868
sky130_fd_sc_hs__nand2b_4	A_N	0.01932	0.03223	0.26546
	A_N	0.01126	0.02427	0.25838
	B	-0.00083	0.01162	0.13038
	B	0.01735	0.02935	0.14887

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	A_N	0.00548	0.01465	0.14630
	A_N	0.01086	0.02000	0.15113
	B	0.00766	0.00908	0.03179
	B	0.00152	0.00293	0.02467
sky130_fd_sc_hs__nand2b_2	A_N	0.00969	0.01859	0.17082
	A_N	0.01526	0.02409	0.17449
	B	0.01479	0.01791	0.06238
	B	0.00274	0.00586	0.04816
sky130_fd_sc_hs__nand2b_4	A_N	0.01683	0.03275	0.28059
	A_N	0.02488	0.04074	0.28643
	B	0.02591	0.03100	0.09653
	B	0.00760	0.01265	0.07726

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	0.00891	0.01667	0.15855
	(!B * Y)	0.00320	0.01097	0.15286
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.01253	0.02054	0.17664
	(!B * Y)	0.00620	0.01420	0.17031
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.01532	0.02826	0.27708
	(!B * Y)	0.00604	0.01898	0.26781

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	-0.00007	0.00883	0.15060
	(!B * Y)	0.00563	0.01457	0.15630
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.00086	0.00993	0.16557
	(!B * Y)	0.00723	0.01631	0.17190
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.00167	0.01705	0.26614
	(!B * Y)	0.01105	0.02645	0.27548

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	0.00271	0.00272	0.00271
	(A_N * Y)	-0.00289	-0.00289	-0.00288
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	0.00465	0.00468	0.00467
	(A_N * Y)	-0.00593	-0.00595	-0.00594
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	0.00941	0.00948	0.00944
	(A_N * Y)	-0.00622	-0.00624	-0.00622

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	-0.00254	-0.00269	-0.00268
	(A_N * Y)	0.00300	0.00293	0.00291
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	-0.00441	-0.00468	-0.00467
	(A_N * Y)	0.00612	0.00597	0.00595
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	-0.00873	-0.00938	-0.00937
	(A_N * Y)	0.00678	0.00632	0.00628

SKY130_FD_SC_HS__NAND2x

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00289	0.00281	1.36397
sky130_fd_sc_hs__nand2_2	0.00554	0.00550	2.63485
sky130_fd_sc_hs__nand2_4	0.00839	0.00817	2.73502
sky130_fd_sc_hs__nand2_8	0.01609	0.01614	4.72273

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand2_1	0.00000	0.10056	0.38031
sky130_fd_sc_hs__nand2_2	0.00000	0.20111	0.76063
sky130_fd_sc_hs__nand2_4	0.00000	0.21207	0.76063
sky130_fd_sc_hs__nand2_8	0.00000	0.42413	1.52125

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)	0.02324	0.66593	9.92539
	B->Y (FR)	0.02910	0.67065	9.93455
sky130_fd_sc_hs__nand2_2	A->Y (FR)	0.02040	0.57778	9.90690
	B->Y (FR)	0.02774	0.58325	9.86825
sky130_fd_sc_hs__nand2_4	A->Y (FR)	0.02819	0.59495	10.16890
	B->Y (FR)	0.04273	0.60855	10.14180
sky130_fd_sc_hs__nand2_8	A->Y (FR)	0.02318	0.50584	9.60200
	B->Y (FR)	0.03552	0.50267	9.14619

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand2_1	A->Y (RF)	0.01708	0.43580	6.55561
	B->Y (RF)	0.01986	0.39356	5.88737
sky130_fd_sc_hs__nand2_2	A->Y (RF)	0.01651	0.39408	7.12958
	B->Y (RF)	0.02127	0.34810	6.32234
sky130_fd_sc_hs__nand2_4	A->Y (RF)	0.01496	0.25369	4.74614
	B->Y (RF)	0.01896	0.20081	3.74628
sky130_fd_sc_hs__nand2_8	A->Y (RF)	0.01340	0.21363	4.81679
	B->Y (RF)	0.01728	0.13970	3.33251

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	-0.00096	0.00295	0.04373
	A	0.00545	0.00941	0.05016
	B	-0.00024	0.00364	0.04515
	B	0.00770	0.01129	0.05308
sky130_fd_sc_hs__nand2_2	A	-0.00251	0.00489	0.07610
	A	0.00994	0.01743	0.08904
	B	0.00012	0.00726	0.08129
	B	0.01588	0.02308	0.09722
sky130_fd_sc_hs__nand2_4	A	-0.00487	0.00746	0.11807
	A	0.01400	0.02571	0.13727
	B	-0.00009	0.01176	0.12739
	B	0.02522	0.03711	0.15301
sky130_fd_sc_hs__nand2_8	A	-0.01034	0.01493	0.26591
	A	0.02619	0.05185	0.30276
	B	-0.00218	0.02272	0.26112
	B	0.04769	0.07298	0.31298

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	0.00587	0.00767	0.02944
	A	-0.00055	0.00119	0.02301
	B	0.00748	0.00893	0.03066
	B	-0.00051	0.00091	0.02207
sky130_fd_sc_hs__nand2_2	A	0.01150	0.01540	0.05597
	A	-0.00096	0.00292	0.04265
	B	0.01507	0.01832	0.05742
	B	-0.00087	0.00217	0.04149
sky130_fd_sc_hs__nand2_4	A	0.02122	0.02726	0.08991
	A	0.00240	0.00836	0.06892
	B	0.02818	0.03298	0.09847
	B	0.00265	0.00734	0.07072
sky130_fd_sc_hs__nand2_8	A	0.03409	0.04736	0.18551
	A	-0.00245	0.01070	0.14277
	B	0.04860	0.06133	0.20323
	B	-0.00190	0.01065	0.15039

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	0.00077	0.00077	0.00076
	(!B * Y)	-0.00349	-0.00350	-0.00353
sky130_fd_sc_hs__nand2_2	(!B * Y)	0.00146	0.00145	0.00139
	(!B * Y)	-0.00682	-0.00681	-0.00693
sky130_fd_sc_hs__nand2_4	(!B * Y)	0.00282	0.00283	0.00272
	(!B * Y)	-0.00810	-0.00815	-0.00835
sky130_fd_sc_hs__nand2_8	(!B * Y)	0.00562	0.00561	0.00540
	(!B * Y)	-0.01571	-0.01573	-0.01612

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	-0.00074	-0.00076	-0.00075
	(!B * Y)	0.00352	0.00360	0.00354
sky130_fd_sc_hs__nand2_2	(!B * Y)	-0.00136	-0.00138	-0.00136
	(!B * Y)	0.00692	0.00707	0.00694
sky130_fd_sc_hs__nand2_4	(!B * Y)	-0.00269	-0.00271	-0.00266
	(!B * Y)	0.00838	0.00851	0.00836
sky130_fd_sc_hs__nand2_8	(!B * Y)	-0.00526	-0.00526	-0.00528
	(!B * Y)	0.01606	0.01606	0.01613

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!A * Y)	0.00230	0.00230	0.00229
	(!A * Y)	-0.00303	-0.00304	-0.00303
sky130_fd_sc_hs__nand2_2	(!A * Y)	0.00443	0.00445	0.00443
	(!A * Y)	-0.00594	-0.00595	-0.00593
sky130_fd_sc_hs__nand2_4	(!A * Y)	0.00888	0.00894	0.00892
	(!A * Y)	-0.00618	-0.00621	-0.00620
sky130_fd_sc_hs__nand2_8	(!A * Y)	0.01767	0.01782	0.01776
	(!A * Y)	-0.01236	-0.01241	-0.01239

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	**(!A * Y)**	-0.00216	-0.00230	-0.00229
	(!A * Y)	0.00316	0.00306	0.00304
sky130_fd_sc_hs__nand2_2	**(!A * Y)**	-0.00410	-0.00445	-0.00443
	(!A * Y)	0.00617	0.00599	0.00595
sky130_fd_sc_hs__nand2_4	**(!A * Y)**	-0.00811	-0.00891	-0.00889
	(!A * Y)	0.00673	0.00625	0.00622
sky130_fd_sc_hs__nand2_8	**(!A * Y)**	-0.01634	-0.01782	-0.01776
	(!A * Y)	0.01334	0.01248	0.01243

SKY130_FD_SC_HS__NAND3Bx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00226	0.00290	0.00282	1.35574
sky130_fd_sc_hs__nand3b_2	0.00267	0.00553	0.00550	2.60274
sky130_fd_sc_hs__nand3b_4	0.00380	0.00793	0.00801	2.34213

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand3b_1	0.00000	0.65396	1.16184
sky130_fd_sc_hs__nand3b_2	0.00000	0.39829	1.15697
sky130_fd_sc_hs__nand3b_4	0.00000	1.31572	2.34656

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)	0.04870	0.43240	5.53466
	B->Y (FR)	0.03420	0.68450	10.04730
	C->Y (FR)	0.03815	0.67696	9.88082
sky130_fd_sc_hs__nand3b_2	A_N->Y (RR)	0.04944	0.34828	5.30748
	B->Y (FR)	0.02960	0.58160	9.77021
	C->Y (FR)	0.03483	0.59249	9.88546
sky130_fd_sc_hs__nand3b_4	A_N->Y (RR)	0.06207	0.38748	5.41544
	B->Y (FR)	0.04143	0.57991	9.29034
	C->Y (FR)	0.05627	0.61439	9.64592

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)	0.06352	0.55633	7.03329
	B->Y (RF)	0.03027	0.48822	7.21353
	C->Y (RF)	0.03310	0.43728	6.43445
sky130_fd_sc_hs__nand3b_2	A_N->Y (FF)	0.07288	0.55841	8.05627
	B->Y (RF)	0.03137	0.45398	8.12461
	C->Y (RF)	0.03382	0.37970	6.96992
sky130_fd_sc_hs__nand3b_4	A_N->Y (FF)	0.06250	0.45928	6.31862
	B->Y (RF)	0.03518	0.39740	6.75844
	C->Y (RF)	0.03779	0.25236	4.48497

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	0.01051	0.01847	0.16169
	A_N	0.00578	0.01376	0.15731
	B	0.00064	0.00395	0.03946
	B	0.00689	0.01029	0.04572
	C	0.00129	0.00471	0.04180
	C	0.00877	0.01191	0.04930
sky130_fd_sc_hs__nand3b_2	A_N	0.01510	0.02361	0.17972
	A_N	0.00983	0.01838	0.17444
	B	0.00095	0.00661	0.06950
	B	0.01351	0.01926	0.08217
	C	0.00223	0.00815	0.07307
	C	0.01794	0.02368	0.08913
sky130_fd_sc_hs__nand3b_4	A_N	0.02040	0.03400	0.27632
	A_N	0.01240	0.02611	0.26833
	B	0.00143	0.00807	0.09382
	B	0.01921	0.02592	0.11228
	C	0.00320	0.01026	0.10161
	C	0.02791	0.03496	0.12630

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	A_N	0.00701	0.01605	0.15155
	A_N	0.01174	0.02077	0.15596
	B	0.00911	0.01021	0.02834
	B	0.00280	0.00389	0.02201
	C	0.01063	0.01177	0.03285
	C	0.00305	0.00418	0.02485
sky130_fd_sc_hs__nand3b_2	A_N	0.01286	0.02215	0.16468
	A_N	0.01816	0.02741	0.16935
	B	0.01723	0.01962	0.05183
	B	0.00459	0.00677	0.03865
	C	0.02061	0.02321	0.06302
	C	0.00462	0.00706	0.04695
sky130_fd_sc_hs__nand3b_4	A_N	0.01781	0.03278	0.26299
	A_N	0.02584	0.04076	0.26965
	B	0.02588	0.02849	0.07022
	B	0.00796	0.01043	0.05015
	C	0.03443	0.03822	0.10175
	C	0.00916	0.01268	0.07528

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)	0.00847	0.01642	0.15947
	(B * !C * Y)	0.00313	0.01105	0.15411
	(!B * Y)	0.00843	0.01641	0.15936
	(!B * Y)	0.00314	0.01107	0.15404
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.01302	0.02104	0.17772
	(B * !C * Y)	0.00628	0.01428	0.17098
	(!B * Y)	0.01283	0.02090	0.17747
	(!B * Y)	0.00629	0.01434	0.17092
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.01545	0.02790	0.26887
	(B * !C * Y)	0.00594	0.01837	0.25935
	(!B * Y)	0.01520	0.02774	0.26954
	(!B * Y)	0.00589	0.01840	0.26020

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)	0.00017	0.00919	0.15213
	(B * !C * Y)	0.00564	0.01468	0.15758
	(!B * Y)	0.00020	0.00923	0.15208
	(!B * Y)	0.00552	0.01457	0.15739
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.00074	0.00976	0.16587
	(B * !C * Y)	0.00769	0.01675	0.17278
	(!B * Y)	0.00097	0.00998	0.16603
	(!B * Y)	0.00755	0.01657	0.17259
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.00181	0.01655	0.25773
	(B * !C * Y)	0.01179	0.02659	0.26763
	(!B * Y)	0.00213	0.01695	0.25902
	(!B * Y)	0.01148	0.02636	0.26838

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)	0.00252	0.00253	0.00252
	(A_N * C * Y)	-0.00296	-0.00297	-0.00296
	(A_N * !C * Y)	0.00152	0.00152	0.00152
	(A_N * !C * Y)	-0.00297	-0.00297	-0.00296
	(!A_N * !C * Y)	0.00084	0.00084	0.00084
	(!A_N * !C * Y)	-0.00344	-0.00344	-0.00345
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	0.00466	0.00472	0.00469
	(A_N * C * Y)	-0.00608	-0.00612	-0.00610
	(A_N * !C * Y)	0.00276	0.00278	0.00276
	(A_N * !C * Y)	-0.00612	-0.00615	-0.00612
	(!A_N * !C * Y)	0.00182	0.00183	0.00185
	(!A_N * !C * Y)	-0.00651	-0.00653	-0.00652
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	0.00950	0.00951	0.00951
	(A_N * C * Y)	-0.00594	-0.00594	-0.00593
	(A_N * !C * Y)	0.00502	0.00499	0.00500
	(A_N * !C * Y)	-0.00660	-0.00657	-0.00658
	(!A_N * !C * Y)	0.00340	0.00340	0.00347
	(!A_N * !C * Y)	-0.00710	-0.00710	-0.00710

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)	-0.00233	-0.00251	-0.00250
	(A_N * C * Y)	0.00312	0.00301	0.00299
	(A_N * !C * Y)	-0.00152	-0.00152	-0.00152
	(A_N * !C * Y)	0.00308	0.00313	0.00301
	(!A_N * !C * Y)	-0.00081	-0.00081	-0.00082
	(!A_N * !C * Y)	0.00350	0.00353	0.00347
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	-0.00424	-0.00468	-0.00467
	(A_N * C * Y)	0.00652	0.00612	0.00612
	(A_N * !C * Y)	-0.00276	-0.00278	-0.00276
	(A_N * !C * Y)	0.00637	0.00648	0.00620
	(!A_N * !C * Y)	-0.00173	-0.00176	-0.00179
	(!A_N * !C * Y)	0.00664	0.00672	0.00658
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	-0.00780	-0.00948	-0.00947
	(A_N * C * Y)	0.00758	0.00602	0.00599
	(A_N * !C * Y)	-0.00502	-0.00499	-0.00500
	(A_N * !C * Y)	0.00724	0.00727	0.00680
	(!A_N * !C * Y)	-0.00332	-0.00334	-0.00338
	(!A_N * !C * Y)	0.00729	0.00735	0.00715

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)	0.00224	0.00225	0.00224
	(A_N * B * Y)	-0.00292	-0.00292	-0.00292
	(A_N * !B * Y)	0.00226	0.00226	0.00225
	(A_N * !B * Y)	-0.00292	-0.00292	-0.00292
	(!A_N * !B * Y)	0.00212	0.00214	0.00213
	(!A_N * !B * Y)	-0.00300	-0.00302	-0.00301
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	0.00475	0.00476	0.00474
	(A_N * B * Y)	-0.00589	-0.00590	-0.00588
	(A_N * !B * Y)	0.00481	0.00487	0.00483
	(A_N * !B * Y)	-0.00587	-0.00592	-0.00588
	(!A_N * !B * Y)	0.00430	0.00434	0.00431
	(!A_N * !B * Y)	-0.00637	-0.00642	-0.00638
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	0.00919	0.00926	0.00923
	(A_N * B * Y)	-0.00597	-0.00600	-0.00599
	(A_N * !B * Y)	0.00926	0.00932	0.00925
	(A_N * !B * Y)	-0.00605	-0.00607	-0.00604
	(!A_N * !B * Y)	0.00858	0.00862	0.00856
	(!A_N * !B * Y)	-0.00673	-0.00674	-0.00672

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)	-0.00209	-0.00221	-0.00222
	(A_N * B * Y)	0.00296	0.00298	0.00295
	(A_N * !B * Y)	-0.00215	-0.00223	-0.00223
	(A_N * !B * Y)	0.00293	0.00296	0.00295
	(!A_N * !B * Y)	-0.00204	-0.00214	-0.00213
	(!A_N * !B * Y)	0.00304	0.00303	0.00302
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	-0.00453	-0.00476	-0.00474
	(A_N * B * Y)	0.00592	0.00597	0.00591
	(A_N * !B * Y)	-0.00462	-0.00482	-0.00480
	(A_N * !B * Y)	0.00588	0.00593	0.00591
	(!A_N * !B * Y)	-0.00409	-0.00433	-0.00431
	(!A_N * !B * Y)	0.00642	0.00642	0.00640
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	-0.00865	-0.00918	-0.00923
	(A_N * B * Y)	0.00610	0.00608	0.00603
	(A_N * !B * Y)	-0.00871	-0.00932	-0.00925
	(A_N * !B * Y)	0.00619	0.00609	0.00608
	(!A_N * !B * Y)	-0.00800	-0.00862	-0.00856
	(!A_N * !B * Y)	0.00690	0.00674	0.00672

SKY130_FD_SC_HS__NAND3x

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00293	0.00298	0.00289	1.38172
sky130_fd_sc_hs__nand3_2	0.00551	0.00595	0.00547	2.14250
sky130_fd_sc_hs__nand3_4	0.00814	0.00805	0.00809	2.71453

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand3_1	0.00000	0.07556	0.57047
sky130_fd_sc_hs__nand3_2	0.00000	0.15111	1.14094
sky130_fd_sc_hs__nand3_4	0.00000	0.15960	1.14094

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)	0.02804	0.66957	9.97366
	B->Y (FR)	0.03441	0.67386	9.95083
	C->Y (FR)	0.03886	0.68121	9.98341
sky130_fd_sc_hs__nand3_2	A->Y (FR)	0.02638	0.60860	9.93051
	B->Y (FR)	0.03073	0.55611	8.85050
	C->Y (FR)	0.03664	0.56673	8.91159
sky130_fd_sc_hs__nand3_4	A->Y (FR)	0.02792	0.59286	10.10070
	B->Y (FR)	0.04299	0.60192	10.01470
	C->Y (FR)	0.05222	0.60616	9.88412

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand3_1	A->Y (RF)	0.02452	0.52731	7.89736
	B->Y (RF)	0.02977	0.49358	7.34037
	C->Y (RF)	0.03209	0.44281	6.56466
sky130_fd_sc_hs__nand3_2	A->Y (RF)	0.02087	0.42153	7.14613
	B->Y (RF)	0.02802	0.39574	6.63923
	C->Y (RF)	0.03202	0.34714	5.83718
sky130_fd_sc_hs__nand3_4	A->Y (RF)	0.01648	0.31705	5.84721
	B->Y (RF)	0.02364	0.27699	5.03789
	C->Y (RF)	0.02632	0.21573	3.98536

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	-0.00072	0.00267	0.03891
	A	0.00611	0.00920	0.04583
	B	0.00030	0.00357	0.03885
	B	0.00862	0.01161	0.04717
	C	0.00081	0.00401	0.04029
	C	0.01079	0.01371	0.05023
sky130_fd_sc_hs__nand3_2	A	-0.00233	0.00384	0.06853
	A	0.01062	0.01677	0.08147
	B	0.00045	0.00659	0.07937
	B	0.01704	0.02330	0.09630
	C	0.00251	0.00887	0.08789
	C	0.02201	0.02849	0.10762
sky130_fd_sc_hs__nand3_4	A	-0.00465	0.00599	0.10476
	A	0.01438	0.02518	0.12372
	B	0.00043	0.00902	0.11302
	B	0.02583	0.03444	0.13835
	C	0.00321	0.01209	0.12200
	C	0.03540	0.04439	0.15435

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	0.00799	0.00954	0.03009
	A	0.00119	0.00268	0.02272
	B	0.00965	0.01072	0.02889
	B	0.00124	0.00232	0.02039
	C	0.01130	0.01245	0.03404
	C	0.00118	0.00228	0.02276
sky130_fd_sc_hs__nand3_2	A	0.01376	0.01711	0.05606
	A	0.00084	0.00407	0.04280
	B	0.01727	0.01994	0.05919
	B	0.00050	0.00304	0.04189
	C	0.02049	0.02319	0.07008
	C	0.00061	0.00327	0.04980
sky130_fd_sc_hs__nand3_4	A	0.02055	0.02580	0.07794
	A	0.00160	0.00679	0.05882
	B	0.02745	0.03110	0.08420
	B	0.00176	0.00542	0.05692
	C	0.03439	0.03834	0.10370
	C	0.00142	0.00539	0.06805

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	0.00072	0.00072	0.00069
	(B * !C * Y)	-0.00343	-0.00344	-0.00353
	(!B * Y)	0.00075	0.00075	0.00073
	(!B * Y)	-0.00349	-0.00350	-0.00354
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	0.00142	0.00142	0.00131
	(B * !C * Y)	-0.00644	-0.00647	-0.00668
	(!B * Y)	0.00151	0.00151	0.00144
	(!B * Y)	-0.00657	-0.00660	-0.00668
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	0.00262	0.00263	0.00244
	(B * !C * Y)	-0.00765	-0.00769	-0.00811
	(!B * Y)	0.00276	0.00276	0.00265
	(!B * Y)	-0.00793	-0.00796	-0.00816

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	-0.00069	-0.00070	-0.00069
	(B * !C * Y)	0.00352	0.00358	0.00354
	(!B * Y)	-0.00071	-0.00073	-0.00071
	(!B * Y)	0.00353	0.00361	0.00354
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	-0.00131	-0.00134	-0.00131
	(B * !C * Y)	0.00667	0.00681	0.00669
	(!B * Y)	-0.00141	-0.00143	-0.00141
	(!B * Y)	0.00667	0.00681	0.00669
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	-0.00250	-0.00253	-0.00244
	(B * !C * Y)	0.00814	0.00826	0.00816
	(!B * Y)	-0.00262	-0.00264	-0.00259
	(!B * Y)	0.00819	0.00831	0.00817

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	0.00095	0.00095	0.00096
	(A * !C * Y)	-0.00301	-0.00303	-0.00302
	(!A * C * Y)	0.00226	0.00226	0.00226
	(!A * C * Y)	-0.00303	-0.00304	-0.00303
	(!A * !C * Y)	0.00114	0.00114	0.00114
	(!A * !C * Y)	-0.00304	-0.00304	-0.00303
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	0.00191	0.00192	0.00194
	(A * !C * Y)	-0.00633	-0.00634	-0.00632
	(!A * C * Y)	0.00442	0.00447	0.00445
	(!A * C * Y)	-0.00629	-0.00633	-0.00630
	(!A * !C * Y)	0.00240	0.00240	0.00240
	(!A * !C * Y)	-0.00636	-0.00636	-0.00636
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	0.00342	0.00345	0.00348
	(A * !C * Y)	-0.00622	-0.00624	-0.00621
	(!A * C * Y)	0.00876	0.00883	0.00880
	(!A * C * Y)	-0.00622	-0.00625	-0.00623
	(!A * !C * Y)	0.00422	0.00424	0.00422
	(!A * !C * Y)	-0.00629	-0.00631	-0.00630

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	-0.00093	-0.00093	-0.00094
	(A * !C * Y)	0.00309	0.00312	0.00304
	(!A * C * Y)	-0.00204	-0.00225	-0.00225
	(!A * C * Y)	0.00318	0.00306	0.00304
	(!A * !C * Y)	-0.00114	-0.00114	-0.00114
	(!A * !C * Y)	0.00316	0.00318	0.00306
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	-0.00183	-0.00185	-0.00187
	(A * !C * Y)	0.00646	0.00653	0.00638
	(!A * C * Y)	-0.00400	-0.00446	-0.00445
	(!A * C * Y)	0.00667	0.00636	0.00632
	(!A * !C * Y)	-0.00240	-0.00240	-0.00240
	(!A * !C * Y)	0.00664	0.00672	0.00645
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	-0.00328	-0.00332	-0.00337
	(A * !C * Y)	0.00648	0.00656	0.00631
	(!A * C * Y)	-0.00771	-0.00883	-0.00880
	(!A * C * Y)	0.00707	0.00627	0.00625
	(!A * !C * Y)	-0.00422	-0.00424	-0.00422
	(!A * !C * Y)	0.00675	0.00687	0.00642

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	0.00237	0.00239	0.00237
	(A * !B * Y)	-0.00304	-0.00306	-0.00305
	(!A * B * Y)	0.00236	0.00236	0.00235
	(!A * B * Y)	-0.00305	-0.00306	-0.00305
	(!A * !B * Y)	0.00235	0.00236	0.00236
	(!A * !B * Y)	-0.00304	-0.00305	-0.00305
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	0.00439	0.00440	0.00438
	(A * !B * Y)	-0.00599	-0.00600	-0.00599
	(!A * B * Y)	0.00435	0.00433	0.00434
	(!A * B * Y)	-0.00599	-0.00598	-0.00599
	(!A * !B * Y)	0.00436	0.00438	0.00436
	(!A * !B * Y)	-0.00600	-0.00601	-0.00600
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	0.00892	0.00897	0.00894
	(A * !B * Y)	-0.00629	-0.00632	-0.00630
	(!A * B * Y)	0.00865	0.00877	0.00870
	(!A * B * Y)	-0.00627	-0.00633	-0.00630
	(!A * !B * Y)	0.00892	0.00900	0.00896
	(!A * !B * Y)	-0.00629	-0.00632	-0.00630

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	-0.00229	-0.00239	-0.00237
	(A * !B * Y)	0.00305	0.00307	0.00306
	(!A * B * Y)	-0.00219	-0.00235	-0.00235
	(!A * B * Y)	0.00305	0.00307	0.00306
	(!A * !B * Y)	-0.00231	-0.00236	-0.00236
	(!A * !B * Y)	0.00305	0.00307	0.00306
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	-0.00417	-0.00440	-0.00438
	(A * !B * Y)	0.00599	0.00603	0.00601
	(!A * B * Y)	-0.00398	-0.00433	-0.00434
	(!A * B * Y)	0.00604	0.00607	0.00600
	(!A * !B * Y)	-0.00420	-0.00438	-0.00436
	(!A * !B * Y)	0.00600	0.00603	0.00601
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	-0.00848	-0.00897	-0.00894
	(A * !B * Y)	0.00630	0.00634	0.00632
	(!A * B * Y)	-0.00809	-0.00877	-0.00870
	(!A * B * Y)	0.00637	0.00639	0.00632
	(!A * !B * Y)	-0.00855	-0.00892	-0.00896
	(!A * !B * Y)	0.00630	0.00637	0.00632

SKY130_FD_SC_HS__NAND4BBx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00229	0.00222	0.00297	0.00299	1.30084
sky130_fd_sc_hs__nand4bb_2	0.00261	0.00258	0.00560	0.00553	2.01539
sky130_fd_sc_hs__nand4bb_4	0.00367	0.00378	0.01091	0.01095	3.09275

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4bb_1	0.00000	1.20741	2.30190
sky130_fd_sc_hs__nand4bb_2	0.00000	0.59555	1.55332
sky130_fd_sc_hs__nand4bb_4	0.00000	2.51463	4.60602

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)	0.05677	0.46695	5.86299
	B_N->Y (RR)	0.06413	0.47191	5.81585
	C->Y (FR)	0.04454	0.68297	9.77634
	D->Y (FR)	0.05004	0.68989	9.80727
sky130_fd_sc_hs__nand4bb_2	A_N->Y (RR)	0.05319	0.31860	4.10884
	B_N->Y (RR)	0.06023	0.30970	3.77149
	C->Y (FR)	0.03606	0.54311	8.37310
	D->Y (FR)	0.04130	0.55497	8.45211
sky130_fd_sc_hs__nand4bb_4	A_N->Y (RR)	0.06497	0.28739	3.53442
	B_N->Y (RR)	0.07544	0.30500	3.66821
	C->Y (FR)	0.03497	0.46497	7.66935
	D->Y (FR)	0.03952	0.47780	7.74900

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)	0.07425	0.64915	8.34622
	B_N->Y (FF)	0.08181	0.65822	8.30710
	C->Y (RF)	0.04935	0.55161	7.88511
	D->Y (RF)	0.05362	0.51252	7.25821
sky130_fd_sc_hs__nand4bb_2	A_N->Y (FF)	0.08335	0.61257	8.43045
	B_N->Y (FF)	0.09929	0.63298	8.43041
	C->Y (RF)	0.05088	0.45029	7.35981
	D->Y (RF)	0.05502	0.41691	6.77098
sky130_fd_sc_hs__nand4bb_4	A_N->Y (FF)	0.08528	0.51608	7.42589
	B_N->Y (FF)	0.09670	0.52888	7.35238
	C->Y (RF)	0.05399	0.36360	6.67945
	D->Y (RF)	0.05743	0.32155	5.94866

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	0.01098	0.01914	0.16133
	A_N	0.00684	0.01502	0.15727
	B_N	0.01193	0.01959	0.16173
	B_N	0.00792	0.01560	0.15791
	C	0.00164	0.00436	0.03617
	C	0.00845	0.01117	0.04304
	D	0.00246	0.00521	0.03906
	D	0.01066	0.01315	0.04736
sky130_fd_sc_hs__nand4bb_2	A_N	0.01569	0.02425	0.17964
	A_N	0.01125	0.01984	0.17650
	B_N	0.01922	0.02729	0.18167
	B_N	0.01489	0.02301	0.17866
	C	0.00270	0.00783	0.07259
	C	0.01518	0.02032	0.08355
	D	0.00488	0.00959	0.07521
	D	0.02059	0.02539	0.09115
sky130_fd_sc_hs__nand4bb_4	A_N	0.02654	0.03921	0.28402
	A_N	0.02072	0.03340	0.27881
	B_N	0.03201	0.04418	0.29362
	B_N	0.02598	0.03817	0.29039
	C	0.00431	0.01636	0.17458
	C	0.02900	0.04117	0.20093
	D	0.00776	0.01966	0.18258
	D	0.03892	0.05082	0.21581

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4bb_1	A_N	0.00875	0.01775	0.15949
	A_N	0.01290	0.02189	0.16362
	B_N	0.01093	0.01989	0.16144
	B_N	0.01493	0.02390	0.16543
	C	0.01311	0.01398	0.03207
	C	0.00627	0.00707	0.02467
	D	0.01481	0.01566	0.03632
	D	0.00647	0.00730	0.02797
sky130_fd_sc_hs__nand4bb_2	A_N	0.01512	0.02424	0.17881
	A_N	0.01956	0.02868	0.18317
	B_N	0.01895	0.02817	0.18746
	B_N	0.02326	0.03248	0.18598
	C	0.02321	0.02511	0.06466
	C	0.01066	0.01246	0.05113
	D	0.02663	0.02840	0.07251
	D	0.01060	0.01234	0.05631
sky130_fd_sc_hs__nand4bb_4	A_N	0.03055	0.04566	0.29619
	A_N	0.03636	0.05147	0.30003
	B_N	0.03706	0.05220	0.30345
	B_N	0.04309	0.05821	0.30802
	C	0.04565	0.05114	0.15947
	C	0.02077	0.02606	0.13398
	D	0.05253	0.05814	0.18545
	D	0.02071	0.02623	0.15329

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)	0.00798	0.01586	0.15636
	(B_N * Y)	0.00287	0.01073	0.15123
	(!B_N * C * !D * Y)	0.00871	0.01688	0.15707
	(!B_N * C * !D * Y)	0.00357	0.01172	0.15191
	(!B_N * !C * Y)	0.00871	0.01657	0.15707
	(!B_N * !C * Y)	0.00358	0.01142	0.15192
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.01206	0.02002	0.17333
	(B_N * Y)	0.00643	0.01438	0.16771
	(!B_N * C * !D * Y)	0.01293	0.02084	0.17416
	(!B_N * C * !D * Y)	0.00726	0.01516	0.16850
	(!B_N * !C * Y)	0.01292	0.02084	0.17415
	(!B_N * !C * Y)	0.00727	0.01516	0.16850
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.01986	0.03155	0.27546
	(B_N * Y)	0.01175	0.02340	0.26733
	(!B_N * C * !D * Y)	0.02104	0.03271	0.27672
	(!B_N * C * !D * Y)	0.01280	0.02444	0.26850
	(!B_N * !C * Y)	0.02101	0.03269	0.27670
	(!B_N * !C * Y)	0.01286	0.02450	0.26854

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4bb_1	(B_N * Y)	0.00050	0.00944	0.14976
	(B_N * Y)	0.00563	0.01459	0.15490
	(!B_N * C * !D * Y)	-0.00020	0.00875	0.14904
	(!B_N * C * !D * Y)	0.00509	0.01405	0.15432
	(!B_N * !C * Y)	-0.00022	0.00873	0.14903
	(!B_N * !C * Y)	0.00496	0.01391	0.15421
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.00162	0.01042	0.16304
	(B_N * Y)	0.00724	0.01607	0.16866
	(!B_N * C * !D * Y)	0.00078	0.00960	0.16218
	(!B_N * C * !D * Y)	0.00672	0.01557	0.16807
	(!B_N * !C * Y)	0.00074	0.00956	0.16218
	(!B_N * !C * Y)	0.00644	0.01529	0.16787
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.00345	0.01761	0.26216
	(B_N * Y)	0.01159	0.02575	0.27028
	(!B_N * C * !D * Y)	0.00236	0.01654	0.26110
	(!B_N * C * !D * Y)	0.01121	0.02538	0.26982
	(!B_N * !C * Y)	0.00230	0.01648	0.26110
	(!B_N * !C * Y)	0.01064	0.02482	0.26939

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)	0.00792	0.01525	0.15528
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00295	0.01025	0.15029
	(!C * Y)	0.00802	0.01571	0.15590
	(!C * Y)	0.00289	0.01054	0.15074
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.01179	0.01889	0.17082
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00629	0.01340	0.16532
	(!C * Y)	0.01200	0.01968	0.17195
	(!C * Y)	0.00622	0.01389	0.16618
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.01972	0.02994	0.27196
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.01141	0.02160	0.26362
	(!C * Y)	0.02045	0.03160	0.27450
	(!C * Y)	0.01153	0.02264	0.26554

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)	0.00185	0.01063	0.15078
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00683	0.01564	0.15576
	(!C * Y)	0.00089	0.00972	0.14994
	(!C * Y)	0.00599	0.01486	0.15507
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00436	0.01298	0.16455
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00985	0.01850	0.17004
	(!C * Y)	0.00250	0.01121	0.16312
	(!C * Y)	0.00824	0.01697	0.16886
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00821	0.02222	0.26600
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.01651	0.03059	0.27430
	(!C * Y)	0.00449	0.01869	0.26285
	(!C * Y)	0.01330	0.02755	0.27168

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)**	0.00244	0.00246	0.00244
	(A_N * B_N * D * Y)	-0.00309	-0.00310	-0.00309
	(A_N * B_N * !D * Y)	0.00157	0.00158	0.00157
	(A_N * B_N * !D * Y)	-0.00310	-0.00311	-0.00310
	(A_N * !B_N * D * Y)	0.00213	0.00214	0.00213
	(A_N * !B_N * D * Y)	-0.00342	-0.00342	-0.00341
	(A_N * !B_N * !D * Y)	0.00114	0.00115	0.00114
	(A_N * !B_N * !D * Y)	-0.00372	-0.00374	-0.00373
	(!A_N * B_N * D * Y)	0.00243	0.00244	0.00243
	(!A_N * B_N * D * Y)	-0.00310	-0.00310	-0.00309
	(!A_N * B_N * !D * Y)	0.00149	0.00150	0.00149
	(!A_N * B_N * !D * Y)	-0.00311	-0.00311	-0.00311
	(!A_N * !B_N * !D * Y)	0.00090	0.00090	0.00090
	(!A_N * !B_N * !D * Y)	-0.00346	-0.00346	-0.00346
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	0.00460	0.00462	0.00460
	(A_N * B_N * D * Y)	-0.00608	-0.00609	-0.00608
	(A_N * B_N * !D * Y)	0.00276	0.00278	0.00277
	(A_N * B_N * !D * Y)	-0.00608	-0.00609	-0.00609
	(A_N * !B_N * D * Y)	0.00449	0.00451	0.00449
	(A_N * !B_N * D * Y)	-0.00624	-0.00622	-0.00621
	(A_N * !B_N * !D * Y)	0.00249	0.00249	0.00250
	(A_N * !B_N * !D * Y)	-0.00682	-0.00682	-0.00684
	(!A_N * B_N * D * Y)	0.00458	0.00461	0.00459
	(!A_N * B_N * D * Y)	-0.00608	-0.00610	-0.00608
	(!A_N * B_N * !D * Y)	0.00262	0.00264	0.00263
	(!A_N * B_N * !D * Y)	-0.00609	-0.00610	-0.00610
	(!A_N * !B_N * !D * Y)	0.00194	0.00195	0.00197
	(!A_N * !B_N * !D * Y)	-0.00625	-0.00626	-0.00627

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * D * Y)**	0.00913	0.00920	0.00916
	(A_N * B_N * D * Y)	-0.01189	-0.01194	-0.01190
	(A_N * B_N * !D * Y)	0.00549	0.00549	0.00549
	(A_N * B_N * !D * Y)	-0.01193	-0.01192	-0.01191
	(A_N * !B_N * D * Y)	0.00883	0.00888	0.00883
	(A_N * !B_N * D * Y)	-0.01235	-0.01231	-0.01229
	(A_N * !B_N * !D * Y)	0.00478	0.00478	0.00477
	(A_N * !B_N * !D * Y)	-0.01355	-0.01355	-0.01354
	(!A_N * B_N * D * Y)	0.00911	0.00918	0.00915
	(!A_N * B_N * D * Y)	-0.01190	-0.01194	-0.01192
	(!A_N * B_N * !D * Y)	0.00518	0.00518	0.00517
	(!A_N * B_N * !D * Y)	-0.01197	-0.01197	-0.01196
	(!A_N * !B_N * !D * Y)	0.00370	0.00372	0.00377
	(!A_N * !B_N * !D * Y)	-0.01238	-0.01240	-0.01244

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)**	-0.00235	-0.00241	-0.00239
	(A_N * B_N * D * Y)	0.00312	0.00316	0.00313
	(A_N * B_N * !D * Y)	-0.00157	-0.00158	-0.00157
	(A_N * B_N * !D * Y)	0.00315	0.00319	0.00315
	(A_N * !B_N * D * Y)	-0.00192	-0.00209	-0.00211
	(A_N * !B_N * D * Y)	0.00358	0.00350	0.00343
	(A_N * !B_N * !D * Y)	-0.00114	-0.00115	-0.00114
	(A_N * !B_N * !D * Y)	0.00380	0.00390	0.00382
	(!A_N * B_N * D * Y)	-0.00232	-0.00242	-0.00241
	(!A_N * B_N * D * Y)	0.00316	0.00315	0.00312
	(!A_N * B_N * !D * Y)	-0.00149	-0.00150	-0.00149
	(!A_N * B_N * !D * Y)	0.00323	0.00328	0.00317
	(!A_N * !B_N * !D * Y)	-0.00084	-0.00086	-0.00086
	(!A_N * !B_N * !D * Y)	0.00350	0.00356	0.00350
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	-0.00447	-0.00460	-0.00458
	(A_N * B_N * D * Y)	0.00608	0.00613	0.00611
	(A_N * B_N * !D * Y)	-0.00276	-0.00278	-0.00277
	(A_N * B_N * !D * Y)	0.00610	0.00619	0.00612
	(A_N * !B_N * D * Y)	-0.00410	-0.00447	-0.00449
	(A_N * !B_N * D * Y)	0.00658	0.00622	0.00621
	(A_N * !B_N * !D * Y)	-0.00249	-0.00249	-0.00250
	(A_N * !B_N * !D * Y)	0.00693	0.00710	0.00698
	(!A_N * B_N * D * Y)	-0.00441	-0.00460	-0.00458
	(!A_N * B_N * D * Y)	0.00617	0.00613	0.00611
	(!A_N * B_N * !D * Y)	-0.00262	-0.00264	-0.00263
	(!A_N * B_N * !D * Y)	0.00636	0.00644	0.00621
	(!A_N * !B_N * !D * Y)	-0.00183	-0.00186	-0.00185
	(!A_N * !B_N * !D * Y)	0.00638	0.00647	0.00637

sky130_fd_sc_hs__nand4bb_4	(A_N * B_N * D * Y)	-0.00890	-0.00916	-0.00912
	(A_N * B_N * D * Y)	0.01195	0.01203	0.01201
	(A_N * B_N * !D * Y)	-0.00549	-0.00549	-0.00549
	(A_N * B_N * !D * Y)	0.01199	0.01217	0.01203
	(A_N * !B_N * D * Y)	-0.00791	-0.00888	-0.00883
	(A_N * !B_N * D * Y)	0.01301	0.01231	0.01229
	(A_N * !B_N * !D * Y)	-0.00478	-0.00478	-0.00477
	(A_N * !B_N * !D * Y)	0.01382	0.01399	0.01389
	(!A_N * B_N * D * Y)	-0.00869	-0.00918	-0.00914
	(!A_N * B_N * D * Y)	0.01220	0.01202	0.01199
	(!A_N * B_N * !D * Y)	-0.00518	-0.00518	-0.00517
	(!A_N * B_N * !D * Y)	0.01248	0.01265	0.01218
	(!A_N * !B_N * !D * Y)	-0.00351	-0.00356	-0.00358
	(!A_N * !B_N * !D * Y)	0.01266	0.01284	0.01261

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)	0.00218	0.00218	0.00218
	(A_N * B_N * C * Y)	-0.00325	-0.00325	-0.00324
	(A_N * !C * Y)	0.00219	0.00220	0.00219
	(A_N * !C * Y)	-0.00324	-0.00325	-0.00324
	(A_N * !B_N * C * Y)	0.00212	0.00213	0.00212
	(A_N * !B_N * C * Y)	-0.00329	-0.00331	-0.00330
	(!A_N * B_N * C * Y)	0.00216	0.00217	0.00216
	(!A_N * B_N * C * Y)	-0.00326	-0.00327	-0.00325
	(!A_N * B_N * !C * Y)	0.00217	0.00219	0.00218
	(!A_N * B_N * !C * Y)	-0.00324	-0.00326	-0.00325
	(!A_N * !B_N * !C * Y)	0.00216	0.00218	0.00217
	(!A_N * !B_N * !C * Y)	-0.00326	-0.00327	-0.00326

sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	0.00453	0.00454	0.00452
	(A_N * B_N * C * Y)	-0.00596	-0.00595	-0.00594
	(A_N * !C * Y)	0.00456	0.00457	0.00456
	(A_N * !C * Y)	-0.00595	-0.00595	-0.00594
	(A_N * !B_N * C * Y)	0.00445	0.00447	0.00446
	(A_N * !B_N * C * Y)	-0.00604	-0.00606	-0.00605
	(!A_N * B_N * C * Y)	0.00451	0.00453	0.00450
	(!A_N * B_N * C * Y)	-0.00596	-0.00597	-0.00595
	(!A_N * B_N * !C * Y)	0.00455	0.00459	0.00455
	(!A_N * B_N * !C * Y)	-0.00595	-0.00598	-0.00595
	(!A_N * !B_N * !C * Y)	0.00452	0.00454	0.00452
	(!A_N * !B_N * !C * Y)	-0.00596	-0.00597	-0.00595
sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	0.00904	0.00905	0.00902
	(A_N * B_N * C * Y)	-0.01184	-0.01184	-0.01182
	(A_N * !C * Y)	0.00904	0.00913	0.00909
	(A_N * !C * Y)	-0.01178	-0.01185	-0.01182
	(A_N * !B_N * C * Y)	0.00889	0.00889	0.00887
	(A_N * !B_N * C * Y)	-0.01208	-0.01208	-0.01205
	(!A_N * B_N * C * Y)	0.00900	0.00901	0.00897
	(!A_N * B_N * C * Y)	-0.01186	-0.01187	-0.01184
	(!A_N * B_N * !C * Y)	0.00888	0.00897	0.00893
	(!A_N * B_N * !C * Y)	-0.01180	-0.01187	-0.01184
	(!A_N * !B_N * !C * Y)	0.00897	0.00905	0.00901
	(!A_N * !B_N * !C * Y)	-0.01183	-0.01189	-0.01186

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)**	-0.00199	-0.00211	-0.00213
	(A_N * B_N * C * Y)	0.00328	0.00333	0.00329
	(A_N * !C * Y)	-0.00206	-0.00215	-0.00214
	(A_N * !C * Y)	0.00328	0.00330	0.00329
	(A_N * !B_N * C * Y)	-0.00194	-0.00211	-0.00212
	(A_N * !B_N * C * Y)	0.00339	0.00334	0.00331
	(!A_N * B_N * C * Y)	-0.00200	-0.00213	-0.00214
	(!A_N * B_N * C * Y)	0.00328	0.00332	0.00328
	(!A_N * B_N * !C * Y)	-0.00207	-0.00216	-0.00215
	(!A_N * B_N * !C * Y)	0.00327	0.00329	0.00328
	(!A_N * !B_N * !C * Y)	-0.00205	-0.00216	-0.00216
	(!A_N * !B_N * !C * Y)	0.00329	0.00328	0.00327
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	-0.00416	-0.00446	-0.00451
	(A_N * B_N * C * Y)	0.00599	0.00605	0.00598
	(A_N * !C * Y)	-0.00432	-0.00455	-0.00453
	(A_N * !C * Y)	0.00595	0.00599	0.00598
	(A_N * !B_N * C * Y)	-0.00403	-0.00444	-0.00446
	(A_N * !B_N * C * Y)	0.00621	0.00616	0.00605
	(!A_N * B_N * C * Y)	-0.00417	-0.00446	-0.00450
	(!A_N * B_N * C * Y)	0.00599	0.00605	0.00597
	(!A_N * B_N * !C * Y)	-0.00432	-0.00455	-0.00453
	(!A_N * B_N * !C * Y)	0.00595	0.00599	0.00597
	(!A_N * !B_N * !C * Y)	-0.00427	-0.00454	-0.00452
	(!A_N * !B_N * !C * Y)	0.00602	0.00599	0.00597

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	-0.00824	-0.00886	-0.00896
	(A_N * B_N * C * Y)	0.01186	0.01208	0.01194
	(A_N * !C * Y)	-0.00860	-0.00895	-0.00899
	(A_N * !C * Y)	0.01189	0.01203	0.01193
	(A_N * !B_N * C * Y)	-0.00806	-0.00879	-0.00887
	(A_N * !B_N * C * Y)	0.01239	0.01220	0.01208
	(!A_N * B_N * C * Y)	-0.00826	-0.00888	-0.00897
	(!A_N * B_N * C * Y)	0.01186	0.01206	0.01192
	(!A_N * B_N * !C * Y)	-0.00862	-0.00897	-0.00893
	(!A_N * B_N * !C * Y)	0.01188	0.01201	0.01192
	(!A_N * !B_N * !C * Y)	-0.00851	-0.00898	-0.00901
	(!A_N * !B_N * !C * Y)	0.01201	0.01200	0.01190

SKY130_FD_SC_HS__NAND4Bx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00224	0.00291	0.00291	0.00282	1.37130
sky130_fd_sc_hs__nand4b_2	0.00281	0.00575	0.00558	0.00559	2.00435
sky130_fd_sc_hs__nand4b_4	0.00393	0.00814	0.00830	0.00798	2.63904

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4b_1	0.00000	0.62901	1.16184
sky130_fd_sc_hs__nand4b_2	0.00000	0.34838	1.53728
sky130_fd_sc_hs__nand4b_4	0.00000	1.26343	2.34657

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)	0.05088	0.42941	5.44187
	B->Y (FR)	0.03591	0.68520	10.09530
	C->Y (FR)	0.04185	0.69275	10.10010
	D->Y (FR)	0.04434	0.68510	9.92627
sky130_fd_sc_hs__nand4b_2	A_N->Y (RR)	0.05195	0.29688	3.67319
	B->Y (FR)	0.03202	0.53419	8.32192
	C->Y (FR)	0.03782	0.54986	8.47468
	D->Y (FR)	0.04241	0.55414	8.43481
sky130_fd_sc_hs__nand4b_4	A_N->Y (RR)	0.06428	0.38116	5.55235
	B->Y (FR)	0.04330	0.58839	9.65311
	C->Y (FR)	0.05471	0.60151	9.67469
	D->Y (FR)	0.06632	0.62232	9.84860

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)	0.07067	0.65315	8.48685
	B->Y (RF)	0.03775	0.59074	8.76508
	C->Y (RF)	0.04332	0.55328	8.12927
	D->Y (RF)	0.04577	0.51371	7.51665
sky130_fd_sc_hs__nand4b_2	A_N->Y (FF)	0.07768	0.59316	8.22232
	B->Y (RF)	0.04255	0.51041	8.31391
	C->Y (RF)	0.04803	0.44307	7.24966
	D->Y (RF)	0.05260	0.41069	6.67454
sky130_fd_sc_hs__nand4b_4	A_N->Y (FF)	0.06099	0.44039	6.30588
	B->Y (RF)	0.03573	0.36951	6.51712
	C->Y (RF)	0.04211	0.31283	5.53366
	D->Y (RF)	0.04575	0.27161	4.78421

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	0.01062	0.01830	0.15921
	A_N	0.00624	0.01396	0.15484
	B	0.00071	0.00361	0.03456
	B	0.00731	0.00989	0.04133
	C	0.00163	0.00440	0.03589
	C	0.00946	0.01225	0.04372
	D	0.00225	0.00501	0.03770
	D	0.01151	0.01400	0.04707
sky130_fd_sc_hs__nand4b_2	A_N	0.01574	0.02347	0.15776
	A_N	0.01144	0.01927	0.15400
	B	0.00058	0.00587	0.06892
	B	0.01421	0.01954	0.08184
	C	0.00253	0.00754	0.07306
	C	0.01889	0.02399	0.08976
	D	0.00459	0.00951	0.07723
	D	0.02429	0.02931	0.09707
sky130_fd_sc_hs__nand4b_4	A_N	0.02018	0.03309	0.26465
	A_N	0.01386	0.02683	0.25893
	B	0.00060	0.00767	0.09421
	B	0.01977	0.02665	0.11280
	C	0.00384	0.01054	0.10022
	C	0.02946	0.03616	0.12575
	D	0.00737	0.01506	0.10571
	D	0.03900	0.04676	0.13750

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4b_1	A_N	0.00798	0.01674	0.14694
	A_N	0.01235	0.02112	0.15122
	B	0.00981	0.01065	0.02634
	B	0.00319	0.00407	0.01956
	C	0.01140	0.01230	0.02946
	C	0.00345	0.00429	0.02131
	D	0.01290	0.01373	0.03372
	D	0.00342	0.00426	0.02379
sky130_fd_sc_hs__nand4b_2	A_N	0.01456	0.02359	0.17850
	A_N	0.01885	0.02788	0.18260
	B	0.01970	0.02151	0.05430
	B	0.00601	0.00782	0.04059
	C	0.02291	0.02488	0.06364
	C	0.00628	0.00813	0.04698
	D	0.02641	0.02823	0.07285
	D	0.00619	0.00798	0.05213
sky130_fd_sc_hs__nand4b_4	A_N	0.02230	0.03750	0.28442
	A_N	0.02861	0.04378	0.28928
	B	0.03086	0.03370	0.07816
	B	0.01156	0.01432	0.05806
	C	0.03775	0.04059	0.09189
	C	0.01170	0.01437	0.06570
	D	0.04434	0.04717	0.10722
	D	0.01176	0.01449	0.07402

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)	0.00858	0.01631	0.15784
	(B * C * !D * Y)	0.00324	0.01094	0.15248
	(B * !C * Y)	0.00857	0.01632	0.15775
	(B * !C * Y)	0.00325	0.01097	0.15240
	(!B * Y)	0.00853	0.01628	0.15770
	(!B * Y)	0.00325	0.01097	0.15240
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.01295	0.02109	0.17924
	(B * C * !D * Y)	0.00632	0.01445	0.17262
	(B * !C * Y)	0.01293	0.02108	0.17923
	(B * !C * Y)	0.00632	0.01446	0.17262
	(!B * Y)	0.01289	0.02102	0.17918
	(!B * Y)	0.00633	0.01446	0.17262
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.01531	0.02825	0.27561
	(B * C * !D * Y)	0.00599	0.01894	0.26632
	(B * !C * Y)	0.01528	0.02822	0.27559
	(B * !C * Y)	0.00599	0.01894	0.26633
	(!B * Y)	0.01518	0.02811	0.27547
	(!B * Y)	0.00602	0.01895	0.26632

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)	0.00049	0.00932	0.15075
	(B * C * !D * Y)	0.00600	0.01487	0.15625
	(B * !C * Y)	0.00049	0.00931	0.15065
	(B * !C * Y)	0.00593	0.01478	0.15609
	(!B * Y)	0.00051	0.00934	0.15070
	(!B * Y)	0.00581	0.01467	0.15601
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.00057	0.00969	0.16721
	(B * C * !D * Y)	0.00756	0.01670	0.17412
	(B * !C * Y)	0.00053	0.00966	0.16721
	(B * !C * Y)	0.00737	0.01652	0.17401
	(!B * Y)	0.00053	0.00967	0.16728
	(!B * Y)	0.00710	0.01626	0.17385
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.00152	0.01680	0.26426
	(B * C * !D * Y)	0.01162	0.02686	0.27417
	(B * !C * Y)	0.00146	0.01674	0.26426
	(B * !C * Y)	0.01126	0.02650	0.27396
	(!B * Y)	0.00149	0.01681	0.26441
	(!B * Y)	0.01073	0.02601	0.27362

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)**	0.00250	0.00251	0.00250
	(A_N * C * D * Y)	-0.00298	-0.00298	-0.00298
	(A_N * C * !D * Y)	0.00151	0.00152	0.00152
	(A_N * C * !D * Y)	-0.00297	-0.00298	-0.00298
	(A_N * !C * Y)	0.00154	0.00154	0.00154
	(A_N * !C * Y)	-0.00297	-0.00297	-0.00298
	(!A_N * C * !D * Y)	0.00081	0.00082	0.00083
	(!A_N * C * !D * Y)	-0.00337	-0.00339	-0.00342
	(!A_N * !C * Y)	0.00088	0.00087	0.00087
	(!A_N * !C * Y)	-0.00342	-0.00342	-0.00343
sky130_fd_sc_hs__nand4b_2	**(A_N * C * D * Y)**	0.00458	0.00461	0.00460
	(A_N * C * D * Y)	-0.00627	-0.00630	-0.00629
	(A_N * C * !D * Y)	0.00269	0.00270	0.00271
	(A_N * C * !D * Y)	-0.00631	-0.00633	-0.00633
	(A_N * !C * Y)	0.00277	0.00277	0.00276
	(A_N * !C * Y)	-0.00636	-0.00637	-0.00635
	(!A_N * C * !D * Y)	0.00175	0.00175	0.00177
	(!A_N * C * !D * Y)	-0.00664	-0.00663	-0.00671
	(!A_N * !C * Y)	0.00186	0.00186	0.00187
	(!A_N * !C * Y)	-0.00669	-0.00669	-0.00673
sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	0.00878	0.00885	0.00882
	(A_N * C * D * Y)	-0.00649	-0.00652	-0.00650
	(A_N * C * !D * Y)	0.00491	0.00494	0.00490
	(A_N * C * !D * Y)	-0.00658	-0.00661	-0.00658
	(A_N * !C * Y)	0.00498	0.00498	0.00496
	(A_N * !C * Y)	-0.00663	-0.00663	-0.00661
	(!A_N * C * !D * Y)	0.00325	0.00327	0.00330
	(!A_N * C * !D * Y)	-0.00696	-0.00698	-0.00714
	(!A_N * !C * Y)	0.00346	0.00348	0.00348
	(!A_N * !C * Y)	-0.00711	-0.00714	-0.00718

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)	-0.00225	-0.00248	-0.00247
	(A_N * C * D * Y)	0.00319	0.00301	0.00300
	(A_N * C * !D * Y)	-0.00151	-0.00152	-0.00152
	(A_N * C * !D * Y)	0.00315	0.00313	0.00302
	(A_N * !C * Y)	-0.00154	-0.00154	-0.00154
	(A_N * !C * Y)	0.00311	0.00316	0.00303
	(!A_N * C * !D * Y)	-0.00081	-0.00082	-0.00083
	(!A_N * C * !D * Y)	0.00345	0.00351	0.00345
	(!A_N * !C * Y)	-0.00083	-0.00084	-0.00085
	(!A_N * !C * Y)	0.00346	0.00351	0.00345
sky130_fd_sc_hs__nand4b_2	(A_N * C * D * Y)	-0.00402	-0.00461	-0.00459
	(A_N * C * D * Y)	0.00684	0.00636	0.00631
	(A_N * C * !D * Y)	-0.00269	-0.00270	-0.00271
	(A_N * C * !D * Y)	0.00664	0.00652	0.00635
	(A_N * !C * Y)	-0.00277	-0.00277	-0.00276
	(A_N * !C * Y)	0.00662	0.00671	0.00644
	(!A_N * C * !D * Y)	-0.00171	-0.00173	-0.00176
	(!A_N * C * !D * Y)	0.00683	0.00692	0.00678
	(!A_N * !C * Y)	-0.00176	-0.00178	-0.00181
	(!A_N * !C * Y)	0.00683	0.00691	0.00679

sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	-0.00757	-0.00881	-0.00880
	(A_N * C * D * Y)	0.00771	0.00663	0.00656
	(A_N * C * !D * Y)	-0.00491	-0.00494	-0.00490
	(A_N * C * !D * Y)	0.00731	0.00700	0.00665
	(A_N * !C * Y)	-0.00498	-0.00498	-0.00496
	(A_N * !C * Y)	0.00712	0.00723	0.00678
	(!A_N * C * !D * Y)	-0.00320	-0.00324	-0.00328
	(!A_N * C * !D * Y)	0.00734	0.00744	0.00725
	(!A_N * !C * Y)	-0.00329	-0.00334	-0.00338
	(!A_N * !C * Y)	0.00735	0.00745	0.00726

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)**	0.00221	0.00222	0.00221
	(A_N * B * D * Y)	-0.00298	-0.00298	-0.00297
	(A_N * B * !D * Y)	0.00120	0.00120	0.00121
	(A_N * B * !D * Y)	-0.00296	-0.00296	-0.00297
	(A_N * !B * D * Y)	0.00223	0.00224	0.00223
	(A_N * !B * D * Y)	-0.00297	-0.00298	-0.00297
	(A_N * !B * !D * Y)	0.00119	0.00119	0.00119
	(A_N * !B * !D * Y)	-0.00297	-0.00298	-0.00297
	(!A_N * B * !D * Y)	0.00085	0.00086	0.00086
	(!A_N * B * !D * Y)	-0.00305	-0.00306	-0.00304
	(!A_N * !B * D * Y)	0.00214	0.00215	0.00214
	(!A_N * !B * D * Y)	-0.00306	-0.00306	-0.00306
	(!A_N * !B * !D * Y)	0.00102	0.00103	0.00103
	(!A_N * !B * !D * Y)	-0.00307	-0.00308	-0.00307

sky130_fd_sc_hs__nand4b_2	**(A_N * B * D * Y)**	0.00444	0.00445	0.00444
	(A_N * B * D * Y)	-0.00606	-0.00606	-0.00605
	(A_N * B * !D * Y)	0.00244	0.00246	0.00245
	(A_N * B * !D * Y)	-0.00608	-0.00612	-0.00609
	(A_N * !B * D * Y)	0.00450	0.00452	0.00450
	(A_N * !B * D * Y)	-0.00605	-0.00606	-0.00605
	(A_N * !B * !D * Y)	0.00248	0.00249	0.00248
	(A_N * !B * !D * Y)	-0.00605	-0.00606	-0.00606
	(!A_N * B * !D * Y)	0.00189	0.00191	0.00193
	(!A_N * B * !D * Y)	-0.00600	-0.00603	-0.00600
	(!A_N * !B * D * Y)	0.00444	0.00447	0.00446
	(!A_N * !B * D * Y)	-0.00604	-0.00606	-0.00605
	(!A_N * !B * !D * Y)	0.00233	0.00235	0.00234
	(!A_N * !B * !D * Y)	-0.00605	-0.00608	-0.00607
sky130_fd_sc_hs__nand4b_4	**(A_N * B * D * Y)**	0.00895	0.00899	0.00896
	(A_N * B * D * Y)	-0.00647	-0.00649	-0.00647
	(A_N * B * !D * Y)	0.00475	0.00477	0.00474
	(A_N * B * !D * Y)	-0.00654	-0.00656	-0.00653
	(A_N * !B * D * Y)	0.00890	0.00897	0.00894
	(A_N * !B * D * Y)	-0.00645	-0.00648	-0.00646
	(A_N * !B * !D * Y)	0.00468	0.00473	0.00471
	(A_N * !B * !D * Y)	-0.00644	-0.00648	-0.00647
	(!A_N * B * !D * Y)	0.00372	0.00371	0.00374
	(!A_N * B * !D * Y)	-0.00645	-0.00644	-0.00639
	(!A_N * !B * D * Y)	0.00890	0.00897	0.00894
	(!A_N * !B * D * Y)	-0.00647	-0.00650	-0.00648
	(!A_N * !B * !D * Y)	0.00447	0.00446	0.00445
	(!A_N * !B * !D * Y)	-0.00652	-0.00652	-0.00651

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)	-0.00198	-0.00217	-0.00219
	(A_N * B * D * Y)	0.00302	0.00303	0.00300
	(A_N * B * !D * Y)	-0.00120	-0.00120	-0.00121
	(A_N * B * !D * Y)	0.00303	0.00310	0.00301
	(A_N * !B * D * Y)	-0.00212	-0.00221	-0.00220
	(A_N * !B * D * Y)	0.00299	0.00302	0.00300
	(A_N * !B * !D * Y)	-0.00119	-0.00119	-0.00119
	(A_N * !B * !D * Y)	0.00300	0.00303	0.00300
	(!A_N * B * !D * Y)	-0.00082	-0.00082	-0.00082
	(!A_N * B * !D * Y)	0.00313	0.00316	0.00309
	(!A_N * !B * D * Y)	-0.00200	-0.00214	-0.00213
	(!A_N * !B * D * Y)	0.00310	0.00309	0.00307
	(!A_N * !B * !D * Y)	-0.00102	-0.00103	-0.00103
	(!A_N * !B * !D * Y)	0.00318	0.00321	0.00311
sky130_fd_sc_hs__nand4b_2	(A_N * B * D * Y)	-0.00402	-0.00441	-0.00444
	(A_N * B * D * Y)	0.00616	0.00606	0.00607
	(A_N * B * !D * Y)	-0.00244	-0.00246	-0.00245
	(A_N * B * !D * Y)	0.00615	0.00624	0.00611
	(A_N * !B * D * Y)	-0.00429	-0.00450	-0.00448
	(A_N * !B * D * Y)	0.00609	0.00609	0.00607
	(A_N * !B * !D * Y)	-0.00248	-0.00249	-0.00248
	(A_N * !B * !D * Y)	0.00606	0.00615	0.00608
	(!A_N * B * !D * Y)	-0.00180	-0.00182	-0.00183
	(!A_N * B * !D * Y)	0.00615	0.00625	0.00612
	(!A_N * !B * D * Y)	-0.00420	-0.00447	-0.00446
	(!A_N * !B * D * Y)	0.00619	0.00608	0.00607
	(!A_N * !B * !D * Y)	-0.00233	-0.00235	-0.00234
	(!A_N * !B * !D * Y)	0.00633	0.00641	0.00617

sky130_fd_sc_hs__nand4b_4	(A_N * B * D * Y)	-0.00794	-0.00899	-0.00896
	(A_N * B * D * Y)	0.00680	0.00654	0.00653
	(A_N * B * !D * Y)	-0.00475	-0.00477	-0.00474
	(A_N * B * !D * Y)	0.00673	0.00690	0.00662
	(A_N * !B * D * Y)	-0.00864	-0.00897	-0.00894
	(A_N * !B * D * Y)	0.00655	0.00654	0.00652
	(A_N * !B * !D * Y)	-0.00468	-0.00473	-0.00471
	(A_N * !B * !D * Y)	0.00649	0.00660	0.00653
	(!A_N * B * !D * Y)	-0.00348	-0.00353	-0.00355
	(!A_N * B * !D * Y)	0.00672	0.00681	0.00660
	(!A_N * !B * D * Y)	-0.00837	-0.00897	-0.00894
	(!A_N * !B * D * Y)	0.00684	0.00652	0.00650
	(!A_N * !B * !D * Y)	-0.00447	-0.00446	-0.00445
	(!A_N * !B * !D * Y)	0.00699	0.00707	0.00667

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)	0.00217	0.00218	0.00217
	(A_N * B * C * Y)	-0.00291	-0.00292	-0.00291
	(A_N * !C * Y)	0.00222	0.00223	0.00222
	(A_N * !C * Y)	-0.00291	-0.00291	-0.00291
	(A_N * !B * C * Y)	0.00217	0.00217	0.00217
	(A_N * !B * C * Y)	-0.00291	-0.00291	-0.00291
	(!A_N * B * !C * Y)	0.00214	0.00216	0.00215
	(!A_N * B * !C * Y)	-0.00299	-0.00301	-0.00300
	(!A_N * !B * C * Y)	0.00208	0.00208	0.00207
	(!A_N * !B * C * Y)	-0.00300	-0.00300	-0.00300
	(!A_N * !B * !C * Y)	0.00213	0.00214	0.00213
	(!A_N * !B * !C * Y)	-0.00300	-0.00300	-0.00300

sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	0.00443	0.00446	0.00442
	(A_N * B * C * Y)	-0.00602	-0.00604	-0.00601
	(A_N * !C * Y)	0.00448	0.00450	0.00448
	(A_N * !C * Y)	-0.00601	-0.00602	-0.00601
	(A_N * !B * C * Y)	0.00446	0.00446	0.00445
	(A_N * !B * C * Y)	-0.00600	-0.00602	-0.00601
	(!A_N * B * !C * Y)	0.00448	0.00450	0.00448
	(!A_N * B * !C * Y)	-0.00600	-0.00603	-0.00601
	(!A_N * !B * C * Y)	0.00443	0.00444	0.00442
	(!A_N * !B * C * Y)	-0.00601	-0.00603	-0.00601
	(!A_N * !B * !C * Y)	0.00447	0.00449	0.00447
	(!A_N * !B * !C * Y)	-0.00600	-0.00603	-0.00601
sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	0.00867	0.00872	0.00867
	(A_N * B * C * Y)	-0.00599	-0.00600	-0.00598
	(A_N * !C * Y)	0.00894	0.00899	0.00895
	(A_N * !C * Y)	-0.00598	-0.00600	-0.00598
	(A_N * !B * C * Y)	0.00865	0.00872	0.00869
	(A_N * !B * C * Y)	-0.00597	-0.00599	-0.00598
	(!A_N * B * !C * Y)	0.00892	0.00899	0.00894
	(!A_N * B * !C * Y)	-0.00600	-0.00603	-0.00600
	(!A_N * !B * C * Y)	0.00864	0.00870	0.00867
	(!A_N * !B * C * Y)	-0.00599	-0.00601	-0.00600
	(!A_N * !B * !C * Y)	0.00892	0.00897	0.00893
	(!A_N * !B * !C * Y)	-0.00600	-0.00602	-0.00600

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)**	-0.00201	-0.00218	-0.00217
	(A_N * B * C * Y)	0.00292	0.00295	0.00294
	(A_N * !C * Y)	-0.00213	-0.00223	-0.00222
	(A_N * !C * Y)	0.00292	0.00295	0.00294
	(A_N * !B * C * Y)	-0.00203	-0.00217	-0.00217
	(A_N * !B * C * Y)	0.00293	0.00297	0.00294
	(!A_N * B * !C * Y)	-0.00204	-0.00216	-0.00215
	(!A_N * B * !C * Y)	0.00300	0.00302	0.00301
	(!A_N * !B * C * Y)	-0.00196	-0.00208	-0.00207
	(!A_N * !B * C * Y)	0.00300	0.00304	0.00301
	(!A_N * !B * !C * Y)	-0.00206	-0.00214	-0.00213
	(!A_N * !B * !C * Y)	0.00300	0.00303	0.00301
sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	-0.00402	-0.00441	-0.00442
	(A_N * B * C * Y)	0.00602	0.00611	0.00603
	(A_N * !C * Y)	-0.00430	-0.00450	-0.00448
	(A_N * !C * Y)	0.00601	0.00605	0.00603
	(A_N * !B * C * Y)	-0.00405	-0.00441	-0.00445
	(A_N * !B * C * Y)	0.00600	0.00610	0.00603
	(!A_N * B * !C * Y)	-0.00427	-0.00450	-0.00448
	(!A_N * B * !C * Y)	0.00600	0.00604	0.00603
	(!A_N * !B * C * Y)	-0.00404	-0.00442	-0.00442
	(!A_N * !B * C * Y)	0.00601	0.00610	0.00603
	(!A_N * !B * !C * Y)	-0.00431	-0.00449	-0.00447
	(!A_N * !B * !C * Y)	0.00600	0.00604	0.00603

sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	-0.00802	-0.00872	-0.00867
	(A_N * B * C * Y)	0.00606	0.00606	0.00604
	(A_N * !C * Y)	-0.00852	-0.00897	-0.00894
	(A_N * !C * Y)	0.00604	0.00608	0.00604
	(A_N * !B * C * Y)	-0.00805	-0.00872	-0.00869
	(A_N * !B * C * Y)	0.00604	0.00604	0.00604
	(!A_N * B * !C * Y)	-0.00846	-0.00898	-0.00894
	(!A_N * B * !C * Y)	0.00602	0.00606	0.00602
	(!A_N * !B * C * Y)	-0.00806	-0.00870	-0.00867
	(!A_N * !B * C * Y)	0.00604	0.00602	0.00602
	(!A_N * !B * !C * Y)	-0.00855	-0.00897	-0.00893
	(!A_N * !B * !C * Y)	0.00602	0.00606	0.00602

SKY130_FD_SC_HS__NAND4x

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00284	0.00300	0.00295	0.00295	1.32888
sky130_fd_sc_hs__nand4_2	0.00555	0.00561	0.00566	0.00550	1.95824
sky130_fd_sc_hs__nand4_4	0.00827	0.00809	0.00810	0.00831	2.53598

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4_1	0.00000	0.05060	0.76062
sky130_fd_sc_hs__nand4_2	0.00000	0.10120	1.52125
sky130_fd_sc_hs__nand4_4	0.00000	0.10732	1.52125

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)	0.02969	0.66031	9.68782
	B->Y (FR)	0.03809	0.68003	9.91429
	C->Y (FR)	0.04362	0.68699	9.92560
	D->Y (FR)	0.04635	0.68117	9.74368
sky130_fd_sc_hs__nand4_2	A->Y (FR)	0.02515	0.52834	8.31824
	B->Y (FR)	0.03268	0.53201	8.24579
	C->Y (FR)	0.03792	0.54036	8.28146
	D->Y (FR)	0.04266	0.55204	8.35641
sky130_fd_sc_hs__nand4_4	A->Y (FR)	0.03132	0.56982	9.43557
	B->Y (FR)	0.04623	0.58216	9.40897
	C->Y (FR)	0.06019	0.61062	9.70976
	D->Y (FR)	0.07087	0.62505	9.74816

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand4_1	A->Y (RF)	0.02977	0.59818	8.84695
	B->Y (RF)	0.03799	0.57507	8.41607
	C->Y (RF)	0.04286	0.53468	7.76385
	D->Y (RF)	0.04575	0.49535	7.13480
sky130_fd_sc_hs__nand4_2	A->Y (RF)	0.02837	0.52703	8.64172
	B->Y (RF)	0.04016	0.50684	8.21078
	C->Y (RF)	0.04593	0.43981	7.16311
	D->Y (RF)	0.04996	0.40642	6.56000
sky130_fd_sc_hs__nand4_4	A->Y (RF)	0.02182	0.38869	6.89855
	B->Y (RF)	0.03316	0.36176	6.29436
	C->Y (RF)	0.03956	0.30498	5.30343
	D->Y (RF)	0.04322	0.26331	4.55288

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	-0.00038	0.00258	0.03390
	A	0.00695	0.00992	0.04122
	B	0.00074	0.00354	0.03493
	B	0.00958	0.01212	0.04377
	C	0.00169	0.00445	0.03712
	C	0.01194	0.01456	0.04737
	D	0.00226	0.00503	0.03913
	D	0.01412	0.01689	0.05099
sky130_fd_sc_hs__nand4_2	A	-0.00203	0.00375	0.06501
	A	0.01159	0.01757	0.07792
	B	0.00093	0.00596	0.06941
	B	0.01785	0.02290	0.08688
	C	0.00237	0.00757	0.07365
	C	0.02264	0.02789	0.09408
	D	0.00459	0.00942	0.07775
	D	0.02794	0.03286	0.10103
sky130_fd_sc_hs__nand4_4	A	-0.00408	0.00545	0.09253
	A	0.01582	0.02547	0.11275
	B	0.00104	0.00817	0.09981
	B	0.02727	0.03444	0.12643
	C	0.00422	0.01104	0.10416
	C	0.03680	0.04368	0.13660
	D	0.00781	0.01437	0.11091
	D	0.04722	0.05388	0.15022

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	0.00870	0.00997	0.02763
	A	0.00139	0.00266	0.02022
	B	0.01040	0.01131	0.02731
	B	0.00149	0.00237	0.01836
	C	0.01192	0.01282	0.03157
	C	0.00150	0.00235	0.02053
	D	0.01355	0.01444	0.03520
	D	0.00145	0.00233	0.02309
sky130_fd_sc_hs__nand4_2	A	0.01585	0.01864	0.05414
	A	0.00225	0.00500	0.04029
	B	0.01938	0.02114	0.05389
	B	0.00232	0.00407	0.03655
	C	0.02297	0.02495	0.06433
	C	0.00229	0.00412	0.04335
	D	0.02623	0.02803	0.07330
	D	0.00223	0.00404	0.04840
sky130_fd_sc_hs__nand4_4	A	0.02469	0.02914	0.07654
	A	0.00477	0.00913	0.05600
	B	0.03147	0.03422	0.07974
	B	0.00496	0.00767	0.05198
	C	0.03828	0.04090	0.09481
	C	0.00504	0.00767	0.05876
	D	0.04531	0.04815	0.10985
	D	0.00468	0.00736	0.06742

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)	0.00081	0.00082	0.00075
	(B * C * !D * Y)	-0.00327	-0.00330	-0.00344
	(B * !C * Y)	0.00081	0.00081	0.00076
	(B * !C * Y)	-0.00333	-0.00335	-0.00345
	(!B * Y)	0.00081	0.00082	0.00079
	(!B * Y)	-0.00339	-0.00341	-0.00345
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	0.00146	0.00147	0.00130
	(B * C * !D * Y)	-0.00649	-0.00655	-0.00688
	(B * !C * Y)	0.00139	0.00140	0.00129
	(B * !C * Y)	-0.00666	-0.00670	-0.00691
	(!B * Y)	0.00147	0.00147	0.00141
	(!B * Y)	-0.00680	-0.00683	-0.00693
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	0.00284	0.00285	0.00256
	(B * C * !D * Y)	-0.00745	-0.00750	-0.00817
	(B * !C * Y)	0.00271	0.00270	0.00255
	(B * !C * Y)	-0.00776	-0.00777	-0.00822
	(!B * Y)	0.00283	0.00284	0.00274
	(!B * Y)	-0.00803	-0.00808	-0.00827

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)	-0.00075	-0.00077	-0.00075
	(B * C * !D * Y)	0.00343	0.00349	0.00345
	(B * !C * Y)	-0.00076	-0.00077	-0.00076
	(B * !C * Y)	0.00343	0.00349	0.00345
	(!B * Y)	-0.00078	-0.00079	-0.00078
	(!B * Y)	0.00347	0.00352	0.00346
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	-0.00131	-0.00134	-0.00130
	(B * C * !D * Y)	0.00691	0.00706	0.00694
	(B * !C * Y)	-0.00132	-0.00135	-0.00129
	(B * !C * Y)	0.00691	0.00706	0.00694
	(!B * Y)	-0.00137	-0.00140	-0.00137
	(!B * Y)	0.00692	0.00707	0.00695
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	-0.00257	-0.00262	-0.00256
	(B * C * !D * Y)	0.00821	0.00836	0.00826
	(B * !C * Y)	-0.00258	-0.00263	-0.00255
	(B * !C * Y)	0.00822	0.00836	0.00826
	(!B * Y)	-0.00267	-0.00273	-0.00268
	(!B * Y)	0.00824	0.00842	0.00828

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)**	0.00083	0.00084	0.00085
	(A * C * !D * Y)	-0.00313	-0.00314	-0.00313
	(A * !C * Y)	0.00090	0.00090	0.00090
	(A * !C * Y)	-0.00314	-0.00314	-0.00313
	(!A * C * D * Y)	0.00216	0.00217	0.00216
	(!A * C * D * Y)	-0.00314	-0.00314	-0.00313
	(!A * C * !D * Y)	0.00110	0.00111	0.00111
	(!A * C * !D * Y)	-0.00314	-0.00315	-0.00315
	(!A * !C * Y)	0.00111	0.00111	0.00111
	(!A * !C * Y)	-0.00314	-0.00315	-0.00315
sky130_fd_sc_hs__nand4_2	**(A * C * !D * Y)**	0.00177	0.00179	0.00183
	(A * C * !D * Y)	-0.00600	-0.00601	-0.00600
	(A * !C * Y)	0.00181	0.00182	0.00184
	(A * !C * Y)	-0.00601	-0.00602	-0.00600
	(!A * C * D * Y)	0.00445	0.00447	0.00445
	(!A * C * D * Y)	-0.00603	-0.00603	-0.00601
	(!A * C * !D * Y)	0.00235	0.00236	0.00236
	(!A * C * !D * Y)	-0.00604	-0.00606	-0.00604
	(!A * !C * Y)	0.00225	0.00225	0.00224
	(!A * !C * Y)	-0.00606	-0.00607	-0.00605
sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	0.00342	0.00342	0.00348
	(A * C * !D * Y)	-0.00628	-0.00628	-0.00626
	(A * !C * Y)	0.00352	0.00355	0.00355
	(A * !C * Y)	-0.00629	-0.00632	-0.00627
	(!A * C * D * Y)	0.00877	0.00883	0.00881
	(!A * C * D * Y)	-0.00626	-0.00629	-0.00627
	(!A * C * !D * Y)	0.00447	0.00448	0.00447
	(!A * C * !D * Y)	-0.00633	-0.00634	-0.00633
	(!A * !C * Y)	0.00426	0.00432	0.00428
	(!A * !C * Y)	-0.00633	-0.00639	-0.00635

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)	-0.00083	-0.00084	-0.00085
	(A * C * !D * Y)	0.00318	0.00323	0.00316
	(A * !C * Y)	-0.00086	-0.00087	-0.00088
	(A * !C * Y)	0.00318	0.00323	0.00316
	(!A * C * D * Y)	-0.00190	-0.00214	-0.00215
	(!A * C * D * Y)	0.00333	0.00316	0.00314
	(!A * C * !D * Y)	-0.00110	-0.00111	-0.00111
	(!A * C * !D * Y)	0.00330	0.00328	0.00317
	(!A * !C * Y)	-0.00111	-0.00111	-0.00111
	(!A * !C * Y)	0.00326	0.00332	0.00319
sky130_fd_sc_hs__nand4_2	(A * C * !D * Y)	-0.00169	-0.00172	-0.00174
	(A * C * !D * Y)	0.00614	0.00623	0.00607
	(A * !C * Y)	-0.00173	-0.00175	-0.00179
	(A * !C * Y)	0.00615	0.00622	0.00607
	(!A * C * D * Y)	-0.00381	-0.00447	-0.00445
	(!A * C * D * Y)	0.00662	0.00607	0.00603
	(!A * C * !D * Y)	-0.00235	-0.00236	-0.00236
	(!A * C * !D * Y)	0.00640	0.00626	0.00606
	(!A * !C * Y)	-0.00225	-0.00225	-0.00224
	(!A * !C * Y)	0.00628	0.00639	0.00613

sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	-0.00329	-0.00332	-0.00336
	(A * C * !D * Y)	0.00653	0.00660	0.00636
	(A * !C * Y)	-0.00337	-0.00340	-0.00345
	(A * !C * Y)	0.00653	0.00660	0.00636
	(!A * C * D * Y)	-0.00742	-0.00883	-0.00881
	(!A * C * D * Y)	0.00754	0.00636	0.00630
	(!A * C * !D * Y)	-0.00447	-0.00448	-0.00447
	(!A * C * !D * Y)	0.00710	0.00675	0.00637
	(!A * !C * Y)	-0.00426	-0.00432	-0.00428
	(!A * !C * Y)	0.00681	0.00691	0.00647

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)**	0.00086	0.00087	0.00088
	(A * B * !D * Y)	-0.00305	-0.00306	-0.00305
	(A * !B * D * Y)	0.00215	0.00215	0.00214
	(A * !B * D * Y)	-0.00308	-0.00309	-0.00308
	(A * !B * !D * Y)	0.00104	0.00105	0.00105
	(A * !B * !D * Y)	-0.00310	-0.00311	-0.00310
	(!A * B * D * Y)	0.00211	0.00211	0.00210
	(!A * B * D * Y)	-0.00309	-0.00309	-0.00308
	(!A * B * !D * Y)	0.00105	0.00106	0.00105
	(!A * B * !D * Y)	-0.00309	-0.00310	-0.00310
	(!A * !B * D * Y)	0.00215	0.00216	0.00214
	(!A * !B * D * Y)	-0.00308	-0.00310	-0.00308
	(!A * !B * !D * Y)	0.00111	0.00112	0.00111
	(!A * !B * !D * Y)	-0.00310	-0.00312	-0.00310

sky130_fd_sc_hs__nand4_2	**(A * B * !D * Y)**	0.00192	0.00192	0.00192
	(A * B * !D * Y)	-0.00592	-0.00591	-0.00590
	(A * !B * D * Y)	0.00449	0.00453	0.00451
	(A * !B * D * Y)	-0.00599	-0.00602	-0.00601
	(A * !B * !D * Y)	0.00230	0.00231	0.00230
	(A * !B * !D * Y)	-0.00600	-0.00603	-0.00601
	(!A * B * D * Y)	0.00445	0.00447	0.00445
	(!A * B * D * Y)	-0.00601	-0.00603	-0.00601
	(!A * B * !D * Y)	0.00236	0.00237	0.00235
	(!A * B * !D * Y)	-0.00605	-0.00606	-0.00603
	(!A * !B * D * Y)	0.00448	0.00450	0.00448
	(!A * !B * D * Y)	-0.00600	-0.00603	-0.00601
	(!A * !B * !D * Y)	0.00243	0.00243	0.00242
	(!A * !B * !D * Y)	-0.00602	-0.00604	-0.00601
sky130_fd_sc_hs__nand4_4	**(A * B * !D * Y)**	0.00358	0.00357	0.00356
	(A * B * !D * Y)	-0.00605	-0.00604	-0.00599
	(A * !B * D * Y)	0.00862	0.00868	0.00865
	(A * !B * D * Y)	-0.00620	-0.00621	-0.00620
	(A * !B * !D * Y)	0.00425	0.00429	0.00428
	(A * !B * !D * Y)	-0.00618	-0.00622	-0.00621
	(!A * B * D * Y)	0.00854	0.00861	0.00856
	(!A * B * D * Y)	-0.00620	-0.00623	-0.00620
	(!A * B * !D * Y)	0.00432	0.00432	0.00431
	(!A * B * !D * Y)	-0.00625	-0.00625	-0.00624
	(!A * !B * D * Y)	0.00863	0.00865	0.00864
	(!A * !B * D * Y)	-0.00621	-0.00621	-0.00620
	(!A * !B * !D * Y)	0.00449	0.00452	0.00450
	(!A * !B * !D * Y)	-0.00620	-0.00623	-0.00621

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)	-0.00083	-0.00083	-0.00083
	(A * B * !D * Y)	0.00315	0.00318	0.00312
	(A * !B * D * Y)	-0.00201	-0.00214	-0.00214
	(A * !B * D * Y)	0.00308	0.00312	0.00309
	(A * !B * !D * Y)	-0.00104	-0.00105	-0.00105
	(A * !B * !D * Y)	0.00320	0.00323	0.00314
	(!A * B * D * Y)	-0.00188	-0.00209	-0.00210
	(!A * B * D * Y)	0.00311	0.00313	0.00309
	(!A * B * !D * Y)	-0.00105	-0.00106	-0.00105
	(!A * B * !D * Y)	0.00313	0.00319	0.00311
	(!A * !B * D * Y)	-0.00204	-0.00214	-0.00214
	(!A * !B * D * Y)	0.00308	0.00312	0.00309
	(!A * !B * !D * Y)	-0.00111	-0.00112	-0.00111
	(!A * !B * !D * Y)	0.00310	0.00314	0.00311
sky130_fd_sc_hs__nand4_2	(A * B * !D * Y)	-0.00176	-0.00178	-0.00179
	(A * B * !D * Y)	0.00616	0.00624	0.00608
	(A * !B * D * Y)	-0.00420	-0.00453	-0.00451
	(A * !B * D * Y)	0.00602	0.00605	0.00603
	(A * !B * !D * Y)	-0.00230	-0.00231	-0.00230
	(A * !B * !D * Y)	0.00633	0.00637	0.00612
	(!A * B * D * Y)	-0.00390	-0.00444	-0.00445
	(!A * B * D * Y)	0.00615	0.00603	0.00603
	(!A * B * !D * Y)	-0.00236	-0.00237	-0.00235
	(!A * B * !D * Y)	0.00610	0.00619	0.00605
	(!A * !B * D * Y)	-0.00427	-0.00450	-0.00448
	(!A * !B * D * Y)	0.00600	0.00605	0.00603
	(!A * !B * !D * Y)	-0.00243	-0.00243	-0.00242
	(!A * !B * !D * Y)	0.00602	0.00610	0.00603

sky130_fd_sc_hs__nand4_4	(A * B * !D * Y)	-0.00329	-0.00332	-0.00334
	(A * B * !D * Y)	0.00647	0.00653	0.00631
	(A * !B * D * Y)	-0.00807	-0.00868	-0.00865
	(A * !B * D * Y)	0.00633	0.00623	0.00622
	(A * !B * !D * Y)	-0.00425	-0.00429	-0.00428
	(A * !B * !D * Y)	0.00674	0.00678	0.00638
	(!A * B * D * Y)	-0.00740	-0.00861	-0.00856
	(!A * B * D * Y)	0.00651	0.00623	0.00622
	(!A * B * !D * Y)	-0.00432	-0.00432	-0.00431
	(!A * B * !D * Y)	0.00637	0.00652	0.00627
	(!A * !B * D * Y)	-0.00828	-0.00865	-0.00864
	(!A * !B * D * Y)	0.00624	0.00623	0.00622
	(!A * !B * !D * Y)	-0.00449	-0.00452	-0.00450
	(!A * !B * !D * Y)	0.00621	0.00629	0.00623

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)	0.00213	0.00214	0.00214
	(A * B * !C * Y)	-0.00320	-0.00321	-0.00320
	(A * !B * C * Y)	0.00214	0.00215	0.00213
	(A * !B * C * Y)	-0.00320	-0.00322	-0.00320
	(A * !B * !C * Y)	0.00214	0.00214	0.00213
	(A * !B * !C * Y)	-0.00320	-0.00321	-0.00320
	(!A * B * C * Y)	0.00207	0.00208	0.00207
	(!A * B * C * Y)	-0.00320	-0.00321	-0.00320
	(!A * !C * Y)	0.00214	0.00214	0.00213
	(!A * !C * Y)	-0.00320	-0.00321	-0.00320
	(!A * !B * C * Y)	0.00213	0.00214	0.00213
	(!A * !B * C * Y)	-0.00320	-0.00321	-0.00320

sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	0.00449	0.00451	0.00450
	(A * B * !C * Y)	-0.00593	-0.00595	-0.00594
	(A * !B * C * Y)	0.00447	0.00450	0.00446
	(A * !B * C * Y)	-0.00595	-0.00597	-0.00594
	(A * !B * !C * Y)	0.00457	0.00459	0.00457
	(A * !B * !C * Y)	-0.00593	-0.00596	-0.00594
	(!A * B * C * Y)	0.00440	0.00443	0.00441
	(!A * B * C * Y)	-0.00593	-0.00595	-0.00594
	(!A * !C * Y)	0.00457	0.00458	0.00457
	(!A * !C * Y)	-0.00593	-0.00595	-0.00594
	(!A * !B * C * Y)	0.00448	0.00452	0.00448
	(!A * !B * C * Y)	-0.00594	-0.00597	-0.00594
sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	0.00915	0.00917	0.00914
	(A * B * !C * Y)	-0.00632	-0.00633	-0.00632
	(A * !B * C * Y)	0.00895	0.00899	0.00895
	(A * !B * C * Y)	-0.00632	-0.00634	-0.00632
	(A * !B * !C * Y)	0.00914	0.00918	0.00914
	(A * !B * !C * Y)	-0.00631	-0.00634	-0.00632
	(!A * B * C * Y)	0.00879	0.00884	0.00881
	(!A * B * C * Y)	-0.00632	-0.00634	-0.00632
	(!A * !C * Y)	0.00914	0.00917	0.00914
	(!A * !C * Y)	-0.00632	-0.00633	-0.00632
	(!A * !B * C * Y)	0.00889	0.00898	0.00895
	(!A * !B * C * Y)	-0.00629	-0.00633	-0.00632

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)**	-0.00206	-0.00214	-0.00214
	(A * B * !C * Y)	0.00322	0.00322	0.00321
	(A * !B * C * Y)	-0.00197	-0.00213	-0.00213
	(A * !B * C * Y)	0.00320	0.00324	0.00321
	(A * !B * !C * Y)	-0.00208	-0.00214	-0.00213
	(A * !B * !C * Y)	0.00321	0.00322	0.00321
	(!A * B * C * Y)	-0.00193	-0.00208	-0.00207
	(!A * B * C * Y)	0.00320	0.00324	0.00321
	(!A * !C * Y)	-0.00208	-0.00214	-0.00213
	(!A * !C * Y)	0.00321	0.00322	0.00321
	(!A * !B * C * Y)	-0.00197	-0.00213	-0.00213
	(!A * !B * C * Y)	0.00320	0.00324	0.00321
sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	-0.00426	-0.00451	-0.00450
	(A * B * !C * Y)	0.00593	0.00598	0.00596
	(A * !B * C * Y)	-0.00406	-0.00442	-0.00446
	(A * !B * C * Y)	0.00597	0.00603	0.00596
	(A * !B * !C * Y)	-0.00433	-0.00457	-0.00455
	(A * !B * !C * Y)	0.00593	0.00598	0.00596
	(!A * B * C * Y)	-0.00396	-0.00440	-0.00441
	(!A * B * C * Y)	0.00593	0.00599	0.00596
	(!A * !C * Y)	-0.00432	-0.00457	-0.00455
	(!A * !C * Y)	0.00593	0.00597	0.00596
	(!A * !B * C * Y)	-0.00406	-0.00442	-0.00448
	(!A * !B * C * Y)	0.00597	0.00603	0.00596

sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	-0.00856	-0.00917	-0.00914
	(A * B * !C * Y)	0.00632	0.00636	0.00634
	(A * !B * C * Y)	-0.00817	-0.00890	-0.00895
	(A * !B * C * Y)	0.00635	0.00641	0.00634
	(A * !B * !C * Y)	-0.00870	-0.00912	-0.00914
	(A * !B * !C * Y)	0.00631	0.00639	0.00634
	(!A * B * C * Y)	-0.00802	-0.00884	-0.00881
	(!A * B * C * Y)	0.00637	0.00637	0.00634
	(!A * !C * Y)	-0.00869	-0.00917	-0.00914
	(!A * !C * Y)	0.00632	0.00636	0.00634
	(!A * !B * C * Y)	-0.00818	-0.00890	-0.00895
	(!A * !B * C * Y)	0.00635	0.00641	0.00634

SKY130_FD_SC_HS__NOR2Bx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00284	0.00229	0.78024
sky130_fd_sc_hs__nor2b_2	0.00560	0.00266	1.33666
sky130_fd_sc_hs__nor2b_4	0.00926	0.00384	2.60785

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor2b_1	0.00000	0.65335	1.22343
sky130_fd_sc_hs__nor2b_2	0.00000	0.39706	0.62439
sky130_fd_sc_hs__nor2b_4	0.00000	1.44444	2.59293

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)	0.05052	0.77572	9.80945
	B_N->Y (RR)	0.06000	0.57387	5.99836
sky130_fd_sc_hs__nor2b_2	A->Y (FR)	0.04947	0.65809	9.50565
	B_N->Y (RR)	0.05498	0.45635	5.62976
sky130_fd_sc_hs__nor2b_4	A->Y (FR)	0.03877	0.53376	9.15129
	B_N->Y (RR)	0.05573	0.39563	6.03587

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2b_1	A->Y (RF)	0.01642	0.27475	3.35397
	B_N->Y (FF)	0.05280	0.35690	3.55204
sky130_fd_sc_hs__nor2b_2	A->Y (RF)	0.01457	0.21298	3.03339
	B_N->Y (FF)	0.05740	0.34372	3.29434
sky130_fd_sc_hs__nor2b_4	A->Y (RF)	0.02179	0.30884	5.31236
	B_N->Y (FF)	0.06116	0.37311	4.51175

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.00135	0.00323	0.04236
	A	0.00750	0.00938	0.04826
	B_N	0.01047	0.01786	0.15051
	B_N	0.00550	0.01288	0.14597
sky130_fd_sc_hs__nor2b_2	A	0.00276	0.00681	0.08745
	A	0.01509	0.01919	0.09996
	B_N	0.01517	0.02379	0.18573
	B_N	0.01023	0.01888	0.18126
sky130_fd_sc_hs__nor2b_4	A	0.00521	0.01075	0.09887
	A	0.02545	0.03094	0.11995
	B_N	0.02330	0.03578	0.27587
	B_N	0.01597	0.02855	0.27024

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.00726	0.00925	0.04203
	A	0.00113	0.00307	0.03567
	B_N	0.00558	0.01457	0.15429
	B_N	0.01054	0.01953	0.15921
sky130_fd_sc_hs__nor2b_2	A	0.01427	0.01843	0.08577
	A	0.00203	0.00614	0.07315
	B_N	0.01028	0.02003	0.16215
	B_N	0.01523	0.02494	0.16708
sky130_fd_sc_hs__nor2b_4	A	0.02225	0.02784	0.10782
	A	0.00209	0.00753	0.08597
	B_N	0.01475	0.03087	0.27620
	B_N	0.02207	0.03805	0.28346

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	0.00276	0.00236	0.00231
	(!B_N * !Y)	-0.00286	-0.00330	-0.00331
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	0.00582	0.00479	0.00471
	(!B_N * !Y)	-0.00497	-0.00610	-0.00610
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	0.00764	0.00582	0.00569
	(!B_N * !Y)	-0.01014	-0.01220	-0.01219

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	-0.00230	-0.00231	-0.00229
	(!B_N * !Y)	0.00332	0.00335	0.00332
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	-0.00468	-0.00471	-0.00468
	(!B_N * !Y)	0.00608	0.00615	0.00612
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	-0.00567	-0.00568	-0.00564
	(!B_N * !Y)	0.01221	0.01227	0.01224

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00641	0.01418	0.15646
	(A * !Y)	0.00102	0.00875	0.15106
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00832	0.01651	0.17629
	(A * !Y)	0.00222	0.01040	0.17020
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.01279	0.02508	0.27284
	(A * !Y)	0.00368	0.01593	0.26373

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00201	0.01120	0.15353
	(A * !Y)	0.00741	0.01661	0.15894
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00437	0.01420	0.17386
	(A * !Y)	0.01045	0.02029	0.17993
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.00518	0.02094	0.26936
	(A * !Y)	0.01425	0.03004	0.27846

SKY130_FD_SC_HS__NOR2x

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00285	0.00292	0.74925
sky130_fd_sc_hs__nor2_2	0.00454	0.00433	1.31969
sky130_fd_sc_hs__nor2_4	0.00869	0.00864	2.48298
sky130_fd_sc_hs__nor2_8	0.01697	0.01705	4.59754

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor2_1	0.00000	0.07494	0.19016
sky130_fd_sc_hs__nor2_2	0.00000	0.14416	0.38031
sky130_fd_sc_hs__nor2_4	0.00000	0.28832	0.76062
sky130_fd_sc_hs__nor2_8	0.00000	0.57664	1.52123

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)	0.04908	0.76251	9.55175
	B->Y (FR)	0.03839	0.79084	10.09530
sky130_fd_sc_hs__nor2_2	A->Y (FR)	0.04049	0.64085	9.29969
	B->Y (FR)	0.02460	0.66554	9.84308
sky130_fd_sc_hs__nor2_4	A->Y (FR)	0.04010	0.54351	9.17959
	B->Y (FR)	0.02404	0.58138	9.86449
sky130_fd_sc_hs__nor2_8	A->Y (FR)	0.04047	0.46290	9.10930
	B->Y (FR)	0.02960	0.52607	10.06120

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2_1	A->Y (RF)	0.01674	0.26949	3.23466
	B->Y (RF)	0.01447	0.26176	3.21038
sky130_fd_sc_hs__nor2_2	A->Y (RF)	0.02259	0.36119	5.15949
	B->Y (RF)	0.01644	0.34810	5.14349
sky130_fd_sc_hs__nor2_4	A->Y (RF)	0.02198	0.29634	5.00353
	B->Y (RF)	0.01572	0.27743	4.91915
sky130_fd_sc_hs__nor2_8	A->Y (RF)	0.02047	0.23729	4.78260
	B->Y (RF)	0.02254	0.22835	4.76111

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	-0.00091	0.00102	0.04140
	A	0.00740	0.00936	0.04980
	B	-0.00114	0.00271	0.05296
	B	0.00561	0.00946	0.05977
sky130_fd_sc_hs__nor2_2	A	-0.00154	0.00080	0.05007
	A	0.01236	0.01477	0.06431
	B	-0.00135	0.00373	0.06697
	B	0.00847	0.01359	0.07687
sky130_fd_sc_hs__nor2_4	A	-0.00041	0.00510	0.10382
	A	0.02664	0.03222	0.13084
	B	-0.00133	0.01022	0.13227
	B	0.01852	0.03015	0.15232
sky130_fd_sc_hs__nor2_8	A	-0.00196	0.01108	0.20141
	A	0.05128	0.06448	0.25593
	B	-0.00383	0.02007	0.26171
	B	0.03551	0.05940	0.30107

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	0.00930	0.01124	0.04503
	A	0.00101	0.00295	0.03650
	B	0.00645	0.00863	0.03946
	B	-0.00028	0.00187	0.03248
sky130_fd_sc_hs__nor2_2	A	0.01592	0.01835	0.06017
	A	0.00210	0.00450	0.04562
	B	0.00758	0.01083	0.05001
	B	-0.00225	0.00100	0.03947
sky130_fd_sc_hs__nor2_4	A	0.03027	0.03593	0.11846
	A	0.00342	0.00904	0.09107
	B	0.01512	0.02217	0.09904
	B	-0.00476	0.00229	0.07862
sky130_fd_sc_hs__nor2_8	A	0.05756	0.07341	0.23363
	A	0.00477	0.02035	0.18054
	B	0.03013	0.04733	0.19885
	B	-0.00929	0.00783	0.15623

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	0.00294	0.00253	0.00248
	(B * !Y)	-0.00246	-0.00292	-0.00293
sky130_fd_sc_hs__nor2_2	(B * !Y)	0.00421	0.00315	0.00307
	(B * !Y)	-0.00468	-0.00586	-0.00588
sky130_fd_sc_hs__nor2_4	(B * !Y)	0.00737	0.00516	0.00501
	(B * !Y)	-0.00942	-0.01179	-0.01183
sky130_fd_sc_hs__nor2_8	(B * !Y)	0.01397	0.00989	0.00968
	(B * !Y)	-0.01902	-0.02359	-0.02356

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	-0.00247	-0.00247	-0.00246
	(B * !Y)	0.00294	0.00295	0.00294
sky130_fd_sc_hs__nor2_2	(B * !Y)	-0.00306	-0.00308	-0.00305
	(B * !Y)	0.00585	0.00592	0.00588
sky130_fd_sc_hs__nor2_4	(B * !Y)	-0.00496	-0.00500	-0.00494
	(B * !Y)	0.01176	0.01193	0.01184
sky130_fd_sc_hs__nor2_8	(B * !Y)	-0.00961	-0.00963	-0.00955
	(B * !Y)	0.02351	0.02364	0.02357

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(A * !Y)	0.00279	0.00280	0.00278
	(A * !Y)	-0.00131	-0.00131	-0.00129
sky130_fd_sc_hs__nor2_2	(A * !Y)	0.00307	0.00308	0.00305
	(A * !Y)	-0.00265	-0.00265	-0.00263
sky130_fd_sc_hs__nor2_4	(A * !Y)	0.00613	0.00620	0.00616
	(A * !Y)	-0.00517	-0.00524	-0.00520
sky130_fd_sc_hs__nor2_8	(A * !Y)	0.01208	0.01223	0.01213
	(A * !Y)	-0.01025	-0.01038	-0.01029

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(A * !Y)	-0.00272	-0.00273	-0.00277
	(A * !Y)	0.00136	0.00135	0.00131
sky130_fd_sc_hs__nor2_2	(A * !Y)	-0.00284	-0.00286	-0.00303
	(A * !Y)	0.00280	0.00281	0.00267
sky130_fd_sc_hs__nor2_4	(A * !Y)	-0.00578	-0.00580	-0.00612
	(A * !Y)	0.00554	0.00552	0.00528
sky130_fd_sc_hs__nor2_8	(A * !Y)	-0.01140	-0.01154	-0.01208
	(A * !Y)	0.01083	0.01095	0.01044

SKY130_FD_SC_HS__NOR3Bx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00280	0.00292	0.00223	0.51783
sky130_fd_sc_hs__nor3b_2	0.00549	0.00548	0.00265	0.89505
sky130_fd_sc_hs__nor3b_4	0.01102	0.01095	0.00376	1.51981

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor3b_1	0.00000	0.62933	1.22343
sky130_fd_sc_hs__nor3b_2	0.00000	0.34902	0.62439
sky130_fd_sc_hs__nor3b_4	0.00000	1.35980	2.59293

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)	0.09305	0.86344	9.32336
	B->Y (FR)	0.08356	0.90344	10.00120
	C_N->Y (RR)	0.07788	0.68127	6.00699
sky130_fd_sc_hs__nor3b_2	A->Y (FR)	0.08942	0.71793	8.97235
	B->Y (FR)	0.07855	0.76932	9.85005
	C_N->Y (RR)	0.06636	0.54295	5.73808
sky130_fd_sc_hs__nor3b_4	A->Y (FR)	0.09335	0.61496	8.69494
	B->Y (FR)	0.08261	0.67043	9.63687
	C_N->Y (RR)	0.08479	0.51235	6.14303

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3b_1	A->Y (RF)	0.01750	0.23402	2.29149
	B->Y (RF)	0.01884	0.23759	2.37614
	C_N->Y (FF)	0.05475	0.33011	2.97906
sky130_fd_sc_hs__nor3b_2	A->Y (RF)	0.01431	0.17327	1.95625
	B->Y (RF)	0.01495	0.16416	1.90159
	C_N->Y (FF)	0.05872	0.32131	2.77778
sky130_fd_sc_hs__nor3b_4	A->Y (RF)	0.01396	0.13507	1.78790
	B->Y (RF)	0.01446	0.12584	1.73573
	C_N->Y (FF)	0.06492	0.30218	2.50432

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.00262	0.00368	0.04714
	A	0.01043	0.01150	0.05508
	B	0.00235	0.00377	0.04118
	B	0.00887	0.01030	0.04775
	C_N	0.01119	0.01847	0.15088
	C_N	0.00692	0.01420	0.14689
sky130_fd_sc_hs__nor3b_2	A	0.00402	0.00631	0.09636
	A	0.02042	0.02274	0.11296
	B	0.00400	0.00692	0.08111
	B	0.01684	0.01981	0.09400
	C_N	0.01626	0.02477	0.18678
	C_N	0.01219	0.02071	0.18298
sky130_fd_sc_hs__nor3b_4	A	0.00751	0.01259	0.18296
	A	0.04045	0.04555	0.21585
	B	0.00776	0.01406	0.15548
	B	0.03376	0.04012	0.18156
	C_N	0.02962	0.04184	0.29020
	C_N	0.02471	0.03696	0.28595

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.01049	0.01212	0.04929
	A	0.00274	0.00433	0.04154
	B	0.00790	0.00963	0.04280
	B	0.00142	0.00312	0.03630
	C_N	0.00607	0.01492	0.15391
	C_N	0.01033	0.01917	0.15819
sky130_fd_sc_hs__nor3b_2	A	0.02131	0.02495	0.10197
	A	0.00510	0.00873	0.08578
	B	0.01525	0.01912	0.08675
	B	0.00245	0.00624	0.07389
	C_N	0.01140	0.02098	0.16409
	C_N	0.01546	0.02506	0.16815
sky130_fd_sc_hs__nor3b_4	A	0.04188	0.04939	0.19778
	A	0.00934	0.01674	0.16519
	B	0.03004	0.03789	0.16609
	B	0.00412	0.01185	0.14011
	C_N	0.02507	0.03985	0.28970
	C_N	0.02994	0.04476	0.29461

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)	0.00257	0.00235	0.00232
	(B * C_N * !Y)	-0.00257	-0.00286	-0.00286
	(B * !C_N * !Y)	0.00222	0.00225	0.00222
	(B * !C_N * !Y)	-0.00290	-0.00296	-0.00295
	(!B * !C_N * !Y)	0.00237	0.00224	0.00222
	(!B * !C_N * !Y)	-0.00258	-0.00289	-0.00289
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	0.00508	0.00474	0.00467
	(B * C_N * !Y)	-0.00543	-0.00595	-0.00593
	(B * !C_N * !Y)	0.00469	0.00472	0.00467
	(B * !C_N * !Y)	-0.00580	-0.00597	-0.00592
	(!B * !C_N * !Y)	0.00492	0.00472	0.00468
	(!B * !C_N * !Y)	-0.00526	-0.00581	-0.00581
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	0.01092	0.01006	0.00995
	(B * C_N * !Y)	-0.01027	-0.01145	-0.01140
	(B * !C_N * !Y)	0.00933	0.00937	0.00928
	(B * !C_N * !Y)	-0.01180	-0.01212	-0.01203
	(!B * !C_N * !Y)	0.00971	0.00937	0.00928
	(!B * !C_N * !Y)	-0.01067	-0.01183	-0.01183

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)	-0.00230	-0.00230	-0.00230
	(B * C_N * !Y)	0.00287	0.00287	0.00287
	(B * !C_N * !Y)	-0.00221	-0.00222	-0.00222
	(B * !C_N * !Y)	0.00294	0.00296	0.00295
	(!B * !C_N * !Y)	-0.00222	-0.00222	-0.00221
	(!B * !C_N * !Y)	0.00289	0.00291	0.00289
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	-0.00464	-0.00466	-0.00465
	(B * C_N * !Y)	0.00591	0.00595	0.00593
	(B * !C_N * !Y)	-0.00465	-0.00468	-0.00466
	(B * !C_N * !Y)	0.00590	0.00597	0.00592
	(!B * !C_N * !Y)	-0.00467	-0.00466	-0.00466
	(!B * !C_N * !Y)	0.00582	0.00581	0.00581
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	-0.00988	-0.00994	-0.00991
	(B * C_N * !Y)	0.01134	0.01145	0.01140
	(B * !C_N * !Y)	-0.00925	-0.00931	-0.00927
	(B * !C_N * !Y)	0.01198	0.01212	0.01203
	(!B * !C_N * !Y)	-0.00922	-0.00925	-0.00924
	(!B * !C_N * !Y)	0.01176	0.01183	0.01183

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)	0.00273	0.00274	0.00270
	(A * C_N * !Y)	-0.00141	-0.00141	-0.00141
	(A * !C_N * !Y)	0.00250	0.00255	0.00241
	(A * !C_N * !Y)	-0.00216	-0.00218	-0.00216
	(!A * !C_N * !Y)	0.00296	0.00236	0.00232
	(!A * !C_N * !Y)	-0.00257	-0.00319	-0.00319
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	0.00481	0.00487	0.00481
	(A * C_N * !Y)	-0.00296	-0.00301	-0.00300
	(A * !C_N * !Y)	0.00501	0.00516	0.00489
	(A * !C_N * !Y)	-0.00392	-0.00393	-0.00391
	(!A * !C_N * !Y)	0.00608	0.00467	0.00463
	(!A * !C_N * !Y)	-0.00458	-0.00597	-0.00605
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	0.00986	0.00995	0.00978
	(A * C_N * !Y)	-0.00585	-0.00591	-0.00594
	(A * !C_N * !Y)	0.01020	0.01035	0.00979
	(A * !C_N * !Y)	-0.00776	-0.00784	-0.00780
	(!A * !C_N * !Y)	0.01235	0.00949	0.00932
	(!A * !C_N * !Y)	-0.00903	-0.01205	-0.01207

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)	-0.00265	-0.00267	-0.00266
	(A * C_N * !Y)	0.00145	0.00147	0.00147
	(A * !C_N * !Y)	-0.00231	-0.00232	-0.00231
	(A * !C_N * !Y)	0.00216	0.00218	0.00216
	(!A * !C_N * !Y)	-0.00229	-0.00231	-0.00230
	(!A * !C_N * !Y)	0.00318	0.00321	0.00321
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	-0.00472	-0.00476	-0.00473
	(A * C_N * !Y)	0.00304	0.00308	0.00310
	(A * !C_N * !Y)	-0.00467	-0.00468	-0.00467
	(A * !C_N * !Y)	0.00392	0.00393	0.00391
	(!A * !C_N * !Y)	-0.00462	-0.00462	-0.00459
	(!A * !C_N * !Y)	0.00605	0.00606	0.00606
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	-0.00965	-0.00968	-0.00961
	(A * C_N * !Y)	0.00607	0.00610	0.00614
	(A * !C_N * !Y)	-0.00932	-0.00938	-0.00935
	(A * !C_N * !Y)	0.00776	0.00784	0.00780
	(!A * !C_N * !Y)	-0.00924	-0.00929	-0.00923
	(!A * !C_N * !Y)	0.01205	0.01215	0.01213

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00631	0.01404	0.15551
	(B * !Y)	0.00112	0.00883	0.15032
	(A * !B * !Y)	0.00640	0.01413	0.15552
	(A * !B * !Y)	0.00113	0.00884	0.15026
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00826	0.01648	0.17636
	(B * !Y)	0.00225	0.01046	0.17036
	(A * !B * !Y)	0.00848	0.01670	0.17652
	(A * !B * !Y)	0.00231	0.01051	0.17037
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.01330	0.02455	0.27291
	(B * !Y)	0.00424	0.01548	0.26384
	(A * !B * !Y)	0.01370	0.02494	0.27317
	(A * !B * !Y)	0.00431	0.01554	0.26381

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00209	0.01123	0.15275
	(B * !Y)	0.00726	0.01642	0.15794
	(A * !B * !Y)	0.00209	0.01122	0.15268
	(A * !B * !Y)	0.00727	0.01643	0.15788
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00431	0.01420	0.17394
	(B * !Y)	0.01031	0.02020	0.17993
	(A * !B * !Y)	0.00431	0.01419	0.17393
	(A * !B * !Y)	0.01033	0.02022	0.17993
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.01042	0.02555	0.27538
	(B * !Y)	0.01944	0.03461	0.28443
	(A * !B * !Y)	0.01042	0.02555	0.27535
	(A * !B * !Y)	0.01950	0.03466	0.28445

SKY130_FD_SC_HS__NOR3x

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00290	0.00313	0.00297	0.50893
sky130_fd_sc_hs__nor3_2	0.00449	0.00471	0.00438	0.94808
sky130_fd_sc_hs__nor3_4	0.00982	0.00967	0.00933	1.46584

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor3_1	0.00000	0.05092	0.19016
sky130_fd_sc_hs__nor3_2	0.00000	0.09755	0.38031
sky130_fd_sc_hs__nor3_4	0.00000	0.19510	0.76061

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)	0.09410	0.85098	9.13245
	B->Y (FR)	0.08581	0.89094	9.80762
	C->Y (FR)	0.06031	0.89162	10.09840
sky130_fd_sc_hs__nor3_2	A->Y (FR)	0.07563	0.69914	8.89281
	B->Y (FR)	0.06355	0.73086	9.56208
	C->Y (FR)	0.03168	0.72695	9.86855
sky130_fd_sc_hs__nor3_4	A->Y (FR)	0.08553	0.60024	8.32968
	B->Y (FR)	0.06937	0.63252	9.05645
	C->Y (FR)	0.03887	0.64176	9.48571

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3_1	A->Y (RF)	0.01820	0.23244	2.24709
	B->Y (RF)	0.01991	0.23405	2.31151
	C->Y (RF)	0.01670	0.22702	2.30391
sky130_fd_sc_hs__nor3_2	A->Y (RF)	0.02685	0.32883	4.02979
	B->Y (RF)	0.02564	0.31504	3.97277
	C->Y (RF)	0.01805	0.30055	3.95320
sky130_fd_sc_hs__nor3_4	A->Y (RF)	0.01856	0.24954	3.31753
	B->Y (RF)	0.02161	0.24430	3.37223
	C->Y (RF)	0.02426	0.23340	3.35021

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	-0.00007	0.00103	0.04565
	A	0.01078	0.01189	0.05662
	B	0.00001	0.00140	0.03920
	B	0.00922	0.01060	0.04841
	C	-0.00017	0.00281	0.05118
	C	0.00741	0.01037	0.05878
sky130_fd_sc_hs__nor3_2	A	-0.00026	0.00098	0.05503
	A	0.01743	0.01875	0.07291
	B	0.00013	0.00193	0.05081
	B	0.01455	0.01633	0.06526
	C	-0.00004	0.00506	0.06987
	C	0.01031	0.01545	0.08029
sky130_fd_sc_hs__nor3_4	A	-0.00101	0.00148	0.11785
	A	0.03667	0.03920	0.15552
	B	-0.00103	0.00337	0.10821
	B	0.02877	0.03325	0.13822
	C	-0.00212	0.00825	0.14182
	C	0.02115	0.03160	0.16530

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.01350	0.01511	0.05304
	A	0.00274	0.00435	0.04229
	B	0.01069	0.01245	0.04623
	B	0.00151	0.00325	0.03706
	C	0.00735	0.00944	0.04087
	C	-0.00021	0.00183	0.03327
sky130_fd_sc_hs__nor3_2	A	0.02287	0.02519	0.07172
	A	0.00544	0.00774	0.05369
	B	0.01676	0.01947	0.06293
	B	0.00252	0.00516	0.04851
	C	0.00829	0.01174	0.05286
	C	-0.00206	0.00121	0.04208
sky130_fd_sc_hs__nor3_4	A	0.04838	0.05253	0.14487
	A	0.01124	0.01529	0.10726
	B	0.03427	0.03951	0.12943
	B	0.00468	0.00974	0.09951
	C	0.01885	0.02616	0.11370
	C	-0.00443	0.00282	0.09007

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	0.00254	0.00256	0.00253
	(B * C * !Y)	-0.00284	-0.00292	-0.00291
	(B * !C * !Y)	0.00275	0.00256	0.00253
	(B * !C * !Y)	-0.00263	-0.00292	-0.00291
	(!B * C * !Y)	0.00269	0.00255	0.00253
	(!B * C * !Y)	-0.00250	-0.00284	-0.00284
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	0.00297	0.00297	0.00294
	(B * C * !Y)	-0.00554	-0.00577	-0.00572
	(B * !C * !Y)	0.00333	0.00297	0.00294
	(B * !C * !Y)	-0.00514	-0.00577	-0.00572
	(!B * C * !Y)	0.00328	0.00297	0.00294
	(!B * C * !Y)	-0.00485	-0.00557	-0.00554
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	0.00565	0.00570	0.00564
	(B * C * !Y)	-0.01182	-0.01223	-0.01217
	(B * !C * !Y)	0.00722	0.00571	0.00565
	(B * !C * !Y)	-0.01034	-0.01216	-0.01219
	(!B * C * !Y)	0.00674	0.00570	0.00565
	(!B * C * !Y)	-0.01000	-0.01183	-0.01181

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	-0.00252	-0.00254	-0.00253
	(B * C * !Y)	0.00290	0.00292	0.00291
	(B * !C * !Y)	-0.00252	-0.00253	-0.00253
	(B * !C * !Y)	0.00290	0.00292	0.00291
	(!B * C * !Y)	-0.00252	-0.00254	-0.00252
	(!B * C * !Y)	0.00283	0.00285	0.00284
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	-0.00294	-0.00295	-0.00294
	(B * C * !Y)	0.00570	0.00577	0.00572
	(B * !C * !Y)	-0.00294	-0.00295	-0.00294
	(B * !C * !Y)	0.00570	0.00577	0.00572
	(!B * C * !Y)	-0.00294	-0.00295	-0.00293
	(!B * C * !Y)	0.00553	0.00557	0.00554
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	-0.00561	-0.00565	-0.00563
	(B * C * !Y)	0.01210	0.01223	0.01217
	(B * !C * !Y)	-0.00561	-0.00562	-0.00563
	(B * !C * !Y)	0.01213	0.01216	0.01219
	(!B * C * !Y)	-0.00559	-0.00562	-0.00560
	(!B * C * !Y)	0.01173	0.01183	0.01181

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	0.00281	0.00283	0.00271
	(A * C * !Y)	-0.00173	-0.00174	-0.00172
	(A * !C * !Y)	0.00266	0.00266	0.00262
	(A * !C * !Y)	-0.00139	-0.00139	-0.00139
	(!A * C * !Y)	0.00326	0.00266	0.00261
	(!A * C * !Y)	-0.00217	-0.00280	-0.00281
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	0.00308	0.00316	0.00284
	(A * C * !Y)	-0.00378	-0.00378	-0.00377
	(A * !C * !Y)	0.00277	0.00277	0.00264
	(A * !C * !Y)	-0.00306	-0.00305	-0.00310
	(!A * C * !Y)	0.00412	0.00268	0.00258
	(!A * C * !Y)	-0.00448	-0.00596	-0.00606
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	0.00695	0.00706	0.00648
	(A * C * !Y)	-0.00716	-0.00724	-0.00718
	(A * !C * !Y)	0.00615	0.00622	0.00609
	(A * !C * !Y)	-0.00559	-0.00567	-0.00568
	(!A * C * !Y)	0.00877	0.00618	0.00606
	(!A * C * !Y)	-0.00861	-0.01139	-0.01142

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	-0.00261	-0.00262	-0.00261
	(A * C * !Y)	0.00173	0.00174	0.00172
	(A * !C * !Y)	-0.00259	-0.00261	-0.00259
	(A * !C * !Y)	0.00141	0.00142	0.00143
	(!A * C * !Y)	-0.00259	-0.00261	-0.00259
	(!A * C * !Y)	0.00279	0.00282	0.00281
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	-0.00263	-0.00263	-0.00262
	(A * C * !Y)	0.00378	0.00378	0.00377
	(A * !C * !Y)	-0.00257	-0.00258	-0.00255
	(A * !C * !Y)	0.00316	0.00320	0.00320
	(!A * C * !Y)	-0.00256	-0.00257	-0.00254
	(!A * C * !Y)	0.00602	0.00608	0.00606
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	-0.00604	-0.00609	-0.00606
	(A * C * !Y)	0.00716	0.00724	0.00718
	(A * !C * !Y)	-0.00600	-0.00600	-0.00593
	(A * !C * !Y)	0.00577	0.00577	0.00584
	(!A * C * !Y)	-0.00600	-0.00604	-0.00598
	(!A * C * !Y)	0.01133	0.01145	0.01142

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	0.00274	0.00275	0.00273
	(B * !Y)	-0.00131	-0.00131	-0.00130
	(A * !B * !Y)	0.00274	0.00275	0.00273
	(A * !B * !Y)	-0.00130	-0.00130	-0.00129
sky130_fd_sc_hs__nor3_2	(B * !Y)	0.00304	0.00305	0.00302
	(B * !Y)	-0.00262	-0.00262	-0.00260
	(A * !B * !Y)	0.00304	0.00304	0.00302
	(A * !B * !Y)	-0.00262	-0.00262	-0.00259
sky130_fd_sc_hs__nor3_4	(B * !Y)	0.00679	0.00682	0.00679
	(B * !Y)	-0.00536	-0.00539	-0.00536
	(A * !B * !Y)	0.00679	0.00682	0.00680
	(A * !B * !Y)	-0.00532	-0.00536	-0.00533

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	-0.00265	-0.00268	-0.00272
	(B * !Y)	0.00135	0.00136	0.00132
	(A * !B * !Y)	-0.00258	-0.00260	-0.00271
	(A * !B * !Y)	0.00138	0.00139	0.00130
sky130_fd_sc_hs__nor3_2	(B * !Y)	-0.00281	-0.00283	-0.00301
	(B * !Y)	0.00279	0.00279	0.00265
	(A * !B * !Y)	-0.00262	-0.00265	-0.00297
	(A * !B * !Y)	0.00285	0.00287	0.00264
sky130_fd_sc_hs__nor3_4	(B * !Y)	-0.00642	-0.00648	-0.00677
	(B * !Y)	0.00567	0.00572	0.00545
	(A * !B * !Y)	-0.00600	-0.00606	-0.00669
	(A * !B * !Y)	0.00581	0.00586	0.00539

SKY130_FD_SC_HS__NOR4BBx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00293	0.00301	0.00236	0.00233	0.38848
sky130_fd_sc_hs__nor4bb_2	0.00549	0.00574	0.00274	0.00261	0.64253
sky130_fd_sc_hs__nor4bb_4	0.01084	0.01153	0.00381	0.00371	1.22632

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor4bb_1	0.00000	1.19083	2.36658
sky130_fd_sc_hs__nor4bb_2	0.00000	0.56239	1.08822
sky130_fd_sc_hs__nor4bb_4	0.00000	2.44829	4.86472

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)	0.15036	0.96408	9.08433
	B->Y (FR)	0.14122	0.98706	9.57592
	C_N->Y (RR)	0.14131	0.82087	6.01063
	D_N->Y (RR)	0.09163	0.76344	5.96297
sky130_fd_sc_hs__nor4bb_2	A->Y (FR)	0.15534	0.83465	8.87733
	B->Y (FR)	0.14220	0.84565	9.32663
	C_N->Y (RR)	0.14106	0.69880	5.91178
	D_N->Y (RR)	0.08245	0.63638	5.89758
sky130_fd_sc_hs__nor4bb_4	A->Y (FR)	0.15707	0.71566	8.90877
	B->Y (FR)	0.14395	0.73305	9.42080
	C_N->Y (RR)	0.14304	0.61696	6.35832
	D_N->Y (RR)	0.09239	0.56496	6.35748

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4bb_1	A->Y (RF)	0.01833	0.21276	1.68692
	B->Y (RF)	0.01893	0.20518	1.62834
	C_N->Y (FF)	0.06759	0.32880	2.67315
	D_N->Y (FF)	0.05649	0.31100	2.58121
sky130_fd_sc_hs__nor4bb_2	A->Y (RF)	0.01516	0.15327	1.30345
	B->Y (RF)	0.01597	0.15025	1.30374
	C_N->Y (FF)	0.07005	0.32270	2.64173
	D_N->Y (FF)	0.05983	0.31008	2.62045
sky130_fd_sc_hs__nor4bb_4	A->Y (RF)	0.01607	0.14004	1.50431
	B->Y (RF)	0.01645	0.12547	1.35811
	C_N->Y (FF)	0.07175	0.29823	2.22089
	D_N->Y (FF)	0.06637	0.29396	2.30201

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.00517	0.00557	0.05213
	A	0.01358	0.01401	0.06065
	B	0.00508	0.00573	0.04598
	B	0.01199	0.01267	0.05292
	C_N	0.01509	0.02192	0.15621
	C_N	0.01069	0.01752	0.15202
	D_N	0.01217	0.01982	0.16380
	D_N	0.00823	0.01588	0.15988
sky130_fd_sc_hs__nor4bb_2	A	0.00958	0.01014	0.09950
	A	0.02613	0.02674	0.11621
	B	0.00948	0.01073	0.08873
	B	0.02280	0.02407	0.10219
	C_N	0.02243	0.03043	0.19338
	C_N	0.01845	0.02644	0.18950
	D_N	0.01820	0.02681	0.19058
	D_N	0.01466	0.02325	0.18710
sky130_fd_sc_hs__nor4bb_4	A	0.01979	0.02103	0.18797
	A	0.05192	0.05322	0.22039
	B	0.01934	0.02171	0.16881
	B	0.04590	0.04829	0.19555
	C_N	0.04088	0.05180	0.30044
	C_N	0.03624	0.04719	0.29625
	D_N	0.03251	0.04515	0.30123
	D_N	0.02818	0.04083	0.29734

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.01262	0.01389	0.05389
	A	0.00429	0.00554	0.04559
	B	0.00995	0.01144	0.04818
	B	0.00306	0.00451	0.04129
	C_N	0.00902	0.01743	0.15610
	C_N	0.01340	0.02182	0.16048
	D_N	0.00654	0.01545	0.15039
	D_N	0.01047	0.01938	0.15431
sky130_fd_sc_hs__nor4bb_2	A	0.02556	0.02808	0.10782
	A	0.00927	0.01171	0.09157
	B	0.01858	0.02183	0.09377
	B	0.00533	0.00849	0.08048
	C_N	0.01712	0.02645	0.18712
	C_N	0.02109	0.03044	0.19108
	D_N	0.01187	0.02176	0.18227
	D_N	0.01542	0.02532	0.18581
sky130_fd_sc_hs__nor4bb_4	A	0.04909	0.05453	0.20831
	A	0.01753	0.02288	0.17672
	B	0.03764	0.04454	0.18654
	B	0.01130	0.01803	0.16014
	C_N	0.03170	0.04593	0.27392
	C_N	0.03633	0.05060	0.27854
	D_N	0.02535	0.04062	0.29225
	D_N	0.02971	0.04499	0.29657

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)**	0.00273	0.00266	0.00263
	(B * C_N * D_N * !Y)	-0.00271	-0.00286	-0.00286
	(B * !D_N * !Y)	0.00269	0.00265	0.00262
	(B * !D_N * !Y)	-0.00275	-0.00287	-0.00287
	(B * !C_N * D_N * !Y)	0.00243	0.00246	0.00243
	(B * !C_N * D_N * !Y)	-0.00300	-0.00306	-0.00306
	(!B * C_N * !D_N * !Y)	0.00281	0.00269	0.00265
	(!B * C_N * !D_N * !Y)	-0.00252	-0.00277	-0.00277
	(!B * !C_N * D_N * !Y)	0.00244	0.00244	0.00243
	(!B * !C_N * D_N * !Y)	-0.00279	-0.00299	-0.00300
	(!B * !C_N * !D_N * !Y)	0.00242	0.00243	0.00242
	(!B * !C_N * !D_N * !Y)	-0.00279	-0.00300	-0.00299
sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	0.00490	0.00469	0.00464
	(B * C_N * D_N * !Y)	-0.00553	-0.00594	-0.00592
	(B * !D_N * !Y)	0.00479	0.00468	0.00463
	(B * !D_N * !Y)	-0.00563	-0.00593	-0.00591
	(B * !C_N * D_N * !Y)	0.00465	0.00468	0.00463
	(B * !C_N * D_N * !Y)	-0.00575	-0.00593	-0.00591
	(!B * C_N * !D_N * !Y)	0.00508	0.00479	0.00470
	(!B * C_N * !D_N * !Y)	-0.00516	-0.00569	-0.00568
	(!B * !C_N * D_N * !Y)	0.00470	0.00467	0.00463
	(!B * !C_N * D_N * !Y)	-0.00532	-0.00580	-0.00577
	(!B * !C_N * !D_N * !Y)	0.00464	0.00467	0.00463
	(!B * !C_N * !D_N * !Y)	-0.00531	-0.00580	-0.00576

sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	0.00960	0.00916	0.00906
	(B * C_N * D_N * !Y)	-0.01064	-0.01144	-0.01143
	(B * !D_N * !Y)	0.00942	0.00916	0.00907
	(B * !D_N * !Y)	-0.01089	-0.01151	-0.01142
	(B * !C_N * D_N * !Y)	0.00906	0.00911	0.00902
	(B * !C_N * D_N * !Y)	-0.01116	-0.01154	-0.01146
	(!B * C_N * !D_N * !Y)	0.00988	0.00933	0.00915
	(!B * C_N * !D_N * !Y)	-0.00981	-0.01104	-0.01098
	(!B * !C_N * D_N * !Y)	0.00913	0.00907	0.00903
	(!B * !C_N * D_N * !Y)	-0.01030	-0.01125	-0.01115
	(!B * !C_N * !D_N * !Y)	0.00903	0.00904	0.00900
	(!B * !C_N * !D_N * !Y)	-0.01028	-0.01123	-0.01113

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)**	-0.00258	-0.00259	-0.00258
	(B * C_N * D_N * !Y)	0.00289	0.00290	0.00289
	(B * !D_N * !Y)	-0.00259	-0.00260	-0.00259
	(B * !D_N * !Y)	0.00287	0.00289	0.00288
	(B * !C_N * D_N * !Y)	-0.00240	-0.00241	-0.00240
	(B * !C_N * D_N * !Y)	0.00306	0.00308	0.00307
	(!B * C_N * !D_N * !Y)	-0.00266	-0.00267	-0.00265
	(!B * C_N * !D_N * !Y)	0.00276	0.00279	0.00277
	(!B * !C_N * D_N * !Y)	-0.00241	-0.00242	-0.00240
	(!B * !C_N * D_N * !Y)	0.00301	0.00303	0.00300
	(!B * !C_N * !D_N * !Y)	-0.00242	-0.00243	-0.00241
	(!B * !C_N * !D_N * !Y)	0.00300	0.00302	0.00299

sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	-0.00460	-0.00463	-0.00461
	(B * C_N * D_N * !Y)	0.00589	0.00597	0.00592
	(B * !D_N * !Y)	-0.00460	-0.00463	-0.00462
	(B * !D_N * !Y)	0.00587	0.00593	0.00591
	(B * !C_N * D_N * !Y)	-0.00460	-0.00462	-0.00462
	(B * !C_N * D_N * !Y)	0.00588	0.00593	0.00591
	(!B * C_N * !D_N * !Y)	-0.00477	-0.00478	-0.00470
	(!B * C_N * !D_N * !Y)	0.00569	0.00569	0.00568
	(!B * !C_N * D_N * !Y)	-0.00462	-0.00463	-0.00461
	(!B * !C_N * D_N * !Y)	0.00578	0.00580	0.00577
	(!B * !C_N * !D_N * !Y)	-0.00462	-0.00464	-0.00462
	(!B * !C_N * !D_N * !Y)	0.00577	0.00580	0.00576
sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	-0.00895	-0.00895	-0.00896
	(B * C_N * D_N * !Y)	0.01142	0.01144	0.01147
	(B * !D_N * !Y)	-0.00899	-0.00906	-0.00901
	(B * !D_N * !Y)	0.01137	0.01153	0.01142
	(B * !C_N * D_N * !Y)	-0.00895	-0.00901	-0.00897
	(B * !C_N * D_N * !Y)	0.01141	0.01156	0.01146
	(!B * C_N * !D_N * !Y)	-0.00925	-0.00931	-0.00915
	(!B * C_N * !D_N * !Y)	0.01092	0.01104	0.01098
	(!B * !C_N * D_N * !Y)	-0.00895	-0.00901	-0.00897
	(!B * !C_N * D_N * !Y)	0.01110	0.01125	0.01115
	(!B * !C_N * !D_N * !Y)	-0.00896	-0.00903	-0.00898
	(!B * !C_N * !D_N * !Y)	0.01108	0.01123	0.01113

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)**	0.00282	0.00283	0.00281
	(A * C_N * D_N * !Y)	-0.00142	-0.00141	-0.00140
	(A * C_N * !D_N * !Y)	0.00320	0.00333	0.00327
	(A * C_N * !D_N * !Y)	-0.00177	-0.00179	-0.00178
	(A * !C_N * D_N * !Y)	0.00269	0.00272	0.00259
	(A * !C_N * D_N * !Y)	-0.00210	-0.00209	-0.00209
	(A * !C_N * !D_N * !Y)	0.00256	0.00256	0.00253
	(A * !C_N * !D_N * !Y)	-0.00220	-0.00221	-0.00219
	(!A * C_N * !D_N * !Y)	0.00328	0.00285	0.00281
	(!A * C_N * !D_N * !Y)	-0.00233	-0.00277	-0.00275
	(!A * !C_N * D_N * !Y)	0.00291	0.00255	0.00252
	(!A * !C_N * D_N * !Y)	-0.00270	-0.00309	-0.00307
	(!A * !C_N * !D_N * !Y)	0.00253	0.00254	0.00251
	(!A * !C_N * !D_N * !Y)	-0.00307	-0.00310	-0.00308
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	0.00503	0.00505	0.00500
	(A * C_N * D_N * !Y)	-0.00316	-0.00316	-0.00313
	(A * C_N * !D_N * !Y)	0.00572	0.00589	0.00588
	(A * C_N * !D_N * !Y)	-0.00393	-0.00393	-0.00392
	(A * !C_N * D_N * !Y)	0.00527	0.00527	0.00498
	(A * !C_N * D_N * !Y)	-0.00416	-0.00418	-0.00414
	(A * !C_N * !D_N * !Y)	0.00486	0.00488	0.00483
	(A * !C_N * !D_N * !Y)	-0.00435	-0.00435	-0.00434
	(!A * C_N * !D_N * !Y)	0.00576	0.00511	0.00500
	(!A * C_N * !D_N * !Y)	-0.00518	-0.00590	-0.00586
	(!A * !C_N * D_N * !Y)	0.00551	0.00483	0.00482
	(!A * !C_N * D_N * !Y)	-0.00543	-0.00614	-0.00617
	(!A * !C_N * !D_N * !Y)	0.00482	0.00481	0.00482
	(!A * !C_N * !D_N * !Y)	-0.00607	-0.00615	-0.00617

sky130_fd_sc_hs__nor4bb_4	**(A * C_N * D_N * !Y)**	0.00977	0.00993	0.00972
	(A * C_N * D_N * !Y)	-0.00619	-0.00628	-0.00618
	(A * C_N * !D_N * !Y)	0.01128	0.01171	0.01156
	(A * C_N * !D_N * !Y)	-0.00761	-0.00764	-0.00760
	(A * !C_N * D_N * !Y)	0.01015	0.01037	0.00966
	(A * !C_N * D_N * !Y)	-0.00815	-0.00814	-0.00815
	(A * !C_N * !D_N * !Y)	0.00930	0.00945	0.00928
	(A * !C_N * !D_N * !Y)	-0.00861	-0.00865	-0.00864
	(!A * C_N * !D_N * !Y)	0.01171	0.01001	0.00969
	(!A * C_N * !D_N * !Y)	-0.00980	-0.01162	-0.01157
	(!A * !C_N * D_N * !Y)	0.01121	0.00940	0.00930
	(!A * !C_N * D_N * !Y)	-0.01029	-0.01228	-0.01225
	(!A * !C_N * !D_N * !Y)	0.00929	0.00936	0.00927
	(!A * !C_N * !D_N * !Y)	-0.01212	-0.01227	-0.01223

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)**	-0.00270	-0.00272	-0.00271
	(A * C_N * D_N * !Y)	0.00149	0.00151	0.00151
	(A * C_N * !D_N * !Y)	-0.00308	-0.00310	-0.00309
	(A * C_N * !D_N * !Y)	0.00177	0.00179	0.00178
	(A * !C_N * D_N * !Y)	-0.00251	-0.00251	-0.00251
	(A * !C_N * D_N * !Y)	0.00210	0.00209	0.00209
	(A * !C_N * !D_N * !Y)	-0.00252	-0.00253	-0.00252
	(A * !C_N * !D_N * !Y)	0.00220	0.00221	0.00219
	(!A * C_N * !D_N * !Y)	-0.00284	-0.00285	-0.00281
	(!A * C_N * !D_N * !Y)	0.00274	0.00277	0.00275
	(!A * !C_N * D_N * !Y)	-0.00250	-0.00251	-0.00250
	(!A * !C_N * D_N * !Y)	0.00310	0.00311	0.00310
	(!A * !C_N * !D_N * !Y)	-0.00251	-0.00252	-0.00251
	(!A * !C_N * !D_N * !Y)	0.00307	0.00311	0.00308
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	-0.00482	-0.00484	-0.00483
	(A * C_N * D_N * !Y)	0.00331	0.00333	0.00334
	(A * C_N * !D_N * !Y)	-0.00558	-0.00560	-0.00558
	(A * C_N * !D_N * !Y)	0.00393	0.00393	0.00392
	(A * !C_N * D_N * !Y)	-0.00483	-0.00485	-0.00482
	(A * !C_N * D_N * !Y)	0.00416	0.00418	0.00414
	(A * !C_N * !D_N * !Y)	-0.00482	-0.00483	-0.00482
	(A * !C_N * !D_N * !Y)	0.00435	0.00435	0.00434
	(!A * C_N * !D_N * !Y)	-0.00514	-0.00511	-0.00500
	(!A * C_N * !D_N * !Y)	0.00587	0.00590	0.00586
	(!A * !C_N * D_N * !Y)	-0.00481	-0.00481	-0.00480
	(!A * !C_N * D_N * !Y)	0.00618	0.00619	0.00618
	(!A * !C_N * !D_N * !Y)	-0.00481	-0.00481	-0.00481
	(!A * !C_N * !D_N * !Y)	0.00617	0.00618	0.00617

sky130_fd_sc_hs__nor4bb_4	(A * C_N * D_N * !Y)	-0.00936	-0.00942	-0.00936
	(A * C_N * D_N * !Y)	0.00645	0.00652	0.00657
	(A * C_N * !D_N * !Y)	-0.01091	-0.01095	-0.01093
	(A * C_N * !D_N * !Y)	0.00761	0.00764	0.00760
	(A * !C_N * D_N * !Y)	-0.00927	-0.00927	-0.00927
	(A * !C_N * D_N * !Y)	0.00815	0.00814	0.00815
	(A * !C_N * !D_N * !Y)	-0.00923	-0.00926	-0.00925
	(A * !C_N * !D_N * !Y)	0.00861	0.00865	0.00864
	(!A * C_N * !D_N * !Y)	-0.00996	-0.01001	-0.00969
	(!A * C_N * !D_N * !Y)	0.01150	0.01162	0.01157
	(!A * !C_N * D_N * !Y)	-0.00921	-0.00926	-0.00923
	(!A * !C_N * D_N * !Y)	0.01220	0.01228	0.01226
	(!A * !C_N * !D_N * !Y)	-0.00923	-0.00928	-0.00925
	(!A * !C_N * !D_N * !Y)	0.01217	0.01227	0.01223

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * !Y)	0.00726	0.01453	0.15487
	(B * !Y)	0.00164	0.00890	0.14926
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00733	0.01459	0.15485
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00161	0.00886	0.14915
sky130_fd_sc_hs__nor4bb_2	(B * !Y)	0.00828	0.01630	0.17654
	(B * !Y)	0.00221	0.01022	0.17046
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00847	0.01648	0.17665
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00220	0.01020	0.17040
sky130_fd_sc_hs__nor4bb_4	(B * !Y)	0.01320	0.02442	0.27027
	(B * !Y)	0.00456	0.01576	0.26163
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.01346	0.02467	0.27044
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00446	0.01565	0.26148

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * !Y)	0.00277	0.01159	0.15202
	(B * !Y)	0.00839	0.01719	0.15763
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00279	0.01160	0.15195
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00842	0.01721	0.15757
sky130_fd_sc_hs__nor4bb_2	(B * !Y)	0.00519	0.01496	0.17506
	(B * !Y)	0.01126	0.02102	0.18112
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00522	0.01498	0.17507
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.01130	0.02107	0.18115
sky130_fd_sc_hs__nor4bb_4	(B * !Y)	0.00961	0.02473	0.27163
	(B * !Y)	0.01816	0.03330	0.28022
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00963	0.02475	0.27164
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.01821	0.03335	0.28026

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)	0.00641	0.01405	0.15610
	(B * C_N * !Y)	0.00126	0.00889	0.15096
	(A * !B * C_N * !Y)	0.00653	0.01417	0.15619
	(A * !B * C_N * !Y)	0.00133	0.00895	0.15100
	(!C_N * !Y)	0.00685	0.01449	0.15657
	(!C_N * !Y)	0.00172	0.00935	0.15144
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00796	0.01615	0.17601
	(B * C_N * !Y)	0.00235	0.01052	0.17041
	(A * !B * C_N * !Y)	0.00831	0.01648	0.17626
	(A * !B * C_N * !Y)	0.00251	0.01068	0.17052
	(!C_N * !Y)	0.00848	0.01665	0.17655
	(!C_N * !Y)	0.00290	0.01106	0.17097
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.01218	0.02355	0.27075
	(B * C_N * !Y)	0.00396	0.01529	0.26256
	(A * !B * C_N * !Y)	0.01272	0.02408	0.27114
	(A * !B * C_N * !Y)	0.00424	0.01557	0.26275
	(!C_N * !Y)	0.01304	0.02441	0.27187
	(!C_N * !Y)	0.00491	0.01625	0.26375

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)	0.00246	0.01160	0.15374
	(B * C_N * !Y)	0.00760	0.01675	0.15887
	(A * !B * C_N * !Y)	0.00246	0.01161	0.15373
	(A * !B * C_N * !Y)	0.00760	0.01675	0.15887
	(!C_N * !Y)	0.00194	0.01109	0.15322
	(!C_N * !Y)	0.00707	0.01623	0.15836
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00474	0.01455	0.17438
	(B * C_N * !Y)	0.01031	0.02013	0.17997
	(A * !B * C_N * !Y)	0.00474	0.01454	0.17438
	(A * !B * C_N * !Y)	0.01031	0.02015	0.17997
	(!C_N * !Y)	0.00411	0.01395	0.17378
	(!C_N * !Y)	0.00967	0.01952	0.17936
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.01119	0.02650	0.27524
	(B * C_N * !Y)	0.01932	0.03467	0.28340
	(A * !B * C_N * !Y)	0.01119	0.02651	0.27524
	(A * !B * C_N * !Y)	0.01933	0.03469	0.28341
	(!C_N * !Y)	0.00999	0.02532	0.27422
	(!C_N * !Y)	0.01811	0.03347	0.28237

SKY130_FD_SC_HS__NOR4Bx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00284	0.00294	0.00293	0.00226	0.39215
sky130_fd_sc_hs__nor4b_2	0.00559	0.00566	0.00569	0.00265	0.63386
sky130_fd_sc_hs__nor4b_4	0.01098	0.01103	0.01120	0.00399	1.15986

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor4b_1	0.00000	0.61242	1.22343
sky130_fd_sc_hs__nor4b_2	0.00000	0.31521	0.62439
sky130_fd_sc_hs__nor4b_4	0.00000	1.29218	2.59293

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)	0.14483	0.95933	9.09796
	B->Y (FR)	0.13527	0.98288	9.59283
	C->Y (FR)	0.11138	1.00034	10.11310
	D_N->Y (RR)	0.09460	0.77308	6.06916
sky130_fd_sc_hs__nor4b_2	A->Y (FR)	0.15587	0.83029	8.79801
	B->Y (FR)	0.14290	0.84228	9.24245
	C->Y (FR)	0.11717	0.87536	9.97654
	D_N->Y (RR)	0.08301	0.62739	5.73288
sky130_fd_sc_hs__nor4b_4	A->Y (FR)	0.15618	0.70759	8.65250
	B->Y (FR)	0.14357	0.72380	9.17706
	C->Y (FR)	0.11513	0.75447	9.91345
	D_N->Y (RR)	0.09403	0.56238	6.21009

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4b_1	A->Y (RF)	0.01886	0.22056	1.78582
	B->Y (RF)	0.01991	0.21597	1.76064
	C->Y (RF)	0.01984	0.20694	1.73600
	D_N->Y (FF)	0.05731	0.31684	2.68485
sky130_fd_sc_hs__nor4b_2	A->Y (RF)	0.01509	0.15109	1.26923
	B->Y (RF)	0.01567	0.14701	1.27055
	C->Y (RF)	0.01782	0.14657	1.29609
	D_N->Y (FF)	0.06174	0.31156	2.51904
sky130_fd_sc_hs__nor4b_4	A->Y (RF)	0.01533	0.12375	1.26759
	B->Y (RF)	0.01534	0.11650	1.21139
	C->Y (RF)	0.01570	0.09987	1.07777
	D_N->Y (FF)	0.06489	0.28795	2.18743

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.00289	0.00325	0.04784
	A	0.01285	0.01323	0.05790
	B	0.00287	0.00351	0.04192
	B	0.01125	0.01191	0.05033
	C	0.00256	0.00372	0.03885
	C	0.00961	0.01079	0.04589
	D_N	0.01170	0.01895	0.15303
	D_N	0.00777	0.01501	0.14932
sky130_fd_sc_hs__nor4b_2	A	0.00521	0.00580	0.09770
	A	0.02655	0.02718	0.11920
	B	0.00526	0.00654	0.08661
	B	0.02306	0.02436	0.10458
	C	0.00506	0.00728	0.07422
	C	0.01962	0.02179	0.08877
	D_N	0.01756	0.02592	0.18857
	D_N	0.01486	0.02321	0.18606
sky130_fd_sc_hs__nor4b_4	A	0.01033	0.01181	0.18404
	A	0.05244	0.05398	0.22629
	B	0.01036	0.01317	0.16596
	B	0.04548	0.04829	0.20143
	C	0.00984	0.01470	0.14526
	C	0.03852	0.04350	0.17407
	D_N	0.03108	0.04309	0.29528
	D_N	0.02877	0.04077	0.29345

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.01432	0.01555	0.05421
	A	0.00450	0.00572	0.04442
	B	0.01155	0.01299	0.04836
	B	0.00325	0.00466	0.04006
	C	0.00862	0.01065	0.04321
	C	0.00159	0.00360	0.03615
	D_N	0.00690	0.01572	0.15440
	D_N	0.01081	0.01965	0.15832
sky130_fd_sc_hs__nor4b_2	A	0.03008	0.03250	0.11242
	A	0.00914	0.01153	0.09162
	B	0.02302	0.02666	0.09824
	B	0.00543	0.00898	0.08066
	C	0.01700	0.02060	0.08397
	C	0.00253	0.00606	0.06949
	D_N	0.01303	0.02266	0.16735
	D_N	0.01572	0.02539	0.17004
sky130_fd_sc_hs__nor4b_4	A	0.05842	0.06356	0.21729
	A	0.01711	0.02219	0.17620
	B	0.04509	0.05164	0.18968
	B	0.01032	0.01672	0.15496
	C	0.03267	0.04079	0.16412
	C	0.00406	0.01204	0.13541
	D_N	0.02672	0.04170	0.27226
	D_N	0.02905	0.04403	0.27456

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)**	0.00235	0.00237	0.00235
	(B * C * D_N * !Y)	-0.00278	-0.00287	-0.00286
	(B * !D_N * !Y)	0.00225	0.00227	0.00225
	(B * !D_N * !Y)	-0.00289	-0.00296	-0.00295
	(B * !C * D_N * !Y)	0.00241	0.00237	0.00235
	(B * !C * D_N * !Y)	-0.00270	-0.00286	-0.00286
	(!B * C * D_N * !Y)	0.00236	0.00236	0.00235
	(!B * C * D_N * !Y)	-0.00254	-0.00279	-0.00279
	(!B * C * !D_N * !Y)	0.00224	0.00226	0.00225
	(!B * C * !D_N * !Y)	-0.00265	-0.00287	-0.00287
	(!B * !C * !D_N * !Y)	0.00228	0.00226	0.00225
	(!B * !C * !D_N * !Y)	-0.00260	-0.00286	-0.00284
sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	0.00473	0.00476	0.00471
	(B * C * D_N * !Y)	-0.00577	-0.00600	-0.00597
	(B * !D_N * !Y)	0.00472	0.00475	0.00471
	(B * !D_N * !Y)	-0.00579	-0.00600	-0.00597
	(B * !C * D_N * !Y)	0.00486	0.00476	0.00472
	(B * !C * D_N * !Y)	-0.00560	-0.00599	-0.00597
	(!B * C * D_N * !Y)	0.00478	0.00475	0.00472
	(!B * C * D_N * !Y)	-0.00530	-0.00582	-0.00580
	(!B * C * !D_N * !Y)	0.00472	0.00475	0.00471
	(!B * C * !D_N * !Y)	-0.00531	-0.00583	-0.00580
	(!B * !C * !D_N * !Y)	0.00482	0.00475	0.00472
	(!B * !C * !D_N * !Y)	-0.00521	-0.00577	-0.00573

sky130_fd_sc_hs__nor4b_4	(B * C * D_N * !Y)	0.00925	0.00932	0.00923
	(B * C * D_N * !Y)	-0.01140	-0.01184	-0.01177
	(B * !D_N * !Y)	0.00923	0.00930	0.00921
	(B * !D_N * !Y)	-0.01144	-0.01183	-0.01175
	(B * !C * D_N * !Y)	0.00951	0.00932	0.00923
	(B * !C * D_N * !Y)	-0.01105	-0.01183	-0.01178
	(!B * C * D_N * !Y)	0.00934	0.00931	0.00923
	(!B * C * D_N * !Y)	-0.01048	-0.01149	-0.01146
	(!B * C * !D_N * !Y)	0.00923	0.00929	0.00921
	(!B * C * !D_N * !Y)	-0.01051	-0.01148	-0.01144
	(!B * !C * !D_N * !Y)	0.00934	0.00930	0.00922
	(!B * !C * !D_N * !Y)	-0.01025	-0.01140	-0.01131

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)	-0.00232	-0.00233	-0.00232
	(B * C * D_N * !Y)	0.00286	0.00288	0.00287
	(B * !D_N * !Y)	-0.00224	-0.00225	-0.00224
	(B * !D_N * !Y)	0.00294	0.00296	0.00295
	(B * !C * D_N * !Y)	-0.00232	-0.00233	-0.00232
	(B * !C * D_N * !Y)	0.00286	0.00288	0.00287
	(!B * C * D_N * !Y)	-0.00232	-0.00233	-0.00232
	(!B * C * D_N * !Y)	0.00280	0.00282	0.00279
	(!B * C * !D_N * !Y)	-0.00224	-0.00224	-0.00224
	(!B * C * !D_N * !Y)	0.00288	0.00287	0.00287
	(!B * !C * !D_N * !Y)	-0.00224	-0.00225	-0.00224
	(!B * !C * !D_N * !Y)	0.00283	0.00286	0.00284

sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	-0.00468	-0.00471	-0.00470
	(B * C * D_N * !Y)	0.00593	0.00600	0.00597
	(B * !D_N * !Y)	-0.00468	-0.00472	-0.00470
	(B * !D_N * !Y)	0.00593	0.00600	0.00597
	(B * !C * D_N * !Y)	-0.00468	-0.00471	-0.00470
	(B * !C * D_N * !Y)	0.00593	0.00599	0.00597
	(!B * C * D_N * !Y)	-0.00470	-0.00471	-0.00470
	(!B * C * D_N * !Y)	0.00581	0.00582	0.00580
	(!B * C * !D_N * !Y)	-0.00470	-0.00471	-0.00470
	(!B * C * !D_N * !Y)	0.00579	0.00583	0.00580
	(!B * !C * !D_N * !Y)	-0.00471	-0.00473	-0.00470
	(!B * !C * !D_N * !Y)	0.00574	0.00577	0.00573
sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	-0.00914	-0.00920	-0.00917
	(B * C * D_N * !Y)	0.01171	0.01184	0.01177
	(B * !D_N * !Y)	-0.00916	-0.00922	-0.00919
	(B * !D_N * !Y)	0.01169	0.01183	0.01175
	(B * !C * D_N * !Y)	-0.00914	-0.00919	-0.00917
	(B * !C * D_N * !Y)	0.01173	0.01183	0.01178
	(!B * C * D_N * !Y)	-0.00918	-0.00918	-0.00917
	(!B * C * D_N * !Y)	0.01148	0.01149	0.01146
	(!B * C * !D_N * !Y)	-0.00920	-0.00921	-0.00919
	(!B * C * !D_N * !Y)	0.01146	0.01148	0.01144
	(!B * !C * !D_N * !Y)	-0.00920	-0.00923	-0.00918
	(!B * !C * !D_N * !Y)	0.01132	0.01140	0.01131

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)**	0.00258	0.00260	0.00248
	(A * C * D_N * !Y)	-0.00179	-0.00180	-0.00178
	(A * C * !D_N * !Y)	0.00233	0.00235	0.00232
	(A * C * !D_N * !Y)	-0.00195	-0.00198	-0.00197
	(A * !C * D_N * !Y)	0.00241	0.00243	0.00241
	(A * !C * D_N * !Y)	-0.00142	-0.00143	-0.00142
	(A * !C * !D_N * !Y)	0.00232	0.00240	0.00232
	(A * !C * !D_N * !Y)	-0.00186	-0.00186	-0.00187
	(!A * C * D_N * !Y)	0.00281	0.00243	0.00240
	(!A * C * D_N * !Y)	-0.00240	-0.00284	-0.00283
	(!A * C * !D_N * !Y)	0.00232	0.00233	0.00231
	(!A * C * !D_N * !Y)	-0.00287	-0.00292	-0.00291
	(!A * !C * !D_N * !Y)	0.00258	0.00232	0.00231
	(!A * !C * !D_N * !Y)	-0.00241	-0.00285	-0.00284
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	0.00521	0.00528	0.00496
	(A * C * D_N * !Y)	-0.00391	-0.00393	-0.00389
	(A * C * !D_N * !Y)	0.00480	0.00487	0.00481
	(A * C * !D_N * !Y)	-0.00409	-0.00410	-0.00407
	(A * !C * D_N * !Y)	0.00484	0.00486	0.00481
	(A * !C * D_N * !Y)	-0.00311	-0.00311	-0.00309
	(A * !C * !D_N * !Y)	0.00484	0.00491	0.00487
	(A * !C * !D_N * !Y)	-0.00387	-0.00388	-0.00385
	(!A * C * D_N * !Y)	0.00548	0.00485	0.00480
	(!A * C * D_N * !Y)	-0.00517	-0.00599	-0.00597
	(!A * C * !D_N * !Y)	0.00482	0.00483	0.00479
	(!A * C * !D_N * !Y)	-0.00580	-0.00598	-0.00596
	(!A * !C * !D_N * !Y)	0.00519	0.00483	0.00480
	(!A * !C * !D_N * !Y)	-0.00511	-0.00577	-0.00579

sky130_fd_sc_hs__nor4b_4	**(A * C * D_N * !Y)**	0.01015	0.01028	0.00970
	(A * C * D_N * !Y)	-0.00763	-0.00763	-0.00760
	(A * C * !D_N * !Y)	0.00937	0.00950	0.00939
	(A * C * !D_N * !Y)	-0.00799	-0.00803	-0.00795
	(A * !C * D_N * !Y)	0.00939	0.00950	0.00940
	(A * !C * D_N * !Y)	-0.00603	-0.00610	-0.00605
	(A * !C * !D_N * !Y)	0.00945	0.00963	0.00950
	(A * !C * !D_N * !Y)	-0.00755	-0.00753	-0.00751
	(!A * C * D_N * !Y)	0.01101	0.00948	0.00939
	(!A * C * D_N * !Y)	-0.00999	-0.01187	-0.01184
	(!A * C * !D_N * !Y)	0.00940	0.00945	0.00936
	(!A * C * !D_N * !Y)	-0.01149	-0.01190	-0.01182
	(!A * !C * !D_N * !Y)	0.01029	0.00943	0.00937
	(!A * !C * !D_N * !Y)	-0.00997	-0.01147	-0.01144

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)**	-0.00239	-0.00240	-0.00239
	(A * C * D_N * !Y)	0.00179	0.00180	0.00178
	(A * C * !D_N * !Y)	-0.00229	-0.00231	-0.00230
	(A * C * !D_N * !Y)	0.00195	0.00198	0.00197
	(A * !C * D_N * !Y)	-0.00232	-0.00234	-0.00232
	(A * !C * D_N * !Y)	0.00149	0.00151	0.00151
	(A * !C * !D_N * !Y)	-0.00229	-0.00229	-0.00230
	(A * !C * !D_N * !Y)	0.00186	0.00186	0.00187
	(!A * C * D_N * !Y)	-0.00236	-0.00239	-0.00237
	(!A * C * D_N * !Y)	0.00282	0.00286	0.00284
	(!A * C * !D_N * !Y)	-0.00229	-0.00231	-0.00230
	(!A * C * !D_N * !Y)	0.00289	0.00292	0.00291
	(!A * !C * !D_N * !Y)	-0.00229	-0.00231	-0.00229
	(!A * !C * !D_N * !Y)	0.00282	0.00285	0.00284
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	-0.00480	-0.00482	-0.00479
	(A * C * D_N * !Y)	0.00391	0.00393	0.00389
	(A * C * !D_N * !Y)	-0.00480	-0.00481	-0.00479
	(A * C * !D_N * !Y)	0.00409	0.00410	0.00407
	(A * !C * D_N * !Y)	-0.00466	-0.00467	-0.00462
	(A * !C * D_N * !Y)	0.00326	0.00328	0.00328
	(A * !C * !D_N * !Y)	-0.00484	-0.00485	-0.00483
	(A * !C * !D_N * !Y)	0.00387	0.00388	0.00385
	(!A * C * D_N * !Y)	-0.00478	-0.00480	-0.00477
	(!A * C * D_N * !Y)	0.00596	0.00601	0.00597
	(!A * C * !D_N * !Y)	-0.00479	-0.00479	-0.00478
	(!A * C * !D_N * !Y)	0.00596	0.00598	0.00596
	(!A * !C * !D_N * !Y)	-0.00480	-0.00478	-0.00478
	(!A * !C * !D_N * !Y)	0.00579	0.00577	0.00579

sky130_fd_sc_hs__nor4b_4	(A * C * D_N * !Y)	-0.00936	-0.00937	-0.00934
	(A * C * D_N * !Y)	0.00763	0.00763	0.00760
	(A * C * !D_N * !Y)	-0.00937	-0.00940	-0.00936
	(A * C * !D_N * !Y)	0.00799	0.00803	0.00795
	(A * !C * D_N * !Y)	-0.00907	-0.00912	-0.00903
	(A * !C * D_N * !Y)	0.00634	0.00641	0.00643
	(A * !C * !D_N * !Y)	-0.00942	-0.00942	-0.00941
	(A * !C * !D_N * !Y)	0.00755	0.00753	0.00751
	(!A * C * D_N * !Y)	-0.00933	-0.00936	-0.00931
	(!A * C * D_N * !Y)	0.01183	0.01191	0.01184
	(!A * C * !D_N * !Y)	-0.00931	-0.00939	-0.00934
	(!A * C * !D_N * !Y)	0.01176	0.01190	0.01182
	(!A * !C * !D_N * !Y)	-0.00936	-0.00937	-0.00933
	(!A * !C * !D_N * !Y)	0.01144	0.01147	0.01144

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)	0.00274	0.00275	0.00272
	(B * D_N * !Y)	-0.00142	-0.00142	-0.00141
	(B * !D_N * !Y)	0.00249	0.00253	0.00239
	(B * !D_N * !Y)	-0.00219	-0.00220	-0.00218
	(A * !B * D_N * !Y)	0.00275	0.00276	0.00273
	(A * !B * D_N * !Y)	-0.00140	-0.00140	-0.00140
	(A * !B * !D_N * !Y)	0.00264	0.00246	0.00233
	(A * !B * !D_N * !Y)	-0.00216	-0.00223	-0.00222
	(!A * !B * !D_N * !Y)	0.00298	0.00236	0.00231
	(!A * !B * !D_N * !Y)	-0.00256	-0.00320	-0.00321

sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	0.00515	0.00521	0.00516
	(B * D_N * !Y)	-0.00289	-0.00293	-0.00291
	(B * !D_N * !Y)	0.00518	0.00533	0.00506
	(B * !D_N * !Y)	-0.00391	-0.00395	-0.00393
	(A * !B * D_N * !Y)	0.00518	0.00523	0.00517
	(A * !B * D_N * !Y)	-0.00286	-0.00290	-0.00289
	(A * !B * !D_N * !Y)	0.00557	0.00502	0.00493
	(A * !B * !D_N * !Y)	-0.00395	-0.00402	-0.00404
	(!A * !B * !D_N * !Y)	0.00639	0.00495	0.00486
	(!A * !B * !D_N * !Y)	-0.00445	-0.00598	-0.00601
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	0.01016	0.01028	0.01015
	(B * D_N * !Y)	-0.00573	-0.00580	-0.00578
	(B * !D_N * !Y)	0.01061	0.01082	0.01024
	(B * !D_N * !Y)	-0.00748	-0.00758	-0.00750
	(A * !B * D_N * !Y)	0.01017	0.01033	0.01017
	(A * !B * D_N * !Y)	-0.00562	-0.00573	-0.00573
	(A * !B * !D_N * !Y)	0.01140	0.01021	0.00995
	(A * !B * !D_N * !Y)	-0.00742	-0.00770	-0.00768
	(!A * !B * !D_N * !Y)	0.01294	0.01001	0.00984
	(!A * !B * !D_N * !Y)	-0.00860	-0.01165	-0.01168

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)**	-0.00267	-0.00269	-0.00268
	(B * D_N * !Y)	0.00145	0.00146	0.00147
	(B * !D_N * !Y)	-0.00231	-0.00232	-0.00231
	(B * !D_N * !Y)	0.00219	0.00220	0.00218
	(A * !B * D_N * !Y)	-0.00262	-0.00264	-0.00267
	(A * !B * D_N * !Y)	0.00143	0.00145	0.00144
	(A * !B * !D_N * !Y)	-0.00230	-0.00231	-0.00231
	(A * !B * !D_N * !Y)	0.00222	0.00223	0.00222
	(!A * !B * !D_N * !Y)	-0.00230	-0.00231	-0.00229
	(!A * !B * !D_N * !Y)	0.00321	0.00323	0.00322
sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	-0.00508	-0.00509	-0.00509
	(B * D_N * !Y)	0.00296	0.00298	0.00300
	(B * !D_N * !Y)	-0.00490	-0.00494	-0.00491
	(B * !D_N * !Y)	0.00391	0.00395	0.00393
	(A * !B * D_N * !Y)	-0.00494	-0.00498	-0.00507
	(A * !B * D_N * !Y)	0.00296	0.00299	0.00295
	(A * !B * !D_N * !Y)	-0.00491	-0.00489	-0.00490
	(A * !B * !D_N * !Y)	0.00405	0.00402	0.00404
	(!A * !B * !D_N * !Y)	-0.00483	-0.00485	-0.00483
	(!A * !B * !D_N * !Y)	0.00598	0.00602	0.00602
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	-0.01000	-0.01000	-0.01000
	(B * D_N * !Y)	0.00594	0.00594	0.00597
	(B * !D_N * !Y)	-0.00989	-0.00997	-0.00992
	(B * !D_N * !Y)	0.00748	0.00758	0.00750
	(A * !B * D_N * !Y)	-0.00973	-0.00979	-0.00997
	(A * !B * D_N * !Y)	0.00589	0.00592	0.00585
	(A * !B * !D_N * !Y)	-0.00990	-0.00991	-0.00989
	(A * !B * !D_N * !Y)	0.00769	0.00770	0.00768
	(!A * !B * !D_N * !Y)	-0.00980	-0.00979	-0.00976
	(!A * !B * !D_N * !Y)	0.01169	0.01166	0.01172

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00653	0.01413	0.15475
	(C * !Y)	0.00115	0.00873	0.14938
	(B * !C * !Y)	0.00663	0.01422	0.15479
	(B * !C * !Y)	0.00117	0.00875	0.14935
	(A * !B * !C * !Y)	0.00674	0.01433	0.15469
	(A * !B * !C * !Y)	0.00122	0.00879	0.14921
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00835	0.01654	0.17637
	(C * !Y)	0.00224	0.01040	0.17025
	(B * !C * !Y)	0.00858	0.01676	0.17653
	(B * !C * !Y)	0.00232	0.01048	0.17028
	(A * !B * !C * !Y)	0.00889	0.01707	0.17676
	(A * !B * !C * !Y)	0.00248	0.01064	0.17039
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.01275	0.02426	0.27235
	(C * !Y)	0.00371	0.01519	0.26333
	(B * !C * !Y)	0.01320	0.02470	0.27266
	(B * !C * !Y)	0.00389	0.01536	0.26340
	(A * !B * !C * !Y)	0.01380	0.02529	0.27308
	(A * !B * !C * !Y)	0.00420	0.01567	0.26361

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00207	0.01114	0.15184
	(C * !Y)	0.00744	0.01652	0.15721
	(B * !C * !Y)	0.00207	0.01113	0.15180
	(B * !C * !Y)	0.00745	0.01652	0.15718
	(A * !B * !C * !Y)	0.00207	0.01111	0.15160
	(A * !B * !C * !Y)	0.00746	0.01650	0.15699
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00431	0.01417	0.17386
	(C * !Y)	0.01043	0.02028	0.17996
	(B * !C * !Y)	0.00431	0.01416	0.17385
	(B * !C * !Y)	0.01044	0.02029	0.17997
	(A * !B * !C * !Y)	0.00431	0.01416	0.17384
	(A * !B * !C * !Y)	0.01044	0.02030	0.17996
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.00920	0.02444	0.27371
	(C * !Y)	0.01820	0.03349	0.28275
	(B * !C * !Y)	0.00919	0.02444	0.27370
	(B * !C * !Y)	0.01822	0.03352	0.28276
	(A * !B * !C * !Y)	0.00919	0.02444	0.27369
	(A * !B * !C * !Y)	0.01823	0.03352	0.28275

SKY130_FD_SC_HS__NOR4x

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00278	0.00294	0.00293	0.00297	0.38995
sky130_fd_sc_hs__nor4_2	0.00431	0.00493	0.00488	0.00458	0.68176
sky130_fd_sc_hs__nor4_4	0.00854	0.00890	0.00870	0.00883	1.18629

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor4_1	0.00000	0.03402	0.19015
sky130_fd_sc_hs__nor4_2	0.00000	0.06517	0.38031
sky130_fd_sc_hs__nor4_4	0.00000	0.13034	0.76060

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)	0.14073	0.94679	8.99319
	B->Y (FR)	0.13234	0.97147	9.48603
	C->Y (FR)	0.10870	0.98906	10.00830
	D->Y (FR)	0.07055	0.97339	10.16100
sky130_fd_sc_hs__nor4_2	A->Y (FR)	0.12272	0.78769	8.59958
	B->Y (FR)	0.10965	0.80019	9.08020
	C->Y (FR)	0.07872	0.80877	9.62317
	D->Y (FR)	0.03882	0.78492	9.73528
sky130_fd_sc_hs__nor4_4	A->Y (FR)	0.13586	0.67670	8.29674
	B->Y (FR)	0.12379	0.69401	8.87199
	C->Y (FR)	0.09558	0.71713	9.58552
	D->Y (FR)	0.04626	0.69905	9.80788

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4_1	A->Y (RF)	0.01812	0.21088	1.67790
	B->Y (RF)	0.02011	0.21555	1.75225
	C->Y (RF)	0.02031	0.20932	1.73924
	D->Y (RF)	0.01706	0.19812	1.69030
sky130_fd_sc_hs__nor4_2	A->Y (RF)	0.02495	0.29686	3.07980
	B->Y (RF)	0.02847	0.30038	3.18507
	C->Y (RF)	0.02733	0.28653	3.15167
	D->Y (RF)	0.02122	0.26165	2.98559
sky130_fd_sc_hs__nor4_4	A->Y (RF)	0.02555	0.23949	2.72531
	B->Y (RF)	0.02732	0.23224	2.72983
	C->Y (RF)	0.02798	0.22552	2.77907
	D->Y (RF)	0.02002	0.20658	2.73312

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.00029	0.00072	0.04676
	A	0.01277	0.01322	0.05931
	B	0.00048	0.00113	0.04011
	B	0.01128	0.01195	0.05095
	C	0.00048	0.00165	0.03704
	C	0.00958	0.01076	0.04614
	D	0.00026	0.00301	0.04832
	D	0.00791	0.01068	0.05604
sky130_fd_sc_hs__nor4_2	A	0.00038	0.00075	0.05635
	A	0.02169	0.02207	0.07769
	B	-0.00013	0.00057	0.04993
	B	0.01882	0.01952	0.06903
	C	0.00024	0.00182	0.04815
	C	0.01519	0.01679	0.06312
	D	-0.00027	0.00434	0.06732
	D	0.01123	0.01589	0.07860
sky130_fd_sc_hs__nor4_4	A	0.00467	0.00550	0.12071
	A	0.04809	0.04895	0.16413
	B	0.00482	0.00636	0.10813
	B	0.04153	0.04306	0.14509
	C	0.00500	0.00811	0.09978
	C	0.03453	0.03762	0.12937
	D	0.00437	0.01357	0.13151
	D	0.02705	0.03629	0.15425

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.01662	0.01795	0.05834
	A	0.00433	0.00564	0.04608
	B	0.01376	0.01522	0.05114
	B	0.00308	0.00452	0.04047
	C	0.01050	0.01230	0.04544
	C	0.00143	0.00320	0.03638
	D	0.00724	0.00935	0.04153
	D	-0.00040	0.00168	0.03385
sky130_fd_sc_hs__nor4_2	A	0.02961	0.03126	0.08067
	A	0.00877	0.01036	0.05972
	B	0.02426	0.02621	0.07134
	B	0.00560	0.00749	0.05274
	C	0.01655	0.01926	0.06196
	C	0.00167	0.00431	0.04701
	D	0.00936	0.01304	0.05502
	D	-0.00215	0.00148	0.04332
sky130_fd_sc_hs__nor4_4	A	0.05943	0.06247	0.16613
	A	0.01694	0.01998	0.12355
	B	0.04643	0.05076	0.14488
	B	0.01015	0.01442	0.10860
	C	0.03337	0.03885	0.12320
	C	0.00406	0.00941	0.09375
	D	0.01859	0.02550	0.10528
	D	-0.00410	0.00274	0.08246

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	0.00241	0.00243	0.00241
	(B * D * !Y)	-0.00287	-0.00294	-0.00293
	(B * C * !D * !Y)	0.00241	0.00243	0.00240
	(B * C * !D * !Y)	-0.00286	-0.00294	-0.00293
	(B * !C * !D * !Y)	0.00242	0.00243	0.00240
	(B * !C * !D * !Y)	-0.00279	-0.00294	-0.00293
	(!B * C * D * !Y)	0.00240	0.00242	0.00240
	(!B * C * D * !Y)	-0.00263	-0.00286	-0.00285
	(!B * C * !D * !Y)	0.00241	0.00242	0.00240
	(!B * C * !D * !Y)	-0.00263	-0.00286	-0.00286
	(!B * !C * D * !Y)	0.00245	0.00241	0.00241
	(!B * !C * D * !Y)	-0.00257	-0.00283	-0.00282
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00241	0.00242	0.00240
	(B * D * !Y)	-0.00553	-0.00572	-0.00570
	(B * C * !D * !Y)	0.00242	0.00242	0.00240
	(B * C * !D * !Y)	-0.00551	-0.00576	-0.00571
	(B * !C * !D * !Y)	0.00247	0.00242	0.00240
	(B * !C * !D * !Y)	-0.00530	-0.00573	-0.00571
	(!B * C * D * !Y)	0.00242	0.00242	0.00240
	(!B * C * D * !Y)	-0.00500	-0.00555	-0.00553
	(!B * C * !D * !Y)	0.00243	0.00242	0.00240
	(!B * C * !D * !Y)	-0.00500	-0.00554	-0.00553
	(!B * !C * D * !Y)	0.00251	0.00242	0.00240
	(!B * !C * D * !Y)	-0.00484	-0.00549	-0.00544

sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00501	0.00504	0.00499
	(B * D * !Y)	-0.01134	-0.01176	-0.01165
	(B * C * !D * !Y)	0.00501	0.00504	0.00499
	(B * C * !D * !Y)	-0.01132	-0.01176	-0.01165
	(B * !C * !D * !Y)	0.00514	0.00504	0.00499
	(B * !C * !D * !Y)	-0.01094	-0.01172	-0.01167
	(!B * C * D * !Y)	0.00502	0.00504	0.00499
	(!B * C * D * !Y)	-0.01039	-0.01139	-0.01134
	(!B * C * !D * !Y)	0.00504	0.00504	0.00499
	(!B * C * !D * !Y)	-0.01038	-0.01138	-0.01133
	(!B * !C * D * !Y)	0.00519	0.00505	0.00500
	(!B * !C * D * !Y)	-0.01012	-0.01128	-0.01119

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00239	-0.00241	-0.00240
	(B * D * !Y)	0.00292	0.00295	0.00293
	(B * C * !D * !Y)	-0.00239	-0.00241	-0.00240
	(B * C * !D * !Y)	0.00292	0.00295	0.00293
	(B * !C * !D * !Y)	-0.00239	-0.00240	-0.00240
	(B * !C * !D * !Y)	0.00292	0.00294	0.00293
	(!B * C * D * !Y)	-0.00240	-0.00240	-0.00240
	(!B * C * D * !Y)	0.00284	0.00286	0.00285
	(!B * C * !D * !Y)	-0.00240	-0.00241	-0.00240
	(!B * C * !D * !Y)	0.00285	0.00287	0.00286
	(!B * !C * D * !Y)	-0.00239	-0.00240	-0.00240
	(!B * !C * D * !Y)	0.00281	0.00283	0.00282

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00240	-0.00240	-0.00239
	(B * D * !Y)	0.00570	0.00572	0.00570
	(B * C * !D * !Y)	-0.00238	-0.00241	-0.00239
	(B * C * !D * !Y)	0.00566	0.00576	0.00571
	(B * !C * !D * !Y)	-0.00238	-0.00240	-0.00239
	(B * !C * !D * !Y)	0.00567	0.00573	0.00571
	(!B * C * D * !Y)	-0.00239	-0.00240	-0.00240
	(!B * C * D * !Y)	0.00551	0.00555	0.00553
	(!B * C * !D * !Y)	-0.00240	-0.00240	-0.00240
	(!B * C * !D * !Y)	0.00552	0.00554	0.00553
	(!B * !C * D * !Y)	-0.00239	-0.00240	-0.00239
	(!B * !C * D * !Y)	0.00544	0.00549	0.00544
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00496	-0.00501	-0.00498
	(B * D * !Y)	0.01158	0.01176	0.01165
	(B * C * !D * !Y)	-0.00496	-0.00501	-0.00498
	(B * C * !D * !Y)	0.01158	0.01176	0.01165
	(B * !C * !D * !Y)	-0.00497	-0.00500	-0.00498
	(B * !C * !D * !Y)	0.01161	0.01172	0.01167
	(!B * C * D * !Y)	-0.00496	-0.00500	-0.00498
	(!B * C * D * !Y)	0.01125	0.01139	0.01134
	(!B * C * !D * !Y)	-0.00496	-0.00500	-0.00498
	(!B * C * !D * !Y)	0.01125	0.01138	0.01133
	(!B * !C * D * !Y)	-0.00496	-0.00500	-0.00497
	(!B * !C * D * !Y)	0.01111	0.01128	0.01119

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)**	0.00235	0.00237	0.00233
	(A * C * D * !Y)	-0.00196	-0.00199	-0.00197
	(A * C * !D * !Y)	0.00247	0.00249	0.00237
	(A * C * !D * !Y)	-0.00188	-0.00189	-0.00187
	(A * !C * D * !Y)	0.00233	0.00242	0.00233
	(A * !C * D * !Y)	-0.00184	-0.00185	-0.00185
	(A * !C * !D * !Y)	0.00232	0.00234	0.00232
	(A * !C * !D * !Y)	-0.00153	-0.00154	-0.00153
	(!A * C * D * !Y)	0.00233	0.00234	0.00232
	(!A * C * D * !Y)	-0.00286	-0.00294	-0.00293
	(!A * C * !D * !Y)	0.00270	0.00234	0.00232
	(!A * C * !D * !Y)	-0.00250	-0.00294	-0.00293
	(!A * !C * D * !Y)	0.00261	0.00233	0.00232
	(!A * !C * D * !Y)	-0.00239	-0.00285	-0.00284
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	0.00308	0.00310	0.00304
	(A * C * D * !Y)	-0.00403	-0.00408	-0.00404
	(A * C * !D * !Y)	0.00343	0.00348	0.00317
	(A * C * !D * !Y)	-0.00380	-0.00385	-0.00382
	(A * !C * D * !Y)	0.00305	0.00317	0.00304
	(A * !C * D * !Y)	-0.00373	-0.00376	-0.00374
	(A * !C * !D * !Y)	0.00300	0.00303	0.00300
	(A * !C * !D * !Y)	-0.00309	-0.00312	-0.00310
	(!A * C * D * !Y)	0.00302	0.00301	0.00298
	(!A * C * D * !Y)	-0.00576	-0.00595	-0.00594
	(!A * C * !D * !Y)	0.00389	0.00300	0.00298
	(!A * C * !D * !Y)	-0.00495	-0.00597	-0.00596
	(!A * !C * D * !Y)	0.00362	0.00301	0.00298
	(!A * !C * D * !Y)	-0.00477	-0.00575	-0.00575

sky130_fd_sc_hs__nor4_4	**(A * C * D * !Y)**	0.00521	0.00523	0.00516
	(A * C * D * !Y)	-0.00801	-0.00808	-0.00802
	(A * C * !D * !Y)	0.00603	0.00603	0.00546
	(A * C * !D * !Y)	-0.00768	-0.00771	-0.00764
	(A * !C * D * !Y)	0.00525	0.00552	0.00527
	(A * !C * D * !Y)	-0.00750	-0.00748	-0.00746
	(A * !C * !D * !Y)	0.00517	0.00521	0.00516
	(A * !C * !D * !Y)	-0.00619	-0.00622	-0.00618
	(!A * C * D * !Y)	0.00524	0.00520	0.00515
	(!A * C * D * !Y)	-0.01161	-0.01198	-0.01195
	(!A * C * !D * !Y)	0.00673	0.00521	0.00516
	(!A * C * !D * !Y)	-0.01004	-0.01198	-0.01196
	(!A * !C * D * !Y)	0.00615	0.00519	0.00516
	(!A * !C * D * !Y)	-0.00978	-0.01157	-0.01153

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)**	-0.00230	-0.00232	-0.00231
	(A * C * D * !Y)	0.00196	0.00199	0.00197
	(A * C * !D * !Y)	-0.00231	-0.00232	-0.00231
	(A * C * !D * !Y)	0.00188	0.00189	0.00187
	(A * !C * D * !Y)	-0.00230	-0.00231	-0.00231
	(A * !C * D * !Y)	0.00184	0.00185	0.00185
	(A * !C * !D * !Y)	-0.00224	-0.00225	-0.00223
	(A * !C * !D * !Y)	0.00158	0.00160	0.00160
	(!A * C * D * !Y)	-0.00231	-0.00232	-0.00231
	(!A * C * D * !Y)	0.00293	0.00294	0.00293
	(!A * C * !D * !Y)	-0.00231	-0.00231	-0.00231
	(!A * C * !D * !Y)	0.00294	0.00294	0.00293
	(!A * !C * D * !Y)	-0.00230	-0.00232	-0.00230
	(!A * !C * D * !Y)	0.00283	0.00285	0.00284
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	-0.00301	-0.00304	-0.00302
	(A * C * D * !Y)	0.00403	0.00408	0.00404
	(A * C * !D * !Y)	-0.00301	-0.00303	-0.00302
	(A * C * !D * !Y)	0.00380	0.00385	0.00382
	(A * !C * D * !Y)	-0.00299	-0.00301	-0.00300
	(A * !C * D * !Y)	0.00373	0.00376	0.00374
	(A * !C * !D * !Y)	-0.00286	-0.00286	-0.00281
	(A * !C * !D * !Y)	0.00324	0.00325	0.00325
	(!A * C * D * !Y)	-0.00298	-0.00299	-0.00298
	(!A * C * D * !Y)	0.00592	0.00595	0.00594
	(!A * C * !D * !Y)	-0.00298	-0.00300	-0.00298
	(!A * C * !D * !Y)	0.00594	0.00598	0.00596
	(!A * !C * D * !Y)	-0.00297	-0.00298	-0.00296
	(!A * !C * D * !Y)	0.00573	0.00575	0.00575

sky130_fd_sc_hs__nor4_4	(A * C * D * !Y)	-0.00514	-0.00517	-0.00515
	(A * C * D * !Y)	0.00801	0.00808	0.00802
	(A * C * !D * !Y)	-0.00516	-0.00518	-0.00515
	(A * C * !D * !Y)	0.00768	0.00771	0.00764
	(A * !C * D * !Y)	-0.00520	-0.00520	-0.00519
	(A * !C * D * !Y)	0.00750	0.00748	0.00746
	(A * !C * !D * !Y)	-0.00485	-0.00488	-0.00479
	(A * !C * !D * !Y)	0.00642	0.00647	0.00650
	(!A * C * D * !Y)	-0.00514	-0.00515	-0.00514
	(!A * C * D * !Y)	0.01192	0.01198	0.01195
	(!A * C * !D * !Y)	-0.00513	-0.00515	-0.00514
	(!A * C * !D * !Y)	0.01192	0.01198	0.01196
	(!A * !C * D * !Y)	-0.00513	-0.00516	-0.00512
	(!A * !C * D * !Y)	0.01148	0.01157	0.01153

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(B * D * !Y)	0.00254	0.00255	0.00243
	(B * D * !Y)	-0.00179	-0.00180	-0.00178
	(B * !D * !Y)	0.00237	0.00239	0.00235
	(B * !D * !Y)	-0.00143	-0.00144	-0.00144
	(A * !B * D * !Y)	0.00269	0.00250	0.00237
	(A * !B * D * !Y)	-0.00175	-0.00183	-0.00183
	(A * !B * !D * !Y)	0.00239	0.00240	0.00236
	(A * !B * !D * !Y)	-0.00142	-0.00142	-0.00143
	(!A * !B * D * !Y)	0.00304	0.00240	0.00235
	(!A * !B * D * !Y)	-0.00217	-0.00283	-0.00285

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00341	0.00335	0.00313
	(B * D * !Y)	-0.00367	-0.00368	-0.00365
	(B * !D * !Y)	0.00302	0.00303	0.00297
	(B * !D * !Y)	-0.00293	-0.00292	-0.00292
	(A * !B * D * !Y)	0.00367	0.00322	0.00301
	(A * !B * D * !Y)	-0.00355	-0.00374	-0.00373
	(A * !B * !D * !Y)	0.00305	0.00305	0.00298
	(A * !B * !D * !Y)	-0.00289	-0.00289	-0.00290
	(!A * !B * D * !Y)	0.00428	0.00302	0.00295
	(!A * !B * D * !Y)	-0.00441	-0.00580	-0.00583
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00577	0.00582	0.00534
	(B * D * !Y)	-0.00729	-0.00733	-0.00726
	(B * !D * !Y)	0.00510	0.00513	0.00499
	(B * !D * !Y)	-0.00590	-0.00595	-0.00597
	(A * !B * D * !Y)	0.00658	0.00543	0.00506
	(A * !B * D * !Y)	-0.00708	-0.00749	-0.00751
	(A * !B * !D * !Y)	0.00516	0.00520	0.00502
	(A * !B * !D * !Y)	-0.00582	-0.00587	-0.00592
	(!A * !B * D * !Y)	0.00818	0.00514	0.00495
	(!A * !B * D * !Y)	-0.00854	-0.01164	-0.01176

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

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

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00235	-0.00235	-0.00234
	(B * D * !Y)	0.00179	0.00180	0.00178
	(B * !D * !Y)	-0.00234	-0.00234	-0.00232
	(B * !D * !Y)	0.00147	0.00147	0.00148
	(A * !B * D * !Y)	-0.00234	-0.00235	-0.00234
	(A * !B * D * !Y)	0.00182	0.00183	0.00183
	(A * !B * !D * !Y)	-0.00230	-0.00232	-0.00232
	(A * !B * !D * !Y)	0.00143	0.00145	0.00145
	(!A * !B * D * !Y)	-0.00234	-0.00235	-0.00233
	(!A * !B * D * !Y)	0.00285	0.00286	0.00285
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00299	-0.00300	-0.00298
	(B * D * !Y)	0.00367	0.00368	0.00365
	(B * !D * !Y)	-0.00294	-0.00296	-0.00291
	(B * !D * !Y)	0.00295	0.00298	0.00299
	(A * !B * D * !Y)	-0.00295	-0.00297	-0.00296
	(A * !B * D * !Y)	0.00371	0.00374	0.00373
	(A * !B * !D * !Y)	-0.00284	-0.00287	-0.00290
	(A * !B * !D * !Y)	0.00295	0.00298	0.00295
	(!A * !B * D * !Y)	-0.00293	-0.00293	-0.00290
	(!A * !B * D * !Y)	0.00582	0.00584	0.00583
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00502	-0.00504	-0.00501
	(B * D * !Y)	0.00729	0.00733	0.00726
	(B * !D * !Y)	-0.00489	-0.00493	-0.00486
	(B * !D * !Y)	0.00603	0.00611	0.00613
	(A * !B * D * !Y)	-0.00500	-0.00498	-0.00499
	(A * !B * D * !Y)	0.00753	0.00749	0.00751
	(A * !B * !D * !Y)	-0.00482	-0.00485	-0.00485
	(A * !B * !D * !Y)	0.00594	0.00601	0.00601
	(!A * !B * D * !Y)	-0.00489	-0.00492	-0.00487
	(!A * !B * D * !Y)	0.01167	0.01177	0.01176

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	0.00270	0.00272	0.00270
	(C * !Y)	-0.00132	-0.00133	-0.00132
	(B * !C * !Y)	0.00271	0.00272	0.00270
	(B * !C * !Y)	-0.00133	-0.00132	-0.00131
	(A * !B * !C * !Y)	0.00271	0.00272	0.00270
	(A * !B * !C * !Y)	-0.00133	-0.00132	-0.00131
sky130_fd_sc_hs__nor4_2	(C * !Y)	0.00325	0.00326	0.00327
	(C * !Y)	-0.00260	-0.00260	-0.00261
	(B * !C * !Y)	0.00326	0.00326	0.00327
	(B * !C * !Y)	-0.00258	-0.00258	-0.00259
	(A * !B * !C * !Y)	0.00327	0.00326	0.00327
	(A * !B * !C * !Y)	-0.00259	-0.00258	-0.00259
sky130_fd_sc_hs__nor4_4	(C * !Y)	0.00620	0.00621	0.00617
	(C * !Y)	-0.00526	-0.00524	-0.00520
	(B * !C * !Y)	0.00619	0.00621	0.00616
	(B * !C * !Y)	-0.00524	-0.00523	-0.00518
	(A * !B * !C * !Y)	0.00618	0.00622	0.00617
	(A * !B * !C * !Y)	-0.00523	-0.00523	-0.00518

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	-0.00263	-0.00264	-0.00269
	(C * !Y)	0.00139	0.00139	0.00134
	(B * !C * !Y)	-0.00254	-0.00255	-0.00268
	(B * !C * !Y)	0.00143	0.00143	0.00133
	(A * !B * !C * !Y)	-0.00241	-0.00244	-0.00265
	(A * !B * !C * !Y)	0.00148	0.00149	0.00134
sky130_fd_sc_hs__nor4_2	(C * !Y)	-0.00311	-0.00313	-0.00325
	(C * !Y)	0.00274	0.00274	0.00265
	(B * !C * !Y)	-0.00289	-0.00289	-0.00322
	(B * !C * !Y)	0.00284	0.00284	0.00263
	(A * !B * !C * !Y)	-0.00263	-0.00264	-0.00315
	(A * !B * !C * !Y)	0.00299	0.00298	0.00266
sky130_fd_sc_hs__nor4_4	(C * !Y)	-0.00579	-0.00586	-0.00614
	(C * !Y)	0.00549	0.00553	0.00528
	(B * !C * !Y)	-0.00541	-0.00547	-0.00606
	(B * !C * !Y)	0.00567	0.00571	0.00527
	(A * !B * !C * !Y)	-0.00484	-0.00490	-0.00591
	(A * !B * !C * !Y)	0.00599	0.00602	0.00534

SKY130_FD_SC_HS__O2111AIx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00281	0.00293	0.00284	0.00301	0.00293	0.75087
sky130_fd_sc_hs__o2111ai_2	0.00546	0.00550	0.00568	0.00554	0.00551	1.29788
sky130_fd_sc_hs__o2111ai_4	0.01089	0.01099	0.00825	0.00833	0.00822	2.12045

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2111ai_1	0.00000	0.06615	0.76062
sky130_fd_sc_hs__o2111ai_2	0.00000	0.13229	1.52124
sky130_fd_sc_hs__o2111ai_4	0.00000	0.15762	1.90156

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)	0.10128	0.81424	9.54528
	A2->Y (FR)	0.09145	0.83775	10.07750
	B1->Y (FR)	0.04155	0.56692	7.13593
	C1->Y (FR)	0.03646	0.56139	7.13398
	D1->Y (FR)	0.03020	0.55410	7.11234
sky130_fd_sc_hs__o2111ai_2	A1->Y (FR)	0.10502	0.70521	9.27719
	A2->Y (FR)	0.08995	0.72985	9.84024
	B1->Y (FR)	0.03899	0.48716	6.74017
	C1->Y (FR)	0.03329	0.47773	6.70846
	D1->Y (FR)	0.02531	0.46647	6.67444
sky130_fd_sc_hs__o2111ai_4	A1->Y (FR)	0.11312	0.62253	8.92389
	A2->Y (FR)	0.09492	0.65215	9.56800
	B1->Y (FR)	0.06954	0.61700	9.27798
	C1->Y (FR)	0.05368	0.57634	8.77594
	D1->Y (FR)	0.03952	0.58648	9.20424

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111ai_1	A1->Y (RF)	0.05913	0.40482	4.44412
	A2->Y (RF)	0.04876	0.38388	4.31266
	B1->Y (RF)	0.05442	0.45093	5.20587
	C1->Y (RF)	0.04902	0.48756	5.79310
	D1->Y (RF)	0.04140	0.50825	6.16756
sky130_fd_sc_hs__o2111ai_2	A1->Y (RF)	0.06746	0.35424	4.48672
	A2->Y (RF)	0.05257	0.33126	4.35716
	B1->Y (RF)	0.06176	0.39527	5.22276
	C1->Y (RF)	0.05510	0.45845	6.22797
	D1->Y (RF)	0.04221	0.47541	6.62074
sky130_fd_sc_hs__o2111ai_4	A1->Y (RF)	0.06353	0.26404	3.80020
	A2->Y (RF)	0.05332	0.25633	3.93931
	B1->Y (RF)	0.04483	0.30484	4.85332
	C1->Y (RF)	0.03795	0.35608	5.75915
	D1->Y (RF)	0.02469	0.37689	6.27830

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111ai_1	A1	0.00327	0.00429	0.03373
	A1	0.01698	0.01802	0.04748
	A2	0.00330	0.00524	0.04252
	A2	0.01532	0.01694	0.05448
	B1	0.00167	0.00523	0.05536
	B1	0.01161	0.01524	0.06557
	C1	0.00070	0.00437	0.05247
	C1	0.00934	0.01304	0.06137
	D1	-0.00005	0.00362	0.05041
	D1	0.00704	0.01074	0.05784
sky130_fd_sc_hs__o2111ai_2	A1	0.00540	0.00716	0.05918
	A1	0.03298	0.03456	0.08705
	A2	0.00547	0.00922	0.07396
	A2	0.02940	0.03313	0.09784
	B1	0.00221	0.00845	0.10106
	B1	0.02252	0.02875	0.12244
	C1	0.00067	0.00670	0.09342
	C1	0.01764	0.02365	0.11035
	D1	-0.00238	0.00426	0.08854
	D1	0.01139	0.01805	0.10230

sky130_fd_sc_hs__o2111ai_4	**A1**	0.00942	0.01310	0.12038
	A1	0.06342	0.06720	0.17483
	A2	0.00908	0.01671	0.13686
	A2	0.05655	0.06423	0.18430
	B1	0.00376	0.01107	0.11653
	B1	0.03782	0.04511	0.15093
	C1	0.00076	0.00836	0.11197
	C1	0.02855	0.03623	0.14026
	D1	-0.00429	0.00507	0.10243
	D1	0.01685	0.02627	0.12424

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111ai_1	**A1**	0.01695	0.01770	0.04326
	A1	0.00295	0.00364	0.02879
	A2	0.01398	0.01486	0.03895
	A2	0.00166	0.00246	0.02589
	B1	0.01155	0.01275	0.04119
	B1	0.00144	0.00257	0.03027
	C1	0.01011	0.01132	0.03670
	C1	0.00143	0.00259	0.02764
	D1	0.00841	0.01002	0.03683
	D1	0.00135	0.00295	0.02976

sky130_fd_sc_hs__o2111ai_2	**A1**	0.03505	0.03625	0.08480
	A1	0.00690	0.00803	0.05648
	A2	0.02746	0.02916	0.07430
	A2	0.00289	0.00455	0.04946
	B1	0.02309	0.02561	0.08264
	B1	0.00240	0.00487	0.06076
	C1	0.01964	0.02195	0.06849
	C1	0.00251	0.00476	0.05076
	D1	0.01605	0.01959	0.06792
	D1	0.00230	0.00572	0.05416
sky130_fd_sc_hs__o2111ai_4	**A1**	0.06753	0.06998	0.16973
	A1	0.01238	0.01474	0.11409
	A2	0.05231	0.05606	0.14743
	A2	0.00356	0.00728	0.09703
	B1	0.04157	0.04467	0.10572
	B1	0.00687	0.00988	0.07099
	C1	0.03502	0.03819	0.09218
	C1	0.00691	0.00992	0.06334
	D1	0.02795	0.03238	0.08798
	D1	0.00681	0.01102	0.06523

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)**	0.00288	0.00247	0.00242
	(A2 * B1 * C1 * D1 * !Y)	-0.00245	-0.00291	-0.00293
	(A2 * B1 * C1 * !D1 * Y)	0.00241	0.00243	0.00240
	(A2 * B1 * C1 * !D1 * Y)	-0.00290	-0.00295	-0.00294
	(A2 * B1 * !C1 * Y)	0.00241	0.00243	0.00240
	(A2 * B1 * !C1 * Y)	-0.00290	-0.00295	-0.00294
	(A2 * !B1 * Y)	0.00241	0.00243	0.00240
	(A2 * !B1 * Y)	-0.00290	-0.00295	-0.00294
	(!A2 * B1 * C1 * !D1 * Y)	0.00224	0.00224	0.00223
	(!A2 * B1 * C1 * !D1 * Y)	-0.00296	-0.00296	-0.00296
	(!A2 * B1 * !C1 * D1 * Y)	0.00226	0.00226	0.00225
	(!A2 * B1 * !C1 * D1 * Y)	-0.00296	-0.00296	-0.00296
	(!A2 * B1 * !C1 * !D1 * Y)	0.00226	0.00226	0.00225
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00296	-0.00297	-0.00296
	(!A2 * !B1 * C1 * D1 * Y)	0.00231	0.00233	0.00232
	(!A2 * !B1 * C1 * D1 * Y)	-0.00295	-0.00296	-0.00296
	(!A2 * !B1 * !D1 * Y)	0.00231	0.00233	0.00232
	(!A2 * !B1 * !D1 * Y)	-0.00295	-0.00297	-0.00296
	(!A2 * !B1 * !C1 * D1 * Y)	0.00231	0.00233	0.00232
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00295	-0.00297	-0.00296

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	0.00581	0.00476	0.00468
	(A2 * B1 * C1 * D1 * !Y)	-0.00474	-0.00591	-0.00591
	(A2 * B1 * C1 * !D1 * Y)	0.00466	0.00470	0.00466
	(A2 * B1 * C1 * !D1 * Y)	-0.00581	-0.00596	-0.00591
	(A2 * B1 * !C1 * Y)	0.00466	0.00470	0.00466
	(A2 * B1 * !C1 * Y)	-0.00581	-0.00596	-0.00591
	(A2 * !B1 * Y)	0.00466	0.00470	0.00466
	(A2 * !B1 * Y)	-0.00581	-0.00596	-0.00591
	(!A2 * B1 * C1 * !D1 * Y)	0.00435	0.00439	0.00435
	(!A2 * B1 * C1 * !D1 * Y)	-0.00596	-0.00601	-0.00598
	(!A2 * B1 * !C1 * D1 * Y)	0.00438	0.00441	0.00437
	(!A2 * B1 * !C1 * D1 * Y)	-0.00596	-0.00601	-0.00598
	(!A2 * B1 * !C1 * !D1 * Y)	0.00438	0.00441	0.00437
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00596	-0.00601	-0.00598
	(!A2 * !B1 * C1 * D1 * Y)	0.00443	0.00447	0.00444
	(!A2 * !B1 * C1 * D1 * Y)	-0.00597	-0.00600	-0.00598
	(!A2 * !B1 * !D1 * Y)	0.00443	0.00447	0.00444
	(!A2 * !B1 * !D1 * Y)	-0.00597	-0.00601	-0.00598
	(!A2 * !B1 * !C1 * D1 * Y)	0.00443	0.00447	0.00444
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00597	-0.00601	-0.00598

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	0.01176	0.00961	0.00949
	(A2 * B1 * C1 * D1 * !Y)	-0.00910	-0.01152	-0.01149
	(A2 * B1 * C1 * !D1 * Y)	0.00912	0.00921	0.00912
	(A2 * B1 * C1 * !D1 * Y)	-0.01161	-0.01187	-0.01183
	(A2 * B1 * !C1 * Y)	0.00912	0.00921	0.00912
	(A2 * B1 * !C1 * Y)	-0.01162	-0.01187	-0.01183
	(A2 * !B1 * Y)	0.00913	0.00921	0.00912
	(A2 * !B1 * Y)	-0.01162	-0.01188	-0.01183
	(!A2 * B1 * C1 * !D1 * Y)	0.00857	0.00859	0.00856
	(!A2 * B1 * C1 * !D1 * Y)	-0.01191	-0.01195	-0.01192
	(!A2 * B1 * !C1 * D1 * Y)	0.00862	0.00868	0.00860
	(!A2 * B1 * !C1 * D1 * Y)	-0.01188	-0.01198	-0.01192
	(!A2 * B1 * !C1 * !D1 * Y)	0.00865	0.00873	0.00864
	(!A2 * B1 * !C1 * !D1 * Y)	-0.01188	-0.01199	-0.01192
	(!A2 * !B1 * C1 * D1 * Y)	0.00875	0.00885	0.00876
	(!A2 * !B1 * C1 * D1 * Y)	-0.01191	-0.01199	-0.01192
	(!A2 * !B1 * !D1 * Y)	0.00866	0.00875	0.00869
	(!A2 * !B1 * !D1 * Y)	-0.01190	-0.01197	-0.01192
	(!A2 * !B1 * !C1 * D1 * Y)	0.00866	0.00875	0.00869
	(!A2 * !B1 * !C1 * D1 * Y)	-0.01190	-0.01197	-0.01192

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)**	-0.00239	-0.00240	-0.00239
	(A2 * B1 * C1 * D1 * !Y)	0.00293	0.00296	0.00295
	(A2 * B1 * C1 * !D1 * Y)	-0.00239	-0.00241	-0.00240
	(A2 * B1 * C1 * !D1 * Y)	0.00293	0.00296	0.00294
	(A2 * B1 * !C1 * Y)	-0.00239	-0.00241	-0.00240
	(A2 * B1 * !C1 * Y)	0.00292	0.00296	0.00294
	(A2 * !B1 * Y)	-0.00239	-0.00241	-0.00240
	(A2 * !B1 * Y)	0.00293	0.00296	0.00294
	(!A2 * B1 * C1 * !D1 * Y)	-0.00206	-0.00224	-0.00223
	(!A2 * B1 * C1 * !D1 * Y)	0.00296	0.00298	0.00297
	(!A2 * B1 * !C1 * D1 * Y)	-0.00211	-0.00226	-0.00225
	(!A2 * B1 * !C1 * D1 * Y)	0.00296	0.00298	0.00297
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00211	-0.00226	-0.00225
	(!A2 * B1 * !C1 * !D1 * Y)	0.00296	0.00298	0.00297
	(!A2 * !B1 * C1 * D1 * Y)	-0.00218	-0.00231	-0.00232
	(!A2 * !B1 * C1 * D1 * Y)	0.00295	0.00299	0.00297
	(!A2 * !B1 * !D1 * Y)	-0.00219	-0.00231	-0.00232
	(!A2 * !B1 * !D1 * Y)	0.00295	0.00299	0.00297
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00219	-0.00231	-0.00232
	(!A2 * !B1 * !C1 * D1 * Y)	0.00295	0.00299	0.00297

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	-0.00463	-0.00464	-0.00463
	(A2 * B1 * C1 * D1 * !Y)	0.00589	0.00592	0.00593
	(A2 * B1 * C1 * !D1 * Y)	-0.00463	-0.00467	-0.00465
	(A2 * B1 * C1 * !D1 * Y)	0.00587	0.00596	0.00591
	(A2 * B1 * !C1 * Y)	-0.00463	-0.00467	-0.00465
	(A2 * B1 * !C1 * Y)	0.00587	0.00596	0.00591
	(A2 * !B1 * Y)	-0.00463	-0.00467	-0.00465
	(A2 * !B1 * Y)	0.00589	0.00597	0.00591
	(!A2 * B1 * C1 * !D1 * Y)	-0.00394	-0.00437	-0.00435
	(!A2 * B1 * C1 * !D1 * Y)	0.00596	0.00607	0.00599
	(!A2 * B1 * !C1 * D1 * Y)	-0.00400	-0.00441	-0.00437
	(!A2 * B1 * !C1 * D1 * Y)	0.00596	0.00603	0.00600
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00400	-0.00441	-0.00437
	(!A2 * B1 * !C1 * !D1 * Y)	0.00596	0.00603	0.00600
	(!A2 * !B1 * C1 * D1 * Y)	-0.00419	-0.00447	-0.00444
	(!A2 * !B1 * C1 * D1 * Y)	0.00597	0.00604	0.00600
	(!A2 * !B1 * !D1 * Y)	-0.00420	-0.00447	-0.00444
	(!A2 * !B1 * !D1 * Y)	0.00597	0.00604	0.00600
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00420	-0.00447	-0.00444
	(!A2 * !B1 * !C1 * D1 * Y)	0.00597	0.00604	0.00600

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	-0.00946	-0.00949	-0.00943
	(A2 * B1 * C1 * D1 * !Y)	0.01149	0.01158	0.01150
	(A2 * B1 * C1 * !D1 * Y)	-0.00911	-0.00912	-0.00910
	(A2 * B1 * C1 * !D1 * Y)	0.01184	0.01187	0.01183
	(A2 * B1 * !C1 * Y)	-0.00911	-0.00912	-0.00910
	(A2 * B1 * !C1 * Y)	0.01184	0.01187	0.01183
	(A2 * !B1 * Y)	-0.00908	-0.00912	-0.00910
	(A2 * !B1 * Y)	0.01178	0.01188	0.01183
	(!A2 * B1 * C1 * !D1 * Y)	-0.00766	-0.00850	-0.00856
	(!A2 * B1 * C1 * !D1 * Y)	0.01191	0.01200	0.01195
	(!A2 * B1 * !C1 * D1 * Y)	-0.00780	-0.00868	-0.00860
	(!A2 * B1 * !C1 * D1 * Y)	0.01188	0.01203	0.01195
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00780	-0.00867	-0.00864
	(!A2 * B1 * !C1 * !D1 * Y)	0.01188	0.01203	0.01195
	(!A2 * !B1 * C1 * D1 * Y)	-0.00818	-0.00881	-0.00876
	(!A2 * !B1 * C1 * D1 * Y)	0.01191	0.01204	0.01195
	(!A2 * !B1 * !D1 * Y)	-0.00822	-0.00875	-0.00869
	(!A2 * !B1 * !D1 * Y)	0.01191	0.01204	0.01195
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00823	-0.00875	-0.00869
	(!A2 * !B1 * !C1 * D1 * Y)	0.01191	0.01204	0.01195

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)**	0.00260	0.00263	0.00261
	(A1 * B1 * C1 * D1 * !Y)	-0.00128	-0.00130	-0.00128
	(A1 * B1 * C1 * !D1 * Y)	0.00234	0.00237	0.00235
	(A1 * B1 * C1 * !D1 * Y)	-0.00286	-0.00291	-0.00289
	(A1 * B1 * !C1 * D1 * Y)	0.00234	0.00237	0.00235
	(A1 * B1 * !C1 * D1 * Y)	-0.00286	-0.00290	-0.00289
	(A1 * B1 * !C1 * !D1 * Y)	0.00234	0.00237	0.00235
	(A1 * B1 * !C1 * !D1 * Y)	-0.00286	-0.00291	-0.00290
	(A1 * !B1 * C1 * D1 * Y)	0.00234	0.00237	0.00235
	(A1 * !B1 * C1 * D1 * Y)	-0.00286	-0.00290	-0.00289
	(A1 * !B1 * !D1 * Y)	0.00235	0.00237	0.00235
	(A1 * !B1 * !D1 * Y)	-0.00287	-0.00291	-0.00290
	(A1 * !B1 * !C1 * D1 * Y)	0.00235	0.00237	0.00235
	(A1 * !B1 * !C1 * D1 * Y)	-0.00287	-0.00291	-0.00290
	(!A1 * B1 * C1 * !D1 * Y)	0.00217	0.00218	0.00217
	(!A1 * B1 * C1 * !D1 * Y)	-0.00292	-0.00293	-0.00292
	(!A1 * B1 * !C1 * D1 * Y)	0.00220	0.00221	0.00219
	(!A1 * B1 * !C1 * D1 * Y)	-0.00292	-0.00294	-0.00292
	(!A1 * B1 * !C1 * !D1 * Y)	0.00220	0.00221	0.00219
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00292	-0.00294	-0.00292
	(!A1 * !B1 * C1 * D1 * Y)	0.00226	0.00227	0.00226
	(!A1 * !B1 * C1 * D1 * Y)	-0.00292	-0.00293	-0.00292
	(!A1 * !B1 * !D1 * Y)	0.00225	0.00227	0.00226
	(!A1 * !B1 * !D1 * Y)	-0.00292	-0.00293	-0.00292
	(!A1 * !B1 * !C1 * D1 * Y)	0.00225	0.00227	0.00226
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00292	-0.00293	-0.00292

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	0.00505	0.00512	0.00508
	(A1 * B1 * C1 * D1 * !Y)	-0.00261	-0.00265	-0.00262
	(A1 * B1 * C1 * !D1 * Y)	0.00458	0.00460	0.00456
	(A1 * B1 * C1 * !D1 * Y)	-0.00575	-0.00581	-0.00582
	(A1 * B1 * !C1 * D1 * Y)	0.00453	0.00457	0.00456
	(A1 * B1 * !C1 * D1 * Y)	-0.00570	-0.00581	-0.00582
	(A1 * B1 * !C1 * !D1 * Y)	0.00454	0.00461	0.00456
	(A1 * B1 * !C1 * !D1 * Y)	-0.00571	-0.00582	-0.00583
	(A1 * !B1 * C1 * D1 * Y)	0.00454	0.00458	0.00456
	(A1 * !B1 * C1 * D1 * Y)	-0.00571	-0.00581	-0.00583
	(A1 * !B1 * !D1 * Y)	0.00454	0.00461	0.00456
	(A1 * !B1 * !D1 * Y)	-0.00571	-0.00585	-0.00584
	(A1 * !B1 * !C1 * D1 * Y)	0.00454	0.00461	0.00456
	(A1 * !B1 * !C1 * D1 * Y)	-0.00572	-0.00585	-0.00584
	(!A1 * B1 * C1 * !D1 * Y)	0.00429	0.00432	0.00429
	(!A1 * B1 * C1 * !D1 * Y)	-0.00591	-0.00593	-0.00591
	(!A1 * B1 * !C1 * D1 * Y)	0.00432	0.00436	0.00432
	(!A1 * B1 * !C1 * D1 * Y)	-0.00591	-0.00594	-0.00591
	(!A1 * B1 * !C1 * !D1 * Y)	0.00432	0.00435	0.00432
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00591	-0.00594	-0.00591
	(!A1 * !B1 * C1 * D1 * Y)	0.00433	0.00438	0.00435
	(!A1 * !B1 * C1 * D1 * Y)	-0.00588	-0.00592	-0.00591
	(!A1 * !B1 * !D1 * Y)	0.00436	0.00437	0.00435
	(!A1 * !B1 * !D1 * Y)	-0.00589	-0.00592	-0.00591
	(!A1 * !B1 * !C1 * D1 * Y)	0.00432	0.00437	0.00435
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00588	-0.00592	-0.00591

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	0.01039	0.01053	0.01044
	(A1 * B1 * C1 * D1 * !Y)	-0.00522	-0.00530	-0.00525
	(A1 * B1 * C1 * !D1 * Y)	0.00924	0.00933	0.00927
	(A1 * B1 * C1 * !D1 * Y)	-0.01157	-0.01182	-0.01177
	(A1 * B1 * !C1 * D1 * Y)	0.00924	0.00932	0.00927
	(A1 * B1 * !C1 * D1 * Y)	-0.01157	-0.01182	-0.01177
	(A1 * B1 * !C1 * !D1 * Y)	0.00924	0.00929	0.00927
	(A1 * B1 * !C1 * !D1 * Y)	-0.01158	-0.01182	-0.01179
	(A1 * !B1 * C1 * D1 * Y)	0.00928	0.00933	0.00927
	(A1 * !B1 * C1 * D1 * Y)	-0.01161	-0.01181	-0.01177
	(A1 * !B1 * !D1 * Y)	0.00928	0.00929	0.00926
	(A1 * !B1 * !D1 * Y)	-0.01161	-0.01182	-0.01179
	(A1 * !B1 * !C1 * D1 * Y)	0.00929	0.00929	0.00927
	(A1 * !B1 * !C1 * D1 * Y)	-0.01161	-0.01182	-0.01179
	(!A1 * B1 * C1 * !D1 * Y)	0.00861	0.00869	0.00859
	(!A1 * B1 * C1 * !D1 * Y)	-0.01188	-0.01199	-0.01192
	(!A1 * B1 * !C1 * D1 * Y)	0.00875	0.00879	0.00872
	(!A1 * B1 * !C1 * D1 * Y)	-0.01187	-0.01197	-0.01192
	(!A1 * B1 * !C1 * !D1 * Y)	0.00873	0.00879	0.00871
	(!A1 * B1 * !C1 * !D1 * Y)	-0.01188	-0.01199	-0.01192
	(!A1 * !B1 * C1 * D1 * Y)	0.00889	0.00893	0.00889
	(!A1 * !B1 * C1 * D1 * Y)	-0.01189	-0.01196	-0.01192
	(!A1 * !B1 * !D1 * Y)	0.00888	0.00890	0.00888
	(!A1 * !B1 * !D1 * Y)	-0.01189	-0.01194	-0.01192
	(!A1 * !B1 * !C1 * D1 * Y)	0.00888	0.00891	0.00888
	(!A1 * !B1 * !C1 * D1 * Y)	-0.01189	-0.01195	-0.01192

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)**	-0.00253	-0.00254	-0.00259
	(A1 * B1 * C1 * D1 * !Y)	0.00136	0.00136	0.00131
	(A1 * B1 * C1 * !D1 * Y)	-0.00234	-0.00235	-0.00234
	(A1 * B1 * C1 * !D1 * Y)	0.00288	0.00291	0.00289
	(A1 * B1 * !C1 * D1 * Y)	-0.00234	-0.00235	-0.00234
	(A1 * B1 * !C1 * D1 * Y)	0.00288	0.00290	0.00289
	(A1 * B1 * !C1 * !D1 * Y)	-0.00234	-0.00235	-0.00234
	(A1 * B1 * !C1 * !D1 * Y)	0.00288	0.00291	0.00290
	(A1 * !B1 * C1 * D1 * Y)	-0.00234	-0.00235	-0.00234
	(A1 * !B1 * C1 * D1 * Y)	0.00289	0.00290	0.00289
	(A1 * !B1 * !D1 * Y)	-0.00234	-0.00235	-0.00234
	(A1 * !B1 * !D1 * Y)	0.00289	0.00291	0.00290
	(A1 * !B1 * !C1 * D1 * Y)	-0.00234	-0.00235	-0.00234
	(A1 * !B1 * !C1 * D1 * Y)	0.00289	0.00291	0.00290
	(!A1 * B1 * C1 * !D1 * Y)	-0.00199	-0.00218	-0.00217
	(!A1 * B1 * C1 * !D1 * Y)	0.00292	0.00294	0.00293
	(!A1 * B1 * !C1 * D1 * Y)	-0.00204	-0.00221	-0.00219
	(!A1 * B1 * !C1 * D1 * Y)	0.00292	0.00294	0.00293
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00205	-0.00221	-0.00219
	(!A1 * B1 * !C1 * !D1 * Y)	0.00292	0.00295	0.00293
	(!A1 * !B1 * C1 * D1 * Y)	-0.00214	-0.00226	-0.00226
	(!A1 * !B1 * C1 * D1 * Y)	0.00293	0.00295	0.00293
	(!A1 * !B1 * !D1 * Y)	-0.00215	-0.00226	-0.00226
	(!A1 * !B1 * !D1 * Y)	0.00293	0.00295	0.00293
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00215	-0.00226	-0.00226
	(!A1 * !B1 * !C1 * D1 * Y)	0.00293	0.00295	0.00293

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	-0.00483	-0.00486	-0.00503
	(A1 * B1 * C1 * D1 * !Y)	0.00281	0.00283	0.00269
	(A1 * B1 * C1 * !D1 * Y)	-0.00455	-0.00454	-0.00455
	(A1 * B1 * C1 * !D1 * Y)	0.00582	0.00581	0.00582
	(A1 * B1 * !C1 * D1 * Y)	-0.00453	-0.00454	-0.00455
	(A1 * B1 * !C1 * D1 * Y)	0.00582	0.00581	0.00582
	(A1 * B1 * !C1 * !D1 * Y)	-0.00454	-0.00454	-0.00455
	(A1 * B1 * !C1 * !D1 * Y)	0.00581	0.00582	0.00583
	(A1 * !B1 * C1 * D1 * Y)	-0.00453	-0.00454	-0.00455
	(A1 * !B1 * C1 * D1 * Y)	0.00580	0.00581	0.00583
	(A1 * !B1 * !D1 * Y)	-0.00454	-0.00456	-0.00455
	(A1 * !B1 * !D1 * Y)	0.00581	0.00585	0.00584
	(A1 * !B1 * !C1 * D1 * Y)	-0.00454	-0.00456	-0.00455
	(A1 * !B1 * !C1 * D1 * Y)	0.00581	0.00585	0.00584
	(!A1 * B1 * C1 * !D1 * Y)	-0.00385	-0.00428	-0.00429
	(!A1 * B1 * C1 * !D1 * Y)	0.00593	0.00599	0.00592
	(!A1 * B1 * !C1 * D1 * Y)	-0.00393	-0.00434	-0.00432
	(!A1 * B1 * !C1 * D1 * Y)	0.00592	0.00595	0.00592
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00393	-0.00434	-0.00432
	(!A1 * B1 * !C1 * !D1 * Y)	0.00592	0.00595	0.00592
	(!A1 * !B1 * C1 * D1 * Y)	-0.00409	-0.00438	-0.00435
	(!A1 * !B1 * C1 * D1 * Y)	0.00589	0.00596	0.00592
	(!A1 * !B1 * !D1 * Y)	-0.00410	-0.00437	-0.00435
	(!A1 * !B1 * !D1 * Y)	0.00589	0.00596	0.00592
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00411	-0.00437	-0.00435
	(!A1 * !B1 * !C1 * D1 * Y)	0.00589	0.00596	0.00592

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	-0.01000	-0.01002	-0.01038
	(A1 * B1 * C1 * D1 * !Y)	0.00568	0.00566	0.00537
	(A1 * B1 * C1 * !D1 * Y)	-0.00922	-0.00928	-0.00925
	(A1 * B1 * C1 * !D1 * Y)	0.01171	0.01182	0.01177
	(A1 * B1 * !C1 * D1 * Y)	-0.00919	-0.00928	-0.00925
	(A1 * B1 * !C1 * D1 * Y)	0.01169	0.01182	0.01177
	(A1 * B1 * !C1 * !D1 * Y)	-0.00921	-0.00927	-0.00925
	(A1 * B1 * !C1 * !D1 * Y)	0.01172	0.01182	0.01179
	(A1 * !B1 * C1 * D1 * Y)	-0.00922	-0.00928	-0.00925
	(A1 * !B1 * C1 * D1 * Y)	0.01172	0.01181	0.01177
	(A1 * !B1 * !D1 * Y)	-0.00926	-0.00927	-0.00925
	(A1 * !B1 * !D1 * Y)	0.01179	0.01182	0.01179
	(A1 * !B1 * !C1 * D1 * Y)	-0.00926	-0.00927	-0.00925
	(A1 * !B1 * !C1 * D1 * Y)	0.01179	0.01183	0.01179
	(!A1 * B1 * C1 * !D1 * Y)	-0.00783	-0.00867	-0.00859
	(!A1 * B1 * C1 * !D1 * Y)	0.01188	0.01199	0.01195
	(!A1 * B1 * !C1 * D1 * Y)	-0.00795	-0.00877	-0.00872
	(!A1 * B1 * !C1 * D1 * Y)	0.01187	0.01201	0.01195
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00796	-0.00877	-0.00871
	(!A1 * B1 * !C1 * !D1 * Y)	0.01188	0.01201	0.01195
	(!A1 * !B1 * C1 * D1 * Y)	-0.00830	-0.00893	-0.00889
	(!A1 * !B1 * C1 * D1 * Y)	0.01189	0.01202	0.01195
	(!A1 * !B1 * !D1 * Y)	-0.00834	-0.00890	-0.00888
	(!A1 * !B1 * !D1 * Y)	0.01189	0.01203	0.01195
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00835	-0.00891	-0.00888
	(!A1 * !B1 * !C1 * D1 * Y)	0.01189	0.01203	0.01195

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)**	0.00214	0.00215	0.00214
	(A2 * C1 * !D1 * Y)	-0.00296	-0.00297	-0.00295
	(A2 * !C1 * D1 * Y)	0.00220	0.00221	0.00220
	(A2 * !C1 * D1 * Y)	-0.00295	-0.00296	-0.00296
	(A2 * !C1 * !D1 * Y)	0.00220	0.00221	0.00220
	(A2 * !C1 * !D1 * Y)	-0.00294	-0.00296	-0.00296
	(A1 * !A2 * C1 * !D1 * Y)	0.00218	0.00219	0.00218
	(A1 * !A2 * C1 * !D1 * Y)	-0.00296	-0.00296	-0.00295
	(A1 * !A2 * !C1 * D1 * Y)	0.00220	0.00221	0.00220
	(A1 * !A2 * !C1 * D1 * Y)	-0.00296	-0.00296	-0.00296
	(A1 * !A2 * !C1 * !D1 * Y)	0.00221	0.00221	0.00221
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00296	-0.00296	-0.00296
	(!A1 * !A2 * C1 * D1 * Y)	0.00095	0.00096	0.00095
	(!A1 * !A2 * C1 * D1 * Y)	-0.00290	-0.00293	-0.00290
	(!A1 * !A2 * C1 * !D1 * Y)	0.00116	0.00115	0.00116
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00296	-0.00295	-0.00295
	(!A1 * !A2 * !C1 * D1 * Y)	0.00124	0.00123	0.00123
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00296	-0.00296	-0.00296
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00128	0.00128	0.00127
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00296	-0.00296	-0.00296

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	0.00454	0.00457	0.00456
	(A2 * C1 * !D1 * Y)	-0.00610	-0.00611	-0.00611
	(A2 * !C1 * D1 * Y)	0.00458	0.00462	0.00460
	(A2 * !C1 * D1 * Y)	-0.00610	-0.00612	-0.00611
	(A2 * !C1 * !D1 * Y)	0.00459	0.00461	0.00460
	(A2 * !C1 * !D1 * Y)	-0.00610	-0.00612	-0.00611
	(A1 * !A2 * C1 * !D1 * Y)	0.00453	0.00456	0.00455
	(A1 * !A2 * C1 * !D1 * Y)	-0.00610	-0.00613	-0.00611
	(A1 * !A2 * !C1 * D1 * Y)	0.00461	0.00463	0.00461
	(A1 * !A2 * !C1 * D1 * Y)	-0.00610	-0.00612	-0.00611
	(A1 * !A2 * !C1 * !D1 * Y)	0.00460	0.00463	0.00461
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00609	-0.00612	-0.00611
	(!A1 * !A2 * C1 * D1 * Y)	0.00201	0.00201	0.00204
	(!A1 * !A2 * C1 * D1 * Y)	-0.00602	-0.00601	-0.00599
	(!A1 * !A2 * C1 * !D1 * Y)	0.00246	0.00249	0.00248
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00609	-0.00613	-0.00612
	(!A1 * !A2 * !C1 * D1 * Y)	0.00256	0.00255	0.00254
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00612	-0.00613	-0.00611
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00263	0.00265	0.00264
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00610	-0.00613	-0.00611

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	0.00872	0.00876	0.00873
	(A2 * C1 * !D1 * Y)	-0.00637	-0.00637	-0.00636
	(A2 * !C1 * D1 * Y)	0.00891	0.00898	0.00893
	(A2 * !C1 * D1 * Y)	-0.00636	-0.00637	-0.00636
	(A2 * !C1 * !D1 * Y)	0.00891	0.00895	0.00893
	(A2 * !C1 * !D1 * Y)	-0.00636	-0.00637	-0.00636
	(A1 * !A2 * C1 * !D1 * Y)	0.00872	0.00876	0.00873
	(A1 * !A2 * C1 * !D1 * Y)	-0.00637	-0.00638	-0.00636
	(A1 * !A2 * !C1 * D1 * Y)	0.00891	0.00904	0.00893
	(A1 * !A2 * !C1 * D1 * Y)	-0.00636	-0.00639	-0.00636
	(A1 * !A2 * !C1 * !D1 * Y)	0.00891	0.00896	0.00893
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00636	-0.00638	-0.00636
	(!A1 * !A2 * C1 * D1 * Y)	0.00371	0.00371	0.00374
	(!A1 * !A2 * C1 * D1 * Y)	-0.00620	-0.00620	-0.00614
	(!A1 * !A2 * C1 * !D1 * Y)	0.00454	0.00455	0.00453
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00640	-0.00642	-0.00641
	(!A1 * !A2 * !C1 * D1 * Y)	0.00468	0.00473	0.00468
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00637	-0.00641	-0.00637
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00486	0.00486	0.00485
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00636	-0.00638	-0.00637

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)**	-0.00195	-0.00214	-0.00214
	(A2 * C1 * !D1 * Y)	0.00297	0.00300	0.00296
	(A2 * !C1 * D1 * Y)	-0.00206	-0.00221	-0.00220
	(A2 * !C1 * D1 * Y)	0.00295	0.00297	0.00296
	(A2 * !C1 * !D1 * Y)	-0.00210	-0.00220	-0.00220
	(A2 * !C1 * !D1 * Y)	0.00294	0.00299	0.00296
	(A1 * !A2 * C1 * !D1 * Y)	-0.00189	-0.00214	-0.00218
	(A1 * !A2 * C1 * !D1 * Y)	0.00300	0.00296	0.00296
	(A1 * !A2 * !C1 * D1 * Y)	-0.00205	-0.00221	-0.00220
	(A1 * !A2 * !C1 * D1 * Y)	0.00298	0.00298	0.00296
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00210	-0.00221	-0.00220
	(A1 * !A2 * !C1 * !D1 * Y)	0.00296	0.00298	0.00296
	(!A1 * !A2 * C1 * D1 * Y)	-0.00090	-0.00090	-0.00090
	(!A1 * !A2 * C1 * D1 * Y)	0.00302	0.00305	0.00298
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00116	-0.00115	-0.00116
	(!A1 * !A2 * C1 * !D1 * Y)	0.00300	0.00307	0.00297
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00124	-0.00123	-0.00123
	(!A1 * !A2 * !C1 * D1 * Y)	0.00313	0.00311	0.00299
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00128	-0.00128	-0.00127
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00296	0.00299	0.00296

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	-0.00416	-0.00453	-0.00456
	(A2 * C1 * !D1 * Y)	0.00617	0.00611	0.00613
	(A2 * !C1 * D1 * Y)	-0.00439	-0.00462	-0.00460
	(A2 * !C1 * D1 * Y)	0.00610	0.00617	0.00613
	(A2 * !C1 * !D1 * Y)	-0.00443	-0.00461	-0.00460
	(A2 * !C1 * !D1 * Y)	0.00610	0.00617	0.00613
	(A1 * !A2 * C1 * !D1 * Y)	-0.00404	-0.00456	-0.00455
	(A1 * !A2 * C1 * !D1 * Y)	0.00621	0.00613	0.00613
	(A1 * !A2 * !C1 * D1 * Y)	-0.00432	-0.00463	-0.00461
	(A1 * !A2 * !C1 * D1 * Y)	0.00610	0.00612	0.00613
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00440	-0.00463	-0.00461
	(A1 * !A2 * !C1 * !D1 * Y)	0.00609	0.00612	0.00613
	(!A1 * !A2 * C1 * D1 * Y)	-0.00191	-0.00192	-0.00193
	(!A1 * !A2 * C1 * D1 * Y)	0.00624	0.00629	0.00617
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00246	-0.00249	-0.00248
	(!A1 * !A2 * C1 * !D1 * Y)	0.00622	0.00635	0.00616
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00256	-0.00255	-0.00254
	(!A1 * !A2 * !C1 * D1 * Y)	0.00646	0.00646	0.00622
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00263	-0.00265	-0.00264
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00613	0.00620	0.00613

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	-0.00778	-0.00876	-0.00873
	(A2 * C1 * !D1 * Y)	0.00651	0.00637	0.00638
	(A2 * !C1 * D1 * Y)	-0.00839	-0.00898	-0.00893
	(A2 * !C1 * D1 * Y)	0.00639	0.00637	0.00638
	(A2 * !C1 * !D1 * Y)	-0.00853	-0.00895	-0.00893
	(A2 * !C1 * !D1 * Y)	0.00637	0.00637	0.00638
	(A1 * !A2 * C1 * !D1 * Y)	-0.00765	-0.00876	-0.00873
	(A1 * !A2 * C1 * !D1 * Y)	0.00658	0.00641	0.00638
	(A1 * !A2 * !C1 * D1 * Y)	-0.00828	-0.00904	-0.00893
	(A1 * !A2 * !C1 * D1 * Y)	0.00640	0.00639	0.00638
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00847	-0.00896	-0.00893
	(A1 * !A2 * !C1 * !D1 * Y)	0.00636	0.00639	0.00638
	(!A1 * !A2 * C1 * D1 * Y)	-0.00346	-0.00351	-0.00352
	(!A1 * !A2 * C1 * D1 * Y)	0.00658	0.00667	0.00647
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00454	-0.00455	-0.00453
	(!A1 * !A2 * C1 * !D1 * Y)	0.00659	0.00685	0.00648
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00468	-0.00473	-0.00468
	(!A1 * !A2 * !C1 * D1 * Y)	0.00701	0.00697	0.00655
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00486	-0.00486	-0.00485
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00636	0.00646	0.00639

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)**	0.00222	0.00224	0.00224
	(A2 * B1 * !D1 * Y)	-0.00304	-0.00306	-0.00305
	(A2 * !B1 * D1 * Y)	0.00096	0.00096	0.00096
	(A2 * !B1 * D1 * Y)	-0.00305	-0.00305	-0.00304
	(A2 * !B1 * !D1 * Y)	0.00114	0.00114	0.00114
	(A2 * !B1 * !D1 * Y)	-0.00305	-0.00306	-0.00305
	(A1 * !A2 * B1 * !D1 * Y)	0.00225	0.00227	0.00227
	(A1 * !A2 * B1 * !D1 * Y)	-0.00304	-0.00306	-0.00305
	(!A2 * !B1 * D1 * Y)	0.00096	0.00096	0.00096
	(!A2 * !B1 * D1 * Y)	-0.00305	-0.00305	-0.00304
	(!A2 * !B1 * !D1 * Y)	0.00114	0.00114	0.00114
	(!A2 * !B1 * !D1 * Y)	-0.00305	-0.00306	-0.00305
	(!A1 * !A2 * B1 * D1 * Y)	0.00092	0.00092	0.00091
	(!A1 * !A2 * B1 * D1 * Y)	-0.00303	-0.00305	-0.00304
	(!A1 * !A2 * B1 * !D1 * Y)	0.00123	0.00123	0.00122
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00306	-0.00306	-0.00305

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	0.00438	0.00442	0.00441
	(A2 * B1 * !D1 * Y)	-0.00594	-0.00598	-0.00596
	(A2 * !B1 * D1 * Y)	0.00192	0.00194	0.00194
	(A2 * !B1 * D1 * Y)	-0.00594	-0.00596	-0.00595
	(A2 * !B1 * !D1 * Y)	0.00237	0.00238	0.00238
	(A2 * !B1 * !D1 * Y)	-0.00598	-0.00599	-0.00599
	(A1 * !A2 * B1 * !D1 * Y)	0.00439	0.00440	0.00439
	(A1 * !A2 * B1 * !D1 * Y)	-0.00597	-0.00597	-0.00596
	(!A2 * !B1 * D1 * Y)	0.00192	0.00194	0.00194
	(!A2 * !B1 * D1 * Y)	-0.00595	-0.00596	-0.00595
	(!A2 * !B1 * !D1 * Y)	0.00237	0.00239	0.00238
	(!A2 * !B1 * !D1 * Y)	-0.00598	-0.00601	-0.00599
	(!A1 * !A2 * B1 * D1 * Y)	0.00180	0.00181	0.00184
	(!A1 * !A2 * B1 * D1 * Y)	-0.00595	-0.00596	-0.00595
	(!A1 * !A2 * B1 * !D1 * Y)	0.00245	0.00245	0.00244
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00599	-0.00599	-0.00598

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * !D1 * Y)**	0.00877	0.00883	0.00881
	(A2 * B1 * !D1 * Y)	-0.00626	-0.00629	-0.00627
	(A2 * !B1 * D1 * Y)	0.00361	0.00360	0.00360
	(A2 * !B1 * D1 * Y)	-0.00630	-0.00629	-0.00628
	(A2 * !B1 * !D1 * Y)	0.00434	0.00435	0.00435
	(A2 * !B1 * !D1 * Y)	-0.00635	-0.00635	-0.00636
	(A1 * !A2 * B1 * !D1 * Y)	0.00875	0.00882	0.00879
	(A1 * !A2 * B1 * !D1 * Y)	-0.00626	-0.00629	-0.00627
	(!A2 * !B1 * D1 * Y)	0.00358	0.00360	0.00360
	(!A2 * !B1 * D1 * Y)	-0.00628	-0.00629	-0.00628
	(!A2 * !B1 * !D1 * Y)	0.00434	0.00435	0.00435
	(!A2 * !B1 * !D1 * Y)	-0.00635	-0.00635	-0.00636
	(!A1 * !A2 * B1 * D1 * Y)	0.00341	0.00343	0.00345
	(!A1 * !A2 * B1 * D1 * Y)	-0.00626	-0.00628	-0.00627
	(!A1 * !A2 * B1 * !D1 * Y)	0.00457	0.00460	0.00459
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00631	-0.00634	-0.00633

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)**	-0.00201	-0.00224	-0.00224
	(A2 * B1 * !D1 * Y)	0.00324	0.00309	0.00306
	(A2 * !B1 * D1 * Y)	-0.00093	-0.00093	-0.00093
	(A2 * !B1 * D1 * Y)	0.00311	0.00313	0.00306
	(A2 * !B1 * !D1 * Y)	-0.00114	-0.00114	-0.00114
	(A2 * !B1 * !D1 * Y)	0.00320	0.00321	0.00309
	(A1 * !A2 * B1 * !D1 * Y)	-0.00199	-0.00227	-0.00225
	(A1 * !A2 * B1 * !D1 * Y)	0.00328	0.00306	0.00306
	(!A2 * !B1 * D1 * Y)	-0.00092	-0.00093	-0.00093
	(!A2 * !B1 * D1 * Y)	0.00309	0.00313	0.00306
	(!A2 * !B1 * !D1 * Y)	-0.00114	-0.00114	-0.00114
	(!A2 * !B1 * !D1 * Y)	0.00318	0.00321	0.00309
	(!A1 * !A2 * B1 * D1 * Y)	-0.00088	-0.00089	-0.00089
	(!A1 * !A2 * B1 * D1 * Y)	0.00309	0.00313	0.00306
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00123	-0.00123	-0.00122
	(!A1 * !A2 * B1 * !D1 * Y)	0.00327	0.00320	0.00308

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	-0.00377	-0.00442	-0.00441
	(A2 * B1 * !D1 * Y)	0.00651	0.00602	0.00598
	(A2 * !B1 * D1 * Y)	-0.00183	-0.00185	-0.00188
	(A2 * !B1 * D1 * Y)	0.00609	0.00617	0.00601
	(A2 * !B1 * !D1 * Y)	-0.00237	-0.00238	-0.00238
	(A2 * !B1 * !D1 * Y)	0.00626	0.00634	0.00607
	(A1 * !A2 * B1 * !D1 * Y)	-0.00373	-0.00440	-0.00439
	(A1 * !A2 * B1 * !D1 * Y)	0.00659	0.00602	0.00598
	(!A2 * !B1 * D1 * Y)	-0.00182	-0.00185	-0.00188
	(!A2 * !B1 * D1 * Y)	0.00608	0.00616	0.00601
	(!A2 * !B1 * !D1 * Y)	-0.00237	-0.00239	-0.00238
	(!A2 * !B1 * !D1 * Y)	0.00626	0.00634	0.00607
	(!A1 * !A2 * B1 * D1 * Y)	-0.00177	-0.00179	-0.00182
	(!A1 * !A2 * B1 * D1 * Y)	0.00609	0.00617	0.00601
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00243	-0.00245	-0.00244
	(!A1 * !A2 * B1 * !D1 * Y)	0.00647	0.00625	0.00602

sky130_fd_sc_hs__o2111ai_4	(A2 * B1 * !D1 * Y)	-0.00741	-0.00883	-0.00881
	(A2 * B1 * !D1 * Y)	0.00755	0.00634	0.00629
	(A2 * !B1 * D1 * Y)	-0.00341	-0.00346	-0.00350
	(A2 * !B1 * D1 * Y)	0.00653	0.00662	0.00636
	(A2 * !B1 * !D1 * Y)	-0.00434	-0.00435	-0.00435
	(A2 * !B1 * !D1 * Y)	0.00687	0.00695	0.00648
	(A1 * !A2 * B1 * !D1 * Y)	-0.00736	-0.00875	-0.00879
	(A1 * !A2 * B1 * !D1 * Y)	0.00760	0.00635	0.00629
	(!A2 * !B1 * D1 * Y)	-0.00341	-0.00346	-0.00350
	(!A2 * !B1 * D1 * Y)	0.00653	0.00661	0.00636
	(!A2 * !B1 * !D1 * Y)	-0.00434	-0.00435	-0.00435
	(!A2 * !B1 * !D1 * Y)	0.00687	0.00695	0.00648
	(!A1 * !A2 * B1 * D1 * Y)	-0.00331	-0.00336	-0.00340
	(!A1 * !A2 * B1 * D1 * Y)	0.00652	0.00661	0.00636
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00453	-0.00460	-0.00459
	(!A1 * !A2 * B1 * !D1 * Y)	0.00731	0.00684	0.00642

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111ai_1	(A2 * !C1 * Y)	0.00070	0.00070	0.00069
	(A2 * !C1 * Y)	-0.00349	-0.00350	-0.00354
	(A2 * !B1 * C1 * Y)	0.00071	0.00071	0.00068
	(A2 * !B1 * C1 * Y)	-0.00343	-0.00344	-0.00353
	(!A2 * !C1 * Y)	0.00070	0.00070	0.00069
	(!A2 * !C1 * Y)	-0.00349	-0.00350	-0.00354
	(!A2 * !B1 * C1 * Y)	0.00071	0.00071	0.00068
	(!A2 * !B1 * C1 * Y)	-0.00342	-0.00344	-0.00353
	(!A1 * !A2 * B1 * C1 * Y)	0.00077	0.00077	0.00069
	(!A1 * !A2 * B1 * C1 * Y)	-0.00331	-0.00333	-0.00351

sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	0.00163	0.00163	0.00156
	(A2 * !C1 * Y)	-0.00671	-0.00673	-0.00682
	(A2 * !B1 * C1 * Y)	0.00161	0.00161	0.00150
	(A2 * !B1 * C1 * Y)	-0.00657	-0.00659	-0.00680
	(!A2 * !C1 * Y)	0.00163	0.00163	0.00156
	(!A2 * !C1 * Y)	-0.00671	-0.00673	-0.00682
	(!A2 * !B1 * C1 * Y)	0.00161	0.00161	0.00150
	(!A2 * !B1 * C1 * Y)	-0.00657	-0.00659	-0.00680
	(!A1 * !A2 * B1 * C1 * Y)	0.00167	0.00167	0.00149
	(!A1 * !A2 * B1 * C1 * Y)	-0.00636	-0.00637	-0.00677
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	0.00286	0.00287	0.00277
	(A2 * !C1 * Y)	-0.00791	-0.00796	-0.00814
	(A2 * !B1 * C1 * Y)	0.00284	0.00285	0.00266
	(A2 * !B1 * C1 * Y)	-0.00763	-0.00769	-0.00809
	(!A2 * !C1 * Y)	0.00288	0.00287	0.00277
	(!A2 * !C1 * Y)	-0.00794	-0.00795	-0.00814
	(!A2 * !B1 * C1 * Y)	0.00285	0.00285	0.00266
	(!A2 * !B1 * C1 * Y)	-0.00766	-0.00769	-0.00809
	(!A1 * !A2 * B1 * C1 * Y)	0.00300	0.00300	0.00267
	(!A1 * !A2 * B1 * C1 * Y)	-0.00724	-0.00729	-0.00802

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

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

sky130_fd_sc_hs__o2111ai_1	**(A2 * !C1 * Y)**	-0.00068	-0.00069	-0.00067
	(A2 * !C1 * Y)	0.00355	0.00360	0.00354
	(A2 * !B1 * C1 * Y)	-0.00066	-0.00067	-0.00066
	(A2 * !B1 * C1 * Y)	0.00351	0.00358	0.00354
	(!A2 * !C1 * Y)	-0.00068	-0.00069	-0.00067
	(!A2 * !C1 * Y)	0.00355	0.00360	0.00354
	(!A2 * !B1 * C1 * Y)	-0.00066	-0.00067	-0.00066
	(!A2 * !B1 * C1 * Y)	0.00352	0.00358	0.00354
	(!A1 * !A2 * B1 * C1 * Y)	-0.00066	-0.00068	-0.00066
	(!A1 * !A2 * B1 * C1 * Y)	0.00352	0.00358	0.00354
sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	-0.00154	-0.00156	-0.00153
	(A2 * !C1 * Y)	0.00684	0.00696	0.00684
	(A2 * !B1 * C1 * Y)	-0.00150	-0.00151	-0.00149
	(A2 * !B1 * C1 * Y)	0.00684	0.00691	0.00683
	(!A2 * !C1 * Y)	-0.00152	-0.00156	-0.00153
	(!A2 * !C1 * Y)	0.00679	0.00696	0.00684
	(!A2 * !B1 * C1 * Y)	-0.00148	-0.00151	-0.00149
	(!A2 * !B1 * C1 * Y)	0.00678	0.00691	0.00683
	(!A1 * !A2 * B1 * C1 * Y)	-0.00146	-0.00148	-0.00148
	(!A1 * !A2 * B1 * C1 * Y)	0.00678	0.00683	0.00683
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	-0.00270	-0.00276	-0.00271
	(A2 * !C1 * Y)	0.00811	0.00829	0.00815
	(A2 * !B1 * C1 * Y)	-0.00263	-0.00268	-0.00263
	(A2 * !B1 * C1 * Y)	0.00810	0.00823	0.00814
	(!A2 * !C1 * Y)	-0.00271	-0.00276	-0.00271
	(!A2 * !C1 * Y)	0.00813	0.00829	0.00815
	(!A2 * !B1 * C1 * Y)	-0.00264	-0.00267	-0.00263
	(!A2 * !B1 * C1 * Y)	0.00811	0.00822	0.00814
	(!A1 * !A2 * B1 * C1 * Y)	-0.00262	-0.00266	-0.00262
	(!A1 * !A2 * B1 * C1 * Y)	0.00810	0.00823	0.00814

SKY130_FD_SC_HS__O2111Ax

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00270	0.00276	0.00255	0.00276	0.00277	1.38307
sky130_fd_sc_hs__o2111a_2	0.00273	0.00272	0.00269	0.00278	0.00287	2.84998
sky130_fd_sc_hs__o2111a_4	0.00521	0.00560	0.00476	0.00489	0.00493	5.26152

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2111a_1	0.00000	0.52188	3.94086
sky130_fd_sc_hs__o2111a_2	0.00000	0.50627	1.93614
sky130_fd_sc_hs__o2111a_4	0.00000	1.39056	7.90452

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)	0.09611	0.49499	5.60445
	A2->X (RR)	0.08389	0.47673	5.48161
	B1->X (RR)	0.09093	0.51621	5.94907
	C1->X (RR)	0.08611	0.52529	6.06297
	D1->X (RR)	0.07891	0.52212	6.03755
sky130_fd_sc_hs__o2111a_2	A1->X (RR)	0.10570	0.42476	5.66341
	A2->X (RR)	0.09310	0.40771	5.55191
	B1->X (RR)	0.10113	0.44987	6.11405
	C1->X (RR)	0.09607	0.46243	6.23643
	D1->X (RR)	0.08827	0.46451	6.26394
sky130_fd_sc_hs__o2111a_4	A1->X (RR)	0.12819	0.37548	5.62993
	A2->X (RR)	0.11569	0.36843	5.51320
	B1->X (RR)	0.12360	0.41099	6.14336
	C1->X (RR)	0.11807	0.44236	6.38825
	D1->X (RR)	0.10572	0.43884	6.45321

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111a_1	A1->X (FF)	0.13231	0.52955	5.13444
	A2->X (FF)	0.12245	0.55346	5.29649
	B1->X (FF)	0.07772	0.46858	4.95022
	C1->X (FF)	0.07014	0.44795	4.80649
	D1->X (FF)	0.05817	0.41748	4.65442
sky130_fd_sc_hs__o2111a_2	A1->X (FF)	0.15235	0.53647	5.37338
	A2->X (FF)	0.14250	0.56435	5.54610
	B1->X (FF)	0.07626	0.44079	5.01705
	C1->X (FF)	0.07040	0.42414	4.87115
	D1->X (FF)	0.06068	0.39786	4.72726
sky130_fd_sc_hs__o2111a_4	A1->X (FF)	0.18293	0.53089	5.39085
	A2->X (FF)	0.17415	0.58399	5.69421
	B1->X (FF)	0.09933	0.45680	5.17614
	C1->X (FF)	0.09253	0.43471	4.92779
	D1->X (FF)	0.08053	0.40938	4.81406

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111a_1	A1	0.02095	0.02406	0.12584
	A1	0.00752	0.01064	0.11288
	A2	0.01816	0.02193	0.13380
	A2	0.00630	0.01008	0.12240
	B1	0.01573	0.02139	0.15787
	B1	0.00636	0.01201	0.14877
	C1	0.01428	0.02005	0.15142
	C1	0.00634	0.01211	0.14361
	D1	0.01277	0.01823	0.12684
	D1	0.00629	0.01175	0.12047
sky130_fd_sc_hs__o2111a_2	A1	0.02625	0.02879	0.12994
	A1	0.01282	0.01539	0.11730
	A2	0.02319	0.02644	0.13721
	A2	0.01144	0.01471	0.12645
	B1	0.02076	0.02574	0.16487
	B1	0.01107	0.01613	0.15518
	C1	0.01922	0.02426	0.15671
	C1	0.01105	0.01612	0.15025
	D1	0.01773	0.02318	0.14345
	D1	0.01094	0.01642	0.13834

sky130_fd_sc_hs__o2111a_4	**A1**	0.05533	0.05755	0.22627
	A1	0.02801	0.03023	0.20053
	A2	0.04999	0.05289	0.21917
	A2	0.02530	0.02822	0.19636
	B1	0.04394	0.05135	0.30190
	B1	0.02470	0.03215	0.28590
	C1	0.04085	0.04792	0.27773
	C1	0.02471	0.03185	0.26375
	D1	0.03737	0.04597	0.28034
	D1	0.02453	0.03322	0.26933

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**A1**	0.00853	0.01194	0.11312
	A1	0.02162	0.02500	0.12614
	A2	0.00861	0.01431	0.12693
	A2	0.02014	0.02552	0.13779
	B1	0.00642	0.01429	0.15231
	B1	0.01564	0.02348	0.16054
	C1	0.00566	0.01372	0.14658
	C1	0.01356	0.02141	0.15345
	D1	0.00456	0.01232	0.14294
	D1	0.01108	0.01870	0.14791

sky130_fd_sc_hs__o2111a_2	**A1**	0.01550	0.01631	0.11907
	A1	0.02858	0.02939	0.12949
	A2	0.01565	0.01859	0.13509
	A2	0.02707	0.02998	0.14117
	B1	0.01114	0.01877	0.15937
	B1	0.02066	0.02813	0.16881
	C1	0.01026	0.01772	0.15347
	C1	0.01834	0.02574	0.16001
	D1	0.00879	0.01641	0.15148
	D1	0.01556	0.02309	0.15620
sky130_fd_sc_hs__o2111a_4	**A1**	0.03343	0.03088	0.21314
	A1	0.06007	0.05748	0.23472
	A2	0.03371	0.03377	0.22231
	A2	0.05770	0.05772	0.24086
	B1	0.02430	0.03548	0.29100
	B1	0.04319	0.05418	0.30216
	C1	0.02239	0.03333	0.27199
	C1	0.04200	0.05133	0.26501
	D1	0.01869	0.03072	0.25920
	D1	0.03509	0.04589	0.25842

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)**	0.00291	0.00252	0.00246
	(A2 * B1 * C1 * D1 * X)	-0.00218	-0.00262	-0.00264
	(A2 * B1 * C1 * !D1 * !X)	0.00242	0.00244	0.00242
	(A2 * B1 * C1 * !D1 * !X)	-0.00265	-0.00269	-0.00268
	(A2 * B1 * !C1 * !X)	0.00242	0.00244	0.00242
	(A2 * B1 * !C1 * !X)	-0.00265	-0.00269	-0.00268
	(A2 * !B1 * !X)	0.00242	0.00244	0.00242
	(A2 * !B1 * !X)	-0.00265	-0.00269	-0.00268
	(!A2 * B1 * C1 * !D1 * !X)	0.00227	0.00229	0.00228
	(!A2 * B1 * C1 * !D1 * !X)	-0.00269	-0.00271	-0.00269
	(!A2 * B1 * !C1 * D1 * !X)	0.00231	0.00231	0.00230
	(!A2 * B1 * !C1 * D1 * !X)	-0.00270	-0.00270	-0.00270
	(!A2 * B1 * !C1 * !D1 * !X)	0.00231	0.00231	0.00230
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00270	-0.00270	-0.00270
	(!A2 * !B1 * C1 * D1 * !X)	0.00234	0.00235	0.00234
	(!A2 * !B1 * C1 * D1 * !X)	-0.00269	-0.00271	-0.00270
	(!A2 * !B1 * !D1 * !X)	0.00234	0.00235	0.00234
	(!A2 * !B1 * !D1 * !X)	-0.00269	-0.00270	-0.00270
	(!A2 * !B1 * !C1 * D1 * !X)	0.00234	0.00235	0.00234
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00269	-0.00270	-0.00270

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	0.00298	0.00259	0.00252
	(A2 * B1 * C1 * D1 * X)	-0.00218	-0.00262	-0.00264
	(A2 * B1 * C1 * !D1 * !X)	0.00251	0.00254	0.00251
	(A2 * B1 * C1 * !D1 * !X)	-0.00262	-0.00266	-0.00265
	(A2 * B1 * !C1 * !X)	0.00251	0.00254	0.00251
	(A2 * B1 * !C1 * !X)	-0.00262	-0.00266	-0.00265
	(A2 * !B1 * !X)	0.00251	0.00254	0.00251
	(A2 * !B1 * !X)	-0.00262	-0.00266	-0.00265
	(!A2 * B1 * C1 * !D1 * !X)	0.00237	0.00238	0.00237
	(!A2 * B1 * C1 * !D1 * !X)	-0.00267	-0.00267	-0.00267
	(!A2 * B1 * !C1 * D1 * !X)	0.00240	0.00241	0.00240
	(!A2 * B1 * !C1 * D1 * !X)	-0.00267	-0.00267	-0.00267
	(!A2 * B1 * !C1 * !D1 * !X)	0.00240	0.00240	0.00240
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00267	-0.00267	-0.00267
	(!A2 * !B1 * C1 * D1 * !X)	0.00240	0.00241	0.00241
	(!A2 * !B1 * C1 * D1 * !X)	-0.00266	-0.00267	-0.00267
	(!A2 * !B1 * !D1 * !X)	0.00240	0.00242	0.00241
	(!A2 * !B1 * !D1 * !X)	-0.00266	-0.00267	-0.00267
	(!A2 * !B1 * !C1 * D1 * !X)	0.00240	0.00242	0.00241
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00266	-0.00267	-0.00267

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	0.00588	0.00499	0.00490
	(A2 * B1 * C1 * D1 * X)	-0.00418	-0.00515	-0.00517
	(A2 * B1 * C1 * !D1 * !X)	0.00450	0.00453	0.00449
	(A2 * B1 * C1 * !D1 * !X)	-0.00550	-0.00559	-0.00557
	(A2 * B1 * !C1 * !X)	0.00450	0.00453	0.00449
	(A2 * B1 * !C1 * !X)	-0.00550	-0.00559	-0.00557
	(A2 * !B1 * !X)	0.00450	0.00453	0.00449
	(A2 * !B1 * !X)	-0.00550	-0.00559	-0.00557
	(!A2 * B1 * C1 * !D1 * !X)	0.00422	0.00423	0.00421
	(!A2 * B1 * C1 * !D1 * !X)	-0.00563	-0.00562	-0.00562
	(!A2 * B1 * !C1 * D1 * !X)	0.00424	0.00427	0.00423
	(!A2 * B1 * !C1 * D1 * !X)	-0.00563	-0.00564	-0.00562
	(!A2 * B1 * !C1 * !D1 * !X)	0.00423	0.00426	0.00423
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00563	-0.00564	-0.00562
	(!A2 * !B1 * C1 * D1 * !X)	0.00429	0.00435	0.00431
	(!A2 * !B1 * C1 * D1 * !X)	-0.00561	-0.00565	-0.00562
	(!A2 * !B1 * !D1 * !X)	0.00429	0.00436	0.00430
	(!A2 * !B1 * !D1 * !X)	-0.00561	-0.00565	-0.00562
	(!A2 * !B1 * !C1 * D1 * !X)	0.00429	0.00436	0.00430
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00561	-0.00565	-0.00562

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)**	-0.00238	-0.00238	-0.00237
	(A2 * B1 * C1 * D1 * X)	0.00272	0.00273	0.00272
	(A2 * B1 * C1 * !D1 * !X)	-0.00241	-0.00242	-0.00241
	(A2 * B1 * C1 * !D1 * !X)	0.00268	0.00270	0.00268
	(A2 * B1 * !C1 * !X)	-0.00241	-0.00242	-0.00241
	(A2 * B1 * !C1 * !X)	0.00268	0.00270	0.00268
	(A2 * !B1 * !X)	-0.00241	-0.00242	-0.00241
	(A2 * !B1 * !X)	0.00268	0.00270	0.00268
	(!A2 * B1 * C1 * !D1 * !X)	-0.00207	-0.00229	-0.00228
	(!A2 * B1 * C1 * !D1 * !X)	0.00271	0.00272	0.00271
	(!A2 * B1 * !C1 * D1 * !X)	-0.00212	-0.00229	-0.00230
	(!A2 * B1 * !C1 * D1 * !X)	0.00271	0.00272	0.00271
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00212	-0.00229	-0.00230
	(!A2 * B1 * !C1 * !D1 * !X)	0.00271	0.00272	0.00271
	(!A2 * !B1 * C1 * D1 * !X)	-0.00220	-0.00233	-0.00234
	(!A2 * !B1 * C1 * D1 * !X)	0.00270	0.00272	0.00271
	(!A2 * !B1 * !D1 * !X)	-0.00221	-0.00233	-0.00234
	(!A2 * !B1 * !D1 * !X)	0.00270	0.00272	0.00271
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00221	-0.00233	-0.00234
	(!A2 * !B1 * !C1 * D1 * !X)	0.00270	0.00272	0.00271

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	-0.00248	-0.00248	-0.00247
	(A2 * B1 * C1 * D1 * X)	0.00268	0.00269	0.00268
	(A2 * B1 * C1 * !D1 * !X)	-0.00249	-0.00250	-0.00249
	(A2 * B1 * C1 * !D1 * !X)	0.00264	0.00267	0.00265
	(A2 * B1 * !C1 * !X)	-0.00249	-0.00250	-0.00249
	(A2 * B1 * !C1 * !X)	0.00264	0.00267	0.00265
	(A2 * !B1 * !X)	-0.00249	-0.00250	-0.00249
	(A2 * !B1 * !X)	0.00265	0.00267	0.00265
	(!A2 * B1 * C1 * !D1 * !X)	-0.00217	-0.00238	-0.00237
	(!A2 * B1 * C1 * !D1 * !X)	0.00268	0.00269	0.00268
	(!A2 * B1 * !C1 * D1 * !X)	-0.00220	-0.00239	-0.00240
	(!A2 * B1 * !C1 * D1 * !X)	0.00268	0.00271	0.00268
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00220	-0.00239	-0.00240
	(!A2 * B1 * !C1 * !D1 * !X)	0.00268	0.00271	0.00268
	(!A2 * !B1 * C1 * D1 * !X)	-0.00230	-0.00241	-0.00241
	(!A2 * !B1 * C1 * D1 * !X)	0.00268	0.00270	0.00268
	(!A2 * !B1 * !D1 * !X)	-0.00231	-0.00242	-0.00241
	(!A2 * !B1 * !D1 * !X)	0.00268	0.00270	0.00268
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00231	-0.00242	-0.00241
	(!A2 * !B1 * !C1 * D1 * !X)	0.00268	0.00270	0.00268

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	-0.00473	-0.00475	-0.00473
	(A2 * B1 * C1 * D1 * X)	0.00528	0.00533	0.00532
	(A2 * B1 * C1 * !D1 * !X)	-0.00446	-0.00448	-0.00447
	(A2 * B1 * C1 * !D1 * !X)	0.00555	0.00559	0.00557
	(A2 * B1 * !C1 * !X)	-0.00445	-0.00448	-0.00447
	(A2 * B1 * !C1 * !X)	0.00555	0.00559	0.00557
	(A2 * !B1 * !X)	-0.00445	-0.00448	-0.00447
	(A2 * !B1 * !X)	0.00555	0.00559	0.00557
	(!A2 * B1 * C1 * !D1 * !X)	-0.00390	-0.00422	-0.00421
	(!A2 * B1 * C1 * !D1 * !X)	0.00563	0.00571	0.00564
	(!A2 * B1 * !C1 * D1 * !X)	-0.00394	-0.00427	-0.00423
	(!A2 * B1 * !C1 * D1 * !X)	0.00563	0.00568	0.00564
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00394	-0.00426	-0.00423
	(!A2 * B1 * !C1 * !D1 * !X)	0.00563	0.00568	0.00564
	(!A2 * !B1 * C1 * D1 * !X)	-0.00408	-0.00433	-0.00431
	(!A2 * !B1 * C1 * D1 * !X)	0.00563	0.00568	0.00564
	(!A2 * !B1 * !D1 * !X)	-0.00409	-0.00433	-0.00430
	(!A2 * !B1 * !D1 * !X)	0.00563	0.00568	0.00564
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00409	-0.00433	-0.00430
	(!A2 * !B1 * !C1 * D1 * !X)	0.00563	0.00568	0.00564

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)**	0.00255	0.00256	0.00254
	(A1 * B1 * C1 * D1 * X)	-0.00121	-0.00121	-0.00120
	(A1 * B1 * C1 * !D1 * !X)	0.00229	0.00232	0.00230
	(A1 * B1 * C1 * !D1 * !X)	-0.00260	-0.00263	-0.00263
	(A1 * B1 * !C1 * D1 * !X)	0.00229	0.00232	0.00230
	(A1 * B1 * !C1 * D1 * !X)	-0.00260	-0.00263	-0.00263
	(A1 * B1 * !C1 * !D1 * !X)	0.00230	0.00232	0.00230
	(A1 * B1 * !C1 * !D1 * !X)	-0.00260	-0.00263	-0.00263
	(A1 * !B1 * C1 * D1 * !X)	0.00230	0.00233	0.00230
	(A1 * !B1 * C1 * D1 * !X)	-0.00260	-0.00263	-0.00263
	(A1 * !B1 * !D1 * !X)	0.00230	0.00232	0.00230
	(A1 * !B1 * !D1 * !X)	-0.00260	-0.00264	-0.00263
	(A1 * !B1 * !C1 * D1 * !X)	0.00230	0.00232	0.00230
	(A1 * !B1 * !C1 * D1 * !X)	-0.00260	-0.00264	-0.00263
	(!A1 * B1 * C1 * !D1 * !X)	0.00217	0.00219	0.00218
	(!A1 * B1 * C1 * !D1 * !X)	-0.00265	-0.00266	-0.00265
	(!A1 * B1 * !C1 * D1 * !X)	0.00221	0.00222	0.00220
	(!A1 * B1 * !C1 * D1 * !X)	-0.00266	-0.00267	-0.00265
	(!A1 * B1 * !C1 * !D1 * !X)	0.00221	0.00222	0.00221
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00266	-0.00266	-0.00265
	(!A1 * !B1 * C1 * D1 * !X)	0.00224	0.00225	0.00224
	(!A1 * !B1 * C1 * D1 * !X)	-0.00265	-0.00266	-0.00265
	(!A1 * !B1 * !D1 * !X)	0.00222	0.00223	0.00224
	(!A1 * !B1 * !D1 * !X)	-0.00264	-0.00265	-0.00265
	(!A1 * !B1 * !C1 * D1 * !X)	0.00222	0.00224	0.00223
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00264	-0.00266	-0.00265

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	0.00251	0.00254	0.00252
	(A1 * B1 * C1 * D1 * X)	-0.00117	-0.00119	-0.00118
	(A1 * B1 * C1 * !D1 * !X)	0.00232	0.00234	0.00231
	(A1 * B1 * C1 * !D1 * !X)	-0.00255	-0.00258	-0.00258
	(A1 * B1 * !C1 * D1 * !X)	0.00232	0.00234	0.00231
	(A1 * B1 * !C1 * D1 * !X)	-0.00255	-0.00258	-0.00258
	(A1 * B1 * !C1 * !D1 * !X)	0.00232	0.00234	0.00231
	(A1 * B1 * !C1 * !D1 * !X)	-0.00255	-0.00260	-0.00258
	(A1 * !B1 * C1 * D1 * !X)	0.00232	0.00234	0.00231
	(A1 * !B1 * C1 * D1 * !X)	-0.00255	-0.00258	-0.00258
	(A1 * !B1 * !D1 * !X)	0.00232	0.00234	0.00231
	(A1 * !B1 * !D1 * !X)	-0.00255	-0.00259	-0.00258
	(A1 * !B1 * !C1 * D1 * !X)	0.00232	0.00234	0.00231
	(A1 * !B1 * !C1 * D1 * !X)	-0.00255	-0.00260	-0.00258
	(!A1 * B1 * C1 * !D1 * !X)	0.00216	0.00216	0.00216
	(!A1 * B1 * C1 * !D1 * !X)	-0.00260	-0.00260	-0.00260
	(!A1 * B1 * !C1 * D1 * !X)	0.00218	0.00219	0.00217
	(!A1 * B1 * !C1 * D1 * !X)	-0.00260	-0.00261	-0.00260
	(!A1 * B1 * !C1 * !D1 * !X)	0.00218	0.00219	0.00217
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00260	-0.00261	-0.00260
	(!A1 * !B1 * C1 * D1 * !X)	0.00223	0.00224	0.00223
	(!A1 * !B1 * C1 * D1 * !X)	-0.00260	-0.00260	-0.00260
	(!A1 * !B1 * !D1 * !X)	0.00223	0.00224	0.00223
	(!A1 * !B1 * !D1 * !X)	-0.00260	-0.00260	-0.00260
	(!A1 * !B1 * !C1 * D1 * !X)	0.00223	0.00224	0.00223
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00260	-0.00261	-0.00260

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	0.00554	0.00559	0.00555
	(A1 * B1 * C1 * D1 * X)	-0.00238	-0.00240	-0.00238
	(A1 * B1 * C1 * !D1 * !X)	0.00470	0.00473	0.00471
	(A1 * B1 * C1 * !D1 * !X)	-0.00552	-0.00560	-0.00559
	(A1 * B1 * !C1 * D1 * !X)	0.00470	0.00473	0.00471
	(A1 * B1 * !C1 * D1 * !X)	-0.00552	-0.00560	-0.00559
	(A1 * B1 * !C1 * !D1 * !X)	0.00471	0.00476	0.00471
	(A1 * B1 * !C1 * !D1 * !X)	-0.00554	-0.00563	-0.00560
	(A1 * !B1 * C1 * D1 * !X)	0.00470	0.00472	0.00471
	(A1 * !B1 * C1 * D1 * !X)	-0.00552	-0.00560	-0.00559
	(A1 * !B1 * !D1 * !X)	0.00471	0.00476	0.00471
	(A1 * !B1 * !D1 * !X)	-0.00554	-0.00562	-0.00560
	(A1 * !B1 * !C1 * D1 * !X)	0.00471	0.00476	0.00471
	(A1 * !B1 * !C1 * D1 * !X)	-0.00554	-0.00562	-0.00560
	(!A1 * B1 * C1 * !D1 * !X)	0.00443	0.00446	0.00443
	(!A1 * B1 * C1 * !D1 * !X)	-0.00566	-0.00568	-0.00565
	(!A1 * B1 * !C1 * D1 * !X)	0.00442	0.00446	0.00441
	(!A1 * B1 * !C1 * D1 * !X)	-0.00566	-0.00569	-0.00565
	(!A1 * B1 * !C1 * !D1 * !X)	0.00446	0.00451	0.00446
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00566	-0.00569	-0.00565
	(!A1 * !B1 * C1 * D1 * !X)	0.00453	0.00459	0.00454
	(!A1 * !B1 * C1 * D1 * !X)	-0.00564	-0.00569	-0.00565
	(!A1 * !B1 * !D1 * !X)	0.00452	0.00456	0.00454
	(!A1 * !B1 * !D1 * !X)	-0.00564	-0.00567	-0.00565
	(!A1 * !B1 * !C1 * D1 * !X)	0.00452	0.00456	0.00454
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00564	-0.00567	-0.00565

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)**	-0.00242	-0.00243	-0.00247
	(A1 * B1 * C1 * D1 * X)	0.00131	0.00132	0.00127
	(A1 * B1 * C1 * !D1 * !X)	-0.00229	-0.00230	-0.00229
	(A1 * B1 * C1 * !D1 * !X)	0.00263	0.00263	0.00263
	(A1 * B1 * !C1 * D1 * !X)	-0.00229	-0.00230	-0.00229
	(A1 * B1 * !C1 * D1 * !X)	0.00263	0.00263	0.00263
	(A1 * B1 * !C1 * !D1 * !X)	-0.00228	-0.00230	-0.00229
	(A1 * B1 * !C1 * !D1 * !X)	0.00261	0.00263	0.00263
	(A1 * !B1 * C1 * D1 * !X)	-0.00228	-0.00230	-0.00229
	(A1 * !B1 * C1 * D1 * !X)	0.00261	0.00263	0.00263
	(A1 * !B1 * !D1 * !X)	-0.00229	-0.00230	-0.00229
	(A1 * !B1 * !D1 * !X)	0.00262	0.00264	0.00263
	(A1 * !B1 * !C1 * D1 * !X)	-0.00229	-0.00230	-0.00229
	(A1 * !B1 * !C1 * D1 * !X)	0.00262	0.00264	0.00263
	(!A1 * B1 * C1 * !D1 * !X)	-0.00195	-0.00217	-0.00218
	(!A1 * B1 * C1 * !D1 * !X)	0.00266	0.00267	0.00266
	(!A1 * B1 * !C1 * D1 * !X)	-0.00201	-0.00218	-0.00220
	(!A1 * B1 * !C1 * D1 * !X)	0.00267	0.00267	0.00266
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00201	-0.00218	-0.00221
	(!A1 * B1 * !C1 * !D1 * !X)	0.00267	0.00267	0.00266
	(!A1 * !B1 * C1 * D1 * !X)	-0.00208	-0.00221	-0.00223
	(!A1 * !B1 * C1 * D1 * !X)	0.00265	0.00268	0.00266
	(!A1 * !B1 * !D1 * !X)	-0.00210	-0.00221	-0.00223
	(!A1 * !B1 * !D1 * !X)	0.00265	0.00268	0.00266
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00210	-0.00221	-0.00223
	(!A1 * !B1 * !C1 * D1 * !X)	0.00265	0.00268	0.00266

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	-0.00243	-0.00244	-0.00248
	(A1 * B1 * C1 * D1 * X)	0.00125	0.00126	0.00122
	(A1 * B1 * C1 * !D1 * !X)	-0.00230	-0.00231	-0.00230
	(A1 * B1 * C1 * !D1 * !X)	0.00256	0.00258	0.00258
	(A1 * B1 * !C1 * D1 * !X)	-0.00229	-0.00231	-0.00230
	(A1 * B1 * !C1 * D1 * !X)	0.00256	0.00258	0.00258
	(A1 * B1 * !C1 * !D1 * !X)	-0.00230	-0.00232	-0.00230
	(A1 * B1 * !C1 * !D1 * !X)	0.00257	0.00260	0.00258
	(A1 * !B1 * C1 * D1 * !X)	-0.00230	-0.00231	-0.00230
	(A1 * !B1 * C1 * D1 * !X)	0.00257	0.00258	0.00258
	(A1 * !B1 * !D1 * !X)	-0.00230	-0.00231	-0.00230
	(A1 * !B1 * !D1 * !X)	0.00257	0.00259	0.00258
	(A1 * !B1 * !C1 * D1 * !X)	-0.00230	-0.00231	-0.00230
	(A1 * !B1 * !C1 * D1 * !X)	0.00257	0.00260	0.00258
	(!A1 * B1 * C1 * !D1 * !X)	-0.00197	-0.00216	-0.00216
	(!A1 * B1 * C1 * !D1 * !X)	0.00260	0.00262	0.00261
	(!A1 * B1 * !C1 * D1 * !X)	-0.00202	-0.00219	-0.00217
	(!A1 * B1 * !C1 * D1 * !X)	0.00260	0.00264	0.00261
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00202	-0.00219	-0.00217
	(!A1 * B1 * !C1 * !D1 * !X)	0.00260	0.00264	0.00261
	(!A1 * !B1 * C1 * D1 * !X)	-0.00211	-0.00223	-0.00223
	(!A1 * !B1 * C1 * D1 * !X)	0.00261	0.00263	0.00261
	(!A1 * !B1 * !D1 * !X)	-0.00212	-0.00223	-0.00223
	(!A1 * !B1 * !D1 * !X)	0.00261	0.00263	0.00261
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00212	-0.00223	-0.00223
	(!A1 * !B1 * !C1 * D1 * !X)	0.00261	0.00263	0.00261

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	-0.00529	-0.00531	-0.00541
	(A1 * B1 * C1 * D1 * X)	0.00263	0.00264	0.00253
	(A1 * B1 * C1 * !D1 * !X)	-0.00470	-0.00471	-0.00469
	(A1 * B1 * C1 * !D1 * !X)	0.00560	0.00561	0.00559
	(A1 * B1 * !C1 * D1 * !X)	-0.00470	-0.00470	-0.00469
	(A1 * B1 * !C1 * D1 * !X)	0.00560	0.00560	0.00559
	(A1 * B1 * !C1 * !D1 * !X)	-0.00470	-0.00471	-0.00469
	(A1 * B1 * !C1 * !D1 * !X)	0.00561	0.00563	0.00560
	(A1 * !B1 * C1 * D1 * !X)	-0.00467	-0.00471	-0.00469
	(A1 * !B1 * C1 * D1 * !X)	0.00557	0.00561	0.00559
	(A1 * !B1 * !D1 * !X)	-0.00467	-0.00471	-0.00469
	(A1 * !B1 * !D1 * !X)	0.00558	0.00562	0.00560
	(A1 * !B1 * !C1 * D1 * !X)	-0.00467	-0.00471	-0.00469
	(A1 * !B1 * !C1 * D1 * !X)	0.00558	0.00562	0.00560
	(!A1 * B1 * C1 * !D1 * !X)	-0.00392	-0.00440	-0.00443
	(!A1 * B1 * C1 * !D1 * !X)	0.00567	0.00569	0.00568
	(!A1 * B1 * !C1 * D1 * !X)	-0.00399	-0.00445	-0.00441
	(!A1 * B1 * !C1 * D1 * !X)	0.00566	0.00570	0.00568
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00399	-0.00444	-0.00446
	(!A1 * B1 * !C1 * !D1 * !X)	0.00566	0.00570	0.00568
	(!A1 * !B1 * C1 * D1 * !X)	-0.00420	-0.00452	-0.00453
	(!A1 * !B1 * C1 * D1 * !X)	0.00566	0.00571	0.00568
	(!A1 * !B1 * !D1 * !X)	-0.00423	-0.00451	-0.00453
	(!A1 * !B1 * !D1 * !X)	0.00566	0.00571	0.00568
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00423	-0.00451	-0.00453
	(!A1 * !B1 * !C1 * D1 * !X)	0.00566	0.00571	0.00568

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)**	0.00213	0.00213	0.00212
	(A2 * C1 * !D1 * !X)	-0.00233	-0.00233	-0.00232
	(A2 * !C1 * D1 * !X)	0.00216	0.00217	0.00216
	(A2 * !C1 * D1 * !X)	-0.00233	-0.00233	-0.00232
	(A2 * !C1 * !D1 * !X)	0.00215	0.00218	0.00217
	(A2 * !C1 * !D1 * !X)	-0.00231	-0.00233	-0.00232
	(A1 * !A2 * C1 * !D1 * !X)	0.00213	0.00214	0.00213
	(A1 * !A2 * C1 * !D1 * !X)	-0.00233	-0.00233	-0.00232
	(A1 * !A2 * !C1 * D1 * !X)	0.00216	0.00217	0.00217
	(A1 * !A2 * !C1 * D1 * !X)	-0.00233	-0.00233	-0.00232
	(A1 * !A2 * !C1 * !D1 * !X)	0.00213	0.00215	0.00214
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00232	-0.00233	-0.00232
	(!A1 * !A2 * C1 * D1 * !X)	0.00093	0.00092	0.00091
	(!A1 * !A2 * C1 * D1 * !X)	-0.00229	-0.00228	-0.00227
	(!A1 * !A2 * C1 * !D1 * !X)	0.00111	0.00112	0.00111
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00232	-0.00233	-0.00232
	(!A1 * !A2 * !C1 * D1 * !X)	0.00118	0.00118	0.00118
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00233	-0.00233	-0.00232
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00121	0.00122	0.00122
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00232	-0.00233	-0.00232

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	0.00214	0.00214	0.00213
	(A2 * C1 * !D1 * !X)	-0.00266	-0.00266	-0.00266
	(A2 * !C1 * D1 * !X)	0.00219	0.00221	0.00220
	(A2 * !C1 * D1 * !X)	-0.00265	-0.00267	-0.00266
	(A2 * !C1 * !D1 * !X)	0.00218	0.00222	0.00220
	(A2 * !C1 * !D1 * !X)	-0.00265	-0.00267	-0.00266
	(A1 * !A2 * C1 * !D1 * !X)	0.00220	0.00220	0.00219
	(A1 * !A2 * C1 * !D1 * !X)	-0.00266	-0.00266	-0.00266
	(A1 * !A2 * !C1 * D1 * !X)	0.00220	0.00221	0.00220
	(A1 * !A2 * !C1 * D1 * !X)	-0.00266	-0.00266	-0.00266
	(A1 * !A2 * !C1 * !D1 * !X)	0.00221	0.00222	0.00221
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00266	-0.00266	-0.00266
	(!A1 * !A2 * C1 * D1 * !X)	0.00099	0.00099	0.00098
	(!A1 * !A2 * C1 * D1 * !X)	-0.00262	-0.00263	-0.00260
	(!A1 * !A2 * C1 * !D1 * !X)	0.00120	0.00121	0.00120
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00265	-0.00266	-0.00266
	(!A1 * !A2 * !C1 * D1 * !X)	0.00125	0.00125	0.00125
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00266	-0.00266	-0.00266
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00128	0.00129	0.00129
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00265	-0.00266	-0.00266

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	0.00430	0.00432	0.00431
	(A2 * C1 * !D1 * !X)	-0.00458	-0.00459	-0.00458
	(A2 * !C1 * D1 * !X)	0.00428	0.00433	0.00431
	(A2 * !C1 * D1 * !X)	-0.00456	-0.00459	-0.00458
	(A2 * !C1 * !D1 * !X)	0.00428	0.00433	0.00431
	(A2 * !C1 * !D1 * !X)	-0.00456	-0.00459	-0.00458
	(A1 * !A2 * C1 * !D1 * !X)	0.00428	0.00432	0.00430
	(A1 * !A2 * C1 * !D1 * !X)	-0.00456	-0.00459	-0.00458
	(A1 * !A2 * !C1 * D1 * !X)	0.00429	0.00431	0.00430
	(A1 * !A2 * !C1 * D1 * !X)	-0.00457	-0.00459	-0.00458
	(A1 * !A2 * !C1 * !D1 * !X)	0.00428	0.00431	0.00429
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00457	-0.00458	-0.00458
	(!A1 * !A2 * C1 * D1 * !X)	0.00180	0.00183	0.00181
	(!A1 * !A2 * C1 * D1 * !X)	-0.00449	-0.00452	-0.00447
	(!A1 * !A2 * C1 * !D1 * !X)	0.00229	0.00230	0.00229
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00460	-0.00462	-0.00460
	(!A1 * !A2 * !C1 * D1 * !X)	0.00229	0.00230	0.00228
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00460	-0.00461	-0.00459
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00235	0.00237	0.00237
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00457	-0.00460	-0.00459

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)**	-0.00190	-0.00210	-0.00212
	(A2 * C1 * !D1 * !X)	0.00235	0.00236	0.00233
	(A2 * !C1 * D1 * !X)	-0.00202	-0.00214	-0.00215
	(A2 * !C1 * D1 * !X)	0.00233	0.00235	0.00233
	(A2 * !C1 * !D1 * !X)	-0.00206	-0.00214	-0.00215
	(A2 * !C1 * !D1 * !X)	0.00232	0.00235	0.00233
	(A1 * !A2 * C1 * !D1 * !X)	-0.00185	-0.00210	-0.00213
	(A1 * !A2 * C1 * !D1 * !X)	0.00237	0.00233	0.00233
	(A1 * !A2 * !C1 * D1 * !X)	-0.00199	-0.00214	-0.00215
	(A1 * !A2 * !C1 * D1 * !X)	0.00234	0.00234	0.00233
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00204	-0.00214	-0.00214
	(A1 * !A2 * !C1 * !D1 * !X)	0.00232	0.00234	0.00233
	(!A1 * !A2 * C1 * D1 * !X)	-0.00084	-0.00085	-0.00086
	(!A1 * !A2 * C1 * D1 * !X)	0.00238	0.00241	0.00235
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00111	-0.00112	-0.00111
	(!A1 * !A2 * C1 * !D1 * !X)	0.00240	0.00245	0.00235
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00118	-0.00118	-0.00118
	(!A1 * !A2 * !C1 * D1 * !X)	0.00250	0.00247	0.00236
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00121	-0.00122	-0.00122
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00233	0.00235	0.00233

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	-0.00196	-0.00214	-0.00213
	(A2 * C1 * !D1 * !X)	0.00268	0.00270	0.00267
	(A2 * !C1 * D1 * !X)	-0.00208	-0.00219	-0.00220
	(A2 * !C1 * D1 * !X)	0.00266	0.00269	0.00267
	(A2 * !C1 * !D1 * !X)	-0.00210	-0.00220	-0.00220
	(A2 * !C1 * !D1 * !X)	0.00266	0.00269	0.00267
	(A1 * !A2 * C1 * !D1 * !X)	-0.00191	-0.00215	-0.00218
	(A1 * !A2 * C1 * !D1 * !X)	0.00270	0.00267	0.00267
	(A1 * !A2 * !C1 * D1 * !X)	-0.00207	-0.00221	-0.00220
	(A1 * !A2 * !C1 * D1 * !X)	0.00268	0.00269	0.00267
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00211	-0.00221	-0.00220
	(A1 * !A2 * !C1 * !D1 * !X)	0.00267	0.00269	0.00267
	(!A1 * !A2 * C1 * D1 * !X)	-0.00090	-0.00091	-0.00091
	(!A1 * !A2 * C1 * D1 * !X)	0.00272	0.00275	0.00269
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00120	-0.00121	-0.00120
	(!A1 * !A2 * C1 * !D1 * !X)	0.00273	0.00277	0.00268
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00125	-0.00125	-0.00125
	(!A1 * !A2 * !C1 * D1 * !X)	0.00283	0.00281	0.00270
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00128	-0.00129	-0.00129
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00267	0.00270	0.00267

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	-0.00387	-0.00424	-0.00431
	(A2 * C1 * !D1 * !X)	0.00464	0.00460	0.00460
	(A2 * !C1 * D1 * !X)	-0.00409	-0.00432	-0.00431
	(A2 * !C1 * D1 * !X)	0.00458	0.00462	0.00460
	(A2 * !C1 * !D1 * !X)	-0.00413	-0.00432	-0.00431
	(A2 * !C1 * !D1 * !X)	0.00458	0.00462	0.00460
	(A1 * !A2 * C1 * !D1 * !X)	-0.00376	-0.00430	-0.00430
	(A1 * !A2 * C1 * !D1 * !X)	0.00469	0.00459	0.00460
	(A1 * !A2 * !C1 * D1 * !X)	-0.00404	-0.00431	-0.00430
	(A1 * !A2 * !C1 * D1 * !X)	0.00459	0.00460	0.00460
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00410	-0.00431	-0.00429
	(A1 * !A2 * !C1 * !D1 * !X)	0.00458	0.00460	0.00460
	(!A1 * !A2 * C1 * D1 * !X)	-0.00165	-0.00167	-0.00167
	(!A1 * !A2 * C1 * D1 * !X)	0.00470	0.00475	0.00466
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00229	-0.00230	-0.00229
	(!A1 * !A2 * C1 * !D1 * !X)	0.00470	0.00480	0.00464
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00229	-0.00230	-0.00228
	(!A1 * !A2 * !C1 * D1 * !X)	0.00495	0.00492	0.00470
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00235	-0.00237	-0.00237
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00463	0.00467	0.00462

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)**	0.00213	0.00216	0.00214
	(A2 * B1 * !D1 * !X)	-0.00245	-0.00246	-0.00245
	(A2 * !B1 * D1 * !X)	0.00085	0.00085	0.00085
	(A2 * !B1 * D1 * !X)	-0.00245	-0.00245	-0.00245
	(A2 * !B1 * !D1 * !X)	0.00099	0.00100	0.00100
	(A2 * !B1 * !D1 * !X)	-0.00245	-0.00246	-0.00246
	(A1 * !A2 * B1 * !D1 * !X)	0.00213	0.00215	0.00214
	(A1 * !A2 * B1 * !D1 * !X)	-0.00245	-0.00246	-0.00245
	(!A2 * !B1 * D1 * !X)	0.00085	0.00085	0.00085
	(!A2 * !B1 * D1 * !X)	-0.00245	-0.00245	-0.00245
	(!A2 * !B1 * !D1 * !X)	0.00100	0.00100	0.00100
	(!A2 * !B1 * !D1 * !X)	-0.00246	-0.00246	-0.00246
	(!A1 * !A2 * B1 * D1 * !X)	0.00087	0.00087	0.00085
	(!A1 * !A2 * B1 * D1 * !X)	-0.00245	-0.00246	-0.00245
	(!A1 * !A2 * B1 * !D1 * !X)	0.00115	0.00115	0.00115
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00246	-0.00246	-0.00245

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	0.00216	0.00217	0.00216
	(A2 * B1 * !D1 * !X)	-0.00275	-0.00275	-0.00274
	(A2 * !B1 * D1 * !X)	0.00090	0.00090	0.00091
	(A2 * !B1 * D1 * !X)	-0.00274	-0.00274	-0.00273
	(A2 * !B1 * !D1 * !X)	0.00110	0.00111	0.00110
	(A2 * !B1 * !D1 * !X)	-0.00275	-0.00277	-0.00275
	(A1 * !A2 * B1 * !D1 * !X)	0.00215	0.00216	0.00215
	(A1 * !A2 * B1 * !D1 * !X)	-0.00275	-0.00275	-0.00274
	(!A2 * !B1 * D1 * !X)	0.00090	0.00090	0.00091
	(!A2 * !B1 * D1 * !X)	-0.00274	-0.00274	-0.00273
	(!A2 * !B1 * !D1 * !X)	0.00110	0.00110	0.00110
	(!A2 * !B1 * !D1 * !X)	-0.00274	-0.00275	-0.00275
	(!A1 * !A2 * B1 * D1 * !X)	0.00090	0.00090	0.00090
	(!A1 * !A2 * B1 * D1 * !X)	-0.00274	-0.00275	-0.00273
	(!A1 * !A2 * B1 * !D1 * !X)	0.00122	0.00123	0.00122
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00274	-0.00276	-0.00275

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	0.00439	0.00442	0.00442
	(A2 * B1 * !D1 * !X)	-0.00466	-0.00468	-0.00468
	(A2 * !B1 * D1 * !X)	0.00186	0.00188	0.00190
	(A2 * !B1 * D1 * !X)	-0.00466	-0.00468	-0.00467
	(A2 * !B1 * !D1 * !X)	0.00232	0.00232	0.00231
	(A2 * !B1 * !D1 * !X)	-0.00472	-0.00473	-0.00471
	(A1 * !A2 * B1 * !D1 * !X)	0.00441	0.00444	0.00442
	(A1 * !A2 * B1 * !D1 * !X)	-0.00468	-0.00469	-0.00468
	(!A2 * !B1 * D1 * !X)	0.00186	0.00188	0.00190
	(!A2 * !B1 * D1 * !X)	-0.00466	-0.00468	-0.00467
	(!A2 * !B1 * !D1 * !X)	0.00232	0.00232	0.00231
	(!A2 * !B1 * !D1 * !X)	-0.00472	-0.00474	-0.00471
	(!A1 * !A2 * B1 * D1 * !X)	0.00179	0.00178	0.00184
	(!A1 * !A2 * B1 * D1 * !X)	-0.00469	-0.00468	-0.00467
	(!A1 * !A2 * B1 * !D1 * !X)	0.00243	0.00241	0.00242
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00472	-0.00470	-0.00471

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)**	-0.00193	-0.00214	-0.00214
	(A2 * B1 * !D1 * !X)	0.00265	0.00248	0.00246
	(A2 * !B1 * D1 * !X)	-0.00081	-0.00082	-0.00082
	(A2 * !B1 * D1 * !X)	0.00250	0.00253	0.00247
	(A2 * !B1 * !D1 * !X)	-0.00099	-0.00100	-0.00100
	(A2 * !B1 * !D1 * !X)	0.00256	0.00260	0.00249
	(A1 * !A2 * B1 * !D1 * !X)	-0.00190	-0.00215	-0.00214
	(A1 * !A2 * B1 * !D1 * !X)	0.00268	0.00247	0.00246
	(!A2 * !B1 * D1 * !X)	-0.00081	-0.00082	-0.00082
	(!A2 * !B1 * D1 * !X)	0.00250	0.00253	0.00247
	(!A2 * !B1 * !D1 * !X)	-0.00100	-0.00100	-0.00100
	(!A2 * !B1 * !D1 * !X)	0.00259	0.00259	0.00249
	(!A1 * !A2 * B1 * D1 * !X)	-0.00080	-0.00081	-0.00081
	(!A1 * !A2 * B1 * D1 * !X)	0.00250	0.00252	0.00247
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00115	-0.00115	-0.00115
	(!A1 * !A2 * B1 * !D1 * !X)	0.00268	0.00260	0.00249

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	-0.00194	-0.00217	-0.00216
	(A2 * B1 * !D1 * !X)	0.00295	0.00278	0.00276
	(A2 * !B1 * D1 * !X)	-0.00086	-0.00087	-0.00088
	(A2 * !B1 * D1 * !X)	0.00280	0.00283	0.00276
	(A2 * !B1 * !D1 * !X)	-0.00110	-0.00111	-0.00110
	(A2 * !B1 * !D1 * !X)	0.00287	0.00290	0.00279
	(A1 * !A2 * B1 * !D1 * !X)	-0.00190	-0.00216	-0.00215
	(A1 * !A2 * B1 * !D1 * !X)	0.00297	0.00276	0.00276
	(!A2 * !B1 * D1 * !X)	-0.00086	-0.00087	-0.00088
	(!A2 * !B1 * D1 * !X)	0.00280	0.00283	0.00276
	(!A2 * !B1 * !D1 * !X)	-0.00110	-0.00110	-0.00110
	(!A2 * !B1 * !D1 * !X)	0.00287	0.00290	0.00279
	(!A1 * !A2 * B1 * D1 * !X)	-0.00085	-0.00086	-0.00086
	(!A1 * !A2 * B1 * D1 * !X)	0.00280	0.00283	0.00276
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00122	-0.00123	-0.00122
	(!A1 * !A2 * B1 * !D1 * !X)	0.00295	0.00289	0.00277

sky130_fd_sc_hs__o2111a_4	(A2 * B1 * !D1 * !X)	-0.00380	-0.00442	-0.00442
	(A2 * B1 * !D1 * !X)	0.00522	0.00473	0.00471
	(A2 * !B1 * D1 * !X)	-0.00177	-0.00179	-0.00182
	(A2 * !B1 * D1 * !X)	0.00483	0.00488	0.00474
	(A2 * !B1 * !D1 * !X)	-0.00232	-0.00232	-0.00231
	(A2 * !B1 * !D1 * !X)	0.00496	0.00504	0.00480
	(A1 * !A2 * B1 * !D1 * !X)	-0.00375	-0.00444	-0.00442
	(A1 * !A2 * B1 * !D1 * !X)	0.00530	0.00474	0.00471
	(!A2 * !B1 * D1 * !X)	-0.00176	-0.00179	-0.00182
	(!A2 * !B1 * D1 * !X)	0.00482	0.00488	0.00474
	(!A2 * !B1 * !D1 * !X)	-0.00232	-0.00232	-0.00231
	(!A2 * !B1 * !D1 * !X)	0.00496	0.00504	0.00480
	(!A1 * !A2 * B1 * D1 * !X)	-0.00171	-0.00174	-0.00176
	(!A1 * !A2 * B1 * D1 * !X)	0.00483	0.00488	0.00475
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00242	-0.00241	-0.00242
	(!A1 * !A2 * B1 * !D1 * !X)	0.00518	0.00497	0.00476

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111a_1	(A2 * !C1 * !X)	0.00073	0.00073	0.00071
	(A2 * !C1 * !X)	-0.00293	-0.00293	-0.00297
	(A2 * !B1 * C1 * !X)	0.00072	0.00072	0.00069
	(A2 * !B1 * C1 * !X)	-0.00288	-0.00288	-0.00296
	(!A2 * !C1 * !X)	0.00073	0.00073	0.00071
	(!A2 * !C1 * !X)	-0.00293	-0.00293	-0.00297
	(!A2 * !B1 * C1 * !X)	0.00073	0.00072	0.00069
	(!A2 * !B1 * C1 * !X)	-0.00288	-0.00288	-0.00297
	(!A1 * !A2 * B1 * C1 * !X)	0.00080	0.00080	0.00072
	(!A1 * !A2 * B1 * C1 * !X)	-0.00277	-0.00278	-0.00295

sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	0.00077	0.00077	0.00075
	(A2 * !C1 * !X)	-0.00329	-0.00329	-0.00333
	(A2 * !B1 * C1 * !X)	0.00075	0.00075	0.00071
	(A2 * !B1 * C1 * !X)	-0.00323	-0.00323	-0.00333
	(!A2 * !C1 * !X)	0.00077	0.00077	0.00075
	(!A2 * !C1 * !X)	-0.00329	-0.00329	-0.00333
	(!A2 * !B1 * C1 * !X)	0.00075	0.00075	0.00071
	(!A2 * !B1 * C1 * !X)	-0.00323	-0.00323	-0.00333
	(!A1 * !A2 * B1 * C1 * !X)	0.00082	0.00082	0.00073
	(!A1 * !A2 * B1 * C1 * !X)	-0.00311	-0.00313	-0.00331
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	0.00161	0.00161	0.00154
	(A2 * !C1 * !X)	-0.00546	-0.00548	-0.00558
	(A2 * !B1 * C1 * !X)	0.00154	0.00154	0.00143
	(A2 * !B1 * C1 * !X)	-0.00532	-0.00535	-0.00556
	(!A2 * !C1 * !X)	0.00160	0.00161	0.00154
	(!A2 * !C1 * !X)	-0.00545	-0.00548	-0.00558
	(!A2 * !B1 * C1 * !X)	0.00154	0.00154	0.00143
	(!A2 * !B1 * C1 * !X)	-0.00532	-0.00536	-0.00556
	(!A1 * !A2 * B1 * C1 * !X)	0.00161	0.00162	0.00143
	(!A1 * !A2 * B1 * C1 * !X)	-0.00511	-0.00515	-0.00553

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

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

sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	-0.00070	-0.00071	-0.00070
	(A2 * !C1 * !X)	0.00297	0.00303	0.00298
	(A2 * !B1 * C1 * !X)	-0.00069	-0.00070	-0.00068
	(A2 * !B1 * C1 * !X)	0.00297	0.00301	0.00297
	(!A2 * !C1 * !X)	-0.00070	-0.00071	-0.00070
	(!A2 * !C1 * !X)	0.00297	0.00302	0.00298
	(!A2 * !B1 * C1 * !X)	-0.00069	-0.00069	-0.00068
	(!A2 * !B1 * C1 * !X)	0.00297	0.00301	0.00297
	(!A1 * !A2 * B1 * C1 * !X)	-0.00069	-0.00070	-0.00068
	(!A1 * !A2 * B1 * C1 * !X)	0.00297	0.00301	0.00297
sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	-0.00073	-0.00074	-0.00072
	(A2 * !C1 * !X)	0.00334	0.00337	0.00334
	(A2 * !B1 * C1 * !X)	-0.00071	-0.00072	-0.00071
	(A2 * !B1 * C1 * !X)	0.00333	0.00338	0.00334
	(!A2 * !C1 * !X)	-0.00073	-0.00074	-0.00072
	(!A2 * !C1 * !X)	0.00334	0.00337	0.00334
	(!A2 * !B1 * C1 * !X)	-0.00071	-0.00072	-0.00071
	(!A2 * !B1 * C1 * !X)	0.00333	0.00337	0.00334
	(!A1 * !A2 * B1 * C1 * !X)	-0.00071	-0.00072	-0.00071
	(!A1 * !A2 * B1 * C1 * !X)	0.00333	0.00338	0.00334
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	-0.00150	-0.00153	-0.00149
	(A2 * !C1 * !X)	0.00561	0.00570	0.00561
	(A2 * !B1 * C1 * !X)	-0.00145	-0.00147	-0.00143
	(A2 * !B1 * C1 * !X)	0.00561	0.00569	0.00560
	(!A2 * !C1 * !X)	-0.00150	-0.00153	-0.00149
	(!A2 * !C1 * !X)	0.00561	0.00570	0.00561
	(!A2 * !B1 * C1 * !X)	-0.00145	-0.00147	-0.00143
	(!A2 * !B1 * C1 * !X)	0.00561	0.00569	0.00560
	(!A1 * !A2 * B1 * C1 * !X)	-0.00145	-0.00146	-0.00143
	(!A1 * !A2 * B1 * C1 * !X)	0.00561	0.00566	0.00560

SKY130_FD_SC_HS__O211AIx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00282	0.00293	0.00297	0.00290	0.75066
sky130_fd_sc_hs__o211ai_2	0.00549	0.00562	0.00561	0.00546	1.30751
sky130_fd_sc_hs__o211ai_4	0.01085	0.01109	0.00795	0.00816	2.34374

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o211ai_1	0.00000	0.09413	0.57047
sky130_fd_sc_hs__o211ai_2	0.00000	0.18826	1.14093
sky130_fd_sc_hs__o211ai_4	0.00000	0.23389	1.52124

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)	0.09063	0.80412	9.56232
	A2->Y (FR)	0.08071	0.82816	10.10670
	B1->Y (FR)	0.03738	0.57300	7.27997
	C1->Y (FR)	0.03034	0.56519	7.26181
sky130_fd_sc_hs__o211ai_2	A1->Y (FR)	0.08694	0.68880	9.34362
	A2->Y (FR)	0.07195	0.71420	9.90749
	B1->Y (FR)	0.03099	0.47916	6.77079
	C1->Y (FR)	0.02240	0.46403	6.68468
sky130_fd_sc_hs__o211ai_4	A1->Y (FR)	0.08358	0.58442	8.99997
	A2->Y (FR)	0.06945	0.62475	9.72802
	B1->Y (FR)	0.04503	0.58935	9.39215
	C1->Y (FR)	0.02882	0.56525	9.20523

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211ai_1	A1->Y (RF)	0.04569	0.36127	4.07919
	A2->Y (RF)	0.03752	0.34397	3.98019
	B1->Y (RF)	0.04139	0.41991	4.97041
	C1->Y (RF)	0.03489	0.44769	5.41607
sky130_fd_sc_hs__o211ai_2	A1->Y (RF)	0.04405	0.28189	3.72084
	A2->Y (RF)	0.03522	0.27078	3.71760
	B1->Y (RF)	0.04024	0.36435	4.97586
	C1->Y (RF)	0.03108	0.38929	5.45330
sky130_fd_sc_hs__o211ai_4	A1->Y (RF)	0.04551	0.24063	3.82996
	A2->Y (RF)	0.03345	0.21966	3.66664
	B1->Y (RF)	0.03771	0.30476	4.93013
	C1->Y (RF)	0.02925	0.35277	5.81249

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.00245	0.00366	0.03579
	A1	0.01433	0.01559	0.04774
	A2	0.00246	0.00484	0.04644
	A2	0.01270	0.01474	0.05663
	B1	0.00080	0.00494	0.05888
	B1	0.00913	0.01331	0.06756
	C1	-0.00015	0.00390	0.05617
	C1	0.00658	0.01067	0.06332
sky130_fd_sc_hs__o211ai_2	A1	0.00289	0.00531	0.06547
	A1	0.02695	0.02928	0.08978
	A2	0.00288	0.00836	0.08180
	A2	0.02336	0.02882	0.10232
	B1	0.00063	0.00809	0.11104
	B1	0.01712	0.02460	0.12789
	C1	-0.00245	0.00558	0.10507
	C1	0.01066	0.01876	0.11842
sky130_fd_sc_hs__o211ai_4	A1	0.00561	0.01058	0.12242
	A1	0.05257	0.05757	0.16959
	A2	0.00554	0.01516	0.14883
	A2	0.04551	0.05517	0.18865
	B1	0.00019	0.00928	0.12271
	B1	0.02601	0.03493	0.14891
	C1	-0.00488	0.00642	0.11373
	C1	0.01473	0.02610	0.13411

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.01510	0.01600	0.04173
	A1	0.00303	0.00392	0.02967
	A2	0.01215	0.01323	0.03751
	A2	0.00172	0.00271	0.02667
	B1	0.00991	0.01141	0.03966
	B1	0.00151	0.00286	0.03088
	C1	0.00821	0.01011	0.03968
	C1	0.00150	0.00331	0.03267
sky130_fd_sc_hs__o211ai_2	A1	0.02974	0.03161	0.08504
	A1	0.00536	0.00725	0.06056
	A2	0.02212	0.02459	0.07314
	A2	0.00125	0.00368	0.05225
	B1	0.01746	0.02053	0.07607
	B1	0.00075	0.00381	0.05900
	C1	0.01374	0.01833	0.07749
	C1	0.00064	0.00491	0.06251
sky130_fd_sc_hs__o211ai_4	A1	0.05475	0.05881	0.16184
	A1	0.00718	0.01109	0.11234
	A2	0.04002	0.04541	0.14072
	A2	-0.00081	0.00441	0.09646
	B1	0.02883	0.03289	0.09369
	B1	0.00273	0.00677	0.06683
	C1	0.02204	0.02712	0.08801
	C1	0.00252	0.00753	0.06603

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)**	0.00288	0.00247	0.00242
	(A2 * B1 * C1 * !Y)	-0.00244	-0.00290	-0.00291
	(A2 * B1 * !C1 * Y)	0.00241	0.00244	0.00241
	(A2 * B1 * !C1 * Y)	-0.00288	-0.00292	-0.00291
	(A2 * !B1 * Y)	0.00241	0.00244	0.00241
	(A2 * !B1 * Y)	-0.00288	-0.00293	-0.00291
	(!A2 * B1 * !C1 * Y)	0.00230	0.00230	0.00229
	(!A2 * B1 * !C1 * Y)	-0.00294	-0.00294	-0.00294
	(!A2 * !B1 * C1 * Y)	0.00233	0.00234	0.00233
	(!A2 * !B1 * C1 * Y)	-0.00293	-0.00294	-0.00294
	(!A2 * !B1 * !C1 * Y)	0.00232	0.00232	0.00233
	(!A2 * !B1 * !C1 * Y)	-0.00293	-0.00293	-0.00294
sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	0.00592	0.00483	0.00474
	(A2 * B1 * C1 * !Y)	-0.00473	-0.00593	-0.00596
	(A2 * B1 * !C1 * Y)	0.00473	0.00476	0.00472
	(A2 * B1 * !C1 * Y)	-0.00585	-0.00598	-0.00595
	(A2 * !B1 * Y)	0.00473	0.00476	0.00472
	(A2 * !B1 * Y)	-0.00585	-0.00598	-0.00595
	(!A2 * B1 * !C1 * Y)	0.00451	0.00455	0.00450
	(!A2 * B1 * !C1 * Y)	-0.00604	-0.00606	-0.00603
	(!A2 * !B1 * C1 * Y)	0.00454	0.00457	0.00455
	(!A2 * !B1 * C1 * Y)	-0.00601	-0.00604	-0.00603
	(!A2 * !B1 * !C1 * Y)	0.00455	0.00458	0.00456
	(!A2 * !B1 * !C1 * Y)	-0.00601	-0.00605	-0.00603

sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	0.01157	0.00945	0.00927
	(A2 * B1 * C1 * !Y)	-0.00947	-0.01180	-0.01183
	(A2 * B1 * !C1 * Y)	0.00926	0.00934	0.00925
	(A2 * B1 * !C1 * Y)	-0.01163	-0.01187	-0.01179
	(A2 * !B1 * Y)	0.00926	0.00934	0.00925
	(A2 * !B1 * Y)	-0.01163	-0.01187	-0.01179
	(!A2 * B1 * !C1 * Y)	0.00876	0.00884	0.00875
	(!A2 * B1 * !C1 * Y)	-0.01198	-0.01202	-0.01195
	(!A2 * !B1 * C1 * Y)	0.00877	0.00887	0.00880
	(!A2 * !B1 * C1 * Y)	-0.01193	-0.01201	-0.01195
	(!A2 * !B1 * !C1 * Y)	0.00883	0.00891	0.00886
	(!A2 * !B1 * !C1 * Y)	-0.01193	-0.01200	-0.01195

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)**	-0.00240	-0.00240	-0.00239
	(A2 * B1 * C1 * !Y)	0.00292	0.00294	0.00293
	(A2 * B1 * !C1 * Y)	-0.00240	-0.00241	-0.00241
	(A2 * B1 * !C1 * Y)	0.00290	0.00292	0.00291
	(A2 * !B1 * Y)	-0.00241	-0.00242	-0.00241
	(A2 * !B1 * Y)	0.00291	0.00293	0.00291
	(!A2 * B1 * !C1 * Y)	-0.00212	-0.00230	-0.00229
	(!A2 * B1 * !C1 * Y)	0.00296	0.00298	0.00295
	(!A2 * !B1 * C1 * Y)	-0.00220	-0.00232	-0.00233
	(!A2 * !B1 * C1 * Y)	0.00293	0.00298	0.00295
	(!A2 * !B1 * !C1 * Y)	-0.00221	-0.00232	-0.00233
	(!A2 * !B1 * !C1 * Y)	0.00294	0.00298	0.00295

sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	-0.00471	-0.00473	-0.00469
	(A2 * B1 * C1 * !Y)	0.00597	0.00601	0.00597
	(A2 * B1 * !C1 * Y)	-0.00472	-0.00472	-0.00471
	(A2 * B1 * !C1 * Y)	0.00597	0.00598	0.00595
	(A2 * !B1 * Y)	-0.00469	-0.00472	-0.00471
	(A2 * !B1 * Y)	0.00592	0.00598	0.00595
	(!A2 * B1 * !C1 * Y)	-0.00420	-0.00450	-0.00450
	(!A2 * B1 * !C1 * Y)	0.00606	0.00607	0.00605
	(!A2 * !B1 * C1 * Y)	-0.00430	-0.00454	-0.00455
	(!A2 * !B1 * C1 * Y)	0.00602	0.00608	0.00605
	(!A2 * !B1 * !C1 * Y)	-0.00431	-0.00454	-0.00456
	(!A2 * !B1 * !C1 * Y)	0.00602	0.00608	0.00605
sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	-0.00920	-0.00923	-0.00918
	(A2 * B1 * C1 * !Y)	0.01178	0.01186	0.01185
	(A2 * B1 * !C1 * Y)	-0.00921	-0.00927	-0.00923
	(A2 * B1 * !C1 * Y)	0.01174	0.01187	0.01179
	(A2 * !B1 * Y)	-0.00921	-0.00927	-0.00923
	(A2 * !B1 * Y)	0.01175	0.01187	0.01179
	(!A2 * B1 * !C1 * Y)	-0.00796	-0.00884	-0.00875
	(!A2 * B1 * !C1 * Y)	0.01198	0.01207	0.01199
	(!A2 * !B1 * C1 * Y)	-0.00830	-0.00887	-0.00880
	(!A2 * !B1 * C1 * Y)	0.01193	0.01206	0.01199
	(!A2 * !B1 * !C1 * Y)	-0.00834	-0.00891	-0.00886
	(!A2 * !B1 * !C1 * Y)	0.01193	0.01208	0.01199

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)**	0.00258	0.00260	0.00258
	(A1 * B1 * C1 * !Y)	-0.00134	-0.00135	-0.00134
	(A1 * B1 * !C1 * Y)	0.00235	0.00238	0.00236
	(A1 * B1 * !C1 * Y)	-0.00289	-0.00295	-0.00292
	(A1 * !B1 * C1 * Y)	0.00235	0.00238	0.00236
	(A1 * !B1 * C1 * Y)	-0.00289	-0.00293	-0.00292
	(A1 * !B1 * !C1 * Y)	0.00235	0.00238	0.00235
	(A1 * !B1 * !C1 * Y)	-0.00289	-0.00294	-0.00293
	(!A1 * B1 * !C1 * Y)	0.00223	0.00225	0.00223
	(!A1 * B1 * !C1 * Y)	-0.00296	-0.00297	-0.00296
	(!A1 * !B1 * C1 * Y)	0.00227	0.00229	0.00229
	(!A1 * !B1 * C1 * Y)	-0.00295	-0.00297	-0.00296
	(!A1 * !B1 * !C1 * Y)	0.00227	0.00229	0.00229
	(!A1 * !B1 * !C1 * Y)	-0.00295	-0.00296	-0.00296
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	0.00534	0.00537	0.00533
	(A1 * B1 * C1 * !Y)	-0.00262	-0.00262	-0.00260
	(A1 * B1 * !C1 * Y)	0.00476	0.00479	0.00473
	(A1 * B1 * !C1 * Y)	-0.00580	-0.00588	-0.00588
	(A1 * !B1 * C1 * Y)	0.00476	0.00479	0.00473
	(A1 * !B1 * C1 * Y)	-0.00581	-0.00587	-0.00588
	(A1 * !B1 * !C1 * Y)	0.00472	0.00478	0.00473
	(A1 * !B1 * !C1 * Y)	-0.00577	-0.00591	-0.00589
	(!A1 * B1 * !C1 * Y)	0.00448	0.00454	0.00449
	(!A1 * B1 * !C1 * Y)	-0.00595	-0.00600	-0.00596
	(!A1 * !B1 * C1 * Y)	0.00453	0.00459	0.00454
	(!A1 * !B1 * C1 * Y)	-0.00594	-0.00599	-0.00596
	(!A1 * !B1 * !C1 * Y)	0.00456	0.00458	0.00454
	(!A1 * !B1 * !C1 * Y)	-0.00595	-0.00599	-0.00596

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	0.01045	0.01051	0.01041
	(A1 * B1 * C1 * !Y)	-0.00532	-0.00532	-0.00527
	(A1 * B1 * !C1 * Y)	0.00927	0.00933	0.00925
	(A1 * B1 * !C1 * Y)	-0.01167	-0.01185	-0.01180
	(A1 * !B1 * C1 * Y)	0.00922	0.00933	0.00925
	(A1 * !B1 * C1 * Y)	-0.01162	-0.01185	-0.01180
	(A1 * !B1 * !C1 * Y)	0.00922	0.00932	0.00924
	(A1 * !B1 * !C1 * Y)	-0.01162	-0.01189	-0.01182
	(!A1 * B1 * !C1 * Y)	0.00877	0.00884	0.00877
	(!A1 * B1 * !C1 * Y)	-0.01200	-0.01205	-0.01199
	(!A1 * !B1 * C1 * Y)	0.00874	0.00883	0.00879
	(!A1 * !B1 * C1 * Y)	-0.01194	-0.01202	-0.01199
	(!A1 * !B1 * !C1 * Y)	0.00889	0.00895	0.00891
	(!A1 * !B1 * !C1 * Y)	-0.01197	-0.01202	-0.01199

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)**	-0.00251	-0.00252	-0.00257
	(A1 * B1 * C1 * !Y)	0.00141	0.00141	0.00136
	(A1 * B1 * !C1 * Y)	-0.00235	-0.00236	-0.00235
	(A1 * B1 * !C1 * Y)	0.00291	0.00295	0.00292
	(A1 * !B1 * C1 * Y)	-0.00234	-0.00235	-0.00235
	(A1 * !B1 * C1 * Y)	0.00290	0.00293	0.00292
	(A1 * !B1 * !C1 * Y)	-0.00235	-0.00236	-0.00235
	(A1 * !B1 * !C1 * Y)	0.00292	0.00294	0.00293
	(!A1 * B1 * !C1 * Y)	-0.00206	-0.00224	-0.00223
	(!A1 * B1 * !C1 * Y)	0.00296	0.00298	0.00297
	(!A1 * !B1 * C1 * Y)	-0.00214	-0.00227	-0.00228
	(!A1 * !B1 * C1 * Y)	0.00295	0.00298	0.00297
	(!A1 * !B1 * !C1 * Y)	-0.00215	-0.00227	-0.00228
	(!A1 * !B1 * !C1 * Y)	0.00295	0.00298	0.00297
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	-0.00510	-0.00513	-0.00529
	(A1 * B1 * C1 * !Y)	0.00280	0.00280	0.00266
	(A1 * B1 * !C1 * Y)	-0.00470	-0.00473	-0.00472
	(A1 * B1 * !C1 * Y)	0.00583	0.00588	0.00588
	(A1 * !B1 * C1 * Y)	-0.00473	-0.00472	-0.00472
	(A1 * !B1 * C1 * Y)	0.00588	0.00587	0.00588
	(A1 * !B1 * !C1 * Y)	-0.00472	-0.00473	-0.00472
	(A1 * !B1 * !C1 * Y)	0.00587	0.00591	0.00589
	(!A1 * B1 * !C1 * Y)	-0.00416	-0.00452	-0.00449
	(!A1 * B1 * !C1 * Y)	0.00600	0.00603	0.00598
	(!A1 * !B1 * C1 * Y)	-0.00428	-0.00453	-0.00454
	(!A1 * !B1 * C1 * Y)	0.00594	0.00599	0.00598
	(!A1 * !B1 * !C1 * Y)	-0.00430	-0.00453	-0.00454
	(!A1 * !B1 * !C1 * Y)	0.00595	0.00599	0.00598

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	-0.00997	-0.01004	-0.01036
	(A1 * B1 * C1 * !Y)	0.00557	0.00561	0.00536
	(A1 * B1 * !C1 * Y)	-0.00920	-0.00926	-0.00923
	(A1 * B1 * !C1 * Y)	0.01174	0.01185	0.01180
	(A1 * !B1 * C1 * Y)	-0.00922	-0.00926	-0.00922
	(A1 * !B1 * C1 * Y)	0.01180	0.01185	0.01180
	(A1 * !B1 * !C1 * Y)	-0.00922	-0.00927	-0.00922
	(A1 * !B1 * !C1 * Y)	0.01182	0.01189	0.01182
	(!A1 * B1 * !C1 * Y)	-0.00789	-0.00876	-0.00877
	(!A1 * B1 * !C1 * Y)	0.01200	0.01208	0.01202
	(!A1 * !B1 * C1 * Y)	-0.00829	-0.00883	-0.00879
	(!A1 * !B1 * C1 * Y)	0.01197	0.01209	0.01202
	(!A1 * !B1 * !C1 * Y)	-0.00832	-0.00888	-0.00891
	(!A1 * !B1 * !C1 * Y)	0.01197	0.01210	0.01202

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	0.00222	0.00224	0.00223
	(A2 * !C1 * Y)	-0.00309	-0.00310	-0.00309
	(A1 * !A2 * !C1 * Y)	0.00223	0.00224	0.00223
	(A1 * !A2 * !C1 * Y)	-0.00309	-0.00310	-0.00309
	(!A1 * !A2 * C1 * Y)	0.00097	0.00097	0.00097
	(!A1 * !A2 * C1 * Y)	-0.00309	-0.00309	-0.00308
	(!A1 * !A2 * !C1 * Y)	0.00126	0.00125	0.00125
	(!A1 * !A2 * !C1 * Y)	-0.00310	-0.00309	-0.00310
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	0.00444	0.00449	0.00446
	(A2 * !C1 * Y)	-0.00606	-0.00609	-0.00606
	(A1 * !A2 * !C1 * Y)	0.00443	0.00448	0.00445
	(A1 * !A2 * !C1 * Y)	-0.00604	-0.00608	-0.00606
	(!A1 * !A2 * C1 * Y)	0.00182	0.00183	0.00185
	(!A1 * !A2 * C1 * Y)	-0.00605	-0.00607	-0.00605
	(!A1 * !A2 * !C1 * Y)	0.00237	0.00240	0.00237
	(!A1 * !A2 * !C1 * Y)	-0.00609	-0.00613	-0.00610
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	0.00880	0.00886	0.00882
	(A2 * !C1 * Y)	-0.00607	-0.00610	-0.00608
	(A1 * !A2 * !C1 * Y)	0.00870	0.00877	0.00874
	(A1 * !A2 * !C1 * Y)	-0.00606	-0.00609	-0.00607
	(!A1 * !A2 * C1 * Y)	0.00351	0.00355	0.00358
	(!A1 * !A2 * C1 * Y)	-0.00605	-0.00608	-0.00605
	(!A1 * !A2 * !C1 * Y)	0.00458	0.00460	0.00459
	(!A1 * !A2 * !C1 * Y)	-0.00613	-0.00615	-0.00614

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	-0.00203	-0.00221	-0.00222
	(A2 * !C1 * Y)	0.00323	0.00313	0.00310
	(A1 * !A2 * !C1 * Y)	-0.00199	-0.00223	-0.00222
	(A1 * !A2 * !C1 * Y)	0.00329	0.00312	0.00310
	(!A1 * !A2 * C1 * Y)	-0.00093	-0.00093	-0.00094
	(!A1 * !A2 * C1 * Y)	0.00316	0.00318	0.00310
	(!A1 * !A2 * !C1 * Y)	-0.00126	-0.00125	-0.00125
	(!A1 * !A2 * !C1 * Y)	0.00328	0.00329	0.00315
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	-0.00396	-0.00448	-0.00446
	(A2 * !C1 * Y)	0.00642	0.00611	0.00608
	(A1 * !A2 * !C1 * Y)	-0.00387	-0.00448	-0.00445
	(A1 * !A2 * !C1 * Y)	0.00654	0.00608	0.00608
	(!A1 * !A2 * C1 * Y)	-0.00173	-0.00175	-0.00179
	(!A1 * !A2 * C1 * Y)	0.00621	0.00629	0.00612
	(!A1 * !A2 * !C1 * Y)	-0.00237	-0.00240	-0.00237
	(!A1 * !A2 * !C1 * Y)	0.00645	0.00648	0.00620
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	-0.00788	-0.00886	-0.00882
	(A2 * !C1 * Y)	0.00676	0.00611	0.00610
	(A1 * !A2 * !C1 * Y)	-0.00764	-0.00877	-0.00874
	(A1 * !A2 * !C1 * Y)	0.00708	0.00614	0.00610
	(!A1 * !A2 * C1 * Y)	-0.00337	-0.00341	-0.00346
	(!A1 * !A2 * C1 * Y)	0.00634	0.00641	0.00616
	(!A1 * !A2 * !C1 * Y)	-0.00458	-0.00460	-0.00459
	(!A1 * !A2 * !C1 * Y)	0.00682	0.00680	0.00631

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	0.00074	0.00074	0.00072
	(A2 * !B1 * Y)	-0.00344	-0.00344	-0.00350
	(!A2 * !B1 * Y)	0.00074	0.00074	0.00072
	(!A2 * !B1 * Y)	-0.00344	-0.00346	-0.00350
	(!A1 * !A2 * B1 * Y)	0.00077	0.00077	0.00071
	(!A1 * !A2 * B1 * Y)	-0.00335	-0.00337	-0.00349
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	0.00158	0.00157	0.00151
	(A2 * !B1 * Y)	-0.00673	-0.00671	-0.00685
	(!A2 * !B1 * Y)	0.00157	0.00158	0.00151
	(!A2 * !B1 * Y)	-0.00671	-0.00674	-0.00685
	(!A1 * !A2 * B1 * Y)	0.00154	0.00153	0.00140
	(!A1 * !A2 * B1 * Y)	-0.00654	-0.00655	-0.00681
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	0.00298	0.00299	0.00288
	(A2 * !B1 * Y)	-0.00775	-0.00779	-0.00799
	(!A2 * !B1 * Y)	0.00299	0.00299	0.00288
	(!A2 * !B1 * Y)	-0.00776	-0.00777	-0.00799
	(!A1 * !A2 * B1 * Y)	0.00294	0.00293	0.00269
	(!A1 * !A2 * B1 * Y)	-0.00737	-0.00739	-0.00793

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	-0.00071	-0.00072	-0.00071
	(A2 * !B1 * Y)	0.00349	0.00357	0.00351
	(!A2 * !B1 * Y)	-0.00071	-0.00072	-0.00071
	(!A2 * !B1 * Y)	0.00349	0.00356	0.00351
	(!A1 * !A2 * B1 * Y)	-0.00069	-0.00071	-0.00069
	(!A1 * !A2 * B1 * Y)	0.00349	0.00355	0.00350
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	-0.00147	-0.00150	-0.00147
	(A2 * !B1 * Y)	0.00684	0.00698	0.00686
	(!A2 * !B1 * Y)	-0.00147	-0.00150	-0.00147
	(!A2 * !B1 * Y)	0.00684	0.00698	0.00686
	(!A1 * !A2 * B1 * Y)	-0.00142	-0.00145	-0.00140
	(!A1 * !A2 * B1 * Y)	0.00684	0.00698	0.00686
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	-0.00281	-0.00287	-0.00281
	(A2 * !B1 * Y)	0.00798	0.00814	0.00800
	(!A2 * !B1 * Y)	-0.00283	-0.00286	-0.00281
	(!A2 * !B1 * Y)	0.00801	0.00814	0.00800
	(!A1 * !A2 * B1 * Y)	-0.00273	-0.00274	-0.00269
	(!A1 * !A2 * B1 * Y)	0.00800	0.00808	0.00799

SKY130_FD_SC_HS__O211Ax

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00271	0.00290	0.00268	0.00263	1.47856
sky130_fd_sc_hs__o211a_2	0.00287	0.00286	0.00285	0.00278	2.86524
sky130_fd_sc_hs__o211a_4	0.00521	0.00497	0.00511	0.00452	5.22439

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o211a_1	0.00000	0.38528	1.44639
sky130_fd_sc_hs__o211a_2	0.00000	0.54002	1.45783
sky130_fd_sc_hs__o211a_4	0.00000	1.58791	5.60390

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)	0.08780	0.48365	5.62336
	A2->X (RR)	0.07670	0.46548	5.50226
	B1->X (RR)	0.08227	0.50972	6.13606
	C1->X (RR)	0.07621	0.51295	6.23949
sky130_fd_sc_hs__o211a_2	A1->X (RR)	0.08961	0.40599	5.56690
	A2->X (RR)	0.07604	0.38681	5.43553
	B1->X (RR)	0.08490	0.43967	6.10341
	C1->X (RR)	0.07861	0.44432	6.20112
sky130_fd_sc_hs__o211a_4	A1->X (RR)	0.09110	0.35123	5.71020
	A2->X (RR)	0.08237	0.33296	5.62247
	B1->X (RR)	0.08485	0.37333	6.03123
	C1->X (RR)	0.07693	0.37285	6.08068

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211a_1	A1->X (FF)	0.12043	0.51411	5.23340
	A2->X (FF)	0.11100	0.53708	5.39935
	B1->X (FF)	0.05932	0.43038	4.88079
	C1->X (FF)	0.05321	0.41182	4.77779
sky130_fd_sc_hs__o211a_2	A1->X (FF)	0.13886	0.51419	5.34884
	A2->X (FF)	0.12803	0.54166	5.52081
	B1->X (FF)	0.06952	0.42747	5.01373
	C1->X (FF)	0.06300	0.40906	4.90125
sky130_fd_sc_hs__o211a_4	A1->X (FF)	0.13240	0.46738	5.19255
	A2->X (FF)	0.11845	0.48633	5.34694
	B1->X (FF)	0.07314	0.39507	4.90895
	C1->X (FF)	0.07225	0.39624	4.94683

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.01921	0.02249	0.11564
	A1	0.00775	0.01104	0.10468
	A2	0.01701	0.02088	0.12408
	A2	0.00660	0.01050	0.11417
	B1	0.01429	0.02059	0.16151
	B1	0.00623	0.01257	0.15349
	C1	0.01285	0.01997	0.16291
	C1	0.00621	0.01333	0.15712
sky130_fd_sc_hs__o211a_2	A1	0.02411	0.02721	0.11609
	A1	0.01205	0.01517	0.10503
	A2	0.02103	0.02479	0.12336
	A2	0.01056	0.01434	0.11361
	B1	0.01877	0.02483	0.16668
	B1	0.01023	0.01642	0.15844
	C1	0.01719	0.02394	0.16739
	C1	0.01019	0.01706	0.16213
sky130_fd_sc_hs__o211a_4	A1	0.04501	0.05190	0.25156
	A1	0.02312	0.03006	0.23075
	A2	0.03867	0.04658	0.26647
	A2	0.02031	0.02823	0.24975
	B1	0.03479	0.04591	0.29064
	B1	0.01997	0.03130	0.27591
	C1	0.03112	0.04374	0.30354
	C1	0.02015	0.03283	0.29446

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.00791	0.01125	0.11084
	A1	0.01918	0.02250	0.12184
	A2	0.00733	0.01270	0.12499
	A2	0.01753	0.02288	0.13317
	B1	0.00580	0.01440	0.15662
	B1	0.01378	0.02221	0.16369
	C1	0.00510	0.01361	0.15582
	C1	0.01177	0.02016	0.16171
sky130_fd_sc_hs__o211a_2	A1	0.01379	0.01528	0.11674
	A1	0.02563	0.02692	0.12594
	A2	0.01388	0.01733	0.13253
	A2	0.02417	0.02754	0.13751
	B1	0.01015	0.01827	0.16115
	B1	0.01864	0.02666	0.16947
	C1	0.00923	0.01751	0.16057
	C1	0.01622	0.02433	0.16657
sky130_fd_sc_hs__o211a_4	A1	0.02661	0.03041	0.23255
	A1	0.04814	0.05171	0.24957
	A2	0.02719	0.03524	0.25810
	A2	0.04512	0.05246	0.27208
	B1	0.01949	0.03342	0.29790
	B1	0.03714	0.05092	0.31035
	C1	0.01963	0.03271	0.28934
	C1	0.03349	0.04631	0.29655

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)**	0.00278	0.00240	0.00234
	(A2 * B1 * C1 * X)	-0.00220	-0.00263	-0.00265
	(A2 * B1 * !C1 * !X)	0.00206	0.00209	0.00206
	(A2 * B1 * !C1 * !X)	-0.00289	-0.00293	-0.00292
	(A2 * !B1 * !X)	0.00206	0.00209	0.00206
	(A2 * !B1 * !X)	-0.00289	-0.00293	-0.00292
	(!A2 * B1 * !C1 * !X)	0.00197	0.00197	0.00197
	(!A2 * B1 * !C1 * !X)	-0.00294	-0.00294	-0.00294
	(!A2 * !B1 * C1 * !X)	0.00196	0.00198	0.00197
	(!A2 * !B1 * C1 * !X)	-0.00293	-0.00295	-0.00295
	(!A2 * !B1 * !C1 * !X)	0.00196	0.00198	0.00197
	(!A2 * !B1 * !C1 * !X)	-0.00293	-0.00295	-0.00295
sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	0.00306	0.00268	0.00261
	(A2 * B1 * C1 * X)	-0.00212	-0.00255	-0.00258
	(A2 * B1 * !C1 * !X)	0.00225	0.00228	0.00225
	(A2 * B1 * !C1 * !X)	-0.00290	-0.00295	-0.00294
	(A2 * !B1 * !X)	0.00226	0.00228	0.00225
	(A2 * !B1 * !X)	-0.00290	-0.00295	-0.00294
	(!A2 * B1 * !C1 * !X)	0.00215	0.00216	0.00215
	(!A2 * B1 * !C1 * !X)	-0.00295	-0.00296	-0.00295
	(!A2 * !B1 * C1 * !X)	0.00218	0.00219	0.00219
	(!A2 * !B1 * C1 * !X)	-0.00295	-0.00296	-0.00296
	(!A2 * !B1 * !C1 * !X)	0.00218	0.00220	0.00219
	(!A2 * !B1 * !C1 * !X)	-0.00295	-0.00297	-0.00296

sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	0.00554	0.00470	0.00464
	(A2 * B1 * C1 * X)	-0.00434	-0.00524	-0.00527
	(A2 * B1 * !C1 * !X)	0.00454	0.00456	0.00454
	(A2 * B1 * !C1 * !X)	-0.00527	-0.00538	-0.00535
	(A2 * !B1 * !X)	0.00454	0.00456	0.00455
	(A2 * !B1 * !X)	-0.00527	-0.00537	-0.00535
	(!A2 * B1 * !C1 * !X)	0.00430	0.00433	0.00431
	(!A2 * B1 * !C1 * !X)	-0.00539	-0.00542	-0.00541
	(!A2 * !B1 * C1 * !X)	0.00439	0.00446	0.00440
	(!A2 * !B1 * C1 * !X)	-0.00539	-0.00544	-0.00540
	(!A2 * !B1 * !C1 * !X)	0.00436	0.00437	0.00438
	(!A2 * !B1 * !C1 * !X)	-0.00539	-0.00540	-0.00541

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)**	-0.00230	-0.00230	-0.00229
	(A2 * B1 * C1 * X)	0.00267	0.00269	0.00268
	(A2 * B1 * !C1 * !X)	-0.00205	-0.00206	-0.00205
	(A2 * B1 * !C1 * !X)	0.00291	0.00294	0.00292
	(A2 * !B1 * !X)	-0.00205	-0.00207	-0.00205
	(A2 * !B1 * !X)	0.00291	0.00294	0.00292
	(!A2 * B1 * !C1 * !X)	-0.00180	-0.00196	-0.00197
	(!A2 * B1 * !C1 * !X)	0.00297	0.00297	0.00295
	(!A2 * !B1 * C1 * !X)	-0.00187	-0.00198	-0.00197
	(!A2 * !B1 * C1 * !X)	0.00296	0.00297	0.00295
	(!A2 * !B1 * !C1 * !X)	-0.00188	-0.00198	-0.00197
	(!A2 * !B1 * !C1 * !X)	0.00296	0.00297	0.00295

sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	-0.00258	-0.00259	-0.00257
	(A2 * B1 * C1 * X)	0.00261	0.00264	0.00261
	(A2 * B1 * !C1 * !X)	-0.00224	-0.00225	-0.00224
	(A2 * B1 * !C1 * !X)	0.00294	0.00295	0.00294
	(A2 * !B1 * !X)	-0.00225	-0.00225	-0.00224
	(A2 * !B1 * !X)	0.00294	0.00295	0.00294
	(!A2 * B1 * !C1 * !X)	-0.00198	-0.00214	-0.00215
	(!A2 * B1 * !C1 * !X)	0.00299	0.00298	0.00297
	(!A2 * !B1 * C1 * !X)	-0.00205	-0.00217	-0.00218
	(!A2 * !B1 * C1 * !X)	0.00297	0.00299	0.00297
	(!A2 * !B1 * !C1 * !X)	-0.00206	-0.00217	-0.00218
	(!A2 * !B1 * !C1 * !X)	0.00297	0.00299	0.00297
sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	-0.00453	-0.00455	-0.00451
	(A2 * B1 * C1 * X)	0.00535	0.00541	0.00537
	(A2 * B1 * !C1 * !X)	-0.00452	-0.00455	-0.00452
	(A2 * B1 * !C1 * !X)	0.00535	0.00541	0.00535
	(A2 * !B1 * !X)	-0.00452	-0.00455	-0.00452
	(A2 * !B1 * !X)	0.00535	0.00541	0.00535
	(!A2 * B1 * !C1 * !X)	-0.00405	-0.00433	-0.00431
	(!A2 * B1 * !C1 * !X)	0.00545	0.00547	0.00543
	(!A2 * !B1 * C1 * !X)	-0.00419	-0.00438	-0.00440
	(!A2 * !B1 * C1 * !X)	0.00543	0.00545	0.00543
	(!A2 * !B1 * !C1 * !X)	-0.00421	-0.00437	-0.00438
	(!A2 * !B1 * !C1 * !X)	0.00543	0.00544	0.00543

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)**	0.00297	0.00298	0.00295
	(A1 * B1 * C1 * X)	-0.00120	-0.00121	-0.00119
	(A1 * B1 * !C1 * !X)	0.00266	0.00268	0.00266
	(A1 * B1 * !C1 * !X)	-0.00265	-0.00268	-0.00267
	(A1 * !B1 * C1 * !X)	0.00268	0.00268	0.00266
	(A1 * !B1 * C1 * !X)	-0.00265	-0.00268	-0.00268
	(A1 * !B1 * !C1 * !X)	0.00268	0.00269	0.00266
	(A1 * !B1 * !C1 * !X)	-0.00265	-0.00268	-0.00268
	(!A1 * B1 * !C1 * !X)	0.00253	0.00257	0.00255
	(!A1 * B1 * !C1 * !X)	-0.00270	-0.00272	-0.00271
	(!A1 * !B1 * C1 * !X)	0.00257	0.00259	0.00257
	(!A1 * !B1 * C1 * !X)	-0.00270	-0.00272	-0.00271
	(!A1 * !B1 * !C1 * !X)	0.00257	0.00260	0.00258
	(!A1 * !B1 * !C1 * !X)	-0.00270	-0.00272	-0.00271
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	0.00262	0.00264	0.00263
	(A1 * B1 * C1 * X)	-0.00119	-0.00120	-0.00119
	(A1 * B1 * !C1 * !X)	0.00222	0.00225	0.00222
	(A1 * B1 * !C1 * !X)	-0.00275	-0.00279	-0.00279
	(A1 * !B1 * C1 * !X)	0.00222	0.00225	0.00222
	(A1 * !B1 * C1 * !X)	-0.00275	-0.00280	-0.00279
	(A1 * !B1 * !C1 * !X)	0.00222	0.00224	0.00222
	(A1 * !B1 * !C1 * !X)	-0.00275	-0.00280	-0.00279
	(!A1 * B1 * !C1 * !X)	0.00211	0.00213	0.00211
	(!A1 * B1 * !C1 * !X)	-0.00281	-0.00282	-0.00281
	(!A1 * !B1 * C1 * !X)	0.00214	0.00216	0.00214
	(!A1 * !B1 * C1 * !X)	-0.00282	-0.00283	-0.00282
	(!A1 * !B1 * !C1 * !X)	0.00214	0.00215	0.00214
	(!A1 * !B1 * !C1 * !X)	-0.00282	-0.00282	-0.00282

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	0.00447	0.00450	0.00447
	(A1 * B1 * C1 * X)	-0.00242	-0.00243	-0.00241
	(A1 * B1 * !C1 * !X)	0.00389	0.00395	0.00391
	(A1 * B1 * !C1 * !X)	-0.00529	-0.00539	-0.00536
	(A1 * !B1 * C1 * !X)	0.00389	0.00394	0.00391
	(A1 * !B1 * C1 * !X)	-0.00529	-0.00538	-0.00536
	(A1 * !B1 * !C1 * !X)	0.00390	0.00395	0.00390
	(A1 * !B1 * !C1 * !X)	-0.00529	-0.00537	-0.00537
	(!A1 * B1 * !C1 * !X)	0.00370	0.00373	0.00369
	(!A1 * B1 * !C1 * !X)	-0.00544	-0.00546	-0.00543
	(!A1 * !B1 * C1 * !X)	0.00379	0.00379	0.00377
	(!A1 * !B1 * C1 * !X)	-0.00544	-0.00544	-0.00543
	(!A1 * !B1 * !C1 * !X)	0.00375	0.00381	0.00377
	(!A1 * !B1 * !C1 * !X)	-0.00541	-0.00546	-0.00543

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)**	-0.00287	-0.00288	-0.00293
	(A1 * B1 * C1 * X)	0.00126	0.00126	0.00122
	(A1 * B1 * !C1 * !X)	-0.00265	-0.00266	-0.00265
	(A1 * B1 * !C1 * !X)	0.00266	0.00268	0.00267
	(A1 * !B1 * C1 * !X)	-0.00265	-0.00266	-0.00265
	(A1 * !B1 * C1 * !X)	0.00267	0.00268	0.00268
	(A1 * !B1 * !C1 * !X)	-0.00265	-0.00266	-0.00265
	(A1 * !B1 * !C1 * !X)	0.00266	0.00268	0.00268
	(!A1 * B1 * !C1 * !X)	-0.00237	-0.00257	-0.00255
	(!A1 * B1 * !C1 * !X)	0.00272	0.00273	0.00272
	(!A1 * !B1 * C1 * !X)	-0.00245	-0.00259	-0.00257
	(!A1 * !B1 * C1 * !X)	0.00271	0.00273	0.00272
	(!A1 * !B1 * !C1 * !X)	-0.00246	-0.00259	-0.00258
	(!A1 * !B1 * !C1 * !X)	0.00272	0.00274	0.00272
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	-0.00255	-0.00256	-0.00260
	(A1 * B1 * C1 * X)	0.00127	0.00127	0.00122
	(A1 * B1 * !C1 * !X)	-0.00220	-0.00222	-0.00221
	(A1 * B1 * !C1 * !X)	0.00277	0.00279	0.00279
	(A1 * !B1 * C1 * !X)	-0.00220	-0.00222	-0.00221
	(A1 * !B1 * C1 * !X)	0.00277	0.00280	0.00279
	(A1 * !B1 * !C1 * !X)	-0.00221	-0.00222	-0.00221
	(A1 * !B1 * !C1 * !X)	0.00278	0.00280	0.00279
	(!A1 * B1 * !C1 * !X)	-0.00193	-0.00211	-0.00211
	(!A1 * B1 * !C1 * !X)	0.00283	0.00284	0.00283
	(!A1 * !B1 * C1 * !X)	-0.00201	-0.00214	-0.00214
	(!A1 * !B1 * C1 * !X)	0.00282	0.00284	0.00283
	(!A1 * !B1 * !C1 * !X)	-0.00202	-0.00214	-0.00214
	(!A1 * !B1 * !C1 * !X)	0.00283	0.00284	0.00283

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	-0.00425	-0.00427	-0.00438
	(A1 * B1 * C1 * X)	0.00262	0.00262	0.00252
	(A1 * B1 * !C1 * !X)	-0.00388	-0.00392	-0.00389
	(A1 * B1 * !C1 * !X)	0.00535	0.00539	0.00536
	(A1 * !B1 * C1 * !X)	-0.00389	-0.00391	-0.00388
	(A1 * !B1 * C1 * !X)	0.00537	0.00538	0.00536
	(A1 * !B1 * !C1 * !X)	-0.00386	-0.00389	-0.00388
	(A1 * !B1 * !C1 * !X)	0.00533	0.00537	0.00537
	(!A1 * B1 * !C1 * !X)	-0.00339	-0.00371	-0.00369
	(!A1 * B1 * !C1 * !X)	0.00547	0.00551	0.00546
	(!A1 * !B1 * C1 * !X)	-0.00354	-0.00374	-0.00377
	(!A1 * !B1 * C1 * !X)	0.00547	0.00548	0.00546
	(!A1 * !B1 * !C1 * !X)	-0.00356	-0.00375	-0.00377
	(!A1 * !B1 * !C1 * !X)	0.00547	0.00548	0.00546

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	0.00181	0.00183	0.00182
	(A2 * !C1 * !X)	-0.00299	-0.00301	-0.00300
	(A1 * !A2 * !C1 * !X)	0.00181	0.00183	0.00182
	(A1 * !A2 * !C1 * !X)	-0.00299	-0.00301	-0.00300
	(!A1 * !A2 * C1 * !X)	0.00078	0.00078	0.00077
	(!A1 * !A2 * C1 * !X)	-0.00303	-0.00303	-0.00302
	(!A1 * !A2 * !C1 * !X)	0.00106	0.00106	0.00105
	(!A1 * !A2 * !C1 * !X)	-0.00305	-0.00305	-0.00305
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	0.00210	0.00213	0.00211
	(A2 * !C1 * !X)	-0.00284	-0.00285	-0.00284
	(A1 * !A2 * !C1 * !X)	0.00213	0.00215	0.00214
	(A1 * !A2 * !C1 * !X)	-0.00284	-0.00285	-0.00284
	(!A1 * !A2 * C1 * !X)	0.00088	0.00088	0.00087
	(!A1 * !A2 * C1 * !X)	-0.00287	-0.00288	-0.00286
	(!A1 * !A2 * !C1 * !X)	0.00116	0.00116	0.00115
	(!A1 * !A2 * !C1 * !X)	-0.00290	-0.00290	-0.00289
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	0.00450	0.00454	0.00453
	(A2 * !C1 * !X)	-0.00482	-0.00485	-0.00484
	(A1 * !A2 * !C1 * !X)	0.00450	0.00454	0.00453
	(A1 * !A2 * !C1 * !X)	-0.00482	-0.00485	-0.00484
	(!A1 * !A2 * C1 * !X)	0.00235	0.00237	0.00234
	(!A1 * !A2 * C1 * !X)	-0.00484	-0.00486	-0.00485
	(!A1 * !A2 * !C1 * !X)	0.00284	0.00285	0.00284
	(!A1 * !A2 * !C1 * !X)	-0.00489	-0.00490	-0.00489

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	-0.00166	-0.00182	-0.00182
	(A2 * !C1 * !X)	0.00315	0.00306	0.00301
	(A1 * !A2 * !C1 * !X)	-0.00163	-0.00182	-0.00182
	(A1 * !A2 * !C1 * !X)	0.00318	0.00304	0.00301
	(!A1 * !A2 * C1 * !X)	-0.00072	-0.00073	-0.00074
	(!A1 * !A2 * C1 * !X)	0.00307	0.00310	0.00304
	(!A1 * !A2 * !C1 * !X)	-0.00106	-0.00106	-0.00105
	(!A1 * !A2 * !C1 * !X)	0.00324	0.00322	0.00310
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	-0.00193	-0.00211	-0.00211
	(A2 * !C1 * !X)	0.00300	0.00288	0.00286
	(A1 * !A2 * !C1 * !X)	-0.00188	-0.00211	-0.00212
	(A1 * !A2 * !C1 * !X)	0.00303	0.00287	0.00286
	(!A1 * !A2 * C1 * !X)	-0.00082	-0.00083	-0.00083
	(!A1 * !A2 * C1 * !X)	0.00292	0.00295	0.00288
	(!A1 * !A2 * !C1 * !X)	-0.00116	-0.00116	-0.00115
	(!A1 * !A2 * !C1 * !X)	0.00311	0.00308	0.00296
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	-0.00425	-0.00454	-0.00453
	(A2 * !C1 * !X)	0.00507	0.00491	0.00487
	(A1 * !A2 * !C1 * !X)	-0.00421	-0.00454	-0.00453
	(A1 * !A2 * !C1 * !X)	0.00511	0.00490	0.00487
	(!A1 * !A2 * C1 * !X)	-0.00224	-0.00226	-0.00227
	(!A1 * !A2 * C1 * !X)	0.00496	0.00500	0.00491
	(!A1 * !A2 * !C1 * !X)	-0.00284	-0.00285	-0.00284
	(!A1 * !A2 * !C1 * !X)	0.00524	0.00523	0.00501

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	0.00061	0.00061	0.00060
	(A2 * !B1 * !X)	-0.00327	-0.00327	-0.00331
	(!A2 * !B1 * !X)	0.00061	0.00061	0.00060
	(!A2 * !B1 * !X)	-0.00327	-0.00327	-0.00331
	(!A1 * !A2 * B1 * !X)	0.00067	0.00067	0.00060
	(!A1 * !A2 * B1 * !X)	-0.00317	-0.00319	-0.00330
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	0.00077	0.00077	0.00075
	(A2 * !B1 * !X)	-0.00316	-0.00316	-0.00319
	(!A2 * !B1 * !X)	0.00077	0.00077	0.00075
	(!A2 * !B1 * !X)	-0.00316	-0.00316	-0.00319
	(!A1 * !A2 * B1 * !X)	0.00082	0.00081	0.00076
	(!A1 * !A2 * B1 * !X)	-0.00307	-0.00307	-0.00320
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	0.00112	0.00113	0.00109
	(A2 * !B1 * !X)	-0.00531	-0.00534	-0.00541
	(!A2 * !B1 * !X)	0.00113	0.00112	0.00109
	(!A2 * !B1 * !X)	-0.00532	-0.00532	-0.00541
	(!A1 * !A2 * B1 * !X)	0.00120	0.00121	0.00109
	(!A1 * !A2 * B1 * !X)	-0.00511	-0.00515	-0.00537

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	-0.00058	-0.00059	-0.00058
	(A2 * !B1 * !X)	0.00331	0.00335	0.00331
	(!A2 * !B1 * !X)	-0.00058	-0.00059	-0.00058
	(!A2 * !B1 * !X)	0.00331	0.00334	0.00331
	(!A1 * !A2 * B1 * !X)	-0.00057	-0.00058	-0.00057
	(!A1 * !A2 * B1 * !X)	0.00331	0.00335	0.00331
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	-0.00073	-0.00074	-0.00073
	(A2 * !B1 * !X)	0.00320	0.00323	0.00321
	(!A2 * !B1 * !X)	-0.00073	-0.00074	-0.00073
	(!A2 * !B1 * !X)	0.00320	0.00323	0.00321
	(!A1 * !A2 * B1 * !X)	-0.00072	-0.00073	-0.00071
	(!A1 * !A2 * B1 * !X)	0.00320	0.00324	0.00320
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	-0.00105	-0.00107	-0.00105
	(A2 * !B1 * !X)	0.00541	0.00548	0.00544
	(!A2 * !B1 * !X)	-0.00105	-0.00107	-0.00105
	(!A2 * !B1 * !X)	0.00542	0.00548	0.00544
	(!A1 * !A2 * B1 * !X)	-0.00101	-0.00104	-0.00100
	(!A1 * !A2 * B1 * !X)	0.00540	0.00548	0.00543

SKY130_FD_SC_HS__O21AIx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00295	0.00302	0.00294	0.75407
sky130_fd_sc_hs__o21ai_2	0.00597	0.00553	0.00545	1.35668
sky130_fd_sc_hs__o21ai_4	0.01064	0.01094	0.00808	2.22873

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21ai_1	0.00000	0.11273	0.38031
sky130_fd_sc_hs__o21ai_2	0.00000	0.22546	0.76062
sky130_fd_sc_hs__o21ai_4	0.00000	0.30830	1.14093

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)	0.07213	0.78575	9.58446
	A2->Y (FR)	0.06169	0.81090	10.12720
	B1->Y (FR)	0.02570	0.55327	7.16804
sky130_fd_sc_hs__o21ai_2	A1->Y (FR)	0.06445	0.65740	9.27664
	A2->Y (FR)	0.05031	0.68014	9.78326
	B1->Y (FR)	0.01975	0.47734	6.97775
sky130_fd_sc_hs__o21ai_4	A1->Y (FR)	0.06537	0.55906	8.79302
	A2->Y (FR)	0.05139	0.61114	9.66141
	B1->Y (FR)	0.02714	0.59640	9.71811

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ai_1	A1->Y (RF)	0.03126	0.32243	3.77538
	A2->Y (RF)	0.02544	0.30996	3.70932
	B1->Y (RF)	0.02634	0.38032	4.61670
sky130_fd_sc_hs__o21ai_2	A1->Y (RF)	0.02554	0.25025	3.48526
	A2->Y (RF)	0.02183	0.24308	3.50524
	B1->Y (RF)	0.01610	0.29782	4.43810
sky130_fd_sc_hs__o21ai_4	A1->Y (RF)	0.02557	0.19680	3.16473
	A2->Y (RF)	0.02086	0.18513	3.14407
	B1->Y (RF)	0.01321	0.22509	3.99072

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.00088	0.00221	0.03648
	A1	0.01142	0.01279	0.04709
	A2	0.00092	0.00367	0.04791
	A2	0.00972	0.01209	0.05667
	B1	-0.00068	0.00431	0.06373
	B1	0.00622	0.01127	0.07145
sky130_fd_sc_hs__o21ai_2	A1	0.00090	0.00416	0.07365
	A1	0.02118	0.02449	0.09432
	A2	0.00087	0.00684	0.08929
	A2	0.01723	0.02290	0.10563
	B1	-0.00299	0.00658	0.12158
	B1	0.00946	0.01990	0.13543
sky130_fd_sc_hs__o21ai_4	A1	0.00124	0.00828	0.14642
	A1	0.04065	0.04782	0.18630
	A2	0.00067	0.01298	0.16880
	A2	0.03333	0.04575	0.20066
	B1	-0.00565	0.00624	0.14144
	B1	0.01302	0.02469	0.16011

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.01237	0.01359	0.04077
	A1	0.00172	0.00289	0.03009
	A2	0.00928	0.01064	0.03570
	A2	0.00039	0.00170	0.02678
	B1	0.00690	0.00922	0.04385
	B1	-0.00001	0.00227	0.03694
sky130_fd_sc_hs__o21ai_2	A1	0.02318	0.02566	0.08002
	A1	0.00277	0.00526	0.05916
	A2	0.01588	0.01904	0.06875
	A2	-0.00071	0.00244	0.05206
	B1	0.01132	0.01696	0.08572
	B1	-0.00113	0.00441	0.07220
sky130_fd_sc_hs__o21ai_4	A1	0.04400	0.05018	0.16293
	A1	0.00443	0.01052	0.12192
	A2	0.03005	0.03729	0.13676
	A2	-0.00309	0.00408	0.10263
	B1	0.01886	0.02541	0.09953
	B1	0.00028	0.00673	0.08033

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	0.00313	0.00272	0.00266
	(A2 * B1 * !Y)	-0.00240	-0.00286	-0.00288
	(A2 * !B1 * Y)	0.00246	0.00248	0.00245
	(A2 * !B1 * Y)	-0.00304	-0.00309	-0.00308
	(!A2 * !B1 * Y)	0.00236	0.00238	0.00237
	(!A2 * !B1 * Y)	-0.00310	-0.00311	-0.00311
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	0.00603	0.00507	0.00497
	(A2 * B1 * !Y)	-0.00477	-0.00581	-0.00584
	(A2 * !B1 * Y)	0.00469	0.00473	0.00469
	(A2 * !B1 * Y)	-0.00602	-0.00614	-0.00611
	(!A2 * !B1 * Y)	0.00447	0.00452	0.00449
	(!A2 * !B1 * Y)	-0.00615	-0.00619	-0.00616
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	0.01127	0.00929	0.00912
	(A2 * B1 * !Y)	-0.00946	-0.01166	-0.01168
	(A2 * !B1 * Y)	0.00910	0.00917	0.00908
	(A2 * !B1 * Y)	-0.01149	-0.01174	-0.01166
	(!A2 * !B1 * Y)	0.00867	0.00876	0.00870
	(!A2 * !B1 * Y)	-0.01180	-0.01187	-0.01182

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	-0.00263	-0.00265	-0.00264
	(A2 * B1 * !Y)	0.00287	0.00290	0.00289
	(A2 * !B1 * Y)	-0.00245	-0.00246	-0.00245
	(A2 * !B1 * Y)	0.00307	0.00310	0.00308
	(!A2 * !B1 * Y)	-0.00221	-0.00236	-0.00237
	(!A2 * !B1 * Y)	0.00316	0.00314	0.00311
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	-0.00493	-0.00496	-0.00493
	(A2 * B1 * !Y)	0.00583	0.00587	0.00586
	(A2 * !B1 * Y)	-0.00467	-0.00469	-0.00468
	(A2 * !B1 * Y)	0.00608	0.00614	0.00611
	(!A2 * !B1 * Y)	-0.00420	-0.00452	-0.00449
	(!A2 * !B1 * Y)	0.00628	0.00623	0.00618
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	-0.00905	-0.00909	-0.00905
	(A2 * B1 * !Y)	0.01160	0.01170	0.01168
	(A2 * !B1 * Y)	-0.00904	-0.00910	-0.00906
	(A2 * !B1 * Y)	0.01160	0.01174	0.01166
	(!A2 * !B1 * Y)	-0.00808	-0.00876	-0.00870
	(!A2 * !B1 * Y)	0.01208	0.01193	0.01185

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	0.00273	0.00274	0.00272
	(A1 * B1 * !Y)	-0.00130	-0.00130	-0.00129
	(A1 * !B1 * Y)	0.00222	0.00226	0.00223
	(A1 * !B1 * Y)	-0.00309	-0.00313	-0.00312
	(!A1 * !B1 * Y)	0.00216	0.00216	0.00216
	(!A1 * !B1 * Y)	-0.00317	-0.00316	-0.00316
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	0.00497	0.00499	0.00495
	(A1 * B1 * !Y)	-0.00262	-0.00262	-0.00260
	(A1 * !B1 * Y)	0.00455	0.00460	0.00456
	(A1 * !B1 * Y)	-0.00561	-0.00571	-0.00569
	(!A1 * !B1 * Y)	0.00434	0.00440	0.00437
	(!A1 * !B1 * Y)	-0.00574	-0.00578	-0.00576
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	0.01039	0.01052	0.01043
	(A1 * B1 * !Y)	-0.00524	-0.00530	-0.00525
	(A1 * !B1 * Y)	0.00924	0.00929	0.00922
	(A1 * !B1 * Y)	-0.01168	-0.01184	-0.01182
	(!A1 * !B1 * Y)	0.00876	0.00884	0.00881
	(!A1 * !B1 * Y)	-0.01198	-0.01204	-0.01201

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	-0.00265	-0.00267	-0.00271
	(A1 * B1 * !Y)	0.00134	0.00135	0.00131
	(A1 * !B1 * Y)	-0.00222	-0.00223	-0.00223
	(A1 * !B1 * Y)	0.00311	0.00313	0.00312
	(!A1 * !B1 * Y)	-0.00204	-0.00215	-0.00216
	(!A1 * !B1 * Y)	0.00321	0.00319	0.00317
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	-0.00476	-0.00481	-0.00493
	(A1 * B1 * !Y)	0.00273	0.00275	0.00264
	(A1 * !B1 * Y)	-0.00453	-0.00457	-0.00455
	(A1 * !B1 * Y)	0.00566	0.00571	0.00569
	(!A1 * !B1 * Y)	-0.00409	-0.00438	-0.00437
	(!A1 * !B1 * Y)	0.00586	0.00581	0.00578
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	-0.01001	-0.01006	-0.01038
	(A1 * B1 * !Y)	0.00556	0.00558	0.00534
	(A1 * !B1 * Y)	-0.00921	-0.00922	-0.00920
	(A1 * !B1 * Y)	0.01181	0.01184	0.01182
	(!A1 * !B1 * Y)	-0.00817	-0.00884	-0.00881
	(!A1 * !B1 * Y)	0.01230	0.01212	0.01204

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	0.00080	0.00080	0.00076
	(!A1 * !A2 * Y)	-0.00354	-0.00355	-0.00363
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	0.00163	0.00162	0.00154
	(!A1 * !A2 * Y)	-0.00656	-0.00658	-0.00673
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	0.00284	0.00283	0.00269
	(!A1 * !A2 * Y)	-0.00761	-0.00763	-0.00791

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	-0.00074	-0.00076	-0.00074
	(!A1 * !A2 * Y)	0.00362	0.00370	0.00364
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	-0.00150	-0.00150	-0.00150
	(!A1 * !A2 * Y)	0.00671	0.00675	0.00675
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	-0.00263	-0.00267	-0.00262
	(!A1 * !A2 * Y)	0.00793	0.00806	0.00793

SKY130_FD_SC_HS__O21Ax

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00253	0.00255	0.00251	1.44255
sky130_fd_sc_hs__o21a_2	0.00275	0.00271	0.00280	2.81522
sky130_fd_sc_hs__o21a_4	0.00526	0.00487	0.00466	5.34658

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21a_1	0.00000	0.64760	1.64015
sky130_fd_sc_hs__o21a_2	0.00000	0.51615	0.97952
sky130_fd_sc_hs__o21a_4	0.00000	1.54146	3.30316

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)	0.06217	0.45443	5.56588
	A2->X (RR)	0.05382	0.43305	5.42455
	B1->X (RR)	0.05726	0.46792	5.84547
sky130_fd_sc_hs__o21a_2	A1->X (RR)	0.06438	0.38044	5.53878
	A2->X (RR)	0.05678	0.36392	5.40569
	B1->X (RR)	0.05968	0.39913	5.86829
sky130_fd_sc_hs__o21a_4	A1->X (RR)	0.06890	0.32333	5.61331
	A2->X (RR)	0.06131	0.30397	5.51443
	B1->X (RR)	0.06035	0.33393	5.82589

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21a_1	A1->X (FF)	0.09754	0.47420	5.11533
	A2->X (FF)	0.08601	0.48961	5.27127
	B1->X (FF)	0.05014	0.40906	4.93601
sky130_fd_sc_hs__o21a_2	A1->X (FF)	0.12126	0.48484	5.22922
	A2->X (FF)	0.11091	0.50856	5.38422
	B1->X (FF)	0.05664	0.39497	4.90497
sky130_fd_sc_hs__o21a_4	A1->X (FF)	0.11957	0.44964	5.23928
	A2->X (FF)	0.10421	0.46481	5.38130
	B1->X (FF)	0.06270	0.37975	5.03316

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.01519	0.01984	0.12318
	A1	0.00619	0.01085	0.11465
	A2	0.01223	0.01772	0.13206
	A2	0.00479	0.01030	0.12499
	B1	0.01036	0.01780	0.14767
	B1	0.00488	0.01235	0.14260
sky130_fd_sc_hs__o21a_2	A1	0.02024	0.02483	0.12946
	A1	0.01045	0.01507	0.12063
	A2	0.01728	0.02260	0.13808
	A2	0.00922	0.01458	0.13074
	B1	0.01507	0.02223	0.15347
	B1	0.00889	0.01613	0.14802
sky130_fd_sc_hs__o21a_4	A1	0.03941	0.04821	0.25182
	A1	0.02098	0.02988	0.23511
	A2	0.03287	0.04323	0.26708
	A2	0.01805	0.02857	0.25410
	B1	0.02847	0.04224	0.28511
	B1	0.01783	0.03176	0.27561

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.00630	0.01094	0.11377
	A1	0.01522	0.01972	0.12236
	A2	0.00635	0.01305	0.12677
	A2	0.01369	0.02026	0.13407
	B1	0.00445	0.01362	0.16075
	B1	0.00995	0.01904	0.16499
sky130_fd_sc_hs__o21a_2	A1	0.01270	0.01564	0.11894
	A1	0.02237	0.02514	0.12854
	A2	0.01285	0.01800	0.13931
	A2	0.02080	0.02592	0.14084
	B1	0.00881	0.01779	0.16871
	B1	0.01498	0.02386	0.17311
sky130_fd_sc_hs__o21a_4	A1	0.02396	0.02908	0.23355
	A1	0.04224	0.04734	0.24752
	A2	0.02454	0.03402	0.26049
	A2	0.03916	0.04841	0.27095
	B1	0.01838	0.03305	0.30422
	B1	0.03189	0.04655	0.31324

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	0.00260	0.00219	0.00214
	(A2 * B1 * X)	-0.00221	-0.00266	-0.00268
	(A2 * !B1 * !X)	0.00212	0.00215	0.00212
	(A2 * !B1 * !X)	-0.00266	-0.00270	-0.00269
	(!A2 * !B1 * !X)	0.00205	0.00206	0.00205
	(!A2 * !B1 * !X)	-0.00270	-0.00271	-0.00271
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	0.00301	0.00261	0.00254
	(A2 * B1 * X)	-0.00220	-0.00262	-0.00265
	(A2 * !B1 * !X)	0.00254	0.00257	0.00254
	(A2 * !B1 * !X)	-0.00262	-0.00266	-0.00265
	(!A2 * !B1 * !X)	0.00243	0.00245	0.00244
	(!A2 * !B1 * !X)	-0.00266	-0.00267	-0.00267
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	0.00559	0.00477	0.00472
	(A2 * B1 * X)	-0.00422	-0.00515	-0.00516
	(A2 * !B1 * !X)	0.00456	0.00460	0.00458
	(A2 * !B1 * !X)	-0.00519	-0.00531	-0.00530
	(!A2 * !B1 * !X)	0.00441	0.00443	0.00442
	(!A2 * !B1 * !X)	-0.00534	-0.00536	-0.00534

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	-0.00209	-0.00210	-0.00209
	(A2 * B1 * X)	0.00270	0.00273	0.00272
	(A2 * !B1 * !X)	-0.00211	-0.00213	-0.00212
	(A2 * !B1 * !X)	0.00268	0.00272	0.00269
	(!A2 * !B1 * !X)	-0.00190	-0.00204	-0.00205
	(!A2 * !B1 * !X)	0.00278	0.00275	0.00272
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	-0.00252	-0.00252	-0.00251
	(A2 * B1 * X)	0.00267	0.00268	0.00267
	(A2 * !B1 * !X)	-0.00252	-0.00253	-0.00253
	(A2 * !B1 * !X)	0.00265	0.00267	0.00265
	(!A2 * !B1 * !X)	-0.00229	-0.00244	-0.00244
	(!A2 * !B1 * !X)	0.00274	0.00270	0.00268
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	-0.00463	-0.00467	-0.00463
	(A2 * B1 * X)	0.00518	0.00527	0.00523
	(A2 * !B1 * !X)	-0.00454	-0.00457	-0.00456
	(A2 * !B1 * !X)	0.00526	0.00531	0.00530
	(!A2 * !B1 * !X)	-0.00418	-0.00441	-0.00442
	(!A2 * !B1 * !X)	0.00547	0.00539	0.00537

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	0.00218	0.00220	0.00218
	(A1 * B1 * X)	-0.00126	-0.00127	-0.00126
	(A1 * !B1 * !X)	0.00202	0.00204	0.00202
	(A1 * !B1 * !X)	-0.00258	-0.00263	-0.00261
	(!A1 * !B1 * !X)	0.00197	0.00197	0.00196
	(!A1 * !B1 * !X)	-0.00264	-0.00264	-0.00264
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	0.00249	0.00252	0.00250
	(A1 * B1 * X)	-0.00118	-0.00120	-0.00118
	(A1 * !B1 * !X)	0.00229	0.00232	0.00229
	(A1 * !B1 * !X)	-0.00255	-0.00259	-0.00259
	(!A1 * !B1 * !X)	0.00219	0.00222	0.00221
	(!A1 * !B1 * !X)	-0.00260	-0.00261	-0.00261
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	0.00435	0.00439	0.00435
	(A1 * B1 * X)	-0.00239	-0.00241	-0.00239
	(A1 * !B1 * !X)	0.00386	0.00391	0.00387
	(A1 * !B1 * !X)	-0.00518	-0.00526	-0.00525
	(!A1 * !B1 * !X)	0.00374	0.00374	0.00372
	(!A1 * !B1 * !X)	-0.00533	-0.00533	-0.00532

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	-0.00210	-0.00210	-0.00215
	(A1 * B1 * X)	0.00134	0.00135	0.00130
	(A1 * !B1 * !X)	-0.00200	-0.00203	-0.00201
	(A1 * !B1 * !X)	0.00259	0.00263	0.00261
	(!A1 * !B1 * !X)	-0.00179	-0.00194	-0.00195
	(!A1 * !B1 * !X)	0.00270	0.00267	0.00265
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	-0.00243	-0.00244	-0.00248
	(A1 * B1 * X)	0.00125	0.00125	0.00121
	(A1 * !B1 * !X)	-0.00227	-0.00229	-0.00228
	(A1 * !B1 * !X)	0.00258	0.00259	0.00259
	(!A1 * !B1 * !X)	-0.00207	-0.00221	-0.00221
	(!A1 * !B1 * !X)	0.00266	0.00264	0.00262
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	-0.00417	-0.00419	-0.00430
	(A1 * B1 * X)	0.00256	0.00256	0.00246
	(A1 * !B1 * !X)	-0.00384	-0.00386	-0.00385
	(A1 * !B1 * !X)	0.00524	0.00526	0.00525
	(!A1 * !B1 * !X)	-0.00346	-0.00371	-0.00372
	(!A1 * !B1 * !X)	0.00546	0.00537	0.00534

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	0.00075	0.00074	0.00071
	(!A1 * !A2 * !X)	-0.00281	-0.00281	-0.00288
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	0.00082	0.00081	0.00077
	(!A1 * !A2 * !X)	-0.00319	-0.00319	-0.00327
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	0.00125	0.00125	0.00117
	(!A1 * !A2 * !X)	-0.00544	-0.00545	-0.00559

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	-0.00069	-0.00071	-0.00069
	(!A1 * !A2 * !X)	0.00288	0.00294	0.00289
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	-0.00074	-0.00076	-0.00074
	(!A1 * !A2 * !X)	0.00328	0.00334	0.00329
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	-0.00112	-0.00115	-0.00112
	(!A1 * !A2 * !X)	0.00559	0.00571	0.00562

SKY130_FD_SC_HS__O21BAIx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00281	0.00310	0.00241	0.74749
sky130_fd_sc_hs__o21bai_2	0.00593	0.00547	0.00267	1.36293
sky130_fd_sc_hs__o21bai_4	0.01076	0.01088	0.00365	2.51634

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21bai_1	0.00000	0.69114	1.16184
sky130_fd_sc_hs__o21bai_2	0.00000	0.47264	0.77666
sky130_fd_sc_hs__o21bai_4	0.00000	1.46442	2.34657

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)	0.06761	0.78148	9.54381
	A2->Y (FR)	0.05794	0.81015	10.09380
	B1_N->Y (RR)	0.04704	0.30593	2.57882
sky130_fd_sc_hs__o21bai_2	A1->Y (FR)	0.06214	0.65433	9.24619
	A2->Y (FR)	0.04881	0.67817	9.76365
	B1_N->Y (RR)	0.04710	0.25340	2.38441
sky130_fd_sc_hs__o21bai_4	A1->Y (FR)	0.06430	0.57744	9.38932
	A2->Y (FR)	0.04977	0.61929	10.12900
	B1_N->Y (RR)	0.06349	0.41682	6.20244

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21bai_1	A1->Y (RF)	0.03104	0.32272	3.78556
	A2->Y (RF)	0.02541	0.31169	3.73049
	B1_N->Y (FF)	0.06413	0.42301	4.27585
sky130_fd_sc_hs__o21bai_2	A1->Y (RF)	0.02784	0.25156	3.50444
	A2->Y (RF)	0.02370	0.24491	3.52414
	B1_N->Y (FF)	0.06297	0.40322	4.37687
sky130_fd_sc_hs__o21bai_4	A1->Y (RF)	0.03395	0.21680	3.62408
	A2->Y (RF)	0.02421	0.20097	3.52766
	B1_N->Y (FF)	0.06553	0.35881	4.33685

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.00081	0.00225	0.03722
	A1	0.00903	0.01050	0.04551
	A2	0.00071	0.00362	0.04811
	A2	0.00759	0.01049	0.05495
	B1_N	0.01028	0.01744	0.14543
	B1_N	0.00709	0.01428	0.14254
sky130_fd_sc_hs__o21bai_2	A1	0.00082	0.00421	0.07344
	A1	0.01735	0.02080	0.09042
	A2	0.00086	0.00689	0.08963
	A2	0.01323	0.01899	0.10200
	B1_N	0.01441	0.02226	0.15774
	B1_N	0.01246	0.02033	0.15625
sky130_fd_sc_hs__o21bai_4	A1	0.00149	0.00790	0.13042
	A1	0.03377	0.04025	0.16322
	A2	0.00120	0.01328	0.16481
	A2	0.02639	0.03856	0.18998
	B1_N	0.01886	0.03268	0.28636
	B1_N	0.01931	0.03334	0.28763

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.01155	0.01271	0.03954
	A1	0.00331	0.00445	0.03130
	A2	0.00860	0.00996	0.03521
	A2	0.00166	0.00300	0.02777
	B1_N	0.00867	0.01768	0.15776
	B1_N	0.01025	0.01927	0.15946
sky130_fd_sc_hs__o21bai_2	A1	0.02305	0.02558	0.07981
	A1	0.00650	0.00897	0.06276
	A2	0.01586	0.01901	0.06874
	A2	0.00334	0.00646	0.05602
	B1_N	0.01733	0.02670	0.18073
	B1_N	0.01582	0.02537	0.17921
sky130_fd_sc_hs__o21bai_4	A1	0.04614	0.05186	0.15593
	A1	0.01380	0.01935	0.12205
	A2	0.03170	0.03848	0.13405
	A2	0.00623	0.01299	0.10637
	B1_N	0.03480	0.05065	0.30137
	B1_N	0.03496	0.05075	0.30134

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)	0.00241	0.00244	0.00241
	(A2 * B1_N * Y)	-0.00287	-0.00292	-0.00291
	(A2 * !B1_N * !Y)	0.00288	0.00246	0.00240
	(A2 * !B1_N * !Y)	-0.00245	-0.00290	-0.00292
	(!A2 * B1_N * Y)	0.00235	0.00237	0.00235
	(!A2 * B1_N * Y)	-0.00293	-0.00294	-0.00293
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	0.00491	0.00497	0.00491
	(A2 * B1_N * Y)	-0.00596	-0.00609	-0.00606
	(A2 * !B1_N * !Y)	0.00601	0.00509	0.00498
	(A2 * !B1_N * !Y)	-0.00494	-0.00596	-0.00600
	(!A2 * B1_N * Y)	0.00477	0.00484	0.00479
	(!A2 * B1_N * Y)	-0.00609	-0.00615	-0.00611
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	0.00925	0.00932	0.00923
	(A2 * B1_N * Y)	-0.01160	-0.01178	-0.01180
	(A2 * !B1_N * !Y)	0.01149	0.00939	0.00924
	(A2 * !B1_N * !Y)	-0.00950	-0.01181	-0.01181
	(!A2 * B1_N * Y)	0.00898	0.00904	0.00897
	(!A2 * B1_N * Y)	-0.01193	-0.01196	-0.01191

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)	-0.00238	-0.00239	-0.00239
	(A2 * B1_N * Y)	0.00292	0.00294	0.00293
	(A2 * !B1_N * !Y)	-0.00238	-0.00239	-0.00238
	(A2 * !B1_N * !Y)	0.00291	0.00293	0.00293
	(!A2 * B1_N * Y)	-0.00220	-0.00233	-0.00234
	(!A2 * B1_N * Y)	0.00301	0.00298	0.00296
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	-0.00488	-0.00491	-0.00489
	(A2 * B1_N * Y)	0.00604	0.00609	0.00606
	(A2 * !B1_N * !Y)	-0.00494	-0.00497	-0.00494
	(A2 * !B1_N * !Y)	0.00598	0.00603	0.00602
	(!A2 * B1_N * Y)	-0.00454	-0.00480	-0.00479
	(!A2 * B1_N * Y)	0.00623	0.00618	0.00614
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	-0.00915	-0.00916	-0.00917
	(A2 * B1_N * Y)	0.01175	0.01178	0.01180
	(A2 * !B1_N * !Y)	-0.00917	-0.00922	-0.00916
	(A2 * !B1_N * !Y)	0.01175	0.01186	0.01182
	(!A2 * B1_N * Y)	-0.00842	-0.00901	-0.00897
	(!A2 * B1_N * Y)	0.01226	0.01202	0.01199

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)	0.00245	0.00249	0.00246
	(A1 * B1_N * Y)	-0.00310	-0.00317	-0.00316
	(A1 * !B1_N * !Y)	0.00278	0.00279	0.00277
	(A1 * !B1_N * !Y)	-0.00148	-0.00148	-0.00147
	(!A1 * B1_N * Y)	0.00242	0.00244	0.00241
	(!A1 * B1_N * Y)	-0.00319	-0.00320	-0.00318
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	0.00449	0.00454	0.00450
	(A1 * B1_N * Y)	-0.00560	-0.00573	-0.00569
	(A1 * !B1_N * !Y)	0.00487	0.00494	0.00490
	(A1 * !B1_N * !Y)	-0.00258	-0.00261	-0.00259
	(!A1 * B1_N * Y)	0.00436	0.00440	0.00438
	(!A1 * B1_N * Y)	-0.00575	-0.00577	-0.00576
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	0.00916	0.00923	0.00915
	(A1 * B1_N * Y)	-0.01162	-0.01184	-0.01180
	(A1 * !B1_N * !Y)	0.01022	0.01035	0.01026
	(A1 * !B1_N * !Y)	-0.00528	-0.00534	-0.00529
	(!A1 * B1_N * Y)	0.00885	0.00898	0.00889
	(!A1 * B1_N * Y)	-0.01193	-0.01202	-0.01194

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)	-0.00244	-0.00245	-0.00244
	(A1 * B1_N * Y)	0.00316	0.00317	0.00316
	(A1 * !B1_N * !Y)	-0.00269	-0.00271	-0.00276
	(A1 * !B1_N * !Y)	0.00153	0.00154	0.00149
	(!A1 * B1_N * Y)	-0.00224	-0.00238	-0.00239
	(!A1 * B1_N * Y)	0.00324	0.00323	0.00321
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	-0.00449	-0.00451	-0.00448
	(A1 * B1_N * Y)	0.00569	0.00573	0.00569
	(A1 * !B1_N * !Y)	-0.00472	-0.00474	-0.00487
	(A1 * !B1_N * !Y)	0.00272	0.00273	0.00263
	(!A1 * B1_N * Y)	-0.00416	-0.00440	-0.00438
	(!A1 * B1_N * Y)	0.00585	0.00582	0.00578
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	-0.00910	-0.00912	-0.00909
	(A1 * B1_N * Y)	0.01181	0.01184	0.01180
	(A1 * !B1_N * !Y)	-0.00988	-0.00990	-0.01021
	(A1 * !B1_N * !Y)	0.00563	0.00562	0.00538
	(!A1 * B1_N * Y)	-0.00834	-0.00892	-0.00889
	(!A1 * B1_N * Y)	0.01223	0.01210	0.01202

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)	0.00859	0.01645	0.15910
	(!A1 * !A2 * Y)	0.00306	0.01087	0.15354
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.01264	0.02076	0.17858
	(!A1 * !A2 * Y)	0.00630	0.01442	0.17224
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.01515	0.02829	0.27774
	(!A1 * !A2 * Y)	0.00645	0.01958	0.26905

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)	0.00007	0.00912	0.15169
	(!A1 * !A2 * Y)	0.00565	0.01471	0.15728
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.00084	0.01001	0.16731
	(!A1 * !A2 * Y)	0.00723	0.01640	0.17368
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.00181	0.01728	0.26692
	(!A1 * !A2 * Y)	0.01061	0.02614	0.27571

SKY130_FD_SC_HS__O21BAx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00256	0.00272	0.00221	1.29113
sky130_fd_sc_hs__o21ba_2	0.00267	0.00279	0.00235	2.42610
sky130_fd_sc_hs__o21ba_4	0.00533	0.00507	0.00287	4.55066

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21ba_1	0.00000	0.97397	1.35658
sky130_fd_sc_hs__o21ba_2	0.00000	1.09456	1.54215
sky130_fd_sc_hs__o21ba_4	0.00000	1.64227	3.31461

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)	0.06925	0.48034	5.60242
	A2->X (RR)	0.06078	0.46048	5.46746
	B1_N->X (FR)	0.10658	0.68388	8.25234
sky130_fd_sc_hs__o21ba_2	A1->X (RR)	0.06870	0.38195	5.20247
	A2->X (RR)	0.05962	0.36420	5.05813
	B1_N->X (FR)	0.10870	0.58455	7.87424
sky130_fd_sc_hs__o21ba_4	A1->X (RR)	0.07421	0.33169	5.39111
	A2->X (RR)	0.06721	0.31264	5.29706
	B1_N->X (FR)	0.11495	0.54589	8.15247

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ba_1	A1->X (FF)	0.10049	0.47089	4.82426
	A2->X (FF)	0.09066	0.48833	4.98006
	B1_N->X (RF)	0.07500	0.24964	1.74320
sky130_fd_sc_hs__o21ba_2	A1->X (FF)	0.11910	0.47529	4.92349
	A2->X (FF)	0.10884	0.49797	5.08276
	B1_N->X (RF)	0.08212	0.23280	1.85167
sky130_fd_sc_hs__o21ba_4	A1->X (FF)	0.11817	0.43783	4.78217
	A2->X (FF)	0.10305	0.45307	4.92785
	B1_N->X (RF)	0.08655	0.20624	1.52605

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.01603	0.02056	0.12393
	A1	0.00853	0.01305	0.11685
	A2	0.01339	0.01868	0.13302
	A2	0.00718	0.01246	0.12710
	B1_N	0.01109	0.02038	0.17656
	B1_N	0.01562	0.02494	0.18119
sky130_fd_sc_hs__o21ba_2	A1	0.02018	0.02479	0.12950
	A1	0.01244	0.01715	0.12177
	A2	0.01735	0.02269	0.13804
	A2	0.01092	0.01630	0.13164
	B1_N	0.01789	0.02692	0.17080
	B1_N	0.01949	0.02901	0.17733
sky130_fd_sc_hs__o21ba_4	A1	0.03938	0.04785	0.25017
	A1	0.02405	0.03255	0.23610
	A2	0.03295	0.04285	0.26561
	A2	0.02122	0.03117	0.25504
	B1_N	0.03433	0.04466	0.22256
	B1_N	0.03337	0.04445	0.22781

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.00644	0.01091	0.11436
	A1	0.01389	0.01836	0.12074
	A2	0.00639	0.01297	0.12844
	A2	0.01254	0.01904	0.13295
	B1_N	0.01525	0.02273	0.16735
	B1_N	0.01072	0.01818	0.16272
sky130_fd_sc_hs__o21ba_2	A1	0.01195	0.01527	0.12115
	A1	0.01962	0.02251	0.12577
	A2	0.01187	0.01724	0.13193
	A2	0.01820	0.02356	0.13818
	B1_N	0.01977	0.02665	0.17577
	B1_N	0.01491	0.02175	0.17090
sky130_fd_sc_hs__o21ba_4	A1	0.02334	0.02840	0.22954
	A1	0.03860	0.04348	0.24281
	A2	0.02387	0.03332	0.25753
	A2	0.03549	0.04471	0.26601
	B1_N	0.03490	0.04225	0.20767
	B1_N	0.03220	0.03947	0.20405

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)	0.00212	0.00214	0.00212
	(A2 * B1_N * !X)	-0.00267	-0.00271	-0.00270
	(A2 * !B1_N * X)	0.00257	0.00218	0.00212
	(A2 * !B1_N * X)	-0.00224	-0.00268	-0.00270
	(!A2 * B1_N * !X)	0.00205	0.00207	0.00206
	(!A2 * B1_N * !X)	-0.00271	-0.00272	-0.00272
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	0.00241	0.00244	0.00241
	(A2 * B1_N * !X)	-0.00261	-0.00265	-0.00265
	(A2 * !B1_N * X)	0.00288	0.00247	0.00241
	(A2 * !B1_N * X)	-0.00219	-0.00262	-0.00264
	(!A2 * B1_N * !X)	0.00234	0.00236	0.00235
	(!A2 * B1_N * !X)	-0.00265	-0.00266	-0.00266
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	0.00465	0.00472	0.00468
	(A2 * B1_N * !X)	-0.00527	-0.00540	-0.00538
	(A2 * !B1_N * X)	0.00561	0.00477	0.00472
	(A2 * !B1_N * X)	-0.00438	-0.00533	-0.00535
	(!A2 * B1_N * !X)	0.00453	0.00455	0.00454
	(!A2 * B1_N * !X)	-0.00544	-0.00545	-0.00544

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)	-0.00209	-0.00210	-0.00209
	(A2 * B1_N * !X)	0.00271	0.00274	0.00272
	(A2 * !B1_N * X)	-0.00208	-0.00209	-0.00208
	(A2 * !B1_N * X)	0.00271	0.00274	0.00273
	(!A2 * B1_N * !X)	-0.00193	-0.00204	-0.00205
	(!A2 * B1_N * !X)	0.00282	0.00277	0.00275
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	-0.00237	-0.00238	-0.00238
	(A2 * B1_N * !X)	0.00266	0.00268	0.00267
	(A2 * !B1_N * X)	-0.00238	-0.00239	-0.00238
	(A2 * !B1_N * X)	0.00265	0.00268	0.00267
	(!A2 * B1_N * !X)	-0.00219	-0.00232	-0.00233
	(!A2 * B1_N * !X)	0.00274	0.00271	0.00269
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	-0.00465	-0.00466	-0.00465
	(A2 * B1_N * !X)	0.00537	0.00540	0.00538
	(A2 * !B1_N * X)	-0.00463	-0.00467	-0.00463
	(A2 * !B1_N * X)	0.00536	0.00545	0.00541
	(!A2 * B1_N * !X)	-0.00435	-0.00455	-0.00454
	(!A2 * B1_N * !X)	0.00557	0.00552	0.00547

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)	0.00222	0.00225	0.00222
	(A1 * B1_N * !X)	-0.00268	-0.00273	-0.00272
	(A1 * !B1_N * X)	0.00232	0.00234	0.00233
	(A1 * !B1_N * X)	-0.00141	-0.00142	-0.00141
	(!A1 * B1_N * !X)	0.00217	0.00218	0.00216
	(!A1 * B1_N * !X)	-0.00274	-0.00274	-0.00273
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	0.00246	0.00249	0.00246
	(A1 * B1_N * !X)	-0.00263	-0.00269	-0.00268
	(A1 * !B1_N * X)	0.00261	0.00264	0.00262
	(A1 * !B1_N * X)	-0.00131	-0.00133	-0.00132
	(!A1 * B1_N * !X)	0.00239	0.00241	0.00240
	(!A1 * B1_N * !X)	-0.00268	-0.00269	-0.00269
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	0.00398	0.00403	0.00399
	(A1 * B1_N * !X)	-0.00532	-0.00543	-0.00540
	(A1 * !B1_N * X)	0.00448	0.00449	0.00446
	(A1 * !B1_N * X)	-0.00255	-0.00255	-0.00253
	(!A1 * B1_N * !X)	0.00387	0.00393	0.00388
	(!A1 * B1_N * !X)	-0.00546	-0.00550	-0.00547

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)	-0.00219	-0.00221	-0.00220
	(A1 * B1_N * !X)	0.00272	0.00274	0.00273
	(A1 * !B1_N * X)	-0.00226	-0.00227	-0.00231
	(A1 * !B1_N * X)	0.00147	0.00148	0.00144
	(!A1 * B1_N * !X)	-0.00204	-0.00215	-0.00216
	(!A1 * B1_N * !X)	0.00283	0.00278	0.00277
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	-0.00243	-0.00244	-0.00243
	(A1 * B1_N * !X)	0.00268	0.00270	0.00269
	(A1 * !B1_N * X)	-0.00255	-0.00256	-0.00260
	(A1 * !B1_N * X)	0.00139	0.00139	0.00134
	(!A1 * B1_N * !X)	-0.00227	-0.00238	-0.00239
	(!A1 * B1_N * !X)	0.00278	0.00274	0.00272
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	-0.00397	-0.00400	-0.00397
	(A1 * B1_N * !X)	0.00540	0.00543	0.00540
	(A1 * !B1_N * X)	-0.00428	-0.00430	-0.00440
	(A1 * !B1_N * X)	0.00270	0.00271	0.00260
	(!A1 * B1_N * !X)	-0.00362	-0.00385	-0.00387
	(!A1 * B1_N * !X)	0.00565	0.00554	0.00550

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)	0.00796	0.01570	0.15355
	(!A1 * !A2 * !X)	0.00279	0.01052	0.14839
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00869	0.01620	0.15363
	(!A1 * !A2 * !X)	0.00325	0.01075	0.14819
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.01223	0.02044	0.17500
	(!A1 * !A2 * !X)	0.00553	0.01370	0.16829

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	0.00898	0.14666
	(!A1 * !A2 * !X)	0.00544	0.01419	0.15186
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00015	0.00876	0.14607
	(!A1 * !A2 * !X)	0.00563	0.01424	0.15154
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.00044	0.00979	0.16367
	(!A1 * !A2 * !X)	0.00722	0.01658	0.17045

SKY130_FD_SC_HS__O221AIx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00290	0.00306	0.00301	0.00293	0.00297	0.74314
sky130_fd_sc_hs__o221ai_2	0.00594	0.00544	0.00621	0.00544	0.00549	1.31773
sky130_fd_sc_hs__o221ai_4	0.01133	0.01080	0.01145	0.01077	0.01093	2.45908

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221ai_1	0.00000	0.11247	0.57047
sky130_fd_sc_hs__o221ai_2	0.00000	0.22495	1.14093
sky130_fd_sc_hs__o221ai_4	0.00000	0.44989	2.28186

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)	0.10496	0.81829	9.53008
	A2->Y (FR)	0.09469	0.84155	10.07930
	B1->Y (FR)	0.07691	0.77933	9.40449
	B2->Y (FR)	0.06569	0.80341	9.96078
	C1->Y (FR)	0.02808	0.54804	7.03360
sky130_fd_sc_hs__o221ai_2	A1->Y (FR)	0.09667	0.68559	9.14132
	A2->Y (FR)	0.08339	0.71032	9.65689
	B1->Y (FR)	0.07092	0.65390	9.06779
	B2->Y (FR)	0.05731	0.67596	9.57424
	C1->Y (FR)	0.02206	0.46442	6.69992
sky130_fd_sc_hs__o221ai_4	A1->Y (FR)	0.08760	0.58167	8.86183
	A2->Y (FR)	0.07494	0.61807	9.51632
	B1->Y (FR)	0.07064	0.57660	9.18752
	B2->Y (FR)	0.05575	0.60836	9.80850
	C1->Y (FR)	0.02219	0.41905	6.84800

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221ai_1	A1->Y (RF)	0.05999	0.37910	4.05786
	A2->Y (RF)	0.05201	0.36691	4.01544
	B1->Y (RF)	0.05381	0.43819	5.00989
	B2->Y (RF)	0.04462	0.41765	4.86695
	C1->Y (RF)	0.04529	0.48535	5.75152
sky130_fd_sc_hs__o221ai_2	A1->Y (RF)	0.04666	0.29181	3.81605
	A2->Y (RF)	0.03966	0.28495	3.85620
	B1->Y (RF)	0.04025	0.34887	4.77960
	B2->Y (RF)	0.03351	0.35678	5.04539
	C1->Y (RF)	0.02200	0.39187	5.73621
sky130_fd_sc_hs__o221ai_4	A1->Y (RF)	0.05320	0.25703	4.07633
	A2->Y (RF)	0.04226	0.24514	4.09277
	B1->Y (RF)	0.04720	0.32761	5.26425
	B2->Y (RF)	0.03619	0.31522	5.32921
	C1->Y (RF)	0.02435	0.36679	6.33425

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221ai_1	A1	0.00348	0.00457	0.03739
	A1	0.01812	0.01920	0.05021
	A2	0.00360	0.00593	0.04755
	A2	0.01614	0.01807	0.06004
	B1	0.00111	0.00229	0.03428
	B1	0.01195	0.01317	0.04524
	B2	0.00110	0.00367	0.04515
	B2	0.01004	0.01224	0.05409
	C1	-0.00085	0.00301	0.05729
	C1	0.00653	0.01042	0.06535
sky130_fd_sc_hs__o221ai_2	A1	0.00558	0.00808	0.07230
	A1	0.03398	0.03648	0.09875
	A2	0.00563	0.01051	0.08880
	A2	0.03002	0.03476	0.11049
	B1	0.00118	0.00388	0.06765
	B1	0.02239	0.02515	0.08931
	B2	0.00146	0.00665	0.08172
	B2	0.01852	0.02343	0.09882
	C1	-0.00274	0.00580	0.10955
	C1	0.01069	0.01930	0.12299

sky130_fd_sc_hs__o221ai_4	**A1**	0.00922	0.01380	0.12198
	A1	0.06540	0.07005	0.17527
	A2	0.00953	0.01809	0.14271
	A2	0.05800	0.06670	0.18804
	B1	0.00172	0.00758	0.13078
	B1	0.04325	0.04920	0.17305
	B2	0.00167	0.01197	0.15323
	B2	0.03572	0.04610	0.18729
	C1	-0.00504	0.01403	0.24696
	C1	0.02160	0.04062	0.27613

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221ai_1	**A1**	0.01953	0.02028	0.04680
	A1	0.00275	0.00348	0.03004
	A2	0.01403	0.01493	0.04001
	A2	0.00116	0.00203	0.02651
	B1	0.01348	0.01440	0.03865
	B1	0.00256	0.00349	0.02749
	B2	0.01035	0.01154	0.03478
	B2	0.00132	0.00243	0.02565
	C1	0.00833	0.01028	0.04070
	C1	0.00097	0.00284	0.03310

sky130_fd_sc_hs__o221ai_2	**A1**	0.03711	0.03865	0.09081
	A1	0.00413	0.00567	0.05820
	A2	0.03013	0.03217	0.08038
	A2	0.00097	0.00307	0.05159
	B1	0.02565	0.02766	0.07603
	B1	0.00430	0.00625	0.05401
	B2	0.01828	0.02073	0.06381
	B2	0.00099	0.00330	0.04522
	C1	0.01385	0.01854	0.07871
	C1	0.00041	0.00505	0.06517
sky130_fd_sc_hs__o221ai_4	**A1**	0.07343	0.07736	0.18425
	A1	0.00837	0.01237	0.12114
	A2	0.05983	0.06446	0.16288
	A2	0.00197	0.00678	0.10536
	B1	0.05016	0.05538	0.16310
	B1	0.00834	0.01355	0.12045
	B2	0.03660	0.04259	0.13928
	B2	0.00213	0.00803	0.10472
	C1	0.02726	0.03895	0.18986
	C1	0.00068	0.01235	0.16255

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

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

	(A2 * B2 * C1 * !Y)	0.00301	0.00260	0.00255
	(A2 * B2 * C1 * !Y)	-0.00249	-0.00296	-0.00297
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00255	0.00258	0.00255
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00292	-0.00298	-0.00297
	(A2 * B1 * !B2 * C1 * !Y)	0.00301	0.00260	0.00255
	(A2 * B1 * !B2 * C1 * !Y)	-0.00249	-0.00296	-0.00297
	(A2 * !B1 * !B2 * Y)	0.00255	0.00258	0.00255
sky130_fd_sc_hs__o221ai_1	**(A2 * !B1 * !B2 * Y)**	-0.00292	-0.00298	-0.00297
	(!A2 * B2 * !C1 * Y)	0.00237	0.00237	0.00237
	(!A2 * B2 * !C1 * Y)	-0.00299	-0.00300	-0.00299
	(!A2 * B1 * !B2 * !C1 * Y)	0.00239	0.00240	0.00239
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00299	-0.00300	-0.00299
	(!A2 * !B1 * !B2 * C1 * Y)	0.00245	0.00247	0.00245
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00299	-0.00300	-0.00299
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00246	0.00246	0.00245
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00300	-0.00300	-0.00299

	(A2 * B2 * C1 * !Y)	0.00594	0.00499	0.00489
	(A2 * B2 * C1 * !Y)	-0.00485	-0.00588	-0.00591
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00472	0.00476	0.00471
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00601	-0.00611	-0.00608
	(A2 * B1 * !B2 * C1 * !Y)	0.00595	0.00499	0.00489
	(A2 * B1 * !B2 * C1 * !Y)	-0.00485	-0.00588	-0.00591
	(A2 * !B1 * !B2 * Y)	0.00471	0.00477	0.00471
sky130_fd_sc_hs__o221ai_2	**(A2 * !B1 * !B2 * Y)**	-0.00599	-0.00611	-0.00608
	(!A2 * B2 * !C1 * Y)	0.00443	0.00444	0.00442
	(!A2 * B2 * !C1 * Y)	-0.00612	-0.00615	-0.00614
	(!A2 * B1 * !B2 * !C1 * Y)	0.00447	0.00448	0.00446
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00612	-0.00615	-0.00614
	(!A2 * !B1 * !B2 * C1 * Y)	0.00449	0.00455	0.00451
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00612	-0.00616	-0.00614
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00449	0.00456	0.00451
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00612	-0.00617	-0.00614

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.01176	0.00981	0.00962
	(A2 * B2 * C1 * !Y)	-0.00952	-0.01163	-0.01167
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00955	0.00961	0.00953
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.01159	-0.01178	-0.01171
	(A2 * B1 * !B2 * C1 * !Y)	0.01176	0.00981	0.00963
	(A2 * B1 * !B2 * C1 * !Y)	-0.00951	-0.01163	-0.01167
	(A2 * !B1 * !B2 * Y)	0.00956	0.00962	0.00953
	(A2 * !B1 * !B2 * Y)	-0.01159	-0.01178	-0.01171
	(!A2 * B2 * !C1 * Y)	0.00891	0.00898	0.00888
	(!A2 * B2 * !C1 * Y)	-0.01186	-0.01193	-0.01186
	(!A2 * B1 * !B2 * !C1 * Y)	0.00899	0.00903	0.00896
	(!A2 * B1 * !B2 * !C1 * Y)	-0.01186	-0.01191	-0.01186
	(!A2 * !B1 * !B2 * C1 * Y)	0.00905	0.00912	0.00908
	(!A2 * !B1 * !B2 * C1 * Y)	-0.01184	-0.01189	-0.01186
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00906	0.00917	0.00908
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.01184	-0.01192	-0.01186

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)**	-0.00253	-0.00255	-0.00253
	(A2 * B2 * C1 * !Y)	0.00297	0.00301	0.00298
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00254	-0.00255	-0.00254
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00296	0.00298	0.00297
	(A2 * B1 * !B2 * C1 * !Y)	-0.00253	-0.00255	-0.00253
	(A2 * B1 * !B2 * C1 * !Y)	0.00297	0.00301	0.00298
	(A2 * !B1 * !B2 * Y)	-0.00254	-0.00255	-0.00254
	(A2 * !B1 * !B2 * Y)	0.00296	0.00298	0.00297
	(!A2 * B2 * !C1 * Y)	-0.00219	-0.00237	-0.00237
	(!A2 * B2 * !C1 * Y)	0.00300	0.00303	0.00300
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00223	-0.00240	-0.00239
	(!A2 * B1 * !B2 * !C1 * Y)	0.00300	0.00303	0.00300
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00230	-0.00245	-0.00245
	(!A2 * !B1 * !B2 * C1 * Y)	0.00301	0.00303	0.00300
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00231	-0.00245	-0.00245
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00301	0.00303	0.00300

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00485	-0.00487	-0.00485
	(A2 * B2 * C1 * !Y)	0.00590	0.00595	0.00593
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00469	-0.00472	-0.00470
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00605	0.00612	0.00608
	(A2 * B1 * !B2 * C1 * !Y)	-0.00485	-0.00487	-0.00485
	(A2 * B1 * !B2 * C1 * !Y)	0.00590	0.00595	0.00593
	(A2 * !B1 * !B2 * Y)	-0.00469	-0.00472	-0.00470
	(A2 * !B1 * !B2 * Y)	0.00605	0.00612	0.00608
	(!A2 * B2 * !C1 * Y)	-0.00398	-0.00443	-0.00442
	(!A2 * B2 * !C1 * Y)	0.00612	0.00622	0.00615
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00406	-0.00446	-0.00446
	(!A2 * B1 * !B2 * !C1 * Y)	0.00612	0.00622	0.00615
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00422	-0.00454	-0.00451
	(!A2 * !B1 * !B2 * C1 * Y)	0.00612	0.00620	0.00615
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00424	-0.00452	-0.00451
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00612	0.00619	0.00615

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	-0.00955	-0.00958	-0.00954
	(A2 * B2 * C1 * !Y)	0.01162	0.01171	0.01169
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00948	-0.00954	-0.00951
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.01166	0.01178	0.01171
	(A2 * B1 * !B2 * C1 * !Y)	-0.00955	-0.00958	-0.00953
	(A2 * B1 * !B2 * C1 * !Y)	0.01163	0.01172	0.01169
	(A2 * !B1 * !B2 * Y)	-0.00948	-0.00954	-0.00951
	(A2 * !B1 * !B2 * Y)	0.01166	0.01178	0.01171
	(!A2 * B2 * !C1 * Y)	-0.00803	-0.00886	-0.00888
	(!A2 * B2 * !C1 * Y)	0.01186	0.01194	0.01189
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00820	-0.00903	-0.00896
	(!A2 * B1 * !B2 * !C1 * Y)	0.01186	0.01197	0.01189
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00851	-0.00912	-0.00908
	(!A2 * !B1 * !B2 * C1 * Y)	0.01185	0.01198	0.01189
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00855	-0.00916	-0.00908
	(!A2 * !B1 * !B2 * !C1 * Y)	0.01184	0.01198	0.01189

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)**	0.00267	0.00269	0.00267
	(A1 * B2 * C1 * !Y)	-0.00144	-0.00145	-0.00144
	(A1 * B2 * !C1 * Y)	0.00230	0.00234	0.00232
	(A1 * B2 * !C1 * Y)	-0.00310	-0.00316	-0.00314
	(A1 * B1 * !B2 * C1 * !Y)	0.00267	0.00269	0.00267
	(A1 * B1 * !B2 * C1 * !Y)	-0.00144	-0.00145	-0.00144
	(A1 * B1 * !B2 * !C1 * Y)	0.00231	0.00234	0.00232
	(A1 * B1 * !B2 * !C1 * Y)	-0.00310	-0.00317	-0.00314
	(A1 * !B1 * !B2 * C1 * Y)	0.00231	0.00234	0.00232
	(A1 * !B1 * !B2 * C1 * Y)	-0.00310	-0.00317	-0.00314
	(A1 * !B1 * !B2 * !C1 * Y)	0.00231	0.00234	0.00232
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00310	-0.00317	-0.00315
	(!A1 * B2 * !C1 * Y)	0.00218	0.00217	0.00218
	(!A1 * B2 * !C1 * Y)	-0.00318	-0.00317	-0.00318
	(!A1 * B1 * !B2 * !C1 * Y)	0.00222	0.00224	0.00223
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00317	-0.00319	-0.00318
	(!A1 * !B1 * !B2 * C1 * Y)	0.00224	0.00225	0.00223
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00318	-0.00320	-0.00318
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00225	0.00227	0.00224
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00319	-0.00320	-0.00318

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	0.00485	0.00491	0.00488
	(A1 * B2 * C1 * !Y)	-0.00257	-0.00260	-0.00258
	(A1 * B2 * !C1 * Y)	0.00446	0.00452	0.00448
	(A1 * B2 * !C1 * Y)	-0.00560	-0.00570	-0.00568
	(A1 * B1 * !B2 * C1 * !Y)	0.00486	0.00491	0.00488
	(A1 * B1 * !B2 * C1 * !Y)	-0.00257	-0.00260	-0.00258
	(A1 * B1 * !B2 * !C1 * Y)	0.00446	0.00452	0.00447
	(A1 * B1 * !B2 * !C1 * Y)	-0.00559	-0.00568	-0.00567
	(A1 * !B1 * !B2 * C1 * Y)	0.00446	0.00451	0.00448
	(A1 * !B1 * !B2 * C1 * Y)	-0.00559	-0.00567	-0.00566
	(A1 * !B1 * !B2 * !C1 * Y)	0.00446	0.00451	0.00447
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00559	-0.00569	-0.00568
	(!A1 * B2 * !C1 * Y)	0.00420	0.00422	0.00420
	(!A1 * B2 * !C1 * Y)	-0.00574	-0.00577	-0.00575
	(!A1 * B1 * !B2 * !C1 * Y)	0.00424	0.00429	0.00424
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00574	-0.00579	-0.00575
	(!A1 * !B1 * !B2 * C1 * Y)	0.00428	0.00431	0.00427
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00574	-0.00578	-0.00575
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00428	0.00433	0.00428
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00574	-0.00579	-0.00575

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	0.00981	0.00993	0.00985
	(A1 * B2 * C1 * !Y)	-0.00513	-0.00520	-0.00515
	(A1 * B2 * !C1 * Y)	0.00870	0.00882	0.00874
	(A1 * B2 * !C1 * Y)	-0.01146	-0.01168	-0.01164
	(A1 * B1 * !B2 * C1 * !Y)	0.00981	0.00994	0.00986
	(A1 * B1 * !B2 * C1 * !Y)	-0.00512	-0.00520	-0.00515
	(A1 * B1 * !B2 * !C1 * Y)	0.00872	0.00882	0.00874
	(A1 * B1 * !B2 * !C1 * Y)	-0.01148	-0.01167	-0.01163
	(A1 * !B1 * !B2 * C1 * Y)	0.00871	0.00882	0.00874
	(A1 * !B1 * !B2 * C1 * Y)	-0.01147	-0.01168	-0.01162
	(A1 * !B1 * !B2 * !C1 * Y)	0.00872	0.00882	0.00874
	(A1 * !B1 * !B2 * !C1 * Y)	-0.01148	-0.01167	-0.01166
	(!A1 * B2 * !C1 * Y)	0.00823	0.00830	0.00824
	(!A1 * B2 * !C1 * Y)	-0.01179	-0.01186	-0.01180
	(!A1 * B1 * !B2 * !C1 * Y)	0.00832	0.00840	0.00831
	(!A1 * B1 * !B2 * !C1 * Y)	-0.01178	-0.01188	-0.01180
	(!A1 * !B1 * !B2 * C1 * Y)	0.00834	0.00849	0.00838
	(!A1 * !B1 * !B2 * C1 * Y)	-0.01177	-0.01187	-0.01180
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00837	0.00844	0.00841
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.01177	-0.01182	-0.01180

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)**	-0.00259	-0.00261	-0.00266
	(A1 * B2 * C1 * !Y)	0.00151	0.00151	0.00146
	(A1 * B2 * !C1 * Y)	-0.00230	-0.00232	-0.00231
	(A1 * B2 * !C1 * Y)	0.00313	0.00316	0.00314
	(A1 * B1 * !B2 * C1 * !Y)	-0.00259	-0.00261	-0.00266
	(A1 * B1 * !B2 * C1 * !Y)	0.00151	0.00151	0.00146
	(A1 * B1 * !B2 * !C1 * Y)	-0.00231	-0.00233	-0.00231
	(A1 * B1 * !B2 * !C1 * Y)	0.00313	0.00317	0.00314
	(A1 * !B1 * !B2 * C1 * Y)	-0.00231	-0.00233	-0.00231
	(A1 * !B1 * !B2 * C1 * Y)	0.00313	0.00317	0.00314
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00231	-0.00233	-0.00231
	(A1 * !B1 * !B2 * !C1 * Y)	0.00315	0.00317	0.00315
	(!A1 * B2 * !C1 * Y)	-0.00198	-0.00217	-0.00218
	(!A1 * B2 * !C1 * Y)	0.00318	0.00322	0.00319
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00203	-0.00222	-0.00223
	(!A1 * B1 * !B2 * !C1 * Y)	0.00318	0.00322	0.00319
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00209	-0.00223	-0.00223
	(!A1 * !B1 * !B2 * C1 * Y)	0.00318	0.00321	0.00319
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00210	-0.00223	-0.00224
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00319	0.00322	0.00319

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	-0.00469	-0.00472	-0.00485
	(A1 * B2 * C1 * !Y)	0.00270	0.00272	0.00262
	(A1 * B2 * !C1 * Y)	-0.00445	-0.00448	-0.00446
	(A1 * B2 * !C1 * Y)	0.00565	0.00570	0.00568
	(A1 * B1 * !B2 * C1 * !Y)	-0.00469	-0.00472	-0.00485
	(A1 * B1 * !B2 * C1 * !Y)	0.00271	0.00272	0.00262
	(A1 * B1 * !B2 * !C1 * Y)	-0.00445	-0.00447	-0.00446
	(A1 * B1 * !B2 * !C1 * Y)	0.00564	0.00568	0.00567
	(A1 * !B1 * !B2 * C1 * Y)	-0.00446	-0.00447	-0.00446
	(A1 * !B1 * !B2 * C1 * Y)	0.00566	0.00567	0.00566
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00445	-0.00448	-0.00446
	(A1 * !B1 * !B2 * !C1 * Y)	0.00565	0.00569	0.00568
	(!A1 * B2 * !C1 * Y)	-0.00381	-0.00421	-0.00420
	(!A1 * B2 * !C1 * Y)	0.00574	0.00583	0.00577
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00388	-0.00423	-0.00424
	(!A1 * B1 * !B2 * !C1 * Y)	0.00574	0.00583	0.00577
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00402	-0.00431	-0.00427
	(!A1 * !B1 * !B2 * C1 * Y)	0.00574	0.00580	0.00577
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00403	-0.00431	-0.00428
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00574	0.00580	0.00577

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	-0.00948	-0.00953	-0.00980
	(A1 * B2 * C1 * !Y)	0.00541	0.00544	0.00523
	(A1 * B2 * !C1 * Y)	-0.00870	-0.00875	-0.00872
	(A1 * B2 * !C1 * Y)	0.01159	0.01168	0.01164
	(A1 * B1 * !B2 * C1 * !Y)	-0.00947	-0.00953	-0.00980
	(A1 * B1 * !B2 * C1 * !Y)	0.00541	0.00544	0.00524
	(A1 * B1 * !B2 * !C1 * Y)	-0.00870	-0.00875	-0.00872
	(A1 * B1 * !B2 * !C1 * Y)	0.01159	0.01167	0.01163
	(A1 * !B1 * !B2 * C1 * Y)	-0.00871	-0.00876	-0.00872
	(A1 * !B1 * !B2 * C1 * Y)	0.01162	0.01168	0.01162
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00870	-0.00873	-0.00872
	(A1 * !B1 * !B2 * !C1 * Y)	0.01161	0.01167	0.01166
	(!A1 * B2 * !C1 * Y)	-0.00743	-0.00822	-0.00824
	(!A1 * B2 * !C1 * Y)	0.01179	0.01187	0.01184
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00757	-0.00829	-0.00831
	(!A1 * B1 * !B2 * !C1 * Y)	0.01178	0.01195	0.01183
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00783	-0.00845	-0.00838
	(!A1 * !B1 * !B2 * C1 * Y)	0.01177	0.01190	0.01184
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00786	-0.00843	-0.00841
	(!A1 * !B1 * !B2 * !C1 * Y)	0.01177	0.01190	0.01184

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)**	0.00312	0.00272	0.00266
	(A2 * B2 * C1 * !Y)	-0.00243	-0.00288	-0.00290
	(A2 * !B2 * !C1 * Y)	0.00236	0.00236	0.00235
	(A2 * !B2 * !C1 * Y)	-0.00317	-0.00316	-0.00316
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00242	0.00245	0.00242
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00310	-0.00314	-0.00313
	(A1 * !A2 * B2 * C1 * !Y)	0.00312	0.00272	0.00267
	(A1 * !A2 * B2 * C1 * !Y)	-0.00243	-0.00288	-0.00290
	(A1 * !A2 * !B2 * !C1 * Y)	0.00237	0.00237	0.00236
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00317	-0.00316	-0.00316
	(!A1 * !A2 * B2 * C1 * Y)	0.00104	0.00105	0.00104
	(!A1 * !A2 * B2 * C1 * Y)	-0.00311	-0.00316	-0.00315
	(!A1 * !A2 * B2 * !C1 * Y)	0.00136	0.00136	0.00136
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00311	-0.00316	-0.00315
	(!A1 * !A2 * !B2 * C1 * Y)	0.00106	0.00107	0.00108
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00315	-0.00316	-0.00315
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00144	0.00144	0.00144
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00317	-0.00318	-0.00317

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.00622	0.00531	0.00522
	(A2 * B2 * C1 * !Y)	-0.00471	-0.00571	-0.00575
	(A2 * !B2 * !C1 * Y)	0.00453	0.00459	0.00455
	(A2 * !B2 * !C1 * Y)	-0.00625	-0.00630	-0.00626
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00475	0.00479	0.00474
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00614	-0.00625	-0.00621
	(A1 * !A2 * B2 * C1 * !Y)	0.00622	0.00531	0.00522
	(A1 * !A2 * B2 * C1 * !Y)	-0.00471	-0.00571	-0.00575
	(A1 * !A2 * !B2 * !C1 * Y)	0.00453	0.00458	0.00454
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00625	-0.00629	-0.00626
	(!A1 * !A2 * B2 * C1 * Y)	0.00188	0.00190	0.00188
	(!A1 * !A2 * B2 * C1 * Y)	-0.00613	-0.00626	-0.00624
	(!A1 * !A2 * B2 * !C1 * Y)	0.00249	0.00250	0.00249
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00614	-0.00625	-0.00624
	(!A1 * !A2 * !B2 * C1 * Y)	0.00196	0.00196	0.00197
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00625	-0.00624	-0.00623
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00265	0.00264	0.00264
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00629	-0.00629	-0.00628

	(A2 * B2 * C1 * !Y)	0.01186	0.00993	0.00981
	(A2 * B2 * C1 * !Y)	-0.00922	-0.01147	-0.01144
	(A2 * !B2 * !C1 * Y)	0.00880	0.00886	0.00881
	(A2 * !B2 * !C1 * Y)	-0.01213	-0.01217	-0.01213
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00915	0.00927	0.00920
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.01180	-0.01213	-0.01201
	(A1 * !A2 * B2 * C1 * !Y)	0.01186	0.00992	0.00981
	(A1 * !A2 * B2 * C1 * !Y)	-0.00922	-0.01147	-0.01144
sky130_fd_sc_hs__o221ai_4	**(A1 * !A2 * !B2 * !C1 * Y)**	0.00880	0.00889	0.00881
	(A1 * !A2 * !B2 * !C1 * Y)	-0.01213	-0.01219	-0.01213
	(!A1 * !A2 * B2 * C1 * Y)	0.00348	0.00352	0.00350
	(!A1 * !A2 * B2 * C1 * Y)	-0.01182	-0.01215	-0.01208
	(!A1 * !A2 * B2 * !C1 * Y)	0.00462	0.00465	0.00464
	(!A1 * !A2 * B2 * !C1 * Y)	-0.01183	-0.01210	-0.01209
	(!A1 * !A2 * !B2 * C1 * Y)	0.00366	0.00367	0.00366
	(!A1 * !A2 * !B2 * C1 * Y)	-0.01212	-0.01215	-0.01208
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00490	0.00493	0.00491
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.01215	-0.01219	-0.01217

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)**	-0.00265	-0.00265	-0.00264
	(A2 * B2 * C1 * !Y)	0.00291	0.00292	0.00291
	(A2 * !B2 * !C1 * Y)	-0.00218	-0.00236	-0.00235
	(A2 * !B2 * !C1 * Y)	0.00325	0.00319	0.00316
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00241	-0.00242	-0.00242
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00312	0.00314	0.00313
	(A1 * !A2 * B2 * C1 * !Y)	-0.00265	-0.00266	-0.00264
	(A1 * !A2 * B2 * C1 * !Y)	0.00291	0.00293	0.00291
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00214	-0.00237	-0.00236
	(A1 * !A2 * !B2 * !C1 * Y)	0.00329	0.00319	0.00316
	(!A1 * !A2 * B2 * C1 * Y)	-0.00098	-0.00098	-0.00102
	(!A1 * !A2 * B2 * C1 * Y)	0.00326	0.00327	0.00316
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00136	-0.00136	-0.00136
	(!A1 * !A2 * B2 * !C1 * Y)	0.00321	0.00322	0.00315
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00101	-0.00102	-0.00104
	(!A1 * !A2 * !B2 * C1 * Y)	0.00324	0.00328	0.00319
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00144	-0.00144	-0.00144
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00331	0.00333	0.00320

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00518	-0.00521	-0.00518
	(A2 * B2 * C1 * !Y)	0.00574	0.00579	0.00576
	(A2 * !B2 * !C1 * Y)	-0.00412	-0.00459	-0.00455
	(A2 * !B2 * !C1 * Y)	0.00653	0.00632	0.00628
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00472	-0.00475	-0.00473
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00619	0.00627	0.00621
	(A1 * !A2 * B2 * C1 * !Y)	-0.00518	-0.00521	-0.00518
	(A1 * !A2 * B2 * C1 * !Y)	0.00574	0.00580	0.00577
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00406	-0.00458	-0.00454
	(A1 * !A2 * !B2 * !C1 * Y)	0.00659	0.00632	0.00628
	(!A1 * !A2 * B2 * C1 * Y)	-0.00175	-0.00176	-0.00185
	(!A1 * !A2 * B2 * C1 * Y)	0.00643	0.00645	0.00627
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00249	-0.00250	-0.00249
	(!A1 * !A2 * B2 * !C1 * Y)	0.00639	0.00648	0.00625
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00182	-0.00184	-0.00189
	(!A1 * !A2 * !B2 * C1 * Y)	0.00644	0.00651	0.00632
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00265	-0.00264	-0.00264
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00666	0.00666	0.00636

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	-0.00973	-0.00979	-0.00973
	(A2 * B2 * C1 * !Y)	0.01140	0.01154	0.01146
	(A2 * !B2 * !C1 * Y)	-0.00778	-0.00886	-0.00881
	(A2 * !B2 * !C1 * Y)	0.01277	0.01223	0.01216
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00914	-0.00922	-0.00918
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.01193	0.01213	0.01201
	(A1 * !A2 * B2 * C1 * !Y)	-0.00973	-0.00979	-0.00973
	(A1 * !A2 * B2 * C1 * !Y)	0.01140	0.01156	0.01147
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00765	-0.00889	-0.00881
	(A1 * !A2 * !B2 * !C1 * Y)	0.01290	0.01222	0.01216
	(!A1 * !A2 * B2 * C1 * Y)	-0.00325	-0.00328	-0.00343
	(!A1 * !A2 * B2 * C1 * Y)	0.01245	0.01252	0.01212
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00462	-0.00465	-0.00464
	(!A1 * !A2 * B2 * !C1 * Y)	0.01244	0.01256	0.01210
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00340	-0.00348	-0.00352
	(!A1 * !A2 * !B2 * C1 * Y)	0.01243	0.01269	0.01224
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00490	-0.00493	-0.00491
	(!A1 * !A2 * !B2 * !C1 * Y)	0.01294	0.01298	0.01235

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)**	0.00261	0.00263	0.00261
	(A2 * B1 * C1 * !Y)	-0.00130	-0.00131	-0.00130
	(A2 * B1 * !C1 * Y)	0.00231	0.00234	0.00231
	(A2 * B1 * !C1 * Y)	-0.00292	-0.00294	-0.00295
	(A2 * !B1 * !C1 * Y)	0.00226	0.00226	0.00226
	(A2 * !B1 * !C1 * Y)	-0.00299	-0.00299	-0.00298
	(A1 * !A2 * B1 * C1 * !Y)	0.00261	0.00264	0.00262
	(A1 * !A2 * B1 * C1 * !Y)	-0.00130	-0.00131	-0.00130
	(A1 * !A2 * B1 * !C1 * Y)	0.00231	0.00234	0.00231
	(A1 * !A2 * B1 * !C1 * Y)	-0.00292	-0.00294	-0.00295
	(A1 * !A2 * !B1 * !C1 * Y)	0.00223	0.00224	0.00223
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00299	-0.00299	-0.00298
	(!A1 * !A2 * B1 * C1 * Y)	0.00094	0.00095	0.00095
	(!A1 * !A2 * B1 * C1 * Y)	-0.00292	-0.00296	-0.00297
	(!A1 * !A2 * B1 * !C1 * Y)	0.00127	0.00128	0.00127
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00293	-0.00299	-0.00297
	(!A1 * !A2 * !B1 * C1 * Y)	0.00098	0.00098	0.00099
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00299	-0.00299	-0.00297
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00134	0.00136	0.00134
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00300	-0.00302	-0.00300

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	0.00486	0.00489	0.00486
	(A2 * B1 * C1 * !Y)	-0.00260	-0.00260	-0.00257
	(A2 * B1 * !C1 * Y)	0.00442	0.00445	0.00443
	(A2 * B1 * !C1 * Y)	-0.00560	-0.00568	-0.00568
	(A2 * !B1 * !C1 * Y)	0.00423	0.00426	0.00425
	(A2 * !B1 * !C1 * Y)	-0.00574	-0.00575	-0.00575
	(A1 * !A2 * B1 * C1 * !Y)	0.00486	0.00489	0.00486
	(A1 * !A2 * B1 * C1 * !Y)	-0.00259	-0.00260	-0.00257
	(A1 * !A2 * B1 * !C1 * Y)	0.00442	0.00444	0.00443
	(A1 * !A2 * B1 * !C1 * Y)	-0.00560	-0.00570	-0.00567
	(A1 * !A2 * !B1 * !C1 * Y)	0.00421	0.00426	0.00424
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00573	-0.00577	-0.00575
	(!A1 * !A2 * B1 * C1 * Y)	0.00168	0.00170	0.00169
	(!A1 * !A2 * B1 * C1 * Y)	-0.00559	-0.00573	-0.00572
	(!A1 * !A2 * B1 * !C1 * Y)	0.00229	0.00230	0.00229
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00561	-0.00570	-0.00571
	(!A1 * !A2 * !B1 * C1 * Y)	0.00175	0.00177	0.00177
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00573	-0.00576	-0.00571
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00243	0.00246	0.00244
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00575	-0.00580	-0.00576

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	0.00990	0.01003	0.00988
	(A2 * B1 * C1 * !Y)	-0.00518	-0.00523	-0.00513
	(A2 * B1 * !C1 * Y)	0.00896	0.00906	0.00898
	(A2 * B1 * !C1 * Y)	-0.01127	-0.01144	-0.01141
	(A2 * !B1 * !C1 * Y)	0.00862	0.00869	0.00866
	(A2 * !B1 * !C1 * Y)	-0.01155	-0.01160	-0.01158
	(A1 * !A2 * B1 * C1 * !Y)	0.00987	0.01003	0.00989
	(A1 * !A2 * B1 * C1 * !Y)	-0.00514	-0.00523	-0.00513
	(A1 * !A2 * B1 * !C1 * Y)	0.00895	0.00906	0.00899
	(A1 * !A2 * B1 * !C1 * Y)	-0.01127	-0.01150	-0.01141
	(A1 * !A2 * !B1 * !C1 * Y)	0.00862	0.00874	0.00866
	(A1 * !A2 * !B1 * !C1 * Y)	-0.01154	-0.01163	-0.01158
	(!A1 * !A2 * B1 * C1 * Y)	0.00336	0.00339	0.00337
	(!A1 * !A2 * B1 * C1 * Y)	-0.01127	-0.01151	-0.01151
	(!A1 * !A2 * B1 * !C1 * Y)	0.00450	0.00456	0.00451
	(!A1 * !A2 * B1 * !C1 * Y)	-0.01129	-0.01155	-0.01153
	(!A1 * !A2 * !B1 * C1 * Y)	0.00351	0.00355	0.00353
	(!A1 * !A2 * !B1 * C1 * Y)	-0.01153	-0.01162	-0.01152
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00480	0.00480	0.00478
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.01162	-0.01164	-0.01161

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)**	-0.00255	-0.00256	-0.00260
	(A2 * B1 * C1 * !Y)	0.00136	0.00137	0.00132
	(A2 * B1 * !C1 * Y)	-0.00231	-0.00231	-0.00231
	(A2 * B1 * !C1 * Y)	0.00294	0.00294	0.00295
	(A2 * !B1 * !C1 * Y)	-0.00211	-0.00225	-0.00226
	(A2 * !B1 * !C1 * Y)	0.00304	0.00301	0.00299
	(A1 * !A2 * B1 * C1 * !Y)	-0.00255	-0.00255	-0.00260
	(A1 * !A2 * B1 * C1 * !Y)	0.00136	0.00136	0.00132
	(A1 * !A2 * B1 * !C1 * Y)	-0.00230	-0.00231	-0.00231
	(A1 * !A2 * B1 * !C1 * Y)	0.00294	0.00294	0.00295
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00205	-0.00224	-0.00223
	(A1 * !A2 * !B1 * !C1 * Y)	0.00308	0.00301	0.00299
	(!A1 * !A2 * B1 * C1 * Y)	-0.00089	-0.00090	-0.00093
	(!A1 * !A2 * B1 * C1 * Y)	0.00304	0.00306	0.00297
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00127	-0.00128	-0.00127
	(!A1 * !A2 * B1 * !C1 * Y)	0.00301	0.00303	0.00297
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00092	-0.00093	-0.00095
	(!A1 * !A2 * !B1 * C1 * Y)	0.00305	0.00309	0.00301
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00134	-0.00136	-0.00134
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00312	0.00314	0.00302

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	-0.00467	-0.00470	-0.00483
	(A2 * B1 * C1 * !Y)	0.00270	0.00271	0.00261
	(A2 * B1 * !C1 * Y)	-0.00442	-0.00443	-0.00442
	(A2 * B1 * !C1 * Y)	0.00568	0.00568	0.00568
	(A2 * !B1 * !C1 * Y)	-0.00379	-0.00426	-0.00425
	(A2 * !B1 * !C1 * Y)	0.00597	0.00579	0.00576
	(A1 * !A2 * B1 * C1 * !Y)	-0.00467	-0.00469	-0.00483
	(A1 * !A2 * B1 * C1 * !Y)	0.00270	0.00271	0.00261
	(A1 * !A2 * B1 * !C1 * Y)	-0.00441	-0.00444	-0.00442
	(A1 * !A2 * B1 * !C1 * Y)	0.00564	0.00571	0.00567
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00374	-0.00426	-0.00424
	(A1 * !A2 * !B1 * !C1 * Y)	0.00602	0.00577	0.00576
	(!A1 * !A2 * B1 * C1 * Y)	-0.00156	-0.00159	-0.00166
	(!A1 * !A2 * B1 * C1 * Y)	0.00584	0.00589	0.00572
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00229	-0.00230	-0.00229
	(!A1 * !A2 * B1 * !C1 * Y)	0.00582	0.00588	0.00571
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00164	-0.00165	-0.00169
	(!A1 * !A2 * !B1 * C1 * Y)	0.00593	0.00597	0.00580
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00243	-0.00246	-0.00244
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00606	0.00608	0.00583

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	-0.00952	-0.00958	-0.00984
	(A2 * B1 * C1 * !Y)	0.00538	0.00541	0.00522
	(A2 * B1 * !C1 * Y)	-0.00895	-0.00898	-0.00896
	(A2 * B1 * !C1 * Y)	0.01136	0.01144	0.01141
	(A2 * !B1 * !C1 * Y)	-0.00762	-0.00869	-0.00866
	(A2 * !B1 * !C1 * Y)	0.01225	0.01160	0.01161
	(A1 * !A2 * B1 * C1 * !Y)	-0.00956	-0.00957	-0.00983
	(A1 * !A2 * B1 * C1 * !Y)	0.00543	0.00541	0.00522
	(A1 * !A2 * B1 * !C1 * Y)	-0.00895	-0.00901	-0.00896
	(A1 * !A2 * B1 * !C1 * Y)	0.01141	0.01150	0.01141
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00749	-0.00874	-0.00866
	(A1 * !A2 * !B1 * !C1 * Y)	0.01238	0.01163	0.01161
	(!A1 * !A2 * B1 * C1 * Y)	-0.00315	-0.00318	-0.00331
	(!A1 * !A2 * B1 * C1 * Y)	0.01183	0.01190	0.01151
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00450	-0.00456	-0.00451
	(!A1 * !A2 * B1 * !C1 * Y)	0.01190	0.01195	0.01153
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00329	-0.00332	-0.00339
	(!A1 * !A2 * !B1 * C1 * Y)	0.01189	0.01200	0.01168
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00480	-0.00480	-0.00478
	(!A1 * !A2 * !B1 * !C1 * Y)	0.01239	0.01236	0.01179

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)	0.00090	0.00090	0.00086
	(A2 * !B1 * !B2 * Y)	-0.00357	-0.00357	-0.00366
	(!A2 * !B1 * !B2 * Y)	0.00090	0.00090	0.00086
	(!A2 * !B1 * !B2 * Y)	-0.00357	-0.00357	-0.00366
	(!A1 * !A2 * B2 * Y)	0.00092	0.00093	0.00082
	(!A1 * !A2 * B2 * Y)	-0.00340	-0.00341	-0.00363
	(!A1 * !A2 * B1 * !B2 * Y)	0.00093	0.00093	0.00083
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00343	-0.00344	-0.00363
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	0.00164	0.00164	0.00156
	(A2 * !B1 * !B2 * Y)	-0.00667	-0.00669	-0.00684
	(!A2 * !B1 * !B2 * Y)	0.00164	0.00164	0.00156
	(!A2 * !B1 * !B2 * Y)	-0.00666	-0.00669	-0.00684
	(!A1 * !A2 * B2 * Y)	0.00169	0.00169	0.00150
	(!A1 * !A2 * B2 * Y)	-0.00638	-0.00640	-0.00680
	(!A1 * !A2 * B1 * !B2 * Y)	0.00171	0.00171	0.00152
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00643	-0.00646	-0.00680
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	0.00282	0.00282	0.00267
	(A2 * !B1 * !B2 * Y)	-0.01357	-0.01359	-0.01385
	(!A2 * !B1 * !B2 * Y)	0.00282	0.00281	0.00267
	(!A2 * !B1 * !B2 * Y)	-0.01358	-0.01359	-0.01385
	(!A1 * !A2 * B2 * Y)	0.00292	0.00291	0.00258
	(!A1 * !A2 * B2 * Y)	-0.01300	-0.01305	-0.01376
	(!A1 * !A2 * B1 * !B2 * Y)	0.00295	0.00294	0.00262
	(!A1 * !A2 * B1 * !B2 * Y)	-0.01311	-0.01316	-0.01378

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)	-0.00084	-0.00086	-0.00084
	(A2 * !B1 * !B2 * Y)	0.00365	0.00373	0.00367
	(!A2 * !B1 * !B2 * Y)	-0.00084	-0.00085	-0.00084
	(!A2 * !B1 * !B2 * Y)	0.00365	0.00373	0.00367
	(!A1 * !A2 * B2 * Y)	-0.00080	-0.00081	-0.00080
	(!A1 * !A2 * B2 * Y)	0.00365	0.00366	0.00367
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00081	-0.00083	-0.00081
	(!A1 * !A2 * B1 * !B2 * Y)	0.00365	0.00373	0.00367
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	-0.00153	-0.00152	-0.00152
	(A2 * !B1 * !B2 * Y)	0.00686	0.00687	0.00686
	(!A2 * !B1 * !B2 * Y)	-0.00151	-0.00155	-0.00152
	(!A2 * !B1 * !B2 * Y)	0.00682	0.00698	0.00686
	(!A1 * !A2 * B2 * Y)	-0.00145	-0.00147	-0.00146
	(!A1 * !A2 * B2 * Y)	0.00681	0.00688	0.00686
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00147	-0.00151	-0.00147
	(!A1 * !A2 * B1 * !B2 * Y)	0.00681	0.00698	0.00686
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	-0.00260	-0.00260	-0.00261
	(A2 * !B1 * !B2 * Y)	0.01383	0.01386	0.01389
	(!A2 * !B1 * !B2 * Y)	-0.00260	-0.00266	-0.00261
	(!A2 * !B1 * !B2 * Y)	0.01382	0.01412	0.01389
	(!A1 * !A2 * B2 * Y)	-0.00251	-0.00252	-0.00250
	(!A1 * !A2 * B2 * Y)	0.01380	0.01386	0.01388
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00253	-0.00259	-0.00252
	(!A1 * !A2 * B1 * !B2 * Y)	0.01381	0.01411	0.01388

SKY130_FD_SC_HS__O221Ax

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00266	0.00264	0.00259	0.00275	0.00271	1.40350
sky130_fd_sc_hs__o221a_2	0.00283	0.00278	0.00278	0.00289	0.00283	2.80687
sky130_fd_sc_hs__o221a_4	0.00530	0.00482	0.00562	0.00483	0.00490	5.29103

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221a_1	0.00000	0.40956	1.44638
sky130_fd_sc_hs__o221a_2	0.00000	0.54693	1.45782
sky130_fd_sc_hs__o221a_4	0.00000	1.09889	2.91564

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)	0.10241	0.51491	5.62829
	A2->X (RR)	0.09523	0.50556	5.57338
	B1->X (RR)	0.09577	0.54055	5.98049
	B2->X (RR)	0.08916	0.52133	5.87331
	C1->X (RR)	0.08660	0.54535	6.33326
sky130_fd_sc_hs__o221a_2	A1->X (RR)	0.10071	0.42625	5.54923
	A2->X (RR)	0.09427	0.41802	5.49102
	B1->X (RR)	0.09443	0.45484	5.90941
	B2->X (RR)	0.09052	0.44021	5.80757
	C1->X (RR)	0.08588	0.46161	6.24280
sky130_fd_sc_hs__o221a_4	A1->X (RR)	0.11072	0.37684	5.74275
	A2->X (RR)	0.10291	0.36973	5.71738
	B1->X (RR)	0.10525	0.40497	6.02661
	B2->X (RR)	0.09705	0.38521	5.93598
	C1->X (RR)	0.09274	0.41227	6.39965

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221a_1	A1->X (FF)	0.13131	0.54401	5.08310
	A2->X (FF)	0.11997	0.56756	5.32941
	B1->X (FF)	0.11069	0.49110	4.90089
	B2->X (FF)	0.10019	0.50878	5.06405
	C1->X (FF)	0.05294	0.40501	4.56238
sky130_fd_sc_hs__o221a_2	A1->X (FF)	0.15300	0.54759	5.27648
	A2->X (FF)	0.14066	0.57403	5.51608
	B1->X (FF)	0.12843	0.49356	5.08878
	B2->X (FF)	0.11802	0.51714	5.25167
	C1->X (FF)	0.06124	0.40125	4.72300
sky130_fd_sc_hs__o221a_4	A1->X (FF)	0.13856	0.48993	5.21659
	A2->X (FF)	0.12436	0.51073	5.39960
	B1->X (FF)	0.12438	0.45072	5.04939
	B2->X (FF)	0.10899	0.46635	5.20459
	C1->X (FF)	0.05802	0.36013	4.67924

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221a_1	A1	0.02296	0.02465	0.09776
	A1	0.00948	0.01118	0.08471
	A2	0.01790	0.02088	0.10670
	A2	0.00660	0.00956	0.09585
	B1	0.01756	0.02110	0.11780
	B1	0.00785	0.01140	0.10824
	B2	0.01505	0.01918	0.12685
	B2	0.00651	0.01065	0.11859
	C1	0.01292	0.02011	0.16400
	C1	0.00616	0.01334	0.15801
sky130_fd_sc_hs__o221a_2	A1	0.02610	0.02820	0.10346
	A1	0.01214	0.01425	0.09050
	A2	0.02319	0.02628	0.11286
	A2	0.01084	0.01399	0.10148
	B1	0.02236	0.02587	0.12432
	B1	0.01194	0.01549	0.11438
	B2	0.01990	0.02393	0.13304
	B2	0.01079	0.01489	0.12469
	C1	0.01750	0.02434	0.17016
	C1	0.01028	0.01723	0.16464

sky130_fd_sc_hs__o221a_4	**A1**	0.04847	0.05386	0.23093
	A1	0.02329	0.02878	0.20687
	A2	0.04191	0.04829	0.24229
	A2	0.02047	0.02690	0.22232
	B1	0.04282	0.04998	0.24335
	B1	0.02307	0.03032	0.22396
	B2	0.03605	0.04419	0.25801
	B2	0.02040	0.02860	0.24309
	C1	0.03158	0.04528	0.32425
	C1	0.01926	0.03295	0.31491

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221a_1	**A1**	0.00877	0.01120	0.09493
	A1	0.02199	0.02442	0.10765
	A2	0.00869	0.01316	0.11690
	A2	0.02036	0.02480	0.12850
	B1	0.00729	0.01111	0.10300
	B1	0.01691	0.02062	0.11148
	B2	0.00696	0.01269	0.11699
	B2	0.01713	0.02223	0.11882
	C1	0.00492	0.01344	0.14893
	C1	0.01172	0.02016	0.15490

sky130_fd_sc_hs__o221a_2	**A1**	0.01540	0.01537	0.10414
	A1	0.02953	0.02944	0.11480
	A2	0.01539	0.01770	0.12673
	A2	0.02793	0.03022	0.13506
	B1	0.01284	0.01502	0.10747
	B1	0.02517	0.02647	0.11214
	B2	0.01329	0.01661	0.11764
	B2	0.02370	0.02700	0.12615
	C1	0.00882	0.01738	0.15561
	C1	0.01770	0.02572	0.15878
sky130_fd_sc_hs__o221a_4	**A1**	0.02881	0.03072	0.21987
	A1	0.05479	0.05633	0.23897
	A2	0.02954	0.03561	0.24882
	A2	0.05178	0.05729	0.26821
	B1	0.02542	0.02850	0.20620
	B1	0.04793	0.05074	0.22461
	B2	0.02623	0.03392	0.23858
	B2	0.04458	0.05166	0.25017
	C1	0.01782	0.03405	0.30077
	C1	0.03704	0.05101	0.29485

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)**	0.00272	0.00232	0.00226
	(A2 * B2 * C1 * X)	-0.00213	-0.00258	-0.00260
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00196	0.00198	0.00196
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00286	-0.00291	-0.00290
	(A2 * B1 * !B2 * C1 * X)	0.00272	0.00232	0.00226
	(A2 * B1 * !B2 * C1 * X)	-0.00213	-0.00258	-0.00260
	(A2 * !B1 * !B2 * !X)	0.00196	0.00198	0.00196
	(A2 * !B1 * !B2 * !X)	-0.00286	-0.00291	-0.00290
	(!A2 * B2 * !C1 * !X)	0.00184	0.00186	0.00185
	(!A2 * B2 * !C1 * !X)	-0.00291	-0.00293	-0.00291
	(!A2 * B1 * !B2 * !C1 * !X)	0.00186	0.00187	0.00186
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00291	-0.00292	-0.00291
	(!A2 * !B1 * !B2 * C1 * !X)	0.00189	0.00190	0.00188
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00291	-0.00293	-0.00291
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00189	0.00189	0.00188
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00291	-0.00292	-0.00291

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00307	0.00266	0.00260
	(A2 * B2 * C1 * X)	-0.00211	-0.00257	-0.00259
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00227	0.00230	0.00227
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00287	-0.00292	-0.00291
	(A2 * B1 * !B2 * C1 * X)	0.00307	0.00266	0.00260
	(A2 * B1 * !B2 * C1 * X)	-0.00210	-0.00256	-0.00258
	(A2 * !B1 * !B2 * !X)	0.00227	0.00230	0.00227
	(A2 * !B1 * !B2 * !X)	-0.00287	-0.00292	-0.00291
	(!A2 * B2 * !C1 * !X)	0.00213	0.00216	0.00214
	(!A2 * B2 * !C1 * !X)	-0.00292	-0.00294	-0.00293
	(!A2 * B1 * !B2 * !C1 * !X)	0.00215	0.00216	0.00215
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00292	-0.00293	-0.00293
	(!A2 * !B1 * !B2 * C1 * !X)	0.00220	0.00220	0.00219
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00292	-0.00293	-0.00292
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00220	0.00220	0.00219
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00292	-0.00293	-0.00293

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00561	0.00482	0.00475
	(A2 * B2 * C1 * X)	-0.00421	-0.00515	-0.00514
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00434	0.00440	0.00436
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00542	-0.00554	-0.00552
	(A2 * B1 * !B2 * C1 * X)	0.00562	0.00483	0.00476
	(A2 * B1 * !B2 * C1 * X)	-0.00421	-0.00514	-0.00514
	(A2 * !B1 * !B2 * !X)	0.00434	0.00441	0.00437
	(A2 * !B1 * !B2 * !X)	-0.00542	-0.00554	-0.00552
	(!A2 * B2 * !C1 * !X)	0.00414	0.00418	0.00415
	(!A2 * B2 * !C1 * !X)	-0.00555	-0.00558	-0.00557
	(!A2 * B1 * !B2 * !C1 * !X)	0.00416	0.00419	0.00417
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00555	-0.00557	-0.00557
	(!A2 * !B1 * !B2 * C1 * !X)	0.00416	0.00419	0.00418
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00555	-0.00557	-0.00556
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00416	0.00423	0.00418
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00555	-0.00560	-0.00557

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)**	-0.00223	-0.00223	-0.00222
	(A2 * B2 * C1 * X)	0.00262	0.00263	0.00263
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00195	-0.00196	-0.00195
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00289	0.00291	0.00290
	(A2 * B1 * !B2 * C1 * X)	-0.00223	-0.00223	-0.00222
	(A2 * B1 * !B2 * C1 * X)	0.00263	0.00264	0.00263
	(A2 * !B1 * !B2 * !X)	-0.00195	-0.00196	-0.00195
	(A2 * !B1 * !B2 * !X)	0.00290	0.00291	0.00290
	(!A2 * B2 * !C1 * !X)	-0.00168	-0.00186	-0.00185
	(!A2 * B2 * !C1 * !X)	0.00292	0.00294	0.00292
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00171	-0.00187	-0.00186
	(!A2 * B1 * !B2 * !C1 * !X)	0.00292	0.00294	0.00292
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00175	-0.00187	-0.00188
	(!A2 * !B1 * !B2 * C1 * !X)	0.00291	0.00294	0.00292
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00175	-0.00187	-0.00188
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00291	0.00294	0.00292

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	-0.00256	-0.00258	-0.00256
	(A2 * B2 * C1 * X)	0.00260	0.00263	0.00261
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00226	-0.00227	-0.00226
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00290	0.00293	0.00291
	(A2 * B1 * !B2 * C1 * X)	-0.00256	-0.00258	-0.00256
	(A2 * B1 * !B2 * C1 * X)	0.00260	0.00264	0.00261
	(A2 * !B1 * !B2 * !X)	-0.00226	-0.00227	-0.00226
	(A2 * !B1 * !B2 * !X)	0.00290	0.00292	0.00291
	(!A2 * B2 * !C1 * !X)	-0.00195	-0.00215	-0.00214
	(!A2 * B2 * !C1 * !X)	0.00295	0.00295	0.00294
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00199	-0.00216	-0.00215
	(!A2 * B1 * !B2 * !C1 * !X)	0.00295	0.00295	0.00294
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00203	-0.00217	-0.00219
	(!A2 * !B1 * !B2 * C1 * !X)	0.00292	0.00295	0.00294
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00204	-0.00217	-0.00219
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00292	0.00295	0.00294

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	-0.00468	-0.00471	-0.00468
	(A2 * B2 * C1 * X)	0.00514	0.00519	0.00519
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00433	-0.00435	-0.00434
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00549	0.00554	0.00552
	(A2 * B1 * !B2 * C1 * X)	-0.00468	-0.00471	-0.00468
	(A2 * B1 * !B2 * C1 * X)	0.00514	0.00520	0.00519
	(A2 * !B1 * !B2 * !X)	-0.00433	-0.00435	-0.00434
	(A2 * !B1 * !B2 * !X)	0.00549	0.00554	0.00552
	(!A2 * B2 * !C1 * !X)	-0.00382	-0.00418	-0.00415
	(!A2 * B2 * !C1 * !X)	0.00560	0.00564	0.00559
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00388	-0.00419	-0.00417
	(!A2 * B1 * !B2 * !C1 * !X)	0.00560	0.00563	0.00559
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00398	-0.00418	-0.00418
	(!A2 * !B1 * !B2 * C1 * !X)	0.00559	0.00561	0.00559
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00398	-0.00423	-0.00418
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00559	0.00563	0.00559

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)**	0.00230	0.00232	0.00230
	(A1 * B2 * C1 * X)	-0.00121	-0.00122	-0.00121
	(A1 * B2 * !C1 * !X)	0.00201	0.00203	0.00201
	(A1 * B2 * !C1 * !X)	-0.00266	-0.00270	-0.00269
	(A1 * B1 * !B2 * C1 * X)	0.00230	0.00232	0.00230
	(A1 * B1 * !B2 * C1 * X)	-0.00121	-0.00122	-0.00121
	(A1 * B1 * !B2 * !C1 * !X)	0.00201	0.00203	0.00201
	(A1 * B1 * !B2 * !C1 * !X)	-0.00266	-0.00270	-0.00269
	(A1 * !B1 * !B2 * C1 * !X)	0.00201	0.00202	0.00201
	(A1 * !B1 * !B2 * C1 * !X)	-0.00266	-0.00269	-0.00269
	(A1 * !B1 * !B2 * !C1 * !X)	0.00201	0.00203	0.00201
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00266	-0.00270	-0.00269
	(!A1 * B2 * !C1 * !X)	0.00188	0.00189	0.00189
	(!A1 * B2 * !C1 * !X)	-0.00271	-0.00272	-0.00271
	(!A1 * B1 * !B2 * !C1 * !X)	0.00190	0.00191	0.00190
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00271	-0.00272	-0.00271
	(!A1 * !B1 * !B2 * C1 * !X)	0.00193	0.00193	0.00193
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00272	-0.00272	-0.00272
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00193	0.00194	0.00193
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00272	-0.00273	-0.00272

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	0.00260	0.00262	0.00260
	(A1 * B2 * C1 * X)	-0.00120	-0.00120	-0.00119
	(A1 * B2 * !C1 * !X)	0.00230	0.00234	0.00231
	(A1 * B2 * !C1 * !X)	-0.00264	-0.00268	-0.00268
	(A1 * B1 * !B2 * C1 * X)	0.00260	0.00262	0.00260
	(A1 * B1 * !B2 * C1 * X)	-0.00120	-0.00120	-0.00119
	(A1 * B1 * !B2 * !C1 * !X)	0.00230	0.00234	0.00231
	(A1 * B1 * !B2 * !C1 * !X)	-0.00264	-0.00268	-0.00268
	(A1 * !B1 * !B2 * C1 * !X)	0.00230	0.00231	0.00231
	(A1 * !B1 * !B2 * C1 * !X)	-0.00264	-0.00267	-0.00267
	(A1 * !B1 * !B2 * !C1 * !X)	0.00230	0.00233	0.00231
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00264	-0.00268	-0.00268
	(!A1 * B2 * !C1 * !X)	0.00219	0.00221	0.00220
	(!A1 * B2 * !C1 * !X)	-0.00269	-0.00270	-0.00270
	(!A1 * B1 * !B2 * !C1 * !X)	0.00221	0.00222	0.00222
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00269	-0.00270	-0.00270
	(!A1 * !B1 * !B2 * C1 * !X)	0.00224	0.00224	0.00223
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00270	-0.00270	-0.00270
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00220	0.00221	0.00220
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00270	-0.00271	-0.00270

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	0.00427	0.00428	0.00425
	(A1 * B2 * C1 * X)	-0.00241	-0.00241	-0.00239
	(A1 * B2 * !C1 * !X)	0.00376	0.00381	0.00377
	(A1 * B2 * !C1 * !X)	-0.00517	-0.00527	-0.00525
	(A1 * B1 * !B2 * C1 * X)	0.00427	0.00428	0.00425
	(A1 * B1 * !B2 * C1 * X)	-0.00241	-0.00241	-0.00239
	(A1 * B1 * !B2 * !C1 * !X)	0.00377	0.00379	0.00377
	(A1 * B1 * !B2 * !C1 * !X)	-0.00518	-0.00524	-0.00525
	(A1 * !B1 * !B2 * C1 * !X)	0.00376	0.00380	0.00377
	(A1 * !B1 * !B2 * C1 * !X)	-0.00517	-0.00525	-0.00524
	(A1 * !B1 * !B2 * !C1 * !X)	0.00377	0.00382	0.00377
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00518	-0.00528	-0.00525
	(!A1 * B2 * !C1 * !X)	0.00358	0.00360	0.00358
	(!A1 * B2 * !C1 * !X)	-0.00531	-0.00532	-0.00531
	(!A1 * B1 * !B2 * !C1 * !X)	0.00361	0.00363	0.00361
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00531	-0.00532	-0.00531
	(!A1 * !B1 * !B2 * C1 * !X)	0.00364	0.00367	0.00363
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00532	-0.00533	-0.00531
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00361	0.00367	0.00363
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00529	-0.00533	-0.00531

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)**	-0.00223	-0.00224	-0.00228
	(A1 * B2 * C1 * X)	0.00127	0.00127	0.00123
	(A1 * B2 * !C1 * !X)	-0.00200	-0.00201	-0.00200
	(A1 * B2 * !C1 * !X)	0.00268	0.00270	0.00269
	(A1 * B1 * !B2 * C1 * X)	-0.00223	-0.00224	-0.00228
	(A1 * B1 * !B2 * C1 * X)	0.00127	0.00127	0.00123
	(A1 * B1 * !B2 * !C1 * !X)	-0.00200	-0.00201	-0.00200
	(A1 * B1 * !B2 * !C1 * !X)	0.00268	0.00270	0.00269
	(A1 * !B1 * !B2 * C1 * !X)	-0.00200	-0.00201	-0.00200
	(A1 * !B1 * !B2 * C1 * !X)	0.00268	0.00269	0.00269
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00200	-0.00201	-0.00200
	(A1 * !B1 * !B2 * !C1 * !X)	0.00268	0.00270	0.00269
	(!A1 * B2 * !C1 * !X)	-0.00171	-0.00189	-0.00189
	(!A1 * B2 * !C1 * !X)	0.00272	0.00273	0.00273
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00174	-0.00191	-0.00190
	(!A1 * B1 * !B2 * !C1 * !X)	0.00272	0.00273	0.00272
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00180	-0.00191	-0.00193
	(!A1 * !B1 * !B2 * C1 * !X)	0.00273	0.00274	0.00273
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00180	-0.00192	-0.00193
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00273	0.00274	0.00273

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	-0.00252	-0.00254	-0.00258
	(A1 * B2 * C1 * X)	0.00127	0.00127	0.00122
	(A1 * B2 * !C1 * !X)	-0.00229	-0.00231	-0.00230
	(A1 * B2 * !C1 * !X)	0.00267	0.00268	0.00268
	(A1 * B1 * !B2 * C1 * X)	-0.00252	-0.00253	-0.00258
	(A1 * B1 * !B2 * C1 * X)	0.00127	0.00127	0.00122
	(A1 * B1 * !B2 * !C1 * !X)	-0.00229	-0.00231	-0.00230
	(A1 * B1 * !B2 * !C1 * !X)	0.00266	0.00268	0.00268
	(A1 * !B1 * !B2 * C1 * !X)	-0.00230	-0.00231	-0.00230
	(A1 * !B1 * !B2 * C1 * !X)	0.00268	0.00268	0.00267
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00229	-0.00231	-0.00230
	(A1 * !B1 * !B2 * !C1 * !X)	0.00266	0.00268	0.00268
	(!A1 * B2 * !C1 * !X)	-0.00196	-0.00219	-0.00220
	(!A1 * B2 * !C1 * !X)	0.00271	0.00272	0.00271
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00200	-0.00220	-0.00221
	(!A1 * B1 * !B2 * !C1 * !X)	0.00272	0.00272	0.00271
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00207	-0.00221	-0.00222
	(!A1 * !B1 * !B2 * C1 * !X)	0.00271	0.00272	0.00271
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00208	-0.00221	-0.00220
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00271	0.00272	0.00271

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	-0.00409	-0.00411	-0.00421
	(A1 * B2 * C1 * X)	0.00254	0.00255	0.00244
	(A1 * B2 * !C1 * !X)	-0.00374	-0.00378	-0.00375
	(A1 * B2 * !C1 * !X)	0.00523	0.00527	0.00525
	(A1 * B1 * !B2 * C1 * X)	-0.00409	-0.00410	-0.00421
	(A1 * B1 * !B2 * C1 * X)	0.00254	0.00255	0.00244
	(A1 * B1 * !B2 * !C1 * !X)	-0.00376	-0.00375	-0.00375
	(A1 * B1 * !B2 * !C1 * !X)	0.00525	0.00524	0.00525
	(A1 * !B1 * !B2 * C1 * !X)	-0.00374	-0.00376	-0.00375
	(A1 * !B1 * !B2 * C1 * !X)	0.00522	0.00525	0.00524
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00376	-0.00377	-0.00375
	(A1 * !B1 * !B2 * !C1 * !X)	0.00525	0.00528	0.00525
	(!A1 * B2 * !C1 * !X)	-0.00315	-0.00354	-0.00358
	(!A1 * B2 * !C1 * !X)	0.00535	0.00535	0.00533
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00323	-0.00357	-0.00361
	(!A1 * B1 * !B2 * !C1 * !X)	0.00535	0.00538	0.00533
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00334	-0.00360	-0.00362
	(!A1 * !B1 * !B2 * C1 * !X)	0.00534	0.00536	0.00533
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00335	-0.00360	-0.00362
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00534	0.00536	0.00533

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)**	0.00257	0.00217	0.00212
	(A2 * B2 * C1 * X)	-0.00218	-0.00263	-0.00264
	(A2 * !B2 * !C1 * !X)	0.00196	0.00196	0.00195
	(A2 * !B2 * !C1 * !X)	-0.00278	-0.00277	-0.00277
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00200	0.00203	0.00200
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00272	-0.00277	-0.00276
	(A1 * !A2 * B2 * C1 * X)	0.00257	0.00217	0.00212
	(A1 * !A2 * B2 * C1 * X)	-0.00218	-0.00263	-0.00264
	(A1 * !A2 * !B2 * !C1 * !X)	0.00196	0.00196	0.00195
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00278	-0.00277	-0.00277
	(!A1 * !A2 * B2 * C1 * !X)	0.00082	0.00083	0.00082
	(!A1 * !A2 * B2 * C1 * !X)	-0.00272	-0.00277	-0.00276
	(!A1 * !A2 * B2 * !C1 * !X)	0.00108	0.00108	0.00108
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00273	-0.00277	-0.00276
	(!A1 * !A2 * !B2 * C1 * !X)	0.00083	0.00083	0.00085
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00277	-0.00277	-0.00275
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00113	0.00114	0.00113
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00277	-0.00278	-0.00278

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00291	0.00253	0.00247
	(A2 * B2 * C1 * X)	-0.00215	-0.00258	-0.00260
	(A2 * !B2 * !C1 * !X)	0.00223	0.00225	0.00223
	(A2 * !B2 * !C1 * !X)	-0.00280	-0.00281	-0.00279
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00229	0.00232	0.00229
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00274	-0.00278	-0.00278
	(A1 * !A2 * B2 * C1 * X)	0.00291	0.00253	0.00247
	(A1 * !A2 * B2 * C1 * X)	-0.00214	-0.00258	-0.00260
	(A1 * !A2 * !B2 * !C1 * !X)	0.00221	0.00225	0.00222
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00278	-0.00281	-0.00279
	(!A1 * !A2 * B2 * C1 * !X)	0.00091	0.00092	0.00091
	(!A1 * !A2 * B2 * C1 * !X)	-0.00276	-0.00280	-0.00279
	(!A1 * !A2 * B2 * !C1 * !X)	0.00120	0.00120	0.00120
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00276	-0.00280	-0.00280
	(!A1 * !A2 * !B2 * C1 * !X)	0.00093	0.00093	0.00095
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00279	-0.00280	-0.00278
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00126	0.00127	0.00126
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00281	-0.00282	-0.00282

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00609	0.00528	0.00523
	(A2 * B2 * C1 * X)	-0.00425	-0.00514	-0.00517
	(A2 * !B2 * !C1 * !X)	0.00473	0.00480	0.00474
	(A2 * !B2 * !C1 * !X)	-0.00554	-0.00558	-0.00555
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00487	0.00493	0.00488
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00541	-0.00554	-0.00551
	(A1 * !A2 * B2 * C1 * X)	0.00609	0.00529	0.00523
	(A1 * !A2 * B2 * C1 * X)	-0.00425	-0.00514	-0.00517
	(A1 * !A2 * !B2 * !C1 * !X)	0.00474	0.00480	0.00474
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00555	-0.00558	-0.00555
	(!A1 * !A2 * B2 * C1 * !X)	0.00234	0.00236	0.00235
	(!A1 * !A2 * B2 * C1 * !X)	-0.00544	-0.00555	-0.00555
	(!A1 * !A2 * B2 * !C1 * !X)	0.00283	0.00287	0.00284
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00545	-0.00558	-0.00556
	(!A1 * !A2 * !B2 * C1 * !X)	0.00237	0.00239	0.00242
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00555	-0.00557	-0.00554
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00295	0.00299	0.00296
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00559	-0.00563	-0.00560

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)**	-0.00209	-0.00209	-0.00208
	(A2 * B2 * C1 * X)	0.00266	0.00268	0.00267
	(A2 * !B2 * !C1 * !X)	-0.00179	-0.00193	-0.00195
	(A2 * !B2 * !C1 * !X)	0.00287	0.00278	0.00278
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00199	-0.00201	-0.00200
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00275	0.00278	0.00276
	(A1 * !A2 * B2 * C1 * X)	-0.00208	-0.00210	-0.00208
	(A1 * !A2 * B2 * C1 * X)	0.00266	0.00269	0.00267
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00176	-0.00193	-0.00195
	(A1 * !A2 * !B2 * !C1 * !X)	0.00290	0.00279	0.00278
	(!A1 * !A2 * B2 * C1 * !X)	-0.00075	-0.00077	-0.00080
	(!A1 * !A2 * B2 * C1 * !X)	0.00286	0.00289	0.00278
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00108	-0.00108	-0.00108
	(!A1 * !A2 * B2 * !C1 * !X)	0.00283	0.00285	0.00277
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00079	-0.00080	-0.00082
	(!A1 * !A2 * !B2 * C1 * !X)	0.00285	0.00287	0.00280
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00113	-0.00114	-0.00113
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00292	0.00294	0.00282

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	-0.00244	-0.00244	-0.00243
	(A2 * B2 * C1 * X)	0.00262	0.00263	0.00263
	(A2 * !B2 * !C1 * !X)	-0.00203	-0.00223	-0.00222
	(A2 * !B2 * !C1 * !X)	0.00290	0.00283	0.00281
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00227	-0.00228	-0.00228
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00277	0.00279	0.00278
	(A1 * !A2 * B2 * C1 * X)	-0.00244	-0.00244	-0.00243
	(A1 * !A2 * B2 * C1 * X)	0.00263	0.00264	0.00263
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00199	-0.00223	-0.00222
	(A1 * !A2 * !B2 * !C1 * !X)	0.00293	0.00283	0.00281
	(!A1 * !A2 * B2 * C1 * !X)	-0.00084	-0.00085	-0.00088
	(!A1 * !A2 * B2 * C1 * !X)	0.00290	0.00291	0.00282
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00120	-0.00120	-0.00120
	(!A1 * !A2 * B2 * !C1 * !X)	0.00289	0.00290	0.00281
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00088	-0.00089	-0.00090
	(!A1 * !A2 * !B2 * C1 * !X)	0.00290	0.00292	0.00284
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00126	-0.00127	-0.00126
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00298	0.00299	0.00286

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	-0.00518	-0.00520	-0.00516
	(A2 * B2 * C1 * X)	0.00518	0.00525	0.00521
	(A2 * !B2 * !C1 * !X)	-0.00442	-0.00474	-0.00474
	(A2 * !B2 * !C1 * !X)	0.00574	0.00560	0.00558
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00486	-0.00489	-0.00486
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00550	0.00556	0.00551
	(A1 * !A2 * B2 * C1 * X)	-0.00517	-0.00518	-0.00516
	(A1 * !A2 * B2 * C1 * X)	0.00518	0.00521	0.00521
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00435	-0.00477	-0.00474
	(A1 * !A2 * !B2 * !C1 * !X)	0.00580	0.00561	0.00558
	(!A1 * !A2 * B2 * C1 * !X)	-0.00217	-0.00219	-0.00228
	(!A1 * !A2 * B2 * C1 * !X)	0.00582	0.00585	0.00562
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00283	-0.00287	-0.00284
	(!A1 * !A2 * B2 * !C1 * !X)	0.00579	0.00583	0.00560
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00227	-0.00230	-0.00234
	(!A1 * !A2 * !B2 * C1 * !X)	0.00572	0.00578	0.00564
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00295	-0.00299	-0.00296
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00594	0.00595	0.00571

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)**	0.00256	0.00258	0.00256
	(A2 * B1 * C1 * X)	-0.00123	-0.00124	-0.00123
	(A2 * B1 * !C1 * !X)	0.00222	0.00225	0.00222
	(A2 * B1 * !C1 * !X)	-0.00272	-0.00278	-0.00276
	(A2 * !B1 * !C1 * !X)	0.00217	0.00218	0.00217
	(A2 * !B1 * !C1 * !X)	-0.00279	-0.00279	-0.00278
	(A1 * !A2 * B1 * C1 * X)	0.00256	0.00258	0.00257
	(A1 * !A2 * B1 * C1 * X)	-0.00123	-0.00124	-0.00123
	(A1 * !A2 * B1 * !C1 * !X)	0.00222	0.00225	0.00222
	(A1 * !A2 * B1 * !C1 * !X)	-0.00272	-0.00277	-0.00276
	(A1 * !A2 * !B1 * !C1 * !X)	0.00218	0.00220	0.00218
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00279	-0.00280	-0.00278
	(!A1 * !A2 * B1 * C1 * !X)	0.00095	0.00096	0.00095
	(!A1 * !A2 * B1 * C1 * !X)	-0.00273	-0.00277	-0.00277
	(!A1 * !A2 * B1 * !C1 * !X)	0.00121	0.00123	0.00121
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00273	-0.00279	-0.00278
	(!A1 * !A2 * !B1 * C1 * !X)	0.00097	0.00097	0.00099
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00278	-0.00279	-0.00277
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00127	0.00128	0.00128
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00279	-0.00280	-0.00279

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	0.00277	0.00279	0.00277
	(A2 * B1 * C1 * X)	-0.00120	-0.00121	-0.00120
	(A2 * B1 * !C1 * !X)	0.00245	0.00248	0.00245
	(A2 * B1 * !C1 * !X)	-0.00268	-0.00272	-0.00271
	(A2 * !B1 * !C1 * !X)	0.00239	0.00240	0.00239
	(A2 * !B1 * !C1 * !X)	-0.00275	-0.00275	-0.00274
	(A1 * !A2 * B1 * C1 * X)	0.00277	0.00279	0.00278
	(A1 * !A2 * B1 * C1 * X)	-0.00120	-0.00121	-0.00119
	(A1 * !A2 * B1 * !C1 * !X)	0.00245	0.00248	0.00245
	(A1 * !A2 * B1 * !C1 * !X)	-0.00268	-0.00273	-0.00271
	(A1 * !A2 * !B1 * !C1 * !X)	0.00240	0.00240	0.00239
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00275	-0.00274	-0.00274
	(!A1 * !A2 * B1 * C1 * !X)	0.00099	0.00100	0.00099
	(!A1 * !A2 * B1 * C1 * !X)	-0.00270	-0.00273	-0.00274
	(!A1 * !A2 * B1 * !C1 * !X)	0.00129	0.00130	0.00128
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00271	-0.00276	-0.00275
	(!A1 * !A2 * !B1 * C1 * !X)	0.00102	0.00103	0.00104
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00274	-0.00274	-0.00273
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00135	0.00136	0.00135
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00276	-0.00277	-0.00277

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	0.00440	0.00442	0.00439
	(A2 * B1 * C1 * X)	-0.00243	-0.00243	-0.00240
	(A2 * B1 * !C1 * !X)	0.00385	0.00389	0.00386
	(A2 * B1 * !C1 * !X)	-0.00527	-0.00533	-0.00532
	(A2 * !B1 * !C1 * !X)	0.00374	0.00378	0.00376
	(A2 * !B1 * !C1 * !X)	-0.00537	-0.00540	-0.00539
	(A1 * !A2 * B1 * C1 * X)	0.00440	0.00442	0.00440
	(A1 * !A2 * B1 * C1 * X)	-0.00242	-0.00242	-0.00240
	(A1 * !A2 * B1 * !C1 * !X)	0.00385	0.00387	0.00386
	(A1 * !A2 * B1 * !C1 * !X)	-0.00527	-0.00534	-0.00532
	(A1 * !A2 * !B1 * !C1 * !X)	0.00375	0.00379	0.00375
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00540	-0.00542	-0.00539
	(!A1 * !A2 * B1 * C1 * !X)	0.00143	0.00145	0.00144
	(!A1 * !A2 * B1 * C1 * !X)	-0.00528	-0.00536	-0.00538
	(!A1 * !A2 * B1 * !C1 * !X)	0.00194	0.00196	0.00194
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00531	-0.00541	-0.00539
	(!A1 * !A2 * !B1 * C1 * !X)	0.00146	0.00148	0.00151
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00539	-0.00542	-0.00537
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00205	0.00206	0.00205
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00544	-0.00546	-0.00543

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)**	-0.00249	-0.00251	-0.00255
	(A2 * B1 * C1 * X)	0.00130	0.00131	0.00125
	(A2 * B1 * !C1 * !X)	-0.00221	-0.00223	-0.00222
	(A2 * B1 * !C1 * !X)	0.00275	0.00278	0.00276
	(A2 * !B1 * !C1 * !X)	-0.00200	-0.00215	-0.00217
	(A2 * !B1 * !C1 * !X)	0.00288	0.00279	0.00279
	(A1 * !A2 * B1 * C1 * X)	-0.00249	-0.00250	-0.00255
	(A1 * !A2 * B1 * C1 * X)	0.00130	0.00131	0.00126
	(A1 * !A2 * B1 * !C1 * !X)	-0.00221	-0.00223	-0.00222
	(A1 * !A2 * B1 * !C1 * !X)	0.00274	0.00277	0.00276
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00196	-0.00216	-0.00217
	(A1 * !A2 * !B1 * !C1 * !X)	0.00290	0.00280	0.00279
	(!A1 * !A2 * B1 * C1 * !X)	-0.00086	-0.00088	-0.00092
	(!A1 * !A2 * B1 * C1 * !X)	0.00291	0.00293	0.00280
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00121	-0.00123	-0.00121
	(!A1 * !A2 * B1 * !C1 * !X)	0.00288	0.00290	0.00279
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00092	-0.00094	-0.00095
	(!A1 * !A2 * !B1 * C1 * !X)	0.00286	0.00288	0.00281
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00127	-0.00128	-0.00128
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00294	0.00297	0.00284

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	-0.00269	-0.00272	-0.00276
	(A2 * B1 * C1 * X)	0.00125	0.00126	0.00122
	(A2 * B1 * !C1 * !X)	-0.00243	-0.00245	-0.00244
	(A2 * B1 * !C1 * !X)	0.00270	0.00272	0.00271
	(A2 * !B1 * !C1 * !X)	-0.00219	-0.00239	-0.00238
	(A2 * !B1 * !C1 * !X)	0.00285	0.00277	0.00275
	(A1 * !A2 * B1 * C1 * X)	-0.00271	-0.00272	-0.00276
	(A1 * !A2 * B1 * C1 * X)	0.00126	0.00127	0.00122
	(A1 * !A2 * B1 * !C1 * !X)	-0.00243	-0.00246	-0.00244
	(A1 * !A2 * B1 * !C1 * !X)	0.00270	0.00273	0.00271
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00214	-0.00239	-0.00238
	(A1 * !A2 * !B1 * !C1 * !X)	0.00287	0.00277	0.00275
	(!A1 * !A2 * B1 * C1 * !X)	-0.00090	-0.00092	-0.00096
	(!A1 * !A2 * B1 * C1 * !X)	0.00288	0.00289	0.00277
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00129	-0.00130	-0.00128
	(!A1 * !A2 * B1 * !C1 * !X)	0.00285	0.00287	0.00276
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00096	-0.00098	-0.00099
	(!A1 * !A2 * !B1 * C1 * !X)	0.00283	0.00286	0.00278
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00135	-0.00136	-0.00135
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00293	0.00296	0.00282

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	-0.00422	-0.00424	-0.00436
	(A2 * B1 * C1 * X)	0.00253	0.00254	0.00245
	(A2 * B1 * !C1 * !X)	-0.00383	-0.00385	-0.00383
	(A2 * B1 * !C1 * !X)	0.00531	0.00533	0.00532
	(A2 * !B1 * !C1 * !X)	-0.00341	-0.00376	-0.00374
	(A2 * !B1 * !C1 * !X)	0.00557	0.00544	0.00542
	(A1 * !A2 * B1 * C1 * X)	-0.00421	-0.00426	-0.00436
	(A1 * !A2 * B1 * C1 * X)	0.00253	0.00256	0.00245
	(A1 * !A2 * B1 * !C1 * !X)	-0.00383	-0.00386	-0.00383
	(A1 * !A2 * B1 * !C1 * !X)	0.00531	0.00535	0.00532
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00334	-0.00376	-0.00374
	(A1 * !A2 * !B1 * !C1 * !X)	0.00563	0.00544	0.00542
	(!A1 * !A2 * B1 * C1 * !X)	-0.00129	-0.00133	-0.00139
	(!A1 * !A2 * B1 * C1 * !X)	0.00557	0.00561	0.00541
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00194	-0.00196	-0.00194
	(!A1 * !A2 * B1 * !C1 * !X)	0.00555	0.00559	0.00540
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00138	-0.00140	-0.00143
	(!A1 * !A2 * !B1 * C1 * !X)	0.00555	0.00560	0.00547
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00205	-0.00206	-0.00205
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00570	0.00577	0.00553

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)	0.00081	0.00080	0.00076
	(A2 * !B1 * !B2 * !X)	-0.00323	-0.00323	-0.00330
	(!A2 * !B1 * !B2 * !X)	0.00081	0.00080	0.00076
	(!A2 * !B1 * !B2 * !X)	-0.00323	-0.00323	-0.00330
	(!A1 * !A2 * B2 * !X)	0.00078	0.00078	0.00069
	(!A1 * !A2 * B2 * !X)	-0.00311	-0.00311	-0.00329
	(!A1 * !A2 * B1 * !B2 * !X)	0.00079	0.00079	0.00071
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00313	-0.00313	-0.00329
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	0.00093	0.00093	0.00089
	(A2 * !B1 * !B2 * !X)	-0.00324	-0.00325	-0.00332
	(!A2 * !B1 * !B2 * !X)	0.00093	0.00093	0.00089
	(!A2 * !B1 * !B2 * !X)	-0.00324	-0.00325	-0.00332
	(!A1 * !A2 * B2 * !X)	0.00093	0.00093	0.00084
	(!A1 * !A2 * B2 * !X)	-0.00309	-0.00310	-0.00329
	(!A1 * !A2 * B1 * !B2 * !X)	0.00094	0.00094	0.00085
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00312	-0.00313	-0.00330
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	0.00135	0.00135	0.00127
	(A2 * !B1 * !B2 * !X)	-0.00611	-0.00612	-0.00626
	(!A2 * !B1 * !B2 * !X)	0.00135	0.00135	0.00127
	(!A2 * !B1 * !B2 * !X)	-0.00611	-0.00612	-0.00626
	(!A1 * !A2 * B2 * !X)	0.00132	0.00131	0.00116
	(!A1 * !A2 * B2 * !X)	-0.00587	-0.00587	-0.00622
	(!A1 * !A2 * B1 * !B2 * !X)	0.00133	0.00132	0.00119
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00592	-0.00590	-0.00623

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)	-0.00074	-0.00075	-0.00074
	(A2 * !B1 * !B2 * !X)	0.00331	0.00337	0.00332
	(!A2 * !B1 * !B2 * !X)	-0.00074	-0.00075	-0.00074
	(!A2 * !B1 * !B2 * !X)	0.00331	0.00337	0.00332
	(!A1 * !A2 * B2 * !X)	-0.00070	-0.00071	-0.00069
	(!A1 * !A2 * B2 * !X)	0.00331	0.00337	0.00332
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00070	-0.00072	-0.00071
	(!A1 * !A2 * B1 * !B2 * !X)	0.00331	0.00337	0.00332
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	-0.00086	-0.00088	-0.00086
	(A2 * !B1 * !B2 * !X)	0.00333	0.00339	0.00334
	(!A2 * !B1 * !B2 * !X)	-0.00086	-0.00087	-0.00086
	(!A2 * !B1 * !B2 * !X)	0.00333	0.00336	0.00334
	(!A1 * !A2 * B2 * !X)	-0.00083	-0.00085	-0.00083
	(!A1 * !A2 * B2 * !X)	0.00332	0.00339	0.00333
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00084	-0.00085	-0.00084
	(!A1 * !A2 * B1 * !B2 * !X)	0.00333	0.00336	0.00334
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	-0.00122	-0.00124	-0.00122
	(A2 * !B1 * !B2 * !X)	0.00628	0.00635	0.00630
	(!A2 * !B1 * !B2 * !X)	-0.00122	-0.00124	-0.00122
	(!A2 * !B1 * !B2 * !X)	0.00628	0.00635	0.00630
	(!A1 * !A2 * B2 * !X)	-0.00117	-0.00117	-0.00116
	(!A1 * !A2 * B2 * !X)	0.00630	0.00635	0.00629
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00117	-0.00118	-0.00117
	(!A1 * !A2 * B1 * !B2 * !X)	0.00628	0.00634	0.00629

SKY130_FD_SC_HS__O22AIx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00290	0.00286	0.00294	0.00301	0.74558
sky130_fd_sc_hs__o22ai_2	0.00550	0.00563	0.00562	0.00553	1.31764
sky130_fd_sc_hs__o22ai_4	0.01130	0.01077	0.01165	0.01095	2.21559

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o22ai_1	0.00000	0.11171	0.38031
sky130_fd_sc_hs__o22ai_2	0.00000	0.22343	0.76062
sky130_fd_sc_hs__o22ai_4	0.00000	0.44684	1.52124

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)	0.08707	0.79773	9.53863
	A2->Y (FR)	0.07543	0.82455	10.08520
	B1->Y (FR)	0.05503	0.76649	9.51059
	B2->Y (FR)	0.04399	0.79420	10.04890
sky130_fd_sc_hs__o22ai_2	A1->Y (FR)	0.08848	0.69280	9.44158
	A2->Y (FR)	0.07313	0.71895	10.00970
	B1->Y (FR)	0.05290	0.65461	9.35640
	B2->Y (FR)	0.03639	0.68077	9.92877
sky130_fd_sc_hs__o22ai_4	A1->Y (FR)	0.08734	0.58046	8.76523
	A2->Y (FR)	0.07345	0.62228	9.51109
	B1->Y (FR)	0.05103	0.54653	8.74948
	B2->Y (FR)	0.03644	0.58349	9.39429

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22ai_1	A1->Y (RF)	0.04031	0.33913	3.83126
	A2->Y (RF)	0.03414	0.32976	3.80098
	B1->Y (RF)	0.03270	0.39112	4.62543
	B2->Y (RF)	0.02700	0.37855	4.54467
sky130_fd_sc_hs__o22ai_2	A1->Y (RF)	0.04156	0.28531	3.69455
	A2->Y (RF)	0.03317	0.27287	3.64805
	B1->Y (RF)	0.03337	0.33985	4.59621
	B2->Y (RF)	0.02475	0.31910	4.46585
sky130_fd_sc_hs__o22ai_4	A1->Y (RF)	0.02928	0.20060	3.13868
	A2->Y (RF)	0.02497	0.18701	3.09615
	B1->Y (RF)	0.02235	0.25484	4.11900
	B2->Y (RF)	0.02264	0.27194	4.35716

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.00238	0.00372	0.03996
	A1	0.01449	0.01586	0.05213
	A2	0.00249	0.00532	0.05083
	A2	0.01265	0.01549	0.06096
	B1	-0.00043	0.00112	0.03650
	B1	0.00829	0.00989	0.04533
	B2	-0.00046	0.00266	0.04745
	B2	0.00645	0.00957	0.05435
sky130_fd_sc_hs__o22ai_2	A1	0.00431	0.00697	0.07612
	A1	0.02917	0.03167	0.09528
	A2	0.00416	0.00973	0.09580
	A2	0.02450	0.03010	0.11609
	B1	-0.00125	0.00187	0.06949
	B1	0.01606	0.01923	0.08708
	B2	-0.00154	0.00518	0.09016
	B2	0.01199	0.01842	0.10368
sky130_fd_sc_hs__o22ai_4	A1	0.00631	0.01420	0.17242
	A1	0.05544	0.06299	0.21416
	A2	0.00623	0.01953	0.20302
	A2	0.04606	0.05947	0.24320
	B1	-0.00297	0.00549	0.15576
	B1	0.03147	0.04003	0.19123
	B2	-0.00284	0.01140	0.18638
	B2	0.02406	0.03835	0.21372

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.01387	0.01498	0.04270
	A1	0.00161	0.00269	0.03007
	A2	0.01049	0.01178	0.03761
	A2	0.00015	0.00140	0.02663
	B1	0.01014	0.01179	0.04077
	B1	0.00144	0.00310	0.03179
	B2	0.00705	0.00883	0.03684
	B2	0.00016	0.00189	0.02930
sky130_fd_sc_hs__o22ai_2	A1	0.03332	0.03540	0.08793
	A1	0.00340	0.00555	0.05833
	A2	0.02613	0.02866	0.07609
	A2	-0.00072	0.00209	0.05060
	B1	0.02064	0.02398	0.07977
	B1	0.00347	0.00672	0.06241
	B2	0.01273	0.01670	0.07033
	B2	-0.00075	0.00317	0.05575
sky130_fd_sc_hs__o22ai_4	A1	0.05315	0.05881	0.17700
	A1	0.00523	0.01073	0.12867
	A2	0.03934	0.04621	0.15279
	A2	-0.00109	0.00556	0.11227
	B1	0.03950	0.04686	0.16407
	B1	0.00526	0.01250	0.12925
	B2	0.02581	0.03541	0.13986
	B2	-0.00105	0.00846	0.11288

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00299	0.00257	0.00253
	(A2 * B2 * !Y)	-0.00251	-0.00297	-0.00298
	(A2 * B1 * !B2 * !Y)	0.00299	0.00258	0.00253
	(A2 * B1 * !B2 * !Y)	-0.00251	-0.00297	-0.00298
	(A2 * !B1 * !B2 * Y)	0.00253	0.00255	0.00252
	(A2 * !B1 * !B2 * Y)	-0.00294	-0.00299	-0.00298
	(!A2 * !B1 * !B2 * Y)	0.00243	0.00243	0.00242
	(!A2 * !B1 * !B2 * Y)	-0.00301	-0.00301	-0.00300
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00583	0.00478	0.00470
	(A2 * B2 * !Y)	-0.00474	-0.00591	-0.00592
	(A2 * B1 * !B2 * !Y)	0.00583	0.00478	0.00470
	(A2 * B1 * !B2 * !Y)	-0.00474	-0.00591	-0.00592
	(A2 * !B1 * !B2 * Y)	0.00469	0.00473	0.00468
	(A2 * !B1 * !B2 * Y)	-0.00581	-0.00596	-0.00592
	(!A2 * !B1 * !B2 * Y)	0.00452	0.00454	0.00451
	(!A2 * !B1 * !B2 * Y)	-0.00600	-0.00601	-0.00598
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.01159	0.00961	0.00945
	(A2 * B2 * !Y)	-0.00951	-0.01167	-0.01169
	(A2 * B1 * !B2 * !Y)	0.01159	0.00961	0.00945
	(A2 * B1 * !B2 * !Y)	-0.00951	-0.01168	-0.01169
	(A2 * !B1 * !B2 * Y)	0.00919	0.00926	0.00918
	(A2 * !B1 * !B2 * Y)	-0.01178	-0.01202	-0.01191
	(!A2 * !B1 * !B2 * Y)	0.00876	0.00882	0.00879
	(!A2 * !B1 * !B2 * Y)	-0.01205	-0.01209	-0.01207

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00251	-0.00253	-0.00251
	(A2 * B2 * !Y)	0.00298	0.00302	0.00299
	(A2 * B1 * !B2 * !Y)	-0.00251	-0.00252	-0.00251
	(A2 * B1 * !B2 * !Y)	0.00298	0.00302	0.00299
	(A2 * !B1 * !B2 * Y)	-0.00251	-0.00252	-0.00252
	(A2 * !B1 * !B2 * Y)	0.00297	0.00299	0.00298
	(!A2 * !B1 * !B2 * Y)	-0.00226	-0.00243	-0.00242
	(!A2 * !B1 * !B2 * Y)	0.00306	0.00303	0.00301
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00467	-0.00470	-0.00467
	(A2 * B2 * !Y)	0.00589	0.00595	0.00592
	(A2 * B1 * !B2 * !Y)	-0.00467	-0.00470	-0.00467
	(A2 * B1 * !B2 * !Y)	0.00589	0.00596	0.00592
	(A2 * !B1 * !B2 * Y)	-0.00466	-0.00470	-0.00467
	(A2 * !B1 * !B2 * Y)	0.00588	0.00597	0.00592
	(!A2 * !B1 * !B2 * Y)	-0.00415	-0.00454	-0.00451
	(!A2 * !B1 * !B2 * Y)	0.00612	0.00604	0.00600
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00938	-0.00939	-0.00937
	(A2 * B2 * !Y)	0.01165	0.01167	0.01171
	(A2 * B1 * !B2 * !Y)	-0.00938	-0.00939	-0.00937
	(A2 * B1 * !B2 * !Y)	0.01165	0.01168	0.01171
	(A2 * !B1 * !B2 * Y)	-0.00914	-0.00920	-0.00915
	(A2 * !B1 * !B2 * Y)	0.01187	0.01202	0.01191
	(!A2 * !B1 * !B2 * Y)	-0.00812	-0.00882	-0.00879
	(!A2 * !B1 * !B2 * Y)	0.01229	0.01217	0.01210

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	0.00248	0.00251	0.00249
	(A1 * B2 * !Y)	-0.00133	-0.00134	-0.00133
	(A1 * B1 * !B2 * !Y)	0.00249	0.00251	0.00249
	(A1 * B1 * !B2 * !Y)	-0.00133	-0.00134	-0.00133
	(A1 * !B1 * !B2 * Y)	0.00229	0.00232	0.00230
	(A1 * !B1 * !B2 * Y)	-0.00281	-0.00286	-0.00286
	(!A1 * !B1 * !B2 * Y)	0.00223	0.00224	0.00223
	(!A1 * !B1 * !B2 * Y)	-0.00290	-0.00290	-0.00289
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	0.00531	0.00535	0.00531
	(A1 * B2 * !Y)	-0.00263	-0.00265	-0.00263
	(A1 * B1 * !B2 * !Y)	0.00533	0.00536	0.00531
	(A1 * B1 * !B2 * !Y)	-0.00265	-0.00265	-0.00263
	(A1 * !B1 * !B2 * Y)	0.00470	0.00471	0.00467
	(A1 * !B1 * !B2 * Y)	-0.00589	-0.00596	-0.00595
	(!A1 * !B1 * !B2 * Y)	0.00450	0.00452	0.00450
	(!A1 * !B1 * !B2 * Y)	-0.00606	-0.00606	-0.00605
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	0.00986	0.00989	0.00982
	(A1 * B2 * !Y)	-0.00517	-0.00516	-0.00512
	(A1 * B1 * !B2 * !Y)	0.00986	0.00990	0.00982
	(A1 * B1 * !B2 * !Y)	-0.00516	-0.00516	-0.00511
	(A1 * !B1 * !B2 * Y)	0.00904	0.00911	0.00903
	(A1 * !B1 * !B2 * Y)	-0.01117	-0.01129	-0.01127
	(!A1 * !B1 * !B2 * Y)	0.00864	0.00863	0.00868
	(!A1 * !B1 * !B2 * Y)	-0.01144	-0.01144	-0.01148

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	-0.00241	-0.00243	-0.00248
	(A1 * B2 * !Y)	0.00140	0.00140	0.00135
	(A1 * B1 * !B2 * !Y)	-0.00241	-0.00242	-0.00248
	(A1 * B1 * !B2 * !Y)	0.00140	0.00140	0.00135
	(A1 * !B1 * !B2 * Y)	-0.00229	-0.00230	-0.00230
	(A1 * !B1 * !B2 * Y)	0.00285	0.00286	0.00286
	(!A1 * !B1 * !B2 * Y)	-0.00207	-0.00221	-0.00223
	(!A1 * !B1 * !B2 * Y)	0.00293	0.00291	0.00290
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	-0.00511	-0.00513	-0.00529
	(A1 * B2 * !Y)	0.00282	0.00282	0.00267
	(A1 * B1 * !B2 * !Y)	-0.00511	-0.00511	-0.00529
	(A1 * B1 * !B2 * !Y)	0.00282	0.00281	0.00267
	(A1 * !B1 * !B2 * Y)	-0.00465	-0.00468	-0.00466
	(A1 * !B1 * !B2 * Y)	0.00592	0.00596	0.00595
	(!A1 * !B1 * !B2 * Y)	-0.00415	-0.00451	-0.00450
	(!A1 * !B1 * !B2 * Y)	0.00617	0.00610	0.00606
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	-0.00949	-0.00955	-0.00978
	(A1 * B2 * !Y)	0.00538	0.00540	0.00519
	(A1 * B1 * !B2 * !Y)	-0.00950	-0.00955	-0.00978
	(A1 * B1 * !B2 * !Y)	0.00539	0.00540	0.00519
	(A1 * !B1 * !B2 * Y)	-0.00898	-0.00903	-0.00901
	(A1 * !B1 * !B2 * Y)	0.01122	0.01129	0.01127
	(!A1 * !B1 * !B2 * Y)	-0.00799	-0.00863	-0.00868
	(!A1 * !B1 * !B2 * Y)	0.01167	0.01158	0.01151

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00307	0.00266	0.00261
	(A2 * B2 * !Y)	-0.00245	-0.00291	-0.00293
	(A1 * !A2 * B2 * !Y)	0.00307	0.00266	0.00261
	(A1 * !A2 * B2 * !Y)	-0.00245	-0.00291	-0.00293
	(!A1 * !A2 * B2 * Y)	0.00087	0.00087	0.00086
	(!A1 * !A2 * B2 * Y)	-0.00347	-0.00352	-0.00351
	(!A1 * !A2 * !B2 * Y)	0.00096	0.00096	0.00090
	(!A1 * !A2 * !B2 * Y)	-0.00340	-0.00340	-0.00352
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00583	0.00476	0.00467
	(A2 * B2 * !Y)	-0.00479	-0.00597	-0.00600
	(A1 * !A2 * B2 * !Y)	0.00583	0.00476	0.00467
	(A1 * !A2 * B2 * !Y)	-0.00479	-0.00597	-0.00600
	(!A1 * !A2 * B2 * Y)	0.00144	0.00145	0.00143
	(!A1 * !A2 * B2 * Y)	-0.00684	-0.00699	-0.00695
	(!A1 * !A2 * !B2 * Y)	0.00163	0.00162	0.00150
	(!A1 * !A2 * !B2 * Y)	-0.00679	-0.00681	-0.00701
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.01209	0.01009	0.00995
	(A2 * B2 * !Y)	-0.00923	-0.01144	-0.01142
	(A1 * !A2 * B2 * !Y)	0.01208	0.01009	0.00996
	(A1 * !A2 * B2 * !Y)	-0.00923	-0.01144	-0.01142
	(!A1 * !A2 * B2 * Y)	0.00272	0.00271	0.00270
	(!A1 * !A2 * B2 * Y)	-0.01391	-0.01414	-0.01409
	(!A1 * !A2 * !B2 * Y)	0.00303	0.00302	0.00282
	(!A1 * !A2 * !B2 * Y)	-0.01380	-0.01386	-0.01419

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00259	-0.00261	-0.00259
	(A2 * B2 * !Y)	0.00292	0.00295	0.00293
	(A1 * !A2 * B2 * !Y)	-0.00260	-0.00261	-0.00259
	(A1 * !A2 * B2 * !Y)	0.00293	0.00295	0.00294
	(!A1 * !A2 * B2 * Y)	-0.00085	-0.00085	-0.00086
	(!A1 * !A2 * B2 * Y)	0.00354	0.00357	0.00351
	(!A1 * !A2 * !B2 * Y)	-0.00087	-0.00089	-0.00087
	(!A1 * !A2 * !B2 * Y)	0.00353	0.00360	0.00354
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00465	-0.00466	-0.00464
	(A2 * B2 * !Y)	0.00600	0.00603	0.00600
	(A1 * !A2 * B2 * !Y)	-0.00465	-0.00466	-0.00463
	(A1 * !A2 * B2 * !Y)	0.00600	0.00602	0.00600
	(!A1 * !A2 * B2 * Y)	-0.00139	-0.00141	-0.00143
	(!A1 * !A2 * B2 * Y)	0.00695	0.00704	0.00695
	(!A1 * !A2 * !B2 * Y)	-0.00145	-0.00148	-0.00145
	(!A1 * !A2 * !B2 * Y)	0.00701	0.00716	0.00704
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00989	-0.00995	-0.00989
	(A2 * B2 * !Y)	0.01134	0.01148	0.01143
	(A1 * !A2 * B2 * !Y)	-0.00989	-0.00996	-0.00989
	(A1 * !A2 * B2 * !Y)	0.01134	0.01151	0.01143
	(!A1 * !A2 * B2 * Y)	-0.00262	-0.00265	-0.00269
	(!A1 * !A2 * B2 * Y)	0.01414	0.01428	0.01409
	(!A1 * !A2 * !B2 * Y)	-0.00273	-0.00274	-0.00274
	(!A1 * !A2 * !B2 * Y)	0.01417	0.01424	0.01424

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	0.00268	0.00269	0.00267
	(A2 * B1 * !Y)	-0.00129	-0.00129	-0.00128
	(A1 * !A2 * B1 * !Y)	0.00267	0.00270	0.00267
	(A1 * !A2 * B1 * !Y)	-0.00128	-0.00129	-0.00128
	(!A1 * !A2 * B1 * Y)	0.00071	0.00071	0.00071
	(!A1 * !A2 * B1 * Y)	-0.00346	-0.00348	-0.00347
	(!A1 * !A2 * !B1 * Y)	0.00080	0.00080	0.00074
	(!A1 * !A2 * !B1 * Y)	-0.00338	-0.00340	-0.00350
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	0.00507	0.00514	0.00510
	(A2 * B1 * !Y)	-0.00263	-0.00266	-0.00264
	(A1 * !A2 * B1 * !Y)	0.00507	0.00517	0.00510
	(A1 * !A2 * B1 * !Y)	-0.00262	-0.00268	-0.00263
	(!A1 * !A2 * B1 * Y)	0.00137	0.00137	0.00136
	(!A1 * !A2 * B1 * Y)	-0.00674	-0.00686	-0.00681
	(!A1 * !A2 * !B1 * Y)	0.00154	0.00155	0.00142
	(!A1 * !A2 * !B1 * Y)	-0.00665	-0.00671	-0.00690
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	0.00989	0.01010	0.00994
	(A2 * B1 * !Y)	-0.00514	-0.00525	-0.00516
	(A1 * !A2 * B1 * !Y)	0.00989	0.01010	0.00994
	(A1 * !A2 * B1 * !Y)	-0.00513	-0.00526	-0.00516
	(!A1 * !A2 * B1 * Y)	0.00257	0.00256	0.00254
	(!A1 * !A2 * B1 * Y)	-0.01331	-0.01348	-0.01338
	(!A1 * !A2 * !B1 * Y)	0.00285	0.00287	0.00266
	(!A1 * !A2 * !B1 * Y)	-0.01313	-0.01323	-0.01354

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	-0.00260	-0.00262	-0.00267
	(A2 * B1 * !Y)	0.00133	0.00134	0.00130
	(A1 * !A2 * B1 * !Y)	-0.00261	-0.00261	-0.00267
	(A1 * !A2 * B1 * !Y)	0.00134	0.00134	0.00130
	(!A1 * !A2 * B1 * Y)	-0.00070	-0.00070	-0.00070
	(!A1 * !A2 * B1 * Y)	0.00348	0.00349	0.00347
	(!A1 * !A2 * !B1 * Y)	-0.00071	-0.00073	-0.00071
	(!A1 * !A2 * !B1 * Y)	0.00350	0.00357	0.00351
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	-0.00487	-0.00490	-0.00507
	(A2 * B1 * !Y)	0.00281	0.00281	0.00268
	(A1 * !A2 * B1 * !Y)	-0.00487	-0.00488	-0.00507
	(A1 * !A2 * B1 * !Y)	0.00280	0.00281	0.00268
	(!A1 * !A2 * B1 * Y)	-0.00134	-0.00135	-0.00136
	(!A1 * !A2 * B1 * Y)	0.00685	0.00687	0.00681
	(!A1 * !A2 * !B1 * Y)	-0.00137	-0.00140	-0.00137
	(!A1 * !A2 * !B1 * Y)	0.00690	0.00704	0.00693
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	-0.00960	-0.00964	-0.00991
	(A2 * B1 * !Y)	0.00540	0.00542	0.00523
	(A1 * !A2 * B1 * !Y)	-0.00959	-0.00966	-0.00990
	(A1 * !A2 * B1 * !Y)	0.00540	0.00544	0.00523
	(!A1 * !A2 * B1 * Y)	-0.00249	-0.00250	-0.00253
	(!A1 * !A2 * B1 * Y)	0.01348	0.01352	0.01338
	(!A1 * !A2 * !B1 * Y)	-0.00258	-0.00259	-0.00258
	(!A1 * !A2 * !B1 * Y)	0.01354	0.01361	0.01359

SKY130_FD_SC_HS__O22Ax

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00250	0.00260	0.00268	0.00286	1.50130
sky130_fd_sc_hs__o22a_2	0.00268	0.00273	0.00284	0.00281	2.83830
sky130_fd_sc_hs__o22a_4	0.00523	0.00486	0.00535	0.00507	5.23825

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o22a_1	0.00000	0.35156	0.96807
sky130_fd_sc_hs__o22a_2	0.00000	0.43822	0.97951
sky130_fd_sc_hs__o22a_4	0.00000	0.88238	1.95901

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)	0.07370	0.47604	5.65545
	A2->X (RR)	0.06697	0.45873	5.53824
	B1->X (RR)	0.06700	0.48683	5.81992
	B2->X (RR)	0.06006	0.46455	5.67050
sky130_fd_sc_hs__o22a_2	A1->X (RR)	0.07529	0.39979	5.55607
	A2->X (RR)	0.06832	0.38514	5.44052
	B1->X (RR)	0.06871	0.41539	5.70817
	B2->X (RR)	0.06069	0.39166	5.53416
sky130_fd_sc_hs__o22a_4	A1->X (RR)	0.08036	0.34892	5.62966
	A2->X (RR)	0.07516	0.33233	5.54343
	B1->X (RR)	0.07264	0.35940	5.75225
	B2->X (RR)	0.06865	0.35210	5.72415

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22a_1	A1->X (FF)	0.10675	0.51030	5.30389
	A2->X (FF)	0.09618	0.53047	5.47356
	B1->X (FF)	0.08192	0.44994	5.13458
	B2->X (FF)	0.07151	0.46440	5.33102
sky130_fd_sc_hs__o22a_2	A1->X (FF)	0.12881	0.51390	5.36056
	A2->X (FF)	0.11783	0.53979	5.52959
	B1->X (FF)	0.10358	0.45611	5.19487
	B2->X (FF)	0.09161	0.47591	5.38497
sky130_fd_sc_hs__o22a_4	A1->X (FF)	0.12545	0.47286	5.24951
	A2->X (FF)	0.11039	0.49135	5.40800
	B1->X (FF)	0.10453	0.42201	5.10078
	B2->X (FF)	0.09254	0.45206	5.19915

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.01684	0.02123	0.12512
	A1	0.00602	0.01043	0.11478
	A2	0.01407	0.01918	0.13387
	A2	0.00473	0.00985	0.12503
	B1	0.01361	0.01902	0.12001
	B1	0.00575	0.01120	0.11255
	B2	0.01158	0.01780	0.12996
	B2	0.00476	0.01101	0.12364
sky130_fd_sc_hs__o22a_2	A1	0.02177	0.02630	0.13140
	A1	0.01026	0.01492	0.12091
	A2	0.01883	0.02399	0.13941
	A2	0.00890	0.01417	0.13023
	B1	0.01828	0.02352	0.11899
	B1	0.01019	0.01553	0.11191
	B2	0.01540	0.02126	0.12697
	B2	0.00889	0.01501	0.12119
sky130_fd_sc_hs__o22a_4	A1	0.04272	0.05158	0.25814
	A1	0.02116	0.03017	0.23845
	A2	0.03613	0.04633	0.27287
	A2	0.01814	0.02844	0.25673
	B1	0.03678	0.04743	0.24599
	B1	0.02108	0.03177	0.23196
	B2	0.03027	0.04162	0.25230
	B2	0.01810	0.02955	0.24201

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.00706	0.01106	0.11475
	A1	0.01834	0.02233	0.12434
	A2	0.00702	0.01310	0.12838
	A2	0.01682	0.02285	0.13585
	B1	0.00496	0.00971	0.11711
	B1	0.01282	0.01745	0.12309
	B2	0.00413	0.01138	0.13028
	B2	0.01095	0.01812	0.13551
sky130_fd_sc_hs__o22a_2	A1	0.01377	0.01580	0.12153
	A1	0.02559	0.02754	0.13041
	A2	0.01385	0.01801	0.13730
	A2	0.02408	0.02817	0.14227
	B1	0.01065	0.01333	0.11528
	B1	0.02016	0.02259	0.12199
	B2	0.01062	0.01581	0.12918
	B2	0.01853	0.02353	0.13409
sky130_fd_sc_hs__o22a_4	A1	0.02632	0.03016	0.23757
	A1	0.04892	0.05259	0.25430
	A2	0.02689	0.03533	0.26242
	A2	0.04590	0.05391	0.27717
	B1	0.02179	0.02659	0.23069
	B1	0.04048	0.04514	0.24441
	B2	0.02244	0.03120	0.25285
	B2	0.03760	0.04629	0.26150

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00252	0.00211	0.00206
	(A2 * B2 * X)	-0.00225	-0.00269	-0.00271
	(A2 * B1 * !B2 * X)	0.00252	0.00212	0.00206
	(A2 * B1 * !B2 * X)	-0.00224	-0.00269	-0.00271
	(A2 * !B1 * !B2 * !X)	0.00205	0.00207	0.00205
	(A2 * !B1 * !B2 * !X)	-0.00269	-0.00273	-0.00272
	(!A2 * !B1 * !B2 * !X)	0.00197	0.00198	0.00196
	(!A2 * !B1 * !B2 * !X)	-0.00275	-0.00275	-0.00274
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00288	0.00247	0.00242
	(A2 * B2 * X)	-0.00223	-0.00266	-0.00268
	(A2 * B1 * !B2 * X)	0.00288	0.00248	0.00242
	(A2 * B1 * !B2 * X)	-0.00223	-0.00266	-0.00268
	(A2 * !B1 * !B2 * !X)	0.00241	0.00244	0.00241
	(A2 * !B1 * !B2 * !X)	-0.00265	-0.00270	-0.00269
	(!A2 * !B1 * !B2 * !X)	0.00234	0.00236	0.00233
	(!A2 * !B1 * !B2 * !X)	-0.00271	-0.00272	-0.00270
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00546	0.00464	0.00459
	(A2 * B2 * X)	-0.00426	-0.00519	-0.00521
	(A2 * B1 * !B2 * X)	0.00547	0.00464	0.00460
	(A2 * B1 * !B2 * X)	-0.00426	-0.00519	-0.00520
	(A2 * !B1 * !B2 * !X)	0.00445	0.00448	0.00447
	(A2 * !B1 * !B2 * !X)	-0.00521	-0.00534	-0.00532
	(!A2 * !B1 * !B2 * !X)	0.00426	0.00432	0.00428
	(!A2 * !B1 * !B2 * !X)	-0.00537	-0.00541	-0.00538

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00204	-0.00204	-0.00203
	(A2 * B2 * X)	0.00273	0.00274	0.00273
	(A2 * B1 * !B2 * X)	-0.00203	-0.00204	-0.00203
	(A2 * B1 * !B2 * X)	0.00272	0.00274	0.00273
	(A2 * !B1 * !B2 * !X)	-0.00204	-0.00204	-0.00204
	(A2 * !B1 * !B2 * !X)	0.00271	0.00273	0.00272
	(!A2 * !B1 * !B2 * !X)	-0.00179	-0.00195	-0.00196
	(!A2 * !B1 * !B2 * !X)	0.00281	0.00277	0.00275
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00239	-0.00241	-0.00239
	(A2 * B2 * X)	0.00269	0.00273	0.00270
	(A2 * B1 * !B2 * X)	-0.00239	-0.00240	-0.00239
	(A2 * B1 * !B2 * X)	0.00269	0.00273	0.00270
	(A2 * !B1 * !B2 * !X)	-0.00240	-0.00241	-0.00240
	(A2 * !B1 * !B2 * !X)	0.00268	0.00272	0.00269
	(!A2 * !B1 * !B2 * !X)	-0.00217	-0.00232	-0.00233
	(!A2 * !B1 * !B2 * !X)	0.00276	0.00273	0.00272
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00454	-0.00458	-0.00454
	(A2 * B2 * X)	0.00519	0.00527	0.00524
	(A2 * B1 * !B2 * X)	-0.00453	-0.00458	-0.00454
	(A2 * B1 * !B2 * X)	0.00519	0.00528	0.00524
	(A2 * !B1 * !B2 * !X)	-0.00443	-0.00447	-0.00445
	(A2 * !B1 * !B2 * !X)	0.00529	0.00537	0.00532
	(!A2 * !B1 * !B2 * !X)	-0.00402	-0.00429	-0.00428
	(!A2 * !B1 * !B2 * !X)	0.00550	0.00542	0.00540

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	0.00226	0.00228	0.00227
	(A1 * B2 * X)	-0.00123	-0.00125	-0.00124
	(A1 * B1 * !B2 * X)	0.00226	0.00229	0.00227
	(A1 * B1 * !B2 * X)	-0.00123	-0.00125	-0.00123
	(A1 * !B1 * !B2 * !X)	0.00198	0.00199	0.00199
	(A1 * !B1 * !B2 * !X)	-0.00267	-0.00271	-0.00271
	(!A1 * !B1 * !B2 * !X)	0.00190	0.00191	0.00190
	(!A1 * !B1 * !B2 * !X)	-0.00274	-0.00274	-0.00273
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	0.00248	0.00249	0.00247
	(A1 * B2 * X)	-0.00126	-0.00126	-0.00125
	(A1 * B1 * !B2 * X)	0.00249	0.00249	0.00248
	(A1 * B1 * !B2 * X)	-0.00126	-0.00126	-0.00125
	(A1 * !B1 * !B2 * !X)	0.00231	0.00233	0.00232
	(A1 * !B1 * !B2 * !X)	-0.00257	-0.00260	-0.00260
	(!A1 * !B1 * !B2 * !X)	0.00226	0.00228	0.00225
	(!A1 * !B1 * !B2 * !X)	-0.00263	-0.00264	-0.00262
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	0.00428	0.00432	0.00429
	(A1 * B2 * X)	-0.00247	-0.00249	-0.00246
	(A1 * B1 * !B2 * X)	0.00429	0.00432	0.00429
	(A1 * B1 * !B2 * X)	-0.00247	-0.00248	-0.00246
	(A1 * !B1 * !B2 * !X)	0.00385	0.00386	0.00384
	(A1 * !B1 * !B2 * !X)	-0.00524	-0.00531	-0.00529
	(!A1 * !B1 * !B2 * !X)	0.00368	0.00369	0.00367
	(!A1 * !B1 * !B2 * !X)	-0.00539	-0.00539	-0.00537

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	-0.00220	-0.00221	-0.00226
	(A1 * B2 * X)	0.00130	0.00130	0.00125
	(A1 * B1 * !B2 * X)	-0.00220	-0.00221	-0.00226
	(A1 * B1 * !B2 * X)	0.00130	0.00130	0.00125
	(A1 * !B1 * !B2 * !X)	-0.00197	-0.00199	-0.00198
	(A1 * !B1 * !B2 * !X)	0.00270	0.00271	0.00271
	(!A1 * !B1 * !B2 * !X)	-0.00174	-0.00189	-0.00190
	(!A1 * !B1 * !B2 * !X)	0.00280	0.00276	0.00275
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	-0.00241	-0.00242	-0.00247
	(A1 * B2 * X)	0.00131	0.00131	0.00127
	(A1 * B1 * !B2 * X)	-0.00241	-0.00242	-0.00246
	(A1 * B1 * !B2 * X)	0.00132	0.00132	0.00127
	(A1 * !B1 * !B2 * !X)	-0.00229	-0.00231	-0.00230
	(A1 * !B1 * !B2 * !X)	0.00259	0.00260	0.00260
	(!A1 * !B1 * !B2 * !X)	-0.00207	-0.00222	-0.00224
	(!A1 * !B1 * !B2 * !X)	0.00268	0.00266	0.00264
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	-0.00413	-0.00416	-0.00427
	(A1 * B2 * X)	0.00260	0.00260	0.00250
	(A1 * B1 * !B2 * X)	-0.00414	-0.00415	-0.00427
	(A1 * B1 * !B2 * X)	0.00261	0.00261	0.00250
	(A1 * !B1 * !B2 * !X)	-0.00381	-0.00385	-0.00382
	(A1 * !B1 * !B2 * !X)	0.00528	0.00532	0.00529
	(!A1 * !B1 * !B2 * !X)	-0.00337	-0.00366	-0.00367
	(!A1 * !B1 * !B2 * !X)	0.00550	0.00543	0.00540

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00262	0.00224	0.00218
	(A2 * B2 * X)	-0.00232	-0.00274	-0.00276
	(A1 * !A2 * B2 * X)	0.00262	0.00224	0.00218
	(A1 * !A2 * B2 * X)	-0.00232	-0.00274	-0.00276
	(!A1 * !A2 * B2 * !X)	0.00059	0.00060	0.00059
	(!A1 * !A2 * B2 * !X)	-0.00334	-0.00339	-0.00338
	(!A1 * !A2 * !B2 * !X)	0.00066	0.00066	0.00062
	(!A1 * !A2 * !B2 * !X)	-0.00329	-0.00331	-0.00339
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00298	0.00259	0.00253
	(A2 * B2 * X)	-0.00214	-0.00258	-0.00260
	(A1 * !A2 * B2 * X)	0.00298	0.00259	0.00253
	(A1 * !A2 * B2 * X)	-0.00214	-0.00258	-0.00260
	(!A1 * !A2 * B2 * !X)	0.00072	0.00073	0.00072
	(!A1 * !A2 * B2 * !X)	-0.00326	-0.00331	-0.00329
	(!A1 * !A2 * !B2 * !X)	0.00081	0.00080	0.00075
	(!A1 * !A2 * !B2 * !X)	-0.00319	-0.00319	-0.00331
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00573	0.00488	0.00482
	(A2 * B2 * X)	-0.00421	-0.00519	-0.00518
	(A1 * !A2 * B2 * X)	0.00574	0.00489	0.00482
	(A1 * !A2 * B2 * X)	-0.00421	-0.00519	-0.00518
	(!A1 * !A2 * B2 * !X)	0.00187	0.00189	0.00187
	(!A1 * !A2 * B2 * !X)	-0.00603	-0.00617	-0.00614
	(!A1 * !A2 * !B2 * !X)	0.00199	0.00200	0.00192
	(!A1 * !A2 * !B2 * !X)	-0.00598	-0.00602	-0.00618

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00216	-0.00216	-0.00216
	(A2 * B2 * X)	0.00277	0.00278	0.00278
	(A1 * !A2 * B2 * X)	-0.00216	-0.00217	-0.00216
	(A1 * !A2 * B2 * X)	0.00277	0.00281	0.00278
	(!A1 * !A2 * B2 * !X)	-0.00058	-0.00058	-0.00059
	(!A1 * !A2 * B2 * !X)	0.00340	0.00342	0.00338
	(!A1 * !A2 * !B2 * !X)	-0.00060	-0.00061	-0.00059
	(!A1 * !A2 * !B2 * !X)	0.00342	0.00347	0.00341
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00251	-0.00252	-0.00251
	(A2 * B2 * X)	0.00262	0.00263	0.00262
	(A1 * !A2 * B2 * X)	-0.00251	-0.00252	-0.00250
	(A1 * !A2 * B2 * X)	0.00262	0.00265	0.00262
	(!A1 * !A2 * B2 * !X)	-0.00070	-0.00070	-0.00071
	(!A1 * !A2 * B2 * !X)	0.00332	0.00334	0.00330
	(!A1 * !A2 * !B2 * !X)	-0.00072	-0.00073	-0.00072
	(!A1 * !A2 * !B2 * !X)	0.00333	0.00336	0.00333
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00477	-0.00480	-0.00477
	(A2 * B2 * X)	0.00517	0.00525	0.00521
	(A1 * !A2 * B2 * X)	-0.00477	-0.00480	-0.00476
	(A1 * !A2 * B2 * X)	0.00517	0.00525	0.00521
	(!A1 * !A2 * B2 * !X)	-0.00181	-0.00184	-0.00185
	(!A1 * !A2 * B2 * !X)	0.00619	0.00627	0.00615
	(!A1 * !A2 * !B2 * !X)	-0.00187	-0.00188	-0.00187
	(!A1 * !A2 * !B2 * !X)	0.00618	0.00624	0.00621

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	0.00290	0.00296	0.00291
	(A2 * B1 * X)	-0.00119	-0.00122	-0.00120
	(A1 * !A2 * B1 * X)	0.00290	0.00296	0.00291
	(A1 * !A2 * B1 * X)	-0.00119	-0.00122	-0.00120
	(!A1 * !A2 * B1 * !X)	0.00122	0.00123	0.00121
	(!A1 * !A2 * B1 * !X)	-0.00300	-0.00304	-0.00304
	(!A1 * !A2 * !B1 * !X)	0.00130	0.00129	0.00124
	(!A1 * !A2 * !B1 * !X)	-0.00296	-0.00297	-0.00306
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	0.00255	0.00256	0.00254
	(A2 * B1 * X)	-0.00123	-0.00122	-0.00121
	(A1 * !A2 * B1 * X)	0.00254	0.00256	0.00254
	(A1 * !A2 * B1 * X)	-0.00122	-0.00122	-0.00121
	(!A1 * !A2 * B1 * !X)	0.00069	0.00070	0.00070
	(!A1 * !A2 * B1 * !X)	-0.00308	-0.00312	-0.00312
	(!A1 * !A2 * !B1 * !X)	0.00079	0.00079	0.00073
	(!A1 * !A2 * !B1 * !X)	-0.00304	-0.00304	-0.00314
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	0.00451	0.00455	0.00452
	(A2 * B1 * X)	-0.00245	-0.00247	-0.00244
	(A1 * !A2 * B1 * X)	0.00452	0.00456	0.00453
	(A1 * !A2 * B1 * X)	-0.00244	-0.00247	-0.00244
	(!A1 * !A2 * B1 * !X)	0.00109	0.00111	0.00110
	(!A1 * !A2 * B1 * !X)	-0.00615	-0.00624	-0.00624
	(!A1 * !A2 * !B1 * !X)	0.00123	0.00124	0.00115
	(!A1 * !A2 * !B1 * !X)	-0.00611	-0.00615	-0.00629

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	-0.00285	-0.00288	-0.00291
	(A2 * B1 * X)	0.00125	0.00126	0.00121
	(A1 * !A2 * B1 * X)	-0.00285	-0.00285	-0.00290
	(A1 * !A2 * B1 * X)	0.00125	0.00125	0.00121
	(!A1 * !A2 * B1 * !X)	-0.00118	-0.00119	-0.00120
	(!A1 * !A2 * B1 * !X)	0.00309	0.00311	0.00304
	(!A1 * !A2 * !B1 * !X)	-0.00122	-0.00122	-0.00122
	(!A1 * !A2 * !B1 * !X)	0.00305	0.00307	0.00307
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	-0.00248	-0.00249	-0.00253
	(A2 * B1 * X)	0.00127	0.00127	0.00123
	(A1 * !A2 * B1 * X)	-0.00248	-0.00249	-0.00253
	(A1 * !A2 * B1 * X)	0.00127	0.00128	0.00123
	(!A1 * !A2 * B1 * !X)	-0.00067	-0.00069	-0.00069
	(!A1 * !A2 * B1 * !X)	0.00313	0.00316	0.00312
	(!A1 * !A2 * !B1 * !X)	-0.00069	-0.00072	-0.00070
	(!A1 * !A2 * !B1 * !X)	0.00315	0.00321	0.00316
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	-0.00438	-0.00440	-0.00451
	(A2 * B1 * X)	0.00258	0.00259	0.00248
	(A1 * !A2 * B1 * X)	-0.00438	-0.00440	-0.00450
	(A1 * !A2 * B1 * X)	0.00259	0.00259	0.00248
	(!A1 * !A2 * B1 * !X)	-0.00105	-0.00106	-0.00107
	(!A1 * !A2 * B1 * !X)	0.00633	0.00635	0.00624
	(!A1 * !A2 * !B1 * !X)	-0.00110	-0.00113	-0.00110
	(!A1 * !A2 * !B1 * !X)	0.00630	0.00641	0.00633

SKY130_FD_SC_HS__O2BB2AIx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00233	0.00253	0.00284	0.00300	0.75657
sky130_fd_sc_hs__o2bb2ai_2	0.00527	0.00466	0.00578	0.00538	1.45555
sky130_fd_sc_hs__o2bb2ai_4	0.01100	0.01105	0.01083	0.01108	2.44573

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2bb2ai_1	0.00000	0.74723	2.31223
sky130_fd_sc_hs__o2bb2ai_2	0.00000	1.49445	4.62442
sky130_fd_sc_hs__o2bb2ai_4	0.00000	1.06044	1.56703

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)	0.05348	0.30884	2.55851
	A2_N->Y (RR)	0.05104	0.31270	2.63368
	B1->Y (FR)	0.06711	0.78297	9.59309
	B2->Y (FR)	0.05689	0.81111	10.14340
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (RR)	0.04831	0.23805	2.46609
	A2_N->Y (RR)	0.04457	0.23857	2.54240
	B1->Y (FR)	0.05960	0.65398	9.44557
	B2->Y (FR)	0.04691	0.67885	9.96788
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (RR)	0.05331	0.19484	2.29539
	A2_N->Y (RR)	0.04949	0.21113	2.50880
	B1->Y (FR)	0.06572	0.57278	9.21083
	B2->Y (FR)	0.05154	0.61462	9.95197

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)	0.07587	0.46030	4.56267
	A2_N->Y (FF)	0.06707	0.43618	4.42736
	B1->Y (RF)	0.03170	0.32846	3.86917
	B2->Y (RF)	0.02526	0.31589	3.80400
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (FF)	0.06267	0.40135	4.53195
	A2_N->Y (FF)	0.05893	0.39291	4.53037
	B1->Y (RF)	0.02736	0.25850	3.70212
	B2->Y (RF)	0.02275	0.25123	3.71572
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (FF)	0.07144	0.38175	4.58176
	A2_N->Y (FF)	0.06163	0.35125	4.32901
	B1->Y (RF)	0.03208	0.21413	3.54361
	B2->Y (RF)	0.02327	0.19756	3.43405

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	0.01198	0.01962	0.16578
	A1_N	0.00716	0.01484	0.16074
	A2_N	0.01072	0.01797	0.14629
	A2_N	0.00718	0.01445	0.14332
	B1	0.00072	0.00215	0.03606
	B1	0.00886	0.01030	0.04426
	B2	0.00066	0.00356	0.04748
	B2	0.00732	0.01021	0.05410
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.02233	0.03614	0.30099
	A1_N	0.01165	0.02547	0.29020
	A2_N	0.01903	0.03458	0.30773
	A2_N	0.01219	0.02782	0.30170
	B1	0.00094	0.00436	0.07315
	B1	0.01722	0.02071	0.08965
	B2	0.00091	0.00707	0.09029
	B2	0.01314	0.01898	0.10248
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.04894	0.07649	0.63765
	A1_N	0.02540	0.05301	0.61369
	A2_N	0.04183	0.07085	0.58491
	A2_N	0.02530	0.05435	0.56976
	B1	0.00120	0.00769	0.12993
	B1	0.03373	0.04026	0.16316
	B2	0.00085	0.01297	0.16575
	B2	0.02649	0.03864	0.19136

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	A1_N	0.00936	0.01863	0.16492
	A1_N	0.01245	0.02185	0.16768
	A2_N	0.00865	0.01748	0.16204
	A2_N	0.01058	0.01969	0.16326
	B1	0.01159	0.01287	0.04053
	B1	0.00342	0.00456	0.03134
	B2	0.00857	0.00996	0.03461
	B2	0.00185	0.00319	0.02789
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.01713	0.03456	0.31714
	A1_N	0.02417	0.04186	0.32402
	A2_N	0.01617	0.03294	0.30466
	A2_N	0.02320	0.03992	0.31112
	B1	0.02265	0.02533	0.07871
	B1	0.00634	0.00894	0.06236
	B2	0.01553	0.01878	0.06868
	B2	0.00318	0.00637	0.05566
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.03739	0.07101	0.63440
	A1_N	0.05275	0.08698	0.64904
	A2_N	0.03340	0.06570	0.59952
	A2_N	0.04217	0.07500	0.60858
	B1	0.04695	0.05275	0.15970
	B1	0.01438	0.01998	0.12516
	B2	0.03261	0.03952	0.13618
	B2	0.00666	0.01354	0.10899

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)	0.01042	0.01791	0.16321
	(A2_N * !B1 * !B2 * Y)	0.00349	0.01094	0.15625
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00201	0.00203	0.00202
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00231	-0.00232	-0.00231
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.02035	0.03499	0.32012
	(A2_N * !B1 * !B2 * Y)	0.00547	0.02006	0.30527
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00393	0.00397	0.00394
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00550	-0.00553	-0.00551
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.04458	0.07179	0.63104
	(A2_N * !B1 * !B2 * Y)	0.01224	0.03928	0.59859
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00891	0.00900	0.00896
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.01188	-0.01194	-0.01192

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)	0.00059	0.00962	0.15495
	(A2_N * !B1 * !B2 * Y)	0.00757	0.01662	0.16190
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00189	-0.00202	-0.00202
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00244	0.00234	0.00233
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.00087	0.01871	0.30347
	(A2_N * !B1 * !B2 * Y)	0.01584	0.03370	0.31833
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00367	-0.00396	-0.00394
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00573	0.00558	0.00553
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.00242	0.03561	0.59564
	(A2_N * !B1 * !B2 * Y)	0.03506	0.06824	0.62806
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00820	-0.00900	-0.00896
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.01245	0.01201	0.01197

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)	0.00923	0.01726	0.16427
	(A1_N * !B1 * !B2 * Y)	0.00349	0.01148	0.15852
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00066	0.00066	0.00064
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00283	-0.00283	-0.00286
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	0.01724	0.03241	0.30285
	(A1_N * !B1 * !B2 * Y)	0.00610	0.02121	0.29168
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00124	0.00124	0.00120
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00532	-0.00534	-0.00542
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	0.03794	0.06714	0.60038
	(A1_N * !B1 * !B2 * Y)	0.01209	0.04132	0.57450
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00284	0.00284	0.00271
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.01371	-0.01374	-0.01391

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)	0.00005	0.00918	0.15595
	(A1_N * !B1 * !B2 * Y)	0.00583	0.01497	0.16172
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00063	-0.00064	-0.00063
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00287	0.00292	0.00287
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	-0.00031	0.01615	0.28649
	(A1_N * !B1 * !B2 * Y)	0.01094	0.02736	0.29770
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00117	-0.00120	-0.00117
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00541	0.00552	0.00544
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	-0.00143	0.03154	0.56611
	(A1_N * !B1 * !B2 * Y)	0.02457	0.05763	0.59208
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00266	-0.00270	-0.00264
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.01396	0.01419	0.01395

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)	0.00243	0.00245	0.00242
	(A1_N * A2_N * B2 * Y)	-0.00291	-0.00296	-0.00295
	(A1_N * A2_N * !B2 * Y)	0.00236	0.00238	0.00237
	(A1_N * A2_N * !B2 * Y)	-0.00296	-0.00297	-0.00296
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00288	0.00247	0.00242
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00248	-0.00294	-0.00296
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	0.00482	0.00487	0.00482
	(A1_N * A2_N * B2 * Y)	-0.00592	-0.00604	-0.00602
	(A1_N * A2_N * !B2 * Y)	0.00469	0.00473	0.00471
	(A1_N * A2_N * !B2 * Y)	-0.00604	-0.00607	-0.00606
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00584	0.00496	0.00485
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00496	-0.00596	-0.00599
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	0.00929	0.00936	0.00927
	(A1_N * A2_N * B2 * Y)	-0.01162	-0.01188	-0.01179
	(A1_N * A2_N * !B2 * Y)	0.00896	0.00907	0.00899
	(A1_N * A2_N * !B2 * Y)	-0.01191	-0.01198	-0.01192
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.01156	0.00946	0.00928
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00949	-0.01179	-0.01182

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)	-0.00238	-0.00238	-0.00238
	(A1_N * A2_N * B2 * Y)	0.00299	0.00300	0.00298
	(A1_N * A2_N * !B2 * Y)	-0.00219	-0.00232	-0.00233
	(A1_N * A2_N * !B2 * Y)	0.00306	0.00305	0.00301
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00240	-0.00241	-0.00240
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00296	0.00300	0.00297
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	-0.00472	-0.00475	-0.00473
	(A1_N * A2_N * B2 * Y)	0.00606	0.00613	0.00609
	(A1_N * A2_N * !B2 * Y)	-0.00440	-0.00464	-0.00465
	(A1_N * A2_N * !B2 * Y)	0.00624	0.00621	0.00616
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00481	-0.00484	-0.00481
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00597	0.00603	0.00601
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	-0.00921	-0.00927	-0.00923
	(A1_N * A2_N * B2 * Y)	0.01176	0.01188	0.01179
	(A1_N * A2_N * !B2 * Y)	-0.00840	-0.00905	-0.00899
	(A1_N * A2_N * !B2 * Y)	0.01225	0.01208	0.01199
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00920	-0.00923	-0.00918
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.01178	0.01186	0.01185

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)	0.00250	0.00254	0.00252
	(A1_N * A2_N * B1 * Y)	-0.00291	-0.00299	-0.00297
	(A1_N * A2_N * !B1 * Y)	0.00246	0.00247	0.00246
	(A1_N * A2_N * !B1 * Y)	-0.00299	-0.00300	-0.00299
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00268	0.00269	0.00267
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00147	-0.00147	-0.00146
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	0.00450	0.00455	0.00451
	(A1_N * A2_N * B1 * Y)	-0.00553	-0.00566	-0.00565
	(A1_N * A2_N * !B1 * Y)	0.00439	0.00442	0.00440
	(A1_N * A2_N * !B1 * Y)	-0.00568	-0.00570	-0.00569
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00487	0.00489	0.00485
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00259	-0.00259	-0.00257
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	0.00926	0.00936	0.00927
	(A1_N * A2_N * B1 * Y)	-0.01167	-0.01195	-0.01187
	(A1_N * A2_N * !B1 * Y)	0.00895	0.00906	0.00900
	(A1_N * A2_N * !B1 * Y)	-0.01198	-0.01206	-0.01201
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.01039	0.01055	0.01046
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00525	-0.00535	-0.00529

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)	-0.00248	-0.00249	-0.00247
	(A1_N * A2_N * B1 * Y)	0.00300	0.00302	0.00300
	(A1_N * A2_N * !B1 * Y)	-0.00227	-0.00241	-0.00242
	(A1_N * A2_N * !B1 * Y)	0.00308	0.00307	0.00304
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00259	-0.00261	-0.00266
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00151	0.00153	0.00148
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	-0.00440	-0.00443	-0.00442
	(A1_N * A2_N * B1 * Y)	0.00565	0.00571	0.00570
	(A1_N * A2_N * !B1 * Y)	-0.00411	-0.00433	-0.00434
	(A1_N * A2_N * !B1 * Y)	0.00583	0.00582	0.00579
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00467	-0.00471	-0.00482
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00270	0.00273	0.00261
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	-0.00919	-0.00929	-0.00923
	(A1_N * A2_N * B1 * Y)	0.01180	0.01195	0.01187
	(A1_N * A2_N * !B1 * Y)	-0.00840	-0.00902	-0.00900
	(A1_N * A2_N * !B1 * Y)	0.01233	0.01216	0.01207
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.01005	-0.01010	-0.01040
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00559	0.00562	0.00538

SKY130_FD_SC_HS__O2BB2Ax

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00233	0.00247	0.00251	0.00271	1.43350
sky130_fd_sc_hs__o2bb2a_2	0.00234	0.00256	0.00269	0.00278	2.63347
sky130_fd_sc_hs__o2bb2a_4	0.00233	0.00249	0.00504	0.00495	5.29337

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2bb2a_1	0.00000	1.45272	2.50698
sky130_fd_sc_hs__o2bb2a_2	0.00000	1.16220	2.69253
sky130_fd_sc_hs__o2bb2a_4	0.00000	2.50201	3.31921

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)	0.10678	0.67412	8.26890
	A2_N->X (FR)	0.09837	0.64991	8.04831
	B1->X (RR)	0.06638	0.45997	5.57286
	B2->X (RR)	0.05824	0.44053	5.43541
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (FR)	0.11682	0.61007	8.34426
	A2_N->X (FR)	0.10647	0.58474	8.12361
	B1->X (RR)	0.06915	0.38553	5.45330
	B2->X (RR)	0.06042	0.36877	5.31708
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (FR)	0.13714	0.57091	8.40231
	A2_N->X (FR)	0.12755	0.54797	8.19124
	B1->X (RR)	0.07970	0.33592	5.63281
	B2->X (RR)	0.06780	0.31336	5.48964

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)	0.08352	0.26300	1.95178
	A2_N->X (RF)	0.08128	0.26954	2.12075
	B1->X (FF)	0.10069	0.48260	5.13888
	B2->X (FF)	0.09105	0.50002	5.28841
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (RF)	0.09388	0.23645	1.71850
	A2_N->X (RF)	0.09179	0.24050	1.83901
	B1->X (FF)	0.12308	0.48695	5.09007
	B2->X (FF)	0.11294	0.51129	5.24845
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (RF)	0.10594	0.25003	2.05763
	A2_N->X (RF)	0.10376	0.25629	2.17050
	B1->X (FF)	0.12763	0.46023	5.23043
	B2->X (FF)	0.11153	0.48019	5.39461

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	0.01361	0.02342	0.17857
	A1_N	0.01682	0.02698	0.18453
	A2_N	0.01289	0.02247	0.17678
	A2_N	0.01476	0.02456	0.18100
	B1	0.01551	0.02004	0.12338
	B1	0.00796	0.01251	0.11632
	B2	0.01294	0.01821	0.13243
	B2	0.00661	0.01189	0.12646
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.01576	0.02572	0.18497
	A1_N	0.02204	0.03200	0.19127
	A2_N	0.01775	0.02708	0.17572
	A2_N	0.01970	0.02949	0.18039
	B1	0.02085	0.02535	0.13065
	B1	0.01280	0.01742	0.12356
	B2	0.01809	0.02331	0.13914
	B2	0.01135	0.01659	0.13311
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.02964	0.04050	0.21250
	A1_N	0.03548	0.04634	0.23035
	A2_N	0.03650	0.04580	0.19980
	A2_N	0.03316	0.04356	0.20248
	B1	0.04170	0.04906	0.24332
	B1	0.02645	0.03390	0.22974
	B2	0.03400	0.04347	0.25530
	B2	0.02205	0.03157	0.24520

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	A1_N	0.01700	0.02473	0.17998
	A1_N	0.01233	0.01987	0.17277
	A2_N	0.01557	0.02403	0.18444
	A2_N	0.01074	0.01916	0.17941
	B1	0.00671	0.01125	0.11366
	B1	0.01419	0.01864	0.12113
	B2	0.00665	0.01314	0.12941
	B2	0.01290	0.01934	0.13324
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.02251	0.02908	0.17234
	A1_N	0.01761	0.02414	0.16735
	A2_N	0.02121	0.02766	0.17621
	A2_N	0.01759	0.02404	0.17201
	B1	0.01284	0.01559	0.11963
	B1	0.02081	0.02352	0.12755
	B2	0.01286	0.01793	0.13328
	B2	0.01953	0.02434	0.13980
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.03616	0.04181	0.19918
	A1_N	0.03339	0.03897	0.19569
	A2_N	0.03382	0.04044	0.20952
	A2_N	0.03339	0.03900	0.20241
	B1	0.02552	0.02844	0.22378
	B1	0.04070	0.04355	0.23488
	B2	0.02557	0.03423	0.24902
	B2	0.03745	0.04476	0.25539

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)	0.00937	0.01709	0.16329
	(A2_N * !B1 * !B2 * !X)	0.00249	0.01019	0.15640
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00212	0.00213	0.00212
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00224	-0.00225	-0.00224
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00993	0.01726	0.15859
	(A2_N * !B1 * !B2 * !X)	0.00286	0.01016	0.15150
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00223	0.00226	0.00224
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00220	-0.00221	-0.00220
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.01188	0.01859	0.15832
	(A2_N * !B1 * !B2 * !X)	0.00479	0.01151	0.15123
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00223	0.00226	0.00224
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00214	-0.00216	-0.00215

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)	0.00059	0.00986	0.15608
	(A2_N * !B1 * !B2 * !X)	0.00752	0.01677	0.16296
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00198	-0.00211	-0.00211
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00239	0.00229	0.00227
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00060	0.00944	0.15073
	(A2_N * !B1 * !B2 * !X)	0.00773	0.01658	0.15780
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00208	-0.00222	-0.00223
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00232	0.00224	0.00222
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.00141	0.00973	0.14966
	(A2_N * !B1 * !B2 * !X)	0.00855	0.01688	0.15675
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00205	-0.00220	-0.00220
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00231	0.00221	0.00220

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)	0.00824	0.01650	0.16367
	(A1_N * !B1 * !B2 * !X)	0.00268	0.01092	0.15810
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00062	0.00062	0.00061
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00279	-0.00279	-0.00282
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	0.00893	0.01671	0.15909
	(A1_N * !B1 * !B2 * !X)	0.00308	0.01084	0.15323
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00073	0.00073	0.00072
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00284	-0.00284	-0.00287
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.01080	0.01792	0.15891
	(A1_N * !B1 * !B2 * !X)	0.00504	0.01213	0.15314
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00067	0.00067	0.00066
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00276	-0.00276	-0.00279

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)	-0.00008	0.00938	0.15624
	(A1_N * !B1 * !B2 * !X)	0.00552	0.01499	0.16183
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00057	-0.00059	-0.00057
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00284	0.00289	0.00284
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	-0.00014	0.00883	0.15094
	(A1_N * !B1 * !B2 * !X)	0.00573	0.01473	0.15682
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00070	-0.00071	-0.00070
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00288	0.00293	0.00288
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.00081	0.00908	0.14990
	(A1_N * !B1 * !B2 * !X)	0.00662	0.01490	0.15570
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00060	-0.00062	-0.00060
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00283	0.00288	0.00283

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)	0.00212	0.00214	0.00212
	(A1_N * A2_N * B2 * !X)	-0.00260	-0.00264	-0.00263
	(A1_N * A2_N * !B2 * !X)	0.00207	0.00208	0.00207
	(A1_N * A2_N * !B2 * !X)	-0.00264	-0.00265	-0.00264
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00258	0.00218	0.00212
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00217	-0.00261	-0.00263
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	0.00240	0.00242	0.00240
	(A1_N * A2_N * B2 * !X)	-0.00266	-0.00271	-0.00270
	(A1_N * A2_N * !B2 * !X)	0.00234	0.00235	0.00235
	(A1_N * A2_N * !B2 * !X)	-0.00271	-0.00271	-0.00271
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00284	0.00245	0.00238
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00225	-0.00269	-0.00271
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	0.00425	0.00429	0.00426
	(A1_N * A2_N * B2 * !X)	-0.00529	-0.00543	-0.00542
	(A1_N * A2_N * !B2 * !X)	0.00414	0.00415	0.00414
	(A1_N * A2_N * !B2 * !X)	-0.00545	-0.00546	-0.00546
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00544	0.00439	0.00427
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00418	-0.00534	-0.00540

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)	-0.00207	-0.00208	-0.00207
	(A1_N * A2_N * B2 * !X)	0.00267	0.00269	0.00267
	(A1_N * A2_N * !B2 * !X)	-0.00190	-0.00202	-0.00203
	(A1_N * A2_N * !B2 * !X)	0.00275	0.00272	0.00270
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00208	-0.00208	-0.00207
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00266	0.00267	0.00267
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	-0.00235	-0.00235	-0.00234
	(A1_N * A2_N * B2 * !X)	0.00274	0.00275	0.00274
	(A1_N * A2_N * !B2 * !X)	-0.00217	-0.00229	-0.00230
	(A1_N * A2_N * !B2 * !X)	0.00281	0.00280	0.00276
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00235	-0.00237	-0.00235
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00273	0.00276	0.00274
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	-0.00419	-0.00422	-0.00419
	(A1_N * A2_N * B2 * !X)	0.00543	0.00549	0.00545
	(A1_N * A2_N * !B2 * !X)	-0.00382	-0.00409	-0.00411
	(A1_N * A2_N * !B2 * !X)	0.00572	0.00557	0.00553
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00418	-0.00421	-0.00418
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00542	0.00550	0.00546

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)	0.00226	0.00228	0.00226
	(A1_N * A2_N * B1 * !X)	-0.00264	-0.00269	-0.00268
	(A1_N * A2_N * !B1 * !X)	0.00220	0.00223	0.00220
	(A1_N * A2_N * !B1 * !X)	-0.00270	-0.00271	-0.00270
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00239	0.00241	0.00240
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00134	-0.00136	-0.00134
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	0.00256	0.00259	0.00256
	(A1_N * A2_N * B1 * !X)	-0.00258	-0.00263	-0.00262
	(A1_N * A2_N * !B1 * !X)	0.00252	0.00253	0.00252
	(A1_N * A2_N * !B1 * !X)	-0.00264	-0.00264	-0.00264
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00255	0.00256	0.00254
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00146	-0.00146	-0.00145
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	0.00411	0.00414	0.00413
	(A1_N * A2_N * B1 * !X)	-0.00524	-0.00536	-0.00539
	(A1_N * A2_N * !B1 * !X)	0.00403	0.00402	0.00404
	(A1_N * A2_N * !B1 * !X)	-0.00541	-0.00541	-0.00542
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00451	0.00453	0.00450
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00264	-0.00263	-0.00261

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)	-0.00222	-0.00222	-0.00221
	(A1_N * A2_N * B1 * !X)	0.00271	0.00272	0.00271
	(A1_N * A2_N * !B1 * !X)	-0.00204	-0.00216	-0.00217
	(A1_N * A2_N * !B1 * !X)	0.00283	0.00277	0.00275
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00232	-0.00233	-0.00237
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00142	0.00142	0.00138
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	-0.00250	-0.00253	-0.00251
	(A1_N * A2_N * B1 * !X)	0.00264	0.00267	0.00265
	(A1_N * A2_N * !B1 * !X)	-0.00234	-0.00246	-0.00246
	(A1_N * A2_N * !B1 * !X)	0.00272	0.00272	0.00269
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00247	-0.00248	-0.00252
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00151	0.00151	0.00147
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	-0.00405	-0.00408	-0.00406
	(A1_N * A2_N * B1 * !X)	0.00537	0.00540	0.00539
	(A1_N * A2_N * !B1 * !X)	-0.00371	-0.00398	-0.00398
	(A1_N * A2_N * !B1 * !X)	0.00560	0.00552	0.00549
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00423	-0.00428	-0.00443
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00279	0.00283	0.00269

SKY130_FD_SC_HS__O311AIx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00277	0.00291	0.00283	0.00293	0.00299	0.51285
sky130_fd_sc_hs__o311ai_2	0.00542	0.00555	0.00561	0.00561	0.00569	0.85736
sky130_fd_sc_hs__o311ai_4	0.01068	0.01072	0.01118	0.00846	0.00800	1.61883

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311ai_1	0.00000	0.10066	0.57047
sky130_fd_sc_hs__o311ai_2	0.00000	0.20131	1.14093
sky130_fd_sc_hs__o311ai_4	0.00000	0.23624	1.52124

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)	0.14246	0.89961	9.13176
	A2->Y (FR)	0.13426	0.93870	9.82089
	A3->Y (FR)	0.10935	0.93642	10.10980
	B1->Y (FR)	0.03412	0.50276	5.90020
	C1->Y (FR)	0.02804	0.49510	5.87391
sky130_fd_sc_hs__o311ai_2	A1->Y (FR)	0.16052	0.79350	8.87199
	A2->Y (FR)	0.14626	0.82251	9.54428
	A3->Y (FR)	0.11972	0.83575	10.05060
	B1->Y (FR)	0.03424	0.44430	5.67393
	C1->Y (FR)	0.02701	0.43507	5.66131
sky130_fd_sc_hs__o311ai_4	A1->Y (FR)	0.14259	0.65874	8.62164
	A2->Y (FR)	0.13254	0.70797	9.53904
	A3->Y (FR)	0.10090	0.70954	9.91964
	B1->Y (FR)	0.04648	0.52500	7.58314
	C1->Y (FR)	0.03203	0.51731	7.67768

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311ai_1	A1->Y (RF)	0.04666	0.30270	2.79930
	A2->Y (RF)	0.04644	0.30484	2.87423
	A3->Y (RF)	0.03671	0.28913	2.81636
	B1->Y (RF)	0.03982	0.35779	3.67800
	C1->Y (RF)	0.03428	0.38310	4.03554
sky130_fd_sc_hs__o311ai_2	A1->Y (RF)	0.05522	0.26755	2.71031
	A2->Y (RF)	0.05089	0.25408	2.66062
	A3->Y (RF)	0.04103	0.23900	2.60331
	B1->Y (RF)	0.04862	0.32188	3.57608
	C1->Y (RF)	0.04138	0.37791	4.36611
sky130_fd_sc_hs__o311ai_4	A1->Y (RF)	0.05832	0.21689	2.64591
	A2->Y (RF)	0.05185	0.20455	2.59942
	A3->Y (RF)	0.03777	0.18573	2.52505
	B1->Y (RF)	0.05177	0.31817	4.17938
	C1->Y (RF)	0.04098	0.34532	4.71938

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	A1	0.00191	0.00261	0.03960
	A1	0.01586	0.01659	0.05366
	A2	0.00205	0.00292	0.03425
	A2	0.01435	0.01523	0.04651
	A3	0.00199	0.00415	0.04560
	A3	0.01256	0.01472	0.05612
	B1	0.00009	0.00469	0.07281
	B1	0.00852	0.01321	0.08170
	C1	-0.00085	0.00375	0.06891
	C1	0.00625	0.01089	0.07604
sky130_fd_sc_hs__o311ai_2	A1	0.00459	0.00551	0.07197
	A1	0.03294	0.03392	0.10039
	A2	0.00463	0.00630	0.06497
	A2	0.02948	0.03117	0.08984
	A3	0.00456	0.00842	0.07963
	A3	0.02602	0.02985	0.10097
	B1	0.00037	0.00878	0.13448
	B1	0.01715	0.02562	0.15208
	C1	-0.00160	0.00634	0.12181
	C1	0.01212	0.02009	0.13766

sky130_fd_sc_hs__o311ai_4	**A1**	0.00634	0.00879	0.12484
	A1	0.06186	0.06444	0.18042
	A2	0.00671	0.00986	0.10875
	A2	0.05516	0.05837	0.15724
	A3	0.00668	0.01420	0.13792
	A3	0.04873	0.05619	0.17978
	B1	0.00043	0.00916	0.13879
	B1	0.02777	0.03649	0.16606
	C1	-0.00408	0.00571	0.12961
	C1	0.01644	0.02623	0.15093

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311ai_1	**A1**	0.01848	0.01923	0.04969
	A1	0.00439	0.00514	0.03560
	A2	0.01562	0.01648	0.04393
	A2	0.00315	0.00398	0.03147
	A3	0.01222	0.01336	0.03906
	A3	0.00146	0.00256	0.02828
	B1	0.00969	0.01141	0.04930
	B1	0.00116	0.00289	0.04060
	C1	0.00820	0.01045	0.04943
	C1	0.00112	0.00330	0.04221

sky130_fd_sc_hs__o311ai_2	**A1**	0.03809	0.03921	0.09733
	A1	0.00949	0.01059	0.06853
	A2	0.03087	0.03264	0.08603
	A2	0.00558	0.00726	0.06071
	A3	0.02439	0.02654	0.07521
	A3	0.00246	0.00459	0.05306
	B1	0.01884	0.02268	0.09921
	B1	0.00191	0.00571	0.08209
	C1	0.01549	0.01983	0.09047
	C1	0.00180	0.00607	0.07634
sky130_fd_sc_hs__o311ai_4	**A1**	0.06997	0.07355	0.19550
	A1	0.01396	0.01750	0.13886
	A2	0.05778	0.06156	0.16773
	A2	0.00859	0.01225	0.11807
	A3	0.04280	0.04828	0.14675
	A3	-0.00016	0.00529	0.10263
	B1	0.03053	0.03484	0.10918
	B1	0.00291	0.00711	0.08001
	C1	0.02337	0.02873	0.10055
	C1	0.00291	0.00818	0.07953

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)**	0.00238	0.00240	0.00237
	(A2 * B1 * !C1 * Y)	-0.00290	-0.00297	-0.00296
	(A2 * A3 * B1 * C1 * !Y)	0.00238	0.00240	0.00238
	(A2 * A3 * B1 * C1 * !Y)	-0.00289	-0.00297	-0.00296
	(A2 * !B1 * Y)	0.00238	0.00240	0.00237
	(A2 * !B1 * Y)	-0.00290	-0.00297	-0.00296
	(A2 * !A3 * B1 * C1 * !Y)	0.00258	0.00241	0.00238
	(A2 * !A3 * B1 * C1 * !Y)	-0.00268	-0.00297	-0.00296
	(!A2 * A3 * B1 * C1 * !Y)	0.00252	0.00239	0.00238
	(!A2 * A3 * B1 * C1 * !Y)	-0.00256	-0.00288	-0.00289
	(!A2 * A3 * B1 * !C1 * Y)	0.00237	0.00238	0.00237
	(!A2 * A3 * B1 * !C1 * Y)	-0.00266	-0.00289	-0.00288
	(!A2 * A3 * !B1 * Y)	0.00237	0.00238	0.00237
	(!A2 * A3 * !B1 * Y)	-0.00266	-0.00289	-0.00288
	(!A2 * !A3 * B1 * !C1 * Y)	0.00228	0.00229	0.00227
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00299	-0.00300	-0.00298
	(!A2 * !A3 * !B1 * C1 * Y)	0.00229	0.00233	0.00230
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00297	-0.00300	-0.00298
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00226	0.00230	0.00227
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00297	-0.00300	-0.00298

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	0.00463	0.00468	0.00463
	(A2 * B1 * !C1 * Y)	-0.00571	-0.00591	-0.00588
	(A2 * A3 * B1 * C1 * !Y)	0.00468	0.00469	0.00464
	(A2 * A3 * B1 * C1 * !Y)	-0.00565	-0.00589	-0.00588
	(A2 * !B1 * Y)	0.00463	0.00468	0.00463
	(A2 * !B1 * Y)	-0.00571	-0.00590	-0.00588
	(A2 * !A3 * B1 * C1 * !Y)	0.00514	0.00469	0.00465
	(A2 * !A3 * B1 * C1 * !Y)	-0.00519	-0.00590	-0.00588
	(!A2 * A3 * B1 * C1 * !Y)	0.00501	0.00470	0.00465
	(!A2 * A3 * B1 * C1 * !Y)	-0.00497	-0.00578	-0.00573
	(!A2 * A3 * B1 * !C1 * Y)	0.00463	0.00467	0.00463
	(!A2 * A3 * B1 * !C1 * Y)	-0.00525	-0.00578	-0.00572
	(!A2 * A3 * !B1 * Y)	0.00463	0.00467	0.00463
	(!A2 * A3 * !B1 * Y)	-0.00525	-0.00578	-0.00572
	(!A2 * !A3 * B1 * !C1 * Y)	0.00436	0.00437	0.00435
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00596	-0.00598	-0.00597
	(!A2 * !A3 * !B1 * C1 * Y)	0.00438	0.00440	0.00441
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00595	-0.00596	-0.00597
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00438	0.00446	0.00441
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00595	-0.00601	-0.00597

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	0.00931	0.00936	0.00927
	(A2 * B1 * !C1 * Y)	-0.01148	-0.01178	-0.01171
	(A2 * A3 * B1 * C1 * !Y)	0.00934	0.00937	0.00928
	(A2 * A3 * B1 * C1 * !Y)	-0.01142	-0.01177	-0.01172
	(A2 * !B1 * Y)	0.00931	0.00936	0.00927
	(A2 * !B1 * Y)	-0.01148	-0.01177	-0.01171
	(A2 * !A3 * B1 * C1 * !Y)	0.01003	0.00937	0.00928
	(A2 * !A3 * B1 * C1 * !Y)	-0.01052	-0.01178	-0.01174
	(!A2 * A3 * B1 * C1 * !Y)	0.00980	0.00938	0.00929
	(!A2 * A3 * B1 * C1 * !Y)	-0.01016	-0.01155	-0.01146
	(!A2 * A3 * B1 * !C1 * Y)	0.00924	0.00934	0.00927
	(!A2 * A3 * B1 * !C1 * Y)	-0.01055	-0.01142	-0.01144
	(!A2 * A3 * !B1 * Y)	0.00925	0.00934	0.00927
	(!A2 * A3 * !B1 * Y)	-0.01056	-0.01141	-0.01144
	(!A2 * !A3 * B1 * !C1 * Y)	0.00868	0.00879	0.00871
	(!A2 * !A3 * B1 * !C1 * Y)	-0.01190	-0.01198	-0.01192
	(!A2 * !A3 * !B1 * C1 * Y)	0.00882	0.00886	0.00881
	(!A2 * !A3 * !B1 * C1 * Y)	-0.01194	-0.01196	-0.01193
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00885	0.00892	0.00883
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.01194	-0.01199	-0.01193

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)**	-0.00237	-0.00237	-0.00237
	(A2 * B1 * !C1 * Y)	0.00296	0.00297	0.00296
	(A2 * A3 * B1 * C1 * !Y)	-0.00237	-0.00238	-0.00237
	(A2 * A3 * B1 * C1 * !Y)	0.00296	0.00299	0.00296
	(A2 * !B1 * Y)	-0.00237	-0.00237	-0.00237
	(A2 * !B1 * Y)	0.00296	0.00297	0.00296
	(A2 * !A3 * B1 * C1 * !Y)	-0.00237	-0.00237	-0.00237
	(A2 * !A3 * B1 * C1 * !Y)	0.00296	0.00297	0.00296
	(!A2 * A3 * B1 * C1 * !Y)	-0.00236	-0.00237	-0.00236
	(!A2 * A3 * B1 * C1 * !Y)	0.00288	0.00291	0.00289
	(!A2 * A3 * B1 * !C1 * Y)	-0.00237	-0.00238	-0.00237
	(!A2 * A3 * B1 * !C1 * Y)	0.00287	0.00291	0.00288
	(!A2 * A3 * !B1 * Y)	-0.00237	-0.00238	-0.00237
	(!A2 * A3 * !B1 * Y)	0.00289	0.00291	0.00288
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00210	-0.00227	-0.00227
	(!A2 * !A3 * B1 * !C1 * Y)	0.00300	0.00300	0.00299
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00215	-0.00229	-0.00230
	(!A2 * !A3 * !B1 * C1 * Y)	0.00298	0.00301	0.00299
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00216	-0.00229	-0.00227
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00298	0.00301	0.00299

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	-0.00460	-0.00464	-0.00462
	(A2 * B1 * !C1 * Y)	0.00584	0.00591	0.00588
	(A2 * A3 * B1 * C1 * !Y)	-0.00461	-0.00463	-0.00462
	(A2 * A3 * B1 * C1 * !Y)	0.00584	0.00589	0.00588
	(A2 * !B1 * Y)	-0.00461	-0.00463	-0.00462
	(A2 * !B1 * Y)	0.00584	0.00590	0.00588
	(A2 * !A3 * B1 * C1 * !Y)	-0.00461	-0.00463	-0.00462
	(A2 * !A3 * B1 * C1 * !Y)	0.00585	0.00590	0.00588
	(!A2 * A3 * B1 * C1 * !Y)	-0.00460	-0.00464	-0.00462
	(!A2 * A3 * B1 * C1 * !Y)	0.00569	0.00578	0.00573
	(!A2 * A3 * B1 * !C1 * Y)	-0.00460	-0.00465	-0.00462
	(!A2 * A3 * B1 * !C1 * Y)	0.00569	0.00578	0.00572
	(!A2 * A3 * !B1 * Y)	-0.00463	-0.00465	-0.00462
	(!A2 * A3 * !B1 * Y)	0.00573	0.00578	0.00572
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00394	-0.00437	-0.00435
	(!A2 * !A3 * B1 * !C1 * Y)	0.00596	0.00606	0.00598
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00410	-0.00440	-0.00441
	(!A2 * !A3 * !B1 * C1 * Y)	0.00595	0.00602	0.00598
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00411	-0.00446	-0.00441
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00595	0.00602	0.00598

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	-0.00924	-0.00929	-0.00926
	(A2 * B1 * !C1 * Y)	0.01167	0.01178	0.01171
	(A2 * A3 * B1 * C1 * !Y)	-0.00923	-0.00927	-0.00925
	(A2 * A3 * B1 * C1 * !Y)	0.01168	0.01177	0.01172
	(A2 * !B1 * Y)	-0.00924	-0.00928	-0.00926
	(A2 * !B1 * Y)	0.01167	0.01177	0.01171
	(A2 * !A3 * B1 * C1 * !Y)	-0.00923	-0.00926	-0.00925
	(A2 * !A3 * B1 * C1 * !Y)	0.01170	0.01178	0.01174
	(!A2 * A3 * B1 * C1 * !Y)	-0.00922	-0.00929	-0.00923
	(!A2 * A3 * B1 * C1 * !Y)	0.01141	0.01156	0.01146
	(!A2 * A3 * B1 * !C1 * Y)	-0.00923	-0.00924	-0.00925
	(!A2 * A3 * B1 * !C1 * Y)	0.01140	0.01142	0.01144
	(!A2 * A3 * !B1 * Y)	-0.00923	-0.00924	-0.00925
	(!A2 * A3 * !B1 * Y)	0.01140	0.01141	0.01144
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00816	-0.00879	-0.00871
	(!A2 * !A3 * B1 * !C1 * Y)	0.01199	0.01203	0.01195
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00837	-0.00886	-0.00881
	(!A2 * !A3 * !B1 * C1 * Y)	0.01198	0.01204	0.01195
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00838	-0.00892	-0.00883
	(!A2 * !A3 * !B1 * !C1 * Y)	0.01198	0.01204	0.01195

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)**	0.00256	0.00259	0.00246
	(A1 * A3 * B1 * C1 * !Y)	-0.00182	-0.00183	-0.00181
	(A1 * A3 * B1 * !C1 * Y)	0.00227	0.00228	0.00226
	(A1 * A3 * B1 * !C1 * Y)	-0.00207	-0.00209	-0.00207
	(A1 * A3 * !B1 * Y)	0.00227	0.00228	0.00226
	(A1 * A3 * !B1 * Y)	-0.00207	-0.00209	-0.00207
	(A1 * !A3 * B1 * C1 * !Y)	0.00241	0.00242	0.00238
	(A1 * !A3 * B1 * C1 * !Y)	-0.00146	-0.00147	-0.00148
	(A1 * !A3 * B1 * !C1 * Y)	0.00228	0.00228	0.00226
	(A1 * !A3 * B1 * !C1 * Y)	-0.00298	-0.00299	-0.00299
	(A1 * !A3 * !B1 * C1 * Y)	0.00228	0.00228	0.00226
	(A1 * !A3 * !B1 * C1 * Y)	-0.00298	-0.00299	-0.00299
	(A1 * !A3 * !B1 * !C1 * Y)	0.00228	0.00228	0.00226
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00298	-0.00299	-0.00299
	(!A1 * A3 * B1 * C1 * !Y)	0.00304	0.00241	0.00237
	(!A1 * A3 * B1 * C1 * !Y)	-0.00224	-0.00289	-0.00290
	(!A1 * A3 * B1 * !C1 * Y)	0.00227	0.00229	0.00226
	(!A1 * A3 * B1 * !C1 * Y)	-0.00298	-0.00300	-0.00299
	(!A1 * A3 * !B1 * Y)	0.00228	0.00229	0.00226
	(!A1 * A3 * !B1 * Y)	-0.00298	-0.00300	-0.00299
	(!A1 * !A3 * B1 * !C1 * Y)	0.00215	0.00218	0.00216
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00302	-0.00304	-0.00303
	(!A1 * !A3 * !B1 * C1 * Y)	0.00219	0.00219	0.00219
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00303	-0.00304	-0.00303
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00218	0.00218	0.00217
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00303	-0.00303	-0.00303

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00526	0.00527	0.00500
	(A1 * A3 * B1 * C1 * !Y)	-0.00383	-0.00383	-0.00381
	(A1 * A3 * B1 * !C1 * Y)	0.00468	0.00471	0.00467
	(A1 * A3 * B1 * !C1 * Y)	-0.00420	-0.00424	-0.00420
	(A1 * A3 * !B1 * Y)	0.00468	0.00471	0.00467
	(A1 * A3 * !B1 * Y)	-0.00420	-0.00424	-0.00420
	(A1 * !A3 * B1 * C1 * !Y)	0.00481	0.00482	0.00474
	(A1 * !A3 * B1 * C1 * !Y)	-0.00306	-0.00305	-0.00306
	(A1 * !A3 * B1 * !C1 * Y)	0.00470	0.00471	0.00467
	(A1 * !A3 * B1 * !C1 * Y)	-0.00589	-0.00595	-0.00593
	(A1 * !A3 * !B1 * C1 * Y)	0.00470	0.00471	0.00467
	(A1 * !A3 * !B1 * C1 * Y)	-0.00589	-0.00595	-0.00593
	(A1 * !A3 * !B1 * !C1 * Y)	0.00470	0.00472	0.00467
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00589	-0.00596	-0.00594
	(!A1 * A3 * B1 * C1 * !Y)	0.00604	0.00473	0.00469
	(!A1 * A3 * B1 * C1 * !Y)	-0.00467	-0.00590	-0.00601
	(!A1 * A3 * B1 * !C1 * Y)	0.00470	0.00473	0.00467
	(!A1 * A3 * B1 * !C1 * Y)	-0.00595	-0.00603	-0.00600
	(!A1 * A3 * !B1 * Y)	0.00470	0.00473	0.00467
	(!A1 * A3 * !B1 * Y)	-0.00595	-0.00603	-0.00599
	(!A1 * !A3 * B1 * !C1 * Y)	0.00443	0.00446	0.00443
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00607	-0.00609	-0.00606
	(!A1 * !A3 * !B1 * C1 * Y)	0.00449	0.00452	0.00448
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00605	-0.00610	-0.00606
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00448	0.00452	0.00447
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00605	-0.00610	-0.00606

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	0.01013	0.01041	0.00980
	(A1 * A3 * B1 * C1 * !Y)	-0.00733	-0.00734	-0.00730
	(A1 * A3 * B1 * !C1 * Y)	0.00914	0.00928	0.00919
	(A1 * A3 * B1 * !C1 * Y)	-0.00821	-0.00817	-0.00818
	(A1 * A3 * !B1 * Y)	0.00914	0.00928	0.00919
	(A1 * A3 * !B1 * Y)	-0.00821	-0.00817	-0.00818
	(A1 * !A3 * B1 * C1 * !Y)	0.00938	0.00950	0.00935
	(A1 * !A3 * B1 * C1 * !Y)	-0.00580	-0.00590	-0.00591
	(A1 * !A3 * B1 * !C1 * Y)	0.00916	0.00925	0.00916
	(A1 * !A3 * B1 * !C1 * Y)	-0.01157	-0.01170	-0.01167
	(A1 * !A3 * !B1 * C1 * Y)	0.00914	0.00925	0.00916
	(A1 * !A3 * !B1 * C1 * Y)	-0.01155	-0.01170	-0.01167
	(A1 * !A3 * !B1 * !C1 * Y)	0.00914	0.00924	0.00916
	(A1 * !A3 * !B1 * !C1 * Y)	-0.01155	-0.01173	-0.01169
	(!A1 * A3 * B1 * C1 * !Y)	0.01229	0.00946	0.00929
	(!A1 * A3 * B1 * C1 * !Y)	-0.00864	-0.01166	-0.01172
	(!A1 * A3 * B1 * !C1 * Y)	0.00917	0.00924	0.00916
	(!A1 * A3 * B1 * !C1 * Y)	-0.01164	-0.01184	-0.01178
	(!A1 * A3 * !B1 * Y)	0.00917	0.00924	0.00916
	(!A1 * A3 * !B1 * Y)	-0.01164	-0.01184	-0.01180
	(!A1 * !A3 * B1 * !C1 * Y)	0.00869	0.00872	0.00868
	(!A1 * !A3 * B1 * !C1 * Y)	-0.01194	-0.01197	-0.01195
	(!A1 * !A3 * !B1 * C1 * Y)	0.00872	0.00878	0.00877
	(!A1 * !A3 * !B1 * C1 * Y)	-0.01190	-0.01196	-0.01195
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00874	0.00880	0.00879
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.01190	-0.01194	-0.01195

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)**	-0.00236	-0.00237	-0.00235
	(A1 * A3 * B1 * C1 * !Y)	0.00182	0.00183	0.00181
	(A1 * A3 * B1 * !C1 * Y)	-0.00225	-0.00227	-0.00226
	(A1 * A3 * B1 * !C1 * Y)	0.00207	0.00209	0.00207
	(A1 * A3 * !B1 * Y)	-0.00225	-0.00227	-0.00226
	(A1 * A3 * !B1 * Y)	0.00207	0.00209	0.00207
	(A1 * !A3 * B1 * C1 * !Y)	-0.00235	-0.00235	-0.00233
	(A1 * !A3 * B1 * C1 * !Y)	0.00151	0.00152	0.00152
	(A1 * !A3 * B1 * !C1 * Y)	-0.00225	-0.00226	-0.00226
	(A1 * !A3 * B1 * !C1 * Y)	0.00298	0.00299	0.00299
	(A1 * !A3 * !B1 * C1 * Y)	-0.00225	-0.00226	-0.00226
	(A1 * !A3 * !B1 * C1 * Y)	0.00298	0.00299	0.00299
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00225	-0.00226	-0.00226
	(A1 * !A3 * !B1 * !C1 * Y)	0.00298	0.00299	0.00299
	(!A1 * A3 * B1 * C1 * !Y)	-0.00234	-0.00235	-0.00234
	(!A1 * A3 * B1 * C1 * !Y)	0.00289	0.00291	0.00291
	(!A1 * A3 * B1 * !C1 * Y)	-0.00225	-0.00226	-0.00226
	(!A1 * A3 * B1 * !C1 * Y)	0.00299	0.00300	0.00299
	(!A1 * A3 * !B1 * Y)	-0.00226	-0.00226	-0.00226
	(!A1 * A3 * !B1 * Y)	0.00300	0.00300	0.00299
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00196	-0.00215	-0.00216
	(!A1 * !A3 * B1 * !C1 * Y)	0.00303	0.00306	0.00303
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00205	-0.00217	-0.00219
	(!A1 * !A3 * !B1 * C1 * Y)	0.00304	0.00305	0.00303
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00205	-0.00217	-0.00217
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00304	0.00305	0.00303

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00475	-0.00475	-0.00474
	(A1 * A3 * B1 * C1 * !Y)	0.00383	0.00383	0.00381
	(A1 * A3 * B1 * !C1 * Y)	-0.00465	-0.00468	-0.00466
	(A1 * A3 * B1 * !C1 * Y)	0.00420	0.00424	0.00420
	(A1 * A3 * !B1 * Y)	-0.00465	-0.00468	-0.00466
	(A1 * A3 * !B1 * Y)	0.00420	0.00424	0.00420
	(A1 * !A3 * B1 * C1 * !Y)	-0.00464	-0.00468	-0.00465
	(A1 * !A3 * B1 * C1 * !Y)	0.00311	0.00316	0.00316
	(A1 * !A3 * B1 * !C1 * Y)	-0.00465	-0.00468	-0.00466
	(A1 * !A3 * B1 * !C1 * Y)	0.00591	0.00595	0.00593
	(A1 * !A3 * !B1 * C1 * Y)	-0.00467	-0.00467	-0.00466
	(A1 * !A3 * !B1 * C1 * Y)	0.00594	0.00595	0.00593
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00465	-0.00467	-0.00466
	(A1 * !A3 * !B1 * !C1 * Y)	0.00593	0.00596	0.00594
	(!A1 * A3 * B1 * C1 * !Y)	-0.00466	-0.00467	-0.00464
	(!A1 * A3 * B1 * C1 * !Y)	0.00600	0.00604	0.00602
	(!A1 * A3 * B1 * !C1 * Y)	-0.00465	-0.00468	-0.00466
	(!A1 * A3 * B1 * !C1 * Y)	0.00598	0.00603	0.00600
	(!A1 * A3 * !B1 * Y)	-0.00465	-0.00468	-0.00466
	(!A1 * A3 * !B1 * Y)	0.00597	0.00603	0.00599
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00398	-0.00442	-0.00443
	(!A1 * !A3 * B1 * !C1 * Y)	0.00611	0.00611	0.00608
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00412	-0.00448	-0.00448
	(!A1 * !A3 * !B1 * C1 * Y)	0.00605	0.00611	0.00608
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00413	-0.00448	-0.00447
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00605	0.00612	0.00608

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00935	-0.00937	-0.00934
	(A1 * A3 * B1 * C1 * !Y)	0.00733	0.00734	0.00730
	(A1 * A3 * B1 * !C1 * Y)	-0.00914	-0.00915	-0.00916
	(A1 * A3 * B1 * !C1 * Y)	0.00821	0.00817	0.00818
	(A1 * A3 * !B1 * Y)	-0.00914	-0.00915	-0.00916
	(A1 * A3 * !B1 * Y)	0.00821	0.00817	0.00818
	(A1 * !A3 * B1 * C1 * !Y)	-0.00924	-0.00926	-0.00917
	(A1 * !A3 * B1 * C1 * !Y)	0.00602	0.00605	0.00609
	(A1 * !A3 * B1 * !C1 * Y)	-0.00912	-0.00918	-0.00915
	(A1 * !A3 * B1 * !C1 * Y)	0.01161	0.01170	0.01167
	(A1 * !A3 * !B1 * C1 * Y)	-0.00913	-0.00918	-0.00915
	(A1 * !A3 * !B1 * C1 * Y)	0.01163	0.01170	0.01167
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00912	-0.00918	-0.00915
	(A1 * !A3 * !B1 * !C1 * Y)	0.01165	0.01173	0.01169
	(!A1 * A3 * B1 * C1 * !Y)	-0.00921	-0.00926	-0.00920
	(!A1 * A3 * B1 * C1 * !Y)	0.01163	0.01174	0.01173
	(!A1 * A3 * B1 * !C1 * Y)	-0.00914	-0.00917	-0.00914
	(!A1 * A3 * B1 * !C1 * Y)	0.01177	0.01184	0.01178
	(!A1 * A3 * !B1 * Y)	-0.00912	-0.00916	-0.00914
	(!A1 * A3 * !B1 * Y)	0.01176	0.01184	0.01180
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00789	-0.00871	-0.00868
	(!A1 * !A3 * B1 * !C1 * Y)	0.01194	0.01204	0.01197
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00820	-0.00878	-0.00877
	(!A1 * !A3 * !B1 * C1 * Y)	0.01200	0.01204	0.01198
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00822	-0.00880	-0.00879
	(!A1 * !A3 * !B1 * !C1 * Y)	0.01200	0.01204	0.01198

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)**	0.00252	0.00255	0.00253
	(A2 * B1 * C1 * !Y)	-0.00128	-0.00130	-0.00129
	(A2 * B1 * !C1 * Y)	0.00230	0.00233	0.00231
	(A2 * B1 * !C1 * Y)	-0.00278	-0.00286	-0.00286
	(A2 * !B1 * C1 * Y)	0.00230	0.00233	0.00231
	(A2 * !B1 * C1 * Y)	-0.00278	-0.00288	-0.00286
	(A2 * !B1 * !C1 * Y)	0.00230	0.00233	0.00231
	(A2 * !B1 * !C1 * Y)	-0.00278	-0.00288	-0.00287
	(A1 * !A2 * B1 * C1 * !Y)	0.00252	0.00255	0.00253
	(A1 * !A2 * B1 * C1 * !Y)	-0.00128	-0.00129	-0.00128
	(A1 * !A2 * B1 * !C1 * Y)	0.00229	0.00232	0.00231
	(A1 * !A2 * B1 * !C1 * Y)	-0.00250	-0.00277	-0.00276
	(A1 * !A2 * !B1 * C1 * Y)	0.00230	0.00233	0.00231
	(A1 * !A2 * !B1 * C1 * Y)	-0.00251	-0.00278	-0.00277
	(A1 * !A2 * !B1 * !C1 * Y)	0.00230	0.00233	0.00231
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00252	-0.00280	-0.00278
	(!A1 * !A2 * B1 * !C1 * Y)	0.00218	0.00220	0.00218
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00289	-0.00291	-0.00289
	(!A1 * !A2 * !B1 * C1 * Y)	0.00221	0.00221	0.00220
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00290	-0.00290	-0.00289
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00222	0.00222	0.00221
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00290	-0.00290	-0.00289

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	0.00518	0.00524	0.00520
	(A2 * B1 * C1 * !Y)	-0.00264	-0.00267	-0.00265
	(A2 * B1 * !C1 * Y)	0.00460	0.00465	0.00461
	(A2 * B1 * !C1 * Y)	-0.00577	-0.00595	-0.00594
	(A2 * !B1 * C1 * Y)	0.00460	0.00465	0.00461
	(A2 * !B1 * C1 * Y)	-0.00577	-0.00595	-0.00594
	(A2 * !B1 * !C1 * Y)	0.00461	0.00466	0.00461
	(A2 * !B1 * !C1 * Y)	-0.00580	-0.00598	-0.00594
	(A1 * !A2 * B1 * C1 * !Y)	0.00518	0.00525	0.00520
	(A1 * !A2 * B1 * C1 * !Y)	-0.00263	-0.00267	-0.00264
	(A1 * !A2 * B1 * !C1 * Y)	0.00461	0.00461	0.00461
	(A1 * !A2 * B1 * !C1 * Y)	-0.00529	-0.00572	-0.00571
	(A1 * !A2 * !B1 * C1 * Y)	0.00461	0.00462	0.00461
	(A1 * !A2 * !B1 * C1 * Y)	-0.00530	-0.00572	-0.00571
	(A1 * !A2 * !B1 * !C1 * Y)	0.00461	0.00462	0.00461
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00533	-0.00583	-0.00575
	(!A1 * !A2 * B1 * !C1 * Y)	0.00434	0.00435	0.00434
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00601	-0.00602	-0.00601
	(!A1 * !A2 * !B1 * C1 * Y)	0.00436	0.00441	0.00438
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00600	-0.00603	-0.00601
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00437	0.00438	0.00438
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00600	-0.00601	-0.00601

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	0.01060	0.01066	0.01056
	(A2 * B1 * C1 * !Y)	-0.00534	-0.00534	-0.00528
	(A2 * B1 * !C1 * Y)	0.00884	0.00894	0.00886
	(A2 * B1 * !C1 * Y)	-0.01193	-0.01238	-0.01235
	(A2 * !B1 * C1 * Y)	0.00885	0.00894	0.00886
	(A2 * !B1 * C1 * Y)	-0.01194	-0.01237	-0.01235
	(A2 * !B1 * !C1 * Y)	0.00883	0.00894	0.00886
	(A2 * !B1 * !C1 * Y)	-0.01194	-0.01243	-0.01236
	(A1 * !A2 * B1 * C1 * !Y)	0.01053	0.01074	0.01056
	(A1 * !A2 * B1 * C1 * !Y)	-0.00525	-0.00536	-0.00526
	(A1 * !A2 * B1 * !C1 * Y)	0.00884	0.00891	0.00886
	(A1 * !A2 * B1 * !C1 * Y)	-0.01076	-0.01181	-0.01174
	(A1 * !A2 * !B1 * C1 * Y)	0.00888	0.00890	0.00886
	(A1 * !A2 * !B1 * C1 * Y)	-0.01081	-0.01182	-0.01175
	(A1 * !A2 * !B1 * !C1 * Y)	0.00888	0.00885	0.00886
	(A1 * !A2 * !B1 * !C1 * Y)	-0.01086	-0.01187	-0.01186
	(!A1 * !A2 * B1 * !C1 * Y)	0.00842	0.00850	0.00841
	(!A1 * !A2 * B1 * !C1 * Y)	-0.01254	-0.01259	-0.01253
	(!A1 * !A2 * !B1 * C1 * Y)	0.00856	0.00857	0.00854
	(!A1 * !A2 * !B1 * C1 * Y)	-0.01256	-0.01255	-0.01253
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00856	0.00852	0.00853
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.01256	-0.01251	-0.01253

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)**	-0.00245	-0.00246	-0.00251
	(A2 * B1 * C1 * !Y)	0.00136	0.00136	0.00131
	(A2 * B1 * !C1 * Y)	-0.00230	-0.00231	-0.00230
	(A2 * B1 * !C1 * Y)	0.00284	0.00286	0.00286
	(A2 * !B1 * C1 * Y)	-0.00230	-0.00231	-0.00230
	(A2 * !B1 * C1 * Y)	0.00285	0.00288	0.00286
	(A2 * !B1 * !C1 * Y)	-0.00230	-0.00231	-0.00230
	(A2 * !B1 * !C1 * Y)	0.00285	0.00288	0.00287
	(A1 * !A2 * B1 * C1 * !Y)	-0.00237	-0.00238	-0.00250
	(A1 * !A2 * B1 * C1 * !Y)	0.00139	0.00139	0.00130
	(A1 * !A2 * B1 * !C1 * Y)	-0.00229	-0.00231	-0.00230
	(A1 * !A2 * B1 * !C1 * Y)	0.00275	0.00277	0.00276
	(A1 * !A2 * !B1 * C1 * Y)	-0.00229	-0.00231	-0.00230
	(A1 * !A2 * !B1 * C1 * Y)	0.00275	0.00278	0.00277
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00230	-0.00231	-0.00230
	(A1 * !A2 * !B1 * !C1 * Y)	0.00277	0.00280	0.00278
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00199	-0.00219	-0.00218
	(!A1 * !A2 * B1 * !C1 * Y)	0.00290	0.00293	0.00290
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00208	-0.00221	-0.00220
	(!A1 * !A2 * !B1 * C1 * Y)	0.00290	0.00291	0.00290
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00208	-0.00221	-0.00221
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00290	0.00292	0.00290

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	-0.00500	-0.00503	-0.00517
	(A2 * B1 * C1 * !Y)	0.00279	0.00281	0.00270
	(A2 * B1 * !C1 * Y)	-0.00459	-0.00461	-0.00460
	(A2 * B1 * !C1 * Y)	0.00591	0.00595	0.00594
	(A2 * !B1 * C1 * Y)	-0.00460	-0.00461	-0.00460
	(A2 * !B1 * C1 * Y)	0.00593	0.00595	0.00594
	(A2 * !B1 * !C1 * Y)	-0.00460	-0.00462	-0.00460
	(A2 * !B1 * !C1 * Y)	0.00593	0.00598	0.00594
	(A1 * !A2 * B1 * C1 * !Y)	-0.00477	-0.00479	-0.00512
	(A1 * !A2 * B1 * C1 * !Y)	0.00292	0.00293	0.00270
	(A1 * !A2 * B1 * !C1 * Y)	-0.00459	-0.00461	-0.00460
	(A1 * !A2 * B1 * !C1 * Y)	0.00569	0.00572	0.00571
	(A1 * !A2 * !B1 * C1 * Y)	-0.00460	-0.00461	-0.00460
	(A1 * !A2 * !B1 * C1 * Y)	0.00571	0.00572	0.00571
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00458	-0.00462	-0.00460
	(A1 * !A2 * !B1 * !C1 * Y)	0.00571	0.00583	0.00575
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00391	-0.00435	-0.00434
	(!A1 * !A2 * B1 * !C1 * Y)	0.00601	0.00605	0.00602
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00408	-0.00441	-0.00438
	(!A1 * !A2 * !B1 * C1 * Y)	0.00600	0.00606	0.00602
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00409	-0.00438	-0.00438
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00600	0.00606	0.00602

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	-0.01017	-0.01019	-0.01051
	(A2 * B1 * C1 * !Y)	0.00565	0.00563	0.00538
	(A2 * B1 * !C1 * Y)	-0.00882	-0.00887	-0.00884
	(A2 * B1 * !C1 * Y)	0.01230	0.01238	0.01235
	(A2 * !B1 * C1 * Y)	-0.00885	-0.00886	-0.00884
	(A2 * !B1 * C1 * Y)	0.01235	0.01237	0.01235
	(A2 * !B1 * !C1 * Y)	-0.00883	-0.00888	-0.00884
	(A2 * !B1 * !C1 * Y)	0.01235	0.01243	0.01236
	(A1 * !A2 * B1 * C1 * !Y)	-0.00974	-0.00980	-0.01043
	(A1 * !A2 * B1 * C1 * !Y)	0.00574	0.00577	0.00533
	(A1 * !A2 * B1 * !C1 * Y)	-0.00881	-0.00889	-0.00884
	(A1 * !A2 * B1 * !C1 * Y)	0.01168	0.01181	0.01174
	(A1 * !A2 * !B1 * C1 * Y)	-0.00883	-0.00888	-0.00884
	(A1 * !A2 * !B1 * C1 * Y)	0.01172	0.01182	0.01175
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00885	-0.00885	-0.00884
	(A1 * !A2 * !B1 * !C1 * Y)	0.01186	0.01187	0.01186
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00773	-0.00846	-0.00841
	(!A1 * !A2 * B1 * !C1 * Y)	0.01260	0.01261	0.01255
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00798	-0.00857	-0.00854
	(!A1 * !A2 * !B1 * C1 * Y)	0.01258	0.01262	0.01255
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00799	-0.00852	-0.00853
	(!A1 * !A2 * !B1 * !C1 * Y)	0.01258	0.01262	0.01255

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

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

sky130_fd_sc_hs__o311ai_1	**(A3 * !C1 * Y)**	0.00218	0.00219	0.00218
	(A3 * !C1 * Y)	-0.00307	-0.00308	-0.00307
	(A2 * !A3 * !C1 * Y)	0.00219	0.00221	0.00220
	(A2 * !A3 * !C1 * Y)	-0.00307	-0.00308	-0.00308
	(A1 * !A2 * !A3 * !C1 * Y)	0.00219	0.00222	0.00221
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00306	-0.00309	-0.00308
	(!A1 * !A2 * !A3 * C1 * Y)	0.00091	0.00091	0.00091
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00308	-0.00309	-0.00308
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00120	0.00121	0.00121
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00309	-0.00310	-0.00310
sky130_fd_sc_hs__o311ai_2	**(A3 * !C1 * Y)**	0.00453	0.00456	0.00454
	(A3 * !C1 * Y)	-0.00605	-0.00606	-0.00605
	(A2 * !A3 * !C1 * Y)	0.00451	0.00455	0.00453
	(A2 * !A3 * !C1 * Y)	-0.00604	-0.00606	-0.00605
	(A1 * !A2 * !A3 * !C1 * Y)	0.00453	0.00457	0.00455
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00603	-0.00606	-0.00605
	(!A1 * !A2 * !A3 * C1 * Y)	0.00191	0.00191	0.00192
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00607	-0.00608	-0.00606
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00251	0.00254	0.00253
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00608	-0.00612	-0.00610
sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	0.00851	0.00856	0.00854
	(A3 * !C1 * Y)	-0.00684	-0.00686	-0.00685
	(A2 * !A3 * !C1 * Y)	0.00848	0.00853	0.00849
	(A2 * !A3 * !C1 * Y)	-0.00686	-0.00687	-0.00685
	(A1 * !A2 * !A3 * !C1 * Y)	0.00846	0.00852	0.00850
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00684	-0.00687	-0.00685
	(!A1 * !A2 * !A3 * C1 * Y)	0.00343	0.00344	0.00345
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00693	-0.00694	-0.00692
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00460	0.00462	0.00460
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00705	-0.00707	-0.00705

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !C1 * Y)	-0.00202	-0.00219	-0.00218
	(A3 * !C1 * Y)	0.00320	0.00312	0.00308
	(A2 * !A3 * !C1 * Y)	-0.00200	-0.00219	-0.00220
	(A2 * !A3 * !C1 * Y)	0.00322	0.00311	0.00308
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00199	-0.00220	-0.00220
	(A1 * !A2 * !A3 * !C1 * Y)	0.00326	0.00311	0.00308
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00086	-0.00088	-0.00088
	(!A1 * !A2 * !A3 * C1 * Y)	0.00312	0.00317	0.00310
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00120	-0.00121	-0.00121
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00329	0.00328	0.00315
sky130_fd_sc_hs__o311ai_2	(A3 * !C1 * Y)	-0.00420	-0.00456	-0.00454
	(A3 * !C1 * Y)	0.00629	0.00610	0.00607
	(A2 * !A3 * !C1 * Y)	-0.00414	-0.00455	-0.00453
	(A2 * !A3 * !C1 * Y)	0.00635	0.00608	0.00607
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00405	-0.00457	-0.00455
	(A1 * !A2 * !A3 * !C1 * Y)	0.00645	0.00609	0.00607
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00182	-0.00183	-0.00186
	(!A1 * !A2 * !A3 * C1 * Y)	0.00618	0.00622	0.00611
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00251	-0.00254	-0.00253
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00651	0.00648	0.00621

sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	-0.00754	-0.00856	-0.00854
	(A3 * !C1 * Y)	0.00765	0.00689	0.00687
	(A2 * !A3 * !C1 * Y)	-0.00738	-0.00853	-0.00849
	(A2 * !A3 * !C1 * Y)	0.00777	0.00691	0.00687
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00722	-0.00852	-0.00850
	(A1 * !A2 * !A3 * !C1 * Y)	0.00803	0.00691	0.00687
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00325	-0.00329	-0.00333
	(!A1 * !A2 * !A3 * C1 * Y)	0.00717	0.00724	0.00701
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00460	-0.00462	-0.00460
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00789	0.00771	0.00723

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	0.00080	0.00081	0.00079
	(A3 * !B1 * Y)	-0.00355	-0.00357	-0.00360
	(A2 * !A3 * !B1 * Y)	0.00080	0.00080	0.00079
	(A2 * !A3 * !B1 * Y)	-0.00355	-0.00356	-0.00360
	(!A2 * !A3 * !B1 * Y)	0.00080	0.00080	0.00079
	(!A2 * !A3 * !B1 * Y)	-0.00355	-0.00356	-0.00360
	(!A1 * !A2 * !A3 * B1 * Y)	0.00084	0.00085	0.00078
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00343	-0.00346	-0.00359
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	0.00157	0.00157	0.00152
	(A3 * !B1 * Y)	-0.00700	-0.00700	-0.00710
	(A2 * !A3 * !B1 * Y)	0.00157	0.00157	0.00152
	(A2 * !A3 * !B1 * Y)	-0.00700	-0.00702	-0.00710
	(!A2 * !A3 * !B1 * Y)	0.00157	0.00157	0.00152
	(!A2 * !A3 * !B1 * Y)	-0.00700	-0.00699	-0.00710
	(!A1 * !A2 * !A3 * B1 * Y)	0.00160	0.00160	0.00145
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00674	-0.00675	-0.00706
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	0.00289	0.00290	0.00280
	(A3 * !B1 * Y)	-0.00770	-0.00775	-0.00792
	(A2 * !A3 * !B1 * Y)	0.00289	0.00289	0.00280
	(A2 * !A3 * !B1 * Y)	-0.00770	-0.00771	-0.00792
	(!A2 * !A3 * !B1 * Y)	0.00289	0.00290	0.00280
	(!A2 * !A3 * !B1 * Y)	-0.00770	-0.00774	-0.00792
	(!A1 * !A2 * !A3 * B1 * Y)	0.00297	0.00298	0.00271
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00721	-0.00727	-0.00784

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	-0.00077	-0.00079	-0.00077
	(A3 * !B1 * Y)	0.00359	0.00367	0.00361
	(A2 * !A3 * !B1 * Y)	-0.00077	-0.00079	-0.00077
	(A2 * !A3 * !B1 * Y)	0.00359	0.00367	0.00361
	(!A2 * !A3 * !B1 * Y)	-0.00077	-0.00079	-0.00077
	(!A2 * !A3 * !B1 * Y)	0.00360	0.00367	0.00361
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00076	-0.00077	-0.00076
	(!A1 * !A2 * !A3 * B1 * Y)	0.00359	0.00365	0.00361
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	-0.00148	-0.00151	-0.00148
	(A3 * !B1 * Y)	0.00708	0.00723	0.00711
	(A2 * !A3 * !B1 * Y)	-0.00148	-0.00151	-0.00148
	(A2 * !A3 * !B1 * Y)	0.00708	0.00723	0.00711
	(!A2 * !A3 * !B1 * Y)	-0.00148	-0.00150	-0.00148
	(!A2 * !A3 * !B1 * Y)	0.00708	0.00717	0.00711
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00144	-0.00146	-0.00144
	(!A1 * !A2 * !A3 * B1 * Y)	0.00707	0.00718	0.00711
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	-0.00274	-0.00280	-0.00274
	(A3 * !B1 * Y)	0.00791	0.00806	0.00793
	(A2 * !A3 * !B1 * Y)	-0.00276	-0.00279	-0.00274
	(A2 * !A3 * !B1 * Y)	0.00794	0.00806	0.00793
	(!A2 * !A3 * !B1 * Y)	-0.00276	-0.00277	-0.00274
	(!A2 * !A3 * !B1 * Y)	0.00794	0.00800	0.00793
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00266	-0.00269	-0.00265
	(!A1 * !A2 * !A3 * B1 * Y)	0.00789	0.00800	0.00792

SKY130_FD_SC_HS__O311Ax

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00264	0.00312	0.00270	0.00265	0.00271	1.44833
sky130_fd_sc_hs__o311a_2	0.00294	0.00294	0.00293	0.00288	0.00286	2.80814
sky130_fd_sc_hs__o311a_4	0.00488	0.00532	0.00492	0.00592	0.00514	5.37691

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311a_1	0.00000	0.39514	1.44638
sky130_fd_sc_hs__o311a_2	0.00000	0.52885	1.16968
sky130_fd_sc_hs__o311a_4	0.00000	1.09241	2.91563

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)	0.09549	0.50202	5.53599
	A2->X (RR)	0.09270	0.49866	5.41800
	A3->X (RR)	0.08203	0.47781	5.35370
	B1->X (RR)	0.08767	0.53134	6.17662
	C1->X (RR)	0.08287	0.53723	6.27920
sky130_fd_sc_hs__o311a_2	A1->X (RR)	0.09864	0.41923	5.47244
	A2->X (RR)	0.09317	0.40843	5.31813
	A3->X (RR)	0.07832	0.38837	5.22132
	B1->X (RR)	0.09346	0.45829	6.07300
	C1->X (RR)	0.08743	0.46471	6.17052
sky130_fd_sc_hs__o311a_4	A1->X (RR)	0.10871	0.36934	5.48000
	A2->X (RR)	0.09987	0.35371	5.31748
	A3->X (RR)	0.08760	0.34011	5.28899
	B1->X (RR)	0.10357	0.41328	6.20535
	C1->X (RR)	0.09466	0.41485	6.33816

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311a_1	A1->X (FF)	0.19633	0.58729	5.27432
	A2->X (FF)	0.18815	0.62031	5.54451
	A3->X (FF)	0.15319	0.62040	5.61933
	B1->X (FF)	0.06138	0.44984	4.82558
	C1->X (FF)	0.05606	0.43390	4.71447
sky130_fd_sc_hs__o311a_2	A1->X (FF)	0.19862	0.56728	5.32780
	A2->X (FF)	0.18621	0.60006	5.69017
	A3->X (FF)	0.16462	0.61046	5.78268
	B1->X (FF)	0.07107	0.43208	4.98987
	C1->X (FF)	0.06494	0.41241	4.88098
sky130_fd_sc_hs__o311a_4	A1->X (FF)	0.24183	0.58809	5.59906
	A2->X (FF)	0.22850	0.61378	5.78765
	A3->X (FF)	0.19125	0.61360	5.84893
	B1->X (FF)	0.06649	0.39588	4.86188
	C1->X (FF)	0.05952	0.37975	4.77509

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	A1	0.02357	0.02499	0.09826
	A1	0.01024	0.01166	0.08539
	A2	0.02099	0.02288	0.08825
	A2	0.00887	0.01119	0.07649
	A3	0.01685	0.01956	0.09516
	A3	0.00657	0.00929	0.08522
	B1	0.01459	0.02089	0.16144
	B1	0.00632	0.01264	0.15319
	C1	0.01332	0.02028	0.16286
	C1	0.00627	0.01322	0.15662
sky130_fd_sc_hs__o311a_2	A1	0.02829	0.02934	0.10346
	A1	0.01379	0.01488	0.08968
	A2	0.02501	0.02739	0.09582
	A2	0.01224	0.01463	0.08365
	A3	0.02165	0.02469	0.10186
	A3	0.01054	0.01370	0.09076
	B1	0.01896	0.02492	0.16707
	B1	0.01025	0.01635	0.15895
	C1	0.01744	0.02396	0.16734
	C1	0.01022	0.01686	0.16044

sky130_fd_sc_hs__o311a_4	**A1**	0.05529	0.05820	0.22390
	A1	0.03010	0.03308	0.20066
	A2	0.04923	0.05305	0.20055
	A2	0.02636	0.03022	0.17891
	A3	0.04053	0.04620	0.21122
	A3	0.02095	0.02687	0.19360
	B1	0.03634	0.04711	0.30080
	B1	0.02003	0.03093	0.28507
	C1	0.03255	0.04575	0.32564
	C1	0.02007	0.03338	0.31649

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311a_1	**A1**	0.00912	0.00952	0.08921
	A1	0.02230	0.02271	0.10142
	A2	0.00920	0.01000	0.08547
	A2	0.02115	0.02196	0.09554
	A3	0.00918	0.01235	0.10009
	A3	0.01927	0.02244	0.10754
	B1	0.00532	0.01382	0.14740
	B1	0.01504	0.02341	0.15583
	C1	0.00466	0.01306	0.14611
	C1	0.01323	0.02148	0.15305

sky130_fd_sc_hs__o311a_2	**A1**	0.01581	0.01374	0.09548
	A1	0.03013	0.02804	0.10538
	A2	0.01591	0.01452	0.09646
	A2	0.02848	0.02707	0.10535
	A3	0.01582	0.01638	0.10749
	A3	0.02668	0.02727	0.11610
	B1	0.01026	0.01860	0.15644
	B1	0.02088	0.02825	0.15543
	C1	0.00929	0.01747	0.15179
	C1	0.01846	0.02577	0.15095
sky130_fd_sc_hs__o311a_4	**A1**	0.03792	0.02930	0.19811
	A1	0.06279	0.05421	0.21657
	A2	0.03743	0.03031	0.17768
	A2	0.05993	0.05290	0.19614
	A3	0.03779	0.03446	0.20219
	A3	0.05691	0.05367	0.21720
	B1	0.02042	0.03513	0.29958
	B1	0.03974	0.05420	0.31851
	C1	0.01858	0.03395	0.30407
	C1	0.03417	0.04935	0.31801

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)**	0.00209	0.00211	0.00208
	(A2 * B1 * !C1 * !X)	-0.00284	-0.00291	-0.00290
	(A2 * A3 * B1 * C1 * X)	0.00242	0.00244	0.00242
	(A2 * A3 * B1 * C1 * X)	-0.00250	-0.00257	-0.00257
	(A2 * !B1 * !X)	0.00209	0.00211	0.00208
	(A2 * !B1 * !X)	-0.00284	-0.00291	-0.00290
	(A2 * !A3 * B1 * C1 * X)	0.00258	0.00244	0.00242
	(A2 * !A3 * B1 * C1 * X)	-0.00233	-0.00257	-0.00256
	(!A2 * A3 * B1 * C1 * X)	0.00256	0.00244	0.00242
	(!A2 * A3 * B1 * C1 * X)	-0.00222	-0.00250	-0.00253
	(!A2 * A3 * B1 * !C1 * !X)	0.00209	0.00209	0.00208
	(!A2 * A3 * B1 * !C1 * !X)	-0.00266	-0.00284	-0.00283
	(!A2 * A3 * !B1 * !X)	0.00209	0.00209	0.00208
	(!A2 * A3 * !B1 * !X)	-0.00266	-0.00284	-0.00283
	(!A2 * !A3 * B1 * !C1 * !X)	0.00200	0.00199	0.00199
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00292	-0.00291	-0.00291
	(!A2 * !A3 * !B1 * C1 * !X)	0.00205	0.00205	0.00203
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00292	-0.00292	-0.00291
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00205	0.00204	0.00203
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00292	-0.00292	-0.00291

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	0.00223	0.00225	0.00223
	(A2 * B1 * !C1 * !X)	-0.00312	-0.00321	-0.00320
	(A2 * A3 * B1 * C1 * X)	0.00251	0.00254	0.00251
	(A2 * A3 * B1 * C1 * X)	-0.00283	-0.00292	-0.00291
	(A2 * !B1 * !X)	0.00223	0.00225	0.00223
	(A2 * !B1 * !X)	-0.00312	-0.00321	-0.00320
	(A2 * !A3 * B1 * C1 * X)	0.00273	0.00254	0.00251
	(A2 * !A3 * B1 * C1 * X)	-0.00261	-0.00292	-0.00291
	(!A2 * A3 * B1 * C1 * X)	0.00265	0.00253	0.00251
	(!A2 * A3 * B1 * C1 * X)	-0.00250	-0.00283	-0.00286
	(!A2 * A3 * B1 * !C1 * !X)	0.00222	0.00224	0.00223
	(!A2 * A3 * B1 * !C1 * !X)	-0.00289	-0.00311	-0.00312
	(!A2 * A3 * !B1 * !X)	0.00222	0.00224	0.00223
	(!A2 * A3 * !B1 * !X)	-0.00289	-0.00311	-0.00312
	(!A2 * !A3 * B1 * !C1 * !X)	0.00212	0.00213	0.00212
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00322	-0.00322	-0.00322
	(!A2 * !A3 * !B1 * C1 * !X)	0.00211	0.00215	0.00213
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00321	-0.00324	-0.00322
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00211	0.00213	0.00213
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00321	-0.00323	-0.00322

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	0.00381	0.00385	0.00381
	(A2 * B1 * !C1 * !X)	-0.00523	-0.00538	-0.00536
	(A2 * A3 * B1 * C1 * X)	0.00382	0.00386	0.00382
	(A2 * A3 * B1 * C1 * X)	-0.00521	-0.00538	-0.00535
	(A2 * !B1 * !X)	0.00381	0.00385	0.00381
	(A2 * !B1 * !X)	-0.00523	-0.00538	-0.00536
	(A2 * !A3 * B1 * C1 * X)	0.00440	0.00386	0.00382
	(A2 * !A3 * B1 * C1 * X)	-0.00464	-0.00537	-0.00534
	(!A2 * A3 * B1 * C1 * X)	0.00435	0.00386	0.00383
	(!A2 * A3 * B1 * C1 * X)	-0.00438	-0.00525	-0.00523
	(!A2 * A3 * B1 * !C1 * !X)	0.00381	0.00383	0.00381
	(!A2 * A3 * B1 * !C1 * !X)	-0.00478	-0.00524	-0.00521
	(!A2 * A3 * !B1 * !X)	0.00381	0.00385	0.00381
	(!A2 * A3 * !B1 * !X)	-0.00478	-0.00524	-0.00521
	(!A2 * !A3 * B1 * !C1 * !X)	0.00365	0.00365	0.00364
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00541	-0.00541	-0.00541
	(!A2 * !A3 * !B1 * C1 * !X)	0.00369	0.00372	0.00368
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00540	-0.00544	-0.00541
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00369	0.00372	0.00368
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00540	-0.00544	-0.00541

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)**	-0.00207	-0.00209	-0.00208
	(A2 * B1 * !C1 * !X)	0.00288	0.00293	0.00290
	(A2 * A3 * B1 * C1 * X)	-0.00239	-0.00241	-0.00240
	(A2 * A3 * B1 * C1 * X)	0.00256	0.00261	0.00258
	(A2 * !B1 * !X)	-0.00207	-0.00209	-0.00208
	(A2 * !B1 * !X)	0.00288	0.00293	0.00290
	(A2 * !A3 * B1 * C1 * X)	-0.00239	-0.00241	-0.00240
	(A2 * !A3 * B1 * C1 * X)	0.00257	0.00261	0.00258
	(!A2 * A3 * B1 * C1 * X)	-0.00239	-0.00240	-0.00239
	(!A2 * A3 * B1 * C1 * X)	0.00251	0.00255	0.00253
	(!A2 * A3 * B1 * !C1 * !X)	-0.00207	-0.00209	-0.00208
	(!A2 * A3 * B1 * !C1 * !X)	0.00283	0.00286	0.00283
	(!A2 * A3 * !B1 * !X)	-0.00207	-0.00208	-0.00208
	(!A2 * A3 * !B1 * !X)	0.00282	0.00285	0.00283
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00188	-0.00199	-0.00199
	(!A2 * !A3 * B1 * !C1 * !X)	0.00292	0.00295	0.00292
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00195	-0.00204	-0.00203
	(!A2 * !A3 * !B1 * C1 * !X)	0.00293	0.00295	0.00292
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00195	-0.00204	-0.00203
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00292	0.00295	0.00292

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	-0.00221	-0.00222	-0.00221
	(A2 * B1 * !C1 * !X)	0.00319	0.00321	0.00320
	(A2 * A3 * B1 * C1 * X)	-0.00248	-0.00249	-0.00249
	(A2 * A3 * B1 * C1 * X)	0.00291	0.00294	0.00292
	(A2 * !B1 * !X)	-0.00221	-0.00222	-0.00221
	(A2 * !B1 * !X)	0.00319	0.00321	0.00320
	(A2 * !A3 * B1 * C1 * X)	-0.00248	-0.00249	-0.00249
	(A2 * !A3 * B1 * C1 * X)	0.00292	0.00294	0.00293
	(!A2 * A3 * B1 * C1 * X)	-0.00249	-0.00249	-0.00248
	(!A2 * A3 * B1 * C1 * X)	0.00286	0.00288	0.00286
	(!A2 * A3 * B1 * !C1 * !X)	-0.00221	-0.00221	-0.00221
	(!A2 * A3 * B1 * !C1 * !X)	0.00311	0.00311	0.00312
	(!A2 * A3 * !B1 * !X)	-0.00222	-0.00221	-0.00221
	(!A2 * A3 * !B1 * !X)	0.00313	0.00311	0.00312
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00194	-0.00211	-0.00212
	(!A2 * !A3 * B1 * !C1 * !X)	0.00325	0.00325	0.00323
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00201	-0.00213	-0.00213
	(!A2 * !A3 * !B1 * C1 * !X)	0.00326	0.00326	0.00324
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00201	-0.00213	-0.00213
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00326	0.00326	0.00324

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	-0.00378	-0.00379	-0.00379
	(A2 * B1 * !C1 * !X)	0.00534	0.00538	0.00536
	(A2 * A3 * B1 * C1 * X)	-0.00377	-0.00378	-0.00378
	(A2 * A3 * B1 * C1 * X)	0.00535	0.00539	0.00537
	(A2 * !B1 * !X)	-0.00378	-0.00379	-0.00379
	(A2 * !B1 * !X)	0.00534	0.00538	0.00536
	(A2 * !A3 * B1 * C1 * X)	-0.00377	-0.00378	-0.00378
	(A2 * !A3 * B1 * C1 * X)	0.00536	0.00539	0.00538
	(!A2 * A3 * B1 * C1 * X)	-0.00376	-0.00378	-0.00375
	(!A2 * A3 * B1 * C1 * X)	0.00523	0.00526	0.00523
	(!A2 * A3 * B1 * !C1 * !X)	-0.00379	-0.00380	-0.00379
	(!A2 * A3 * B1 * !C1 * !X)	0.00522	0.00524	0.00521
	(!A2 * A3 * !B1 * !X)	-0.00379	-0.00380	-0.00379
	(!A2 * A3 * !B1 * !X)	0.00522	0.00524	0.00521
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00332	-0.00362	-0.00364
	(!A2 * !A3 * B1 * !C1 * !X)	0.00541	0.00546	0.00543
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00343	-0.00366	-0.00368
	(!A2 * !A3 * !B1 * C1 * !X)	0.00540	0.00546	0.00544
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00344	-0.00366	-0.00368
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00540	0.00547	0.00544

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)**	0.00270	0.00274	0.00261
	(A1 * A3 * B1 * C1 * X)	-0.00178	-0.00179	-0.00178
	(A1 * A3 * B1 * !C1 * !X)	0.00210	0.00210	0.00208
	(A1 * A3 * B1 * !C1 * !X)	-0.00235	-0.00234	-0.00235
	(A1 * A3 * !B1 * !X)	0.00210	0.00210	0.00208
	(A1 * A3 * !B1 * !X)	-0.00235	-0.00234	-0.00235
	(A1 * !A3 * B1 * C1 * X)	0.00253	0.00255	0.00250
	(A1 * !A3 * B1 * C1 * X)	-0.00137	-0.00139	-0.00140
	(A1 * !A3 * B1 * !C1 * !X)	0.00207	0.00210	0.00208
	(A1 * !A3 * B1 * !C1 * !X)	-0.00301	-0.00306	-0.00305
	(A1 * !A3 * !B1 * C1 * !X)	0.00207	0.00210	0.00208
	(A1 * !A3 * !B1 * C1 * !X)	-0.00301	-0.00306	-0.00305
	(A1 * !A3 * !B1 * !C1 * !X)	0.00207	0.00210	0.00208
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00301	-0.00306	-0.00306
	(!A1 * A3 * B1 * C1 * X)	0.00318	0.00254	0.00249
	(!A1 * A3 * B1 * C1 * X)	-0.00198	-0.00265	-0.00266
	(!A1 * A3 * B1 * !C1 * !X)	0.00210	0.00211	0.00208
	(!A1 * A3 * B1 * !C1 * !X)	-0.00303	-0.00308	-0.00306
	(!A1 * A3 * !B1 * !X)	0.00210	0.00211	0.00208
	(!A1 * A3 * !B1 * !X)	-0.00303	-0.00308	-0.00306
	(!A1 * !A3 * B1 * !C1 * !X)	0.00199	0.00200	0.00199
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00308	-0.00309	-0.00308
	(!A1 * !A3 * !B1 * C1 * !X)	0.00201	0.00203	0.00201
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00308	-0.00310	-0.00308
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00201	0.00203	0.00201
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00308	-0.00310	-0.00308

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	0.00254	0.00254	0.00242
	(A1 * A3 * B1 * C1 * X)	-0.00191	-0.00192	-0.00190
	(A1 * A3 * B1 * !C1 * !X)	0.00223	0.00225	0.00223
	(A1 * A3 * B1 * !C1 * !X)	-0.00213	-0.00215	-0.00213
	(A1 * A3 * !B1 * !X)	0.00223	0.00225	0.00223
	(A1 * A3 * !B1 * !X)	-0.00213	-0.00215	-0.00213
	(A1 * !A3 * B1 * C1 * X)	0.00236	0.00238	0.00233
	(A1 * !A3 * B1 * C1 * X)	-0.00153	-0.00154	-0.00154
	(A1 * !A3 * B1 * !C1 * !X)	0.00224	0.00225	0.00223
	(A1 * !A3 * B1 * !C1 * !X)	-0.00303	-0.00305	-0.00304
	(A1 * !A3 * !B1 * C1 * !X)	0.00225	0.00225	0.00223
	(A1 * !A3 * !B1 * C1 * !X)	-0.00303	-0.00305	-0.00305
	(A1 * !A3 * !B1 * !C1 * !X)	0.00225	0.00225	0.00223
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00303	-0.00306	-0.00305
	(!A1 * A3 * B1 * C1 * X)	0.00297	0.00237	0.00232
	(!A1 * A3 * B1 * C1 * X)	-0.00234	-0.00296	-0.00297
	(!A1 * A3 * B1 * !C1 * !X)	0.00224	0.00226	0.00223
	(!A1 * A3 * B1 * !C1 * !X)	-0.00304	-0.00306	-0.00306
	(!A1 * A3 * !B1 * !X)	0.00224	0.00226	0.00223
	(!A1 * A3 * !B1 * !X)	-0.00304	-0.00306	-0.00306
	(!A1 * !A3 * B1 * !C1 * !X)	0.00212	0.00214	0.00213
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00308	-0.00310	-0.00308
	(!A1 * !A3 * !B1 * C1 * !X)	0.00216	0.00217	0.00216
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00309	-0.00310	-0.00309
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00215	0.00216	0.00214
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00310	-0.00310	-0.00309

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	0.00473	0.00489	0.00459
	(A1 * A3 * B1 * C1 * X)	-0.00360	-0.00362	-0.00359
	(A1 * A3 * B1 * !C1 * !X)	0.00433	0.00440	0.00435
	(A1 * A3 * B1 * !C1 * !X)	-0.00391	-0.00393	-0.00392
	(A1 * A3 * !B1 * !X)	0.00433	0.00440	0.00435
	(A1 * A3 * !B1 * !X)	-0.00391	-0.00393	-0.00392
	(A1 * !A3 * B1 * C1 * X)	0.00446	0.00446	0.00438
	(A1 * !A3 * B1 * C1 * X)	-0.00282	-0.00282	-0.00283
	(A1 * !A3 * B1 * !C1 * !X)	0.00434	0.00439	0.00435
	(A1 * !A3 * B1 * !C1 * !X)	-0.00523	-0.00532	-0.00531
	(A1 * !A3 * !B1 * C1 * !X)	0.00434	0.00439	0.00435
	(A1 * !A3 * !B1 * C1 * !X)	-0.00523	-0.00532	-0.00531
	(A1 * !A3 * !B1 * !C1 * !X)	0.00434	0.00439	0.00435
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00523	-0.00533	-0.00532
	(!A1 * A3 * B1 * C1 * X)	0.00570	0.00446	0.00437
	(!A1 * A3 * B1 * C1 * X)	-0.00392	-0.00522	-0.00532
	(!A1 * A3 * B1 * !C1 * !X)	0.00435	0.00436	0.00435
	(!A1 * A3 * B1 * !C1 * !X)	-0.00522	-0.00532	-0.00532
	(!A1 * A3 * !B1 * !X)	0.00437	0.00436	0.00435
	(!A1 * A3 * !B1 * !X)	-0.00523	-0.00532	-0.00532
	(!A1 * !A3 * B1 * !C1 * !X)	0.00416	0.00418	0.00415
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00538	-0.00540	-0.00537
	(!A1 * !A3 * !B1 * C1 * !X)	0.00418	0.00421	0.00420
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00536	-0.00539	-0.00537
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00418	0.00421	0.00420
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00536	-0.00538	-0.00537

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)**	-0.00248	-0.00249	-0.00248
	(A1 * A3 * B1 * C1 * X)	0.00178	0.00179	0.00178
	(A1 * A3 * B1 * !C1 * !X)	-0.00208	-0.00207	-0.00208
	(A1 * A3 * B1 * !C1 * !X)	0.00235	0.00234	0.00235
	(A1 * A3 * !B1 * !X)	-0.00208	-0.00207	-0.00208
	(A1 * A3 * !B1 * !X)	0.00235	0.00234	0.00235
	(A1 * !A3 * B1 * C1 * X)	-0.00246	-0.00247	-0.00244
	(A1 * !A3 * B1 * C1 * X)	0.00145	0.00145	0.00147
	(A1 * !A3 * B1 * !C1 * !X)	-0.00207	-0.00208	-0.00208
	(A1 * !A3 * B1 * !C1 * !X)	0.00304	0.00306	0.00305
	(A1 * !A3 * !B1 * C1 * !X)	-0.00207	-0.00208	-0.00208
	(A1 * !A3 * !B1 * C1 * !X)	0.00304	0.00306	0.00305
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00207	-0.00208	-0.00208
	(A1 * !A3 * !B1 * !C1 * !X)	0.00304	0.00306	0.00306
	(!A1 * A3 * B1 * C1 * X)	-0.00245	-0.00246	-0.00244
	(!A1 * A3 * B1 * C1 * X)	0.00267	0.00269	0.00269
	(!A1 * A3 * B1 * !C1 * !X)	-0.00207	-0.00208	-0.00208
	(!A1 * A3 * B1 * !C1 * !X)	0.00304	0.00308	0.00306
	(!A1 * A3 * !B1 * !X)	-0.00207	-0.00208	-0.00208
	(!A1 * A3 * !B1 * !X)	0.00305	0.00308	0.00306
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00184	-0.00199	-0.00199
	(!A1 * !A3 * B1 * !C1 * !X)	0.00309	0.00310	0.00309
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00192	-0.00203	-0.00201
	(!A1 * !A3 * !B1 * C1 * !X)	0.00309	0.00311	0.00309
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00193	-0.00203	-0.00201
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00309	0.00311	0.00309

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	-0.00230	-0.00231	-0.00230
	(A1 * A3 * B1 * C1 * X)	0.00191	0.00192	0.00190
	(A1 * A3 * B1 * !C1 * !X)	-0.00222	-0.00223	-0.00222
	(A1 * A3 * B1 * !C1 * !X)	0.00213	0.00215	0.00213
	(A1 * A3 * !B1 * !X)	-0.00222	-0.00223	-0.00222
	(A1 * A3 * !B1 * !X)	0.00213	0.00215	0.00213
	(A1 * !A3 * B1 * C1 * X)	-0.00230	-0.00230	-0.00228
	(A1 * !A3 * B1 * C1 * X)	0.00160	0.00160	0.00160
	(A1 * !A3 * B1 * !C1 * !X)	-0.00221	-0.00223	-0.00222
	(A1 * !A3 * B1 * !C1 * !X)	0.00304	0.00305	0.00304
	(A1 * !A3 * !B1 * C1 * !X)	-0.00221	-0.00223	-0.00222
	(A1 * !A3 * !B1 * C1 * !X)	0.00304	0.00305	0.00305
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00222	-0.00222	-0.00222
	(A1 * !A3 * !B1 * !C1 * !X)	0.00304	0.00306	0.00305
	(!A1 * A3 * B1 * C1 * X)	-0.00229	-0.00230	-0.00229
	(!A1 * A3 * B1 * C1 * X)	0.00297	0.00299	0.00299
	(!A1 * A3 * B1 * !C1 * !X)	-0.00222	-0.00222	-0.00222
	(!A1 * A3 * B1 * !C1 * !X)	0.00306	0.00306	0.00306
	(!A1 * A3 * !B1 * !X)	-0.00221	-0.00222	-0.00222
	(!A1 * A3 * !B1 * !X)	0.00304	0.00306	0.00306
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00193	-0.00212	-0.00213
	(!A1 * !A3 * B1 * !C1 * !X)	0.00310	0.00311	0.00310
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00201	-0.00214	-0.00215
	(!A1 * !A3 * !B1 * C1 * !X)	0.00312	0.00312	0.00310
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00201	-0.00214	-0.00214
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00312	0.00312	0.00310

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	-0.00433	-0.00435	-0.00433
	(A1 * A3 * B1 * C1 * X)	0.00360	0.00362	0.00359
	(A1 * A3 * B1 * !C1 * !X)	-0.00432	-0.00434	-0.00433
	(A1 * A3 * B1 * !C1 * !X)	0.00391	0.00393	0.00392
	(A1 * A3 * !B1 * !X)	-0.00432	-0.00434	-0.00433
	(A1 * A3 * !B1 * !X)	0.00391	0.00393	0.00392
	(A1 * !A3 * B1 * C1 * X)	-0.00430	-0.00431	-0.00425
	(A1 * !A3 * B1 * C1 * X)	0.00292	0.00293	0.00296
	(A1 * !A3 * B1 * !C1 * !X)	-0.00432	-0.00434	-0.00433
	(A1 * !A3 * B1 * !C1 * !X)	0.00529	0.00532	0.00531
	(A1 * !A3 * !B1 * C1 * !X)	-0.00431	-0.00434	-0.00433
	(A1 * !A3 * !B1 * C1 * !X)	0.00528	0.00532	0.00531
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00431	-0.00434	-0.00433
	(A1 * !A3 * !B1 * !C1 * !X)	0.00528	0.00533	0.00532
	(!A1 * A3 * B1 * C1 * X)	-0.00429	-0.00430	-0.00428
	(!A1 * A3 * B1 * C1 * X)	0.00533	0.00536	0.00537
	(!A1 * A3 * B1 * !C1 * !X)	-0.00432	-0.00434	-0.00433
	(!A1 * A3 * B1 * !C1 * !X)	0.00530	0.00533	0.00532
	(!A1 * A3 * !B1 * !X)	-0.00432	-0.00433	-0.00433
	(!A1 * A3 * !B1 * !X)	0.00529	0.00532	0.00532
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00379	-0.00414	-0.00415
	(!A1 * !A3 * B1 * !C1 * !X)	0.00541	0.00545	0.00540
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00392	-0.00417	-0.00420
	(!A1 * !A3 * !B1 * C1 * !X)	0.00540	0.00543	0.00540
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00393	-0.00417	-0.00420
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00539	0.00543	0.00540

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)**	0.00231	0.00233	0.00231
	(A2 * B1 * C1 * X)	-0.00130	-0.00130	-0.00129
	(A2 * B1 * !C1 * !X)	0.00206	0.00209	0.00206
	(A2 * B1 * !C1 * !X)	-0.00265	-0.00274	-0.00273
	(A2 * !B1 * C1 * !X)	0.00206	0.00209	0.00206
	(A2 * !B1 * C1 * !X)	-0.00265	-0.00274	-0.00273
	(A2 * !B1 * !C1 * !X)	0.00206	0.00208	0.00206
	(A2 * !B1 * !C1 * !X)	-0.00266	-0.00275	-0.00273
	(A1 * !A2 * B1 * C1 * X)	0.00232	0.00233	0.00231
	(A1 * !A2 * B1 * C1 * X)	-0.00129	-0.00130	-0.00129
	(A1 * !A2 * B1 * !C1 * !X)	0.00206	0.00207	0.00206
	(A1 * !A2 * B1 * !C1 * !X)	-0.00245	-0.00264	-0.00264
	(A1 * !A2 * !B1 * C1 * !X)	0.00207	0.00207	0.00206
	(A1 * !A2 * !B1 * C1 * !X)	-0.00246	-0.00264	-0.00264
	(A1 * !A2 * !B1 * !C1 * !X)	0.00207	0.00207	0.00206
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00247	-0.00267	-0.00265
	(!A1 * !A2 * B1 * !C1 * !X)	0.00200	0.00200	0.00199
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00276	-0.00276	-0.00275
	(!A1 * !A2 * !B1 * C1 * !X)	0.00203	0.00204	0.00202
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00276	-0.00277	-0.00275
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00203	0.00203	0.00201
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00276	-0.00277	-0.00275

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	0.00255	0.00257	0.00256
	(A2 * B1 * C1 * X)	-0.00130	-0.00131	-0.00129
	(A2 * B1 * !C1 * !X)	0.00223	0.00223	0.00223
	(A2 * B1 * !C1 * !X)	-0.00290	-0.00297	-0.00297
	(A2 * !B1 * C1 * !X)	0.00223	0.00226	0.00223
	(A2 * !B1 * C1 * !X)	-0.00290	-0.00298	-0.00297
	(A2 * !B1 * !C1 * !X)	0.00224	0.00226	0.00223
	(A2 * !B1 * !C1 * !X)	-0.00292	-0.00299	-0.00298
	(A1 * !A2 * B1 * C1 * X)	0.00256	0.00258	0.00256
	(A1 * !A2 * B1 * C1 * X)	-0.00129	-0.00130	-0.00129
	(A1 * !A2 * B1 * !C1 * !X)	0.00222	0.00226	0.00223
	(A1 * !A2 * B1 * !C1 * !X)	-0.00263	-0.00288	-0.00287
	(A1 * !A2 * !B1 * C1 * !X)	0.00222	0.00226	0.00223
	(A1 * !A2 * !B1 * C1 * !X)	-0.00264	-0.00288	-0.00288
	(A1 * !A2 * !B1 * !C1 * !X)	0.00222	0.00225	0.00223
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00264	-0.00290	-0.00289
	(!A1 * !A2 * B1 * !C1 * !X)	0.00212	0.00214	0.00212
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00301	-0.00302	-0.00301
	(!A1 * !A2 * !B1 * C1 * !X)	0.00215	0.00216	0.00214
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00302	-0.00303	-0.00301
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00216	0.00218	0.00216
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00302	-0.00303	-0.00301

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	0.00439	0.00444	0.00441
	(A2 * B1 * C1 * X)	-0.00253	-0.00257	-0.00255
	(A2 * B1 * !C1 * !X)	0.00386	0.00390	0.00387
	(A2 * B1 * !C1 * !X)	-0.00529	-0.00547	-0.00546
	(A2 * !B1 * C1 * !X)	0.00386	0.00390	0.00387
	(A2 * !B1 * C1 * !X)	-0.00529	-0.00547	-0.00546
	(A2 * !B1 * !C1 * !X)	0.00386	0.00392	0.00387
	(A2 * !B1 * !C1 * !X)	-0.00529	-0.00548	-0.00547
	(A1 * !A2 * B1 * C1 * X)	0.00439	0.00444	0.00441
	(A1 * !A2 * B1 * C1 * X)	-0.00253	-0.00256	-0.00254
	(A1 * !A2 * B1 * !C1 * !X)	0.00386	0.00389	0.00387
	(A1 * !A2 * B1 * !C1 * !X)	-0.00484	-0.00529	-0.00527
	(A1 * !A2 * !B1 * C1 * !X)	0.00386	0.00389	0.00387
	(A1 * !A2 * !B1 * C1 * !X)	-0.00484	-0.00528	-0.00527
	(A1 * !A2 * !B1 * !C1 * !X)	0.00388	0.00389	0.00387
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00487	-0.00537	-0.00530
	(!A1 * !A2 * B1 * !C1 * !X)	0.00368	0.00369	0.00368
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00552	-0.00552	-0.00552
	(!A1 * !A2 * !B1 * C1 * !X)	0.00372	0.00376	0.00372
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00551	-0.00555	-0.00552
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00372	0.00375	0.00371
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00551	-0.00555	-0.00552

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)**	-0.00220	-0.00221	-0.00228
	(A2 * B1 * C1 * X)	0.00140	0.00141	0.00133
	(A2 * B1 * !C1 * !X)	-0.00205	-0.00207	-0.00206
	(A2 * B1 * !C1 * !X)	0.00271	0.00274	0.00273
	(A2 * !B1 * C1 * !X)	-0.00205	-0.00207	-0.00206
	(A2 * !B1 * C1 * !X)	0.00272	0.00274	0.00273
	(A2 * !B1 * !C1 * !X)	-0.00205	-0.00207	-0.00206
	(A2 * !B1 * !C1 * !X)	0.00272	0.00275	0.00273
	(A1 * !A2 * B1 * C1 * X)	-0.00212	-0.00213	-0.00227
	(A1 * !A2 * B1 * C1 * X)	0.00144	0.00144	0.00133
	(A1 * !A2 * B1 * !C1 * !X)	-0.00205	-0.00206	-0.00206
	(A1 * !A2 * B1 * !C1 * !X)	0.00263	0.00264	0.00264
	(A1 * !A2 * !B1 * C1 * !X)	-0.00205	-0.00206	-0.00206
	(A1 * !A2 * !B1 * C1 * !X)	0.00263	0.00264	0.00264
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00206	-0.00206	-0.00206
	(A1 * !A2 * !B1 * !C1 * !X)	0.00265	0.00267	0.00265
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00183	-0.00199	-0.00199
	(!A1 * !A2 * B1 * !C1 * !X)	0.00276	0.00277	0.00276
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00191	-0.00201	-0.00202
	(!A1 * !A2 * !B1 * C1 * !X)	0.00276	0.00277	0.00276
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00191	-0.00201	-0.00201
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00276	0.00277	0.00276

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	-0.00248	-0.00249	-0.00253
	(A2 * B1 * C1 * X)	0.00137	0.00137	0.00133
	(A2 * B1 * !C1 * !X)	-0.00223	-0.00223	-0.00222
	(A2 * B1 * !C1 * !X)	0.00298	0.00298	0.00297
	(A2 * !B1 * C1 * !X)	-0.00222	-0.00223	-0.00222
	(A2 * !B1 * C1 * !X)	0.00296	0.00298	0.00297
	(A2 * !B1 * !C1 * !X)	-0.00222	-0.00223	-0.00222
	(A2 * !B1 * !C1 * !X)	0.00296	0.00299	0.00298
	(A1 * !A2 * B1 * C1 * X)	-0.00239	-0.00240	-0.00252
	(A1 * !A2 * B1 * C1 * X)	0.00141	0.00141	0.00132
	(A1 * !A2 * B1 * !C1 * !X)	-0.00222	-0.00223	-0.00222
	(A1 * !A2 * B1 * !C1 * !X)	0.00286	0.00288	0.00287
	(A1 * !A2 * !B1 * C1 * !X)	-0.00222	-0.00223	-0.00222
	(A1 * !A2 * !B1 * C1 * !X)	0.00287	0.00288	0.00288
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00222	-0.00223	-0.00222
	(A1 * !A2 * !B1 * !C1 * !X)	0.00288	0.00290	0.00289
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00192	-0.00212	-0.00212
	(!A1 * !A2 * B1 * !C1 * !X)	0.00303	0.00305	0.00302
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00201	-0.00214	-0.00214
	(!A1 * !A2 * !B1 * C1 * !X)	0.00304	0.00304	0.00302
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00201	-0.00214	-0.00215
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00304	0.00304	0.00302

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	-0.00414	-0.00417	-0.00435
	(A2 * B1 * C1 * X)	0.00276	0.00278	0.00263
	(A2 * B1 * !C1 * !X)	-0.00385	-0.00386	-0.00385
	(A2 * B1 * !C1 * !X)	0.00546	0.00547	0.00546
	(A2 * !B1 * C1 * !X)	-0.00385	-0.00386	-0.00385
	(A2 * !B1 * C1 * !X)	0.00546	0.00547	0.00546
	(A2 * !B1 * !C1 * !X)	-0.00383	-0.00386	-0.00385
	(A2 * !B1 * !C1 * !X)	0.00543	0.00548	0.00547
	(A1 * !A2 * B1 * C1 * X)	-0.00398	-0.00400	-0.00432
	(A1 * !A2 * B1 * C1 * X)	0.00284	0.00285	0.00262
	(A1 * !A2 * B1 * !C1 * !X)	-0.00384	-0.00387	-0.00385
	(A1 * !A2 * B1 * !C1 * !X)	0.00525	0.00529	0.00527
	(A1 * !A2 * !B1 * C1 * !X)	-0.00384	-0.00387	-0.00385
	(A1 * !A2 * !B1 * C1 * !X)	0.00526	0.00528	0.00527
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00386	-0.00389	-0.00385
	(A1 * !A2 * !B1 * !C1 * !X)	0.00530	0.00537	0.00530
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00331	-0.00368	-0.00368
	(!A1 * !A2 * B1 * !C1 * !X)	0.00552	0.00559	0.00554
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00345	-0.00373	-0.00372
	(!A1 * !A2 * !B1 * C1 * !X)	0.00551	0.00557	0.00554
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00346	-0.00373	-0.00371
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00551	0.00557	0.00554

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

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

sky130_fd_sc_hs__o311a_1	**(A3 * !C1 * !X)**	0.00192	0.00192	0.00192
	(A3 * !C1 * !X)	-0.00280	-0.00280	-0.00280
	(A2 * !A3 * !C1 * !X)	0.00192	0.00192	0.00192
	(A2 * !A3 * !C1 * !X)	-0.00280	-0.00280	-0.00280
	(A1 * !A2 * !A3 * !C1 * !X)	0.00192	0.00193	0.00192
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00280	-0.00281	-0.00280
	(!A1 * !A2 * !A3 * C1 * !X)	0.00092	0.00092	0.00088
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00280	-0.00280	-0.00280
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00124	0.00124	0.00123
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00281	-0.00282	-0.00281
sky130_fd_sc_hs__o311a_2	**(A3 * !C1 * !X)**	0.00213	0.00215	0.00214
	(A3 * !C1 * !X)	-0.00289	-0.00290	-0.00289
	(A2 * !A3 * !C1 * !X)	0.00214	0.00216	0.00215
	(A2 * !A3 * !C1 * !X)	-0.00289	-0.00290	-0.00289
	(A1 * !A2 * !A3 * !C1 * !X)	0.00215	0.00216	0.00215
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00289	-0.00290	-0.00289
	(!A1 * !A2 * !A3 * C1 * !X)	0.00086	0.00086	0.00086
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00293	-0.00294	-0.00292
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00115	0.00115	0.00115
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00296	-0.00296	-0.00296
sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	0.00412	0.00416	0.00414
	(A3 * !C1 * !X)	-0.00617	-0.00620	-0.00619
	(A2 * !A3 * !C1 * !X)	0.00412	0.00415	0.00414
	(A2 * !A3 * !C1 * !X)	-0.00617	-0.00620	-0.00619
	(A1 * !A2 * !A3 * !C1 * !X)	0.00414	0.00415	0.00414
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00619	-0.00620	-0.00619
	(!A1 * !A2 * !A3 * C1 * !X)	0.00196	0.00198	0.00196
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00619	-0.00621	-0.00620
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00255	0.00256	0.00255
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00622	-0.00625	-0.00623

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !C1 * !X)	-0.00175	-0.00190	-0.00191
	(A3 * !C1 * !X)	0.00293	0.00284	0.00281
	(A2 * !A3 * !C1 * !X)	-0.00174	-0.00190	-0.00191
	(A2 * !A3 * !C1 * !X)	0.00294	0.00284	0.00281
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00173	-0.00191	-0.00191
	(A1 * !A2 * !A3 * !C1 * !X)	0.00298	0.00284	0.00281
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00083	-0.00084	-0.00084
	(!A1 * !A2 * !A3 * C1 * !X)	0.00284	0.00288	0.00282
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00123	-0.00124	-0.00123
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00300	0.00298	0.00287
sky130_fd_sc_hs__o311a_2	(A3 * !C1 * !X)	-0.00195	-0.00212	-0.00213
	(A3 * !C1 * !X)	0.00303	0.00294	0.00291
	(A2 * !A3 * !C1 * !X)	-0.00193	-0.00214	-0.00213
	(A2 * !A3 * !C1 * !X)	0.00306	0.00293	0.00291
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00189	-0.00212	-0.00213
	(A1 * !A2 * !A3 * !C1 * !X)	0.00308	0.00293	0.00291
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00081	-0.00082	-0.00082
	(!A1 * !A2 * !A3 * C1 * !X)	0.00298	0.00301	0.00294
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00115	-0.00115	-0.00115
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00319	0.00314	0.00302

sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	-0.00379	-0.00416	-0.00414
	(A3 * !C1 * !X)	0.00648	0.00627	0.00622
	(A2 * !A3 * !C1 * !X)	-0.00374	-0.00415	-0.00414
	(A2 * !A3 * !C1 * !X)	0.00652	0.00626	0.00622
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00367	-0.00415	-0.00414
	(A1 * !A2 * !A3 * !C1 * !X)	0.00657	0.00623	0.00622
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00185	-0.00186	-0.00189
	(!A1 * !A2 * !A3 * C1 * !X)	0.00633	0.00636	0.00626
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00255	-0.00256	-0.00255
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00668	0.00661	0.00636

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	0.00071	0.00071	0.00070
	(A3 * !B1 * !X)	-0.00324	-0.00323	-0.00326
	(A2 * !A3 * !B1 * !X)	0.00071	0.00071	0.00070
	(A2 * !A3 * !B1 * !X)	-0.00324	-0.00322	-0.00326
	(!A2 * !A3 * !B1 * !X)	0.00071	0.00071	0.00070
	(!A2 * !A3 * !B1 * !X)	-0.00324	-0.00322	-0.00326
	(!A1 * !A2 * !A3 * B1 * !X)	0.00083	0.00083	0.00075
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00309	-0.00310	-0.00325
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	0.00081	0.00080	0.00078
	(A3 * !B1 * !X)	-0.00327	-0.00326	-0.00331
	(A2 * !A3 * !B1 * !X)	0.00080	0.00080	0.00078
	(A2 * !A3 * !B1 * !X)	-0.00327	-0.00326	-0.00331
	(!A2 * !A3 * !B1 * !X)	0.00080	0.00079	0.00078
	(!A2 * !A3 * !B1 * !X)	-0.00327	-0.00326	-0.00331
	(!A1 * !A2 * !A3 * B1 * !X)	0.00084	0.00085	0.00078
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00316	-0.00318	-0.00331
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	0.00146	0.00146	0.00141
	(A3 * !B1 * !X)	-0.00612	-0.00613	-0.00624
	(A2 * !A3 * !B1 * !X)	0.00145	0.00147	0.00141
	(A2 * !A3 * !B1 * !X)	-0.00612	-0.00616	-0.00624
	(!A2 * !A3 * !B1 * !X)	0.00145	0.00146	0.00141
	(!A2 * !A3 * !B1 * !X)	-0.00612	-0.00613	-0.00624
	(!A1 * !A2 * !A3 * B1 * !X)	0.00151	0.00153	0.00137
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00588	-0.00593	-0.00619

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	-0.00068	-0.00070	-0.00068
	(A3 * !B1 * !X)	0.00326	0.00333	0.00327
	(A2 * !A3 * !B1 * !X)	-0.00068	-0.00069	-0.00068
	(A2 * !A3 * !B1 * !X)	0.00326	0.00330	0.00327
	(!A2 * !A3 * !B1 * !X)	-0.00068	-0.00069	-0.00068
	(!A2 * !A3 * !B1 * !X)	0.00326	0.00330	0.00327
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00068	-0.00069	-0.00067
	(!A1 * !A2 * !A3 * B1 * !X)	0.00325	0.00330	0.00327
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	-0.00076	-0.00078	-0.00076
	(A3 * !B1 * !X)	0.00330	0.00337	0.00332
	(A2 * !A3 * !B1 * !X)	-0.00077	-0.00077	-0.00076
	(A2 * !A3 * !B1 * !X)	0.00331	0.00335	0.00332
	(!A2 * !A3 * !B1 * !X)	-0.00077	-0.00077	-0.00076
	(!A2 * !A3 * !B1 * !X)	0.00331	0.00334	0.00332
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00076	-0.00076	-0.00075
	(!A1 * !A2 * !A3 * B1 * !X)	0.00331	0.00335	0.00332
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	-0.00138	-0.00140	-0.00137
	(A3 * !B1 * !X)	0.00626	0.00637	0.00626
	(A2 * !A3 * !B1 * !X)	-0.00137	-0.00140	-0.00137
	(A2 * !A3 * !B1 * !X)	0.00624	0.00636	0.00626
	(!A2 * !A3 * !B1 * !X)	-0.00137	-0.00140	-0.00137
	(!A2 * !A3 * !B1 * !X)	0.00624	0.00636	0.00626
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00130	-0.00134	-0.00130
	(!A1 * !A2 * !A3 * B1 * !X)	0.00624	0.00635	0.00626

SKY130_FD_SC_HS__O31AIx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00273	0.00319	0.00312	0.00284	0.51509
sky130_fd_sc_hs__o31ai_2	0.00560	0.00548	0.00575	0.00566	0.86467
sky130_fd_sc_hs__o31ai_4	0.01078	0.01077	0.01119	0.00826	1.56815

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o31ai_1	0.00000	0.11336	0.38031
sky130_fd_sc_hs__o31ai_2	0.00000	0.22673	0.76062
sky130_fd_sc_hs__o31ai_4	0.00000	0.28707	1.14093

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)	0.11924	0.87759	9.15858
	A2->Y (FR)	0.11319	0.91859	9.85405
	A3->Y (FR)	0.08848	0.91851	10.14360
	B1->Y (FR)	0.02560	0.49342	5.90212
sky130_fd_sc_hs__o31ai_2	A1->Y (FR)	0.13081	0.76582	8.92696
	A2->Y (FR)	0.11615	0.79503	9.59748
	A3->Y (FR)	0.08981	0.80797	10.11000
	B1->Y (FR)	0.02286	0.43785	5.77957
sky130_fd_sc_hs__o31ai_4	A1->Y (FR)	0.12302	0.64441	8.68308
	A2->Y (FR)	0.10982	0.68229	9.45725
	A3->Y (FR)	0.08049	0.70194	10.02960
	B1->Y (FR)	0.02892	0.51811	7.66917

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31ai_1	A1->Y (RF)	0.03259	0.27563	2.64605
	A2->Y (RF)	0.03335	0.26971	2.61913
	A3->Y (RF)	0.02640	0.25719	2.56699
	B1->Y (RF)	0.02767	0.33116	3.38106
sky130_fd_sc_hs__o31ai_2	A1->Y (RF)	0.03404	0.23504	2.52544
	A2->Y (RF)	0.03310	0.22443	2.48322
	A3->Y (RF)	0.02688	0.21258	2.44386
	B1->Y (RF)	0.02644	0.28910	3.33349
sky130_fd_sc_hs__o31ai_4	A1->Y (RF)	0.03600	0.18899	2.38860
	A2->Y (RF)	0.03325	0.17568	2.31686
	A3->Y (RF)	0.02396	0.15427	2.16714
	B1->Y (RF)	0.02779	0.27675	3.73118

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.00100	0.00185	0.04085
	A1	0.01339	0.01423	0.05335
	A2	0.00103	0.00204	0.03579
	A2	0.01222	0.01324	0.04697
	A3	0.00097	0.00338	0.04780
	A3	0.01038	0.01282	0.05720
	B1	-0.00073	0.00474	0.07816
	B1	0.00620	0.01172	0.08574
sky130_fd_sc_hs__o31ai_2	A1	0.00206	0.00331	0.07498
	A1	0.02712	0.02842	0.10008
	A2	0.00216	0.00423	0.06818
	A2	0.02343	0.02553	0.08946
	A3	0.00195	0.00665	0.08455
	A3	0.02003	0.02433	0.10254
	B1	-0.00277	0.00693	0.14377
	B1	0.01034	0.02011	0.15891
sky130_fd_sc_hs__o31ai_4	A1	0.00286	0.00578	0.14013
	A1	0.05157	0.05459	0.18897
	A2	0.00301	0.00750	0.12438
	A2	0.04461	0.04913	0.16614
	A3	0.00256	0.01254	0.15600
	A3	0.03762	0.04751	0.19089
	B1	-0.00512	0.00730	0.16216
	B1	0.01461	0.02706	0.18183

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.01598	0.01700	0.04877
	A1	0.00357	0.00457	0.03623
	A2	0.01343	0.01453	0.04374
	A2	0.00217	0.00322	0.03232
	A3	0.01004	0.01146	0.03871
	A3	0.00047	0.00187	0.02911
	B1	0.00710	0.00980	0.05531
	B1	0.00018	0.00284	0.04834
sky130_fd_sc_hs__o31ai_2	A1	0.03302	0.03479	0.09594
	A1	0.00794	0.00962	0.07062
	A2	0.02566	0.02806	0.08427
	A2	0.00420	0.00652	0.06280
	A3	0.01920	0.02207	0.07333
	A3	0.00084	0.00371	0.05475
	B1	0.01340	0.01948	0.10944
	B1	0.00030	0.00630	0.09619
sky130_fd_sc_hs__o31ai_4	A1	0.06157	0.06572	0.18862
	A1	0.01283	0.01695	0.13959
	A2	0.04776	0.05289	0.16351
	A2	0.00576	0.01091	0.12140
	A3	0.03420	0.04105	0.14300
	A3	-0.00135	0.00540	0.10722
	B1	0.02129	0.02846	0.12327
	B1	0.00165	0.00875	0.10325

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)**	0.00238	0.00240	0.00238
	(A2 * A3 * B1 * !Y)	-0.00282	-0.00290	-0.00289
	(A2 * !B1 * Y)	0.00238	0.00240	0.00237
	(A2 * !B1 * Y)	-0.00282	-0.00290	-0.00288
	(A2 * !A3 * B1 * !Y)	0.00258	0.00240	0.00238
	(A2 * !A3 * B1 * !Y)	-0.00261	-0.00289	-0.00289
	(!A2 * A3 * B1 * !Y)	0.00252	0.00239	0.00238
	(!A2 * A3 * B1 * !Y)	-0.00248	-0.00281	-0.00281
	(!A2 * A3 * !B1 * Y)	0.00237	0.00238	0.00237
	(!A2 * A3 * !B1 * Y)	-0.00259	-0.00282	-0.00281
	(!A2 * !A3 * !B1 * Y)	0.00228	0.00231	0.00229
	(!A2 * !A3 * !B1 * Y)	-0.00291	-0.00293	-0.00291
sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	0.00482	0.00484	0.00479
	(A2 * A3 * B1 * !Y)	-0.00574	-0.00599	-0.00595
	(A2 * !B1 * Y)	0.00479	0.00483	0.00478
	(A2 * !B1 * Y)	-0.00578	-0.00600	-0.00595
	(A2 * !A3 * B1 * !Y)	0.00535	0.00484	0.00479
	(A2 * !A3 * B1 * !Y)	-0.00522	-0.00599	-0.00595
	(!A2 * A3 * B1 * !Y)	0.00519	0.00484	0.00479
	(!A2 * A3 * B1 * !Y)	-0.00501	-0.00584	-0.00580
	(!A2 * A3 * !B1 * Y)	0.00479	0.00482	0.00478
	(!A2 * A3 * !B1 * Y)	-0.00530	-0.00584	-0.00579
	(!A2 * !A3 * !B1 * Y)	0.00452	0.00454	0.00455
	(!A2 * !A3 * !B1 * Y)	-0.00603	-0.00604	-0.00605

sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	0.00931	0.00934	0.00924
	(A2 * A3 * B1 * !Y)	-0.01141	-0.01183	-0.01176
	(A2 * !B1 * Y)	0.00926	0.00933	0.00924
	(A2 * !B1 * Y)	-0.01149	-0.01185	-0.01176
	(A2 * !A3 * B1 * !Y)	0.01029	0.00934	0.00925
	(A2 * !A3 * B1 * !Y)	-0.01044	-0.01179	-0.01178
	(!A2 * A3 * B1 * !Y)	0.00990	0.00931	0.00925
	(!A2 * A3 * B1 * !Y)	-0.01001	-0.01163	-0.01144
	(!A2 * A3 * !B1 * Y)	0.00920	0.00927	0.00923
	(!A2 * A3 * !B1 * Y)	-0.01051	-0.01163	-0.01143
	(!A2 * !A3 * !B1 * Y)	0.00881	0.00886	0.00881
	(!A2 * !A3 * !B1 * Y)	-0.01198	-0.01201	-0.01197

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)**	-0.00237	-0.00237	-0.00237
	(A2 * A3 * B1 * !Y)	0.00289	0.00290	0.00289
	(A2 * !B1 * Y)	-0.00236	-0.00238	-0.00237
	(A2 * !B1 * Y)	0.00287	0.00290	0.00288
	(A2 * !A3 * B1 * !Y)	-0.00237	-0.00237	-0.00237
	(A2 * !A3 * B1 * !Y)	0.00289	0.00290	0.00289
	(!A2 * A3 * B1 * !Y)	-0.00236	-0.00237	-0.00236
	(!A2 * A3 * B1 * !Y)	0.00281	0.00283	0.00281
	(!A2 * A3 * !B1 * Y)	-0.00237	-0.00238	-0.00237
	(!A2 * A3 * !B1 * Y)	0.00280	0.00283	0.00281
	(!A2 * !A3 * !B1 * Y)	-0.00216	-0.00229	-0.00229
	(!A2 * !A3 * !B1 * Y)	0.00294	0.00294	0.00292

sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	-0.00476	-0.00480	-0.00478
	(A2 * A3 * B1 * !Y)	0.00591	0.00599	0.00595
	(A2 * !B1 * Y)	-0.00475	-0.00479	-0.00477
	(A2 * !B1 * Y)	0.00591	0.00600	0.00595
	(A2 * !A3 * B1 * !Y)	-0.00476	-0.00479	-0.00477
	(A2 * !A3 * B1 * !Y)	0.00592	0.00599	0.00595
	(!A2 * A3 * B1 * !Y)	-0.00478	-0.00479	-0.00477
	(!A2 * A3 * B1 * !Y)	0.00580	0.00584	0.00580
	(!A2 * A3 * !B1 * Y)	-0.00478	-0.00479	-0.00477
	(!A2 * A3 * !B1 * Y)	0.00580	0.00584	0.00579
	(!A2 * !A3 * !B1 * Y)	-0.00421	-0.00454	-0.00455
	(!A2 * !A3 * !B1 * Y)	0.00617	0.00611	0.00606
sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	-0.00920	-0.00925	-0.00923
	(A2 * A3 * B1 * !Y)	0.01172	0.01183	0.01176
	(A2 * !B1 * Y)	-0.00919	-0.00926	-0.00922
	(A2 * !B1 * Y)	0.01171	0.01185	0.01176
	(A2 * !A3 * B1 * !Y)	-0.00920	-0.00923	-0.00922
	(A2 * !A3 * B1 * !Y)	0.01173	0.01179	0.01178
	(!A2 * A3 * B1 * !Y)	-0.00920	-0.00929	-0.00920
	(!A2 * A3 * B1 * !Y)	0.01139	0.01163	0.01144
	(!A2 * A3 * !B1 * Y)	-0.00920	-0.00927	-0.00921
	(!A2 * A3 * !B1 * Y)	0.01139	0.01163	0.01143
	(!A2 * !A3 * !B1 * Y)	-0.00814	-0.00886	-0.00881
	(!A2 * !A3 * !B1 * Y)	0.01214	0.01208	0.01200

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)**	0.00289	0.00292	0.00279
	(A1 * A3 * B1 * !Y)	-0.00190	-0.00191	-0.00189
	(A1 * A3 * !B1 * Y)	0.00236	0.00237	0.00235
	(A1 * A3 * !B1 * Y)	-0.00240	-0.00242	-0.00240
	(A1 * !A3 * B1 * !Y)	0.00273	0.00275	0.00270
	(A1 * !A3 * B1 * !Y)	-0.00154	-0.00155	-0.00156
	(A1 * !A3 * !B1 * Y)	0.00237	0.00238	0.00235
	(A1 * !A3 * !B1 * Y)	-0.00329	-0.00331	-0.00330
	(!A1 * A3 * B1 * !Y)	0.00333	0.00274	0.00269
	(!A1 * A3 * B1 * !Y)	-0.00229	-0.00298	-0.00298
	(!A1 * A3 * !B1 * Y)	0.00237	0.00238	0.00235
	(!A1 * A3 * !B1 * Y)	-0.00330	-0.00332	-0.00331
	(!A1 * !A3 * !B1 * Y)	0.00227	0.00228	0.00226
	(!A1 * !A3 * !B1 * Y)	-0.00335	-0.00336	-0.00335
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	0.00522	0.00530	0.00500
	(A1 * A3 * B1 * !Y)	-0.00376	-0.00377	-0.00374
	(A1 * A3 * !B1 * Y)	0.00465	0.00469	0.00464
	(A1 * A3 * !B1 * Y)	-0.00417	-0.00419	-0.00416
	(A1 * !A3 * B1 * !Y)	0.00477	0.00483	0.00475
	(A1 * !A3 * B1 * !Y)	-0.00294	-0.00298	-0.00299
	(A1 * !A3 * !B1 * Y)	0.00462	0.00468	0.00464
	(A1 * !A3 * !B1 * Y)	-0.00578	-0.00591	-0.00590
	(!A1 * A3 * B1 * !Y)	0.00598	0.00480	0.00471
	(!A1 * A3 * B1 * !Y)	-0.00454	-0.00588	-0.00591
	(!A1 * A3 * !B1 * Y)	0.00461	0.00468	0.00464
	(!A1 * A3 * !B1 * Y)	-0.00584	-0.00597	-0.00595
	(!A1 * !A3 * !B1 * Y)	0.00442	0.00444	0.00442
	(!A1 * !A3 * !B1 * Y)	-0.00603	-0.00604	-0.00602

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	0.01037	0.01047	0.00989
	(A1 * A3 * B1 * !Y)	-0.00741	-0.00750	-0.00743
	(A1 * A3 * !B1 * Y)	0.00917	0.00931	0.00919
	(A1 * A3 * !B1 * Y)	-0.00825	-0.00836	-0.00829
	(A1 * !A3 * B1 * !Y)	0.00949	0.00960	0.00941
	(A1 * !A3 * B1 * !Y)	-0.00588	-0.00596	-0.00597
	(A1 * !A3 * !B1 * Y)	0.00919	0.00927	0.00919
	(A1 * !A3 * !B1 * Y)	-0.01166	-0.01185	-0.01178
	(!A1 * A3 * B1 * !Y)	0.01212	0.00950	0.00933
	(!A1 * A3 * B1 * !Y)	-0.00895	-0.01176	-0.01180
	(!A1 * A3 * !B1 * Y)	0.00919	0.00927	0.00918
	(!A1 * A3 * !B1 * Y)	-0.01176	-0.01192	-0.01188
	(!A1 * !A3 * !B1 * Y)	0.00871	0.00873	0.00875
	(!A1 * !A3 * !B1 * Y)	-0.01201	-0.01203	-0.01204

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)**	-0.00269	-0.00270	-0.00269
	(A1 * A3 * B1 * !Y)	0.00190	0.00191	0.00189
	(A1 * A3 * !B1 * Y)	-0.00235	-0.00236	-0.00235
	(A1 * A3 * !B1 * Y)	0.00240	0.00242	0.00240
	(A1 * !A3 * B1 * !Y)	-0.00268	-0.00268	-0.00266
	(A1 * !A3 * B1 * !Y)	0.00159	0.00160	0.00160
	(A1 * !A3 * !B1 * Y)	-0.00234	-0.00235	-0.00235
	(A1 * !A3 * !B1 * Y)	0.00329	0.00331	0.00330
	(!A1 * A3 * B1 * !Y)	-0.00268	-0.00268	-0.00267
	(!A1 * A3 * B1 * !Y)	0.00299	0.00299	0.00299
	(!A1 * A3 * !B1 * Y)	-0.00235	-0.00235	-0.00235
	(!A1 * A3 * !B1 * Y)	0.00332	0.00332	0.00331
	(!A1 * !A3 * !B1 * Y)	-0.00211	-0.00225	-0.00226
	(!A1 * !A3 * !B1 * Y)	0.00340	0.00337	0.00335
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	-0.00475	-0.00477	-0.00475
	(A1 * A3 * B1 * !Y)	0.00376	0.00377	0.00374
	(A1 * A3 * !B1 * Y)	-0.00464	-0.00465	-0.00463
	(A1 * A3 * !B1 * Y)	0.00417	0.00419	0.00416
	(A1 * !A3 * B1 * !Y)	-0.00467	-0.00469	-0.00466
	(A1 * !A3 * B1 * !Y)	0.00304	0.00307	0.00308
	(A1 * !A3 * !B1 * Y)	-0.00462	-0.00464	-0.00463
	(A1 * !A3 * !B1 * Y)	0.00590	0.00591	0.00590
	(!A1 * A3 * B1 * !Y)	-0.00468	-0.00469	-0.00466
	(!A1 * A3 * B1 * !Y)	0.00590	0.00593	0.00592
	(!A1 * A3 * !B1 * Y)	-0.00461	-0.00465	-0.00463
	(!A1 * A3 * !B1 * Y)	0.00595	0.00597	0.00595
	(!A1 * !A3 * !B1 * Y)	-0.00407	-0.00444	-0.00442
	(!A1 * !A3 * !B1 * Y)	0.00609	0.00607	0.00603

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	-0.00939	-0.00945	-0.00941
	(A1 * A3 * B1 * !Y)	0.00741	0.00750	0.00743
	(A1 * A3 * !B1 * Y)	-0.00914	-0.00921	-0.00916
	(A1 * A3 * !B1 * Y)	0.00825	0.00836	0.00829
	(A1 * !A3 * B1 * !Y)	-0.00930	-0.00930	-0.00925
	(A1 * !A3 * B1 * !Y)	0.00611	0.00611	0.00615
	(A1 * !A3 * !B1 * Y)	-0.00917	-0.00921	-0.00916
	(A1 * !A3 * !B1 * Y)	0.01180	0.01185	0.01178
	(!A1 * A3 * B1 * !Y)	-0.00925	-0.00928	-0.00925
	(!A1 * A3 * B1 * !Y)	0.01171	0.01176	0.01180
	(!A1 * A3 * !B1 * Y)	-0.00913	-0.00918	-0.00916
	(!A1 * A3 * !B1 * Y)	0.01182	0.01192	0.01188
	(!A1 * !A3 * !B1 * Y)	-0.00807	-0.00873	-0.00875
	(!A1 * !A3 * !B1 * Y)	0.01221	0.01212	0.01207

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	0.00288	0.00289	0.00287
	(A2 * B1 * !Y)	-0.00133	-0.00133	-0.00131
	(A2 * !B1 * Y)	0.00225	0.00229	0.00226
	(A2 * !B1 * Y)	-0.00318	-0.00328	-0.00327
	(A1 * !A2 * B1 * !Y)	0.00288	0.00289	0.00287
	(A1 * !A2 * B1 * !Y)	-0.00132	-0.00132	-0.00131
	(A1 * !A2 * !B1 * Y)	0.00228	0.00229	0.00226
	(A1 * !A2 * !B1 * Y)	-0.00293	-0.00318	-0.00317
	(!A1 * !A2 * !B1 * Y)	0.00219	0.00220	0.00218
	(!A1 * !A2 * !B1 * Y)	-0.00332	-0.00333	-0.00331

sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	0.00536	0.00543	0.00538
	(A2 * B1 * !Y)	-0.00261	-0.00265	-0.00262
	(A2 * !B1 * Y)	0.00452	0.00458	0.00453
	(A2 * !B1 * Y)	-0.00599	-0.00618	-0.00616
	(A1 * !A2 * B1 * !Y)	0.00536	0.00543	0.00538
	(A1 * !A2 * B1 * !Y)	-0.00260	-0.00264	-0.00261
	(A1 * !A2 * !B1 * Y)	0.00453	0.00452	0.00453
	(A1 * !A2 * !B1 * Y)	-0.00549	-0.00596	-0.00594
	(!A1 * !A2 * !B1 * Y)	0.00433	0.00434	0.00433
	(!A1 * !A2 * !B1 * Y)	-0.00626	-0.00626	-0.00625
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	0.01052	0.01072	0.01054
	(A2 * B1 * !Y)	-0.00521	-0.00530	-0.00521
	(A2 * !B1 * Y)	0.00893	0.00898	0.00891
	(A2 * !B1 * Y)	-0.01191	-0.01225	-0.01223
	(A1 * !A2 * B1 * !Y)	0.01048	0.01072	0.01054
	(A1 * !A2 * B1 * !Y)	-0.00515	-0.00529	-0.00518
	(A1 * !A2 * !B1 * Y)	0.00886	0.00898	0.00891
	(A1 * !A2 * !B1 * Y)	-0.01071	-0.01175	-0.01168
	(!A1 * !A2 * !B1 * Y)	0.00858	0.00867	0.00858
	(!A1 * !A2 * !B1 * Y)	-0.01241	-0.01247	-0.01240

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

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

sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	-0.00279	-0.00281	-0.00286
	(A2 * B1 * !Y)	0.00138	0.00139	0.00134
	(A2 * !B1 * Y)	-0.00225	-0.00226	-0.00226
	(A2 * !B1 * Y)	0.00326	0.00328	0.00327
	(A1 * !A2 * B1 * !Y)	-0.00270	-0.00273	-0.00285
	(A1 * !A2 * B1 * !Y)	0.00141	0.00142	0.00133
	(A1 * !A2 * !B1 * Y)	-0.00225	-0.00226	-0.00226
	(A1 * !A2 * !B1 * Y)	0.00316	0.00318	0.00317
	(!A1 * !A2 * !B1 * Y)	-0.00205	-0.00217	-0.00218
	(!A1 * !A2 * !B1 * Y)	0.00334	0.00333	0.00332
sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	-0.00520	-0.00522	-0.00536
	(A2 * B1 * !Y)	0.00276	0.00277	0.00266
	(A2 * !B1 * Y)	-0.00451	-0.00453	-0.00452
	(A2 * !B1 * Y)	0.00613	0.00618	0.00616
	(A1 * !A2 * B1 * !Y)	-0.00497	-0.00499	-0.00531
	(A1 * !A2 * B1 * !Y)	0.00287	0.00288	0.00266
	(A1 * !A2 * !B1 * Y)	-0.00453	-0.00452	-0.00452
	(A1 * !A2 * !B1 * Y)	0.00594	0.00596	0.00594
	(!A1 * !A2 * !B1 * Y)	-0.00400	-0.00434	-0.00433
	(!A1 * !A2 * !B1 * Y)	0.00631	0.00630	0.00626
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	-0.01021	-0.01023	-0.01050
	(A2 * B1 * !Y)	0.00552	0.00550	0.00529
	(A2 * !B1 * Y)	-0.00886	-0.00890	-0.00888
	(A2 * !B1 * Y)	0.01218	0.01225	0.01223
	(A1 * !A2 * B1 * !Y)	-0.00977	-0.00979	-0.01041
	(A1 * !A2 * B1 * !Y)	0.00572	0.00571	0.00527
	(A1 * !A2 * !B1 * Y)	-0.00885	-0.00893	-0.00888
	(A1 * !A2 * !B1 * Y)	0.01161	0.01175	0.01168
	(!A1 * !A2 * !B1 * Y)	-0.00794	-0.00865	-0.00858
	(!A1 * !A2 * !B1 * Y)	0.01250	0.01247	0.01243

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)	0.00082	0.00082	0.00078
	(!A1 * !A2 * !A3 * Y)	-0.00338	-0.00339	-0.00348
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	0.00162	0.00162	0.00151
	(!A1 * !A2 * !A3 * Y)	-0.00674	-0.00676	-0.00694
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	0.00287	0.00286	0.00268
	(!A1 * !A2 * !A3 * Y)	-0.00774	-0.00778	-0.00815

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)	-0.00076	-0.00078	-0.00076
	(!A1 * !A2 * !A3 * Y)	0.00347	0.00355	0.00349
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	-0.00146	-0.00149	-0.00147
	(!A1 * !A2 * !A3 * Y)	0.00694	0.00709	0.00697
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	-0.00261	-0.00266	-0.00260
	(!A1 * !A2 * !A3 * Y)	0.00816	0.00831	0.00818

SKY130_FD_SC_HS__O31Ax

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00268	0.00263	0.00262	0.00241	1.40025
sky130_fd_sc_hs__o31a_2	0.00284	0.00276	0.00278	0.00289	2.38357
sky130_fd_sc_hs__o31a_4	0.00488	0.00519	0.00515	0.00510	5.25182

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o31a_1	0.00000	0.67866	1.64014
sky130_fd_sc_hs__o31a_2	0.00000	0.49397	0.97951
sky130_fd_sc_hs__o31a_4	0.00000	0.99319	1.95901

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)	0.06895	0.47218	5.43000
	A2->X (RR)	0.06736	0.46366	5.29075
	A3->X (RR)	0.05816	0.44367	5.20702
	B1->X (RR)	0.06231	0.49372	5.94254
sky130_fd_sc_hs__o31a_2	A1->X (RR)	0.07236	0.39806	5.06803
	A2->X (RR)	0.07084	0.39149	4.95597
	A3->X (RR)	0.06123	0.37400	4.87530
	B1->X (RR)	0.06635	0.42745	5.75921
sky130_fd_sc_hs__o31a_4	A1->X (RR)	0.07735	0.33731	5.44371
	A2->X (RR)	0.07442	0.32543	5.27950
	A3->X (RR)	0.06361	0.30950	5.23617
	B1->X (RR)	0.07046	0.37176	6.06370

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31a_1	A1->X (FF)	0.15631	0.53120	5.11482
	A2->X (FF)	0.14465	0.55813	5.41523
	A3->X (FF)	0.12075	0.56108	5.48457
	B1->X (FF)	0.05542	0.42215	4.90792
sky130_fd_sc_hs__o31a_2	A1->X (FF)	0.19647	0.54851	4.91897
	A2->X (FF)	0.18430	0.57913	5.20134
	A3->X (FF)	0.15992	0.58624	5.27436
	B1->X (FF)	0.05869	0.38814	4.46196
sky130_fd_sc_hs__o31a_4	A1->X (FF)	0.20235	0.53141	5.43980
	A2->X (FF)	0.19009	0.55905	5.62170
	A3->X (FF)	0.15649	0.55948	5.67098
	B1->X (FF)	0.05542	0.35888	4.85990

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.01900	0.02124	0.09060
	A1	0.00785	0.01010	0.07980
	A2	0.01631	0.01911	0.08182
	A2	0.00674	0.00955	0.07258
	A3	0.01339	0.01687	0.09003
	A3	0.00519	0.00869	0.08184
	B1	0.01096	0.01914	0.16799
	B1	0.00521	0.01339	0.16252
sky130_fd_sc_hs__o31a_2	A1	0.02417	0.02627	0.08324
	A1	0.01236	0.01447	0.07144
	A2	0.02133	0.02406	0.07590
	A2	0.01116	0.01395	0.06587
	A3	0.01834	0.02166	0.08213
	A3	0.00947	0.01290	0.07330
	B1	0.01569	0.02385	0.18132
	B1	0.00891	0.01713	0.17544
sky130_fd_sc_hs__o31a_4	A1	0.04719	0.05280	0.22693
	A1	0.02544	0.03116	0.20656
	A2	0.04174	0.04793	0.20179
	A2	0.02216	0.02842	0.18337
	A3	0.03384	0.04178	0.21388
	A3	0.01777	0.02581	0.19784
	B1	0.02858	0.04367	0.31820
	B1	0.01712	0.03239	0.30781

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.00699	0.00860	0.08658
	A1	0.01805	0.01967	0.09761
	A2	0.00706	0.00920	0.08654
	A2	0.01652	0.01866	0.09491
	A3	0.00698	0.01140	0.10078
	A3	0.01504	0.01945	0.10744
	B1	0.00464	0.01398	0.15690
	B1	0.01042	0.01968	0.16147
sky130_fd_sc_hs__o31a_2	A1	0.01473	0.01275	0.09152
	A1	0.02644	0.02439	0.10030
	A2	0.01485	0.01338	0.08826
	A2	0.02488	0.02341	0.09574
	A3	0.01472	0.01561	0.10132
	A3	0.02343	0.02432	0.10809
	B1	0.00852	0.01788	0.16754
	B1	0.01531	0.02463	0.17424
sky130_fd_sc_hs__o31a_4	A1	0.03138	0.02691	0.19761
	A1	0.05303	0.04854	0.21896
	A2	0.03069	0.02782	0.18324
	A2	0.05006	0.04714	0.19694
	A3	0.03136	0.03273	0.21190
	A3	0.04711	0.04847	0.21832
	B1	0.01765	0.03388	0.31732
	B1	0.03265	0.04866	0.32988

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)**	0.00228	0.00230	0.00228
	(A2 * A3 * B1 * X)	-0.00249	-0.00257	-0.00256
	(A2 * !B1 * !X)	0.00196	0.00198	0.00196
	(A2 * !B1 * !X)	-0.00282	-0.00289	-0.00288
	(A2 * !A3 * B1 * X)	0.00254	0.00231	0.00228
	(A2 * !A3 * B1 * X)	-0.00224	-0.00256	-0.00256
	(!A2 * A3 * B1 * X)	0.00249	0.00230	0.00228
	(!A2 * A3 * B1 * X)	-0.00214	-0.00248	-0.00252
	(!A2 * A3 * !B1 * !X)	0.00195	0.00197	0.00196
	(!A2 * A3 * !B1 * !X)	-0.00261	-0.00282	-0.00281
	(!A2 * !A3 * !B1 * !X)	0.00188	0.00188	0.00187
	(!A2 * !A3 * !B1 * !X)	-0.00290	-0.00291	-0.00290
sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	0.00251	0.00254	0.00251
	(A2 * A3 * B1 * X)	-0.00260	-0.00268	-0.00267
	(A2 * !B1 * !X)	0.00235	0.00237	0.00234
	(A2 * !B1 * !X)	-0.00279	-0.00285	-0.00284
	(A2 * !A3 * B1 * X)	0.00278	0.00254	0.00251
	(A2 * !A3 * B1 * X)	-0.00234	-0.00267	-0.00267
	(!A2 * A3 * B1 * X)	0.00273	0.00254	0.00251
	(!A2 * A3 * B1 * X)	-0.00223	-0.00260	-0.00262
	(!A2 * A3 * !B1 * !X)	0.00233	0.00235	0.00234
	(!A2 * A3 * !B1 * !X)	-0.00256	-0.00278	-0.00277
	(!A2 * !A3 * !B1 * !X)	0.00227	0.00229	0.00226
	(!A2 * !A3 * !B1 * !X)	-0.00286	-0.00287	-0.00285

sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	0.00387	0.00389	0.00385
	(A2 * A3 * B1 * X)	-0.00515	-0.00537	-0.00534
	(A2 * !B1 * !X)	0.00385	0.00388	0.00384
	(A2 * !B1 * !X)	-0.00519	-0.00538	-0.00534
	(A2 * !A3 * B1 * X)	0.00454	0.00390	0.00386
	(A2 * !A3 * B1 * X)	-0.00449	-0.00534	-0.00532
	(!A2 * A3 * B1 * X)	0.00444	0.00391	0.00386
	(!A2 * A3 * B1 * X)	-0.00430	-0.00525	-0.00522
	(!A2 * A3 * !B1 * !X)	0.00385	0.00388	0.00384
	(!A2 * A3 * !B1 * !X)	-0.00471	-0.00523	-0.00519
	(!A2 * !A3 * !B1 * !X)	0.00365	0.00369	0.00367
	(!A2 * !A3 * !B1 * !X)	-0.00541	-0.00544	-0.00543

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)**	-0.00226	-0.00226	-0.00225
	(A2 * A3 * B1 * X)	0.00258	0.00259	0.00257
	(A2 * !B1 * !X)	-0.00194	-0.00195	-0.00195
	(A2 * !B1 * !X)	0.00287	0.00289	0.00288
	(A2 * !A3 * B1 * X)	-0.00225	-0.00226	-0.00225
	(A2 * !A3 * B1 * X)	0.00258	0.00259	0.00258
	(!A2 * A3 * B1 * X)	-0.00224	-0.00226	-0.00224
	(!A2 * A3 * B1 * X)	0.00251	0.00253	0.00252
	(!A2 * A3 * !B1 * !X)	-0.00195	-0.00196	-0.00195
	(!A2 * A3 * !B1 * !X)	0.00280	0.00283	0.00281
	(!A2 * !A3 * !B1 * !X)	-0.00175	-0.00188	-0.00187
	(!A2 * !A3 * !B1 * !X)	0.00292	0.00293	0.00291

sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	-0.00249	-0.00251	-0.00250
	(A2 * A3 * B1 * X)	0.00266	0.00269	0.00267
	(A2 * !B1 * !X)	-0.00232	-0.00233	-0.00233
	(A2 * !B1 * !X)	0.00283	0.00285	0.00284
	(A2 * !A3 * B1 * X)	-0.00249	-0.00251	-0.00250
	(A2 * !A3 * B1 * X)	0.00267	0.00271	0.00268
	(!A2 * A3 * B1 * X)	-0.00249	-0.00250	-0.00249
	(!A2 * A3 * B1 * X)	0.00261	0.00263	0.00262
	(!A2 * A3 * !B1 * !X)	-0.00232	-0.00234	-0.00233
	(!A2 * A3 * !B1 * !X)	0.00277	0.00280	0.00277
	(!A2 * !A3 * !B1 * !X)	-0.00213	-0.00225	-0.00226
	(!A2 * !A3 * !B1 * !X)	0.00289	0.00288	0.00287
sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	-0.00382	-0.00384	-0.00382
	(A2 * A3 * B1 * X)	0.00531	0.00538	0.00534
	(A2 * !B1 * !X)	-0.00381	-0.00384	-0.00382
	(A2 * !B1 * !X)	0.00532	0.00539	0.00534
	(A2 * !A3 * B1 * X)	-0.00381	-0.00384	-0.00382
	(A2 * !A3 * B1 * X)	0.00531	0.00537	0.00534
	(!A2 * A3 * B1 * X)	-0.00381	-0.00383	-0.00380
	(!A2 * A3 * B1 * X)	0.00521	0.00525	0.00522
	(!A2 * A3 * !B1 * !X)	-0.00383	-0.00384	-0.00382
	(!A2 * A3 * !B1 * !X)	0.00520	0.00523	0.00519
	(!A2 * !A3 * !B1 * !X)	-0.00341	-0.00368	-0.00367
	(!A2 * !A3 * !B1 * !X)	0.00548	0.00549	0.00546

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)**	0.00232	0.00233	0.00223
	(A1 * A3 * B1 * X)	-0.00160	-0.00161	-0.00159
	(A1 * A3 * !B1 * !X)	0.00202	0.00203	0.00202
	(A1 * A3 * !B1 * !X)	-0.00182	-0.00184	-0.00182
	(A1 * !A3 * B1 * X)	0.00215	0.00217	0.00213
	(A1 * !A3 * B1 * X)	-0.00125	-0.00127	-0.00127
	(A1 * !A3 * !B1 * !X)	0.00203	0.00203	0.00202
	(A1 * !A3 * !B1 * !X)	-0.00260	-0.00262	-0.00261
	(!A1 * A3 * B1 * X)	0.00276	0.00217	0.00212
	(!A1 * A3 * B1 * X)	-0.00190	-0.00251	-0.00252
	(!A1 * A3 * !B1 * !X)	0.00203	0.00204	0.00201
	(!A1 * A3 * !B1 * !X)	-0.00260	-0.00263	-0.00262
	(!A1 * !A3 * !B1 * !X)	0.00194	0.00195	0.00194
	(!A1 * !A3 * !B1 * !X)	-0.00265	-0.00265	-0.00264
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	0.00253	0.00256	0.00245
	(A1 * A3 * B1 * X)	-0.00164	-0.00165	-0.00163
	(A1 * A3 * !B1 * !X)	0.00226	0.00228	0.00226
	(A1 * A3 * !B1 * !X)	-0.00186	-0.00186	-0.00186
	(A1 * !A3 * B1 * X)	0.00239	0.00240	0.00236
	(A1 * !A3 * B1 * X)	-0.00131	-0.00131	-0.00132
	(A1 * !A3 * !B1 * !X)	0.00224	0.00228	0.00226
	(A1 * !A3 * !B1 * !X)	-0.00260	-0.00265	-0.00265
	(!A1 * A3 * B1 * X)	0.00300	0.00240	0.00235
	(!A1 * A3 * B1 * X)	-0.00193	-0.00255	-0.00257
	(!A1 * A3 * !B1 * !X)	0.00227	0.00228	0.00226
	(!A1 * A3 * !B1 * !X)	-0.00263	-0.00267	-0.00265
	(!A1 * !A3 * !B1 * !X)	0.00219	0.00219	0.00218
	(!A1 * !A3 * !B1 * !X)	-0.00268	-0.00268	-0.00267

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	0.00494	0.00505	0.00479
	(A1 * A3 * B1 * X)	-0.00336	-0.00339	-0.00336
	(A1 * A3 * !B1 * !X)	0.00452	0.00457	0.00454
	(A1 * A3 * !B1 * !X)	-0.00367	-0.00372	-0.00368
	(A1 * !A3 * B1 * X)	0.00462	0.00465	0.00458
	(A1 * !A3 * B1 * X)	-0.00268	-0.00271	-0.00274
	(A1 * !A3 * !B1 * !X)	0.00454	0.00457	0.00453
	(A1 * !A3 * !B1 * !X)	-0.00526	-0.00534	-0.00532
	(!A1 * A3 * B1 * X)	0.00587	0.00464	0.00455
	(!A1 * A3 * B1 * X)	-0.00393	-0.00527	-0.00530
	(!A1 * A3 * !B1 * !X)	0.00454	0.00457	0.00453
	(!A1 * A3 * !B1 * !X)	-0.00517	-0.00532	-0.00528
	(!A1 * !A3 * !B1 * !X)	0.00438	0.00444	0.00440
	(!A1 * !A3 * !B1 * !X)	-0.00536	-0.00540	-0.00538

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)**	-0.00211	-0.00212	-0.00211
	(A1 * A3 * B1 * X)	0.00160	0.00161	0.00159
	(A1 * A3 * !B1 * !X)	-0.00200	-0.00202	-0.00201
	(A1 * A3 * !B1 * !X)	0.00182	0.00184	0.00182
	(A1 * !A3 * B1 * X)	-0.00209	-0.00209	-0.00208
	(A1 * !A3 * B1 * X)	0.00132	0.00132	0.00133
	(A1 * !A3 * !B1 * !X)	-0.00200	-0.00202	-0.00201
	(A1 * !A3 * !B1 * !X)	0.00261	0.00262	0.00261
	(!A1 * A3 * B1 * X)	-0.00208	-0.00209	-0.00207
	(!A1 * A3 * B1 * X)	0.00255	0.00257	0.00256
	(!A1 * A3 * !B1 * !X)	-0.00201	-0.00201	-0.00201
	(!A1 * A3 * !B1 * !X)	0.00262	0.00263	0.00262
	(!A1 * !A3 * !B1 * !X)	-0.00179	-0.00193	-0.00194
	(!A1 * !A3 * !B1 * !X)	0.00269	0.00266	0.00265
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	-0.00234	-0.00235	-0.00234
	(A1 * A3 * B1 * X)	0.00164	0.00165	0.00163
	(A1 * A3 * !B1 * !X)	-0.00224	-0.00224	-0.00224
	(A1 * A3 * !B1 * !X)	0.00186	0.00186	0.00186
	(A1 * !A3 * B1 * X)	-0.00233	-0.00233	-0.00231
	(A1 * !A3 * B1 * X)	0.00136	0.00136	0.00136
	(A1 * !A3 * !B1 * !X)	-0.00224	-0.00225	-0.00225
	(A1 * !A3 * !B1 * !X)	0.00264	0.00265	0.00265
	(!A1 * A3 * B1 * X)	-0.00231	-0.00233	-0.00231
	(!A1 * A3 * B1 * X)	0.00257	0.00260	0.00259
	(!A1 * A3 * !B1 * !X)	-0.00224	-0.00225	-0.00224
	(!A1 * A3 * !B1 * !X)	0.00265	0.00267	0.00265
	(!A1 * !A3 * !B1 * !X)	-0.00204	-0.00217	-0.00218
	(!A1 * !A3 * !B1 * !X)	0.00271	0.00270	0.00269

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	-0.00454	-0.00457	-0.00455
	(A1 * A3 * B1 * X)	0.00336	0.00339	0.00336
	(A1 * A3 * !B1 * !X)	-0.00451	-0.00454	-0.00451
	(A1 * A3 * !B1 * !X)	0.00367	0.00372	0.00368
	(A1 * !A3 * B1 * X)	-0.00449	-0.00451	-0.00446
	(A1 * !A3 * B1 * X)	0.00281	0.00284	0.00284
	(A1 * !A3 * !B1 * !X)	-0.00450	-0.00453	-0.00451
	(A1 * !A3 * !B1 * !X)	0.00530	0.00534	0.00532
	(!A1 * A3 * B1 * X)	-0.00448	-0.00451	-0.00447
	(!A1 * A3 * B1 * X)	0.00529	0.00535	0.00533
	(!A1 * A3 * !B1 * !X)	-0.00450	-0.00453	-0.00451
	(!A1 * A3 * !B1 * !X)	0.00526	0.00532	0.00528
	(!A1 * !A3 * !B1 * !X)	-0.00412	-0.00436	-0.00439
	(!A1 * !A3 * !B1 * !X)	0.00544	0.00541	0.00540

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	0.00227	0.00229	0.00227
	(A2 * B1 * X)	-0.00119	-0.00120	-0.00119
	(A2 * !B1 * !X)	0.00199	0.00202	0.00199
	(A2 * !B1 * !X)	-0.00259	-0.00267	-0.00266
	(A1 * !A2 * B1 * X)	0.00227	0.00229	0.00227
	(A1 * !A2 * B1 * X)	-0.00119	-0.00120	-0.00119
	(A1 * !A2 * !B1 * !X)	0.00201	0.00201	0.00199
	(A1 * !A2 * !B1 * !X)	-0.00237	-0.00257	-0.00257
	(!A1 * !A2 * !B1 * !X)	0.00192	0.00192	0.00192
	(!A1 * !A2 * !B1 * !X)	-0.00269	-0.00269	-0.00269

sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	0.00262	0.00265	0.00263
	(A2 * B1 * X)	-0.00119	-0.00121	-0.00119
	(A2 * !B1 * !X)	0.00232	0.00234	0.00232
	(A2 * !B1 * !X)	-0.00263	-0.00271	-0.00270
	(A1 * !A2 * B1 * X)	0.00263	0.00265	0.00263
	(A1 * !A2 * B1 * X)	-0.00119	-0.00120	-0.00119
	(A1 * !A2 * !B1 * !X)	0.00231	0.00234	0.00232
	(A1 * !A2 * !B1 * !X)	-0.00240	-0.00262	-0.00262
	(!A1 * !A2 * !B1 * !X)	0.00225	0.00224	0.00224
	(!A1 * !A2 * !B1 * !X)	-0.00273	-0.00272	-0.00272
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	0.00451	0.00455	0.00452
	(A2 * B1 * X)	-0.00265	-0.00267	-0.00265
	(A2 * !B1 * !X)	0.00410	0.00414	0.00410
	(A2 * !B1 * !X)	-0.00533	-0.00554	-0.00551
	(A1 * !A2 * B1 * X)	0.00450	0.00454	0.00451
	(A1 * !A2 * B1 * X)	-0.00265	-0.00267	-0.00264
	(A1 * !A2 * !B1 * !X)	0.00409	0.00412	0.00410
	(A1 * !A2 * !B1 * !X)	-0.00485	-0.00532	-0.00532
	(!A1 * !A2 * !B1 * !X)	0.00394	0.00397	0.00393
	(!A1 * !A2 * !B1 * !X)	-0.00565	-0.00567	-0.00564

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

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

sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	-0.00219	-0.00220	-0.00225
	(A2 * B1 * X)	0.00127	0.00127	0.00123
	(A2 * !B1 * !X)	-0.00198	-0.00200	-0.00199
	(A2 * !B1 * !X)	0.00265	0.00267	0.00266
	(A1 * !A2 * B1 * X)	-0.00212	-0.00213	-0.00224
	(A1 * !A2 * B1 * X)	0.00130	0.00130	0.00122
	(A1 * !A2 * !B1 * !X)	-0.00198	-0.00199	-0.00199
	(A1 * !A2 * !B1 * !X)	0.00256	0.00257	0.00257
	(!A1 * !A2 * !B1 * !X)	-0.00178	-0.00191	-0.00192
	(!A1 * !A2 * !B1 * !X)	0.00273	0.00271	0.00270
sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	-0.00255	-0.00257	-0.00261
	(A2 * B1 * X)	0.00126	0.00127	0.00122
	(A2 * !B1 * !X)	-0.00230	-0.00232	-0.00231
	(A2 * !B1 * !X)	0.00269	0.00271	0.00270
	(A1 * !A2 * B1 * X)	-0.00248	-0.00250	-0.00260
	(A1 * !A2 * B1 * X)	0.00129	0.00130	0.00121
	(A1 * !A2 * !B1 * !X)	-0.00230	-0.00232	-0.00231
	(A1 * !A2 * !B1 * !X)	0.00261	0.00262	0.00262
	(!A1 * !A2 * !B1 * !X)	-0.00209	-0.00223	-0.00224
	(!A1 * !A2 * !B1 * !X)	0.00275	0.00274	0.00273
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	-0.00430	-0.00433	-0.00448
	(A2 * B1 * X)	0.00284	0.00284	0.00271
	(A2 * !B1 * !X)	-0.00408	-0.00412	-0.00408
	(A2 * !B1 * !X)	0.00549	0.00554	0.00551
	(A1 * !A2 * B1 * X)	-0.00415	-0.00415	-0.00444
	(A1 * !A2 * B1 * X)	0.00290	0.00289	0.00270
	(A1 * !A2 * !B1 * !X)	-0.00408	-0.00409	-0.00408
	(A1 * !A2 * !B1 * !X)	0.00531	0.00532	0.00532
	(!A1 * !A2 * !B1 * !X)	-0.00359	-0.00392	-0.00393
	(!A1 * !A2 * !B1 * !X)	0.00578	0.00569	0.00566

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)	0.00069	0.00069	0.00065
	(!A1 * !A2 * !A3 * !X)	-0.00268	-0.00269	-0.00277
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	0.00090	0.00089	0.00084
	(!A1 * !A2 * !A3 * !X)	-0.00332	-0.00333	-0.00342
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	0.00132	0.00132	0.00122
	(!A1 * !A2 * !A3 * !X)	-0.00627	-0.00630	-0.00648

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)	-0.00063	-0.00064	-0.00063
	(!A1 * !A2 * !A3 * !X)	0.00277	0.00283	0.00278
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	-0.00081	-0.00083	-0.00081
	(!A1 * !A2 * !A3 * !X)	0.00342	0.00347	0.00344
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	-0.00117	-0.00120	-0.00117
	(!A1 * !A2 * !A3 * !X)	0.00650	0.00662	0.00652

SKY130_FD_SC_HS__O32AIx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00274	0.00301	0.00293	0.00289	0.00299	0.50679
sky130_fd_sc_hs__o32ai_2	0.00580	0.00543	0.00586	0.00555	0.00563	0.87549
sky130_fd_sc_hs__o32ai_4	0.01096	0.01099	0.01109	0.01133	0.01099	1.57046

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32ai_1	0.00000	0.10319	0.38031
sky130_fd_sc_hs__o32ai_2	0.00000	0.20638	0.76062
sky130_fd_sc_hs__o32ai_4	0.00000	0.41275	1.52123

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)	0.14186	0.89563	9.10876
	A2->Y (FR)	0.13251	0.93387	9.79622
	A3->Y (FR)	0.10742	0.93311	10.08840
	B1->Y (FR)	0.05442	0.65916	7.44944
	B2->Y (FR)	0.04349	0.68723	8.05297
sky130_fd_sc_hs__o32ai_2	A1->Y (FR)	0.15166	0.77115	8.83113
	A2->Y (FR)	0.14126	0.82151	9.71212
	A3->Y (FR)	0.10946	0.81775	10.00690
	B1->Y (FR)	0.05777	0.60100	7.66114
	B2->Y (FR)	0.03956	0.62349	8.19267
sky130_fd_sc_hs__o32ai_4	A1->Y (FR)	0.15277	0.66933	8.64445
	A2->Y (FR)	0.14174	0.71889	9.53918
	A3->Y (FR)	0.10906	0.72404	9.94277
	B1->Y (FR)	0.05491	0.50499	7.28739
	B2->Y (FR)	0.03817	0.53951	7.94929

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32ai_1	A1->Y (RF)	0.04139	0.28642	2.62196
	A2->Y (RF)	0.04181	0.29013	2.71220
	A3->Y (RF)	0.03479	0.27954	2.67797
	B1->Y (RF)	0.03263	0.33525	3.39578
	B2->Y (RF)	0.02698	0.32272	3.32213
sky130_fd_sc_hs__o32ai_2	A1->Y (RF)	0.04308	0.23394	2.36626
	A2->Y (RF)	0.04399	0.24381	2.54491
	A3->Y (RF)	0.02971	0.21952	2.50433
	B1->Y (RF)	0.03399	0.28671	3.27159
	B2->Y (RF)	0.02664	0.27919	3.30519
sky130_fd_sc_hs__o32ai_4	A1->Y (RF)	0.04743	0.21150	2.56905
	A2->Y (RF)	0.04244	0.19606	2.46638
	A3->Y (RF)	0.03103	0.17610	2.35859
	B1->Y (RF)	0.04868	0.30555	3.81342
	B2->Y (RF)	0.03939	0.31073	4.06270

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	A1	0.00246	0.00322	0.04432
	A1	0.01674	0.01748	0.05644
	A2	0.00264	0.00365	0.03865
	A2	0.01533	0.01632	0.04942
	A3	0.00260	0.00505	0.05049
	A3	0.01344	0.01572	0.05856
	B1	-0.00044	0.00141	0.04597
	B1	0.00819	0.01009	0.05464
	B2	-0.00050	0.00310	0.05928
	B2	0.00641	0.00975	0.06643
sky130_fd_sc_hs__o32ai_2	A1	0.00437	0.00577	0.08518
	A1	0.03432	0.03570	0.11191
	A2	0.00479	0.00652	0.07089
	A2	0.03053	0.03223	0.09375
	A3	0.00454	0.00936	0.09233
	A3	0.02731	0.03198	0.11188
	B1	-0.00130	0.00233	0.08537
	B1	0.01604	0.01969	0.10315
	B2	-0.00166	0.00511	0.10246
	B2	0.01253	0.01931	0.11683

sky130_fd_sc_hs__o32ai_4	**A1**	0.00873	0.01216	0.16884
	A1	0.06764	0.07112	0.22376
	A2	0.00898	0.01331	0.14377
	A2	0.06062	0.06497	0.19268
	A3	0.00891	0.01915	0.18079
	A3	0.05366	0.06376	0.22025
	B1	-0.00278	0.00428	0.14738
	B1	0.03244	0.03954	0.18255
	B2	-0.00293	0.00871	0.16172
	B2	0.02519	0.03676	0.19087

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**A1**	0.01963	0.02053	0.05230
	A1	0.00340	0.00431	0.03674
	A2	0.01653	0.01749	0.04590
	A2	0.00179	0.00281	0.03175
	A3	0.01317	0.01435	0.04096
	A3	0.00017	0.00148	0.02861
	B1	0.01009	0.01211	0.05065
	B1	0.00147	0.00346	0.04197
	B2	0.00704	0.00906	0.04512
	B2	0.00016	0.00216	0.03813

sky130_fd_sc_hs__o32ai_2	**A1**	0.04120	0.04304	0.10671
	A1	0.00660	0.00857	0.07372
	A2	0.03478	0.03665	0.09076
	A2	0.00825	0.01006	0.06403
	A3	0.02745	0.03006	0.08088
	A3	-0.00050	0.00238	0.05396
	B1	0.02085	0.02462	0.09783
	B1	0.00363	0.00731	0.08047
	B2	0.01364	0.01793	0.08260
	B2	-0.00052	0.00370	0.06832
sky130_fd_sc_hs__o32ai_4	**A1**	0.08031	0.08507	0.23214
	A1	0.01282	0.01785	0.16704
	A2	0.06789	0.07310	0.20226
	A2	0.01461	0.01977	0.14862
	A3	0.05317	0.05987	0.17997
	A3	-0.00118	0.00617	0.12813
	B1	0.04096	0.04881	0.18736
	B1	0.00604	0.01375	0.15227
	B2	0.02672	0.03504	0.15048
	B2	-0.00128	0.00685	0.12218

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)**	0.00242	0.00244	0.00241
	(A2 * A3 * B2 * !Y)	-0.00285	-0.00294	-0.00292
	(A2 * A3 * B1 * !B2 * !Y)	0.00242	0.00244	0.00241
	(A2 * A3 * B1 * !B2 * !Y)	-0.00285	-0.00294	-0.00293
	(A2 * !B1 * !B2 * Y)	0.00242	0.00244	0.00241
	(A2 * !B1 * !B2 * Y)	-0.00286	-0.00294	-0.00292
	(A2 * !A3 * B2 * !Y)	0.00260	0.00244	0.00241
	(A2 * !A3 * B2 * !Y)	-0.00266	-0.00294	-0.00293
	(A2 * !A3 * B1 * !B2 * !Y)	0.00260	0.00244	0.00241
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00266	-0.00294	-0.00293
	(!A2 * A3 * B2 * !Y)	0.00255	0.00243	0.00241
	(!A2 * A3 * B2 * !Y)	-0.00254	-0.00285	-0.00285
	(!A2 * A3 * B1 * !B2 * !Y)	0.00255	0.00243	0.00242
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00254	-0.00285	-0.00285
	(!A2 * A3 * !B1 * !B2 * Y)	0.00241	0.00242	0.00241
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00263	-0.00285	-0.00285
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00233	0.00235	0.00232
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00295	-0.00296	-0.00295

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	0.00500	0.00504	0.00498
	(A2 * A3 * B2 * !Y)	-0.00592	-0.00610	-0.00608
	(A2 * A3 * B1 * !B2 * !Y)	0.00500	0.00504	0.00498
	(A2 * A3 * B1 * !B2 * !Y)	-0.00592	-0.00610	-0.00608
	(A2 * !B1 * !B2 * Y)	0.00498	0.00504	0.00498
	(A2 * !B1 * !B2 * Y)	-0.00595	-0.00610	-0.00608
	(A2 * !A3 * B2 * !Y)	0.00538	0.00504	0.00498
	(A2 * !A3 * B2 * !Y)	-0.00553	-0.00609	-0.00609
	(A2 * !A3 * B1 * !B2 * !Y)	0.00538	0.00504	0.00498
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00553	-0.00608	-0.00609
	(!A2 * A3 * B2 * !Y)	0.00526	0.00504	0.00498
	(!A2 * A3 * B2 * !Y)	-0.00532	-0.00597	-0.00594
	(!A2 * A3 * B1 * !B2 * !Y)	0.00526	0.00504	0.00499
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00532	-0.00597	-0.00594
	(!A2 * A3 * !B1 * !B2 * Y)	0.00498	0.00501	0.00498
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00552	-0.00599	-0.00594
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00477	0.00477	0.00475
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00621	-0.00620	-0.00619

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	0.00944	0.00948	0.00939
	(A2 * A3 * B2 * !Y)	-0.01155	-0.01195	-0.01184
	(A2 * A3 * B1 * !B2 * !Y)	0.00945	0.00949	0.00940
	(A2 * A3 * B1 * !B2 * !Y)	-0.01154	-0.01195	-0.01184
	(A2 * !B1 * !B2 * Y)	0.00941	0.00948	0.00939
	(A2 * !B1 * !B2 * Y)	-0.01160	-0.01185	-0.01184
	(A2 * !A3 * B2 * !Y)	0.01028	0.00949	0.00940
	(A2 * !A3 * B2 * !Y)	-0.01070	-0.01194	-0.01187
	(A2 * !A3 * B1 * !B2 * !Y)	0.01029	0.00949	0.00940
	(A2 * !A3 * B1 * !B2 * !Y)	-0.01069	-0.01195	-0.01187
	(!A2 * A3 * B2 * !Y)	0.00991	0.00950	0.00940
	(!A2 * A3 * B2 * !Y)	-0.01022	-0.01161	-0.01158
	(!A2 * A3 * B1 * !B2 * !Y)	0.00991	0.00951	0.00941
	(!A2 * A3 * B1 * !B2 * !Y)	-0.01022	-0.01161	-0.01158
	(!A2 * A3 * !B1 * !B2 * Y)	0.00934	0.00947	0.00939
	(!A2 * A3 * !B1 * !B2 * Y)	-0.01064	-0.01161	-0.01157
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00894	0.00909	0.00900
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.01202	-0.01213	-0.01206

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)**	-0.00240	-0.00242	-0.00241
	(A2 * A3 * B2 * !Y)	0.00291	0.00294	0.00292
	(A2 * A3 * B1 * !B2 * !Y)	-0.00240	-0.00242	-0.00241
	(A2 * A3 * B1 * !B2 * !Y)	0.00291	0.00294	0.00293
	(A2 * !B1 * !B2 * Y)	-0.00240	-0.00241	-0.00241
	(A2 * !B1 * !B2 * Y)	0.00291	0.00294	0.00292
	(A2 * !A3 * B2 * !Y)	-0.00240	-0.00242	-0.00241
	(A2 * !A3 * B2 * !Y)	0.00291	0.00296	0.00293
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00240	-0.00242	-0.00241
	(A2 * !A3 * B1 * !B2 * !Y)	0.00291	0.00296	0.00293
	(!A2 * A3 * B2 * !Y)	-0.00240	-0.00242	-0.00240
	(!A2 * A3 * B2 * !Y)	0.00284	0.00287	0.00285
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00240	-0.00241	-0.00240
	(!A2 * A3 * B1 * !B2 * !Y)	0.00284	0.00287	0.00285
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00240	-0.00241	-0.00241
	(!A2 * A3 * !B1 * !B2 * Y)	0.00284	0.00285	0.00285
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00218	-0.00233	-0.00232
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00297	0.00297	0.00296

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	-0.00496	-0.00498	-0.00497
	(A2 * A3 * B2 * !Y)	0.00606	0.00610	0.00608
	(A2 * A3 * B1 * !B2 * !Y)	-0.00496	-0.00498	-0.00497
	(A2 * A3 * B1 * !B2 * !Y)	0.00606	0.00610	0.00608
	(A2 * !B1 * !B2 * Y)	-0.00496	-0.00498	-0.00497
	(A2 * !B1 * !B2 * Y)	0.00606	0.00610	0.00608
	(A2 * !A3 * B2 * !Y)	-0.00496	-0.00496	-0.00497
	(A2 * !A3 * B2 * !Y)	0.00607	0.00609	0.00609
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00495	-0.00496	-0.00497
	(A2 * !A3 * B1 * !B2 * !Y)	0.00607	0.00608	0.00609
	(!A2 * A3 * B2 * !Y)	-0.00496	-0.00499	-0.00496
	(!A2 * A3 * B2 * !Y)	0.00593	0.00599	0.00594
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00498	-0.00499	-0.00496
	(!A2 * A3 * B1 * !B2 * !Y)	0.00596	0.00599	0.00594
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00498	-0.00499	-0.00497
	(!A2 * A3 * !B1 * !B2 * Y)	0.00595	0.00599	0.00594
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00438	-0.00476	-0.00475
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00627	0.00626	0.00621

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	-0.00935	-0.00942	-0.00937
	(A2 * A3 * B2 * !Y)	0.01178	0.01195	0.01184
	(A2 * A3 * B1 * !B2 * !Y)	-0.00934	-0.00942	-0.00937
	(A2 * A3 * B1 * !B2 * !Y)	0.01178	0.01195	0.01184
	(A2 * !B1 * !B2 * Y)	-0.00935	-0.00937	-0.00937
	(A2 * !B1 * !B2 * Y)	0.01178	0.01185	0.01184
	(A2 * !A3 * B2 * !Y)	-0.00934	-0.00941	-0.00937
	(A2 * !A3 * B2 * !Y)	0.01180	0.01194	0.01187
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00935	-0.00941	-0.00937
	(A2 * !A3 * B1 * !B2 * !Y)	0.01183	0.01195	0.01187
	(!A2 * A3 * B2 * !Y)	-0.00934	-0.00939	-0.00936
	(!A2 * A3 * B2 * !Y)	0.01151	0.01161	0.01158
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00934	-0.00938	-0.00936
	(!A2 * A3 * B1 * !B2 * !Y)	0.01151	0.01161	0.01158
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00933	-0.00939	-0.00937
	(!A2 * A3 * !B1 * !B2 * Y)	0.01150	0.01161	0.01157
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00825	-0.00902	-0.00900
	(!A2 * !A3 * !B1 * !B2 * Y)	0.01219	0.01219	0.01210

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)**	0.00257	0.00259	0.00246
	(A1 * A3 * B2 * !Y)	-0.00197	-0.00198	-0.00196
	(A1 * A3 * B1 * !B2 * !Y)	0.00257	0.00259	0.00246
	(A1 * A3 * B1 * !B2 * !Y)	-0.00197	-0.00198	-0.00196
	(A1 * A3 * !B1 * !B2 * Y)	0.00234	0.00235	0.00233
	(A1 * A3 * !B1 * !B2 * Y)	-0.00214	-0.00216	-0.00215
	(A1 * !A3 * B2 * !Y)	0.00239	0.00241	0.00237
	(A1 * !A3 * B2 * !Y)	-0.00159	-0.00160	-0.00161
	(A1 * !A3 * B1 * !B2 * !Y)	0.00240	0.00241	0.00237
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00159	-0.00160	-0.00160
	(A1 * !A3 * !B1 * !B2 * Y)	0.00235	0.00235	0.00233
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00302	-0.00304	-0.00303
	(!A1 * A3 * B2 * !Y)	0.00302	0.00240	0.00236
	(!A1 * A3 * B2 * !Y)	-0.00238	-0.00303	-0.00303
	(!A1 * A3 * B1 * !B2 * !Y)	0.00303	0.00240	0.00236
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00237	-0.00303	-0.00303
	(!A1 * A3 * !B1 * !B2 * Y)	0.00234	0.00236	0.00233
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00303	-0.00305	-0.00304
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00225	0.00226	0.00224
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00308	-0.00309	-0.00308

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	0.00504	0.00520	0.00488
	(A1 * A3 * B2 * !Y)	-0.00364	-0.00369	-0.00366
	(A1 * A3 * B1 * !B2 * !Y)	0.00504	0.00520	0.00488
	(A1 * A3 * B1 * !B2 * !Y)	-0.00364	-0.00369	-0.00366
	(A1 * A3 * !B1 * !B2 * Y)	0.00454	0.00462	0.00456
	(A1 * A3 * !B1 * !B2 * Y)	-0.00415	-0.00412	-0.00413
	(A1 * !A3 * B2 * !Y)	0.00466	0.00472	0.00465
	(A1 * !A3 * B2 * !Y)	-0.00291	-0.00295	-0.00296
	(A1 * !A3 * B1 * !B2 * !Y)	0.00467	0.00472	0.00465
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00292	-0.00295	-0.00296
	(A1 * !A3 * !B1 * !B2 * Y)	0.00454	0.00460	0.00456
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00574	-0.00581	-0.00582
	(!A1 * A3 * B2 * !Y)	0.00606	0.00470	0.00462
	(!A1 * A3 * B2 * !Y)	-0.00430	-0.00583	-0.00585
	(!A1 * A3 * B1 * !B2 * !Y)	0.00606	0.00470	0.00462
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00429	-0.00583	-0.00585
	(!A1 * A3 * !B1 * !B2 * Y)	0.00454	0.00460	0.00456
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00577	-0.00587	-0.00589
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00435	0.00437	0.00434
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00596	-0.00597	-0.00595

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	0.01034	0.01049	0.00996
	(A1 * A3 * B2 * !Y)	-0.00744	-0.00744	-0.00741
	(A1 * A3 * B1 * !B2 * !Y)	0.01034	0.01050	0.00996
	(A1 * A3 * B1 * !B2 * !Y)	-0.00745	-0.00744	-0.00741
	(A1 * A3 * !B1 * !B2 * Y)	0.00942	0.00949	0.00940
	(A1 * A3 * !B1 * !B2 * Y)	-0.00828	-0.00832	-0.00824
	(A1 * !A3 * B2 * !Y)	0.00964	0.00967	0.00951
	(A1 * !A3 * B2 * !Y)	-0.00604	-0.00604	-0.00605
	(A1 * !A3 * B1 * !B2 * !Y)	0.00964	0.00967	0.00951
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00604	-0.00604	-0.00605
	(A1 * !A3 * !B1 * !B2 * Y)	0.00937	0.00948	0.00940
	(A1 * !A3 * !B1 * !B2 * Y)	-0.01166	-0.01182	-0.01176
	(!A1 * A3 * B2 * !Y)	0.01249	0.00965	0.00947
	(!A1 * A3 * B2 * !Y)	-0.00884	-0.01184	-0.01192
	(!A1 * A3 * B1 * !B2 * !Y)	0.01249	0.00966	0.00947
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00884	-0.01184	-0.01192
	(!A1 * A3 * !B1 * !B2 * Y)	0.00938	0.00948	0.00940
	(!A1 * A3 * !B1 * !B2 * Y)	-0.01176	-0.01198	-0.01194
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00897	0.00905	0.00896
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.01210	-0.01214	-0.01208

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)**	-0.00235	-0.00236	-0.00235
	(A1 * A3 * B2 * !Y)	0.00197	0.00198	0.00196
	(A1 * A3 * B1 * !B2 * !Y)	-0.00235	-0.00236	-0.00235
	(A1 * A3 * B1 * !B2 * !Y)	0.00197	0.00198	0.00196
	(A1 * A3 * !B1 * !B2 * Y)	-0.00232	-0.00233	-0.00233
	(A1 * A3 * !B1 * !B2 * Y)	0.00214	0.00216	0.00215
	(A1 * !A3 * B2 * !Y)	-0.00234	-0.00235	-0.00233
	(A1 * !A3 * B2 * !Y)	0.00164	0.00165	0.00165
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00234	-0.00235	-0.00233
	(A1 * !A3 * B1 * !B2 * !Y)	0.00164	0.00165	0.00165
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00232	-0.00233	-0.00233
	(A1 * !A3 * !B1 * !B2 * Y)	0.00302	0.00304	0.00303
	(!A1 * A3 * B2 * !Y)	-0.00235	-0.00235	-0.00234
	(!A1 * A3 * B2 * !Y)	0.00303	0.00304	0.00304
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00235	-0.00235	-0.00234
	(!A1 * A3 * B1 * !B2 * !Y)	0.00304	0.00304	0.00304
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00232	-0.00233	-0.00233
	(!A1 * A3 * !B1 * !B2 * Y)	0.00304	0.00305	0.00304
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00207	-0.00223	-0.00224
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00311	0.00310	0.00308

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	-0.00464	-0.00468	-0.00466
	(A1 * A3 * B2 * !Y)	0.00364	0.00369	0.00366
	(A1 * A3 * B1 * !B2 * !Y)	-0.00464	-0.00468	-0.00466
	(A1 * A3 * B1 * !B2 * !Y)	0.00364	0.00369	0.00366
	(A1 * A3 * !B1 * !B2 * Y)	-0.00454	-0.00454	-0.00455
	(A1 * A3 * !B1 * !B2 * Y)	0.00415	0.00412	0.00413
	(A1 * !A3 * B2 * !Y)	-0.00457	-0.00459	-0.00455
	(A1 * !A3 * B2 * !Y)	0.00298	0.00301	0.00304
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00457	-0.00459	-0.00455
	(A1 * !A3 * B1 * !B2 * !Y)	0.00298	0.00301	0.00305
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00454	-0.00455	-0.00455
	(A1 * !A3 * !B1 * !B2 * Y)	0.00580	0.00581	0.00582
	(!A1 * A3 * B2 * !Y)	-0.00458	-0.00462	-0.00459
	(!A1 * A3 * B2 * !Y)	0.00581	0.00588	0.00585
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00458	-0.00462	-0.00458
	(!A1 * A3 * B1 * !B2 * !Y)	0.00580	0.00589	0.00585
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00454	-0.00454	-0.00455
	(!A1 * A3 * !B1 * !B2 * Y)	0.00587	0.00587	0.00589
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00396	-0.00437	-0.00434
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00601	0.00600	0.00597

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	-0.00952	-0.00953	-0.00951
	(A1 * A3 * B2 * !Y)	0.00744	0.00744	0.00741
	(A1 * A3 * B1 * !B2 * !Y)	-0.00952	-0.00953	-0.00951
	(A1 * A3 * B1 * !B2 * !Y)	0.00745	0.00744	0.00741
	(A1 * A3 * !B1 * !B2 * Y)	-0.00939	-0.00942	-0.00937
	(A1 * A3 * !B1 * !B2 * Y)	0.00828	0.00832	0.00824
	(A1 * !A3 * B2 * !Y)	-0.00942	-0.00943	-0.00934
	(A1 * !A3 * B2 * !Y)	0.00616	0.00618	0.00622
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00935	-0.00943	-0.00934
	(A1 * !A3 * B1 * !B2 * !Y)	0.00609	0.00618	0.00622
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00935	-0.00942	-0.00938
	(A1 * !A3 * !B1 * !B2 * Y)	0.01172	0.01182	0.01176
	(!A1 * A3 * B2 * !Y)	-0.00940	-0.00945	-0.00939
	(!A1 * A3 * B2 * !Y)	0.01183	0.01194	0.01192
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00940	-0.00945	-0.00938
	(!A1 * A3 * B1 * !B2 * !Y)	0.01183	0.01194	0.01192
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00938	-0.00940	-0.00937
	(!A1 * A3 * !B1 * !B2 * Y)	0.01194	0.01198	0.01194
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00817	-0.00903	-0.00896
	(!A1 * !A3 * !B1 * !B2 * Y)	0.01221	0.01217	0.01210

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

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

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	0.00251	0.00253	0.00251
	(A2 * B2 * !Y)	-0.00133	-0.00134	-0.00133
	(A2 * B1 * !B2 * !Y)	0.00251	0.00253	0.00251
	(A2 * B1 * !B2 * !Y)	-0.00133	-0.00134	-0.00133
	(A2 * !B1 * !B2 * Y)	0.00230	0.00234	0.00232
	(A2 * !B1 * !B2 * Y)	-0.00279	-0.00288	-0.00287
	(A1 * !A2 * B2 * !Y)	0.00251	0.00253	0.00251
	(A1 * !A2 * B2 * !Y)	-0.00133	-0.00134	-0.00133
	(A1 * !A2 * B1 * !B2 * !Y)	0.00251	0.00253	0.00251
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00133	-0.00134	-0.00132
	(A1 * !A2 * !B1 * !B2 * Y)	0.00233	0.00234	0.00232
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00254	-0.00276	-0.00276
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00222	0.00225	0.00222
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00292	-0.00293	-0.00291
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	0.00547	0.00555	0.00550
	(A2 * B2 * !Y)	-0.00263	-0.00267	-0.00264
	(A2 * B1 * !B2 * !Y)	0.00547	0.00555	0.00550
	(A2 * B1 * !B2 * !Y)	-0.00263	-0.00266	-0.00264
	(A2 * !B1 * !B2 * Y)	0.00454	0.00458	0.00454
	(A2 * !B1 * !B2 * Y)	-0.00608	-0.00631	-0.00627
	(A1 * !A2 * B2 * !Y)	0.00547	0.00555	0.00550
	(A1 * !A2 * B2 * !Y)	-0.00262	-0.00266	-0.00263
	(A1 * !A2 * B1 * !B2 * !Y)	0.00547	0.00555	0.00550
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00262	-0.00266	-0.00263
	(A1 * !A2 * !B1 * !B2 * Y)	0.00454	0.00456	0.00454
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00551	-0.00594	-0.00596
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00434	0.00437	0.00433
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00637	-0.00636	-0.00636

sky130_fd_sc_hs__o32ai_4	**(A2 * B2 * !Y)**	0.01039	0.01052	0.01044
	(A2 * B2 * !Y)	-0.00519	-0.00526	-0.00521
	(A2 * B1 * !B2 * !Y)	0.01039	0.01053	0.01044
	(A2 * B1 * !B2 * !Y)	-0.00519	-0.00526	-0.00521
	(A2 * !B1 * !B2 * Y)	0.00883	0.00894	0.00886
	(A2 * !B1 * !B2 * Y)	-0.01173	-0.01216	-0.01214
	(A1 * !A2 * B2 * !Y)	0.01039	0.01053	0.01044
	(A1 * !A2 * B2 * !Y)	-0.00518	-0.00525	-0.00520
	(A1 * !A2 * B1 * !B2 * !Y)	0.01039	0.01061	0.01044
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00518	-0.00529	-0.00519
	(A1 * !A2 * !B1 * !B2 * Y)	0.00886	0.00897	0.00886
	(A1 * !A2 * !B1 * !B2 * Y)	-0.01063	-0.01145	-0.01149
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00851	0.00857	0.00850
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.01233	-0.01236	-0.01231

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

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

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	-0.00244	-0.00245	-0.00250
	(A2 * B2 * !Y)	0.00140	0.00140	0.00135
	(A2 * B1 * !B2 * !Y)	-0.00244	-0.00245	-0.00250
	(A2 * B1 * !B2 * !Y)	0.00140	0.00140	0.00135
	(A2 * !B1 * !B2 * Y)	-0.00230	-0.00232	-0.00231
	(A2 * !B1 * !B2 * Y)	0.00286	0.00288	0.00287
	(A1 * !A2 * B2 * !Y)	-0.00235	-0.00236	-0.00249
	(A1 * !A2 * B2 * !Y)	0.00144	0.00144	0.00134
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00235	-0.00236	-0.00249
	(A1 * !A2 * B1 * !B2 * !Y)	0.00144	0.00144	0.00134
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00231	-0.00231	-0.00231
	(A1 * !A2 * !B1 * !B2 * Y)	0.00275	0.00276	0.00276
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00206	-0.00222	-0.00222
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00294	0.00293	0.00292
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	-0.00527	-0.00530	-0.00548
	(A2 * B2 * !Y)	0.00282	0.00283	0.00269
	(A2 * B1 * !B2 * !Y)	-0.00528	-0.00530	-0.00548
	(A2 * B1 * !B2 * !Y)	0.00282	0.00283	0.00269
	(A2 * !B1 * !B2 * Y)	-0.00453	-0.00455	-0.00453
	(A2 * !B1 * !B2 * Y)	0.00627	0.00631	0.00627
	(A1 * !A2 * B2 * !Y)	-0.00507	-0.00510	-0.00543
	(A1 * !A2 * B2 * !Y)	0.00289	0.00290	0.00267
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00508	-0.00510	-0.00543
	(A1 * !A2 * B1 * !B2 * !Y)	0.00289	0.00290	0.00267
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00452	-0.00452	-0.00453
	(A1 * !A2 * !B1 * !B2 * Y)	0.00594	0.00594	0.00596
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00396	-0.00437	-0.00433
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00640	0.00636	0.00637

sky130_fd_sc_hs__o32ai_4	(A2 * B2 * !Y)	-0.01002	-0.01008	-0.01039
	(A2 * B2 * !Y)	0.00553	0.00555	0.00530
	(A2 * B1 * !B2 * !Y)	-0.01002	-0.01008	-0.01039
	(A2 * B1 * !B2 * !Y)	0.00553	0.00555	0.00530
	(A2 * !B1 * !B2 * Y)	-0.00883	-0.00887	-0.00884
	(A2 * !B1 * !B2 * Y)	0.01213	0.01216	0.01214
	(A1 * !A2 * B2 * !Y)	-0.00962	-0.00967	-0.01031
	(A1 * !A2 * B2 * !Y)	0.00567	0.00569	0.00526
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00962	-0.00967	-0.01031
	(A1 * !A2 * B1 * !B2 * !Y)	0.00568	0.00570	0.00526
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00882	-0.00882	-0.00884
	(A1 * !A2 * !B1 * !B2 * Y)	0.01146	0.01145	0.01149
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00778	-0.00857	-0.00850
	(!A1 * !A2 * !B1 * !B2 * Y)	0.01238	0.01238	0.01234

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	(A3 * B2 * !Y)	0.00303	0.00262	0.00257
	(A3 * B2 * !Y)	-0.00241	-0.00287	-0.00288
	(A2 * !A3 * B2 * !Y)	0.00303	0.00262	0.00257
	(A2 * !A3 * B2 * !Y)	-0.00241	-0.00287	-0.00288
	(A1 * !A2 * !A3 * B2 * !Y)	0.00303	0.00262	0.00257
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00241	-0.00287	-0.00288
	(!A1 * !A2 * !A3 * B2 * Y)	0.00084	0.00084	0.00083
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00340	-0.00345	-0.00344
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00093	0.00093	0.00087
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00332	-0.00332	-0.00345

sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	0.00581	0.00473	0.00466
	(A3 * B2 * !Y)	-0.00453	-0.00574	-0.00574
	(A2 * !A3 * B2 * !Y)	0.00581	0.00472	0.00466
	(A2 * !A3 * B2 * !Y)	-0.00453	-0.00575	-0.00574
	(A1 * !A2 * !A3 * B2 * !Y)	0.00581	0.00472	0.00466
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00453	-0.00575	-0.00574
	(!A1 * !A2 * !A3 * B2 * Y)	0.00131	0.00132	0.00131
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00670	-0.00684	-0.00682
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00151	0.00151	0.00137
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00658	-0.00662	-0.00685
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	0.01209	0.00991	0.00977
	(A3 * B2 * !Y)	-0.00914	-0.01153	-0.01152
	(A2 * !A3 * B2 * !Y)	0.01208	0.00990	0.00977
	(A2 * !A3 * B2 * !Y)	-0.00914	-0.01155	-0.01152
	(A1 * !A2 * !A3 * B2 * !Y)	0.01208	0.00989	0.00977
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00914	-0.01155	-0.01152
	(!A1 * !A2 * !A3 * B2 * Y)	0.00264	0.00264	0.00263
	(!A1 * !A2 * !A3 * B2 * Y)	-0.01391	-0.01415	-0.01410
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00303	0.00301	0.00275
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.01368	-0.01371	-0.01419

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

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

sky130_fd_sc_hs__o32ai_1	**(A3 * B2 * !Y)**	-0.00255	-0.00256	-0.00255
	(A3 * B2 * !Y)	0.00288	0.00290	0.00289
	(A2 * !A3 * B2 * !Y)	-0.00255	-0.00257	-0.00255
	(A2 * !A3 * B2 * !Y)	0.00288	0.00291	0.00289
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00256	-0.00257	-0.00255
	(A1 * !A2 * !A3 * B2 * !Y)	0.00289	0.00291	0.00289
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00081	-0.00082	-0.00083
	(!A1 * !A2 * !A3 * B2 * Y)	0.00346	0.00348	0.00344
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00084	-0.00086	-0.00084
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00346	0.00353	0.00347
sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	-0.00463	-0.00466	-0.00464
	(A3 * B2 * !Y)	0.00569	0.00574	0.00574
	(A2 * !A3 * B2 * !Y)	-0.00463	-0.00467	-0.00464
	(A2 * !A3 * B2 * !Y)	0.00569	0.00578	0.00574
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00463	-0.00466	-0.00464
	(A1 * !A2 * !A3 * B2 * !Y)	0.00569	0.00576	0.00574
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00129	-0.00130	-0.00131
	(!A1 * !A2 * !A3 * B2 * Y)	0.00682	0.00684	0.00682
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00132	-0.00135	-0.00132
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00686	0.00699	0.00689
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	-0.00975	-0.00975	-0.00972
	(A3 * B2 * !Y)	0.01151	0.01153	0.01152
	(A2 * !A3 * B2 * !Y)	-0.00975	-0.00978	-0.00972
	(A2 * !A3 * B2 * !Y)	0.01150	0.01158	0.01152
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00975	-0.00978	-0.00971
	(A1 * !A2 * !A3 * B2 * !Y)	0.01150	0.01159	0.01152
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00260	-0.00262	-0.00262
	(!A1 * !A2 * !A3 * B2 * Y)	0.01412	0.01425	0.01410
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00266	-0.00271	-0.00266
	(!A1 * !A2 * !A3 * !B2 * Y)	0.01422	0.01448	0.01426

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	(A3 * B1 * !Y)	0.00268	0.00269	0.00267
	(A3 * B1 * !Y)	-0.00130	-0.00130	-0.00129
	(A2 * !A3 * B1 * !Y)	0.00267	0.00269	0.00267
	(A2 * !A3 * B1 * !Y)	-0.00129	-0.00130	-0.00129
	(A1 * !A2 * !A3 * B1 * !Y)	0.00267	0.00270	0.00267
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00129	-0.00130	-0.00129
	(!A1 * !A2 * !A3 * B1 * Y)	0.00071	0.00070	0.00070
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00346	-0.00348	-0.00346
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00080	0.00080	0.00073
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00337	-0.00338	-0.00350
sky130_fd_sc_hs__o32ai_2	(A3 * B1 * !Y)	0.00521	0.00528	0.00523
	(A3 * B1 * !Y)	-0.00265	-0.00269	-0.00266
	(A2 * !A3 * B1 * !Y)	0.00521	0.00528	0.00523
	(A2 * !A3 * B1 * !Y)	-0.00265	-0.00269	-0.00266
	(A1 * !A2 * !A3 * B1 * !Y)	0.00522	0.00532	0.00523
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00265	-0.00271	-0.00266
	(!A1 * !A2 * !A3 * B1 * Y)	0.00140	0.00139	0.00138
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00685	-0.00695	-0.00689
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00159	0.00159	0.00145
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00672	-0.00675	-0.00698

sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	0.01023	0.01044	0.01027
	(A3 * B1 * !Y)	-0.00525	-0.00536	-0.00526
	(A2 * !A3 * B1 * !Y)	0.01023	0.01043	0.01027
	(A2 * !A3 * B1 * !Y)	-0.00524	-0.00537	-0.00526
	(A1 * !A2 * !A3 * B1 * !Y)	0.01023	0.01043	0.01027
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00524	-0.00537	-0.00526
	(!A1 * !A2 * !A3 * B1 * Y)	0.00268	0.00267	0.00265
	(!A1 * !A2 * !A3 * B1 * Y)	-0.01361	-0.01378	-0.01366
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00303	0.00304	0.00277
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.01329	-0.01337	-0.01386

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**(A3 * B1 * !Y)**	-0.00260	-0.00262	-0.00267
	(A3 * B1 * !Y)	0.00134	0.00135	0.00130
	(A2 * !A3 * B1 * !Y)	-0.00260	-0.00262	-0.00266
	(A2 * !A3 * B1 * !Y)	0.00134	0.00135	0.00130
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00261	-0.00262	-0.00266
	(A1 * !A2 * !A3 * B1 * !Y)	0.00135	0.00135	0.00130
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00070	-0.00070	-0.00070
	(!A1 * !A2 * !A3 * B1 * Y)	0.00347	0.00349	0.00346
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00071	-0.00072	-0.00071
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00350	0.00356	0.00351

sky130_fd_sc_hs__o32ai_2	**(A3 * B1 * !Y)**	-0.00502	-0.00505	-0.00521
	(A3 * B1 * !Y)	0.00283	0.00284	0.00270
	(A2 * !A3 * B1 * !Y)	-0.00502	-0.00505	-0.00521
	(A2 * !A3 * B1 * !Y)	0.00282	0.00284	0.00270
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00504	-0.00508	-0.00521
	(A1 * !A2 * !A3 * B1 * !Y)	0.00284	0.00286	0.00270
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00138	-0.00138	-0.00138
	(!A1 * !A2 * !A3 * B1 * Y)	0.00693	0.00695	0.00689
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00140	-0.00143	-0.00140
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00699	0.00711	0.00701
sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	-0.00989	-0.00992	-0.01024
	(A3 * B1 * !Y)	0.00555	0.00556	0.00534
	(A2 * !A3 * B1 * !Y)	-0.00988	-0.00996	-0.01024
	(A2 * !A3 * B1 * !Y)	0.00554	0.00558	0.00534
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00992	-0.00995	-0.01023
	(A1 * !A2 * !A3 * B1 * !Y)	0.00559	0.00558	0.00534
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00263	-0.00265	-0.00265
	(!A1 * !A2 * !A3 * B1 * Y)	0.01371	0.01378	0.01366
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00268	-0.00274	-0.00268
	(!A1 * !A2 * !A3 * !B1 * Y)	0.01388	0.01412	0.01392

SKY130_FD_SC_HS__O32Ax

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00271	0.00264	0.00262	0.00264	0.00268	1.41558
sky130_fd_sc_hs__o32a_2	0.00285	0.00279	0.00284	0.00303	0.00284	2.71056
sky130_fd_sc_hs__o32a_4	0.00488	0.00521	0.00488	0.00647	0.00514	5.28336

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32a_1	0.00000	0.31078	0.96806
sky130_fd_sc_hs__o32a_2	0.00000	0.38073	0.97950
sky130_fd_sc_hs__o32a_4	0.00000	0.76732	1.95899

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)	0.08127	0.49674	5.48654
	A2->X (RR)	0.07905	0.49021	5.35807
	A3->X (RR)	0.07054	0.47236	5.28733
	B1->X (RR)	0.07284	0.51187	5.84401
	B2->X (RR)	0.06490	0.48968	5.70353
sky130_fd_sc_hs__o32a_2	A1->X (RR)	0.08295	0.41430	5.30591
	A2->X (RR)	0.08142	0.40974	5.20040
	A3->X (RR)	0.07371	0.39520	5.13043
	B1->X (RR)	0.07502	0.43513	5.67776
	B2->X (RR)	0.06720	0.41476	5.52303
sky130_fd_sc_hs__o32a_4	A1->X (RR)	0.09646	0.37469	5.56207
	A2->X (RR)	0.08972	0.36036	5.40801
	A3->X (RR)	0.07788	0.34014	5.32084
	B1->X (RR)	0.08932	0.40222	5.94439
	B2->X (RR)	0.07608	0.37598	5.77873

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32a_1	A1->X (FF)	0.17023	0.57226	5.21965
	A2->X (FF)	0.15845	0.60170	5.52390
	A3->X (FF)	0.13414	0.60767	5.60730
	B1->X (FF)	0.08806	0.45732	5.00054
	B2->X (FF)	0.07571	0.46981	5.16837
sky130_fd_sc_hs__o32a_2	A1->X (FF)	0.21109	0.59522	5.33221
	A2->X (FF)	0.19967	0.62932	5.62682
	A3->X (FF)	0.17625	0.63829	5.71350
	B1->X (FF)	0.11465	0.47161	5.07641
	B2->X (FF)	0.10364	0.51057	5.25096
sky130_fd_sc_hs__o32a_4	A1->X (FF)	0.21827	0.57104	5.52279
	A2->X (FF)	0.20424	0.59712	5.71420
	A3->X (FF)	0.16860	0.59928	5.80535
	B1->X (FF)	0.11036	0.44719	5.14716
	B2->X (FF)	0.09434	0.46332	5.32356

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	A1	0.02070	0.02286	0.09238
	A1	0.00774	0.00992	0.07979
	A2	0.01802	0.02074	0.08369
	A2	0.00669	0.00941	0.07263
	A3	0.01507	0.01842	0.09171
	A3	0.00515	0.00852	0.08178
	B1	0.01770	0.02242	0.12829
	B1	0.00637	0.01195	0.12069
	B2	0.01173	0.01819	0.13772
	B2	0.00503	0.01150	0.13136
sky130_fd_sc_hs__o32a_2	A1	0.02833	0.03007	0.09937
	A1	0.01194	0.01437	0.08529
	A2	0.02325	0.02618	0.08953
	A2	0.01083	0.01387	0.07712
	A3	0.02032	0.02381	0.09720
	A3	0.00924	0.01286	0.08614
	B1	0.01952	0.02483	0.13306
	B1	0.01023	0.01564	0.12446
	B2	0.01635	0.02247	0.14223
	B2	0.00906	0.01530	0.13596

sky130_fd_sc_hs__o32a_4	**A1**	0.04980	0.05461	0.22547
	A1	0.02614	0.03098	0.20373
	A2	0.04491	0.05074	0.20309
	A2	0.02222	0.02818	0.18179
	A3	0.03680	0.04471	0.21637
	A3	0.01783	0.02581	0.19744
	B1	0.03749	0.04759	0.24349
	B1	0.02015	0.03033	0.22808
	B2	0.03020	0.04258	0.25687
	B2	0.01752	0.03006	0.24560

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**A1**	0.00821	0.00914	0.08729
	A1	0.02164	0.02257	0.10058
	A2	0.00826	0.00983	0.08792
	A2	0.02004	0.02161	0.09711
	A3	0.00821	0.01193	0.10015
	A3	0.01857	0.02232	0.10940
	B1	0.00486	0.00961	0.11066
	B1	0.01483	0.01920	0.11627
	B2	0.00488	0.01174	0.12538
	B2	0.01323	0.01967	0.12873

sky130_fd_sc_hs__o32a_2	**A1**	0.01805	0.01443	0.09737
	A1	0.03236	0.02921	0.10913
	A2	0.01814	0.01550	0.09438
	A2	0.03083	0.02819	0.10336
	A3	0.01805	0.01776	0.10782
	A3	0.02937	0.02907	0.11618
	B1	0.01188	0.01414	0.11084
	B1	0.02262	0.02488	0.12158
	B2	0.01199	0.01694	0.12754
	B2	0.02223	0.02649	0.12910
sky130_fd_sc_hs__o32a_4	**A1**	0.03619	0.02876	0.19591
	A1	0.06276	0.05534	0.22201
	A2	0.03617	0.02992	0.18138
	A2	0.06006	0.05377	0.20054
	A3	0.03627	0.03449	0.20628
	A3	0.05632	0.05457	0.22260
	B1	0.02238	0.02627	0.22872
	B1	0.04315	0.04701	0.24418
	B2	0.02236	0.03150	0.25771
	B2	0.04157	0.04977	0.25998

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)**	0.00230	0.00233	0.00230
	(A2 * A3 * B2 * X)	-0.00252	-0.00260	-0.00259
	(A2 * A3 * B1 * !B2 * X)	0.00231	0.00233	0.00230
	(A2 * A3 * B1 * !B2 * X)	-0.00252	-0.00260	-0.00259
	(A2 * !B1 * !B2 * !X)	0.00198	0.00200	0.00198
	(A2 * !B1 * !B2 * !X)	-0.00285	-0.00292	-0.00291
	(A2 * !A3 * B2 * X)	0.00256	0.00233	0.00230
	(A2 * !A3 * B2 * X)	-0.00228	-0.00259	-0.00259
	(A2 * !A3 * B1 * !B2 * X)	0.00256	0.00233	0.00230
	(A2 * !A3 * B1 * !B2 * X)	-0.00227	-0.00259	-0.00259
	(!A2 * A3 * B2 * X)	0.00251	0.00232	0.00230
	(!A2 * A3 * B2 * X)	-0.00217	-0.00252	-0.00253
	(!A2 * A3 * B1 * !B2 * X)	0.00251	0.00233	0.00230
	(!A2 * A3 * B1 * !B2 * X)	-0.00217	-0.00252	-0.00253
	(!A2 * A3 * !B1 * !B2 * !X)	0.00198	0.00199	0.00198
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00264	-0.00285	-0.00284
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00190	0.00191	0.00190
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00293	-0.00293	-0.00293

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	0.00258	0.00260	0.00257
	(A2 * A3 * B2 * X)	-0.00253	-0.00260	-0.00259
	(A2 * A3 * B1 * !B2 * X)	0.00258	0.00260	0.00258
	(A2 * A3 * B1 * !B2 * X)	-0.00253	-0.00260	-0.00259
	(A2 * !B1 * !B2 * !X)	0.00227	0.00230	0.00227
	(A2 * !B1 * !B2 * !X)	-0.00284	-0.00291	-0.00290
	(A2 * !A3 * B2 * X)	0.00283	0.00261	0.00258
	(A2 * !A3 * B2 * X)	-0.00228	-0.00259	-0.00259
	(A2 * !A3 * B1 * !B2 * X)	0.00283	0.00261	0.00258
	(A2 * !A3 * B1 * !B2 * X)	-0.00228	-0.00259	-0.00259
	(!A2 * A3 * B2 * X)	0.00278	0.00260	0.00258
	(!A2 * A3 * B2 * X)	-0.00218	-0.00252	-0.00253
	(!A2 * A3 * B1 * !B2 * X)	0.00278	0.00260	0.00258
	(!A2 * A3 * B1 * !B2 * X)	-0.00218	-0.00252	-0.00253
	(!A2 * A3 * !B1 * !B2 * !X)	0.00227	0.00228	0.00227
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00262	-0.00284	-0.00283
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00220	0.00220	0.00219
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00292	-0.00292	-0.00291

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	0.00399	0.00402	0.00398
	(A2 * A3 * B2 * X)	-0.00506	-0.00523	-0.00521
	(A2 * A3 * B1 * !B2 * X)	0.00399	0.00402	0.00399
	(A2 * A3 * B1 * !B2 * X)	-0.00506	-0.00523	-0.00521
	(A2 * !B1 * !B2 * !X)	0.00400	0.00403	0.00399
	(A2 * !B1 * !B2 * !X)	-0.00507	-0.00523	-0.00522
	(A2 * !A3 * B2 * X)	0.00459	0.00403	0.00399
	(A2 * !A3 * B2 * X)	-0.00447	-0.00525	-0.00522
	(A2 * !A3 * B1 * !B2 * X)	0.00460	0.00403	0.00399
	(A2 * !A3 * B1 * !B2 * X)	-0.00447	-0.00523	-0.00523
	(!A2 * A3 * B2 * X)	0.00452	0.00402	0.00399
	(!A2 * A3 * B2 * X)	-0.00427	-0.00514	-0.00511
	(!A2 * A3 * B1 * !B2 * X)	0.00452	0.00402	0.00399
	(!A2 * A3 * B1 * !B2 * X)	-0.00427	-0.00514	-0.00511
	(!A2 * A3 * !B1 * !B2 * !X)	0.00400	0.00401	0.00399
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00462	-0.00513	-0.00509
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00381	0.00386	0.00382
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00529	-0.00533	-0.00530

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)**	-0.00229	-0.00230	-0.00230
	(A2 * A3 * B2 * X)	0.00258	0.00260	0.00259
	(A2 * A3 * B1 * !B2 * X)	-0.00229	-0.00230	-0.00229
	(A2 * A3 * B1 * !B2 * X)	0.00258	0.00260	0.00259
	(A2 * !B1 * !B2 * !X)	-0.00197	-0.00198	-0.00197
	(A2 * !B1 * !B2 * !X)	0.00290	0.00293	0.00291
	(A2 * !A3 * B2 * X)	-0.00230	-0.00230	-0.00229
	(A2 * !A3 * B2 * X)	0.00259	0.00260	0.00259
	(A2 * !A3 * B1 * !B2 * X)	-0.00229	-0.00230	-0.00229
	(A2 * !A3 * B1 * !B2 * X)	0.00259	0.00260	0.00259
	(!A2 * A3 * B2 * X)	-0.00228	-0.00230	-0.00229
	(!A2 * A3 * B2 * X)	0.00252	0.00254	0.00253
	(!A2 * A3 * B1 * !B2 * X)	-0.00228	-0.00230	-0.00228
	(!A2 * A3 * B1 * !B2 * X)	0.00252	0.00255	0.00253
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00197	-0.00198	-0.00197
	(!A2 * A3 * !B1 * !B2 * !X)	0.00284	0.00286	0.00284
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00177	-0.00190	-0.00190
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00296	0.00295	0.00294

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	-0.00257	-0.00258	-0.00257
	(A2 * A3 * B2 * X)	0.00259	0.00260	0.00259
	(A2 * A3 * B1 * !B2 * X)	-0.00257	-0.00257	-0.00257
	(A2 * A3 * B1 * !B2 * X)	0.00259	0.00260	0.00259
	(A2 * !B1 * !B2 * !X)	-0.00225	-0.00227	-0.00226
	(A2 * !B1 * !B2 * !X)	0.00289	0.00291	0.00290
	(A2 * !A3 * B2 * X)	-0.00257	-0.00258	-0.00257
	(A2 * !A3 * B2 * X)	0.00259	0.00261	0.00259
	(A2 * !A3 * B1 * !B2 * X)	-0.00257	-0.00258	-0.00257
	(A2 * !A3 * B1 * !B2 * X)	0.00259	0.00262	0.00259
	(!A2 * A3 * B2 * X)	-0.00256	-0.00257	-0.00256
	(!A2 * A3 * B2 * X)	0.00252	0.00254	0.00253
	(!A2 * A3 * B1 * !B2 * X)	-0.00256	-0.00257	-0.00256
	(!A2 * A3 * B1 * !B2 * X)	0.00252	0.00254	0.00253
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00226	-0.00227	-0.00226
	(!A2 * A3 * !B1 * !B2 * !X)	0.00282	0.00285	0.00283
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00204	-0.00218	-0.00219
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00295	0.00294	0.00293

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	-0.00398	-0.00398	-0.00397
	(A2 * A3 * B2 * X)	0.00521	0.00523	0.00521
	(A2 * A3 * B1 * !B2 * X)	-0.00397	-0.00398	-0.00397
	(A2 * A3 * B1 * !B2 * X)	0.00521	0.00523	0.00521
	(A2 * !B1 * !B2 * !X)	-0.00397	-0.00397	-0.00397
	(A2 * !B1 * !B2 * !X)	0.00521	0.00523	0.00522
	(A2 * !A3 * B2 * X)	-0.00396	-0.00399	-0.00397
	(A2 * !A3 * B2 * X)	0.00519	0.00525	0.00522
	(A2 * !A3 * B1 * !B2 * X)	-0.00395	-0.00397	-0.00397
	(A2 * !A3 * B1 * !B2 * X)	0.00519	0.00523	0.00523
	(!A2 * A3 * B2 * X)	-0.00396	-0.00398	-0.00395
	(!A2 * A3 * B2 * X)	0.00509	0.00514	0.00511
	(!A2 * A3 * B1 * !B2 * X)	-0.00396	-0.00397	-0.00395
	(!A2 * A3 * B1 * !B2 * X)	0.00510	0.00514	0.00511
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00397	-0.00399	-0.00397
	(!A2 * A3 * !B1 * !B2 * !X)	0.00508	0.00513	0.00509
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00351	-0.00383	-0.00382
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00541	0.00537	0.00533

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)**	0.00230	0.00233	0.00222
	(A1 * A3 * B2 * X)	-0.00161	-0.00161	-0.00160
	(A1 * A3 * B1 * !B2 * X)	0.00230	0.00233	0.00222
	(A1 * A3 * B1 * !B2 * X)	-0.00161	-0.00161	-0.00160
	(A1 * A3 * !B1 * !B2 * !X)	0.00202	0.00204	0.00202
	(A1 * A3 * !B1 * !B2 * !X)	-0.00183	-0.00185	-0.00183
	(A1 * !A3 * B2 * X)	0.00215	0.00216	0.00212
	(A1 * !A3 * B2 * X)	-0.00128	-0.00129	-0.00129
	(A1 * !A3 * B1 * !B2 * X)	0.00215	0.00216	0.00212
	(A1 * !A3 * B1 * !B2 * X)	-0.00128	-0.00129	-0.00129
	(A1 * !A3 * !B1 * !B2 * !X)	0.00204	0.00204	0.00202
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00261	-0.00262	-0.00261
	(!A1 * A3 * B2 * X)	0.00275	0.00216	0.00211
	(!A1 * A3 * B2 * X)	-0.00191	-0.00253	-0.00254
	(!A1 * A3 * B1 * !B2 * X)	0.00276	0.00216	0.00211
	(!A1 * A3 * B1 * !B2 * X)	-0.00191	-0.00253	-0.00254
	(!A1 * A3 * !B1 * !B2 * !X)	0.00203	0.00204	0.00202
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00261	-0.00263	-0.00263
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00194	0.00193	0.00194
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00264	-0.00264	-0.00265

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	0.00259	0.00262	0.00252
	(A1 * A3 * B2 * X)	-0.00161	-0.00162	-0.00161
	(A1 * A3 * B1 * !B2 * X)	0.00260	0.00263	0.00252
	(A1 * A3 * B1 * !B2 * X)	-0.00162	-0.00162	-0.00161
	(A1 * A3 * !B1 * !B2 * !X)	0.00231	0.00233	0.00231
	(A1 * A3 * !B1 * !B2 * !X)	-0.00185	-0.00187	-0.00185
	(A1 * !A3 * B2 * X)	0.00244	0.00246	0.00242
	(A1 * !A3 * B2 * X)	-0.00129	-0.00130	-0.00130
	(A1 * !A3 * B1 * !B2 * X)	0.00244	0.00246	0.00242
	(A1 * !A3 * B1 * !B2 * X)	-0.00129	-0.00129	-0.00130
	(A1 * !A3 * !B1 * !B2 * !X)	0.00232	0.00232	0.00231
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00262	-0.00263	-0.00263
	(!A1 * A3 * B2 * X)	0.00305	0.00246	0.00240
	(!A1 * A3 * B2 * X)	-0.00192	-0.00254	-0.00255
	(!A1 * A3 * B1 * !B2 * X)	0.00305	0.00246	0.00241
	(!A1 * A3 * B1 * !B2 * X)	-0.00192	-0.00254	-0.00255
	(!A1 * A3 * !B1 * !B2 * !X)	0.00232	0.00233	0.00231
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00262	-0.00265	-0.00264
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00222	0.00225	0.00222
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00266	-0.00268	-0.00266

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	0.00445	0.00455	0.00429
	(A1 * A3 * B2 * X)	-0.00356	-0.00359	-0.00356
	(A1 * A3 * B1 * !B2 * X)	0.00446	0.00455	0.00429
	(A1 * A3 * B1 * !B2 * X)	-0.00357	-0.00360	-0.00357
	(A1 * A3 * !B1 * !B2 * !X)	0.00409	0.00412	0.00408
	(A1 * A3 * !B1 * !B2 * !X)	-0.00387	-0.00390	-0.00386
	(A1 * !A3 * B2 * X)	0.00416	0.00420	0.00410
	(A1 * !A3 * B2 * X)	-0.00289	-0.00291	-0.00294
	(A1 * !A3 * B1 * !B2 * X)	0.00416	0.00420	0.00410
	(A1 * !A3 * B1 * !B2 * X)	-0.00287	-0.00291	-0.00294
	(A1 * !A3 * !B1 * !B2 * !X)	0.00411	0.00411	0.00408
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00548	-0.00551	-0.00550
	(!A1 * A3 * B2 * X)	0.00551	0.00421	0.00408
	(!A1 * A3 * B2 * X)	-0.00414	-0.00549	-0.00555
	(!A1 * A3 * B1 * !B2 * X)	0.00551	0.00421	0.00408
	(!A1 * A3 * B1 * !B2 * X)	-0.00414	-0.00549	-0.00555
	(!A1 * A3 * !B1 * !B2 * !X)	0.00411	0.00413	0.00408
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00546	-0.00554	-0.00553
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00388	0.00390	0.00389
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00560	-0.00561	-0.00560

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)**	-0.00212	-0.00213	-0.00212
	(A1 * A3 * B2 * X)	0.00161	0.00161	0.00160
	(A1 * A3 * B1 * !B2 * X)	-0.00212	-0.00213	-0.00212
	(A1 * A3 * B1 * !B2 * X)	0.00161	0.00161	0.00160
	(A1 * A3 * !B1 * !B2 * !X)	-0.00201	-0.00202	-0.00201
	(A1 * A3 * !B1 * !B2 * !X)	0.00183	0.00185	0.00183
	(A1 * !A3 * B2 * X)	-0.00210	-0.00211	-0.00209
	(A1 * !A3 * B2 * X)	0.00132	0.00133	0.00133
	(A1 * !A3 * B1 * !B2 * X)	-0.00210	-0.00210	-0.00209
	(A1 * !A3 * B1 * !B2 * X)	0.00132	0.00133	0.00133
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00201	-0.00202	-0.00201
	(A1 * !A3 * !B1 * !B2 * !X)	0.00261	0.00262	0.00261
	(!A1 * A3 * B2 * X)	-0.00210	-0.00210	-0.00209
	(!A1 * A3 * B2 * X)	0.00255	0.00257	0.00256
	(!A1 * A3 * B1 * !B2 * X)	-0.00208	-0.00210	-0.00208
	(!A1 * A3 * B1 * !B2 * X)	0.00253	0.00257	0.00256
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00201	-0.00201	-0.00201
	(!A1 * A3 * !B1 * !B2 * !X)	0.00262	0.00263	0.00263
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00179	-0.00193	-0.00194
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00269	0.00267	0.00266

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	-0.00241	-0.00242	-0.00241
	(A1 * A3 * B2 * X)	0.00161	0.00162	0.00161
	(A1 * A3 * B1 * !B2 * X)	-0.00241	-0.00242	-0.00241
	(A1 * A3 * B1 * !B2 * X)	0.00162	0.00162	0.00161
	(A1 * A3 * !B1 * !B2 * !X)	-0.00229	-0.00231	-0.00230
	(A1 * A3 * !B1 * !B2 * !X)	0.00185	0.00187	0.00185
	(A1 * !A3 * B2 * X)	-0.00239	-0.00240	-0.00238
	(A1 * !A3 * B2 * X)	0.00133	0.00133	0.00134
	(A1 * !A3 * B1 * !B2 * X)	-0.00239	-0.00240	-0.00238
	(A1 * !A3 * B1 * !B2 * X)	0.00133	0.00134	0.00134
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00229	-0.00230	-0.00230
	(A1 * !A3 * !B1 * !B2 * !X)	0.00263	0.00263	0.00263
	(!A1 * A3 * B2 * X)	-0.00237	-0.00239	-0.00238
	(!A1 * A3 * B2 * X)	0.00254	0.00256	0.00257
	(!A1 * A3 * B1 * !B2 * X)	-0.00237	-0.00238	-0.00238
	(!A1 * A3 * B1 * !B2 * X)	0.00254	0.00256	0.00257
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00229	-0.00230	-0.00230
	(!A1 * A3 * !B1 * !B2 * !X)	0.00264	0.00265	0.00264
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00204	-0.00221	-0.00222
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00270	0.00269	0.00268

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	-0.00406	-0.00408	-0.00406
	(A1 * A3 * B2 * X)	0.00356	0.00359	0.00356
	(A1 * A3 * B1 * !B2 * X)	-0.00406	-0.00408	-0.00406
	(A1 * A3 * B1 * !B2 * X)	0.00357	0.00360	0.00357
	(A1 * A3 * !B1 * !B2 * !X)	-0.00405	-0.00408	-0.00405
	(A1 * A3 * !B1 * !B2 * !X)	0.00387	0.00390	0.00386
	(A1 * !A3 * B2 * X)	-0.00404	-0.00405	-0.00400
	(A1 * !A3 * B2 * X)	0.00300	0.00301	0.00303
	(A1 * !A3 * B1 * !B2 * X)	-0.00404	-0.00405	-0.00400
	(A1 * !A3 * B1 * !B2 * X)	0.00300	0.00301	0.00303
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00405	-0.00407	-0.00406
	(A1 * !A3 * !B1 * !B2 * !X)	0.00549	0.00551	0.00550
	(!A1 * A3 * B2 * X)	-0.00403	-0.00406	-0.00402
	(!A1 * A3 * B2 * X)	0.00553	0.00560	0.00557
	(!A1 * A3 * B1 * !B2 * X)	-0.00403	-0.00405	-0.00401
	(!A1 * A3 * B1 * !B2 * X)	0.00554	0.00560	0.00558
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00404	-0.00406	-0.00405
	(!A1 * A3 * !B1 * !B2 * !X)	0.00550	0.00554	0.00553
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00357	-0.00390	-0.00389
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00571	0.00566	0.00563

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	0.00227	0.00229	0.00227
	(A2 * B2 * X)	-0.00120	-0.00120	-0.00119
	(A2 * B1 * !B2 * X)	0.00227	0.00229	0.00227
	(A2 * B1 * !B2 * X)	-0.00119	-0.00120	-0.00119
	(A2 * !B1 * !B2 * !X)	0.00202	0.00204	0.00203
	(A2 * !B1 * !B2 * !X)	-0.00256	-0.00263	-0.00262
	(A1 * !A2 * B2 * X)	0.00227	0.00229	0.00227
	(A1 * !A2 * B2 * X)	-0.00119	-0.00120	-0.00119
	(A1 * !A2 * B1 * !B2 * X)	0.00227	0.00229	0.00227
	(A1 * !A2 * B1 * !B2 * X)	-0.00119	-0.00120	-0.00119
	(A1 * !A2 * !B1 * !B2 * !X)	0.00204	0.00205	0.00203
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00234	-0.00253	-0.00252
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00195	0.00196	0.00195
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00266	-0.00266	-0.00265
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	0.00261	0.00263	0.00262
	(A2 * B2 * X)	-0.00120	-0.00121	-0.00119
	(A2 * B1 * !B2 * X)	0.00261	0.00264	0.00262
	(A2 * B1 * !B2 * X)	-0.00120	-0.00120	-0.00119
	(A2 * !B1 * !B2 * !X)	0.00231	0.00232	0.00232
	(A2 * !B1 * !B2 * !X)	-0.00262	-0.00269	-0.00269
	(A1 * !A2 * B2 * X)	0.00261	0.00263	0.00262
	(A1 * !A2 * B2 * X)	-0.00119	-0.00120	-0.00119
	(A1 * !A2 * B1 * !B2 * X)	0.00262	0.00264	0.00262
	(A1 * !A2 * B1 * !B2 * X)	-0.00119	-0.00120	-0.00119
	(A1 * !A2 * !B1 * !B2 * !X)	0.00230	0.00234	0.00231
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00239	-0.00258	-0.00258
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00223	0.00225	0.00223
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00272	-0.00272	-0.00271

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	0.00426	0.00430	0.00427
	(A2 * B2 * X)	-0.00240	-0.00242	-0.00240
	(A2 * B1 * !B2 * X)	0.00427	0.00430	0.00427
	(A2 * B1 * !B2 * X)	-0.00240	-0.00242	-0.00240
	(A2 * !B1 * !B2 * !X)	0.00394	0.00398	0.00395
	(A2 * !B1 * !B2 * !X)	-0.00489	-0.00510	-0.00508
	(A1 * !A2 * B2 * X)	0.00426	0.00430	0.00427
	(A1 * !A2 * B2 * X)	-0.00240	-0.00241	-0.00239
	(A1 * !A2 * B1 * !B2 * X)	0.00427	0.00430	0.00427
	(A1 * !A2 * B1 * !B2 * X)	-0.00239	-0.00241	-0.00239
	(A1 * !A2 * !B1 * !B2 * !X)	0.00394	0.00399	0.00395
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00444	-0.00488	-0.00486
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00379	0.00382	0.00378
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00518	-0.00520	-0.00517

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	-0.00221	-0.00222	-0.00226
	(A2 * B2 * X)	0.00126	0.00126	0.00121
	(A2 * B1 * !B2 * X)	-0.00220	-0.00222	-0.00226
	(A2 * B1 * !B2 * X)	0.00126	0.00126	0.00121
	(A2 * !B1 * !B2 * !X)	-0.00202	-0.00204	-0.00202
	(A2 * !B1 * !B2 * !X)	0.00262	0.00264	0.00262
	(A1 * !A2 * B2 * X)	-0.00213	-0.00215	-0.00225
	(A1 * !A2 * B2 * X)	0.00128	0.00129	0.00120
	(A1 * !A2 * B1 * !B2 * X)	-0.00213	-0.00214	-0.00225
	(A1 * !A2 * B1 * !B2 * X)	0.00129	0.00129	0.00121
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00202	-0.00203	-0.00202
	(A1 * !A2 * !B1 * !B2 * !X)	0.00251	0.00253	0.00252
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00180	-0.00194	-0.00195
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00269	0.00267	0.00266
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	-0.00255	-0.00256	-0.00261
	(A2 * B2 * X)	0.00126	0.00126	0.00121
	(A2 * B1 * !B2 * X)	-0.00255	-0.00256	-0.00261
	(A2 * B1 * !B2 * X)	0.00126	0.00126	0.00121
	(A2 * !B1 * !B2 * !X)	-0.00230	-0.00232	-0.00230
	(A2 * !B1 * !B2 * !X)	0.00268	0.00270	0.00269
	(A1 * !A2 * B2 * X)	-0.00248	-0.00249	-0.00260
	(A1 * !A2 * B2 * X)	0.00129	0.00129	0.00120
	(A1 * !A2 * B1 * !B2 * X)	-0.00248	-0.00249	-0.00259
	(A1 * !A2 * B1 * !B2 * X)	0.00129	0.00129	0.00121
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00230	-0.00231	-0.00230
	(A1 * !A2 * !B1 * !B2 * !X)	0.00257	0.00258	0.00258
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00206	-0.00222	-0.00223
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00275	0.00273	0.00272

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	-0.00406	-0.00409	-0.00424
	(A2 * B2 * X)	0.00257	0.00257	0.00244
	(A2 * B1 * !B2 * X)	-0.00406	-0.00408	-0.00424
	(A2 * B1 * !B2 * X)	0.00258	0.00258	0.00244
	(A2 * !B1 * !B2 * !X)	-0.00391	-0.00396	-0.00393
	(A2 * !B1 * !B2 * !X)	0.00506	0.00510	0.00508
	(A1 * !A2 * B2 * X)	-0.00390	-0.00392	-0.00421
	(A1 * !A2 * B2 * X)	0.00264	0.00265	0.00243
	(A1 * !A2 * B1 * !B2 * X)	-0.00390	-0.00392	-0.00421
	(A1 * !A2 * B1 * !B2 * X)	0.00265	0.00265	0.00243
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00392	-0.00395	-0.00393
	(A1 * !A2 * !B1 * !B2 * !X)	0.00484	0.00488	0.00486
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00346	-0.00379	-0.00378
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00527	0.00522	0.00520

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	0.00279	0.00237	0.00232
	(A3 * B2 * X)	-0.00218	-0.00263	-0.00265
	(A2 * !A3 * B2 * X)	0.00278	0.00237	0.00232
	(A2 * !A3 * B2 * X)	-0.00217	-0.00263	-0.00265
	(A1 * !A2 * !A3 * B2 * X)	0.00278	0.00237	0.00232
	(A1 * !A2 * !A3 * B2 * X)	-0.00217	-0.00263	-0.00265
	(!A1 * !A2 * !A3 * B2 * !X)	0.00077	0.00077	0.00076
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00317	-0.00322	-0.00321
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00085	0.00085	0.00079
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00310	-0.00311	-0.00322

sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	0.00328	0.00286	0.00281
	(A3 * B2 * X)	-0.00240	-0.00285	-0.00287
	(A2 * !A3 * B2 * X)	0.00328	0.00286	0.00281
	(A2 * !A3 * B2 * X)	-0.00240	-0.00285	-0.00287
	(A1 * !A2 * !A3 * B2 * X)	0.00328	0.00286	0.00281
	(A1 * !A2 * !A3 * B2 * X)	-0.00240	-0.00285	-0.00287
	(!A1 * !A2 * !A3 * B2 * !X)	0.00092	0.00093	0.00092
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00357	-0.00362	-0.00361
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00102	0.00102	0.00095
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00348	-0.00349	-0.00362
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	0.00599	0.00502	0.00492
	(A3 * B2 * X)	-0.00498	-0.00609	-0.00610
	(A2 * !A3 * B2 * X)	0.00599	0.00502	0.00492
	(A2 * !A3 * B2 * X)	-0.00497	-0.00608	-0.00609
	(A1 * !A2 * !A3 * B2 * X)	0.00600	0.00503	0.00493
	(A1 * !A2 * !A3 * B2 * X)	-0.00495	-0.00606	-0.00608
	(!A1 * !A2 * !A3 * B2 * !X)	0.00134	0.00136	0.00134
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00766	-0.00782	-0.00776
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00151	0.00152	0.00139
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00757	-0.00762	-0.00782

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

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

sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	-0.00229	-0.00231	-0.00229
	(A3 * B2 * X)	0.00265	0.00269	0.00267
	(A2 * !A3 * B2 * X)	-0.00229	-0.00230	-0.00229
	(A2 * !A3 * B2 * X)	0.00265	0.00267	0.00267
	(A1 * !A2 * !A3 * B2 * X)	-0.00229	-0.00231	-0.00229
	(A1 * !A2 * !A3 * B2 * X)	0.00265	0.00268	0.00267
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00074	-0.00074	-0.00076
	(!A1 * !A2 * !A3 * B2 * !X)	0.00323	0.00322	0.00321
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00077	-0.00078	-0.00077
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00322	0.00326	0.00324
sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	-0.00278	-0.00279	-0.00278
	(A3 * B2 * X)	0.00287	0.00288	0.00289
	(A2 * !A3 * B2 * X)	-0.00278	-0.00280	-0.00278
	(A2 * !A3 * B2 * X)	0.00287	0.00290	0.00289
	(A1 * !A2 * !A3 * B2 * X)	-0.00278	-0.00280	-0.00278
	(A1 * !A2 * !A3 * B2 * X)	0.00287	0.00291	0.00289
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00089	-0.00090	-0.00091
	(!A1 * !A2 * !A3 * B2 * !X)	0.00361	0.00364	0.00361
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00092	-0.00093	-0.00092
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00363	0.00367	0.00364
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	-0.00487	-0.00489	-0.00487
	(A3 * B2 * X)	0.00609	0.00615	0.00614
	(A2 * !A3 * B2 * X)	-0.00487	-0.00490	-0.00487
	(A2 * !A3 * B2 * X)	0.00608	0.00617	0.00613
	(A1 * !A2 * !A3 * B2 * X)	-0.00487	-0.00490	-0.00486
	(A1 * !A2 * !A3 * B2 * X)	0.00608	0.00617	0.00612
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00129	-0.00132	-0.00132
	(!A1 * !A2 * !A3 * B2 * !X)	0.00777	0.00786	0.00776
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00133	-0.00135	-0.00134
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00783	0.00789	0.00786

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	(A3 * B1 * X)	0.00236	0.00238	0.00237
	(A3 * B1 * X)	-0.00121	-0.00122	-0.00121
	(A2 * !A3 * B1 * X)	0.00236	0.00238	0.00237
	(A2 * !A3 * B1 * X)	-0.00121	-0.00122	-0.00121
	(A1 * !A2 * !A3 * B1 * X)	0.00236	0.00238	0.00237
	(A1 * !A2 * !A3 * B1 * X)	-0.00121	-0.00122	-0.00120
	(!A1 * !A2 * !A3 * B1 * !X)	0.00062	0.00063	0.00063
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00311	-0.00316	-0.00315
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00071	0.00071	0.00065
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00306	-0.00307	-0.00317
sky130_fd_sc_hs__o32a_2	(A3 * B1 * X)	0.00265	0.00268	0.00266
	(A3 * B1 * X)	-0.00121	-0.00122	-0.00121
	(A2 * !A3 * B1 * X)	0.00265	0.00268	0.00266
	(A2 * !A3 * B1 * X)	-0.00121	-0.00122	-0.00121
	(A1 * !A2 * !A3 * B1 * X)	0.00266	0.00268	0.00266
	(A1 * !A2 * !A3 * B1 * X)	-0.00121	-0.00122	-0.00121
	(!A1 * !A2 * !A3 * B1 * !X)	0.00071	0.00071	0.00071
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00317	-0.00321	-0.00321
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00081	0.00081	0.00074
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00310	-0.00311	-0.00323

sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	0.00456	0.00464	0.00457
	(A3 * B1 * X)	-0.00244	-0.00249	-0.00244
	(A2 * !A3 * B1 * X)	0.00455	0.00464	0.00457
	(A2 * !A3 * B1 * X)	-0.00243	-0.00249	-0.00244
	(A1 * !A2 * !A3 * B1 * X)	0.00455	0.00464	0.00457
	(A1 * !A2 * !A3 * B1 * X)	-0.00243	-0.00249	-0.00244
	(!A1 * !A2 * !A3 * B1 * !X)	0.00130	0.00130	0.00129
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00610	-0.00619	-0.00616
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00146	0.00146	0.00134
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00600	-0.00602	-0.00624

Passive power(pJ) for B2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**(A3 * B1 * X)**	-0.00230	-0.00231	-0.00236
	(A3 * B1 * X)	0.00127	0.00127	0.00122
	(A2 * !A3 * B1 * X)	-0.00230	-0.00231	-0.00236
	(A2 * !A3 * B1 * X)	0.00127	0.00127	0.00122
	(A1 * !A2 * !A3 * B1 * X)	-0.00230	-0.00231	-0.00236
	(A1 * !A2 * !A3 * B1 * X)	0.00127	0.00128	0.00122
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00061	-0.00063	-0.00062
	(!A1 * !A2 * !A3 * B1 * !X)	0.00315	0.00318	0.00315
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00063	-0.00065	-0.00063
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00318	0.00324	0.00319

sky130_fd_sc_hs__o32a_2	**(A3 * B1 * X)**	-0.00259	-0.00260	-0.00265
	(A3 * B1 * X)	0.00127	0.00128	0.00123
	(A2 * !A3 * B1 * X)	-0.00259	-0.00261	-0.00265
	(A2 * !A3 * B1 * X)	0.00127	0.00128	0.00123
	(A1 * !A2 * !A3 * B1 * X)	-0.00259	-0.00261	-0.00265
	(A1 * !A2 * !A3 * B1 * X)	0.00128	0.00128	0.00123
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00070	-0.00071	-0.00070
	(!A1 * !A2 * !A3 * B1 * !X)	0.00322	0.00323	0.00321
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00071	-0.00073	-0.00071
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00324	0.00327	0.00325
sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	-0.00441	-0.00442	-0.00455
	(A3 * B1 * X)	0.00256	0.00257	0.00248
	(A2 * !A3 * B1 * X)	-0.00441	-0.00442	-0.00455
	(A2 * !A3 * B1 * X)	0.00256	0.00257	0.00247
	(A1 * !A2 * !A3 * B1 * X)	-0.00440	-0.00443	-0.00455
	(A1 * !A2 * !A3 * B1 * X)	0.00256	0.00258	0.00248
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00125	-0.00127	-0.00127
	(!A1 * !A2 * !A3 * B1 * !X)	0.00617	0.00620	0.00616
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00127	-0.00132	-0.00129
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00624	0.00636	0.00628

SKY130_FD_SC_HS__O41AIx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00280	0.00286	0.00296	0.00294	0.00298	0.38617
sky130_fd_sc_hs__o41ai_2	0.00552	0.00561	0.00540	0.00551	0.00578	0.65708
sky130_fd_sc_hs__o41ai_4	0.01074	0.01068	0.01084	0.01103	0.00800	1.22552

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41ai_1	0.00000	0.11129	0.38031
sky130_fd_sc_hs__o41ai_2	0.00000	0.22258	0.76062
sky130_fd_sc_hs__o41ai_4	0.00000	0.26689	1.14092

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)	0.18180	0.98440	8.91445
	A2->Y (FR)	0.17131	1.00657	9.43426
	A3->Y (FR)	0.14814	1.02320	9.95819
	A4->Y (FR)	0.11073	1.00614	10.11770
	B1->Y (FR)	0.02411	0.45466	5.14721
sky130_fd_sc_hs__o41ai_2	A1->Y (FR)	0.19761	0.86791	8.78109
	A2->Y (FR)	0.18433	0.88013	9.26971
	A3->Y (FR)	0.15728	0.90495	9.96397
	A4->Y (FR)	0.10244	0.87815	10.11130
	B1->Y (FR)	0.01882	0.38109	4.78634
sky130_fd_sc_hs__o41ai_4	A1->Y (FR)	0.18875	0.73895	8.68587
	A2->Y (FR)	0.17572	0.75715	9.24980
	A3->Y (FR)	0.14851	0.78169	9.95061
	A4->Y (FR)	0.09439	0.76348	10.17850
	B1->Y (FR)	0.02487	0.47328	6.67878

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41ai_1	A1->Y (RF)	0.03307	0.25876	2.07118
	A2->Y (RF)	0.03402	0.25262	2.04257
	A3->Y (RF)	0.03327	0.24511	2.02057
	A4->Y (RF)	0.02690	0.23304	1.97906
	B1->Y (RF)	0.02574	0.30741	2.71818
sky130_fd_sc_hs__o41ai_2	A1->Y (RF)	0.03189	0.21336	1.88835
	A2->Y (RF)	0.03280	0.20683	1.86062
	A3->Y (RF)	0.03254	0.19716	1.81559
	A4->Y (RF)	0.02550	0.18282	1.77983
	B1->Y (RF)	0.02327	0.26778	2.67186
sky130_fd_sc_hs__o41ai_4	A1->Y (RF)	0.03662	0.17718	1.83892
	A2->Y (RF)	0.03555	0.16633	1.77017
	A3->Y (RF)	0.03295	0.15390	1.70867
	A4->Y (RF)	0.02314	0.13292	1.59559
	B1->Y (RF)	0.02714	0.27604	3.22680

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41ai_1	A1	0.00192	0.00212	0.04352
	A1	0.01621	0.01644	0.05786
	A2	0.00200	0.00246	0.03845
	A2	0.01455	0.01503	0.05103
	A3	0.00198	0.00284	0.03562
	A3	0.01297	0.01383	0.04661
	A4	0.00190	0.00415	0.04736
	A4	0.01124	0.01351	0.05666
	B1	-0.00100	0.00449	0.08846
	B1	0.00577	0.01132	0.09526
sky130_fd_sc_hs__o41ai_2	A1	0.00284	0.00289	0.07982
	A1	0.03168	0.03172	0.10873
	A2	0.00295	0.00353	0.07150
	A2	0.02824	0.02883	0.09690
	A3	0.00307	0.00436	0.06374
	A3	0.02470	0.02600	0.08537
	A4	0.00284	0.00741	0.08463
	A4	0.02107	0.02560	0.10276
	B1	-0.00358	0.00811	0.17499
	B1	0.00958	0.02144	0.18831

sky130_fd_sc_hs__o41ai_4	**A1**	0.00466	0.00522	0.14608
	A1	0.06139	0.06202	0.20263
	A2	0.00485	0.00629	0.12821
	A2	0.05440	0.05584	0.17792
	A3	0.00484	0.00800	0.11695
	A3	0.04764	0.05080	0.15966
	A4	0.00437	0.01389	0.15636
	A4	0.04027	0.04979	0.19219
	B1	-0.00559	0.00874	0.19309
	B1	0.01315	0.02748	0.21179

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41ai_1	**A1**	0.01887	0.01952	0.05275
	A1	0.00457	0.00520	0.03849
	A2	0.01584	0.01662	0.04725
	A2	0.00320	0.00396	0.03462
	A3	0.01263	0.01369	0.04215
	A3	0.00149	0.00257	0.03101
	A4	0.00932	0.01073	0.03813
	A4	-0.00021	0.00118	0.02858
	B1	0.00619	0.00906	0.06293
	B1	-0.00058	0.00225	0.05614

sky130_fd_sc_hs__o41ai_2	**A1**	0.03974	0.04079	0.10470
	A1	0.01101	0.01204	0.07607
	A2	0.03271	0.03438	0.09317
	A2	0.00727	0.00890	0.06776
	A3	0.02631	0.02837	0.08150
	A3	0.00442	0.00645	0.05961
	A4	0.01801	0.02116	0.07285
	A4	-0.00058	0.00255	0.05425
	B1	0.01202	0.01942	0.13065
	B1	-0.00115	0.00617	0.11741
sky130_fd_sc_hs__o41ai_4	**A1**	0.07514	0.07774	0.20523
	A1	0.01863	0.02130	0.14879
	A2	0.06172	0.06538	0.18065
	A2	0.01196	0.01555	0.13093
	A3	0.04903	0.05384	0.15801
	A3	0.00578	0.01043	0.11464
	A4	0.03354	0.04079	0.14279
	A4	-0.00296	0.00419	0.10619
	B1	0.01889	0.02765	0.14174
	B1	0.00022	0.00887	0.12299

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)**	0.00240	0.00243	0.00240
	(A2 * A4 * B1 * !Y)	-0.00290	-0.00297	-0.00297
	(A2 * A3 * !A4 * B1 * !Y)	0.00240	0.00243	0.00240
	(A2 * A3 * !A4 * B1 * !Y)	-0.00290	-0.00298	-0.00297
	(A2 * !B1 * Y)	0.00240	0.00243	0.00240
	(A2 * !B1 * Y)	-0.00290	-0.00297	-0.00297
	(A2 * !A3 * !A4 * B1 * !Y)	0.00241	0.00243	0.00240
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00282	-0.00297	-0.00297
	(!A2 * A3 * A4 * B1 * !Y)	0.00240	0.00241	0.00240
	(!A2 * A3 * A4 * B1 * !Y)	-0.00267	-0.00290	-0.00289
	(!A2 * A3 * !B1 * Y)	0.00240	0.00241	0.00240
	(!A2 * A3 * !B1 * Y)	-0.00267	-0.00290	-0.00289
	(!A2 * A3 * !A4 * B1 * !Y)	0.00240	0.00241	0.00240
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00267	-0.00290	-0.00289
	(!A2 * !A3 * A4 * B1 * !Y)	0.00243	0.00241	0.00240
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00260	-0.00286	-0.00285
	(!A2 * !A3 * A4 * !B1 * Y)	0.00240	0.00240	0.00240
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00263	-0.00286	-0.00284
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00231	0.00232	0.00230
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00300	-0.00300	-0.00299

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00477	0.00481	0.00476
	(A2 * A4 * B1 * !Y)	-0.00572	-0.00593	-0.00591
	(A2 * A3 * !A4 * B1 * !Y)	0.00477	0.00481	0.00476
	(A2 * A3 * !A4 * B1 * !Y)	-0.00571	-0.00593	-0.00591
	(A2 * !B1 * Y)	0.00477	0.00480	0.00476
	(A2 * !B1 * Y)	-0.00573	-0.00593	-0.00590
	(A2 * !A3 * !A4 * B1 * !Y)	0.00481	0.00481	0.00476
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00555	-0.00594	-0.00591
	(!A2 * A3 * A4 * B1 * !Y)	0.00477	0.00480	0.00476
	(!A2 * A3 * A4 * B1 * !Y)	-0.00524	-0.00578	-0.00574
	(!A2 * A3 * !B1 * Y)	0.00477	0.00480	0.00476
	(!A2 * A3 * !B1 * Y)	-0.00525	-0.00578	-0.00574
	(!A2 * A3 * !A4 * B1 * !Y)	0.00478	0.00480	0.00476
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00524	-0.00578	-0.00575
	(!A2 * !A3 * A4 * B1 * !Y)	0.00486	0.00480	0.00477
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00511	-0.00567	-0.00566
	(!A2 * !A3 * A4 * !B1 * Y)	0.00477	0.00479	0.00476
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00518	-0.00566	-0.00565
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00457	0.00460	0.00456
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00600	-0.00602	-0.00599

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00922	0.00928	0.00919
	(A2 * A4 * B1 * !Y)	-0.01142	-0.01188	-0.01177
	(A2 * A3 * !A4 * B1 * !Y)	0.00922	0.00928	0.00919
	(A2 * A3 * !A4 * B1 * !Y)	-0.01138	-0.01188	-0.01177
	(A2 * !B1 * Y)	0.00921	0.00927	0.00918
	(A2 * !B1 * Y)	-0.01143	-0.01188	-0.01177
	(A2 * !A3 * !A4 * B1 * !Y)	0.00934	0.00928	0.00919
	(A2 * !A3 * !A4 * B1 * !Y)	-0.01101	-0.01182	-0.01178
	(!A2 * A3 * A4 * B1 * !Y)	0.00922	0.00927	0.00919
	(!A2 * A3 * A4 * B1 * !Y)	-0.01044	-0.01143	-0.01142
	(!A2 * A3 * !B1 * Y)	0.00922	0.00927	0.00918
	(!A2 * A3 * !B1 * Y)	-0.01045	-0.01143	-0.01142
	(!A2 * A3 * !A4 * B1 * !Y)	0.00924	0.00927	0.00919
	(!A2 * A3 * !A4 * B1 * !Y)	-0.01046	-0.01142	-0.01143
	(!A2 * !A3 * A4 * B1 * !Y)	0.00939	0.00927	0.00920
	(!A2 * !A3 * A4 * B1 * !Y)	-0.01021	-0.01137	-0.01128
	(!A2 * !A3 * A4 * !B1 * Y)	0.00913	0.00925	0.00918
	(!A2 * !A3 * A4 * !B1 * Y)	-0.01025	-0.01136	-0.01126
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00874	0.00887	0.00878
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.01192	-0.01202	-0.01195

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)**	-0.00239	-0.00240	-0.00239
	(A2 * A4 * B1 * !Y)	0.00296	0.00297	0.00297
	(A2 * A3 * !A4 * B1 * !Y)	-0.00239	-0.00240	-0.00239
	(A2 * A3 * !A4 * B1 * !Y)	0.00296	0.00299	0.00297
	(A2 * !B1 * Y)	-0.00239	-0.00240	-0.00239
	(A2 * !B1 * Y)	0.00296	0.00297	0.00297
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00239	-0.00240	-0.00239
	(A2 * !A3 * !A4 * B1 * !Y)	0.00296	0.00297	0.00297
	(!A2 * A3 * A4 * B1 * !Y)	-0.00239	-0.00240	-0.00239
	(!A2 * A3 * A4 * B1 * !Y)	0.00288	0.00292	0.00289
	(!A2 * A3 * !B1 * Y)	-0.00239	-0.00241	-0.00239
	(!A2 * A3 * !B1 * Y)	0.00288	0.00291	0.00289
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00239	-0.00240	-0.00239
	(!A2 * A3 * !A4 * B1 * !Y)	0.00288	0.00292	0.00289
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00239	-0.00240	-0.00239
	(!A2 * !A3 * A4 * B1 * !Y)	0.00284	0.00287	0.00285
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00239	-0.00240	-0.00239
	(!A2 * !A3 * A4 * !B1 * Y)	0.00284	0.00286	0.00284
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00214	-0.00230	-0.00230
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00302	0.00302	0.00300

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00473	-0.00476	-0.00475
	(A2 * A4 * B1 * !Y)	0.00587	0.00593	0.00591
	(A2 * A3 * !A4 * B1 * !Y)	-0.00473	-0.00476	-0.00475
	(A2 * A3 * !A4 * B1 * !Y)	0.00587	0.00593	0.00591
	(A2 * !B1 * Y)	-0.00473	-0.00476	-0.00475
	(A2 * !B1 * Y)	0.00587	0.00593	0.00590
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00473	-0.00477	-0.00475
	(A2 * !A3 * !A4 * B1 * !Y)	0.00588	0.00596	0.00591
	(!A2 * A3 * A4 * B1 * !Y)	-0.00475	-0.00477	-0.00475
	(!A2 * A3 * A4 * B1 * !Y)	0.00576	0.00578	0.00574
	(!A2 * A3 * !B1 * Y)	-0.00476	-0.00477	-0.00475
	(!A2 * A3 * !B1 * Y)	0.00575	0.00578	0.00574
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00475	-0.00476	-0.00475
	(!A2 * A3 * !A4 * B1 * !Y)	0.00576	0.00578	0.00575
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00475	-0.00475	-0.00474
	(!A2 * !A3 * A4 * B1 * !Y)	0.00567	0.00567	0.00566
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00476	-0.00476	-0.00475
	(!A2 * !A3 * A4 * !B1 * Y)	0.00566	0.00566	0.00565
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00420	-0.00458	-0.00456
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00606	0.00605	0.00601

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00914	-0.00921	-0.00916
	(A2 * A4 * B1 * !Y)	0.01171	0.01188	0.01177
	(A2 * A3 * !A4 * B1 * !Y)	-0.00914	-0.00921	-0.00916
	(A2 * A3 * !A4 * B1 * !Y)	0.01171	0.01188	0.01177
	(A2 * !B1 * Y)	-0.00914	-0.00921	-0.00917
	(A2 * !B1 * Y)	0.01171	0.01188	0.01177
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00914	-0.00918	-0.00916
	(A2 * !A3 * !A4 * B1 * !Y)	0.01173	0.01182	0.01178
	(!A2 * A3 * A4 * B1 * !Y)	-0.00912	-0.00917	-0.00916
	(!A2 * A3 * A4 * B1 * !Y)	0.01135	0.01143	0.01142
	(!A2 * A3 * !B1 * Y)	-0.00912	-0.00917	-0.00917
	(!A2 * A3 * !B1 * Y)	0.01135	0.01143	0.01142
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00912	-0.00916	-0.00916
	(!A2 * A3 * !A4 * B1 * !Y)	0.01135	0.01142	0.01143
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00912	-0.00919	-0.00915
	(!A2 * !A3 * A4 * B1 * !Y)	0.01121	0.01137	0.01128
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00913	-0.00921	-0.00916
	(!A2 * !A3 * A4 * !B1 * Y)	0.01119	0.01136	0.01126
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00808	-0.00881	-0.00878
	(!A2 * !A3 * !A4 * !B1 * Y)	0.01202	0.01207	0.01199

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)**	0.00236	0.00238	0.00234
	(A1 * A3 * A4 * B1 * !Y)	-0.00197	-0.00199	-0.00197
	(A1 * A3 * !B1 * Y)	0.00233	0.00234	0.00232
	(A1 * A3 * !B1 * Y)	-0.00200	-0.00202	-0.00201
	(A1 * A3 * !A4 * B1 * !Y)	0.00250	0.00251	0.00237
	(A1 * A3 * !A4 * B1 * !Y)	-0.00188	-0.00189	-0.00187
	(A1 * !A3 * A4 * B1 * !Y)	0.00234	0.00242	0.00234
	(A1 * !A3 * A4 * B1 * !Y)	-0.00181	-0.00182	-0.00182
	(A1 * !A3 * A4 * !B1 * Y)	0.00232	0.00235	0.00232
	(A1 * !A3 * A4 * !B1 * Y)	-0.00197	-0.00198	-0.00196
	(A1 * !A3 * !A4 * B1 * !Y)	0.00234	0.00235	0.00233
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00150	-0.00150	-0.00149
	(A1 * !A3 * !A4 * !B1 * Y)	0.00234	0.00234	0.00232
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00287	-0.00289	-0.00288
	(!A1 * A3 * A4 * B1 * !Y)	0.00234	0.00235	0.00233
	(!A1 * A3 * A4 * B1 * !Y)	-0.00281	-0.00290	-0.00289
	(!A1 * A3 * !B1 * Y)	0.00234	0.00235	0.00232
	(!A1 * A3 * !B1 * Y)	-0.00283	-0.00290	-0.00289
	(!A1 * A3 * !A4 * B1 * !Y)	0.00272	0.00235	0.00233
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00245	-0.00290	-0.00289
	(!A1 * !A3 * A4 * B1 * !Y)	0.00262	0.00234	0.00233
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00233	-0.00280	-0.00280
	(!A1 * !A3 * A4 * !B1 * Y)	0.00232	0.00233	0.00232
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00252	-0.00279	-0.00279
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00223	0.00225	0.00223
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00293	-0.00294	-0.00292

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00476	0.00483	0.00478
	(A1 * A3 * A4 * B1 * !Y)	-0.00411	-0.00413	-0.00410
	(A1 * A3 * !B1 * Y)	0.00478	0.00482	0.00477
	(A1 * A3 * !B1 * Y)	-0.00416	-0.00421	-0.00417
	(A1 * A3 * !A4 * B1 * !Y)	0.00517	0.00522	0.00492
	(A1 * A3 * !A4 * B1 * !Y)	-0.00393	-0.00394	-0.00391
	(A1 * !A3 * A4 * B1 * !Y)	0.00479	0.00486	0.00482
	(A1 * !A3 * A4 * B1 * !Y)	-0.00384	-0.00385	-0.00383
	(A1 * !A3 * A4 * !B1 * Y)	0.00476	0.00476	0.00477
	(A1 * !A3 * A4 * !B1 * Y)	-0.00412	-0.00417	-0.00413
	(A1 * !A3 * !A4 * B1 * !Y)	0.00480	0.00481	0.00478
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00314	-0.00314	-0.00311
	(A1 * !A3 * !A4 * !B1 * Y)	0.00475	0.00481	0.00477
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00585	-0.00597	-0.00593
	(!A1 * A3 * A4 * B1 * !Y)	0.00477	0.00481	0.00477
	(!A1 * A3 * A4 * B1 * !Y)	-0.00578	-0.00604	-0.00600
	(!A1 * A3 * !B1 * Y)	0.00475	0.00481	0.00477
	(!A1 * A3 * !B1 * Y)	-0.00583	-0.00604	-0.00600
	(!A1 * A3 * !A4 * B1 * !Y)	0.00531	0.00482	0.00477
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00523	-0.00603	-0.00601
	(!A1 * !A3 * A4 * B1 * !Y)	0.00514	0.00480	0.00478
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00505	-0.00581	-0.00580
	(!A1 * !A3 * A4 * !B1 * Y)	0.00475	0.00478	0.00477
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00533	-0.00580	-0.00579
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00456	0.00455	0.00456
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00608	-0.00606	-0.00607

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00916	0.00921	0.00911
	(A1 * A3 * A4 * B1 * !Y)	-0.00771	-0.00778	-0.00773
	(A1 * A3 * !B1 * Y)	0.00912	0.00918	0.00911
	(A1 * A3 * !B1 * Y)	-0.00787	-0.00794	-0.00787
	(A1 * A3 * !A4 * B1 * !Y)	0.01003	0.00999	0.00939
	(A1 * A3 * !A4 * B1 * !Y)	-0.00740	-0.00745	-0.00738
	(A1 * !A3 * A4 * B1 * !Y)	0.00915	0.00950	0.00918
	(A1 * !A3 * A4 * B1 * !Y)	-0.00731	-0.00730	-0.00729
	(A1 * !A3 * A4 * !B1 * Y)	0.00909	0.00924	0.00910
	(A1 * !A3 * A4 * !B1 * Y)	-0.00783	-0.00788	-0.00785
	(A1 * !A3 * !A4 * B1 * !Y)	0.00912	0.00919	0.00911
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00594	-0.00599	-0.00592
	(A1 * !A3 * !A4 * !B1 * Y)	0.00907	0.00917	0.00909
	(A1 * !A3 * !A4 * !B1 * Y)	-0.01151	-0.01169	-0.01163
	(!A1 * A3 * A4 * B1 * !Y)	0.00911	0.00918	0.00910
	(!A1 * A3 * A4 * B1 * !Y)	-0.01128	-0.01174	-0.01170
	(!A1 * A3 * !B1 * Y)	0.00908	0.00918	0.00909
	(!A1 * A3 * !B1 * Y)	-0.01134	-0.01171	-0.01168
	(!A1 * A3 * !A4 * B1 * !Y)	0.01068	0.00919	0.00910
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00975	-0.01173	-0.01171
	(!A1 * !A3 * A4 * B1 * !Y)	0.01014	0.00916	0.00910
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00949	-0.01121	-0.01128
	(!A1 * !A3 * A4 * !B1 * Y)	0.00911	0.00911	0.00909
	(!A1 * !A3 * A4 * !B1 * Y)	-0.01026	-0.01125	-0.01124
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00872	0.00877	0.00870
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.01194	-0.01197	-0.01191

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)**	-0.00231	-0.00233	-0.00232
	(A1 * A3 * A4 * B1 * !Y)	0.00197	0.00199	0.00197
	(A1 * A3 * !B1 * Y)	-0.00231	-0.00233	-0.00232
	(A1 * A3 * !B1 * Y)	0.00200	0.00202	0.00201
	(A1 * A3 * !A4 * B1 * !Y)	-0.00232	-0.00233	-0.00232
	(A1 * A3 * !A4 * B1 * !Y)	0.00188	0.00189	0.00187
	(A1 * !A3 * A4 * B1 * !Y)	-0.00231	-0.00232	-0.00232
	(A1 * !A3 * A4 * B1 * !Y)	0.00181	0.00182	0.00182
	(A1 * !A3 * A4 * !B1 * Y)	-0.00232	-0.00233	-0.00232
	(A1 * !A3 * A4 * !B1 * Y)	0.00197	0.00198	0.00196
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00224	-0.00226	-0.00223
	(A1 * !A3 * !A4 * B1 * !Y)	0.00155	0.00157	0.00157
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00231	-0.00232	-0.00232
	(A1 * !A3 * !A4 * !B1 * Y)	0.00287	0.00289	0.00288
	(!A1 * A3 * A4 * B1 * !Y)	-0.00232	-0.00232	-0.00232
	(!A1 * A3 * A4 * B1 * !Y)	0.00289	0.00290	0.00289
	(!A1 * A3 * !B1 * Y)	-0.00232	-0.00232	-0.00232
	(!A1 * A3 * !B1 * Y)	0.00288	0.00290	0.00289
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00232	-0.00232	-0.00232
	(!A1 * A3 * !A4 * B1 * !Y)	0.00289	0.00290	0.00289
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00231	-0.00232	-0.00231
	(!A1 * !A3 * A4 * B1 * !Y)	0.00278	0.00280	0.00280
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00231	-0.00232	-0.00232
	(!A1 * !A3 * A4 * !B1 * Y)	0.00278	0.00279	0.00279
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00206	-0.00222	-0.00223
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00294	0.00294	0.00293

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00476	-0.00478	-0.00476
	(A1 * A3 * A4 * B1 * !Y)	0.00411	0.00413	0.00410
	(A1 * A3 * !B1 * Y)	-0.00475	-0.00478	-0.00476
	(A1 * A3 * !B1 * Y)	0.00416	0.00421	0.00417
	(A1 * A3 * !A4 * B1 * !Y)	-0.00477	-0.00477	-0.00476
	(A1 * A3 * !A4 * B1 * !Y)	0.00393	0.00394	0.00391
	(A1 * !A3 * A4 * B1 * !Y)	-0.00478	-0.00480	-0.00478
	(A1 * !A3 * A4 * B1 * !Y)	0.00384	0.00385	0.00383
	(A1 * !A3 * A4 * !B1 * Y)	-0.00475	-0.00476	-0.00476
	(A1 * !A3 * A4 * !B1 * Y)	0.00412	0.00417	0.00413
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00457	-0.00460	-0.00455
	(A1 * !A3 * !A4 * B1 * !Y)	0.00325	0.00330	0.00331
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00475	-0.00478	-0.00476
	(A1 * !A3 * !A4 * !B1 * Y)	0.00591	0.00597	0.00593
	(!A1 * A3 * A4 * B1 * !Y)	-0.00475	-0.00477	-0.00475
	(!A1 * A3 * A4 * B1 * !Y)	0.00598	0.00604	0.00600
	(!A1 * A3 * !B1 * Y)	-0.00475	-0.00478	-0.00476
	(!A1 * A3 * !B1 * Y)	0.00600	0.00604	0.00600
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00476	-0.00477	-0.00475
	(!A1 * A3 * !A4 * B1 * !Y)	0.00600	0.00604	0.00601
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00475	-0.00476	-0.00475
	(!A1 * !A3 * A4 * B1 * !Y)	0.00578	0.00581	0.00580
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00475	-0.00477	-0.00476
	(!A1 * !A3 * A4 * !B1 * Y)	0.00577	0.00580	0.00579
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00417	-0.00455	-0.00456
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00614	0.00612	0.00608

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00906	-0.00912	-0.00908
	(A1 * A3 * A4 * B1 * !Y)	0.00771	0.00778	0.00773
	(A1 * A3 * !B1 * Y)	-0.00907	-0.00913	-0.00908
	(A1 * A3 * !B1 * Y)	0.00787	0.00794	0.00787
	(A1 * A3 * !A4 * B1 * !Y)	-0.00909	-0.00912	-0.00908
	(A1 * A3 * !A4 * B1 * !Y)	0.00740	0.00745	0.00738
	(A1 * !A3 * A4 * B1 * !Y)	-0.00911	-0.00911	-0.00910
	(A1 * !A3 * A4 * B1 * !Y)	0.00731	0.00730	0.00729
	(A1 * !A3 * A4 * !B1 * Y)	-0.00907	-0.00911	-0.00908
	(A1 * !A3 * A4 * !B1 * Y)	0.00783	0.00788	0.00785
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00878	-0.00881	-0.00870
	(A1 * !A3 * !A4 * B1 * !Y)	0.00627	0.00632	0.00629
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00906	-0.00912	-0.00907
	(A1 * !A3 * !A4 * !B1 * Y)	0.01159	0.01169	0.01163
	(!A1 * A3 * A4 * B1 * !Y)	-0.00908	-0.00910	-0.00907
	(!A1 * A3 * A4 * B1 * !Y)	0.01170	0.01174	0.01170
	(!A1 * A3 * !B1 * Y)	-0.00908	-0.00909	-0.00908
	(!A1 * A3 * !B1 * Y)	0.01168	0.01171	0.01168
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00902	-0.00909	-0.00907
	(!A1 * A3 * !A4 * B1 * !Y)	0.01162	0.01173	0.01171
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00907	-0.00903	-0.00904
	(!A1 * !A3 * A4 * B1 * !Y)	0.01128	0.01121	0.01128
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00909	-0.00908	-0.00907
	(!A1 * !A3 * A4 * !B1 * Y)	0.01125	0.01125	0.01124
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00801	-0.00875	-0.00870
	(!A1 * !A3 * !A4 * !B1 * Y)	0.01203	0.01200	0.01194

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)**	0.00262	0.00262	0.00250
	(A2 * A4 * B1 * !Y)	-0.00181	-0.00182	-0.00180
	(A2 * A4 * !B1 * Y)	0.00234	0.00235	0.00233
	(A2 * A4 * !B1 * Y)	-0.00205	-0.00207	-0.00205
	(A2 * !A4 * B1 * !Y)	0.00244	0.00246	0.00242
	(A2 * !A4 * B1 * !Y)	-0.00145	-0.00146	-0.00146
	(A2 * !A4 * !B1 * Y)	0.00234	0.00235	0.00233
	(A2 * !A4 * !B1 * Y)	-0.00289	-0.00296	-0.00295
	(A1 * !A2 * A4 * B1 * !Y)	0.00277	0.00256	0.00243
	(A1 * !A2 * A4 * B1 * !Y)	-0.00177	-0.00187	-0.00187
	(A1 * !A2 * A4 * !B1 * Y)	0.00232	0.00236	0.00233
	(A1 * !A2 * A4 * !B1 * Y)	-0.00202	-0.00202	-0.00203
	(A1 * !A2 * !A4 * B1 * !Y)	0.00246	0.00247	0.00242
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00143	-0.00144	-0.00145
	(A1 * !A2 * !A4 * !B1 * Y)	0.00234	0.00234	0.00233
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00261	-0.00284	-0.00284
	(!A1 * !A2 * A4 * B1 * !Y)	0.00311	0.00246	0.00241
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00220	-0.00286	-0.00288
	(!A1 * !A2 * A4 * !B1 * Y)	0.00234	0.00235	0.00233
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00294	-0.00295	-0.00295
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00224	0.00225	0.00224
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00299	-0.00300	-0.00299

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00483	0.00497	0.00469
	(A2 * A4 * B1 * !Y)	-0.00368	-0.00373	-0.00370
	(A2 * A4 * !B1 * Y)	0.00451	0.00456	0.00451
	(A2 * A4 * !B1 * Y)	-0.00416	-0.00419	-0.00415
	(A2 * !A4 * B1 * !Y)	0.00456	0.00461	0.00454
	(A2 * !A4 * B1 * !Y)	-0.00297	-0.00301	-0.00301
	(A2 * !A4 * !B1 * Y)	0.00449	0.00455	0.00451
	(A2 * !A4 * !B1 * Y)	-0.00567	-0.00586	-0.00585
	(A1 * !A2 * A4 * B1 * !Y)	0.00523	0.00467	0.00457
	(A1 * !A2 * A4 * B1 * !Y)	-0.00368	-0.00385	-0.00382
	(A1 * !A2 * A4 * !B1 * Y)	0.00449	0.00449	0.00451
	(A1 * !A2 * A4 * !B1 * Y)	-0.00403	-0.00406	-0.00404
	(A1 * !A2 * !A4 * B1 * !Y)	0.00459	0.00465	0.00456
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00292	-0.00296	-0.00298
	(A1 * !A2 * !A4 * !B1 * Y)	0.00450	0.00452	0.00451
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00516	-0.00560	-0.00558
	(!A1 * !A2 * A4 * B1 * !Y)	0.00612	0.00463	0.00453
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00425	-0.00581	-0.00587
	(!A1 * !A2 * A4 * !B1 * Y)	0.00453	0.00455	0.00451
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00577	-0.00584	-0.00584
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00430	0.00433	0.00430
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00594	-0.00596	-0.00593

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00996	0.01023	0.00963
	(A2 * A4 * B1 * !Y)	-0.00728	-0.00733	-0.00730
	(A2 * A4 * !B1 * Y)	0.00930	0.00937	0.00926
	(A2 * A4 * !B1 * Y)	-0.00808	-0.00815	-0.00808
	(A2 * !A4 * B1 * !Y)	0.00942	0.00943	0.00929
	(A2 * !A4 * B1 * !Y)	-0.00607	-0.00607	-0.00607
	(A2 * !A4 * !B1 * Y)	0.00927	0.00934	0.00925
	(A2 * !A4 * !B1 * Y)	-0.01149	-0.01184	-0.01179
	(A1 * !A2 * A4 * B1 * !Y)	0.01084	0.00963	0.00935
	(A1 * !A2 * A4 * B1 * !Y)	-0.00723	-0.00761	-0.00762
	(A1 * !A2 * A4 * !B1 * Y)	0.00927	0.00927	0.00925
	(A1 * !A2 * A4 * !B1 * Y)	-0.00795	-0.00801	-0.00798
	(A1 * !A2 * !A4 * B1 * !Y)	0.00939	0.00949	0.00931
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00592	-0.00600	-0.00601
	(A1 * !A2 * !A4 * !B1 * Y)	0.00928	0.00925	0.00924
	(A1 * !A2 * !A4 * !B1 * Y)	-0.01034	-0.01116	-0.01111
	(!A1 * !A2 * A4 * B1 * !Y)	0.01247	0.00944	0.00926
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00871	-0.01191	-0.01198
	(!A1 * !A2 * A4 * !B1 * Y)	0.00927	0.00933	0.00925
	(!A1 * !A2 * A4 * !B1 * Y)	-0.01178	-0.01195	-0.01190
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00880	0.00893	0.00884
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.01205	-0.01214	-0.01208

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)**	-0.00241	-0.00242	-0.00240
	(A2 * A4 * B1 * !Y)	0.00181	0.00182	0.00180
	(A2 * A4 * !B1 * Y)	-0.00232	-0.00233	-0.00232
	(A2 * A4 * !B1 * Y)	0.00205	0.00207	0.00205
	(A2 * !A4 * B1 * !Y)	-0.00240	-0.00241	-0.00238
	(A2 * !A4 * B1 * !Y)	0.00149	0.00150	0.00150
	(A2 * !A4 * !B1 * Y)	-0.00232	-0.00233	-0.00232
	(A2 * !A4 * !B1 * Y)	0.00294	0.00296	0.00295
	(A1 * !A2 * A4 * B1 * !Y)	-0.00240	-0.00241	-0.00240
	(A1 * !A2 * A4 * B1 * !Y)	0.00186	0.00187	0.00187
	(A1 * !A2 * A4 * !B1 * Y)	-0.00231	-0.00231	-0.00232
	(A1 * !A2 * A4 * !B1 * Y)	0.00202	0.00202	0.00203
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00237	-0.00239	-0.00238
	(A1 * !A2 * !A4 * B1 * !Y)	0.00148	0.00149	0.00148
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00232	-0.00233	-0.00232
	(A1 * !A2 * !A4 * !B1 * Y)	0.00283	0.00284	0.00284
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00240	-0.00240	-0.00239
	(!A1 * !A2 * A4 * B1 * !Y)	0.00288	0.00288	0.00289
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00232	-0.00233	-0.00232
	(!A1 * !A2 * A4 * !B1 * Y)	0.00294	0.00295	0.00295
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00206	-0.00223	-0.00224
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00301	0.00301	0.00300

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00453	-0.00457	-0.00454
	(A2 * A4 * B1 * !Y)	0.00368	0.00373	0.00370
	(A2 * A4 * !B1 * Y)	-0.00451	-0.00452	-0.00450
	(A2 * A4 * !B1 * Y)	0.00416	0.00419	0.00415
	(A2 * !A4 * B1 * !Y)	-0.00448	-0.00449	-0.00446
	(A2 * !A4 * B1 * !Y)	0.00304	0.00307	0.00309
	(A2 * !A4 * !B1 * Y)	-0.00448	-0.00451	-0.00450
	(A2 * !A4 * !B1 * Y)	0.00582	0.00586	0.00585
	(A1 * !A2 * A4 * B1 * !Y)	-0.00454	-0.00455	-0.00453
	(A1 * !A2 * A4 * B1 * !Y)	0.00384	0.00385	0.00382
	(A1 * !A2 * A4 * !B1 * Y)	-0.00449	-0.00449	-0.00450
	(A1 * !A2 * A4 * !B1 * Y)	0.00403	0.00406	0.00404
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00443	-0.00446	-0.00445
	(A1 * !A2 * !A4 * B1 * !Y)	0.00299	0.00304	0.00304
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00449	-0.00452	-0.00450
	(A1 * !A2 * !A4 * !B1 * Y)	0.00556	0.00560	0.00558
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00450	-0.00450	-0.00448
	(!A1 * !A2 * A4 * B1 * !Y)	0.00585	0.00586	0.00587
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00450	-0.00450	-0.00450
	(!A1 * !A2 * A4 * !B1 * Y)	0.00584	0.00584	0.00584
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00394	-0.00433	-0.00430
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00595	0.00598	0.00595

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00926	-0.00930	-0.00927
	(A2 * A4 * B1 * !Y)	0.00728	0.00733	0.00730
	(A2 * A4 * !B1 * Y)	-0.00924	-0.00929	-0.00924
	(A2 * A4 * !B1 * Y)	0.00808	0.00815	0.00808
	(A2 * !A4 * B1 * !Y)	-0.00922	-0.00924	-0.00914
	(A2 * !A4 * B1 * !Y)	0.00615	0.00618	0.00622
	(A2 * !A4 * !B1 * Y)	-0.00924	-0.00926	-0.00923
	(A2 * !A4 * !B1 * Y)	0.01179	0.01184	0.01179
	(A1 * !A2 * A4 * B1 * !Y)	-0.00927	-0.00925	-0.00926
	(A1 * !A2 * A4 * B1 * !Y)	0.00765	0.00761	0.00762
	(A1 * !A2 * A4 * !B1 * Y)	-0.00921	-0.00925	-0.00923
	(A1 * !A2 * A4 * !B1 * Y)	0.00795	0.00801	0.00798
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00907	-0.00914	-0.00913
	(A1 * !A2 * !A4 * B1 * !Y)	0.00603	0.00611	0.00612
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00921	-0.00925	-0.00922
	(A1 * !A2 * !A4 * !B1 * Y)	0.01108	0.01116	0.01111
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00921	-0.00922	-0.00916
	(!A1 * !A2 * A4 * B1 * !Y)	0.01194	0.01198	0.01198
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00924	-0.00926	-0.00922
	(!A1 * !A2 * A4 * !B1 * Y)	0.01190	0.01195	0.01190
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00807	-0.00891	-0.00884
	(!A1 * !A2 * !A4 * !B1 * Y)	0.01215	0.01216	0.01211

Passive power(pJ) for A4 rising (conditional):

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

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	0.00262	0.00264	0.00263
	(A3 * B1 * !Y)	-0.00130	-0.00131	-0.00130
	(A3 * !B1 * Y)	0.00233	0.00234	0.00231
	(A3 * !B1 * Y)	-0.00291	-0.00297	-0.00296
	(A2 * !A3 * B1 * !Y)	0.00262	0.00265	0.00263
	(A2 * !A3 * B1 * !Y)	-0.00130	-0.00131	-0.00129
	(A2 * !A3 * !B1 * Y)	0.00233	0.00234	0.00231
	(A2 * !A3 * !B1 * Y)	-0.00262	-0.00289	-0.00287
	(A1 * !A2 * !A3 * B1 * !Y)	0.00263	0.00265	0.00263
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00131	-0.00131	-0.00129
	(A1 * !A2 * !A3 * !B1 * Y)	0.00233	0.00234	0.00231
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00257	-0.00282	-0.00281
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00221	0.00223	0.00220
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00300	-0.00301	-0.00300
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	0.00508	0.00514	0.00510
	(A3 * B1 * !Y)	-0.00267	-0.00270	-0.00268
	(A3 * !B1 * Y)	0.00455	0.00461	0.00457
	(A3 * !B1 * Y)	-0.00570	-0.00591	-0.00592
	(A2 * !A3 * B1 * !Y)	0.00508	0.00514	0.00510
	(A2 * !A3 * B1 * !Y)	-0.00266	-0.00270	-0.00267
	(A2 * !A3 * !B1 * Y)	0.00457	0.00458	0.00457
	(A2 * !A3 * !B1 * Y)	-0.00516	-0.00570	-0.00568
	(A1 * !A2 * !A3 * B1 * !Y)	0.00508	0.00514	0.00510
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00266	-0.00269	-0.00267
	(A1 * !A2 * !A3 * !B1 * Y)	0.00457	0.00459	0.00457
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00504	-0.00559	-0.00555
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00436	0.00439	0.00435
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00601	-0.00603	-0.00600

sky130_fd_sc_hs__o41ai_4	**(A3 * B1 * !Y)**	0.01043	0.01055	0.01047
	(A3 * B1 * !Y)	-0.00518	-0.00524	-0.00519
	(A3 * !B1 * Y)	0.00925	0.00935	0.00927
	(A3 * !B1 * Y)	-0.01131	-0.01180	-0.01177
	(A2 * !A3 * B1 * !Y)	0.01042	0.01056	0.01047
	(A2 * !A3 * B1 * !Y)	-0.00515	-0.00522	-0.00518
	(A2 * !A3 * !B1 * Y)	0.00924	0.00932	0.00926
	(A2 * !A3 * !B1 * Y)	-0.01009	-0.01123	-0.01117
	(A1 * !A2 * !A3 * B1 * !Y)	0.01043	0.01064	0.01047
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00515	-0.00526	-0.00517
	(A1 * !A2 * !A3 * !B1 * Y)	0.00928	0.00929	0.00926
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00991	-0.01086	-0.01086
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00881	0.00889	0.00879
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.01196	-0.01200	-0.01193

Passive power(pJ) for A4 falling (conditional):

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

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	-0.00254	-0.00257	-0.00261
	(A3 * B1 * !Y)	0.00135	0.00137	0.00132
	(A3 * !B1 * Y)	-0.00231	-0.00231	-0.00231
	(A3 * !B1 * Y)	0.00295	0.00297	0.00296
	(A2 * !A3 * B1 * !Y)	-0.00245	-0.00248	-0.00260
	(A2 * !A3 * B1 * !Y)	0.00140	0.00141	0.00131
	(A2 * !A3 * !B1 * Y)	-0.00230	-0.00232	-0.00231
	(A2 * !A3 * !B1 * Y)	0.00285	0.00289	0.00287
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00233	-0.00235	-0.00257
	(A1 * !A2 * !A3 * B1 * !Y)	0.00147	0.00149	0.00133
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00231	-0.00232	-0.00231
	(A1 * !A2 * !A3 * !B1 * Y)	0.00280	0.00282	0.00281
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00206	-0.00222	-0.00220
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00301	0.00302	0.00300
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	-0.00486	-0.00489	-0.00507
	(A3 * B1 * !Y)	0.00287	0.00288	0.00273
	(A3 * !B1 * Y)	-0.00455	-0.00456	-0.00456
	(A3 * !B1 * Y)	0.00589	0.00591	0.00592
	(A2 * !A3 * B1 * !Y)	-0.00467	-0.00469	-0.00503
	(A2 * !A3 * B1 * !Y)	0.00295	0.00296	0.00272
	(A2 * !A3 * !B1 * Y)	-0.00455	-0.00458	-0.00456
	(A2 * !A3 * !B1 * Y)	0.00566	0.00570	0.00568
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00436	-0.00439	-0.00495
	(A1 * !A2 * !A3 * B1 * !Y)	0.00312	0.00312	0.00275
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00457	-0.00458	-0.00456
	(A1 * !A2 * !A3 * !B1 * Y)	0.00555	0.00559	0.00555
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00402	-0.00439	-0.00435
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00605	0.00604	0.00601

sky130_fd_sc_hs__o41ai_4	(A3 * B1 * !Y)	-0.01006	-0.01011	-0.01042
	(A3 * B1 * !Y)	0.00551	0.00552	0.00528
	(A3 * !B1 * Y)	-0.00925	-0.00926	-0.00924
	(A3 * !B1 * Y)	0.01176	0.01180	0.01177
	(A2 * !A3 * B1 * !Y)	-0.00969	-0.00974	-0.01035
	(A2 * !A3 * B1 * !Y)	0.00563	0.00564	0.00523
	(A2 * !A3 * !B1 * Y)	-0.00924	-0.00929	-0.00924
	(A2 * !A3 * !B1 * Y)	0.01117	0.01123	0.01117
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00909	-0.00914	-0.01020
	(A1 * !A2 * !A3 * B1 * !Y)	0.00597	0.00598	0.00531
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00925	-0.00925	-0.00924
	(A1 * !A2 * !A3 * !B1 * Y)	0.01086	0.01086	0.01086
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00812	-0.00889	-0.00879
	(!A1 * !A2 * !A3 * !B1 * Y)	0.01198	0.01202	0.01196

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)	0.00091	0.00091	0.00084
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00348	-0.00349	-0.00362
sky130_fd_sc_hs__o41ai_2	(!A1 * !A2 * !A3 * !A4 * Y)	0.00213	0.00213	0.00200
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00666	-0.00669	-0.00693
sky130_fd_sc_hs__o41ai_4	(!A1 * !A2 * !A3 * !A4 * Y)	0.00305	0.00305	0.00282
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00733	-0.00736	-0.00784

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)	-0.00082	-0.00084	-0.00082
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00362	0.00369	0.00363
sky130_fd_sc_hs__o41ai_2	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00195	-0.00198	-0.00195
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00695	0.00709	0.00696
sky130_fd_sc_hs__o41ai_4	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00274	-0.00279	-0.00274
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00786	0.00801	0.00789

SKY130_FD_SC_HS__O41Ax

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00267	0.00276	0.00278	0.00279	0.00254	1.42582
sky130_fd_sc_hs__o41a_2	0.00283	0.00296	0.00304	0.00289	0.00289	2.89530
sky130_fd_sc_hs__o41a_4	0.00513	0.00551	0.00555	0.00519	0.00475	5.10412

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41a_1	0.00000	0.67035	1.35199
sky130_fd_sc_hs__o41a_2	0.00000	0.45914	0.69136
sky130_fd_sc_hs__o41a_4	0.00000	1.55346	2.72686

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)	0.07484	0.49830	5.61950
	A2->X (RR)	0.07329	0.48490	5.43818
	A3->X (RR)	0.06864	0.46751	5.29327
	A4->X (RR)	0.05919	0.44659	5.21768
	B1->X (RR)	0.06677	0.51832	5.99348
sky130_fd_sc_hs__o41a_2	A1->X (RR)	0.07518	0.40624	5.46378
	A2->X (RR)	0.07398	0.39623	5.30336
	A3->X (RR)	0.07021	0.38261	5.17971
	A4->X (RR)	0.06000	0.36333	5.10173
	B1->X (RR)	0.06764	0.43316	5.98976
sky130_fd_sc_hs__o41a_4	A1->X (RR)	0.08398	0.35672	5.44745
	A2->X (RR)	0.08284	0.34705	5.30522
	A3->X (RR)	0.07389	0.32886	5.15920
	A4->X (RR)	0.06532	0.30774	5.10596
	B1->X (RR)	0.07570	0.39610	6.03189

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41a_1	A1->X (FF)	0.20895	0.58164	5.33636
	A2->X (FF)	0.19754	0.60075	5.51340
	A3->X (FF)	0.17323	0.61421	5.64461
	A4->X (FF)	0.13805	0.60897	5.68434
	B1->X (FF)	0.05461	0.45142	4.99423
sky130_fd_sc_hs__o41a_2	A1->X (FF)	0.25103	0.61119	5.61049
	A2->X (FF)	0.24130	0.63382	5.79646
	A3->X (FF)	0.21859	0.65133	5.94375
	A4->X (FF)	0.17930	0.64747	5.98734
	B1->X (FF)	0.05754	0.41693	5.08664
sky130_fd_sc_hs__o41a_4	A1->X (FF)	0.26419	0.58669	5.49212
	A2->X (FF)	0.25099	0.60085	5.65741
	A3->X (FF)	0.21840	0.61183	5.79897
	A4->X (FF)	0.17216	0.60022	5.82427
	B1->X (FF)	0.06400	0.39812	5.01866

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41a_1	A1	0.02328	0.02577	0.11615
	A1	0.00983	0.01234	0.10313
	A2	0.02010	0.02266	0.10081
	A2	0.00835	0.01092	0.08954
	A3	0.01672	0.01955	0.09030
	A3	0.00663	0.00947	0.08055
	A4	0.01361	0.01724	0.09813
	A4	0.00504	0.00868	0.08957
	B1	0.01079	0.01783	0.14103
	B1	0.00516	0.01223	0.13583
sky130_fd_sc_hs__o41a_2	A1	0.02862	0.03117	0.12299
	A1	0.01421	0.01686	0.10962
	A2	0.02563	0.02820	0.10736
	A2	0.01286	0.01557	0.09532
	A3	0.02225	0.02514	0.09618
	A3	0.01100	0.01399	0.08496
	A4	0.01862	0.02240	0.10357
	A4	0.00910	0.01299	0.09406
	B1	0.01531	0.02328	0.17104
	B1	0.00882	0.01685	0.16549

sky130_fd_sc_hs__o41a_4	**A1**	0.05662	0.06044	0.22774
	A1	0.02982	0.03369	0.20231
	A2	0.05100	0.05531	0.20278
	A2	0.02656	0.03095	0.17963
	A3	0.04276	0.04819	0.18065
	A3	0.02185	0.02743	0.15978
	A4	0.03479	0.04199	0.19350
	A4	0.01789	0.02517	0.17662
	B1	0.02880	0.04346	0.30757
	B1	0.01801	0.03285	0.29855

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41a_1	**A1**	0.00857	0.00867	0.10131
	A1	0.02198	0.02208	0.11172
	A2	0.00861	0.00932	0.08828
	A2	0.02026	0.02098	0.09824
	A3	0.00863	0.01011	0.08172
	A3	0.01857	0.02006	0.08959
	A4	0.00853	0.01190	0.09364
	A4	0.01693	0.02031	0.10050
	B1	0.00441	0.01383	0.15911
	B1	0.01344	0.02200	0.16159

sky130_fd_sc_hs__o41a_2	**A1**	0.01763	0.01333	0.10648
	A1	0.03194	0.02771	0.11827
	A2	0.01782	0.01388	0.09460
	A2	0.03045	0.02650	0.10407
	A3	0.01773	0.01473	0.08747
	A3	0.02877	0.02585	0.09506
	A4	0.01765	0.01679	0.09937
	A4	0.02695	0.02614	0.10614
	B1	0.00882	0.01804	0.17295
	B1	0.01867	0.02732	0.17804
sky130_fd_sc_hs__o41a_4	**A1**	0.03573	0.02599	0.19288
	A1	0.06252	0.05280	0.21615
	A2	0.03480	0.02630	0.16991
	A2	0.05910	0.05058	0.19363
	A3	0.03536	0.02844	0.16135
	A3	0.05596	0.04914	0.17715
	A4	0.03561	0.03302	0.18581
	A4	0.05221	0.04955	0.19826
	B1	0.01858	0.03506	0.32144
	B1	0.03277	0.04899	0.33141

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)**	0.00211	0.00213	0.00211
	(A2 * A4 * B1 * X)	-0.00292	-0.00301	-0.00300
	(A2 * A3 * !A4 * B1 * X)	0.00211	0.00213	0.00211
	(A2 * A3 * !A4 * B1 * X)	-0.00292	-0.00301	-0.00300
	(A2 * !B1 * !X)	0.00210	0.00213	0.00210
	(A2 * !B1 * !X)	-0.00293	-0.00300	-0.00300
	(A2 * !A3 * !A4 * B1 * X)	0.00213	0.00213	0.00211
	(A2 * !A3 * !A4 * B1 * X)	-0.00284	-0.00300	-0.00300
	(!A2 * A3 * A4 * B1 * X)	0.00210	0.00212	0.00211
	(!A2 * A3 * A4 * B1 * X)	-0.00269	-0.00293	-0.00293
	(!A2 * A3 * !B1 * !X)	0.00210	0.00211	0.00210
	(!A2 * A3 * !B1 * !X)	-0.00270	-0.00294	-0.00292
	(!A2 * A3 * !A4 * B1 * X)	0.00211	0.00212	0.00211
	(!A2 * A3 * !A4 * B1 * X)	-0.00269	-0.00293	-0.00294
	(!A2 * !A3 * A4 * B1 * X)	0.00214	0.00212	0.00211
	(!A2 * !A3 * A4 * B1 * X)	-0.00262	-0.00290	-0.00289
	(!A2 * !A3 * A4 * !B1 * !X)	0.00210	0.00211	0.00210
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00265	-0.00290	-0.00288
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00202	0.00202	0.00202
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00303	-0.00303	-0.00302

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00241	0.00243	0.00241
	(A2 * A4 * B1 * X)	-0.00288	-0.00296	-0.00295
	(A2 * A3 * !A4 * B1 * X)	0.00241	0.00243	0.00241
	(A2 * A3 * !A4 * B1 * X)	-0.00288	-0.00296	-0.00295
	(A2 * !B1 * !X)	0.00241	0.00243	0.00240
	(A2 * !B1 * !X)	-0.00288	-0.00296	-0.00295
	(A2 * !A3 * !A4 * B1 * X)	0.00242	0.00243	0.00241
	(A2 * !A3 * !A4 * B1 * X)	-0.00280	-0.00295	-0.00295
	(!A2 * A3 * A4 * B1 * X)	0.00240	0.00241	0.00240
	(!A2 * A3 * A4 * B1 * X)	-0.00264	-0.00285	-0.00287
	(!A2 * A3 * !B1 * !X)	0.00240	0.00241	0.00240
	(!A2 * A3 * !B1 * !X)	-0.00264	-0.00285	-0.00287
	(!A2 * A3 * !A4 * B1 * X)	0.00240	0.00241	0.00241
	(!A2 * A3 * !A4 * B1 * X)	-0.00264	-0.00287	-0.00287
	(!A2 * !A3 * A4 * B1 * X)	0.00243	0.00241	0.00241
	(!A2 * !A3 * A4 * B1 * X)	-0.00258	-0.00284	-0.00283
	(!A2 * !A3 * A4 * !B1 * !X)	0.00240	0.00241	0.00240
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00260	-0.00284	-0.00283
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00231	0.00232	0.00230
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00297	-0.00298	-0.00297

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00391	0.00393	0.00390
	(A2 * A4 * B1 * X)	-0.00568	-0.00590	-0.00587
	(A2 * A3 * !A4 * B1 * X)	0.00392	0.00393	0.00390
	(A2 * A3 * !A4 * B1 * X)	-0.00566	-0.00590	-0.00587
	(A2 * !B1 * !X)	0.00388	0.00391	0.00388
	(A2 * !B1 * !X)	-0.00572	-0.00590	-0.00588
	(A2 * !A3 * !A4 * B1 * X)	0.00404	0.00393	0.00390
	(A2 * !A3 * !A4 * B1 * X)	-0.00540	-0.00588	-0.00585
	(!A2 * A3 * A4 * B1 * X)	0.00392	0.00391	0.00389
	(!A2 * A3 * A4 * B1 * X)	-0.00515	-0.00575	-0.00572
	(!A2 * A3 * !B1 * !X)	0.00389	0.00391	0.00388
	(!A2 * A3 * !B1 * !X)	-0.00518	-0.00575	-0.00571
	(!A2 * A3 * !A4 * B1 * X)	0.00394	0.00391	0.00389
	(!A2 * A3 * !A4 * B1 * X)	-0.00514	-0.00575	-0.00572
	(!A2 * !A3 * A4 * B1 * X)	0.00403	0.00392	0.00390
	(!A2 * !A3 * A4 * B1 * X)	-0.00496	-0.00564	-0.00563
	(!A2 * !A3 * A4 * !B1 * !X)	0.00389	0.00389	0.00388
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00506	-0.00563	-0.00561
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00372	0.00372	0.00370
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00597	-0.00597	-0.00596

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)**	-0.00208	-0.00209	-0.00208
	(A2 * A4 * B1 * X)	0.00300	0.00301	0.00301
	(A2 * A3 * !A4 * B1 * X)	-0.00208	-0.00208	-0.00208
	(A2 * A3 * !A4 * B1 * X)	0.00300	0.00301	0.00301
	(A2 * !B1 * !X)	-0.00209	-0.00209	-0.00209
	(A2 * !B1 * !X)	0.00299	0.00300	0.00300
	(A2 * !A3 * !A4 * B1 * X)	-0.00208	-0.00210	-0.00208
	(A2 * !A3 * !A4 * B1 * X)	0.00300	0.00304	0.00301
	(!A2 * A3 * A4 * B1 * X)	-0.00208	-0.00209	-0.00208
	(!A2 * A3 * A4 * B1 * X)	0.00293	0.00294	0.00293
	(!A2 * A3 * !B1 * !X)	-0.00209	-0.00210	-0.00209
	(!A2 * A3 * !B1 * !X)	0.00292	0.00295	0.00292
	(!A2 * A3 * !A4 * B1 * X)	-0.00208	-0.00209	-0.00208
	(!A2 * A3 * !A4 * B1 * X)	0.00293	0.00294	0.00294
	(!A2 * !A3 * A4 * B1 * X)	-0.00208	-0.00209	-0.00208
	(!A2 * !A3 * A4 * B1 * X)	0.00288	0.00291	0.00289
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00209	-0.00210	-0.00209
	(!A2 * !A3 * A4 * !B1 * !X)	0.00287	0.00290	0.00288
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00188	-0.00202	-0.00202
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00306	0.00305	0.00303

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00239	-0.00240	-0.00239
	(A2 * A4 * B1 * X)	0.00295	0.00296	0.00295
	(A2 * A3 * !A4 * B1 * X)	-0.00239	-0.00240	-0.00239
	(A2 * A3 * !A4 * B1 * X)	0.00295	0.00296	0.00295
	(A2 * !B1 * !X)	-0.00239	-0.00240	-0.00239
	(A2 * !B1 * !X)	0.00295	0.00296	0.00295
	(A2 * !A3 * !A4 * B1 * X)	-0.00239	-0.00239	-0.00239
	(A2 * !A3 * !A4 * B1 * X)	0.00295	0.00296	0.00295
	(!A2 * A3 * A4 * B1 * X)	-0.00239	-0.00238	-0.00239
	(!A2 * A3 * A4 * B1 * X)	0.00287	0.00285	0.00287
	(!A2 * A3 * !B1 * !X)	-0.00239	-0.00238	-0.00239
	(!A2 * A3 * !B1 * !X)	0.00286	0.00285	0.00287
	(!A2 * A3 * !A4 * B1 * X)	-0.00239	-0.00240	-0.00239
	(!A2 * A3 * !A4 * B1 * X)	0.00287	0.00290	0.00287
	(!A2 * !A3 * A4 * B1 * X)	-0.00238	-0.00240	-0.00239
	(!A2 * !A3 * A4 * B1 * X)	0.00283	0.00286	0.00283
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00239	-0.00240	-0.00239
	(!A2 * !A3 * A4 * !B1 * !X)	0.00282	0.00285	0.00283
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00213	-0.00229	-0.00230
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00301	0.00300	0.00298

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	-0.00385	-0.00385	-0.00385
	(A2 * A4 * B1 * X)	0.00588	0.00590	0.00588
	(A2 * A3 * !A4 * B1 * X)	-0.00385	-0.00385	-0.00385
	(A2 * A3 * !A4 * B1 * X)	0.00588	0.00590	0.00588
	(A2 * !B1 * !X)	-0.00386	-0.00386	-0.00386
	(A2 * !B1 * !X)	0.00588	0.00590	0.00588
	(A2 * !A3 * !A4 * B1 * X)	-0.00383	-0.00386	-0.00385
	(A2 * !A3 * !A4 * B1 * X)	0.00584	0.00591	0.00588
	(!A2 * A3 * A4 * B1 * X)	-0.00385	-0.00386	-0.00385
	(!A2 * A3 * A4 * B1 * X)	0.00572	0.00575	0.00572
	(!A2 * A3 * !B1 * !X)	-0.00386	-0.00387	-0.00386
	(!A2 * A3 * !B1 * !X)	0.00571	0.00575	0.00571
	(!A2 * A3 * !A4 * B1 * X)	-0.00385	-0.00386	-0.00385
	(!A2 * A3 * !A4 * B1 * X)	0.00572	0.00575	0.00572
	(!A2 * !A3 * A4 * B1 * X)	-0.00384	-0.00385	-0.00384
	(!A2 * !A3 * A4 * B1 * X)	0.00563	0.00564	0.00563
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00386	-0.00387	-0.00385
	(!A2 * !A3 * A4 * !B1 * !X)	0.00561	0.00563	0.00561
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00340	-0.00369	-0.00370
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00599	0.00603	0.00599

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)**	0.00209	0.00210	0.00205
	(A1 * A3 * A4 * B1 * X)	-0.00201	-0.00204	-0.00202
	(A1 * A3 * !B1 * !X)	0.00204	0.00204	0.00203
	(A1 * A3 * !B1 * !X)	-0.00205	-0.00206	-0.00205
	(A1 * A3 * !A4 * B1 * X)	0.00221	0.00222	0.00208
	(A1 * A3 * !A4 * B1 * X)	-0.00193	-0.00194	-0.00192
	(A1 * !A3 * A4 * B1 * X)	0.00205	0.00213	0.00205
	(A1 * !A3 * A4 * B1 * X)	-0.00185	-0.00187	-0.00187
	(A1 * !A3 * A4 * !B1 * !X)	0.00202	0.00205	0.00203
	(A1 * !A3 * A4 * !B1 * !X)	-0.00201	-0.00201	-0.00200
	(A1 * !A3 * !A4 * B1 * X)	0.00203	0.00205	0.00204
	(A1 * !A3 * !A4 * B1 * X)	-0.00152	-0.00153	-0.00152
	(A1 * !A3 * !A4 * !B1 * !X)	0.00204	0.00204	0.00203
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00291	-0.00292	-0.00292
	(!A1 * A3 * A4 * B1 * X)	0.00205	0.00206	0.00204
	(!A1 * A3 * A4 * B1 * X)	-0.00285	-0.00295	-0.00293
	(!A1 * A3 * !B1 * !X)	0.00204	0.00205	0.00203
	(!A1 * A3 * !B1 * !X)	-0.00287	-0.00294	-0.00293
	(!A1 * A3 * !A4 * B1 * X)	0.00244	0.00206	0.00204
	(!A1 * A3 * !A4 * B1 * X)	-0.00248	-0.00294	-0.00293
	(!A1 * !A3 * A4 * B1 * X)	0.00233	0.00205	0.00204
	(!A1 * !A3 * A4 * B1 * X)	-0.00237	-0.00286	-0.00285
	(!A1 * !A3 * A4 * !B1 * !X)	0.00204	0.00204	0.00203
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00258	-0.00284	-0.00283
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00194	0.00197	0.00195
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00296	-0.00298	-0.00296

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	0.00235	0.00236	0.00232
	(A1 * A3 * A4 * B1 * X)	-0.00197	-0.00197	-0.00196
	(A1 * A3 * !B1 * !X)	0.00232	0.00233	0.00231
	(A1 * A3 * !B1 * !X)	-0.00200	-0.00202	-0.00200
	(A1 * A3 * !A4 * B1 * X)	0.00247	0.00249	0.00236
	(A1 * A3 * !A4 * B1 * X)	-0.00187	-0.00188	-0.00187
	(A1 * !A3 * A4 * B1 * X)	0.00233	0.00242	0.00233
	(A1 * !A3 * A4 * B1 * X)	-0.00183	-0.00184	-0.00184
	(A1 * !A3 * A4 * !B1 * !X)	0.00230	0.00234	0.00231
	(A1 * !A3 * A4 * !B1 * !X)	-0.00197	-0.00198	-0.00198
	(A1 * !A3 * !A4 * B1 * X)	0.00231	0.00233	0.00231
	(A1 * !A3 * !A4 * B1 * X)	-0.00152	-0.00153	-0.00151
	(A1 * !A3 * !A4 * !B1 * !X)	0.00232	0.00233	0.00231
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00291	-0.00293	-0.00293
	(!A1 * A3 * A4 * B1 * X)	0.00232	0.00234	0.00231
	(!A1 * A3 * A4 * B1 * X)	-0.00286	-0.00294	-0.00293
	(!A1 * A3 * !B1 * !X)	0.00232	0.00234	0.00231
	(!A1 * A3 * !B1 * !X)	-0.00287	-0.00294	-0.00293
	(!A1 * A3 * !A4 * B1 * X)	0.00271	0.00234	0.00231
	(!A1 * A3 * !A4 * B1 * X)	-0.00248	-0.00295	-0.00294
	(!A1 * !A3 * A4 * B1 * X)	0.00261	0.00233	0.00231
	(!A1 * !A3 * A4 * B1 * X)	-0.00237	-0.00286	-0.00284
	(!A1 * !A3 * A4 * !B1 * !X)	0.00232	0.00232	0.00231
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00257	-0.00285	-0.00283
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00222	0.00223	0.00222
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00297	-0.00297	-0.00296

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	0.00489	0.00492	0.00487
	(A1 * A3 * A4 * B1 * X)	-0.00393	-0.00396	-0.00393
	(A1 * A3 * !B1 * !X)	0.00482	0.00481	0.00480
	(A1 * A3 * !B1 * !X)	-0.00405	-0.00408	-0.00405
	(A1 * A3 * !A4 * B1 * X)	0.00519	0.00530	0.00500
	(A1 * A3 * !A4 * B1 * X)	-0.00370	-0.00373	-0.00370
	(A1 * !A3 * A4 * B1 * X)	0.00485	0.00496	0.00487
	(A1 * !A3 * A4 * B1 * X)	-0.00362	-0.00365	-0.00362
	(A1 * !A3 * A4 * !B1 * !X)	0.00482	0.00482	0.00480
	(A1 * !A3 * A4 * !B1 * !X)	-0.00391	-0.00394	-0.00393
	(A1 * !A3 * !A4 * B1 * X)	0.00485	0.00485	0.00483
	(A1 * !A3 * !A4 * B1 * X)	-0.00293	-0.00294	-0.00292
	(A1 * !A3 * !A4 * !B1 * !X)	0.00481	0.00484	0.00479
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00571	-0.00579	-0.00578
	(!A1 * A3 * A4 * B1 * X)	0.00485	0.00486	0.00481
	(!A1 * A3 * A4 * B1 * X)	-0.00551	-0.00579	-0.00578
	(!A1 * A3 * !B1 * !X)	0.00481	0.00483	0.00479
	(!A1 * A3 * !B1 * !X)	-0.00557	-0.00581	-0.00578
	(!A1 * A3 * !A4 * B1 * X)	0.00558	0.00486	0.00481
	(!A1 * A3 * !A4 * B1 * X)	-0.00482	-0.00578	-0.00578
	(!A1 * !A3 * A4 * B1 * X)	0.00534	0.00486	0.00481
	(!A1 * !A3 * A4 * B1 * X)	-0.00467	-0.00562	-0.00560
	(!A1 * !A3 * A4 * !B1 * !X)	0.00481	0.00483	0.00479
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00505	-0.00559	-0.00557
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00462	0.00467	0.00463
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00584	-0.00588	-0.00586

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)**	-0.00200	-0.00202	-0.00201
	(A1 * A3 * A4 * B1 * X)	0.00201	0.00204	0.00202
	(A1 * A3 * !B1 * !X)	-0.00201	-0.00203	-0.00202
	(A1 * A3 * !B1 * !X)	0.00205	0.00206	0.00205
	(A1 * A3 * !A4 * B1 * X)	-0.00201	-0.00202	-0.00201
	(A1 * A3 * !A4 * B1 * X)	0.00193	0.00194	0.00192
	(A1 * !A3 * A4 * B1 * X)	-0.00200	-0.00202	-0.00201
	(A1 * !A3 * A4 * B1 * X)	0.00185	0.00187	0.00187
	(A1 * !A3 * A4 * !B1 * !X)	-0.00202	-0.00203	-0.00202
	(A1 * !A3 * A4 * !B1 * !X)	0.00201	0.00201	0.00200
	(A1 * !A3 * !A4 * B1 * X)	-0.00195	-0.00195	-0.00193
	(A1 * !A3 * !A4 * B1 * X)	0.00161	0.00161	0.00162
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00201	-0.00202	-0.00202
	(A1 * !A3 * !A4 * !B1 * !X)	0.00291	0.00292	0.00292
	(!A1 * A3 * A4 * B1 * X)	-0.00201	-0.00202	-0.00201
	(!A1 * A3 * A4 * B1 * X)	0.00293	0.00295	0.00294
	(!A1 * A3 * !B1 * !X)	-0.00202	-0.00202	-0.00202
	(!A1 * A3 * !B1 * !X)	0.00293	0.00294	0.00293
	(!A1 * A3 * !A4 * B1 * X)	-0.00201	-0.00202	-0.00201
	(!A1 * A3 * !A4 * B1 * X)	0.00294	0.00296	0.00294
	(!A1 * !A3 * A4 * B1 * X)	-0.00200	-0.00201	-0.00200
	(!A1 * !A3 * A4 * B1 * X)	0.00284	0.00286	0.00285
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00201	-0.00202	-0.00202
	(!A1 * !A3 * A4 * !B1 * !X)	0.00282	0.00284	0.00283
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00181	-0.00194	-0.00195
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00298	0.00298	0.00297

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	-0.00230	-0.00230	-0.00230
	(A1 * A3 * A4 * B1 * X)	0.00197	0.00197	0.00196
	(A1 * A3 * !B1 * !X)	-0.00229	-0.00231	-0.00230
	(A1 * A3 * !B1 * !X)	0.00200	0.00202	0.00200
	(A1 * A3 * !A4 * B1 * X)	-0.00230	-0.00231	-0.00230
	(A1 * A3 * !A4 * B1 * X)	0.00187	0.00188	0.00187
	(A1 * !A3 * A4 * B1 * X)	-0.00229	-0.00230	-0.00230
	(A1 * !A3 * A4 * B1 * X)	0.00183	0.00184	0.00184
	(A1 * !A3 * A4 * !B1 * !X)	-0.00229	-0.00230	-0.00230
	(A1 * !A3 * A4 * !B1 * !X)	0.00197	0.00198	0.00198
	(A1 * !A3 * !A4 * B1 * X)	-0.00222	-0.00223	-0.00222
	(A1 * !A3 * !A4 * B1 * X)	0.00157	0.00158	0.00160
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00229	-0.00230	-0.00230
	(A1 * !A3 * !A4 * !B1 * !X)	0.00292	0.00293	0.00293
	(!A1 * A3 * A4 * B1 * X)	-0.00230	-0.00230	-0.00230
	(!A1 * A3 * A4 * B1 * X)	0.00294	0.00294	0.00293
	(!A1 * A3 * !B1 * !X)	-0.00230	-0.00230	-0.00230
	(!A1 * A3 * !B1 * !X)	0.00292	0.00294	0.00293
	(!A1 * A3 * !A4 * B1 * X)	-0.00230	-0.00231	-0.00230
	(!A1 * A3 * !A4 * B1 * X)	0.00294	0.00296	0.00294
	(!A1 * !A3 * A4 * B1 * X)	-0.00229	-0.00230	-0.00229
	(!A1 * !A3 * A4 * B1 * X)	0.00283	0.00286	0.00284
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00229	-0.00231	-0.00230
	(!A1 * !A3 * A4 * !B1 * !X)	0.00282	0.00285	0.00283
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00204	-0.00220	-0.00222
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00298	0.00299	0.00298

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	-0.00482	-0.00484	-0.00481
	(A1 * A3 * A4 * B1 * X)	0.00393	0.00396	0.00393
	(A1 * A3 * !B1 * !X)	-0.00479	-0.00480	-0.00478
	(A1 * A3 * !B1 * !X)	0.00405	0.00408	0.00405
	(A1 * A3 * !A4 * B1 * X)	-0.00481	-0.00483	-0.00480
	(A1 * A3 * !A4 * B1 * X)	0.00370	0.00373	0.00370
	(A1 * !A3 * A4 * B1 * X)	-0.00479	-0.00481	-0.00479
	(A1 * !A3 * A4 * B1 * X)	0.00362	0.00365	0.00362
	(A1 * !A3 * A4 * !B1 * !X)	-0.00477	-0.00479	-0.00477
	(A1 * !A3 * A4 * !B1 * !X)	0.00391	0.00394	0.00393
	(A1 * !A3 * !A4 * B1 * X)	-0.00462	-0.00463	-0.00459
	(A1 * !A3 * !A4 * B1 * X)	0.00307	0.00309	0.00312
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00476	-0.00479	-0.00477
	(A1 * !A3 * !A4 * !B1 * !X)	0.00576	0.00579	0.00578
	(!A1 * A3 * A4 * B1 * X)	-0.00476	-0.00480	-0.00477
	(!A1 * A3 * A4 * B1 * X)	0.00575	0.00582	0.00578
	(!A1 * A3 * !B1 * !X)	-0.00476	-0.00480	-0.00477
	(!A1 * A3 * !B1 * !X)	0.00575	0.00582	0.00578
	(!A1 * A3 * !A4 * B1 * X)	-0.00476	-0.00480	-0.00477
	(!A1 * A3 * !A4 * B1 * X)	0.00575	0.00582	0.00578
	(!A1 * !A3 * A4 * B1 * X)	-0.00475	-0.00478	-0.00475
	(!A1 * !A3 * A4 * B1 * X)	0.00557	0.00562	0.00560
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00477	-0.00479	-0.00477
	(!A1 * !A3 * A4 * !B1 * !X)	0.00555	0.00559	0.00557
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00435	-0.00467	-0.00463
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00591	0.00590	0.00588

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)**	0.00223	0.00222	0.00211
	(A2 * A4 * B1 * X)	-0.00180	-0.00181	-0.00180
	(A2 * A4 * !B1 * !X)	0.00202	0.00203	0.00201
	(A2 * A4 * !B1 * !X)	-0.00195	-0.00197	-0.00195
	(A2 * !A4 * B1 * X)	0.00204	0.00206	0.00203
	(A2 * !A4 * B1 * X)	-0.00143	-0.00144	-0.00144
	(A2 * !A4 * !B1 * !X)	0.00203	0.00203	0.00201
	(A2 * !A4 * !B1 * !X)	-0.00280	-0.00286	-0.00285
	(A1 * !A2 * A4 * B1 * X)	0.00238	0.00216	0.00205
	(A1 * !A2 * A4 * B1 * X)	-0.00174	-0.00187	-0.00186
	(A1 * !A2 * A4 * !B1 * !X)	0.00201	0.00204	0.00201
	(A1 * !A2 * A4 * !B1 * !X)	-0.00194	-0.00195	-0.00193
	(A1 * !A2 * !A4 * B1 * X)	0.00206	0.00207	0.00203
	(A1 * !A2 * !A4 * B1 * X)	-0.00141	-0.00143	-0.00143
	(A1 * !A2 * !A4 * !B1 * !X)	0.00200	0.00202	0.00201
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00248	-0.00274	-0.00273
	(!A1 * !A2 * A4 * B1 * X)	0.00268	0.00207	0.00202
	(!A1 * !A2 * A4 * B1 * X)	-0.00217	-0.00285	-0.00286
	(!A1 * !A2 * A4 * !B1 * !X)	0.00203	0.00203	0.00201
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00284	-0.00286	-0.00286
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00193	0.00195	0.00192
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00289	-0.00291	-0.00289

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00263	0.00264	0.00251
	(A2 * A4 * B1 * X)	-0.00183	-0.00184	-0.00183
	(A2 * A4 * !B1 * !X)	0.00235	0.00236	0.00234
	(A2 * A4 * !B1 * !X)	-0.00209	-0.00211	-0.00210
	(A2 * !A4 * B1 * X)	0.00246	0.00248	0.00244
	(A2 * !A4 * B1 * X)	-0.00146	-0.00147	-0.00147
	(A2 * !A4 * !B1 * !X)	0.00235	0.00236	0.00234
	(A2 * !A4 * !B1 * !X)	-0.00291	-0.00299	-0.00298
	(A1 * !A2 * A4 * B1 * X)	0.00280	0.00259	0.00246
	(A1 * !A2 * A4 * B1 * X)	-0.00179	-0.00188	-0.00187
	(A1 * !A2 * A4 * !B1 * !X)	0.00233	0.00237	0.00234
	(A1 * !A2 * A4 * !B1 * !X)	-0.00203	-0.00207	-0.00205
	(A1 * !A2 * !A4 * B1 * X)	0.00248	0.00249	0.00245
	(A1 * !A2 * !A4 * B1 * X)	-0.00145	-0.00146	-0.00146
	(A1 * !A2 * !A4 * !B1 * !X)	0.00235	0.00235	0.00234
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00262	-0.00287	-0.00287
	(!A1 * !A2 * A4 * B1 * X)	0.00314	0.00248	0.00244
	(!A1 * !A2 * A4 * B1 * X)	-0.00220	-0.00288	-0.00289
	(!A1 * !A2 * A4 * !B1 * !X)	0.00235	0.00236	0.00234
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00296	-0.00299	-0.00298
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00224	0.00226	0.00224
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00302	-0.00303	-0.00301

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00523	0.00515	0.00495
	(A2 * A4 * B1 * X)	-0.00366	-0.00370	-0.00367
	(A2 * A4 * !B1 * !X)	0.00474	0.00474	0.00473
	(A2 * A4 * !B1 * !X)	-0.00404	-0.00408	-0.00405
	(A2 * !A4 * B1 * X)	0.00484	0.00485	0.00479
	(A2 * !A4 * B1 * X)	-0.00285	-0.00286	-0.00287
	(A2 * !A4 * !B1 * !X)	0.00474	0.00477	0.00472
	(A2 * !A4 * !B1 * !X)	-0.00554	-0.00575	-0.00574
	(A1 * !A2 * A4 * B1 * X)	0.00547	0.00496	0.00483
	(A1 * !A2 * A4 * B1 * X)	-0.00349	-0.00373	-0.00372
	(A1 * !A2 * A4 * !B1 * !X)	0.00474	0.00474	0.00472
	(A1 * !A2 * A4 * !B1 * !X)	-0.00392	-0.00392	-0.00393
	(A1 * !A2 * !A4 * B1 * X)	0.00487	0.00487	0.00480
	(A1 * !A2 * !A4 * B1 * X)	-0.00282	-0.00283	-0.00285
	(A1 * !A2 * !A4 * !B1 * !X)	0.00473	0.00475	0.00472
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00502	-0.00547	-0.00547
	(!A1 * !A2 * A4 * B1 * X)	0.00611	0.00485	0.00477
	(!A1 * !A2 * A4 * B1 * X)	-0.00437	-0.00572	-0.00574
	(!A1 * !A2 * A4 * !B1 * !X)	0.00473	0.00476	0.00472
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00569	-0.00577	-0.00576
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00454	0.00460	0.00456
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00582	-0.00586	-0.00583

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)**	-0.00200	-0.00201	-0.00200
	(A2 * A4 * B1 * X)	0.00180	0.00181	0.00180
	(A2 * A4 * !B1 * !X)	-0.00200	-0.00202	-0.00200
	(A2 * A4 * !B1 * !X)	0.00195	0.00197	0.00195
	(A2 * !A4 * B1 * X)	-0.00199	-0.00200	-0.00198
	(A2 * !A4 * B1 * X)	0.00149	0.00150	0.00150
	(A2 * !A4 * !B1 * !X)	-0.00200	-0.00201	-0.00201
	(A2 * !A4 * !B1 * !X)	0.00284	0.00286	0.00285
	(A1 * !A2 * A4 * B1 * X)	-0.00199	-0.00200	-0.00200
	(A1 * !A2 * A4 * B1 * X)	0.00185	0.00187	0.00186
	(A1 * !A2 * A4 * !B1 * !X)	-0.00201	-0.00202	-0.00201
	(A1 * !A2 * A4 * !B1 * !X)	0.00194	0.00195	0.00193
	(A1 * !A2 * !A4 * B1 * X)	-0.00195	-0.00196	-0.00198
	(A1 * !A2 * !A4 * B1 * X)	0.00148	0.00149	0.00147
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00200	-0.00201	-0.00201
	(A1 * !A2 * !A4 * !B1 * !X)	0.00272	0.00274	0.00273
	(!A1 * !A2 * A4 * B1 * X)	-0.00199	-0.00200	-0.00198
	(!A1 * !A2 * A4 * B1 * X)	0.00288	0.00289	0.00289
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00200	-0.00201	-0.00201
	(!A1 * !A2 * A4 * !B1 * !X)	0.00285	0.00286	0.00286
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00180	-0.00193	-0.00192
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00291	0.00291	0.00290

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00242	-0.00243	-0.00242
	(A2 * A4 * B1 * X)	0.00183	0.00184	0.00183
	(A2 * A4 * !B1 * !X)	-0.00232	-0.00234	-0.00232
	(A2 * A4 * !B1 * !X)	0.00209	0.00211	0.00210
	(A2 * !A4 * B1 * X)	-0.00241	-0.00242	-0.00240
	(A2 * !A4 * B1 * X)	0.00151	0.00152	0.00152
	(A2 * !A4 * !B1 * !X)	-0.00232	-0.00233	-0.00233
	(A2 * !A4 * !B1 * !X)	0.00297	0.00299	0.00298
	(A1 * !A2 * A4 * B1 * X)	-0.00241	-0.00242	-0.00242
	(A1 * !A2 * A4 * B1 * X)	0.00187	0.00188	0.00187
	(A1 * !A2 * A4 * !B1 * !X)	-0.00231	-0.00234	-0.00232
	(A1 * !A2 * A4 * !B1 * !X)	0.00203	0.00207	0.00205
	(A1 * !A2 * !A4 * B1 * X)	-0.00240	-0.00241	-0.00240
	(A1 * !A2 * !A4 * B1 * X)	0.00149	0.00149	0.00149
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00232	-0.00233	-0.00233
	(A1 * !A2 * !A4 * !B1 * !X)	0.00286	0.00287	0.00287
	(!A1 * !A2 * A4 * B1 * X)	-0.00242	-0.00242	-0.00240
	(!A1 * !A2 * A4 * B1 * X)	0.00290	0.00292	0.00291
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00232	-0.00233	-0.00232
	(!A1 * !A2 * A4 * !B1 * !X)	0.00297	0.00299	0.00298
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00206	-0.00223	-0.00224
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00304	0.00304	0.00303

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	-0.00477	-0.00479	-0.00477
	(A2 * A4 * B1 * X)	0.00366	0.00370	0.00367
	(A2 * A4 * !B1 * !X)	-0.00471	-0.00473	-0.00470
	(A2 * A4 * !B1 * !X)	0.00404	0.00408	0.00405
	(A2 * !A4 * B1 * X)	-0.00471	-0.00473	-0.00469
	(A2 * !A4 * B1 * X)	0.00295	0.00297	0.00299
	(A2 * !A4 * !B1 * !X)	-0.00469	-0.00472	-0.00470
	(A2 * !A4 * !B1 * !X)	0.00571	0.00575	0.00574
	(A1 * !A2 * A4 * B1 * X)	-0.00473	-0.00475	-0.00474
	(A1 * !A2 * A4 * B1 * X)	0.00370	0.00373	0.00372
	(A1 * !A2 * A4 * !B1 * !X)	-0.00470	-0.00469	-0.00470
	(A1 * !A2 * A4 * !B1 * !X)	0.00392	0.00392	0.00393
	(A1 * !A2 * !A4 * B1 * X)	-0.00462	-0.00465	-0.00468
	(A1 * !A2 * !A4 * B1 * X)	0.00295	0.00297	0.00294
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00469	-0.00471	-0.00470
	(A1 * !A2 * !A4 * !B1 * !X)	0.00544	0.00547	0.00547
	(!A1 * !A2 * A4 * B1 * X)	-0.00469	-0.00473	-0.00468
	(!A1 * !A2 * A4 * B1 * X)	0.00574	0.00581	0.00579
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00468	-0.00470	-0.00469
	(!A1 * !A2 * A4 * !B1 * !X)	0.00574	0.00577	0.00576
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00425	-0.00459	-0.00456
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00589	0.00587	0.00586

Passive power(pJ) for A4 rising (conditional):

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

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	0.00230	0.00232	0.00230
	(A3 * B1 * X)	-0.00129	-0.00130	-0.00129
	(A3 * !B1 * !X)	0.00204	0.00206	0.00204
	(A3 * !B1 * !X)	-0.00284	-0.00292	-0.00290
	(A2 * !A3 * B1 * X)	0.00230	0.00232	0.00230
	(A2 * !A3 * B1 * X)	-0.00129	-0.00130	-0.00129
	(A2 * !A3 * !B1 * !X)	0.00204	0.00207	0.00204
	(A2 * !A3 * !B1 * !X)	-0.00256	-0.00281	-0.00280
	(A1 * !A2 * !A3 * B1 * X)	0.00230	0.00232	0.00231
	(A1 * !A2 * !A3 * B1 * X)	-0.00129	-0.00130	-0.00129
	(A1 * !A2 * !A3 * !B1 * !X)	0.00204	0.00207	0.00204
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00251	-0.00274	-0.00274
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00196	0.00197	0.00195
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00294	-0.00295	-0.00294
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	0.00256	0.00258	0.00257
	(A3 * B1 * X)	-0.00131	-0.00132	-0.00131
	(A3 * !B1 * !X)	0.00232	0.00236	0.00233
	(A3 * !B1 * !X)	-0.00282	-0.00290	-0.00290
	(A2 * !A3 * B1 * X)	0.00256	0.00258	0.00256
	(A2 * !A3 * B1 * X)	-0.00130	-0.00131	-0.00130
	(A2 * !A3 * !B1 * !X)	0.00232	0.00235	0.00233
	(A2 * !A3 * !B1 * !X)	-0.00256	-0.00282	-0.00280
	(A1 * !A2 * !A3 * B1 * X)	0.00256	0.00258	0.00257
	(A1 * !A2 * !A3 * B1 * X)	-0.00130	-0.00131	-0.00130
	(A1 * !A2 * !A3 * !B1 * !X)	0.00232	0.00235	0.00233
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00251	-0.00275	-0.00274
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00223	0.00223	0.00222
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00293	-0.00293	-0.00292

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	0.00436	0.00440	0.00436
	(A3 * B1 * X)	-0.00263	-0.00265	-0.00263
	(A3 * !B1 * !X)	0.00389	0.00393	0.00389
	(A3 * !B1 * !X)	-0.00564	-0.00581	-0.00580
	(A2 * !A3 * B1 * X)	0.00437	0.00440	0.00436
	(A2 * !A3 * B1 * X)	-0.00262	-0.00263	-0.00261
	(A2 * !A3 * !B1 * !X)	0.00389	0.00391	0.00389
	(A2 * !A3 * !B1 * !X)	-0.00506	-0.00559	-0.00556
	(A1 * !A2 * !A3 * B1 * X)	0.00439	0.00440	0.00437
	(A1 * !A2 * !A3 * B1 * X)	-0.00263	-0.00263	-0.00261
	(A1 * !A2 * !A3 * !B1 * !X)	0.00390	0.00393	0.00389
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00495	-0.00542	-0.00541
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00373	0.00371	0.00371
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00590	-0.00588	-0.00589

Passive power(pJ) for A4 falling (conditional):

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

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	-0.00222	-0.00223	-0.00228
	(A3 * B1 * X)	0.00137	0.00137	0.00133
	(A3 * !B1 * !X)	-0.00203	-0.00205	-0.00204
	(A3 * !B1 * !X)	0.00289	0.00292	0.00290
	(A2 * !A3 * B1 * X)	-0.00213	-0.00214	-0.00226
	(A2 * !A3 * B1 * X)	0.00141	0.00142	0.00132
	(A2 * !A3 * !B1 * !X)	-0.00203	-0.00204	-0.00204
	(A2 * !A3 * !B1 * !X)	0.00279	0.00281	0.00280
	(A1 * !A2 * !A3 * B1 * X)	-0.00200	-0.00202	-0.00224
	(A1 * !A2 * !A3 * B1 * X)	0.00149	0.00149	0.00134
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00203	-0.00204	-0.00204
	(A1 * !A2 * !A3 * !B1 * !X)	0.00273	0.00274	0.00274
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00182	-0.00196	-0.00195
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00296	0.00296	0.00295
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	-0.00248	-0.00249	-0.00255
	(A3 * B1 * X)	0.00138	0.00139	0.00133
	(A3 * !B1 * !X)	-0.00231	-0.00233	-0.00232
	(A3 * !B1 * !X)	0.00289	0.00290	0.00290
	(A2 * !A3 * B1 * X)	-0.00239	-0.00240	-0.00253
	(A2 * !A3 * B1 * X)	0.00143	0.00143	0.00133
	(A2 * !A3 * !B1 * !X)	-0.00231	-0.00233	-0.00232
	(A2 * !A3 * !B1 * !X)	0.00279	0.00282	0.00280
	(A1 * !A2 * !A3 * B1 * X)	-0.00227	-0.00229	-0.00251
	(A1 * !A2 * !A3 * B1 * X)	0.00149	0.00149	0.00134
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00231	-0.00233	-0.00232
	(A1 * !A2 * !A3 * !B1 * !X)	0.00273	0.00275	0.00274
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00206	-0.00223	-0.00222
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00294	0.00295	0.00294

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	-0.00417	-0.00419	-0.00431
	(A3 * B1 * X)	0.00281	0.00281	0.00271
	(A3 * !B1 * !X)	-0.00386	-0.00389	-0.00387
	(A3 * !B1 * !X)	0.00579	0.00581	0.00580
	(A2 * !A3 * B1 * X)	-0.00393	-0.00396	-0.00427
	(A2 * !A3 * B1 * X)	0.00291	0.00292	0.00269
	(A2 * !A3 * !B1 * !X)	-0.00386	-0.00390	-0.00387
	(A2 * !A3 * !B1 * !X)	0.00554	0.00559	0.00556
	(A1 * !A2 * !A3 * B1 * X)	-0.00368	-0.00371	-0.00421
	(A1 * !A2 * !A3 * B1 * X)	0.00305	0.00305	0.00271
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00386	-0.00389	-0.00387
	(A1 * !A2 * !A3 * !B1 * !X)	0.00540	0.00542	0.00541
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00343	-0.00371	-0.00371
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00597	0.00594	0.00592

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)**	0.00074	0.00074	0.00067
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00283	-0.00283	-0.00294
sky130_fd_sc_hs__o41a_2	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.00082	0.00081	0.00075
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00324	-0.00325	-0.00337
sky130_fd_sc_hs__o41a_4	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.00135	0.00136	0.00125
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00536	-0.00539	-0.00560

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)	-0.00065	-0.00067	-0.00065
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00296	0.00301	0.00296
sky130_fd_sc_hs__o41a_2	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00072	-0.00073	-0.00072
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00339	0.00342	0.00340
sky130_fd_sc_hs__o41a_4	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00119	-0.00121	-0.00119
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00562	0.00569	0.00564

SKY130_FD_SC_HS__OR2Bx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00259	0.00242	1.45982
sky130_fd_sc_hs__or2b_2	0.00269	0.00234	2.33562
sky130_fd_sc_hs__or2b_4	0.00512	0.00290	5.20200

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2b_1	0.00000	0.80512	1.35339
sky130_fd_sc_hs__or2b_2	0.00000	0.86605	1.56277
sky130_fd_sc_hs__or2b_4	0.00000	0.82247	1.30309

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)	0.04949	0.44709	5.59942
	B_N->X (FR)	0.08532	0.63587	8.08738
sky130_fd_sc_hs__or2b_2	A->X (RR)	0.04955	0.36228	4.97237
	B_N->X (FR)	0.09386	0.56956	7.83000
sky130_fd_sc_hs__or2b_4	A->X (RR)	0.04583	0.28376	5.28369
	B_N->X (FR)	0.09675	0.50766	8.03657

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2b_1	A->X (FF)	0.08273	0.45310	4.96214
	B_N->X (RF)	0.08821	0.28610	2.26288
sky130_fd_sc_hs__or2b_2	A->X (FF)	0.10749	0.44957	4.66031
	B_N->X (RF)	0.11768	0.27038	1.72527
sky130_fd_sc_hs__or2b_4	A->X (FF)	0.10762	0.42265	5.13686
	B_N->X (RF)	0.11419	0.25832	2.03318

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.01140	0.01534	0.09460
	A	0.00574	0.00971	0.08941
	B_N	0.01022	0.01965	0.16858
	B_N	0.01508	0.02450	0.17370
sky130_fd_sc_hs__or2b_2	A	0.01611	0.02067	0.09122
	A	0.01010	0.01469	0.08522
	B_N	0.01488	0.02424	0.16469
	B_N	0.01970	0.02914	0.17080
sky130_fd_sc_hs__or2b_4	A	0.03098	0.04240	0.24659
	A	0.01976	0.03132	0.23728
	B_N	0.02856	0.03981	0.21510
	B_N	0.03395	0.04546	0.22190

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.00674	0.01091	0.08643
	A	0.01241	0.01657	0.09128
	B_N	0.01497	0.02312	0.17307
	B_N	0.01012	0.01823	0.16822
sky130_fd_sc_hs__or2b_2	A	0.01204	0.01475	0.10089
	A	0.01806	0.02075	0.10689
	B_N	0.02147	0.02676	0.16569
	B_N	0.01666	0.02188	0.16085
sky130_fd_sc_hs__or2b_4	A	0.02512	0.03138	0.24485
	A	0.03637	0.04250	0.24408
	B_N	0.03720	0.04388	0.22149
	B_N	0.03181	0.03844	0.21516

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	0.00250	0.00211	0.00205
	(!B_N * X)	-0.00239	-0.00281	-0.00283
sky130_fd_sc_hs__or2b_2	(!B_N * X)	0.00269	0.00228	0.00221
	(!B_N * X)	-0.00250	-0.00295	-0.00297
sky130_fd_sc_hs__or2b_4	(!B_N * X)	0.00530	0.00436	0.00427
	(!B_N * X)	-0.00447	-0.00547	-0.00549

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	-0.00203	-0.00203	-0.00202
	(!B_N * X)	0.00286	0.00286	0.00286
sky130_fd_sc_hs__or2b_2	(!B_N * X)	-0.00219	-0.00220	-0.00219
	(!B_N * X)	0.00298	0.00301	0.00300
sky130_fd_sc_hs__or2b_4	(!B_N * X)	-0.00423	-0.00424	-0.00422
	(!B_N * X)	0.00550	0.00554	0.00554

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00636	0.01420	0.15622
	(A * X)	0.00080	0.00863	0.15068
sky130_fd_sc_hs__or2b_2	(A * X)	0.00676	0.01416	0.15188
	(A * X)	0.00119	0.00859	0.14632
sky130_fd_sc_hs__or2b_4	(A * X)	0.00858	0.01667	0.17654
	(A * X)	0.00206	0.01014	0.17001

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00169	0.01088	0.15290
	(A * X)	0.00724	0.01646	0.15846
sky130_fd_sc_hs__or2b_2	(A * X)	0.00173	0.01060	0.14836
	(A * X)	0.00728	0.01617	0.15392
sky130_fd_sc_hs__or2b_4	(A * X)	0.00469	0.01441	0.17401
	(A * X)	0.01119	0.02094	0.18052

SKY130_FD_SC_HS__OR2x

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00235	0.00225	1.44592
sky130_fd_sc_hs__or2_2	0.00290	0.00255	2.38045
sky130_fd_sc_hs__or2_4	0.00464	0.00404	5.17818

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2_1	0.00000	0.43966	1.16179
sky130_fd_sc_hs__or2_2	0.00000	0.28764	0.50120
sky130_fd_sc_hs__or2_4	0.00000	0.56498	1.00240

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)	0.04734	0.43679	5.45525
	B->X (RR)	0.04354	0.42197	5.36936
sky130_fd_sc_hs__or2_2	A->X (RR)	0.05050	0.36623	5.05821
	B->X (RR)	0.04572	0.35050	4.95525
sky130_fd_sc_hs__or2_4	A->X (RR)	0.06648	0.36164	5.95658
	B->X (RR)	0.05525	0.33044	5.76184

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2_1	A->X (FF)	0.08884	0.46728	5.03857
	B->X (FF)	0.07662	0.47858	5.38079
sky130_fd_sc_hs__or2_2	A->X (FF)	0.10629	0.44872	4.60820
	B->X (FF)	0.09182	0.46428	4.94568
sky130_fd_sc_hs__or2_4	A->X (FF)	0.09963	0.40364	4.62406
	B->X (FF)	0.08459	0.41744	4.98570

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.01227	0.01615	0.09391
	A	0.00564	0.00955	0.08777
	B	0.01028	0.01578	0.11002
	B	0.00489	0.01043	0.10500
sky130_fd_sc_hs__or2_2	A	0.01784	0.02198	0.09005
	A	0.00989	0.01411	0.08212
	B	0.01505	0.02033	0.10061
	B	0.00882	0.01414	0.09451
sky130_fd_sc_hs__or2_4	A	0.03307	0.04008	0.18974
	A	0.01996	0.02705	0.17987
	B	0.02622	0.03607	0.21238
	B	0.01680	0.02675	0.20383

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.00499	0.00924	0.08449
	A	0.01161	0.01577	0.08952
	B	0.00474	0.01134	0.11843
	B	0.01012	0.01660	0.12184
sky130_fd_sc_hs__or2_2	A	0.00979	0.01231	0.08999
	A	0.01775	0.02027	0.09788
	B	0.00967	0.01499	0.12476
	B	0.01587	0.02102	0.12926
sky130_fd_sc_hs__or2_4	A	0.02170	0.02607	0.15899
	A	0.03483	0.03918	0.17169
	B	0.02166	0.03064	0.23405
	B	0.03107	0.03989	0.23283

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	0.00245	0.00210	0.00203
	(B * X)	-0.00174	-0.00213	-0.00216
sky130_fd_sc_hs__or2_2	(B * X)	0.00297	0.00255	0.00248
	(B * X)	-0.00208	-0.00254	-0.00256
sky130_fd_sc_hs__or2_4	(B * X)	0.00402	0.00309	0.00298
	(B * X)	-0.00423	-0.00520	-0.00526

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	-0.00200	-0.00200	-0.00199
	(B * X)	0.00219	0.00220	0.00220
sky130_fd_sc_hs__or2_2	(B * X)	-0.00246	-0.00246	-0.00246
	(B * X)	0.00258	0.00258	0.00258
sky130_fd_sc_hs__or2_4	(B * X)	-0.00294	-0.00297	-0.00294
	(B * X)	0.00526	0.00534	0.00529

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	0.00215	0.00218	0.00216
	(A * X)	-0.00096	-0.00098	-0.00097
sky130_fd_sc_hs__or2_2	(A * X)	0.00232	0.00235	0.00233
	(A * X)	-0.00119	-0.00120	-0.00119
sky130_fd_sc_hs__or2_4	(A * X)	0.00270	0.00274	0.00272
	(A * X)	-0.00237	-0.00241	-0.00239

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	-0.00211	-0.00213	-0.00216
	(A * X)	0.00101	0.00101	0.00098
sky130_fd_sc_hs__or2_2	(A * X)	-0.00227	-0.00228	-0.00232
	(A * X)	0.00124	0.00124	0.00120
sky130_fd_sc_hs__or2_4	(A * X)	-0.00258	-0.00258	-0.00271
	(A * X)	0.00253	0.00252	0.00243

SKY130_FD_SC_HS__OR3Bx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00254	0.00276	0.00234	1.46480
sky130_fd_sc_hs__or3b_2	0.00271	0.00262	0.00233	2.37517
sky130_fd_sc_hs__or3b_4	0.00477	0.00436	0.00272	5.25352

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or3b_1	0.00000	0.72242	1.35980
sky130_fd_sc_hs__or3b_2	0.00000	0.75981	1.57881
sky130_fd_sc_hs__or3b_4	0.00000	0.60225	1.27328

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)	0.05459	0.46754	5.60466
	B->X (RR)	0.05346	0.45469	5.42821
	C_N->X (FR)	0.08819	0.64214	8.12650
sky130_fd_sc_hs__or3b_2	A->X (RR)	0.05390	0.38020	5.02343
	B->X (RR)	0.05242	0.36945	4.88232
	C_N->X (FR)	0.09483	0.57220	7.88273
sky130_fd_sc_hs__or3b_4	A->X (RR)	0.07164	0.37903	5.98372
	B->X (RR)	0.06742	0.36096	5.77866
	C_N->X (FR)	0.10968	0.52288	8.15728

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3b_1	A->X (FF)	0.13137	0.50621	5.13156
	B->X (FF)	0.12236	0.53186	5.51945
	C_N->X (RF)	0.11820	0.33354	2.33812
sky130_fd_sc_hs__or3b_2	A->X (FF)	0.16753	0.51215	4.86440
	B->X (FF)	0.15472	0.53978	5.23795
	C_N->X (RF)	0.15224	0.33172	1.91337
sky130_fd_sc_hs__or3b_4	A->X (FF)	0.14826	0.44663	4.78833
	B->X (FF)	0.13584	0.47274	5.18458
	C_N->X (RF)	0.13376	0.28874	2.18468

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.01432	0.01719	0.08960
	A	0.00701	0.00988	0.08271
	B	0.01223	0.01583	0.08351
	B	0.00591	0.00957	0.07755
	C_N	0.01061	0.02018	0.16734
	C_N	0.01476	0.02433	0.17171
sky130_fd_sc_hs__or3b_2	A	0.01911	0.02239	0.08505
	A	0.01158	0.01488	0.07753
	B	0.01659	0.02065	0.07944
	B	0.01043	0.01460	0.07334
	C_N	0.01496	0.02433	0.16131
	C_N	0.01941	0.02885	0.16692
sky130_fd_sc_hs__or3b_4	A	0.03646	0.04173	0.18368
	A	0.02325	0.02851	0.17367
	B	0.03051	0.03732	0.16938
	B	0.02050	0.02740	0.16008
	C_N	0.02645	0.03721	0.20475
	C_N	0.03152	0.04226	0.21063

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.00833	0.01108	0.08385
	A	0.01568	0.01793	0.08863
	B	0.00805	0.01087	0.08856
	B	0.01436	0.01714	0.09374
	C_N	0.01654	0.02408	0.17110
	C_N	0.01238	0.01985	0.16691
sky130_fd_sc_hs__or3b_2	A	0.01475	0.01403	0.08895
	A	0.02232	0.02141	0.09395
	B	0.01451	0.01443	0.09191
	B	0.02066	0.02049	0.09738
	C_N	0.02389	0.02744	0.16141
	C_N	0.01945	0.02293	0.15639
sky130_fd_sc_hs__or3b_4	A	0.02843	0.02712	0.15314
	A	0.04174	0.04042	0.16639
	B	0.02848	0.02858	0.17520
	B	0.03847	0.03854	0.17786
	C_N	0.03974	0.04321	0.21134
	C_N	0.03468	0.03815	0.20428

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)	0.00225	0.00199	0.00196
	(B * C_N * X)	-0.00229	-0.00261	-0.00261
	(B * !C_N * X)	0.00195	0.00197	0.00195
	(B * !C_N * X)	-0.00258	-0.00263	-0.00262
	(!B * !C_N * X)	0.00216	0.00197	0.00195
	(!B * !C_N * X)	-0.00223	-0.00255	-0.00257
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	0.00259	0.00232	0.00229
	(B * C_N * X)	-0.00230	-0.00263	-0.00263
	(B * !C_N * X)	0.00219	0.00222	0.00219
	(B * !C_N * X)	-0.00268	-0.00273	-0.00272
	(!B * !C_N * X)	0.00241	0.00222	0.00220
	(!B * !C_N * X)	-0.00231	-0.00266	-0.00267
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	0.00389	0.00332	0.00330
	(B * C_N * X)	-0.00458	-0.00521	-0.00521
	(B * !C_N * X)	0.00299	0.00297	0.00296
	(B * !C_N * X)	-0.00544	-0.00556	-0.00554
	(!B * !C_N * X)	0.00337	0.00300	0.00296
	(!B * !C_N * X)	-0.00477	-0.00543	-0.00545

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)	-0.00194	-0.00194	-0.00193
	(B * C_N * X)	0.00263	0.00264	0.00263
	(B * !C_N * X)	-0.00194	-0.00195	-0.00195
	(B * !C_N * X)	0.00261	0.00263	0.00262
	(!B * !C_N * X)	-0.00193	-0.00195	-0.00194
	(!B * !C_N * X)	0.00256	0.00259	0.00257
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	-0.00226	-0.00227	-0.00226
	(B * C_N * X)	0.00264	0.00266	0.00265
	(B * !C_N * X)	-0.00218	-0.00219	-0.00219
	(B * !C_N * X)	0.00271	0.00273	0.00272
	(!B * !C_N * X)	-0.00218	-0.00219	-0.00218
	(!B * !C_N * X)	0.00266	0.00269	0.00267
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	-0.00328	-0.00331	-0.00329
	(B * C_N * X)	0.00518	0.00526	0.00521
	(B * !C_N * X)	-0.00295	-0.00297	-0.00296
	(B * !C_N * X)	0.00551	0.00560	0.00554
	(!B * !C_N * X)	-0.00293	-0.00295	-0.00293
	(!B * !C_N * X)	0.00543	0.00548	0.00545

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)	0.00235	0.00237	0.00233
	(A * C_N * X)	-0.00136	-0.00138	-0.00138
	(A * !C_N * X)	0.00225	0.00226	0.00216
	(A * !C_N * X)	-0.00195	-0.00197	-0.00195
	(!A * !C_N * X)	0.00268	0.00213	0.00207
	(!A * !C_N * X)	-0.00224	-0.00286	-0.00288
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	0.00242	0.00244	0.00241
	(A * C_N * X)	-0.00127	-0.00128	-0.00128
	(A * !C_N * X)	0.00218	0.00221	0.00211
	(A * !C_N * X)	-0.00201	-0.00202	-0.00200
	(!A * !C_N * X)	0.00265	0.00206	0.00201
	(!A * !C_N * X)	-0.00230	-0.00289	-0.00290
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	0.00306	0.00306	0.00300
	(A * C_N * X)	-0.00271	-0.00269	-0.00271
	(A * !C_N * X)	0.00292	0.00296	0.00273
	(A * !C_N * X)	-0.00390	-0.00391	-0.00387
	(!A * !C_N * X)	0.00367	0.00254	0.00246
	(!A * !C_N * X)	-0.00447	-0.00571	-0.00572

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)	-0.00228	-0.00229	-0.00229
	(A * C_N * X)	0.00144	0.00144	0.00144
	(A * !C_N * X)	-0.00206	-0.00207	-0.00206
	(A * !C_N * X)	0.00195	0.00197	0.00195
	(!A * !C_N * X)	-0.00205	-0.00205	-0.00204
	(!A * !C_N * X)	0.00290	0.00291	0.00290
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	-0.00236	-0.00237	-0.00236
	(A * C_N * X)	0.00133	0.00134	0.00134
	(A * !C_N * X)	-0.00201	-0.00201	-0.00200
	(A * !C_N * X)	0.00201	0.00202	0.00200
	(!A * !C_N * X)	-0.00200	-0.00200	-0.00199
	(!A * !C_N * X)	0.00292	0.00294	0.00293
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	-0.00294	-0.00295	-0.00293
	(A * C_N * X)	0.00278	0.00278	0.00279
	(A * !C_N * X)	-0.00250	-0.00251	-0.00250
	(A * !C_N * X)	0.00390	0.00391	0.00387
	(!A * !C_N * X)	-0.00242	-0.00244	-0.00241
	(!A * !C_N * X)	0.00573	0.00580	0.00577

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00618	0.01403	0.15476
	(B * X)	0.00080	0.00862	0.14937
	(A * !B * X)	0.00626	0.01412	0.15482
	(A * !B * X)	0.00083	0.00863	0.14938
sky130_fd_sc_hs__or3b_2	(B * X)	0.00694	0.01435	0.15199
	(B * X)	0.00134	0.00875	0.14640
	(A * !B * X)	0.00702	0.01443	0.15205
	(A * !B * X)	0.00136	0.00876	0.14639
sky130_fd_sc_hs__or3b_4	(B * X)	0.00874	0.01747	0.17340
	(B * X)	0.00206	0.01074	0.16671
	(A * !B * X)	0.00891	0.01764	0.17352
	(A * !B * X)	0.00210	0.01078	0.16672

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00141	0.01063	0.15136
	(B * X)	0.00679	0.01604	0.15676
	(A * !B * X)	0.00141	0.01063	0.15136
	(A * !B * X)	0.00680	0.01605	0.15677
sky130_fd_sc_hs__or3b_2	(B * X)	0.00153	0.01040	0.14808
	(B * X)	0.00711	0.01600	0.15368
	(A * !B * X)	0.00153	0.01040	0.14808
	(A * !B * X)	0.00712	0.01602	0.15369
sky130_fd_sc_hs__or3b_4	(B * X)	0.00202	0.01166	0.16789
	(B * X)	0.00868	0.01837	0.17459
	(A * !B * X)	0.00202	0.01167	0.16789
	(A * !B * X)	0.00871	0.01840	0.17461

SKY130_FD_SC_HS__OR3x

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00262	0.00260	0.00255	1.47945
sky130_fd_sc_hs__or3_2	0.00267	0.00270	0.00277	2.78883
sky130_fd_sc_hs__or3_4	0.00497	0.00444	0.00434	5.22409

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or3_1	0.00000	0.14402	0.48975
sky130_fd_sc_hs__or3_2	0.00000	0.18140	0.50119
sky130_fd_sc_hs__or3_4	0.00000	0.35507	1.00238

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)	0.05442	0.46272	5.54461
	B->X (RR)	0.05310	0.44979	5.36522
	C->X (RR)	0.04802	0.43080	5.29309
sky130_fd_sc_hs__or3_2	A->X (RR)	0.05282	0.37304	5.35164
	B->X (RR)	0.05112	0.36097	5.18672
	C->X (RR)	0.04712	0.34635	5.11065
sky130_fd_sc_hs__or3_4	A->X (RR)	0.07216	0.37905	5.94718
	B->X (RR)	0.06781	0.36076	5.74316
	C->X (RR)	0.05933	0.33803	5.65941

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3_1	A->X (FF)	0.13369	0.51028	5.14723
	B->X (FF)	0.12219	0.53542	5.54373
	C->X (FF)	0.09932	0.53568	5.60888
sky130_fd_sc_hs__or3_2	A->X (FF)	0.16239	0.51762	5.26901
	B->X (FF)	0.14976	0.54603	5.65141
	C->X (FF)	0.12873	0.55257	5.72514
sky130_fd_sc_hs__or3_4	A->X (FF)	0.14797	0.44732	4.77415
	B->X (FF)	0.13521	0.47279	5.16577
	C->X (FF)	0.11027	0.47276	5.23232

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.01680	0.01961	0.09630
	A	0.00735	0.01018	0.08735
	B	0.01407	0.01776	0.08911
	B	0.00622	0.00991	0.08162
	C	0.01132	0.01580	0.09797
	C	0.00479	0.00929	0.09172
sky130_fd_sc_hs__or3_2	A	0.02108	0.02488	0.10671
	A	0.01158	0.01546	0.09791
	B	0.01815	0.02268	0.09804
	B	0.01017	0.01481	0.09006
	C	0.01559	0.02074	0.10643
	C	0.00885	0.01407	0.09971
sky130_fd_sc_hs__or3_4	A	0.04025	0.04546	0.18735
	A	0.02326	0.02853	0.17364
	B	0.03356	0.04032	0.17225
	B	0.02047	0.02733	0.16012
	C	0.02720	0.03625	0.18741
	C	0.01681	0.02597	0.17850

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.00635	0.00853	0.08314
	A	0.01583	0.01801	0.08939
	B	0.00638	0.00924	0.08797
	B	0.01426	0.01709	0.09465
	C	0.00622	0.01123	0.10047
	C	0.01277	0.01773	0.10699
sky130_fd_sc_hs__or3_2	A	0.01329	0.01309	0.09510
	A	0.02285	0.02262	0.10098
	B	0.01337	0.01382	0.10052
	B	0.02137	0.02175	0.10403
	C	0.01322	0.01577	0.11553
	C	0.01994	0.02246	0.11628
sky130_fd_sc_hs__or3_4	A	0.02480	0.02358	0.15341
	A	0.04186	0.04058	0.16684
	B	0.02561	0.02565	0.17122
	B	0.03873	0.03874	0.17789
	C	0.02502	0.02899	0.19717
	C	0.03543	0.03929	0.20114

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	0.00211	0.00213	0.00211
	(B * C * X)	-0.00254	-0.00261	-0.00260
	(B * !C * X)	0.00236	0.00213	0.00211
	(B * !C * X)	-0.00229	-0.00261	-0.00260
	(!B * C * X)	0.00230	0.00213	0.00211
	(!B * C * X)	-0.00220	-0.00253	-0.00254
sky130_fd_sc_hs__or3_2	(B * C * X)	0.00223	0.00225	0.00222
	(B * C * X)	-0.00257	-0.00264	-0.00263
	(B * !C * X)	0.00248	0.00225	0.00222
	(B * !C * X)	-0.00231	-0.00263	-0.00263
	(!B * C * X)	0.00242	0.00225	0.00223
	(!B * C * X)	-0.00222	-0.00256	-0.00257
sky130_fd_sc_hs__or3_4	(B * C * X)	0.00350	0.00350	0.00347
	(B * C * X)	-0.00507	-0.00523	-0.00519
	(B * !C * X)	0.00399	0.00351	0.00347
	(B * !C * X)	-0.00460	-0.00522	-0.00520
	(!B * C * X)	0.00390	0.00352	0.00348
	(!B * C * X)	-0.00440	-0.00510	-0.00510

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	-0.00210	-0.00212	-0.00210
	(B * C * X)	0.00259	0.00263	0.00260
	(B * !C * X)	-0.00210	-0.00211	-0.00210
	(B * !C * X)	0.00260	0.00263	0.00260
	(!B * C * X)	-0.00209	-0.00211	-0.00209
	(!B * C * X)	0.00253	0.00256	0.00254
sky130_fd_sc_hs__or3_2	(B * C * X)	-0.00221	-0.00223	-0.00222
	(B * C * X)	0.00262	0.00266	0.00263
	(B * !C * X)	-0.00221	-0.00223	-0.00222
	(B * !C * X)	0.00262	0.00266	0.00263
	(!B * C * X)	-0.00220	-0.00222	-0.00221
	(!B * C * X)	0.00256	0.00259	0.00257
sky130_fd_sc_hs__or3_4	(B * C * X)	-0.00346	-0.00349	-0.00347
	(B * C * X)	0.00517	0.00524	0.00519
	(B * !C * X)	-0.00346	-0.00347	-0.00347
	(B * !C * X)	0.00518	0.00522	0.00520
	(!B * C * X)	-0.00344	-0.00347	-0.00344
	(!B * C * X)	0.00507	0.00513	0.00510

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	0.00218	0.00218	0.00207
	(A * C * X)	-0.00164	-0.00162	-0.00163
	(A * !C * X)	0.00199	0.00200	0.00196
	(A * !C * X)	-0.00129	-0.00130	-0.00131
	(!A * C * X)	0.00258	0.00200	0.00195
	(!A * C * X)	-0.00195	-0.00254	-0.00255
sky130_fd_sc_hs__or3_2	(A * C * X)	0.00221	0.00222	0.00212
	(A * C * X)	-0.00179	-0.00180	-0.00179
	(A * !C * X)	0.00204	0.00206	0.00202
	(A * !C * X)	-0.00144	-0.00146	-0.00147
	(!A * C * X)	0.00265	0.00206	0.00201
	(!A * C * X)	-0.00211	-0.00271	-0.00272
sky130_fd_sc_hs__or3_4	(A * C * X)	0.00293	0.00294	0.00273
	(A * C * X)	-0.00340	-0.00341	-0.00337
	(A * !C * X)	0.00257	0.00257	0.00250
	(A * !C * X)	-0.00274	-0.00272	-0.00274
	(!A * C * X)	0.00373	0.00254	0.00247
	(!A * C * X)	-0.00406	-0.00527	-0.00529

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	-0.00196	-0.00196	-0.00196
	(A * C * X)	0.00164	0.00162	0.00163
	(A * !C * X)	-0.00194	-0.00195	-0.00193
	(A * !C * X)	0.00134	0.00134	0.00134
	(!A * C * X)	-0.00193	-0.00194	-0.00193
	(!A * C * X)	0.00255	0.00257	0.00257
sky130_fd_sc_hs__or3_2	(A * C * X)	-0.00201	-0.00201	-0.00200
	(A * C * X)	0.00179	0.00180	0.00179
	(A * !C * X)	-0.00199	-0.00200	-0.00199
	(A * !C * X)	0.00149	0.00150	0.00150
	(!A * C * X)	-0.00199	-0.00200	-0.00199
	(!A * C * X)	0.00272	0.00273	0.00273
sky130_fd_sc_hs__or3_4	(A * C * X)	-0.00250	-0.00251	-0.00250
	(A * C * X)	0.00340	0.00341	0.00337
	(A * !C * X)	-0.00247	-0.00247	-0.00243
	(A * !C * X)	0.00280	0.00281	0.00282
	(!A * C * X)	-0.00243	-0.00244	-0.00242
	(!A * C * X)	0.00528	0.00535	0.00532

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	0.00216	0.00218	0.00217
	(B * X)	-0.00121	-0.00122	-0.00121
	(A * !B * X)	0.00216	0.00218	0.00217
	(A * !B * X)	-0.00121	-0.00122	-0.00121
sky130_fd_sc_hs__or3_2	(B * X)	0.00243	0.00245	0.00244
	(B * X)	-0.00123	-0.00124	-0.00123
	(A * !B * X)	0.00243	0.00245	0.00244
	(A * !B * X)	-0.00123	-0.00124	-0.00123
sky130_fd_sc_hs__or3_4	(B * X)	0.00309	0.00310	0.00308
	(B * X)	-0.00247	-0.00247	-0.00245
	(A * !B * X)	0.00310	0.00311	0.00308
	(A * !B * X)	-0.00245	-0.00245	-0.00243

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	-0.00211	-0.00212	-0.00216
	(B * X)	0.00127	0.00127	0.00123
	(A * !B * X)	-0.00203	-0.00204	-0.00215
	(A * !B * X)	0.00131	0.00131	0.00123
sky130_fd_sc_hs__or3_2	(B * X)	-0.00238	-0.00239	-0.00243
	(B * X)	0.00128	0.00129	0.00125
	(A * !B * X)	-0.00230	-0.00231	-0.00242
	(A * !B * X)	0.00132	0.00133	0.00125
sky130_fd_sc_hs__or3_4	(B * X)	-0.00292	-0.00294	-0.00307
	(B * X)	0.00256	0.00257	0.00248
	(A * !B * X)	-0.00276	-0.00278	-0.00304
	(A * !B * X)	0.00262	0.00263	0.00245

SKY130_FD_SC_HS__OR4BBx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00258	0.00255	0.00239	0.00242	1.44931
sky130_fd_sc_hs__or4bb_2	0.00257	0.00271	0.00236	0.00233	2.34648
sky130_fd_sc_hs__or4bb_4	0.00408	0.00415	0.00262	0.00259	4.42222

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__or4bb_1	0.00000	1.24909	2.51659
sky130_fd_sc_hs__or4bb_2	0.00000	1.27412	2.74524
sky130_fd_sc_hs__or4bb_4	0.00000	0.72381	1.76305

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)	0.05530	0.47514	5.49466
	B->X (RR)	0.05570	0.46627	5.34909
	C_N->X (FR)	0.10273	0.66245	8.13570
	D_N->X (FR)	0.09155	0.64653	8.10667
sky130_fd_sc_hs__or4bb_2	A->X (RR)	0.05468	0.39153	5.08864
	B->X (RR)	0.05578	0.38506	4.94411
	C_N->X (FR)	0.09491	0.56780	7.77262
	D_N->X (FR)	0.09428	0.56963	7.84364
sky130_fd_sc_hs__or4bb_4	A->X (RR)	0.07801	0.40415	5.64688
	B->X (RR)	0.08002	0.39704	5.49401
	C_N->X (FR)	0.13396	0.56544	8.08999
	D_N->X (FR)	0.13116	0.56639	8.11090

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4bb_1	A->X (FF)	0.18655	0.55867	5.23425
	B->X (FF)	0.17265	0.57744	5.61602
	C_N->X (RF)	0.17500	0.40740	2.35758
	D_N->X (RF)	0.13435	0.36763	2.32212
sky130_fd_sc_hs__or4bb_2	A->X (FF)	0.22582	0.56407	5.13571
	B->X (FF)	0.21710	0.58733	5.28731
	C_N->X (RF)	0.21403	0.40341	1.86469
	D_N->X (RF)	0.18202	0.37701	1.88740
sky130_fd_sc_hs__or4bb_4	A->X (FF)	0.25256	0.54679	4.78121
	B->X (FF)	0.24086	0.55998	4.95713
	C_N->X (RF)	0.24008	0.39989	1.77095
	D_N->X (RF)	0.18934	0.35827	1.73536

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.01568	0.01765	0.08452
	A	0.00856	0.01056	0.07790
	B	0.01326	0.01622	0.07848
	B	0.00732	0.01031	0.07291
	C_N	0.01205	0.02106	0.16378
	C_N	0.01674	0.02578	0.16874
	D_N	0.01040	0.01973	0.16258
	D_N	0.01461	0.02395	0.16703
sky130_fd_sc_hs__or4bb_2	A	0.01983	0.02393	0.11956
	A	0.01265	0.01679	0.11240
	B	0.01773	0.02180	0.10477
	B	0.01150	0.01567	0.09861
	C_N	0.01563	0.02553	0.17219
	C_N	0.02020	0.03019	0.17806
	D_N	0.01499	0.02347	0.16229
	D_N	0.01919	0.02776	0.16774
sky130_fd_sc_hs__or4bb_4	A	0.04130	0.04630	0.19692
	A	0.02849	0.03364	0.18556
	B	0.03475	0.03993	0.17110
	B	0.02490	0.03026	0.16301
	C_N	0.03331	0.04293	0.19673
	C_N	0.03764	0.04743	0.20216
	D_N	0.02920	0.03898	0.19880
	D_N	0.03356	0.04353	0.20419

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.01099	0.01126	0.07963
	A	0.01814	0.01841	0.08464
	B	0.01064	0.01169	0.08249
	B	0.01655	0.01761	0.08817
	C_N	0.02000	0.02616	0.16722
	C_N	0.01530	0.02128	0.16218
	D_N	0.01756	0.02435	0.16689
	D_N	0.01336	0.02010	0.16271
sky130_fd_sc_hs__or4bb_2	A	0.01902	0.01604	0.10858
	A	0.02624	0.02325	0.11439
	B	0.01859	0.01607	0.09392
	B	0.02480	0.02231	0.10012
	C_N	0.02769	0.03016	0.17335
	C_N	0.02313	0.02545	0.16856
	D_N	0.02633	0.02837	0.15821
	D_N	0.02214	0.02420	0.15399
sky130_fd_sc_hs__or4bb_4	A	0.04138	0.03270	0.17694
	A	0.05434	0.04562	0.18932
	B	0.04163	0.03380	0.16102
	B	0.05147	0.04364	0.16749
	C_N	0.05230	0.04892	0.19276
	C_N	0.04798	0.04459	0.18756
	D_N	0.05036	0.04716	0.19784
	D_N	0.04599	0.04268	0.19259

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)**	0.00218	0.00205	0.00203
	(B * C_N * D_N * X)	-0.00241	-0.00261	-0.00260
	(B * !D_N * X)	0.00207	0.00204	0.00201
	(B * !D_N * X)	-0.00251	-0.00262	-0.00262
	(B * !C_N * D_N * X)	0.00201	0.00204	0.00201
	(B * !C_N * D_N * X)	-0.00256	-0.00262	-0.00262
	(!B * C_N * !D_N * X)	0.00221	0.00207	0.00204
	(!B * C_N * !D_N * X)	-0.00228	-0.00251	-0.00253
	(!B * !C_N * D_N * X)	0.00204	0.00202	0.00201
	(!B * !C_N * D_N * X)	-0.00237	-0.00256	-0.00257
	(!B * !C_N * !D_N * X)	0.00200	0.00201	0.00200
	(!B * !C_N * !D_N * X)	-0.00238	-0.00257	-0.00256
sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	0.00233	0.00219	0.00216
	(B * C_N * D_N * X)	-0.00240	-0.00259	-0.00258
	(B * !D_N * X)	0.00222	0.00217	0.00215
	(B * !D_N * X)	-0.00251	-0.00260	-0.00260
	(B * !C_N * D_N * X)	0.00194	0.00195	0.00193
	(B * !C_N * D_N * X)	-0.00278	-0.00283	-0.00282
	(!B * C_N * !D_N * X)	0.00235	0.00221	0.00218
	(!B * C_N * !D_N * X)	-0.00226	-0.00250	-0.00252
	(!B * !C_N * D_N * X)	0.00196	0.00194	0.00193
	(!B * !C_N * D_N * X)	-0.00257	-0.00276	-0.00277
	(!B * !C_N * !D_N * X)	0.00192	0.00193	0.00192
	(!B * !C_N * !D_N * X)	-0.00258	-0.00277	-0.00276

sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	0.00295	0.00266	0.00263
	(B * C_N * D_N * X)	-0.00494	-0.00537	-0.00536
	(B * !D_N * X)	0.00276	0.00265	0.00262
	(B * !D_N * X)	-0.00510	-0.00534	-0.00536
	(B * !C_N * D_N * X)	0.00264	0.00264	0.00262
	(B * !C_N * D_N * X)	-0.00522	-0.00534	-0.00536
	(!B * C_N * !D_N * X)	0.00307	0.00276	0.00268
	(!B * C_N * !D_N * X)	-0.00465	-0.00518	-0.00516
	(!B * !C_N * D_N * X)	0.00270	0.00264	0.00262
	(!B * !C_N * D_N * X)	-0.00484	-0.00523	-0.00523
	(!B * !C_N * !D_N * X)	0.00263	0.00263	0.00261
	(!B * !C_N * !D_N * X)	-0.00481	-0.00522	-0.00522

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)**	-0.00197	-0.00198	-0.00198
	(B * C_N * D_N * X)	0.00263	0.00265	0.00264
	(B * !D_N * X)	-0.00198	-0.00200	-0.00199
	(B * !D_N * X)	0.00262	0.00266	0.00263
	(B * !C_N * D_N * X)	-0.00198	-0.00200	-0.00199
	(B * !C_N * D_N * X)	0.00262	0.00266	0.00263
	(!B * C_N * !D_N * X)	-0.00204	-0.00205	-0.00204
	(!B * C_N * !D_N * X)	0.00252	0.00255	0.00253
	(!B * !C_N * D_N * X)	-0.00198	-0.00200	-0.00199
	(!B * !C_N * D_N * X)	0.00256	0.00259	0.00257
	(!B * !C_N * !D_N * X)	-0.00199	-0.00201	-0.00200
	(!B * !C_N * !D_N * X)	0.00255	0.00258	0.00256

sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	-0.00211	-0.00212	-0.00211
	(B * C_N * D_N * X)	0.00263	0.00263	0.00263
	(B * !D_N * X)	-0.00212	-0.00213	-0.00212
	(B * !D_N * X)	0.00261	0.00262	0.00261
	(B * !C_N * D_N * X)	-0.00190	-0.00191	-0.00190
	(B * !C_N * D_N * X)	0.00282	0.00284	0.00283
	(!B * C_N * !D_N * X)	-0.00218	-0.00219	-0.00218
	(!B * C_N * !D_N * X)	0.00252	0.00253	0.00252
	(!B * !C_N * D_N * X)	-0.00190	-0.00191	-0.00190
	(!B * !C_N * D_N * X)	0.00276	0.00279	0.00277
	(!B * !C_N * !D_N * X)	-0.00191	-0.00192	-0.00191
	(!B * !C_N * !D_N * X)	0.00275	0.00278	0.00276
sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	-0.00259	-0.00261	-0.00260
	(B * C_N * D_N * X)	0.00533	0.00542	0.00537
	(B * !D_N * X)	-0.00261	-0.00260	-0.00261
	(B * !D_N * X)	0.00535	0.00534	0.00536
	(B * !C_N * D_N * X)	-0.00260	-0.00260	-0.00260
	(B * !C_N * D_N * X)	0.00535	0.00534	0.00536
	(!B * C_N * !D_N * X)	-0.00273	-0.00274	-0.00268
	(!B * C_N * !D_N * X)	0.00514	0.00518	0.00516
	(!B * !C_N * D_N * X)	-0.00260	-0.00260	-0.00260
	(!B * !C_N * D_N * X)	0.00522	0.00523	0.00523
	(!B * !C_N * !D_N * X)	-0.00261	-0.00261	-0.00261
	(!B * !C_N * !D_N * X)	0.00521	0.00522	0.00522

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)**	0.00218	0.00219	0.00217
	(A * C_N * D_N * X)	-0.00144	-0.00145	-0.00144
	(A * C_N * !D_N * X)	0.00254	0.00268	0.00261
	(A * C_N * !D_N * X)	-0.00179	-0.00179	-0.00178
	(A * !C_N * D_N * X)	0.00191	0.00193	0.00180
	(A * !C_N * D_N * X)	-0.00224	-0.00225	-0.00223
	(A * !C_N * !D_N * X)	0.00182	0.00183	0.00178
	(A * !C_N * !D_N * X)	-0.00230	-0.00232	-0.00230
	(!A * C_N * !D_N * X)	0.00268	0.00221	0.00217
	(!A * C_N * !D_N * X)	-0.00218	-0.00264	-0.00265
	(!A * !C_N * D_N * X)	0.00219	0.00177	0.00175
	(!A * !C_N * D_N * X)	-0.00268	-0.00311	-0.00309
	(!A * !C_N * !D_N * X)	0.00175	0.00176	0.00174
	(!A * !C_N * !D_N * X)	-0.00310	-0.00311	-0.00310
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	0.00265	0.00269	0.00264
	(A * C_N * D_N * X)	-0.00130	-0.00132	-0.00130
	(A * C_N * !D_N * X)	0.00305	0.00318	0.00308
	(A * C_N * !D_N * X)	-0.00162	-0.00163	-0.00162
	(A * !C_N * D_N * X)	0.00249	0.00254	0.00240
	(A * !C_N * D_N * X)	-0.00193	-0.00195	-0.00193
	(A * !C_N * !D_N * X)	0.00241	0.00246	0.00239
	(A * !C_N * !D_N * X)	-0.00200	-0.00201	-0.00201
	(!A * C_N * !D_N * X)	0.00315	0.00269	0.00264
	(!A * C_N * !D_N * X)	-0.00201	-0.00247	-0.00250
	(!A * !C_N * D_N * X)	0.00280	0.00238	0.00236
	(!A * !C_N * D_N * X)	-0.00237	-0.00282	-0.00280
	(!A * !C_N * !D_N * X)	0.00236	0.00237	0.00234
	(!A * !C_N * !D_N * X)	-0.00280	-0.00283	-0.00281

sky130_fd_sc_hs__or4bb_4	**(A * C_N * D_N * X)**	0.00273	0.00273	0.00271
	(A * C_N * D_N * X)	-0.00282	-0.00282	-0.00279
	(A * C_N * !D_N * X)	0.00331	0.00357	0.00347
	(A * C_N * !D_N * X)	-0.00353	-0.00353	-0.00352
	(A * !C_N * D_N * X)	0.00307	0.00302	0.00274
	(A * !C_N * D_N * X)	-0.00367	-0.00372	-0.00369
	(A * !C_N * !D_N * X)	0.00259	0.00260	0.00257
	(A * !C_N * !D_N * X)	-0.00382	-0.00388	-0.00384
	(!A * C_N * !D_N * X)	0.00357	0.00279	0.00268
	(!A * C_N * !D_N * X)	-0.00437	-0.00521	-0.00521
	(!A * !C_N * D_N * X)	0.00338	0.00258	0.00254
	(!A * !C_N * D_N * X)	-0.00462	-0.00545	-0.00544
	(!A * !C_N * !D_N * X)	0.00257	0.00256	0.00253
	(!A * !C_N * !D_N * X)	-0.00540	-0.00546	-0.00543

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)**	-0.00206	-0.00208	-0.00208
	(A * C_N * D_N * X)	0.00153	0.00155	0.00155
	(A * C_N * !D_N * X)	-0.00243	-0.00244	-0.00243
	(A * C_N * !D_N * X)	0.00179	0.00179	0.00178
	(A * !C_N * D_N * X)	-0.00173	-0.00173	-0.00172
	(A * !C_N * D_N * X)	0.00224	0.00225	0.00223
	(A * !C_N * !D_N * X)	-0.00173	-0.00174	-0.00173
	(A * !C_N * !D_N * X)	0.00230	0.00232	0.00230
	(!A * C_N * !D_N * X)	-0.00219	-0.00220	-0.00217
	(!A * C_N * !D_N * X)	0.00264	0.00264	0.00265
	(!A * !C_N * D_N * X)	-0.00172	-0.00173	-0.00172
	(!A * !C_N * D_N * X)	0.00312	0.00313	0.00312
	(!A * !C_N * !D_N * X)	-0.00173	-0.00174	-0.00173
	(!A * !C_N * !D_N * X)	0.00310	0.00311	0.00310
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	-0.00255	-0.00255	-0.00255
	(A * C_N * D_N * X)	0.00139	0.00139	0.00140
	(A * C_N * !D_N * X)	-0.00289	-0.00290	-0.00290
	(A * C_N * !D_N * X)	0.00162	0.00163	0.00162
	(A * !C_N * D_N * X)	-0.00233	-0.00234	-0.00233
	(A * !C_N * D_N * X)	0.00193	0.00195	0.00193
	(A * !C_N * !D_N * X)	-0.00233	-0.00234	-0.00234
	(A * !C_N * !D_N * X)	0.00200	0.00201	0.00201
	(!A * C_N * !D_N * X)	-0.00267	-0.00268	-0.00264
	(!A * C_N * !D_N * X)	0.00249	0.00250	0.00250
	(!A * !C_N * D_N * X)	-0.00232	-0.00232	-0.00233
	(!A * !C_N * D_N * X)	0.00282	0.00282	0.00283
	(!A * !C_N * !D_N * X)	-0.00233	-0.00235	-0.00234
	(!A * !C_N * !D_N * X)	0.00280	0.00283	0.00281

sky130_fd_sc_hs__or4bb_4	(A * C_N * D_N * X)	-0.00251	-0.00252	-0.00253
	(A * C_N * D_N * X)	0.00297	0.00299	0.00300
	(A * C_N * !D_N * X)	-0.00321	-0.00322	-0.00321
	(A * C_N * !D_N * X)	0.00353	0.00353	0.00352
	(A * !C_N * D_N * X)	-0.00255	-0.00257	-0.00256
	(A * !C_N * D_N * X)	0.00367	0.00372	0.00369
	(A * !C_N * !D_N * X)	-0.00255	-0.00257	-0.00256
	(A * !C_N * !D_N * X)	0.00382	0.00388	0.00384
	(!A * C_N * !D_N * X)	-0.00278	-0.00279	-0.00268
	(!A * C_N * !D_N * X)	0.00519	0.00521	0.00521
	(!A * !C_N * D_N * X)	-0.00252	-0.00254	-0.00252
	(!A * !C_N * D_N * X)	0.00542	0.00549	0.00545
	(!A * !C_N * !D_N * X)	-0.00253	-0.00254	-0.00253
	(!A * !C_N * !D_N * X)	0.00543	0.00547	0.00543

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * X)	0.00714	0.01447	0.15186
	(B * X)	0.00142	0.00873	0.14613
	(A * !B * X) + (!A * !B * !D_N * X)	0.00721	0.01453	0.15190
	(A * !B * X) + (!A * !B * !D_N * X)	0.00140	0.00871	0.14610
sky130_fd_sc_hs__or4bb_2	(B * X)	0.00649	0.01425	0.15529
	(B * X)	0.00097	0.00871	0.14976
	(A * !B * X) + (!A * !B * !D_N * X)	0.00656	0.01431	0.15519
	(A * !B * X) + (!A * !B * !D_N * X)	0.00095	0.00867	0.14958
sky130_fd_sc_hs__or4bb_4	(B * X)	0.00787	0.01603	0.16888
	(B * X)	0.00197	0.01011	0.16298
	(A * !B * X) + (!A * !B * !D_N * X)	0.00804	0.01619	0.16897
	(A * !B * X) + (!A * !B * !D_N * X)	0.00197	0.01011	0.16293

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * X)	0.00169	0.01048	0.14786
	(B * X)	0.00741	0.01620	0.15359
	(A * !B * X) + (!A * !B * !D_N * X)	0.00170	0.01049	0.14787
	(A * !B * X) + (!A * !B * !D_N * X)	0.00743	0.01623	0.15360
sky130_fd_sc_hs__or4bb_2	(B * X)	0.00150	0.01069	0.15169
	(B * X)	0.00703	0.01623	0.15723
	(A * !B * X) + (!A * !B * !D_N * X)	0.00151	0.01068	0.15154
	(A * !B * X) + (!A * !B * !D_N * X)	0.00706	0.01624	0.15709
sky130_fd_sc_hs__or4bb_4	(B * X)	0.00283	0.01238	0.16491
	(B * X)	0.00872	0.01827	0.17080
	(A * !B * X) + (!A * !B * !D_N * X)	0.00287	0.01243	0.16493
	(A * !B * X) + (!A * !B * !D_N * X)	0.00878	0.01832	0.17083

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)	0.00620	0.01375	0.15108
	(B * C_N * X)	0.00101	0.00855	0.14590
	(A * !B * C_N * X)	0.00631	0.01386	0.15116
	(A * !B * C_N * X)	0.00108	0.00862	0.14594
	(!C_N * X)	0.00635	0.01390	0.15124
	(!C_N * X)	0.00120	0.00871	0.14607
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00632	0.01378	0.15159
	(B * C_N * X)	0.00116	0.00862	0.14644
	(A * !B * C_N * X)	0.00642	0.01389	0.15167
	(A * !B * C_N * X)	0.00122	0.00867	0.14648
	(!C_N * X)	0.00650	0.01397	0.15180
	(!C_N * X)	0.00136	0.00881	0.14666
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00893	0.01696	0.17129
	(B * C_N * X)	0.00304	0.01105	0.16540
	(A * !B * C_N * X)	0.00921	0.01723	0.17150
	(A * !B * C_N * X)	0.00321	0.01121	0.16551
	(!C_N * X)	0.00950	0.01753	0.17190
	(!C_N * X)	0.00365	0.01166	0.16603

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)	0.00170	0.01064	0.14794
	(B * C_N * X)	0.00684	0.01582	0.15312
	(A * !B * C_N * X)	0.00170	0.01064	0.14794
	(A * !B * C_N * X)	0.00685	0.01582	0.15312
	(!C_N * X)	0.00147	0.01043	0.14774
	(!C_N * X)	0.00661	0.01560	0.15291
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00207	0.01095	0.14882
	(B * C_N * X)	0.00719	0.01611	0.15397
	(A * !B * C_N * X)	0.00207	0.01095	0.14882
	(A * !B * C_N * X)	0.00719	0.01611	0.15397
	(!C_N * X)	0.00183	0.01071	0.14858
	(!C_N * X)	0.00694	0.01586	0.15372
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00339	0.01282	0.16698
	(B * C_N * X)	0.00926	0.01869	0.17284
	(A * !B * C_N * X)	0.00340	0.01283	0.16698
	(A * !B * C_N * X)	0.00927	0.01869	0.17285
	(!C_N * X)	0.00273	0.01216	0.16632
	(!C_N * X)	0.00860	0.01801	0.17218

SKY130_FD_SC_HS__OR4Bx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00263	0.00251	0.00260	0.00244	1.39132
sky130_fd_sc_hs__or4b_2	0.00272	0.00262	0.00263	0.00233	2.39861
sky130_fd_sc_hs__or4b_4	0.00403	0.00455	0.00458	0.00256	5.38212

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4b_1	0.00000	0.67070	1.36622
sky130_fd_sc_hs__or4b_2	0.00000	0.69571	1.59484
sky130_fd_sc_hs__or4b_4	0.00000	0.47663	1.28473

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)	0.05814	0.48463	5.44729
	B->X (RR)	0.05837	0.47627	5.30970
	C->X (RR)	0.05599	0.46115	5.17308
	D_N->X (FR)	0.09191	0.64685	8.00477
sky130_fd_sc_hs__or4b_2	A->X (RR)	0.05524	0.39205	5.04401
	B->X (RR)	0.05581	0.38624	4.92921
	C->X (RR)	0.05373	0.37380	4.81670
	D_N->X (FR)	0.09857	0.57988	7.95133
sky130_fd_sc_hs__or4b_4	A->X (RR)	0.07987	0.40398	5.97150
	B->X (RR)	0.07953	0.39314	5.81346
	C->X (RR)	0.07224	0.36934	5.64329
	D_N->X (FR)	0.11581	0.53458	8.25351

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4b_1	A->X (FF)	0.19458	0.56674	5.14427
	B->X (FF)	0.18043	0.58535	5.51893
	C->X (FF)	0.15991	0.60001	5.63991
	D_N->X (RF)	0.13793	0.37482	2.26841
sky130_fd_sc_hs__or4b_2	A->X (FF)	0.23708	0.57870	5.03166
	B->X (FF)	0.22322	0.59876	5.37835
	C->X (FF)	0.19851	0.61430	5.50420
	D_N->X (RF)	0.18610	0.38903	1.96939
sky130_fd_sc_hs__or4b_4	A->X (FF)	0.24210	0.55553	5.30264
	B->X (FF)	0.23063	0.56857	5.47627
	C->X (FF)	0.19648	0.57612	5.61437
	D_N->X (RF)	0.17590	0.35705	2.34049

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.01799	0.01978	0.08150
	A	0.00878	0.01060	0.07267
	B	0.01525	0.01806	0.07589
	B	0.00774	0.01057	0.06871
	C	0.01277	0.01577	0.06877
	C	0.00632	0.00937	0.06235
	D_N	0.01116	0.02046	0.16539
	D_N	0.01503	0.02439	0.16962
sky130_fd_sc_hs__or4b_2	A	0.02252	0.02497	0.08275
	A	0.01319	0.01571	0.07345
	B	0.01983	0.02319	0.07743
	B	0.01214	0.01554	0.06989
	C	0.01716	0.02083	0.07059
	C	0.01055	0.01427	0.06406
	D_N	0.01580	0.02512	0.16091
	D_N	0.01992	0.02929	0.16596
sky130_fd_sc_hs__or4b_4	A	0.04393	0.04862	0.19399
	A	0.02785	0.03266	0.18117
	B	0.03885	0.04352	0.17489
	B	0.02493	0.02967	0.16164
	C	0.03175	0.03774	0.15857
	C	0.02048	0.02656	0.14892
	D_N	0.02841	0.03879	0.19720
	D_N	0.03224	0.04262	0.20160

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.00936	0.00938	0.07471
	A	0.01862	0.01864	0.08346
	B	0.00945	0.01023	0.08154
	B	0.01697	0.01777	0.08661
	C	0.00926	0.01066	0.07408
	C	0.01570	0.01709	0.07942
	D_N	0.01736	0.02432	0.17014
	D_N	0.01347	0.02044	0.16620
sky130_fd_sc_hs__or4b_2	A	0.01718	0.01290	0.08180
	A	0.02657	0.02232	0.09053
	B	0.01717	0.01387	0.08612
	B	0.02488	0.02156	0.09210
	C	0.01683	0.01417	0.07922
	C	0.02344	0.02082	0.08416
	D_N	0.02658	0.02818	0.15843
	D_N	0.02246	0.02392	0.15375
sky130_fd_sc_hs__or4b_4	A	0.03853	0.02948	0.17251
	A	0.05484	0.04573	0.18482
	B	0.03830	0.02986	0.16204
	B	0.05232	0.04385	0.16731
	C	0.03757	0.03080	0.14867
	C	0.04884	0.04208	0.15499
	D_N	0.04909	0.04655	0.20471
	D_N	0.04527	0.04254	0.19973

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)**	0.00210	0.00212	0.00209
	(B * C * D_N * X)	-0.00251	-0.00259	-0.00259
	(B * !D_N * X)	0.00209	0.00211	0.00208
	(B * !D_N * X)	-0.00253	-0.00260	-0.00259
	(B * !C * D_N * X)	0.00222	0.00212	0.00209
	(B * !C * D_N * X)	-0.00237	-0.00259	-0.00258
	(!B * C * D_N * X)	0.00213	0.00211	0.00209
	(!B * C * D_N * X)	-0.00229	-0.00252	-0.00253
	(!B * C * !D_N * X)	0.00208	0.00209	0.00208
	(!B * C * !D_N * X)	-0.00231	-0.00253	-0.00252
	(!B * !C * !D_N * X)	0.00215	0.00210	0.00209
	(!B * !C * !D_N * X)	-0.00225	-0.00250	-0.00249
sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	0.00230	0.00232	0.00229
	(B * C * D_N * X)	-0.00255	-0.00262	-0.00262
	(B * !D_N * X)	0.00221	0.00224	0.00221
	(B * !D_N * X)	-0.00264	-0.00271	-0.00269
	(B * !C * D_N * X)	0.00241	0.00232	0.00230
	(B * !C * D_N * X)	-0.00241	-0.00262	-0.00261
	(!B * C * D_N * X)	0.00233	0.00231	0.00229
	(!B * C * D_N * X)	-0.00232	-0.00255	-0.00256
	(!B * C * !D_N * X)	0.00220	0.00222	0.00221
	(!B * C * !D_N * X)	-0.00242	-0.00264	-0.00262
	(!B * !C * !D_N * X)	0.00227	0.00223	0.00221
	(!B * !C * !D_N * X)	-0.00235	-0.00261	-0.00260

sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	0.00231	0.00230	0.00228
	(B * C * D_N * X)	-0.00513	-0.00534	-0.00531
	(B * !D_N * X)	0.00227	0.00229	0.00227
	(B * !D_N * X)	-0.00517	-0.00535	-0.00531
	(B * !C * D_N * X)	0.00257	0.00231	0.00228
	(B * !C * D_N * X)	-0.00482	-0.00532	-0.00530
	(!B * C * D_N * X)	0.00240	0.00230	0.00228
	(!B * C * D_N * X)	-0.00464	-0.00519	-0.00516
	(!B * C * !D_N * X)	0.00228	0.00229	0.00227
	(!B * C * !D_N * X)	-0.00471	-0.00520	-0.00516
	(!B * !C * !D_N * X)	0.00245	0.00231	0.00228
	(!B * !C * !D_N * X)	-0.00453	-0.00512	-0.00511

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)**	-0.00207	-0.00208	-0.00207
	(B * C * D_N * X)	0.00259	0.00263	0.00260
	(B * !D_N * X)	-0.00208	-0.00209	-0.00208
	(B * !D_N * X)	0.00258	0.00262	0.00259
	(B * !C * D_N * X)	-0.00207	-0.00208	-0.00207
	(B * !C * D_N * X)	0.00259	0.00262	0.00260
	(!B * C * D_N * X)	-0.00207	-0.00208	-0.00207
	(!B * C * D_N * X)	0.00252	0.00255	0.00253
	(!B * C * !D_N * X)	-0.00208	-0.00209	-0.00208
	(!B * C * !D_N * X)	0.00251	0.00254	0.00252
	(!B * !C * !D_N * X)	-0.00207	-0.00208	-0.00207
	(!B * !C * !D_N * X)	0.00248	0.00251	0.00249

sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	-0.00226	-0.00228	-0.00227
	(B * C * D_N * X)	0.00262	0.00264	0.00263
	(B * !D_N * X)	-0.00220	-0.00221	-0.00220
	(B * !D_N * X)	0.00268	0.00271	0.00269
	(B * !C * D_N * X)	-0.00226	-0.00228	-0.00227
	(B * !C * D_N * X)	0.00262	0.00264	0.00263
	(!B * C * D_N * X)	-0.00226	-0.00228	-0.00227
	(!B * C * D_N * X)	0.00255	0.00258	0.00256
	(!B * C * !D_N * X)	-0.00220	-0.00222	-0.00220
	(!B * C * !D_N * X)	0.00262	0.00264	0.00262
	(!B * !C * !D_N * X)	-0.00219	-0.00221	-0.00220
	(!B * !C * !D_N * X)	0.00259	0.00261	0.00260
sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	-0.00226	-0.00228	-0.00227
	(B * C * D_N * X)	0.00528	0.00535	0.00531
	(B * !D_N * X)	-0.00226	-0.00227	-0.00226
	(B * !D_N * X)	0.00529	0.00536	0.00531
	(B * !C * D_N * X)	-0.00226	-0.00227	-0.00227
	(B * !C * D_N * X)	0.00527	0.00533	0.00531
	(!B * C * D_N * X)	-0.00227	-0.00228	-0.00227
	(!B * C * D_N * X)	0.00516	0.00519	0.00516
	(!B * C * !D_N * X)	-0.00226	-0.00227	-0.00226
	(!B * C * !D_N * X)	0.00516	0.00520	0.00516
	(!B * !C * !D_N * X)	-0.00225	-0.00226	-0.00224
	(!B * !C * !D_N * X)	0.00511	0.00512	0.00511

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)**	0.00203	0.00202	0.00191
	(A * C * D_N * X)	-0.00163	-0.00162	-0.00163
	(A * C * !D_N * X)	0.00193	0.00193	0.00188
	(A * C * !D_N * X)	-0.00168	-0.00170	-0.00169
	(A * !C * D_N * X)	0.00185	0.00187	0.00184
	(A * !C * D_N * X)	-0.00128	-0.00129	-0.00128
	(A * !C * !D_N * X)	0.00188	0.00197	0.00188
	(A * !C * !D_N * X)	-0.00160	-0.00161	-0.00159
	(!A * C * D_N * X)	0.00228	0.00186	0.00183
	(!A * C * D_N * X)	-0.00204	-0.00253	-0.00252
	(!A * C * !D_N * X)	0.00182	0.00184	0.00182
	(!A * C * !D_N * X)	-0.00246	-0.00253	-0.00252
	(!A * !C * !D_N * X)	0.00218	0.00184	0.00183
	(!A * !C * !D_N * X)	-0.00196	-0.00246	-0.00246
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	0.00223	0.00225	0.00213
	(A * C * D_N * X)	-0.00165	-0.00166	-0.00164
	(A * C * !D_N * X)	0.00206	0.00207	0.00203
	(A * C * !D_N * X)	-0.00179	-0.00179	-0.00178
	(A * !C * D_N * X)	0.00208	0.00209	0.00207
	(A * !C * D_N * X)	-0.00131	-0.00132	-0.00131
	(A * !C * !D_N * X)	0.00203	0.00213	0.00203
	(A * !C * !D_N * X)	-0.00169	-0.00171	-0.00169
	(!A * C * D_N * X)	0.00251	0.00209	0.00206
	(!A * C * D_N * X)	-0.00209	-0.00256	-0.00255
	(!A * C * !D_N * X)	0.00200	0.00202	0.00199
	(!A * C * !D_N * X)	-0.00258	-0.00262	-0.00261
	(!A * !C * !D_N * X)	0.00235	0.00201	0.00200
	(!A * !C * !D_N * X)	-0.00209	-0.00256	-0.00255

sky130_fd_sc_hs__or4b_4	**(A * C * D_N * X)**	0.00328	0.00333	0.00305
	(A * C * D_N * X)	-0.00347	-0.00349	-0.00346
	(A * C * !D_N * X)	0.00292	0.00293	0.00285
	(A * C * !D_N * X)	-0.00371	-0.00375	-0.00372
	(A * !C * D_N * X)	0.00287	0.00289	0.00285
	(A * !C * D_N * X)	-0.00280	-0.00283	-0.00280
	(A * !C * !D_N * X)	0.00288	0.00302	0.00287
	(A * !C * !D_N * X)	-0.00349	-0.00349	-0.00348
	(!A * C * D_N * X)	0.00381	0.00287	0.00282
	(!A * C * D_N * X)	-0.00431	-0.00534	-0.00533
	(!A * C * !D_N * X)	0.00283	0.00284	0.00280
	(!A * C * !D_N * X)	-0.00523	-0.00536	-0.00533
	(!A * !C * !D_N * X)	0.00350	0.00284	0.00281
	(!A * !C * !D_N * X)	-0.00422	-0.00521	-0.00521

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)**	-0.00183	-0.00182	-0.00182
	(A * C * D_N * X)	0.00163	0.00162	0.00163
	(A * C * !D_N * X)	-0.00183	-0.00184	-0.00184
	(A * C * !D_N * X)	0.00168	0.00170	0.00169
	(A * !C * D_N * X)	-0.00177	-0.00178	-0.00176
	(A * !C * D_N * X)	0.00136	0.00137	0.00137
	(A * !C * !D_N * X)	-0.00183	-0.00184	-0.00183
	(A * !C * !D_N * X)	0.00160	0.00161	0.00159
	(!A * C * D_N * X)	-0.00180	-0.00180	-0.00180
	(!A * C * D_N * X)	0.00253	0.00253	0.00254
	(!A * C * !D_N * X)	-0.00182	-0.00182	-0.00182
	(!A * C * !D_N * X)	0.00252	0.00253	0.00252
	(!A * !C * !D_N * X)	-0.00181	-0.00181	-0.00180
	(!A * !C * !D_N * X)	0.00245	0.00246	0.00246
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	-0.00205	-0.00206	-0.00205
	(A * C * D_N * X)	0.00165	0.00166	0.00164
	(A * C * !D_N * X)	-0.00199	-0.00200	-0.00199
	(A * C * !D_N * X)	0.00179	0.00179	0.00178
	(A * !C * D_N * X)	-0.00199	-0.00200	-0.00198
	(A * !C * D_N * X)	0.00137	0.00139	0.00140
	(A * !C * !D_N * X)	-0.00198	-0.00200	-0.00199
	(A * !C * !D_N * X)	0.00169	0.00171	0.00169
	(!A * C * D_N * X)	-0.00204	-0.00204	-0.00204
	(!A * C * D_N * X)	0.00257	0.00257	0.00257
	(!A * C * !D_N * X)	-0.00199	-0.00199	-0.00199
	(!A * C * !D_N * X)	0.00261	0.00262	0.00261
	(!A * !C * !D_N * X)	-0.00197	-0.00198	-0.00198
	(!A * !C * !D_N * X)	0.00254	0.00256	0.00255

sky130_fd_sc_hs__or4b_4	**(A * C * D_N * X)**	-0.00288	-0.00289	-0.00288
	(A * C * D_N * X)	0.00347	0.00349	0.00346
	(A * C * !D_N * X)	-0.00281	-0.00283	-0.00281
	(A * C * !D_N * X)	0.00371	0.00375	0.00372
	(A * !C * D_N * X)	-0.00272	-0.00273	-0.00269
	(A * !C * D_N * X)	0.00294	0.00295	0.00296
	(A * !C * !D_N * X)	-0.00281	-0.00281	-0.00280
	(A * !C * !D_N * X)	0.00349	0.00349	0.00348
	(!A * C * D_N * X)	-0.00281	-0.00282	-0.00281
	(!A * C * D_N * X)	0.00530	0.00535	0.00533
	(!A * C * !D_N * X)	-0.00279	-0.00281	-0.00280
	(!A * C * !D_N * X)	0.00530	0.00536	0.00533
	(!A * !C * !D_N * X)	-0.00277	-0.00279	-0.00276
	(!A * !C * !D_N * X)	0.00517	0.00521	0.00521

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)**	0.00219	0.00221	0.00218
	(B * D_N * X)	-0.00126	-0.00127	-0.00127
	(B * !D_N * X)	0.00219	0.00219	0.00209
	(B * !D_N * X)	-0.00174	-0.00176	-0.00174
	(A * !B * D_N * X)	0.00221	0.00222	0.00219
	(A * !B * D_N * X)	-0.00125	-0.00126	-0.00126
	(A * !B * !D_N * X)	0.00237	0.00217	0.00205
	(A * !B * !D_N * X)	-0.00168	-0.00182	-0.00181
	(!A * !B * !D_N * X)	0.00264	0.00205	0.00199
	(!A * !B * !D_N * X)	-0.00204	-0.00267	-0.00269

sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	0.00242	0.00244	0.00241
	(B * D_N * X)	-0.00130	-0.00131	-0.00131
	(B * !D_N * X)	0.00216	0.00219	0.00207
	(B * !D_N * X)	-0.00207	-0.00208	-0.00206
	(A * !B * D_N * X)	0.00244	0.00246	0.00242
	(A * !B * D_N * X)	-0.00129	-0.00129	-0.00130
	(A * !B * !D_N * X)	0.00232	0.00215	0.00201
	(A * !B * !D_N * X)	-0.00199	-0.00211	-0.00210
	(!A * !B * !D_N * X)	0.00264	0.00203	0.00198
	(!A * !B * !D_N * X)	-0.00234	-0.00295	-0.00297
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	0.00353	0.00356	0.00352
	(B * D_N * X)	-0.00269	-0.00272	-0.00271
	(B * !D_N * X)	0.00333	0.00326	0.00303
	(B * !D_N * X)	-0.00412	-0.00411	-0.00411
	(A * !B * D_N * X)	0.00357	0.00359	0.00353
	(A * !B * D_N * X)	-0.00266	-0.00268	-0.00269
	(A * !B * !D_N * X)	0.00355	0.00314	0.00291
	(A * !B * !D_N * X)	-0.00389	-0.00414	-0.00413
	(!A * !B * !D_N * X)	0.00413	0.00295	0.00286
	(!A * !B * !D_N * X)	-0.00456	-0.00583	-0.00586

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)**	-0.00214	-0.00215	-0.00214
	(B * D_N * X)	0.00131	0.00132	0.00132
	(B * !D_N * X)	-0.00199	-0.00201	-0.00200
	(B * !D_N * X)	0.00174	0.00176	0.00174
	(A * !B * D_N * X)	-0.00210	-0.00211	-0.00214
	(A * !B * D_N * X)	0.00131	0.00132	0.00130
	(A * !B * !D_N * X)	-0.00198	-0.00200	-0.00200
	(A * !B * !D_N * X)	0.00180	0.00182	0.00181
	(!A * !B * !D_N * X)	-0.00197	-0.00199	-0.00197
	(!A * !B * !D_N * X)	0.00270	0.00273	0.00271
sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	-0.00237	-0.00238	-0.00237
	(B * D_N * X)	0.00136	0.00136	0.00137
	(B * !D_N * X)	-0.00197	-0.00198	-0.00197
	(B * !D_N * X)	0.00207	0.00208	0.00206
	(A * !B * D_N * X)	-0.00233	-0.00234	-0.00237
	(A * !B * D_N * X)	0.00134	0.00135	0.00134
	(A * !B * !D_N * X)	-0.00196	-0.00198	-0.00197
	(A * !B * !D_N * X)	0.00209	0.00211	0.00210
	(!A * !B * !D_N * X)	-0.00196	-0.00196	-0.00195
	(!A * !B * !D_N * X)	0.00299	0.00299	0.00300
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	-0.00346	-0.00348	-0.00347
	(B * D_N * X)	0.00276	0.00278	0.00279
	(B * !D_N * X)	-0.00286	-0.00286	-0.00286
	(B * !D_N * X)	0.00412	0.00411	0.00411
	(A * !B * D_N * X)	-0.00333	-0.00336	-0.00344
	(A * !B * D_N * X)	0.00277	0.00279	0.00275
	(A * !B * !D_N * X)	-0.00285	-0.00285	-0.00285
	(A * !B * !D_N * X)	0.00415	0.00414	0.00413
	(!A * !B * !D_N * X)	-0.00282	-0.00283	-0.00280
	(!A * !B * !D_N * X)	0.00588	0.00593	0.00591

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00640	0.01416	0.15506
	(C * X)	0.00084	0.00862	0.14952
	(B * !C * X)	0.00648	0.01426	0.15509
	(B * !C * X)	0.00087	0.00863	0.14950
	(A * !B * !C * X)	0.00659	0.01437	0.15516
	(A * !B * !C * X)	0.00093	0.00869	0.14952
sky130_fd_sc_hs__or4b_2	(C * X)	0.00719	0.01450	0.15215
	(C * X)	0.00150	0.00880	0.14647
	(B * !C * X)	0.00728	0.01458	0.15221
	(B * !C * X)	0.00153	0.00882	0.14647
	(A * !B * !C * X)	0.00738	0.01469	0.15229
	(A * !B * !C * X)	0.00158	0.00887	0.14650
sky130_fd_sc_hs__or4b_4	(C * X)	0.00849	0.01683	0.17399
	(C * X)	0.00226	0.01058	0.16776
	(B * !C * X)	0.00873	0.01706	0.17416
	(B * !C * X)	0.00233	0.01065	0.16778
	(A * !B * !C * X)	0.00895	0.01728	0.17433
	(A * !B * !C * X)	0.00244	0.01076	0.16785

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00139	0.01062	0.15145
	(C * X)	0.00694	0.01618	0.15700
	(B * !C * X)	0.00139	0.01061	0.15142
	(B * !C * X)	0.00695	0.01618	0.15698
	(A * !B * !C * X)	0.00139	0.01061	0.15140
	(A * !B * !C * X)	0.00695	0.01619	0.15696
sky130_fd_sc_hs__or4b_2	(C * X)	0.00172	0.01053	0.14825
	(C * X)	0.00741	0.01622	0.15393
	(B * !C * X)	0.00172	0.01053	0.14825
	(B * !C * X)	0.00742	0.01623	0.15394
	(A * !B * !C * X)	0.00172	0.01053	0.14825
	(A * !B * !C * X)	0.00742	0.01624	0.15395
sky130_fd_sc_hs__or4b_4	(C * X)	0.00263	0.01235	0.16935
	(C * X)	0.00886	0.01858	0.17558
	(B * !C * X)	0.00264	0.01236	0.16935
	(B * !C * X)	0.00889	0.01861	0.17560
	(A * !B * !C * X)	0.00264	0.01236	0.16935
	(A * !B * !C * X)	0.00890	0.01862	0.17561

SKY130_FD_SC_HS__OR4x

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00261	0.00249	0.00254	0.00247	1.39212
sky130_fd_sc_hs__or4_2	0.00272	0.00268	0.00279	0.00277	2.80522
sky130_fd_sc_hs__or4_4	0.00399	0.00459	0.00464	0.00437	5.36115

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4_1	0.00000	0.09229	0.48974
sky130_fd_sc_hs__or4_2	0.00000	0.11731	0.50118
sky130_fd_sc_hs__or4_4	0.00000	0.22946	1.00236

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)	0.05605	0.48282	5.48927
	B->X (RR)	0.05692	0.47518	5.35141
	C->X (RR)	0.05453	0.45911	5.21481
	D->X (RR)	0.04873	0.43942	5.14560
sky130_fd_sc_hs__or4_2	A->X (RR)	0.05353	0.38157	5.31823
	B->X (RR)	0.05396	0.37437	5.18070
	C->X (RR)	0.05227	0.36211	5.06092
	D->X (RR)	0.04797	0.34721	5.00412
sky130_fd_sc_hs__or4_4	A->X (RR)	0.07247	0.38785	5.90256
	B->X (RR)	0.07509	0.38262	5.78447
	C->X (RR)	0.06848	0.35639	5.58616
	D->X (RR)	0.06155	0.33800	5.53454

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4_1	A->X (FF)	0.18756	0.55505	5.09904
	B->X (FF)	0.17394	0.57352	5.47405
	C->X (FF)	0.15042	0.58574	5.58888
	D->X (FF)	0.11335	0.57676	5.61951
sky130_fd_sc_hs__or4_2	A->X (FF)	0.22813	0.58110	5.42504
	B->X (FF)	0.21452	0.60264	5.79259
	C->X (FF)	0.19390	0.62069	5.91690
	D->X (FF)	0.15863	0.61446	5.95554
sky130_fd_sc_hs__or4_4	A->X (FF)	0.23207	0.54248	5.30192
	B->X (FF)	0.22222	0.55522	5.29343
	C->X (FF)	0.18870	0.56517	5.60071
	D->X (FF)	0.14346	0.55253	5.61836

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.01996	0.02180	0.08445
	A	0.00888	0.01074	0.07386
	B	0.01723	0.01997	0.07841
	B	0.00776	0.01053	0.06931
	C	0.01427	0.01729	0.07076
	C	0.00618	0.00922	0.06267
	D	0.01151	0.01521	0.07822
	D	0.00471	0.00844	0.07145
sky130_fd_sc_hs__or4_2	A	0.02433	0.02713	0.10232
	A	0.01277	0.01567	0.09147
	B	0.02148	0.02518	0.09417
	B	0.01146	0.01523	0.08419
	C	0.01876	0.02268	0.08555
	C	0.01013	0.01405	0.07692
	D	0.01599	0.02063	0.09357
	D	0.00862	0.01350	0.08622
sky130_fd_sc_hs__or4_4	A	0.04767	0.05269	0.20031
	A	0.02811	0.03312	0.18083
	B	0.04259	0.04642	0.17133
	B	0.02506	0.02896	0.15454
	C	0.03522	0.04124	0.16231
	C	0.02084	0.02693	0.14976
	D	0.02865	0.03639	0.17815
	D	0.01716	0.02507	0.16854

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.00654	0.00668	0.07257
	A	0.01772	0.01785	0.08314
	B	0.00661	0.00748	0.07721
	B	0.01611	0.01698	0.08643
	C	0.00662	0.00823	0.07356
	C	0.01472	0.01635	0.07912
	D	0.00642	0.01009	0.08528
	D	0.01320	0.01687	0.09089
sky130_fd_sc_hs__or4_2	A	0.01528	0.01167	0.08731
	A	0.02693	0.02335	0.09662
	B	0.01536	0.01244	0.08957
	B	0.02540	0.02247	0.09786
	C	0.01530	0.01303	0.08388
	C	0.02396	0.02174	0.08945
	D	0.01516	0.01506	0.09660
	D	0.02252	0.02246	0.10161
sky130_fd_sc_hs__or4_4	A	0.03215	0.02389	0.17258
	A	0.05200	0.04350	0.18516
	B	0.03185	0.02435	0.13680
	B	0.04951	0.04194	0.14779
	C	0.03183	0.02601	0.14841
	C	0.04626	0.04042	0.15486
	D	0.03113	0.02942	0.17223
	D	0.04262	0.04082	0.17720

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__or4_1	**(B * D * X)**	0.00206	0.00208	0.00205
	(B * D * X)	-0.00256	-0.00263	-0.00261
	(B * C * !D * X)	0.00206	0.00208	0.00205
	(B * C * !D * X)	-0.00255	-0.00263	-0.00261
	(B * !C * !D * X)	0.00212	0.00208	0.00205
	(B * !C * !D * X)	-0.00243	-0.00262	-0.00262
	(!B * C * D * X)	0.00205	0.00206	0.00205
	(!B * C * D * X)	-0.00235	-0.00256	-0.00254
	(!B * C * !D * X)	0.00206	0.00206	0.00205
	(!B * C * !D * X)	-0.00234	-0.00255	-0.00255
	(!B * !C * D * X)	0.00211	0.00207	0.00206
	(!B * !C * D * X)	-0.00227	-0.00252	-0.00251
sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00225	0.00228	0.00225
	(B * D * X)	-0.00259	-0.00267	-0.00265
	(B * C * !D * X)	0.00225	0.00228	0.00225
	(B * C * !D * X)	-0.00259	-0.00267	-0.00265
	(B * !C * !D * X)	0.00233	0.00228	0.00226
	(B * !C * !D * X)	-0.00246	-0.00266	-0.00265
	(!B * C * D * X)	0.00225	0.00226	0.00225
	(!B * C * D * X)	-0.00238	-0.00259	-0.00258
	(!B * C * !D * X)	0.00226	0.00226	0.00226
	(!B * C * !D * X)	-0.00237	-0.00259	-0.00258
	(!B * !C * D * X)	0.00231	0.00227	0.00226
	(!B * !C * D * X)	-0.00230	-0.00256	-0.00255

sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00230	0.00230	0.00228
	(B * D * X)	-0.00511	-0.00529	-0.00525
	(B * C * !D * X)	0.00230	0.00230	0.00228
	(B * C * !D * X)	-0.00509	-0.00529	-0.00525
	(B * !C * !D * X)	0.00247	0.00231	0.00229
	(B * !C * !D * X)	-0.00480	-0.00527	-0.00525
	(!B * C * D * X)	0.00230	0.00230	0.00228
	(!B * C * D * X)	-0.00464	-0.00514	-0.00510
	(!B * C * !D * X)	0.00234	0.00231	0.00229
	(!B * C * !D * X)	-0.00461	-0.00514	-0.00510
	(!B * !C * D * X)	0.00246	0.00232	0.00229
	(!B * !C * D * X)	-0.00444	-0.00505	-0.00504

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00204	-0.00206	-0.00205
	(B * D * X)	0.00260	0.00264	0.00261
	(B * C * !D * X)	-0.00204	-0.00206	-0.00205
	(B * C * !D * X)	0.00260	0.00264	0.00261
	(B * !C * !D * X)	-0.00204	-0.00206	-0.00205
	(B * !C * !D * X)	0.00261	0.00264	0.00262
	(!B * C * D * X)	-0.00205	-0.00206	-0.00205
	(!B * C * D * X)	0.00254	0.00257	0.00254
	(!B * C * !D * X)	-0.00205	-0.00206	-0.00205
	(!B * C * !D * X)	0.00254	0.00257	0.00255
	(!B * !C * D * X)	-0.00204	-0.00205	-0.00204
	(!B * !C * D * X)	0.00250	0.00253	0.00251

sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00224	-0.00226	-0.00225
	(B * D * X)	0.00264	0.00268	0.00265
	(B * C * !D * X)	-0.00224	-0.00226	-0.00225
	(B * C * !D * X)	0.00264	0.00268	0.00265
	(B * !C * !D * X)	-0.00224	-0.00226	-0.00225
	(B * !C * !D * X)	0.00264	0.00268	0.00265
	(!B * C * D * X)	-0.00224	-0.00226	-0.00225
	(!B * C * D * X)	0.00257	0.00260	0.00258
	(!B * C * !D * X)	-0.00225	-0.00226	-0.00225
	(!B * C * !D * X)	0.00258	0.00260	0.00258
	(!B * !C * D * X)	-0.00224	-0.00225	-0.00224
	(!B * !C * D * X)	0.00254	0.00256	0.00255
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00227	-0.00229	-0.00228
	(B * D * X)	0.00522	0.00529	0.00525
	(B * C * !D * X)	-0.00227	-0.00229	-0.00228
	(B * C * !D * X)	0.00522	0.00529	0.00525
	(B * !C * !D * X)	-0.00227	-0.00229	-0.00228
	(B * !C * !D * X)	0.00522	0.00528	0.00525
	(!B * C * D * X)	-0.00228	-0.00229	-0.00228
	(!B * C * D * X)	0.00510	0.00514	0.00510
	(!B * C * !D * X)	-0.00228	-0.00229	-0.00228
	(!B * C * !D * X)	0.00511	0.00514	0.00510
	(!B * !C * D * X)	-0.00226	-0.00227	-0.00226
	(!B * !C * D * X)	0.00500	0.00505	0.00504

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)**	0.00191	0.00192	0.00187
	(A * C * D * X)	-0.00178	-0.00179	-0.00178
	(A * C * !D * X)	0.00200	0.00201	0.00188
	(A * C * !D * X)	-0.00171	-0.00171	-0.00170
	(A * !C * D * X)	0.00187	0.00195	0.00186
	(A * !C * D * X)	-0.00165	-0.00165	-0.00164
	(A * !C * !D * X)	0.00182	0.00184	0.00183
	(A * !C * !D * X)	-0.00134	-0.00136	-0.00135
	(!A * C * D * X)	0.00184	0.00184	0.00182
	(!A * C * D * X)	-0.00251	-0.00258	-0.00258
	(!A * C * !D * X)	0.00225	0.00184	0.00182
	(!A * C * !D * X)	-0.00212	-0.00258	-0.00258
	(!A * !C * D * X)	0.00218	0.00184	0.00182
	(!A * !C * D * X)	-0.00203	-0.00250	-0.00251
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	0.00210	0.00211	0.00206
	(A * C * D * X)	-0.00187	-0.00188	-0.00186
	(A * C * !D * X)	0.00219	0.00219	0.00206
	(A * C * !D * X)	-0.00180	-0.00179	-0.00179
	(A * !C * D * X)	0.00206	0.00216	0.00206
	(A * !C * D * X)	-0.00173	-0.00175	-0.00174
	(A * !C * !D * X)	0.00202	0.00204	0.00202
	(A * !C * !D * X)	-0.00146	-0.00147	-0.00146
	(!A * C * D * X)	0.00203	0.00204	0.00202
	(!A * C * D * X)	-0.00264	-0.00271	-0.00270
	(!A * C * !D * X)	0.00245	0.00204	0.00202
	(!A * C * !D * X)	-0.00225	-0.00271	-0.00271
	(!A * !C * D * X)	0.00239	0.00204	0.00202
	(!A * !C * D * X)	-0.00214	-0.00263	-0.00263

sky130_fd_sc_hs__or4_4	**(A * C * D * X)**	0.00302	0.00303	0.00295
	(A * C * D * X)	-0.00365	-0.00370	-0.00366
	(A * C * !D * X)	0.00327	0.00333	0.00306
	(A * C * !D * X)	-0.00349	-0.00347	-0.00347
	(A * !C * D * X)	0.00297	0.00311	0.00296
	(A * !C * D * X)	-0.00342	-0.00342	-0.00341
	(A * !C * !D * X)	0.00290	0.00292	0.00290
	(A * !C * !D * X)	-0.00280	-0.00283	-0.00281
	(!A * C * D * X)	0.00292	0.00292	0.00288
	(!A * C * D * X)	-0.00513	-0.00533	-0.00529
	(!A * C * !D * X)	0.00378	0.00292	0.00289
	(!A * C * !D * X)	-0.00433	-0.00533	-0.00531
	(!A * !C * D * X)	0.00356	0.00292	0.00289
	(!A * !C * D * X)	-0.00415	-0.00515	-0.00516

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)**	-0.00183	-0.00184	-0.00183
	(A * C * D * X)	0.00178	0.00179	0.00178
	(A * C * !D * X)	-0.00183	-0.00184	-0.00183
	(A * C * !D * X)	0.00171	0.00171	0.00170
	(A * !C * D * X)	-0.00183	-0.00183	-0.00183
	(A * !C * D * X)	0.00165	0.00165	0.00164
	(A * !C * !D * X)	-0.00176	-0.00176	-0.00175
	(A * !C * !D * X)	0.00141	0.00142	0.00142
	(!A * C * D * X)	-0.00181	-0.00182	-0.00182
	(!A * C * D * X)	0.00257	0.00258	0.00258
	(!A * C * !D * X)	-0.00181	-0.00182	-0.00182
	(!A * C * !D * X)	0.00257	0.00258	0.00258
	(!A * !C * D * X)	-0.00180	-0.00181	-0.00180
	(!A * !C * D * X)	0.00249	0.00250	0.00251
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	-0.00202	-0.00202	-0.00201
	(A * C * D * X)	0.00187	0.00188	0.00186
	(A * C * !D * X)	-0.00201	-0.00201	-0.00201
	(A * C * !D * X)	0.00180	0.00179	0.00179
	(A * !C * D * X)	-0.00200	-0.00202	-0.00201
	(A * !C * D * X)	0.00173	0.00175	0.00174
	(A * !C * !D * X)	-0.00195	-0.00196	-0.00194
	(A * !C * !D * X)	0.00153	0.00153	0.00153
	(!A * C * D * X)	-0.00202	-0.00202	-0.00201
	(!A * C * D * X)	0.00270	0.00271	0.00270
	(!A * C * !D * X)	-0.00200	-0.00202	-0.00201
	(!A * C * !D * X)	0.00269	0.00272	0.00271
	(!A * !C * D * X)	-0.00200	-0.00201	-0.00200
	(!A * !C * D * X)	0.00261	0.00263	0.00263

sky130_fd_sc_hs__or4_4	(A * C * D * X)	-0.00291	-0.00293	-0.00292
	(A * C * D * X)	0.00365	0.00370	0.00366
	(A * C * !D * X)	-0.00292	-0.00291	-0.00291
	(A * C * !D * X)	0.00349	0.00347	0.00347
	(A * !C * D * X)	-0.00290	-0.00290	-0.00289
	(A * !C * D * X)	0.00342	0.00342	0.00341
	(A * !C * !D * X)	-0.00275	-0.00276	-0.00271
	(A * !C * !D * X)	0.00293	0.00294	0.00296
	(!A * C * D * X)	-0.00287	-0.00290	-0.00288
	(!A * C * D * X)	0.00526	0.00533	0.00529
	(!A * C * !D * X)	-0.00288	-0.00289	-0.00288
	(!A * C * !D * X)	0.00528	0.00533	0.00531
	(!A * !C * D * X)	-0.00285	-0.00286	-0.00285
	(!A * !C * D * X)	0.00512	0.00515	0.00516

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(B * D * X)	0.00207	0.00206	0.00196
	(B * D * X)	-0.00164	-0.00165	-0.00163
	(B * !D * X)	0.00187	0.00189	0.00186
	(B * !D * X)	-0.00131	-0.00133	-0.00133
	(A * !B * D * X)	0.00222	0.00202	0.00190
	(A * !B * D * X)	-0.00156	-0.00169	-0.00169
	(A * !B * !D * X)	0.00189	0.00191	0.00187
	(A * !B * !D * X)	-0.00130	-0.00131	-0.00132
	(!A * !B * D * X)	0.00251	0.00191	0.00186
	(!A * !B * D * X)	-0.00194	-0.00255	-0.00257

sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00234	0.00234	0.00224
	(B * D * X)	-0.00162	-0.00163	-0.00162
	(B * !D * X)	0.00217	0.00219	0.00215
	(B * !D * X)	-0.00133	-0.00134	-0.00135
	(A * !B * D * X)	0.00253	0.00232	0.00219
	(A * !B * D * X)	-0.00156	-0.00170	-0.00169
	(A * !B * !D * X)	0.00219	0.00221	0.00216
	(A * !B * !D * X)	-0.00132	-0.00133	-0.00134
	(!A * !B * D * X)	0.00282	0.00221	0.00215
	(!A * !B * D * X)	-0.00192	-0.00258	-0.00260
sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00344	0.00336	0.00315
	(B * D * X)	-0.00348	-0.00345	-0.00345
	(B * !D * X)	0.00301	0.00301	0.00296
	(B * !D * X)	-0.00279	-0.00277	-0.00277
	(A * !B * D * X)	0.00368	0.00325	0.00303
	(A * !B * D * X)	-0.00328	-0.00351	-0.00350
	(A * !B * !D * X)	0.00304	0.00304	0.00298
	(A * !B * !D * X)	-0.00275	-0.00274	-0.00274
	(!A * !B * D * X)	0.00426	0.00304	0.00295
	(!A * !B * D * X)	-0.00403	-0.00526	-0.00531

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

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

sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00186	-0.00187	-0.00186
	(B * D * X)	0.00164	0.00165	0.00163
	(B * !D * X)	-0.00185	-0.00185	-0.00184
	(B * !D * X)	0.00136	0.00136	0.00136
	(A * !B * D * X)	-0.00186	-0.00186	-0.00186
	(A * !B * D * X)	0.00169	0.00169	0.00169
	(A * !B * !D * X)	-0.00181	-0.00183	-0.00184
	(A * !B * !D * X)	0.00135	0.00136	0.00134
	(!A * !B * D * X)	-0.00184	-0.00185	-0.00183
	(!A * !B * D * X)	0.00257	0.00260	0.00259
sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00215	-0.00215	-0.00214
	(B * D * X)	0.00162	0.00163	0.00162
	(B * !D * X)	-0.00214	-0.00214	-0.00213
	(B * !D * X)	0.00137	0.00138	0.00138
	(A * !B * D * X)	-0.00214	-0.00215	-0.00214
	(A * !B * D * X)	0.00170	0.00170	0.00169
	(A * !B * !D * X)	-0.00212	-0.00213	-0.00213
	(A * !B * !D * X)	0.00136	0.00137	0.00136
	(!A * !B * D * X)	-0.00213	-0.00214	-0.00212
	(!A * !B * D * X)	0.00260	0.00262	0.00262
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00298	-0.00298	-0.00298
	(B * D * X)	0.00348	0.00345	0.00345
	(B * !D * X)	-0.00294	-0.00295	-0.00291
	(B * !D * X)	0.00283	0.00284	0.00284
	(A * !B * D * X)	-0.00295	-0.00296	-0.00296
	(A * !B * D * X)	0.00349	0.00351	0.00350
	(A * !B * !D * X)	-0.00284	-0.00286	-0.00290
	(A * !B * !D * X)	0.00283	0.00284	0.00279
	(!A * !B * D * X)	-0.00290	-0.00292	-0.00289
	(!A * !B * D * X)	0.00528	0.00535	0.00534

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	0.00206	0.00208	0.00206
	(C * X)	-0.00125	-0.00127	-0.00126
	(B * !C * X)	0.00206	0.00208	0.00206
	(B * !C * X)	-0.00125	-0.00126	-0.00125
	(A * !B * !C * X)	0.00206	0.00208	0.00206
	(A * !B * !C * X)	-0.00125	-0.00126	-0.00125
sky130_fd_sc_hs__or4_2	(C * X)	0.00244	0.00246	0.00244
	(C * X)	-0.00125	-0.00126	-0.00125
	(B * !C * X)	0.00244	0.00246	0.00244
	(B * !C * X)	-0.00125	-0.00125	-0.00124
	(A * !B * !C * X)	0.00244	0.00246	0.00244
	(A * !B * !C * X)	-0.00125	-0.00125	-0.00124
sky130_fd_sc_hs__or4_4	(C * X)	0.00334	0.00341	0.00335
	(C * X)	-0.00244	-0.00249	-0.00245
	(B * !C * X)	0.00334	0.00341	0.00335
	(B * !C * X)	-0.00242	-0.00248	-0.00243
	(A * !B * !C * X)	0.00334	0.00341	0.00335
	(A * !B * !C * X)	-0.00242	-0.00248	-0.00243

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	-0.00201	-0.00202	-0.00206
	(C * X)	0.00131	0.00131	0.00127
	(B * !C * X)	-0.00193	-0.00194	-0.00205
	(B * !C * X)	0.00135	0.00135	0.00127
	(A * !B * !C * X)	-0.00181	-0.00183	-0.00202
	(A * !B * !C * X)	0.00142	0.00142	0.00128
sky130_fd_sc_hs__or4_2	(C * X)	-0.00239	-0.00240	-0.00244
	(C * X)	0.00130	0.00130	0.00126
	(B * !C * X)	-0.00232	-0.00233	-0.00243
	(B * !C * X)	0.00133	0.00133	0.00126
	(A * !B * !C * X)	-0.00220	-0.00221	-0.00240
	(A * !B * !C * X)	0.00140	0.00140	0.00127
sky130_fd_sc_hs__or4_4	(C * X)	-0.00320	-0.00322	-0.00333
	(C * X)	0.00257	0.00257	0.00248
	(B * !C * X)	-0.00299	-0.00300	-0.00330
	(B * !C * X)	0.00268	0.00268	0.00247
	(A * !B * !C * X)	-0.00277	-0.00278	-0.00324
	(A * !B * !C * X)	0.00280	0.00280	0.00250

SKY130_FD_SC_HS__SDFBBNx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00201	0.00182	0.00423	0.00186	0.00566	0.00306	1.42478	1.44044
sky130_fd_sc_hs__sdfbbn_2	0.00202	0.00183	0.00428	0.00173	0.00559	0.00303	2.85339	2.88113

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfbbn_1	0.00000	3.56024	6.36914
sky130_fd_sc_hs__sdfbbn_2	0.00000	3.36244	6.54209

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)	0.27930	0.85225	8.37992
	SET_B->Q (FR)	0.13846	0.73917	8.44550
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FR)	0.31720	0.79169	8.39397
	SET_B->Q (FR)	0.16504	0.68032	8.48682

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)	0.28432	0.65519	4.93539
	RESET_B->Q (FF)	0.18259	0.57340	4.88309
	SET_B->Q (RF)	0.11203	0.32291	2.04160
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FF)	0.30670	0.63857	4.98018
	RESET_B->Q (FF)	0.20598	0.56016	4.95254
	SET_B->Q (RF)	0.13541	0.32213	2.17394

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)	0.25793	0.84434	8.47135
	RESET_B->Q_N (FR)	0.15680	0.76572	8.41528
	SET_B->Q_N (RR)	0.08621	0.51994	5.89259
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FR)	0.25802	0.75196	8.37115
	RESET_B->Q_N (FR)	0.15882	0.67496	8.34005
	SET_B->Q_N (RR)	0.08800	0.43966	5.84038

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)	0.23563	0.66365	5.08164
	SET_B->Q_N (FF)	0.09789	0.55644	5.38151
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FF)	0.25043	0.64592	5.01812
	SET_B->Q_N (FF)	0.10441	0.53192	5.33457

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)	-0.03377	0.01719	2.50918
	setup	CLK_N (F)	0.11099	0.04532	-2.50165
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.03508	0.01183	2.50276
	setup	CLK_N (F)	0.11046	0.05008	-2.49250

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)	-0.14221	-0.17947	-0.59366
	setup	CLK_N (F)	0.15877	0.19048	0.60471
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.15528	-0.19262	-0.64840
	setup	CLK_N (F)	0.17329	0.20764	0.65872

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)	-0.03377	0.01719	2.50918
	setup	CLK_N (F)	0.11099	0.04532	-2.50165
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.03508	0.01183	2.50276
	setup	CLK_N (F)	0.11046	0.05008	-2.49250

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)	-0.14221	-0.17947	-0.59366
	setup	CLK_N (F)	0.15877	0.19048	0.60471
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.15528	-0.19262	-0.64840
	setup	CLK_N (F)	0.17329	0.20764	0.65872

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)	-0.04994	0.00829	2.45096
	setup	CLK_N (F)	0.12822	0.05905	-2.43817
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.05041	0.00462	2.45199
	setup	CLK_N (F)	0.12988	0.06153	-2.43463

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)	-0.18036	-0.19212	-0.59150
	setup	CLK_N (F)	0.20590	0.21458	0.61248
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.19583	-0.20891	-0.65253
	setup	CLK_N (F)	0.22224	0.23145	0.67671

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)	-0.04994	0.00829	2.45096
	hold	CLK_N (F)	-0.05322	0.00500	2.44368
	setup	CLK_N (F)	0.12519	0.05236	-2.44455
	setup	CLK_N (F)	0.12822	0.05905	-2.43817
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.05041	0.00462	2.45199
	hold	CLK_N (F)	-0.05576	0.00366	2.44333
	setup	CLK_N (F)	0.12819	0.05620	-2.44590
	setup	CLK_N (F)	0.12988	0.06153	-2.43463

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)	-0.18754	-0.20037	-0.60616
	hold	CLK_N (F)	-0.18036	-0.19212	-0.59150
	setup	CLK_N (F)	0.20590	0.21458	0.61248
	setup	CLK_N (F)	0.20198	0.20719	0.60152
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.20408	-0.21841	-0.66512
	hold	CLK_N (F)	-0.19583	-0.20891	-0.65253
	setup	CLK_N (F)	0.22224	0.23145	0.67671
	setup	CLK_N (F)	0.21595	0.22447	0.66470

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)	-0.04377	0.00000	2.27703
	setup	CLK_N (F)	0.20556	0.12831	-2.25755
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.04670	-0.00276	2.26184
	setup	CLK_N (F)	0.21799	0.14344	-2.24542

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)	-0.07787	-0.06557	0.02661
	setup	CLK_N (F)	0.16216	0.17180	0.39653
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.08155	-0.07214	0.01006
	setup	CLK_N (F)	0.17769	0.18516	0.45878

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)	-0.18533	-0.11279	2.27703
	hold	CLK_N (F)	-0.04377	0.00000	2.26120
	setup	CLK_N (F)	0.20556	0.12831	-2.26895
	setup	CLK_N (F)	0.11836	0.06159	-2.25755
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.19856	-0.13130	2.25616
	hold	CLK_N (F)	-0.04670	-0.00276	2.26184
	setup	CLK_N (F)	0.21799	0.14344	-2.24542
	setup	CLK_N (F)	0.12079	0.06376	-2.25556

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)	-0.07787	-0.06557	0.02661
	hold	CLK_N (F)	-0.14519	-0.15767	-0.38636
	setup	CLK_N (F)	0.15319	0.13345	-0.02004
	setup	CLK_N (F)	0.16216	0.17180	0.39653
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.08155	-0.07214	0.01006
	hold	CLK_N (F)	-0.15858	-0.17393	-0.44839
	setup	CLK_N (F)	0.15807	0.13600	-0.00470
	setup	CLK_N (F)	0.17769	0.18516	0.45878

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)	0.07830	-0.00345	-2.59990
	removal	CLK_N (F)	0.00942	0.07995	2.61955
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.07348	-0.00495	-2.59534
	removal	CLK_N (F)	0.01261	0.08317	2.61672

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)	0.07828	-0.00349	-2.59996
	recovery	CLK_N (F)	0.07830	-0.00345	-2.59990
	recovery	CLK_N (F)	0.07523	-0.00540	-2.60294
	removal	CLK_N (F)	0.00942	0.07995	2.61955
	removal	CLK_N (F)	0.00942	0.07995	2.61851
	removal	CLK_N (F)	0.00942	0.07995	2.61851
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.07348	-0.00505	-2.59900
	recovery	CLK_N (F)	0.07338	-0.00495	-2.59542
	recovery	CLK_N (F)	0.07338	-0.00495	-2.59534
	removal	CLK_N (F)	0.01261	0.08317	2.61672
	removal	CLK_N (F)	0.01261	0.08317	2.61672
	removal	CLK_N (F)	0.01261	0.08317	2.61672

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 ()	0.14855	0.60669	16.50020
	min_pulse_width	RESET_B ()	0.13488	0.60669	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	RESET_B ()	0.15539	0.60669	16.50020
	min_pulse_width	RESET_B ()	0.13716	0.60669	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)	-0.01676	-0.11535	-2.50897
	removal	CLK_N (F)	0.02623	0.12347	2.70375
	hold	RESET_B (R)	-0.04113	-0.06597	-0.32910
	setup	RESET_B (R)	0.07793	0.09923	0.57260
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.01616	-0.10935	-2.32408
	removal	CLK_N (F)	0.02473	0.11942	2.68145
	hold	RESET_B (R)	-0.05414	-0.08719	-0.40535
	setup	RESET_B (R)	0.08296	0.11345	0.57336

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)	-0.01679	-0.11535	-2.50897
	recovery	CLK_N (F)	-0.01952	-0.11535	-2.50915
	recovery	CLK_N (F)	-0.01676	-0.11535	-2.51160
	removal	CLK_N (F)	0.02623	0.12347	2.70082
	removal	CLK_N (F)	0.02496	0.12347	2.69976
	removal	CLK_N (F)	0.02623	0.12347	2.70375
	hold	RESET_B (R)	-0.04113	-0.06597	-0.32939
	hold	RESET_B (R)	-0.04326	-0.06849	-0.32910
	setup	RESET_B (R)	0.07793	0.09923	0.41940
	setup	RESET_B (R)	0.06481	0.08872	0.57260
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.01622	-0.10935	-2.32408
	recovery	CLK_N (F)	-0.01618	-0.10935	-2.32414
	recovery	CLK_N (F)	-0.01616	-0.10935	-2.32413
	removal	CLK_N (F)	0.02473	0.11942	2.68145
	removal	CLK_N (F)	0.02473	0.11942	2.68145
	removal	CLK_N (F)	0.02473	0.11942	2.68145
	hold	RESET_B (R)	-0.05706	-0.08989	-0.40736
	hold	RESET_B (R)	-0.05414	-0.08719	-0.40535
	setup	RESET_B (R)	0.08296	0.11345	0.52150
	setup	RESET_B (R)	0.06599	0.10652	0.57336

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 ()	0.11209	0.60669	16.50020
	min_pulse_width	SET_B ()	0.09841	0.60669	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	SET_B ()	0.12576	0.60669	16.50020
	min_pulse_width	SET_B ()	0.11209	0.60669	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 ()	0.13716	0.60669	16.50020
	min_pulse_width	CLK_N ()	0.10753	0.60669	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.13944	0.60669	16.50020
	min_pulse_width	CLK_N ()	0.11209	0.60669	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 ()	0.12348	0.60669	16.50020
	min_pulse_width	CLK_N ()	0.14627	0.60669	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.13488	0.60669	16.50020
	min_pulse_width	CLK_N ()	0.15083	0.60669	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	0.02124	0.02559	0.11410
	CLK_N	0.02461	0.02895	0.11403
	SET_B	0.02205	0.02969	0.17278
	SET_B	0.02835	0.03595	0.17892
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.02738	0.03017	0.11507
	CLK_N	0.03059	0.03338	0.11804
	SET_B	0.02756	0.03432	0.17800
	SET_B	0.03367	0.04039	0.18410

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.02191	0.02662	0.10849
	CLK_N	0.02485	0.02956	0.11141
	RESET_B	0.02650	0.02940	0.08022
	RESET_B	0.02833	0.03121	0.08168
	SET_B	0.02783	0.03227	0.17270
	SET_B	0.02156	0.02598	0.16638
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.02656	0.03111	0.11285
	CLK_N	0.02956	0.03410	0.11584
	RESET_B	0.03178	0.03452	0.08556
	RESET_B	0.03365	0.03639	0.08742
	SET_B	0.03294	0.03709	0.17754
	SET_B	0.02679	0.03093	0.17138

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.02195	0.02666	0.10969
	CLK_N	0.02489	0.02960	0.11222
	RESET_B	0.02653	0.02943	0.08035
	RESET_B	0.02836	0.03125	0.08202
	SET_B	0.02787	0.03232	0.17303
	SET_B	0.02159	0.02602	0.16674
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.02660	0.03118	0.12115
	CLK_N	0.02960	0.03416	0.11738
	RESET_B	0.03180	0.03447	0.08647
	RESET_B	0.03367	0.03634	0.08808
	SET_B	0.03297	0.03707	0.17809
	SET_B	0.02682	0.03094	0.17192

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.02119	0.02555	0.11056
	CLK_N	0.02457	0.02894	0.11307
	SET_B	0.02199	0.02960	0.17263
	SET_B	0.02828	0.03585	0.17813
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.02732	0.03010	0.11397
	CLK_N	0.03054	0.03336	0.11719
	SET_B	0.02750	0.03421	0.17851
	SET_B	0.03361	0.04031	0.18329

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)**	0.00183	0.00184	0.00184
	(CLK_N * SCD * SCE)	-0.00082	-0.00082	-0.00082
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01763	0.02059	0.09652
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01365	0.01659	0.09253
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.01215	0.01465	0.08371
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00752	0.00999	0.07907
	(CLK_N * !SCD * SCE)	0.00075	0.00076	0.00074
	(CLK_N * !SCD * SCE)	-0.00216	-0.00220	-0.00221
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01012	0.01258	0.08159
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00553	0.00799	0.07698
	(!CLK_N * SCD * SCE)	0.00186	0.00188	0.00186
	(!CLK_N * SCD * SCE)	-0.00079	-0.00080	-0.00079
	(!CLK_N * !SCE)	0.00678	0.00987	0.08100
	(!CLK_N * !SCE)	0.00218	0.00525	0.07639
	(!CLK_N * !SCD * SCE)	0.00074	0.00074	0.00072
	(!CLK_N * !SCD * SCE)	-0.00217	-0.00220	-0.00223

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	0.00188	0.00191	0.00188
	(CLK_N * SCD * SCE)	-0.00082	-0.00084	-0.00082
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01782	0.02056	0.09577
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01373	0.01644	0.09167
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.01238	0.01473	0.08296
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00768	0.01000	0.07824
	(CLK_N * !SCD * SCE)	0.00079	0.00080	0.00077
	(CLK_N * !SCD * SCE)	-0.00217	-0.00220	-0.00222
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01022	0.01255	0.08070
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00556	0.00786	0.07602
	(!CLK_N * SCD * SCE)	0.00187	0.00189	0.00188
	(!CLK_N * SCD * SCE)	-0.00081	-0.00083	-0.00082
	(!CLK_N * !SCE)	0.00668	0.00969	0.08000
	(!CLK_N * !SCE)	0.00202	0.00501	0.07532
	(!CLK_N * !SCD * SCE)	0.00077	0.00077	0.00075
	(!CLK_N * !SCD * SCE)	-0.00219	-0.00222	-0.00224

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)**	-0.00172	-0.00174	-0.00178
	(CLK_N * SCD * SCE)	0.00092	0.00091	0.00089
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01714	0.02080	0.09738
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02114	0.02480	0.10138
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00510	0.00844	0.07779
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00974	0.01311	0.08244
	(CLK_N * !SCD * SCE)	-0.00061	-0.00064	-0.00061
	(CLK_N * !SCD * SCE)	0.00231	0.00234	0.00231
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00680	0.01024	0.07978
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01138	0.01485	0.08438
	(!CLK_N * SCD * SCE)	-0.00169	-0.00172	-0.00175
	(!CLK_N * SCD * SCE)	0.00093	0.00094	0.00091
	(!CLK_N * !SCE)	0.00314	0.00688	0.07810
	(!CLK_N * !SCE)	0.00774	0.01149	0.08270
	(!CLK_N * !SCD * SCE)	-0.00062	-0.00064	-0.00063
	(!CLK_N * !SCD * SCE)	0.00229	0.00231	0.00230

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	-0.00177	-0.00180	-0.00183
	(CLK_N * SCD * SCE)	0.00091	0.00091	0.00088
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01845	0.02201	0.09766
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02256	0.02612	0.10177
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00554	0.00879	0.07722
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.01027	0.01352	0.08195
	(CLK_N * !SCD * SCE)	-0.00067	-0.00067	-0.00066
	(CLK_N * !SCD * SCE)	0.00231	0.00232	0.00231
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00736	0.01071	0.07934
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01206	0.01540	0.08402
	(!CLK_N * SCD * SCE)	-0.00177	-0.00179	-0.00182
	(!CLK_N * SCD * SCE)	0.00091	0.00091	0.00089
	(!CLK_N * !SCE)	0.00351	0.00714	0.07749
	(!CLK_N * !SCE)	0.00819	0.01183	0.08218
	(!CLK_N * !SCD * SCE)	-0.00068	-0.00069	-0.00068
	(!CLK_N * !SCD * SCE)	0.00228	0.00230	0.00229

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)**	0.01496	0.01695	0.07984
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00871	0.01070	0.07362
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02042	0.02273	0.09144
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01483	0.01712	0.08586
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01293	0.01490	0.07763
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00672	0.00868	0.07144
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.01620	0.01803	0.08035
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00966	0.01149	0.07383
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02168	0.02381	0.09212
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01579	0.01791	0.08625
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01417	0.01598	0.07815
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00767	0.00948	0.07168
	(!CLK_N * D * SCE)	0.00959	0.01192	0.07636
	(!CLK_N * D * SCE)	0.00339	0.00572	0.07017
	(!CLK_N * !D * SCE)	0.01083	0.01297	0.07682
	(!CLK_N * !D * SCE)	0.00433	0.00645	0.07034
	!SCE	0.00178	0.00145	0.00141
	!SCE	-0.00152	-0.00187	-0.00190

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.01511	0.01705	0.07890
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00889	0.01083	0.07271
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02053	0.02277	0.09048
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01493	0.01717	0.08489
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01294	0.01486	0.07658
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00677	0.00869	0.07042
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.01633	0.01813	0.07942
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00983	0.01161	0.07293
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02178	0.02386	0.09101
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01588	0.01795	0.08513
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01417	0.01595	0.07709
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00771	0.00947	0.07065
	(!CLK_N * D * SCE)	0.00941	0.01170	0.07516
	(!CLK_N * D * SCE)	0.00324	0.00552	0.06901
	(!CLK_N * !D * SCE)	0.01064	0.01273	0.07562
	(!CLK_N * !D * SCE)	0.00418	0.00625	0.06918
	!SCE	0.00177	0.00143	0.00140
	!SCE	-0.00153	-0.00189	-0.00192

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)**	0.00736	0.00927	0.07241
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.01362	0.01553	0.07863
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01952	0.02169	0.09022
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02511	0.02728	0.09578
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00906	0.01102	0.07439
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01526	0.01723	0.08057
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00674	0.00875	0.07219
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.01329	0.01530	0.07871
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01901	0.02129	0.09048
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02489	0.02717	0.09633
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00844	0.01050	0.07419
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01493	0.01701	0.08065
	(!CLK_N * D * SCE)	0.00546	0.00768	0.07221
	(!CLK_N * D * SCE)	0.01167	0.01390	0.07839
	(!CLK_N * !D * SCE)	0.00484	0.00719	0.07201
	(!CLK_N * !D * SCE)	0.01133	0.01368	0.07848
	!SCE	-0.00133	-0.00135	-0.00135
	!SCE	0.00197	0.00197	0.00197

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.00781	0.00970	0.07175
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.01403	0.01592	0.07794
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02089	0.02298	0.09062
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02650	0.02858	0.09619
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00964	0.01158	0.07387
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01581	0.01775	0.08002
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00718	0.00917	0.07152
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.01369	0.01567	0.07799
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02034	0.02272	0.09095
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02623	0.02861	0.09682
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00902	0.01105	0.07364
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01548	0.01751	0.08007
	(!CLK_N * D * SCE)	0.00582	0.00800	0.07149
	(!CLK_N * D * SCE)	0.01199	0.01418	0.07763
	(!CLK_N * !D * SCE)	0.00519	0.00751	0.07129
	(!CLK_N * !D * SCE)	0.01165	0.01398	0.07772
	!SCE	-0.00132	-0.00135	-0.00135
	!SCE	0.00198	0.00200	0.00198

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)**	0.00747	0.01255	0.10951
	(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)	-0.00087	0.00420	0.10116
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.02748	0.03264	0.13387
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.02094	0.02608	0.12724
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01532	0.02053	0.12103
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00945	0.01461	0.11506
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01704	0.02222	0.12282
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01111	0.01627	0.11680
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01896	0.02679	0.18783
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00852	0.01626	0.17738
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.02442	0.03262	0.20023
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01464	0.02277	0.19043
	(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)	0.00743	0.01268	0.10948
	(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)	-0.00031	0.00492	0.10172
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01693	0.02471	0.18564
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00653	0.01425	0.17523
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00765	0.01274	0.10969
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00069	0.00439	0.10134
	(!CLK_N * D * !SCD)	0.01376	0.01885	0.11978
	(!CLK_N * D * !SCD)	0.00783	0.01285	0.11377
	(!CLK_N * !D * SCD)	0.01377	0.02199	0.18455
	(!CLK_N * !D * SCD)	0.00333	0.01156	0.17414

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)**	0.00759	0.01268	0.10986
	(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)	-0.00086	0.00424	0.10144
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.02887	0.03409	0.13544
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.02230	0.02747	0.12879
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01583	0.02110	0.12174
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00988	0.01509	0.11570
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01768	0.02294	0.12366
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01168	0.01688	0.11757
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01928	0.02702	0.18736
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00867	0.01640	0.17678
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.02471	0.03283	0.19979
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01471	0.02283	0.18982
	(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)	0.00752	0.01279	0.10983
	(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)	-0.00033	0.00493	0.10197
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01711	0.02483	0.18504
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00655	0.01425	0.17450
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00775	0.01285	0.11005
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00070	0.00440	0.10159
	(!CLK_N * D * !SCD)	0.01420	0.01932	0.12039
	(!CLK_N * D * !SCD)	0.00819	0.01326	0.11434
	(!CLK_N * !D * SCD)	0.01375	0.02194	0.18381
	(!CLK_N * !D * SCD)	0.00319	0.01135	0.17328

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)	-0.00089	0.00523	0.10232
	(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)	0.00741	0.01357	0.11065
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01664	0.02249	0.12163
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.02322	0.02910	0.12797
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01117	0.01702	0.11596
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01710	0.02294	0.12169
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00914	0.01498	0.11389
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01511	0.02100	0.11966
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00509	0.01332	0.17403
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01554	0.02381	0.18449
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01710	0.02555	0.19160
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.02689	0.03538	0.20141
	(CLK_N * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (CLK_N * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	-0.00040	0.00578	0.10247
	(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)	0.00736	0.01356	0.11023
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00679	0.01508	0.17604
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01718	0.02551	0.18645
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00103	0.00512	0.10219
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00727	0.01348	0.11052
	(!CLK_N * D * !SCD)	0.00568	0.01144	0.11135
	(!CLK_N * D * !SCD)	0.01165	0.01745	0.11710
	(!CLK_N * !D * SCD)	0.00299	0.01168	0.17428
	(!CLK_N * !D * SCD)	0.01339	0.02213	0.18470

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)**	-0.00100	0.00512	0.10249
	(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)	0.00740	0.01358	0.11090
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01670	0.02256	0.12172
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.02329	0.02920	0.12811
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01126	0.01712	0.11611
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01725	0.02314	0.12190
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00910	0.01495	0.11393
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01513	0.02104	0.11978
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00546	0.01362	0.17350
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01603	0.02424	0.18410
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01833	0.02669	0.19211
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.02829	0.03667	0.20210
	(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)	-0.00048	0.00571	0.10262
	(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)	0.00737	0.01358	0.11048
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00729	0.01551	0.17564
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01781	0.02608	0.18618
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00117	0.00499	0.10232
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00723	0.01345	0.11074
	(!CLK_N * D * !SCD)	0.00544	0.01122	0.11121
	(!CLK_N * D * !SCD)	0.01147	0.01729	0.11705
	(!CLK_N * !D * SCD)	0.00327	0.01189	0.17372
	(!CLK_N * !D * SCD)	0.01379	0.02245	0.18427

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)	0.01815	0.02193	0.12168
	(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)	0.01408	0.01784	0.11760
	(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)	0.01075	0.01468	0.10923
	(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)	0.00607	0.00998	0.10454
	(!SET_B * Q * !Q_N)	0.01072	0.01492	0.10999
	(!SET_B * Q * !Q_N)	0.00593	0.01013	0.10520

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)**	0.01778	0.02152	0.12103
	(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)	0.01379	0.01752	0.11705
	(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)	0.01033	0.01425	0.10860
	(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)	0.00577	0.00968	0.10404
	(!SET_B * Q * !Q_N)	0.01052	0.01472	0.10961
	(!SET_B * Q * !Q_N)	0.00588	0.01006	0.10497

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)**	0.01571	0.02101	0.12130
	(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)	0.01978	0.02507	0.12538
	(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)	0.00515	0.01017	0.10472
	(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)	0.00982	0.01487	0.10941
	(!SET_B * Q * !Q_N)	0.00325	0.00842	0.10343
	(!SET_B * Q * !Q_N)	0.00805	0.01324	0.10823

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)**	0.01658	0.02184	0.12190
	(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)	0.02057	0.02584	0.12589
	(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)	0.00540	0.01040	0.10474
	(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)	0.00996	0.01497	0.10930
	(!SET_B * Q * !Q_N)	0.00327	0.00842	0.10325
	(!SET_B * Q * !Q_N)	0.00795	0.01310	0.10791

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)**	0.00483	0.00488	0.00486
	(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)	-0.00605	-0.00609	-0.00608
	(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)	0.01659	0.02106	0.14687
	(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)	0.00483	0.00924	0.13509

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)**	0.00497	0.00500	0.00498
	(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)	-0.00588	-0.00590	-0.00589
	(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)	0.01744	0.02177	0.14722
	(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)	0.00578	0.01005	0.13554

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)**	-0.00469	-0.00477	-0.00479
	(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)	0.00624	0.00615	0.00615
	(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)	0.00240	0.00909	0.13650
	(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)	0.01419	0.02092	0.14828

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)**	-0.00484	-0.00496	-0.00493
	(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)	0.00603	0.00602	0.00595
	(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)	0.00220	0.00887	0.13602
	(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)	0.01388	0.02059	0.14770

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)	0.02961	0.03749	0.20527
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02392	0.03179	0.19959
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01809	0.02551	0.19006
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01179	0.01921	0.18375
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02974	0.03761	0.20540
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02405	0.03192	0.19970
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01821	0.02563	0.19017
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01191	0.01933	0.18386
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.03165	0.03923	0.20840
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02476	0.03231	0.20152
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01786	0.02536	0.19010
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01156	0.01902	0.18380
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01964	0.02729	0.19635
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01337	0.02100	0.19007
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02213	0.02999	0.19765
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01583	0.02367	0.19133
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.02224	0.03011	0.19776
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01594	0.02378	0.19145
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02962	0.03750	0.20528
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02392	0.03179	0.19960
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01810	0.02552	0.19006
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01179	0.01921	0.18375
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.03173	0.03931	0.20856
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.02482	0.03237	0.20166
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.03163	0.03921	0.20849
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02474	0.03231	0.20158
	(!D * !SCE * SET_B * !Q * Q_N)	0.01798	0.02547	0.19020
	(!D * !SCE * SET_B * !Q * Q_N)	0.01167	0.01913	0.18391
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01975	0.02741	0.19654
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01348	0.02111	0.19026
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01787	0.02536	0.19009
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01156	0.01902	0.18379
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01964	0.02730	0.19643
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01337	0.02102	0.19016
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02213	0.02999	0.19765
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01583	0.02367	0.19133

sky130_fd_sc_hs__sdfbbn_2	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02998	0.03784	0.20541
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02433	0.03217	0.19978
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01798	0.02544	0.18977
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01176	0.01918	0.18355
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.03010	0.03797	0.20553
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02445	0.03229	0.19988
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01809	0.02554	0.18988
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01187	0.01928	0.18365
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.03232	0.03990	0.20896
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02556	0.03311	0.20219
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01784	0.02533	0.18991
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01161	0.01909	0.18369
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01950	0.02715	0.19607
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01331	0.02095	0.18988
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02234	0.03018	0.19764
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01612	0.02393	0.19140
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.02244	0.03028	0.19775
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01622	0.02403	0.19151
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02999	0.03785	0.20542
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02433	0.03218	0.19978
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01798	0.02544	0.18978
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01176	0.01918	0.18355
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.03240	0.03998	0.20910
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.02561	0.03316	0.20231
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.03231	0.03991	0.20903
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02554	0.03310	0.20226
	(!D * !SCE * SET_B * !Q * Q_N)	0.01794	0.02543	0.18999
	(!D * !SCE * SET_B * !Q * Q_N)	0.01172	0.01919	0.18378
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01960	0.02726	0.19626
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01341	0.02105	0.19006
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01784	0.02533	0.18989
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01161	0.01909	0.18368
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01950	0.02716	0.19617
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01331	0.02097	0.18998
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02234	0.03018	0.19764
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01612	0.02393	0.19141

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)**	0.01367	0.02302	0.18698
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01998	0.02935	0.19329
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01355	0.02291	0.18686
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01986	0.02924	0.19317
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01450	0.02383	0.18745
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.02081	0.03014	0.19377
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01920	0.02882	0.19648
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02549	0.03512	0.20275
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01926	0.02853	0.19161
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02557	0.03486	0.19792
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01914	0.02843	0.19149
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.02546	0.03475	0.19780
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01367	0.02302	0.18698
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01999	0.02936	0.19329
	(!D * !SCE * SET_B * !Q * Q_N)	0.01437	0.02371	0.18732
	(!D * !SCE * SET_B * !Q * Q_N)	0.02069	0.03002	0.19364
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01908	0.02870	0.19646
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02537	0.03501	0.20274
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01450	0.02383	0.18745
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.02081	0.03014	0.19376
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01918	0.02881	0.19653
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02547	0.03511	0.20282
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01926	0.02854	0.19161
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02558	0.03487	0.19792

sky130_fd_sc_hs__sdfbbn_2	**(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)**	0.01366	0.02303	0.18673
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01989	0.02927	0.19296
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01355	0.02293	0.18662
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01978	0.02917	0.19285
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01442	0.02376	0.18716
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.02065	0.02998	0.19339
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01920	0.02886	0.19625
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02541	0.03506	0.20245
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01951	0.02865	0.19158
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02574	0.03489	0.19780
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01941	0.02856	0.19146
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.02564	0.03477	0.19769
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01366	0.02303	0.18673
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01989	0.02928	0.19296
	(!D * !SCE * SET_B * !Q * Q_N)	0.01431	0.02365	0.18700
	(!D * !SCE * SET_B * !Q * Q_N)	0.02054	0.02987	0.19323
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01908	0.02876	0.19622
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02529	0.03495	0.20242
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01442	0.02376	0.18710
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.02065	0.02998	0.19334
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01918	0.02885	0.19632
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02539	0.03508	0.20253
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01952	0.02866	0.19158
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02575	0.03491	0.19780

SKY130_FD_SC_HS__SDFBBP

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00200	0.00184	0.00413	0.00174	0.00639	0.00301	1.40403	1.33345

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfbbp_1	0.00000	3.56024	6.36913

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)	0.27584	0.68324	5.71164
	SET_B->Q (FR)	0.12761	0.73105	8.46173

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbp_1	CLK->Q (RF)	0.22143	0.41619	2.08891
	RESET_B->Q (FF)	0.17808	0.56467	4.84889
	SET_B->Q (RF)	0.11453	0.31340	1.97626

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)	0.19567	0.62170	5.75320
	RESET_B->Q_N (FR)	0.15292	0.77564	8.51552
	SET_B->Q_N (RR)	0.08968	0.52742	5.94281

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)	0.23143	0.47408	2.10817
	SET_B->Q_N (FF)	0.08761	0.52145	5.09193

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)	-0.06802	-0.12348	-0.59776
	setup	CLK (R)	0.09092	0.13582	0.61135

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)	-0.12814	-0.24129	-3.34105
	setup	CLK (R)	0.15657	0.26900	3.35164

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)	-0.06802	-0.12348	-0.59776
	setup	CLK (R)	0.09092	0.13582	0.61135

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)	-0.12814	-0.24129	-3.34105
	setup	CLK (R)	0.15657	0.26900	3.35164

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)	-0.08617	-0.13548	-0.61469
	setup	CLK (R)	0.10929	0.14972	0.62846

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)	-0.17171	-0.26289	-3.36217
	setup	CLK (R)	0.20932	0.29818	3.37481

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)	-0.08617	-0.13548	-0.61925
	hold	CLK (R)	-0.08660	-0.14092	-0.61469
	setup	CLK (R)	0.10842	0.14426	0.62846
	setup	CLK (R)	0.10929	0.14972	0.62682

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)	-0.17646	-0.27055	-3.36217
	hold	CLK (R)	-0.17171	-0.26289	-3.36388
	setup	CLK (R)	0.20932	0.29818	3.37162
	setup	CLK (R)	0.20400	0.29323	3.37481

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)	-0.07924	-0.14391	-0.30510
	setup	CLK (R)	0.20802	0.20863	0.81429

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)	-0.11405	-0.21887	-3.00575
	setup	CLK (R)	0.15952	0.25000	3.13703

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)	-0.17666	-0.18109	-0.30510
	hold	CLK (R)	-0.07924	-0.14391	-0.80123
	setup	CLK (R)	0.20802	0.20863	0.32160
	setup	CLK (R)	0.10153	0.15534	0.81429

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)	-0.11405	-0.22079	-3.00575
	hold	CLK (R)	-0.12997	-0.21887	-3.12359
	setup	CLK (R)	0.13653	0.23079	3.01363
	setup	CLK (R)	0.15952	0.25000	3.13703

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)	0.05262	0.05938	0.13200
	removal	CLK (R)	-0.02797	-0.03567	-0.08606

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)	0.05261	0.05932	0.13200
	recovery	CLK (R)	0.05262	0.05938	0.13194
	recovery	CLK (R)	0.05262	0.05937	0.13195
	removal	CLK (R)	-0.02797	-0.03567	-0.08606
	removal	CLK (R)	-0.02797	-0.03567	-0.08606
	removal	CLK (R)	-0.02797	-0.03567	-0.08606

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 ()	0.13260	0.60669	16.50020
	min_pulse_width	RESET_B ()	0.13716	0.60669	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)	0.00141	0.00000	0.83031
	removal	CLK (R)	0.04789	0.06882	-0.00845
	hold	RESET_B (R)	-0.04382	-0.07483	-0.43051
	setup	RESET_B (R)	0.07318	0.09967	0.68214

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)	0.00141	0.00000	0.83027
	recovery	CLK (R)	0.00141	0.00000	0.83031
	recovery	CLK (R)	0.00138	0.00000	0.83017
	removal	CLK (R)	0.04789	0.06882	-0.00845
	removal	CLK (R)	0.04789	0.06882	-0.00845
	removal	CLK (R)	0.04789	0.06882	-0.00845
	hold	RESET_B (R)	-0.04382	-0.07500	-0.43830
	hold	RESET_B (R)	-0.04702	-0.07483	-0.43051
	setup	RESET_B (R)	0.07318	0.09888	0.68214
	setup	RESET_B (R)	0.07232	0.09967	0.51684

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 ()	0.08701	0.60669	16.50020
	min_pulse_width	SET_B ()	0.09613	0.60669	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 ()	0.07790	0.60669	16.50020
	min_pulse_width	CLK ()	0.09613	0.60669	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 ()	0.12120	0.60669	16.50020
	min_pulse_width	CLK ()	0.15767	0.60669	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	0.02459	0.02821	0.11143
	CLK	0.02139	0.02501	0.10822
	SET_B	0.02140	0.02968	0.17793
	SET_B	0.02810	0.03637	0.18460

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.02372	0.02796	0.11394
	CLK	0.02023	0.02442	0.11039
	RESET_B	0.02433	0.02726	0.07712
	RESET_B	0.02599	0.02892	0.07828
	SET_B	0.02638	0.03085	0.17560
	SET_B	0.01965	0.02408	0.16883

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.02376	0.02805	0.11505
	CLK	0.02027	0.02446	0.11155
	RESET_B	0.02437	0.02721	0.07713
	RESET_B	0.02603	0.02887	0.07877
	SET_B	0.02641	0.03090	0.17628
	SET_B	0.01968	0.02412	0.16967

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.02454	0.02829	0.11056
	CLK	0.02134	0.02497	0.10735
	SET_B	0.02133	0.02961	0.17686
	SET_B	0.02803	0.03629	0.18354

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	0.00188	0.00191	0.00188
	(CLK * SCD * SCE)	-0.00079	-0.00080	-0.00079
	(CLK * !SCE)	0.00658	0.00999	0.08068
	(CLK * !SCE)	0.00195	0.00534	0.07605
	(CLK * !SCD * SCE)	0.00074	0.00075	0.00074
	(CLK * !SCD * SCE)	-0.00217	-0.00220	-0.00222
	(!CLK * SCD * SCE)	0.00185	0.00186	0.00185
	(!CLK * SCD * SCE)	-0.00081	-0.00082	-0.00081
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01753	0.02052	0.09612
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01318	0.01616	0.09178
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.01163	0.01414	0.08262
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00659	0.00911	0.07760
	(!CLK * !SCD * SCE)	0.00076	0.00075	0.00075
	(!CLK * !SCD * SCE)	-0.00215	-0.00217	-0.00221
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00981	0.01230	0.08072
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00480	0.00729	0.07572

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	-0.00171	-0.00174	-0.00177
	(CLK * SCD * SCE)	0.00093	0.00093	0.00090
	(CLK * !SCE)	0.00155	0.00543	0.07630
	(CLK * !SCE)	0.00618	0.01007	0.08094
	(CLK * !SCD * SCE)	-0.00064	-0.00065	-0.00064
	(CLK * !SCD * SCE)	0.00229	0.00231	0.00230
	(!CLK * SCD * SCE)	-0.00174	-0.00176	-0.00179
	(!CLK * SCD * SCE)	0.00091	0.00091	0.00088
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01410	0.01787	0.09410
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01845	0.02222	0.09845
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00490	0.00825	0.07694
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00992	0.01330	0.08197
	(!CLK * !SCD * SCE)	-0.00062	-0.00064	-0.00063
	(!CLK * !SCD * SCE)	0.00230	0.00232	0.00231
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00633	0.00979	0.07868
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01131	0.01479	0.08369

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCE)**	0.00943	0.01185	0.07556
	(CLK * D * SCE)	0.00321	0.00562	0.06935
	(CLK * !D * SCE)	0.01068	0.01287	0.07601
	(CLK * !D * SCE)	0.00416	0.00634	0.06951
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01445	0.01644	0.07840
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00784	0.00982	0.07181
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02034	0.02267	0.09069
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01441	0.01675	0.08478
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01263	0.01460	0.07641
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00604	0.00801	0.06985
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01569	0.01751	0.07890
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00879	0.01060	0.07202
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02160	0.02375	0.09117
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01537	0.01752	0.08498
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01388	0.01567	0.07693
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00699	0.00879	0.07007
	!SCE	0.00182	0.00150	0.00145
	!SCE	-0.00150	-0.00188	-0.00189

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * SCE)	0.00387	0.00616	0.06990
	(CLK * D * SCE)	0.01010	0.01239	0.07610
	(CLK * !D * SCE)	0.00326	0.00570	0.06973
	(CLK * !D * SCE)	0.00978	0.01222	0.07622
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00712	0.00904	0.07119
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01375	0.01567	0.07778
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01652	0.01873	0.08676
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02245	0.02466	0.09267
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00855	0.01053	0.07293
sky130_fd_sc_hs__sdfbbp_1	**(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)**	0.01515	0.01713	0.07950
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00652	0.00853	0.07097
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01343	0.01544	0.07785
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01604	0.01837	0.08694
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.02226	0.02458	0.09313
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00795	0.01002	0.07271
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01483	0.01691	0.07956
	!SCE	-0.00131	-0.00134	-0.00134
	!SCE	0.00200	0.00201	0.00201

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)**	0.00743	0.01241	0.10780
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00077	0.00418	0.09963
	(CLK * D * !SCD)	0.01201	0.01694	0.11634
	(CLK * D * !SCD)	0.00625	0.01112	0.11050
	(CLK * !D * SCD)	0.01339	0.02163	0.18210
	(CLK * !D * SCD)	0.00310	0.01128	0.17180
	(!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)	0.00770	0.01267	0.10806
	(!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)	-0.00050	0.00445	0.09989
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.02470	0.02974	0.12930
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01864	0.02364	0.12316
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01531	0.02041	0.11928
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00994	0.01500	0.11382
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01677	0.02184	0.12083
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01137	0.01642	0.11538
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01870	0.02636	0.18517
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00802	0.01563	0.17449
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.02459	0.03267	0.19825
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01459	0.02263	0.18824
	(!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)	0.00768	0.01281	0.10807
	(!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)	0.00008	0.00518	0.10048
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01688	0.02450	0.18320
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00623	0.01382	0.17254

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)**	-0.00072	0.00528	0.10088
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00743	0.01349	0.10906
	(CLK * D * !SCD)	0.00578	0.01141	0.10992
	(CLK * D * !SCD)	0.01157	0.01725	0.11549
	(CLK * !D * SCD)	0.00170	0.01047	0.17110
	(CLK * !D * SCD)	0.01197	0.02079	0.18138
	(!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)	-0.00103	0.00494	0.10056
	(!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)	0.00712	0.01314	0.10874
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01637	0.02210	0.11969
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.02245	0.02822	0.12558
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01048	0.01619	0.11350
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01588	0.02162	0.11870
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00866	0.01437	0.11167
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01408	0.01984	0.11690
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00473	0.01289	0.17134
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01539	0.02359	0.18204
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01389	0.02235	0.18655
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.02387	0.03234	0.19653
	(!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)	-0.00056	0.00548	0.10064
	(!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)	0.00705	0.01310	0.10825
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00616	0.01439	0.17311
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01679	0.02507	0.18377

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)	0.00918	0.01327	0.10679
	(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)	0.00525	0.00933	0.10287
	(!SET_B * Q * !Q_N)	0.00988	0.01429	0.10835
	(!SET_B * Q * !Q_N)	0.00588	0.01026	0.10434
	(!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)	0.01712	0.02094	0.11957
	(!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)	0.01386	0.01767	0.11632

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)	0.00487	0.00992	0.10323
	(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)	0.00879	0.01385	0.10716
	(!SET_B * Q * !Q_N)	0.00221	0.00741	0.10121
	(!SET_B * Q * !Q_N)	0.00625	0.01145	0.10524
	(!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)	0.01298	0.01823	0.11710
	(!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)	0.01623	0.02148	0.12035

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)	0.00509	0.00510	0.00508
	(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)	-0.00721	-0.00720	-0.00719
	(!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)	0.01345	0.01842	0.14713
	(!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)	0.00032	0.00523	0.13397

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)	-0.00489	-0.00503	-0.00501
	(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)	0.00732	0.00729	0.00727
	(!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)	0.00320	0.01037	0.14029
	(!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)	0.01630	0.02347	0.15346

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)**	0.02080	0.02823	0.19158
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01409	0.02150	0.18487
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.02112	0.02855	0.19191
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01441	0.02182	0.18519
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.02086	0.02821	0.19194
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01415	0.02148	0.18525
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02662	0.03401	0.19766
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01953	0.02689	0.19057
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02518	0.03253	0.19881
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01884	0.02617	0.19246
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.02552	0.03285	0.19914
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01918	0.02649	0.19279
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.02080	0.02823	0.19159
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01409	0.02150	0.18487
	(!D * !SCE * SET_B * !Q * Q_N)	0.02118	0.02853	0.19226
	(!D * !SCE * SET_B * !Q * Q_N)	0.01448	0.02180	0.18557
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02694	0.03434	0.19798
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01985	0.02722	0.19089
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.02086	0.02821	0.19193
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01416	0.02148	0.18524
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02663	0.03400	0.19763
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01954	0.02689	0.19054
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02520	0.03253	0.19882
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01885	0.02617	0.19247

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)	0.02233	0.03185	0.19812
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02933	0.03884	0.20514
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01106	0.02042	0.18366
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01776	0.02715	0.19038
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02202	0.03153	0.19780
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02901	0.03855	0.20481
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01072	0.02008	0.18333
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01742	0.02681	0.19005
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02503	0.03475	0.20047
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.03149	0.04122	0.20695
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01160	0.02100	0.18389
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01830	0.02773	0.19060
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01576	0.02555	0.19063
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02282	0.03264	0.19773
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01415	0.02356	0.18974
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02048	0.02990	0.19608
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01382	0.02340	0.18941
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.02015	0.02976	0.19575
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02233	0.03185	0.19812
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02932	0.03885	0.20513
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01106	0.02042	0.18366
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01776	0.02715	0.19038
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.02464	0.03435	0.20011
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.03107	0.04081	0.20655
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02502	0.03474	0.20048
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.03148	0.04120	0.20696
	(!D * !SCE * SET_B * !Q * Q_N)	0.01127	0.02066	0.18355
	(!D * !SCE * SET_B * !Q * Q_N)	0.01797	0.02740	0.19026
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01547	0.02522	0.19028
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02256	0.03232	0.19738
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01160	0.02100	0.18389
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01830	0.02774	0.19060
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01582	0.02556	0.19064
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02290	0.03265	0.19774
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01415	0.02355	0.18973
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02048	0.02990	0.19608

SKY130_FD_SC_HS__SDFRBPx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00191	0.00198	0.00431	0.00591	0.00315	1.44124	1.47759
sky130_fd_sc_hs__sdfrbp_2	0.00193	0.00200	0.00443	0.00596	0.00309	2.89500	2.84959

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfrbp_1	0.00000	2.05008	3.67650
sky130_fd_sc_hs__sdfrbp_2	0.00000	2.03407	3.20602

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)	0.16732	0.56375	5.51655
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RR)	0.19329	0.50496	5.81583

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrbp_1	CLK->Q (RF)	0.16011	0.35234	1.99269
	RESET_B->Q (FF)	0.22605	0.64479	5.28853
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RF)	0.18326	0.34316	2.16499
	RESET_B->Q (FF)	0.25171	0.64046	5.49288

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)	0.13367	0.54068	5.53853
	RESET_B->Q_N (FR)	0.19939	0.82973	8.82698
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RR)	0.13628	0.45258	5.37018
	RESET_B->Q_N (FR)	0.20474	0.74711	8.69284

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)	0.12565	0.37913	2.31037
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RF)	0.13149	0.34635	2.09879

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)	-0.07084	-0.15496	-1.02089
	setup	CLK (R)	0.11693	0.18196	1.03339
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.07358	-0.16055	-1.05896
	setup	CLK (R)	0.11585	0.18766	1.07283

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)	-0.08862	-0.20725	-3.23637
	setup	CLK (R)	0.14840	0.26928	3.26936
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.09526	-0.21814	-3.26843
	setup	CLK (R)	0.15236	0.27756	3.31265

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)	-0.07084	-0.15496	-1.02089
	hold	CLK (R)	-0.07110	-0.15496	-1.02381
	setup	CLK (R)	0.11361	0.18196	1.03324
	setup	CLK (R)	0.11693	0.18196	1.03339
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.07358	-0.16055	-1.05896
	hold	CLK (R)	-0.07385	-0.16055	-1.06256
	setup	CLK (R)	0.11571	0.18766	1.07268
	setup	CLK (R)	0.11585	0.18766	1.07283

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)	-0.08862	-0.20725	-3.23637
	hold	CLK (R)	-0.09025	-0.20725	-3.23637
	setup	CLK (R)	0.14840	0.26928	3.26936
	setup	CLK (R)	0.14838	0.26928	3.26890
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.09526	-0.21814	-3.27179
	hold	CLK (R)	-0.09527	-0.21814	-3.26843
	setup	CLK (R)	0.15236	0.27756	3.31243
	setup	CLK (R)	0.15203	0.27651	3.31265

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)	-0.08762	-0.16396	-0.99837
	setup	CLK (R)	0.13376	0.19331	1.01472
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.08991	-0.16729	-1.03513
	setup	CLK (R)	0.13586	0.19892	1.04904

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)	-0.11760	-0.22496	-3.29603
	setup	CLK (R)	0.19111	0.29356	3.32911
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.12308	-0.23073	-3.33813
	setup	CLK (R)	0.19711	0.30009	3.37475

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)	-0.08762	-0.16396	-1.00512
	hold	CLK (R)	-0.09362	-0.17061	-0.99837
	setup	CLK (R)	0.12901	0.18945	1.01472
	setup	CLK (R)	0.13376	0.19331	1.01117
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.08991	-0.16729	-1.03606
	hold	CLK (R)	-0.09607	-0.17425	-1.03513
	setup	CLK (R)	0.13110	0.19229	1.04718
	setup	CLK (R)	0.13586	0.19892	1.04904

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)	-0.12471	-0.23023	-3.29603
	hold	CLK (R)	-0.11760	-0.22496	-3.29748
	setup	CLK (R)	0.19111	0.29356	3.32911
	setup	CLK (R)	0.18480	0.28836	3.32890
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.13114	-0.23952	-3.33975
	hold	CLK (R)	-0.12308	-0.23073	-3.33813
	setup	CLK (R)	0.19711	0.30009	3.36901
	setup	CLK (R)	0.19134	0.29657	3.37475

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)	-0.07714	-0.15331	-0.39283
	setup	CLK (R)	0.19186	0.21311	1.11419
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.07534	-0.15700	-0.42163
	setup	CLK (R)	0.19839	0.21747	1.15368

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)	-0.10058	-0.19710	-3.10613
	setup	CLK (R)	0.16774	0.27347	3.19969
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.10343	-0.20382	-3.13641
	setup	CLK (R)	0.16805	0.27550	3.22953

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)	-0.12898	-0.15331	-0.39283
	hold	CLK (R)	-0.07714	-0.16030	-1.10315
	setup	CLK (R)	0.19186	0.21311	0.41220
	setup	CLK (R)	0.11676	0.18705	1.11419
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.13137	-0.15700	-0.42163
	hold	CLK (R)	-0.07534	-0.16396	-1.14314
	setup	CLK (R)	0.19839	0.21747	0.44277
	setup	CLK (R)	0.11983	0.19084	1.15368

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)	-0.12286	-0.25057	-3.19261
	hold	CLK (R)	-0.10058	-0.19710	-3.10613
	setup	CLK (R)	0.16774	0.27347	3.19969
	setup	CLK (R)	0.15830	0.25803	3.13595
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.12237	-0.25114	-3.21610
	hold	CLK (R)	-0.10343	-0.20382	-3.13641
	setup	CLK (R)	0.16805	0.27550	3.22953
	setup	CLK (R)	0.16335	0.26380	3.17274

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)	0.14926	0.19251	1.42297
	removal	CLK (R)	-0.11574	-0.15767	-1.38938
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.15272	0.19445	1.45318
	removal	CLK (R)	-0.12233	-0.16329	-1.42075

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)	0.14707	0.18454	1.42297
	recovery	CLK (R)	0.14290	0.17425	1.40838
	recovery	CLK (R)	0.13862	0.16796	1.39334
	recovery	CLK (R)	0.14926	0.19251	1.41912
	removal	CLK (R)	-0.12662	-0.17425	-1.41939
	removal	CLK (R)	-0.12050	-0.16389	-1.40474
	removal	CLK (R)	-0.11574	-0.15767	-1.38938
	removal	CLK (R)	-0.13138	-0.18093	-1.41465
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.14790	0.18945	1.45318
	recovery	CLK (R)	0.14348	0.17929	1.43672
	recovery	CLK (R)	0.14159	0.17162	1.42354
	recovery	CLK (R)	0.15272	0.19445	1.44868
	removal	CLK (R)	-0.12833	-0.17787	-1.44691
	removal	CLK (R)	-0.12597	-0.16892	-1.43371
	removal	CLK (R)	-0.12233	-0.16329	-1.42075
	removal	CLK (R)	-0.13468	-0.18462	-1.44395

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 ()	0.11664	0.60669	16.50020
	min_pulse_width	RESET_B ()	0.10297	0.60669	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	RESET_B ()	0.11892	0.60669	16.50020
	min_pulse_width	RESET_B ()	0.11436	0.60669	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 ()	0.09385	0.60669	16.50020
	min_pulse_width	CLK ()	0.06422	0.60669	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.11209	0.60669	16.50020
	min_pulse_width	CLK ()	0.07562	0.60669	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 ()	0.12576	0.60669	16.50020
	min_pulse_width	CLK ()	0.14172	0.60669	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.12576	0.60669	16.50020
	min_pulse_width	CLK ()	0.14400	0.60669	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	0.02231	0.02578	0.10954
	CLK	0.01888	0.02223	0.10603
sky130_fd_sc_hs__sdfrbp_2	CLK	0.02804	0.03074	0.11486
	CLK	0.02453	0.02720	0.11132

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.02212	0.02610	0.10735
	CLK	0.01874	0.02264	0.10398
	RESET_B	0.01909	0.02420	0.11411
	RESET_B	0.02688	0.03194	0.12199
sky130_fd_sc_hs__sdfrbp_2	CLK	0.02669	0.03063	0.11290
	CLK	0.02353	0.02743	0.10965
	RESET_B	0.02346	0.02850	0.12065
	RESET_B	0.03178	0.03677	0.12693

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.02216	0.02614	0.10812
	CLK	0.01878	0.02266	0.10473
	RESET_B	0.01876	0.02389	0.11644
	RESET_B	0.02692	0.03202	0.12293
sky130_fd_sc_hs__sdfrbp_2	CLK	0.02671	0.03063	0.11352
	CLK	0.02354	0.02744	0.11030
	RESET_B	0.02380	0.02887	0.12097
	RESET_B	0.03182	0.03684	0.12763

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.02227	0.02560	0.10880
	CLK	0.01884	0.02218	0.10533
sky130_fd_sc_hs__sdfrbp_2	CLK	0.02801	0.03071	0.11394
	CLK	0.02450	0.02716	0.11042

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * RESET_B * SCD * SCE)	0.00181	0.00184	0.00181
	(CLK * RESET_B * SCD * SCE)	-0.00079	-0.00081	-0.00079
	(CLK * RESET_B * SCD * !SCE)	0.00760	0.01045	0.07692
	(CLK * RESET_B * SCD * !SCE)	0.00249	0.00532	0.07180
	(CLK * RESET_B * !SCD * !SCE)	0.00760	0.01046	0.07692
	(CLK * RESET_B * !SCD * !SCE)	0.00250	0.00534	0.07180
	(CLK * !SCD * SCE)	0.00090	0.00091	0.00089
	(CLK * !SCD * SCE)	-0.00195	-0.00198	-0.00200
	(CLK * !RESET_B * SCD * SCE)	0.00088	0.00089	0.00087
	(CLK * !RESET_B * SCD * SCE)	-0.00196	-0.00198	-0.00201
	(CLK * !RESET_B * SCD * !SCE)	0.00059	0.00059	0.00053
	(CLK * !RESET_B * SCD * !SCE)	-0.00223	-0.00226	-0.00234
	(CLK * !RESET_B * !SCD * !SCE)	0.00059	0.00059	0.00054
	(CLK * !RESET_B * !SCD * !SCE)	-0.00229	-0.00230	-0.00237
	(!CLK * RESET_B * SCD * SCE)	0.00181	0.00182	0.00181
	(!CLK * RESET_B * SCD * SCE)	-0.00079	-0.00079	-0.00078
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.01789	0.02113	0.09973
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.01252	0.01574	0.09435
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01789	0.02113	0.09973
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01252	0.01575	0.09435
	(!CLK * !SCD * SCE)	0.00092	0.00093	0.00090
	(!CLK * !SCD * SCE)	-0.00194	-0.00197	-0.00199
	(!CLK * !RESET_B * SCD * SCE)	0.00088	0.00089	0.00087
	(!CLK * !RESET_B * SCD * SCE)	-0.00196	-0.00199	-0.00201
	(!CLK * !RESET_B * SCD * !SCE)	0.00059	0.00059	0.00053
	(!CLK * !RESET_B * SCD * !SCE)	-0.00224	-0.00226	-0.00234
	(!CLK * !RESET_B * !SCD * !SCE)	0.00059	0.00059	0.00054
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00229	-0.00230	-0.00236

	(CLK * RESET_B * SCD * SCE)	0.00185	0.00188	0.00185
	(CLK * RESET_B * SCD * SCE)	-0.00079	-0.00080	-0.00079
	(CLK * RESET_B * SCD * !SCE)	0.00805	0.01080	0.07715
	(CLK * RESET_B * SCD * !SCE)	0.00285	0.00558	0.07193
	(CLK * RESET_B * !SCD * !SCE)	0.00805	0.01080	0.07715
	(CLK * RESET_B * !SCD * !SCE)	0.00285	0.00558	0.07193
	(CLK * !SCD * SCE)	0.00092	0.00092	0.00090
	(CLK * !SCD * SCE)	-0.00197	-0.00199	-0.00202
	(CLK * !RESET_B * SCD * SCE)	0.00089	0.00090	0.00088
	(CLK * !RESET_B * SCD * SCE)	-0.00198	-0.00201	-0.00203
	(CLK * !RESET_B * SCD * !SCE)	0.00057	0.00057	0.00051
	(CLK * !RESET_B * SCD * !SCE)	-0.00229	-0.00231	-0.00240
	(CLK * !RESET_B * !SCD * !SCE)	0.00057	0.00057	0.00052
	(CLK * !RESET_B * !SCD * !SCE)	-0.00234	-0.00236	-0.00242
	(!CLK * RESET_B * SCD * SCE)	0.00184	0.00185	0.00185
	(!CLK * RESET_B * SCD * SCE)	-0.00078	-0.00080	-0.00079
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.01839	0.02158	0.10013
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.01292	0.01610	0.09466
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01840	0.02158	0.10013
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01293	0.01610	0.09465
	(!CLK * !SCD * SCE)	0.00093	0.00093	0.00091
	(!CLK * !SCD * SCE)	-0.00196	-0.00200	-0.00201
	(!CLK * !RESET_B * SCD * SCE)	0.00089	0.00090	0.00088
	(!CLK * !RESET_B * SCD * SCE)	-0.00198	-0.00202	-0.00203
	(!CLK * !RESET_B * SCD * !SCE)	0.00057	0.00058	0.00051
	(!CLK * !RESET_B * SCD * !SCE)	-0.00229	-0.00231	-0.00240
	(!CLK * !RESET_B * !SCD * !SCE)	0.00057	0.00057	0.00052
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00234	-0.00235	-0.00242

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * RESET_B * SCD * SCE)	-0.00170	-0.00173	-0.00176
	(CLK * RESET_B * SCD * SCE)	0.00087	0.00087	0.00085
	(CLK * RESET_B * SCD * !SCE)	0.00087	0.00438	0.07124
	(CLK * RESET_B * SCD * !SCE)	0.00597	0.00950	0.07636
	(CLK * RESET_B * !SCD * !SCE)	0.00088	0.00439	0.07124
	(CLK * RESET_B * !SCD * !SCE)	0.00598	0.00950	0.07636
	(CLK * !SCD * SCE)	-0.00085	-0.00085	-0.00085
	(CLK * !SCD * SCE)	0.00201	0.00202	0.00202
	(CLK * !RESET_B * SCD * SCE)	-0.00083	-0.00083	-0.00083
	(CLK * !RESET_B * SCD * SCE)	0.00201	0.00203	0.00202
	(CLK * !RESET_B * SCD * !SCE)	-0.00050	-0.00050	-0.00049
	(CLK * !RESET_B * SCD * !SCE)	0.00237	0.00240	0.00238
	(CLK * !RESET_B * !SCD * !SCE)	-0.00050	-0.00051	-0.00050
	(CLK * !RESET_B * !SCD * !SCE)	0.00237	0.00240	0.00238
	(!CLK * RESET_B * SCD * SCE)	-0.00169	-0.00173	-0.00175
	(!CLK * RESET_B * SCD * SCE)	0.00088	0.00088	0.00085
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.01205	0.01651	0.09663
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.01744	0.02190	0.10200
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01205	0.01651	0.09663
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01744	0.02190	0.10201
	(!CLK * !SCD * SCE)	-0.00083	-0.00083	-0.00083
	(!CLK * !SCD * SCE)	0.00203	0.00202	0.00203
	(!CLK * !RESET_B * SCD * SCE)	-0.00083	-0.00084	-0.00083
	(!CLK * !RESET_B * SCD * SCE)	0.00202	0.00203	0.00202
	(!CLK * !RESET_B * SCD * !SCE)	-0.00050	-0.00050	-0.00049
	(!CLK * !RESET_B * SCD * !SCE)	0.00237	0.00239	0.00238
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00050	-0.00051	-0.00050
	(!CLK * !RESET_B * !SCD * !SCE)	0.00237	0.00240	0.00238

	(CLK * RESET_B * SCD * SCE)	-0.00174	-0.00177	-0.00180
	(CLK * RESET_B * SCD * SCE)	0.00087	0.00087	0.00085
	(CLK * RESET_B * SCD * !SCE)	0.00103	0.00447	0.07123
	(CLK * RESET_B * SCD * !SCE)	0.00623	0.00967	0.07645
	(CLK * RESET_B * !SCD * !SCE)	0.00104	0.00447	0.07124
	(CLK * RESET_B * !SCD * !SCE)	0.00623	0.00967	0.07645
	(CLK * !SCD * SCE)	-0.00086	-0.00087	-0.00086
	(CLK * !SCD * SCE)	0.00203	0.00204	0.00204
	(CLK * !RESET_B * SCD * SCE)	-0.00084	-0.00085	-0.00084
	(CLK * !RESET_B * SCD * SCE)	0.00204	0.00205	0.00204
	(CLK * !RESET_B * SCD * !SCE)	-0.00047	-0.00048	-0.00047
	(CLK * !RESET_B * SCD * !SCE)	0.00243	0.00246	0.00244
	(CLK * !RESET_B * !SCD * !SCE)	-0.00047	-0.00048	-0.00047
	(CLK * !RESET_B * !SCD * !SCE)	0.00243	0.00246	0.00244
	(!CLK * RESET_B * SCD * SCE)	-0.00175	-0.00177	-0.00180
	(!CLK * RESET_B * SCD * SCE)	0.00088	0.00088	0.00085
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.01229	0.01668	0.09671
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.01778	0.02217	0.10219
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01229	0.01669	0.09672
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01778	0.02217	0.10219
	(!CLK * !SCD * SCE)	-0.00085	-0.00088	-0.00085
	(!CLK * !SCD * SCE)	0.00204	0.00207	0.00205
	(!CLK * !RESET_B * SCD * SCE)	-0.00084	-0.00085	-0.00084
	(!CLK * !RESET_B * SCD * SCE)	0.00204	0.00206	0.00205
	(!CLK * !RESET_B * SCD * !SCE)	-0.00047	-0.00048	-0.00047
	(!CLK * !RESET_B * SCD * !SCE)	0.00243	0.00246	0.00244
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00047	-0.00048	-0.00047
	(!CLK * !RESET_B * !SCD * !SCE)	0.00243	0.00246	0.00244

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.01002	0.01221	0.07236
	(CLK * D * RESET_B * SCE)	0.00336	0.00553	0.06571
	(CLK * D * RESET_B * !SCE)	0.00184	0.00156	0.00152
	(CLK * D * RESET_B * !SCE)	-0.00157	-0.00187	-0.00190
	(CLK * D * !RESET_B * SCE)	0.00079	0.00079	0.00076
	(CLK * D * !RESET_B * SCE)	-0.00208	-0.00207	-0.00206
	(CLK * D * !RESET_B * !SCE)	0.00057	0.00057	0.00057
	(CLK * D * !RESET_B * !SCE)	-0.00223	-0.00226	-0.00225
	(CLK * !D * RESET_B * SCE)	0.01127	0.01323	0.07276
	(CLK * !D * RESET_B * SCE)	0.00432	0.00626	0.06582
	(CLK * !D * !RESET_B * SCE)	0.00079	0.00079	0.00076
	(CLK * !D * !RESET_B * SCE)	-0.00207	-0.00207	-0.00206
	(!D * RESET_B * !SCE)	0.00122	0.00122	0.00122
	(!D * RESET_B * !SCE)	-0.00219	-0.00220	-0.00220
	(!D * !RESET_B * !SCE)	0.00069	0.00070	0.00069
	(!D * !RESET_B * !SCE)	-0.00235	-0.00237	-0.00237
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.02030	0.02306	0.09313
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.01337	0.01611	0.08621
	(!CLK * D * RESET_B * !SCE)	0.00185	0.00157	0.00153
	(!CLK * D * RESET_B * !SCE)	-0.00157	-0.00187	-0.00189
	(!CLK * D * !RESET_B * SCE)	0.00079	0.00079	0.00076
	(!CLK * D * !RESET_B * SCE)	-0.00207	-0.00207	-0.00206
	(!CLK * D * !RESET_B * !SCE)	0.00057	0.00057	0.00057
	(!CLK * D * !RESET_B * !SCE)	-0.00223	-0.00226	-0.00225
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.02157	0.02425	0.09372
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01435	0.01701	0.08650
	(!CLK * !D * !RESET_B * SCE)	0.00079	0.00079	0.00076
	(!CLK * !D * !RESET_B * SCE)	-0.00207	-0.00207	-0.00206

	(CLK * D * RESET_B * SCE)	0.01033	0.01246	0.07253
	(CLK * D * RESET_B * SCE)	0.00357	0.00571	0.06579
	(CLK * D * RESET_B * !SCE)	0.00188	0.00161	0.00157
	(CLK * D * RESET_B * !SCE)	-0.00158	-0.00187	-0.00190
	(CLK * D * !RESET_B * SCE)	0.00082	0.00082	0.00080
	(CLK * D * !RESET_B * SCE)	-0.00207	-0.00207	-0.00206
	(CLK * D * !RESET_B * !SCE)	0.00059	0.00059	0.00059
	(CLK * D * !RESET_B * !SCE)	-0.00225	-0.00227	-0.00226
	(CLK * !D * RESET_B * SCE)	0.01158	0.01349	0.07294
	(CLK * !D * RESET_B * SCE)	0.00453	0.00643	0.06590
	(CLK * !D * !RESET_B * SCE)	0.00082	0.00082	0.00080
	(CLK * !D * !RESET_B * SCE)	-0.00207	-0.00207	-0.00206
	(!D * RESET_B * !SCE)	0.00125	0.00126	0.00125
	(!D * RESET_B * !SCE)	-0.00220	-0.00222	-0.00221
	(!D * !RESET_B * !SCE)	0.00070	0.00071	0.00070
	(!D * !RESET_B * !SCE)	-0.00238	-0.00239	-0.00239
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.02066	0.02337	0.09350
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.01363	0.01633	0.08648
	(!CLK * D * RESET_B * !SCE)	0.00188	0.00161	0.00157
	(!CLK * D * RESET_B * !SCE)	-0.00158	-0.00187	-0.00190
	(!CLK * D * !RESET_B * SCE)	0.00082	0.00082	0.00080
	(!CLK * D * !RESET_B * SCE)	-0.00207	-0.00207	-0.00206
	(!CLK * D * !RESET_B * !SCE)	0.00059	0.00059	0.00059
	(!CLK * D * !RESET_B * !SCE)	-0.00225	-0.00227	-0.00226
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.02194	0.02450	0.09415
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01461	0.01717	0.08683
	(!CLK * !D * !RESET_B * SCE)	0.00082	0.00082	0.00080
	(!CLK * !D * !RESET_B * SCE)	-0.00207	-0.00207	-0.00206

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.00302	0.00522	0.06545
	(CLK * D * RESET_B * SCE)	0.00969	0.01190	0.07210
	(CLK * D * RESET_B * !SCE)	-0.00144	-0.00147	-0.00147
	(CLK * D * RESET_B * !SCE)	0.00195	0.00196	0.00196
	(CLK * D * !RESET_B * SCE)	-0.00070	-0.00071	-0.00071
	(CLK * D * !RESET_B * SCE)	0.00211	0.00214	0.00210
	(CLK * D * !RESET_B * !SCE)	-0.00054	-0.00054	-0.00054
	(CLK * D * !RESET_B * !SCE)	0.00227	0.00228	0.00227
	(CLK * !D * RESET_B * SCE)	0.00229	0.00466	0.06520
	(CLK * !D * RESET_B * SCE)	0.00925	0.01163	0.07211
	(CLK * !D * !RESET_B * SCE)	-0.00070	-0.00071	-0.00071
	(CLK * !D * !RESET_B * SCE)	0.00211	0.00214	0.00210
	(!D * RESET_B * !SCE)	-0.00111	-0.00120	-0.00121
	(!D * RESET_B * !SCE)	0.00228	0.00223	0.00222
	(!D * !RESET_B * !SCE)	-0.00069	-0.00070	-0.00069
	(!D * !RESET_B * !SCE)	0.00238	0.00242	0.00241
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.01463	0.01726	0.08749
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.02156	0.02421	0.09441
	(!CLK * D * RESET_B * !SCE)	-0.00143	-0.00147	-0.00147
	(!CLK * D * RESET_B * !SCE)	0.00196	0.00198	0.00197
	(!CLK * D * !RESET_B * SCE)	-0.00070	-0.00071	-0.00071
	(!CLK * D * !RESET_B * SCE)	0.00211	0.00214	0.00210
	(!CLK * D * !RESET_B * !SCE)	-0.00054	-0.00054	-0.00054
	(!CLK * D * !RESET_B * !SCE)	0.00227	0.00228	0.00227
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01410	0.01696	0.08816
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.02131	0.02416	0.09535
	(!CLK * !D * !RESET_B * SCE)	-0.00070	-0.00071	-0.00071
	(!CLK * !D * !RESET_B * SCE)	0.00211	0.00214	0.00210

	(CLK * D * RESET_B * SCE)	0.00312	0.00529	0.06546
	(CLK * D * RESET_B * SCE)	0.00989	0.01206	0.07220
	(CLK * D * RESET_B * !SCE)	-0.00147	-0.00151	-0.00151
	(CLK * D * RESET_B * !SCE)	0.00196	0.00198	0.00197
	(CLK * D * !RESET_B * SCE)	-0.00073	-0.00074	-0.00074
	(CLK * D * !RESET_B * SCE)	0.00211	0.00215	0.00210
	(CLK * D * !RESET_B * !SCE)	-0.00056	-0.00056	-0.00056
	(CLK * D * !RESET_B * !SCE)	0.00230	0.00231	0.00229
	(CLK * !D * RESET_B * SCE)	0.00248	0.00482	0.06525
	(CLK * !D * RESET_B * SCE)	0.00954	0.01188	0.07229
	(CLK * !D * !RESET_B * SCE)	-0.00073	-0.00074	-0.00074
	(CLK * !D * !RESET_B * SCE)	0.00211	0.00215	0.00210
	(!D * RESET_B * !SCE)	-0.00114	-0.00123	-0.00124
	(!D * RESET_B * !SCE)	0.00231	0.00226	0.00224
	(!D * !RESET_B * !SCE)	-0.00070	-0.00071	-0.00070
	(!D * !RESET_B * !SCE)	0.00241	0.00243	0.00244
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.01480	0.01741	0.08756
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.02183	0.02444	0.09458
	(!CLK * D * RESET_B * !SCE)	-0.00147	-0.00151	-0.00151
	(!CLK * D * RESET_B * !SCE)	0.00196	0.00198	0.00197
	(!CLK * D * !RESET_B * SCE)	-0.00073	-0.00074	-0.00074
	(!CLK * D * !RESET_B * SCE)	0.00211	0.00215	0.00210
	(!CLK * D * !RESET_B * !SCE)	-0.00056	-0.00056	-0.00056
	(!CLK * D * !RESET_B * !SCE)	0.00230	0.00231	0.00229
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01438	0.01716	0.08838
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.02169	0.02449	0.09567
	(!CLK * !D * !RESET_B * SCE)	-0.00073	-0.00074	-0.00074
	(!CLK * !D * !RESET_B * SCE)	0.00211	0.00214	0.00210

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)**	0.00889	0.01347	0.11073
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00004	0.00449	0.10182
	(CLK * D * RESET_B * !SCD)	0.01258	0.01727	0.11835
	(CLK * D * RESET_B * !SCD)	0.00663	0.01125	0.11232
	(CLK * !D * RESET_B * SCD)	0.01622	0.02382	0.18017
	(CLK * !D * RESET_B * SCD)	0.00465	0.01222	0.16861
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00889	0.01347	0.11074
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00003	0.00450	0.10182
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.02398	0.02867	0.13071
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01829	0.02293	0.12495
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00875	0.01374	0.11102
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00034	0.00525	0.10254
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.02646	0.03484	0.20248
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01462	0.02295	0.19065

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00829	0.01299	0.11036
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00092	0.00372	0.10112
	(CLK * D * RESET_B * !SCD)	0.01217	0.01695	0.11809
	(CLK * D * RESET_B * !SCD)	0.00598	0.01071	0.11183
	(CLK * !D * RESET_B * SCD)	0.01599	0.02355	0.18034
	(CLK * !D * RESET_B * SCD)	0.00407	0.01160	0.16843
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00830	0.01299	0.11036
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00092	0.00372	0.10112
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.02361	0.02845	0.13054
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01770	0.02247	0.12456
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00823	0.01331	0.11068
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00047	0.00453	0.10194
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.02628	0.03467	0.20306
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01410	0.02246	0.19088

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)**	-0.00061	0.00527	0.10272
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00834	0.01423	0.11167
	(CLK * D * RESET_B * !SCD)	0.00707	0.01260	0.11341
	(CLK * D * RESET_B * !SCD)	0.01305	0.01863	0.11918
	(CLK * !D * RESET_B * SCD)	0.00147	0.00939	0.16613
	(CLK * !D * RESET_B * SCD)	0.01302	0.02100	0.17772
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00060	0.00529	0.10273
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00835	0.01424	0.11167
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01734	0.02300	0.12400
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.02305	0.02873	0.12952
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00058	0.00514	0.10249
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00785	0.01361	0.11093
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01261	0.02095	0.18708
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.02444	0.03284	0.19894

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00054	0.00539	0.10288
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00866	0.01463	0.11208
	(CLK * D * RESET_B * !SCD)	0.00757	0.01314	0.11391
	(CLK * D * RESET_B * !SCD)	0.01379	0.01940	0.11991
	(CLK * !D * RESET_B * SCD)	0.00159	0.00959	0.16659
	(CLK * !D * RESET_B * SCD)	0.01349	0.02151	0.17852
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00054	0.00540	0.10288
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00866	0.01465	0.11208
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01788	0.02360	0.12458
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.02383	0.02953	0.13033
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00058	0.00518	0.10258
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00814	0.01394	0.11131
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01281	0.02119	0.18755
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.02501	0.03342	0.19976

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)**	0.01467	0.01732	0.10308
	(CLK * D * SCD * SCE * !Q * Q_N)	-0.00076	0.00184	0.08762
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.01410	0.01690	0.10324
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00077	0.00198	0.08838
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00499	0.00503	0.00501
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00640	-0.00643	-0.00641
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.01334	0.01640	0.10303
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00075	0.00225	0.08891
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.01593	0.01839	0.10353
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00022	0.00255	0.08780
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00495	0.00499	0.00497
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00642	-0.00645	-0.00644
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00498	0.00502	0.00501
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00639	-0.00643	-0.00641
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00496	0.00501	0.00498
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00643	-0.00647	-0.00644
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.02595	0.02892	0.14420
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01031	0.01316	0.12849
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.02538	0.02844	0.14540
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01031	0.01326	0.13032
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00499	0.00504	0.00501
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00639	-0.00642	-0.00641
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.02464	0.02788	0.14450
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01029	0.01356	0.13012
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.02723	0.02991	0.14488
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01130	0.01386	0.12887
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00495	0.00499	0.00497
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00641	-0.00644	-0.00643
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00499	0.00504	0.00501
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00639	-0.00642	-0.00641
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00496	0.00503	0.00498
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00642	-0.00647	-0.00644

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.01478	0.01738	0.10294
	(CLK * D * SCD * SCE * !Q * Q_N)	-0.00069	0.00185	0.08743
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.01438	0.01708	0.10321
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00053	0.00216	0.08830
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00482	0.00486	0.00484
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00654	-0.00657	-0.00655
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.01361	0.01660	0.10299
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00049	0.00241	0.08880
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.01605	0.01843	0.10338
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00026	0.00259	0.08757
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00479	0.00483	0.00480
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00658	-0.00660	-0.00658
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00481	0.00486	0.00484
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00653	-0.00657	-0.00655
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00479	0.00484	0.00481
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00657	-0.00661	-0.00658
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.02608	0.02900	0.14422
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01035	0.01322	0.12846
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.02568	0.02868	0.14494
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01054	0.01344	0.12976
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00480	0.00485	0.00482
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00654	-0.00658	-0.00656
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.02492	0.02816	0.14457
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01053	0.01368	0.13017
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.02737	0.03006	0.14439
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01135	0.01400	0.12835
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00476	0.00481	0.00478
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00656	-0.00660	-0.00658
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00480	0.00484	0.00482
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00654	-0.00657	-0.00656
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00477	0.00482	0.00479
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00657	-0.00661	-0.00659

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)**	0.00090	0.00537	0.09248
	(CLK * D * SCD * SCE * !Q * Q_N)	0.01635	0.02087	0.10788
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00059	0.00381	0.09071
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.01427	0.01876	0.10558
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00483	-0.00500	-0.00497
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00651	0.00648	0.00645
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00105	0.00328	0.09070
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.01304	0.01745	0.10478
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00018	0.00461	0.09219
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.01590	0.02037	0.10791
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00474	-0.00498	-0.00496
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00655	0.00648	0.00646
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00483	-0.00500	-0.00497
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00651	0.00648	0.00645
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00477	-0.00498	-0.00496
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00657	0.00648	0.00647
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01142	0.01645	0.13890
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.02713	0.03221	0.15462
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00989	0.01480	0.13695
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.02502	0.02993	0.15208
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00485	-0.00501	-0.00498
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00649	0.00651	0.00645
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00942	0.01444	0.13690
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.02377	0.02883	0.15125
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01070	0.01598	0.13922
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.02668	0.03201	0.15520
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00476	-0.00499	-0.00496
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00653	0.00648	0.00645
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00485	-0.00500	-0.00498
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00649	0.00646	0.00645
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00479	-0.00499	-0.00497
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00655	0.00648	0.00646

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.00115	0.00556	0.09254
	(CLK * D * SCD * SCE * !Q * Q_N)	0.01665	0.02110	0.10802
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00041	0.00395	0.09070
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.01451	0.01891	0.10562
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00465	-0.00479	-0.00480
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00665	0.00660	0.00660
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00086	0.00344	0.09068
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.01328	0.01766	0.10486
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00053	0.00490	0.09231
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.01631	0.02070	0.10810
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00457	-0.00477	-0.00478
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00670	0.00662	0.00660
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00465	-0.00479	-0.00480
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00665	0.00661	0.00660
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00459	-0.00477	-0.00479
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00671	0.00662	0.00661
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01171	0.01687	0.13906
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.02748	0.03270	0.15481
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01014	0.01511	0.13704
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.02530	0.03036	0.15222
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00466	-0.00479	-0.00479
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00665	0.00662	0.00661
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00966	0.01477	0.13697
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.02405	0.02925	0.15139
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01110	0.01646	0.13947
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.02712	0.03257	0.15549
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00457	-0.00476	-0.00477
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00669	0.00664	0.00661
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00466	-0.00482	-0.00479
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00665	0.00663	0.00661
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00460	-0.00477	-0.00478
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00671	0.00664	0.00662

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)**	0.02040	0.02720	0.18559
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.01358	0.02037	0.17878
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.02039	0.02720	0.18559
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01358	0.02037	0.17877
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.02040	0.02720	0.18560
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01358	0.02037	0.17878
	(D * !SCD * SCE * !Q * Q_N)	0.02086	0.02767	0.18598
	(D * !SCD * SCE * !Q * Q_N)	0.01405	0.02082	0.17916
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.02087	0.02768	0.18596
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01405	0.02083	0.17914
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.02086	0.02768	0.18595
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01405	0.02083	0.17914
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.02086	0.02768	0.18595
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01405	0.02083	0.17914
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.02040	0.02720	0.18559
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01358	0.02038	0.17878
	(!D * !SCE * !Q * Q_N)	0.02086	0.02766	0.18597
	(!D * !SCE * !Q * Q_N)	0.01404	0.02081	0.17916
	(!D * !SCD * SCE * !Q * Q_N)	0.02086	0.02767	0.18596
	(!D * !SCD * SCE * !Q * Q_N)	0.01405	0.02082	0.17915
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.02087	0.02765	0.18593
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01405	0.02085	0.17913

sky130_fd_sc_hs__sdfrbp_2	**(D * RESET_B * SCD * SCE * Q * !Q_N)**	0.02054	0.02742	0.18698
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.01386	0.02072	0.18030
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.02054	0.02742	0.18698
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01385	0.02071	0.18030
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.02054	0.02743	0.18698
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01386	0.02072	0.18031
	(D * !SCD * SCE * !Q * Q_N)	0.02090	0.02775	0.18727
	(D * !SCD * SCE * !Q * Q_N)	0.01422	0.02107	0.18059
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.02091	0.02777	0.18725
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01422	0.02108	0.18058
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.02090	0.02776	0.18724
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01421	0.02108	0.18055
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.02090	0.02776	0.18725
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01421	0.02108	0.18057
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.02054	0.02742	0.18698
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01386	0.02072	0.18031
	(!D * !SCE * !Q * Q_N)	0.02090	0.02774	0.18726
	(!D * !SCE * !Q * Q_N)	0.01421	0.02106	0.18059
	(!D * !SCD * SCE * !Q * Q_N)	0.02090	0.02775	0.18726
	(!D * !SCD * SCE * !Q * Q_N)	0.01422	0.02107	0.18059
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.02091	0.02777	0.18725
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01422	0.02108	0.18057

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)	0.01065	0.01969	0.17819
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.01747	0.02653	0.18500
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.02005	0.02935	0.19276
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.02660	0.03589	0.19929
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01064	0.01969	0.17819
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01747	0.02653	0.18500
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.02004	0.02933	0.19269
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.02660	0.03590	0.19924
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.02264	0.03220	0.19326
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.02975	0.03933	0.20038
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01065	0.01969	0.17819
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01747	0.02653	0.18500
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.02005	0.02933	0.19269
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.02661	0.03591	0.19925
	(D * !SCD * SCE * !Q * Q_N)	0.00987	0.01903	0.17753
	(D * !SCD * SCE * !Q * Q_N)	0.01669	0.02584	0.18433
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00987	0.01903	0.17750
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01670	0.02584	0.18431
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00987	0.01903	0.17749
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01669	0.02584	0.18430
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00987	0.01903	0.17749
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01669	0.02584	0.18430
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01065	0.01969	0.17819
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01747	0.02653	0.18500
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.02010	0.02939	0.19280
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.02664	0.03593	0.19934
	(!D * RESET_B * !SCE * Q * !Q_N)	0.02257	0.03213	0.19320
	(!D * RESET_B * !SCE * Q * !Q_N)	0.02966	0.03923	0.20029
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.02258	0.03217	0.19325
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.02968	0.03929	0.20035
	(!D * !SCE * !Q * Q_N)	0.00986	0.01902	0.17752
	(!D * !SCE * !Q * Q_N)	0.01669	0.02583	0.18432
	(!D * !SCD * SCE * !Q * Q_N)	0.00987	0.01902	0.17753
	(!D * !SCD * SCE * !Q * Q_N)	0.01669	0.02584	0.18433
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00987	0.01903	0.17750
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01670	0.02584	0.18432

sky130_fd_sc_hs__sdfrbp_2	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.01057	0.01982	0.18053
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.01727	0.02651	0.18720
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.02008	0.02947	0.19498
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.02650	0.03589	0.20140
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01057	0.01982	0.18052
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01726	0.02651	0.18719
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.02008	0.02945	0.19491
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.02650	0.03589	0.20133
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.02254	0.03229	0.19567
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.02953	0.03929	0.20266
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01058	0.01982	0.18053
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01727	0.02651	0.18720
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.02008	0.02946	0.19492
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.02651	0.03590	0.20134
	(D * !SCD * SCE * !Q * Q_N)	0.00992	0.01920	0.18001
	(D * !SCD * SCE * !Q * Q_N)	0.01661	0.02590	0.18668
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00992	0.01921	0.17998
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01661	0.02591	0.18665
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00992	0.01921	0.17997
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01661	0.02591	0.18665
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00992	0.01921	0.17997
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01661	0.02591	0.18665
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01058	0.01982	0.18053
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01727	0.02651	0.18720
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.02013	0.02951	0.19503
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.02653	0.03591	0.20143
	(!D * RESET_B * !SCE * Q * !Q_N)	0.02247	0.03221	0.19582
	(!D * RESET_B * !SCE * Q * !Q_N)	0.02944	0.03919	0.20277
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.02247	0.03225	0.19586
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.02945	0.03921	0.20283
	(!D * !SCE * !Q * Q_N)	0.00991	0.01920	0.18000
	(!D * !SCE * !Q * Q_N)	0.01661	0.02589	0.18667
	(!D * !SCD * SCE * !Q * Q_N)	0.00992	0.01919	0.18001
	(!D * !SCD * SCE * !Q * Q_N)	0.01661	0.02589	0.18668
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00992	0.01920	0.17998
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01662	0.02590	0.18665

SKY130_FD_SC_HS__SDFRTN

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00202	0.00197	0.00425	0.00586	0.00296	1.44656

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrtn_1	0.00000	1.97907	3.48635

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)	0.18358	0.77004	8.44578

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)	0.15953	0.54006	4.91438
	RESET_B->Q (FF)	0.21618	0.63317	5.27363

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)	-0.02112	0.01445	2.18951
	setup	CLK_N (F)	0.09145	0.04500	-2.13592

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)	-0.08869	-0.12205	-0.26579
	setup	CLK_N (F)	0.17304	0.18107	0.30216

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)	-0.02112	0.01445	2.18951
	hold	CLK_N (F)	-0.02133	0.01445	2.18928
	setup	CLK_N (F)	0.08819	0.04444	-2.13594
	setup	CLK_N (F)	0.09145	0.04500	-2.13592

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)	-0.08869	-0.12211	-0.26579
	hold	CLK_N (F)	-0.08872	-0.12205	-0.26582
	setup	CLK_N (F)	0.17294	0.18107	0.30204
	setup	CLK_N (F)	0.17304	0.18099	0.30216

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)	-0.03819	0.01045	2.16301
	setup	CLK_N (F)	0.10707	0.05174	-2.09618

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)	-0.11585	-0.12571	-0.29508
	setup	CLK_N (F)	0.21105	0.19853	0.34727

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)	-0.03819	0.01045	2.16301
	hold	CLK_N (F)	-0.04390	-0.00152	2.14593
	setup	CLK_N (F)	0.10362	0.04771	-2.11496
	setup	CLK_N (F)	0.10707	0.05174	-2.09618

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)	-0.12252	-0.13401	-0.31532
	hold	CLK_N (F)	-0.11585	-0.12571	-0.29508
	setup	CLK_N (F)	0.21105	0.19853	0.34727
	setup	CLK_N (F)	0.20568	0.19185	0.33191

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)	-0.02584	0.00862	2.46009
	setup	CLK_N (F)	0.21530	0.11591	-2.04132

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)	-0.07136	-0.07500	-0.07780
	setup	CLK_N (F)	0.18731	0.17469	0.23171

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)	-0.12674	-0.05571	2.46009
	hold	CLK_N (F)	-0.02584	0.00862	2.09436
	setup	CLK_N (F)	0.21530	0.11591	-2.43581
	setup	CLK_N (F)	0.08949	0.04673	-2.04132

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)	-0.07136	-0.07500	-0.07780
	hold	CLK_N (F)	-0.10426	-0.11269	-0.20297
	setup	CLK_N (F)	0.13897	0.12509	0.09720
	setup	CLK_N (F)	0.18731	0.17469	0.23171

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)	0.12389	0.04556	-1.78316
	removal	CLK_N (F)	-0.08880	-0.01198	1.84254

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)	0.11829	0.04000	-1.79020
	recovery	CLK_N (F)	0.11216	0.03009	-1.82668
	recovery	CLK_N (F)	0.10960	0.02578	-1.83816
	recovery	CLK_N (F)	0.12389	0.04556	-1.78316
	removal	CLK_N (F)	-0.09570	-0.02739	1.79589
	removal	CLK_N (F)	-0.09297	-0.01688	1.83121
	removal	CLK_N (F)	-0.08880	-0.01198	1.84254
	removal	CLK_N (F)	-0.10093	-0.03291	1.78751

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 ()	0.09613	0.60669	16.50020
	min_pulse_width	RESET_B ()	0.11664	0.60669	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 ()	0.10297	0.60669	16.50020
	min_pulse_width	CLK_N ()	0.13032	0.60669	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 ()	0.10525	0.60669	16.50020
	min_pulse_width	CLK_N ()	0.10069	0.60669	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	0.03478	0.04454	0.21086
	CLK_N	0.04169	0.05152	0.21785

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtn_1	CLK_N	0.03186	0.04133	0.20856
	CLK_N	0.03795	0.04738	0.21462
	RESET_B	0.03450	0.04431	0.22353
	RESET_B	0.04951	0.05913	0.23833

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)**	0.00186	0.00187	0.00187
	(CLK_N * RESET_B * SCD * SCE)	-0.00092	-0.00092	-0.00092
	(CLK_N * RESET_B * SCD * !SCE)	0.01881	0.02195	0.09888
	(CLK_N * RESET_B * SCD * !SCE)	0.01356	0.01668	0.09362
	(CLK_N * RESET_B * !SCD * !SCE)	0.01881	0.02195	0.09888
	(CLK_N * RESET_B * !SCD * !SCE)	0.01356	0.01667	0.09362
	(CLK_N * !SCD * SCE)	0.00102	0.00103	0.00101
	(CLK_N * !SCD * SCE)	-0.00202	-0.00205	-0.00207
	(CLK_N * !RESET_B * SCD * SCE)	0.00099	0.00100	0.00098
	(CLK_N * !RESET_B * SCD * SCE)	-0.00204	-0.00208	-0.00209
	(CLK_N * !RESET_B * SCD * !SCE)	0.00050	0.00050	0.00045
	(CLK_N * !RESET_B * SCD * !SCE)	-0.00252	-0.00255	-0.00262
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00050	0.00050	0.00045
	(CLK_N * !RESET_B * !SCD * !SCE)	-0.00258	-0.00259	-0.00265
	(!CLK_N * RESET_B * SCD * SCE)	0.00186	0.00187	0.00187
	(!CLK_N * RESET_B * SCD * SCE)	-0.00092	-0.00093	-0.00093
	(!CLK_N * RESET_B * SCD * !SCE)	0.00795	0.01054	0.07605
	(!CLK_N * RESET_B * SCD * !SCE)	0.00264	0.00522	0.07074
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00795	0.01054	0.07605
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00265	0.00522	0.07074
	(!CLK_N * !SCD * SCE)	0.00101	0.00101	0.00100
	(!CLK_N * !SCD * SCE)	-0.00203	-0.00205	-0.00208
	(!CLK_N * !RESET_B * SCD * SCE)	0.00099	0.00100	0.00098
	(!CLK_N * !RESET_B * SCD * SCE)	-0.00204	-0.00208	-0.00209
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00050	0.00050	0.00045
	(!CLK_N * !RESET_B * SCD * !SCE)	-0.00252	-0.00255	-0.00262
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00049	0.00050	0.00045
	(!CLK_N * !RESET_B * !SCD * !SCE)	-0.00257	-0.00259	-0.00265

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)**	-0.00176	-0.00179	-0.00181
	(CLK_N * RESET_B * SCD * SCE)	0.00102	0.00102	0.00099
	(CLK_N * RESET_B * SCD * !SCE)	0.01400	0.01819	0.09681
	(CLK_N * RESET_B * SCD * !SCE)	0.01926	0.02346	0.10207
	(CLK_N * RESET_B * !SCD * !SCE)	0.01400	0.01819	0.09682
	(CLK_N * RESET_B * !SCD * !SCE)	0.01927	0.02346	0.10207
	(CLK_N * !SCD * SCE)	-0.00094	-0.00095	-0.00095
	(CLK_N * !SCD * SCE)	0.00211	0.00211	0.00211
	(CLK_N * !RESET_B * SCD * SCE)	-0.00095	-0.00095	-0.00095
	(CLK_N * !RESET_B * SCD * SCE)	0.00210	0.00211	0.00210
	(CLK_N * !RESET_B * SCD * !SCE)	-0.00041	-0.00042	-0.00041
	(CLK_N * !RESET_B * SCD * !SCE)	0.00265	0.00268	0.00266
	(CLK_N * !RESET_B * !SCD * !SCE)	-0.00041	-0.00042	-0.00041
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00265	0.00268	0.00266
	(!CLK_N * RESET_B * SCD * SCE)	-0.00176	-0.00179	-0.00182
	(!CLK_N * RESET_B * SCD * SCE)	0.00101	0.00101	0.00098
	(!CLK_N * RESET_B * SCD * !SCE)	0.00166	0.00510	0.07094
	(!CLK_N * RESET_B * SCD * !SCE)	0.00696	0.01042	0.07626
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00166	0.00503	0.07095
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00697	0.01035	0.07626
	(!CLK_N * !SCD * SCE)	-0.00096	-0.00098	-0.00096
	(!CLK_N * !SCD * SCE)	0.00209	0.00213	0.00210
	(!CLK_N * !RESET_B * SCD * SCE)	-0.00095	-0.00096	-0.00095
	(!CLK_N * !RESET_B * SCD * SCE)	0.00210	0.00211	0.00210
	(!CLK_N * !RESET_B * SCD * !SCE)	-0.00041	-0.00042	-0.00041
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00265	0.00268	0.00266
	(!CLK_N * !RESET_B * !SCD * !SCE)	-0.00041	-0.00042	-0.00041
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00265	0.00268	0.00266

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)**	0.02118	0.02384	0.09305
	(CLK_N * D * RESET_B * SCE)	0.01455	0.01719	0.08641
	(CLK_N * D * RESET_B * !SCE)	0.00175	0.00148	0.00144
	(CLK_N * D * RESET_B * !SCE)	-0.00170	-0.00199	-0.00202
	(CLK_N * D * !RESET_B * SCE)	0.00090	0.00090	0.00088
	(CLK_N * D * !RESET_B * SCE)	-0.00198	-0.00199	-0.00197
	(CLK_N * D * !RESET_B * !SCE)	0.00057	0.00058	0.00057
	(CLK_N * D * !RESET_B * !SCE)	-0.00226	-0.00228	-0.00227
	(CLK_N * !D * RESET_B * SCE)	0.02243	0.02485	0.09373
	(CLK_N * !D * RESET_B * SCE)	0.01550	0.01792	0.08679
	(CLK_N * !D * !RESET_B * SCE)	0.00090	0.00090	0.00088
	(CLK_N * !D * !RESET_B * SCE)	-0.00198	-0.00199	-0.00197
	(!D * RESET_B * !SCE)	0.00125	0.00126	0.00126
	(!D * RESET_B * !SCE)	-0.00218	-0.00220	-0.00220
	(!D * !RESET_B * !SCE)	0.00068	0.00068	0.00068
	(!D * !RESET_B * !SCE)	-0.00239	-0.00241	-0.00240
	(!CLK_N * D * RESET_B * SCE)	0.01031	0.01246	0.07214
	(!CLK_N * D * RESET_B * SCE)	0.00363	0.00575	0.06544
	(!CLK_N * D * RESET_B * !SCE)	0.00174	0.00147	0.00143
	(!CLK_N * D * RESET_B * !SCE)	-0.00170	-0.00199	-0.00202
	(!CLK_N * D * !RESET_B * SCE)	0.00090	0.00090	0.00088
	(!CLK_N * D * !RESET_B * SCE)	-0.00198	-0.00199	-0.00197
	(!CLK_N * D * !RESET_B * !SCE)	0.00057	0.00058	0.00057
	(!CLK_N * D * !RESET_B * !SCE)	-0.00226	-0.00228	-0.00227
	(!CLK_N * !D * RESET_B * SCE)	0.01155	0.01347	0.07253
	(!CLK_N * !D * RESET_B * SCE)	0.00456	0.00646	0.06555
	(!CLK_N * !D * !RESET_B * SCE)	0.00090	0.00090	0.00088
	(!CLK_N * !D * !RESET_B * SCE)	-0.00198	-0.00199	-0.00197

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)**	0.01619	0.01902	0.08813
	(CLK_N * D * RESET_B * SCE)	0.02283	0.02568	0.09475
	(CLK_N * D * RESET_B * !SCE)	-0.00134	-0.00138	-0.00138
	(CLK_N * D * RESET_B * !SCE)	0.00208	0.00211	0.00209
	(CLK_N * D * !RESET_B * SCE)	-0.00082	-0.00083	-0.00083
	(CLK_N * D * !RESET_B * SCE)	0.00203	0.00205	0.00201
	(CLK_N * D * !RESET_B * !SCE)	-0.00055	-0.00055	-0.00055
	(CLK_N * D * !RESET_B * !SCE)	0.00230	0.00231	0.00230
	(CLK_N * !D * RESET_B * SCE)	0.01578	0.01848	0.08885
	(CLK_N * !D * RESET_B * SCE)	0.02271	0.02543	0.09578
	(CLK_N * !D * !RESET_B * SCE)	-0.00082	-0.00083	-0.00083
	(CLK_N * !D * !RESET_B * SCE)	0.00203	0.00205	0.00201
	(!D * RESET_B * !SCE)	-0.00113	-0.00122	-0.00122
	(!D * RESET_B * !SCE)	0.00232	0.00227	0.00224
	(!D * !RESET_B * !SCE)	-0.00068	-0.00068	-0.00068
	(!D * !RESET_B * !SCE)	0.00242	0.00245	0.00245
	(!CLK_N * D * RESET_B * SCE)	0.00355	0.00573	0.06552
	(!CLK_N * D * RESET_B * SCE)	0.01025	0.01243	0.07220
	(!CLK_N * D * RESET_B * !SCE)	-0.00135	-0.00139	-0.00138
	(!CLK_N * D * RESET_B * !SCE)	0.00208	0.00211	0.00209
	(!CLK_N * D * !RESET_B * SCE)	-0.00082	-0.00083	-0.00083
	(!CLK_N * D * !RESET_B * SCE)	0.00203	0.00205	0.00201
	(!CLK_N * D * !RESET_B * !SCE)	-0.00055	-0.00055	-0.00055
	(!CLK_N * D * !RESET_B * !SCE)	0.00230	0.00231	0.00230
	(!CLK_N * !D * RESET_B * SCE)	0.00295	0.00525	0.06532
	(!CLK_N * !D * RESET_B * SCE)	0.00993	0.01226	0.07230
	(!CLK_N * !D * !RESET_B * SCE)	-0.00082	-0.00083	-0.00083
	(!CLK_N * !D * !RESET_B * SCE)	0.00203	0.00205	0.00201

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)	0.00821	0.01284	0.10854
	(CLK_N * D * RESET_B * SCD)	-0.00079	0.00379	0.09952
	(CLK_N * D * RESET_B * !SCD)	0.02491	0.02971	0.12994
	(CLK_N * D * RESET_B * !SCD)	0.01884	0.02359	0.12378
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00809	0.01310	0.10884
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	-0.00041	0.00452	0.10029
	(CLK_N * !D * RESET_B * SCD)	0.02675	0.03487	0.19783
	(CLK_N * !D * RESET_B * SCD)	0.01515	0.02323	0.18623
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00820	0.01284	0.10854
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	-0.00079	0.00379	0.09951
	(!CLK_N * D * RESET_B * !SCD)	0.01251	0.01729	0.11664
	(!CLK_N * D * RESET_B * !SCD)	0.00650	0.01120	0.11054
	(!CLK_N * !D * RESET_B * SCD)	0.01591	0.02325	0.17504
	(!CLK_N * !D * RESET_B * SCD)	0.00426	0.01156	0.16340

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)	-0.00055	0.00532	0.10112
	(CLK_N * D * RESET_B * SCD)	0.00846	0.01434	0.11011
	(CLK_N * D * RESET_B * !SCD)	0.01846	0.02411	0.12324
	(CLK_N * D * RESET_B * !SCD)	0.02456	0.03023	0.12910
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	-0.00056	0.00514	0.10083
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00794	0.01366	0.10935
	(CLK_N * !D * RESET_B * SCD)	0.01445	0.02243	0.18317
	(CLK_N * !D * RESET_B * SCD)	0.02602	0.03407	0.19479
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	-0.00056	0.00529	0.10111
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00845	0.01432	0.11010
	(!CLK_N * D * RESET_B * !SCD)	0.00763	0.01314	0.11209
	(!CLK_N * D * RESET_B * !SCD)	0.01367	0.01920	0.11793
	(!CLK_N * !D * RESET_B * SCD)	0.00217	0.00980	0.16172
	(!CLK_N * !D * RESET_B * SCD)	0.01381	0.02148	0.17339

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.02747	0.03022	0.14413
	(CLK_N * D * SCD * SCE * !Q)	0.01203	0.01472	0.12868
	(CLK_N * D * SCD * !SCE * !Q)	0.02707	0.02987	0.14540
	(CLK_N * D * SCD * !SCE * !Q)	0.01224	0.01494	0.13052
	(CLK_N * D * !SCD * SCE * !Q)	0.00564	0.00571	0.00567
	(CLK_N * D * !SCD * SCE * !Q)	-0.00577	-0.00582	-0.00579
	(CLK_N * D * !SCD * !SCE * !Q)	0.02632	0.02935	0.14492
	(CLK_N * D * !SCD * !SCE * !Q)	0.01223	0.01521	0.13077
	(CLK_N * !D * SCD * SCE * !Q)	0.02874	0.03127	0.14483
	(CLK_N * !D * SCD * SCE * !Q)	0.01301	0.01550	0.12906
	(CLK_N * !D * SCD * !SCE * !Q)	0.00560	0.00565	0.00563
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00579	-0.00583	-0.00582
	(CLK_N * !D * !SCD * SCE * !Q)	0.00564	0.00571	0.00567
	(CLK_N * !D * !SCD * SCE * !Q)	-0.00577	-0.00581	-0.00579
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00561	0.00566	0.00564
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00580	-0.00584	-0.00583
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.01554	0.01807	0.10305
	(!CLK_N * D * SCD * SCE * !Q)	0.00004	0.00250	0.08751
	(!CLK_N * D * SCD * !SCE * !Q)	0.01516	0.01781	0.10338
	(!CLK_N * D * SCD * !SCE * !Q)	0.00023	0.00281	0.08842
	(!CLK_N * D * !SCD * SCE * !Q)	0.00552	0.00557	0.00553
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00593	-0.00597	-0.00594
	(!CLK_N * D * !SCD * !SCE * !Q)	0.01438	0.01731	0.10316
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00026	0.00308	0.08897
	(!CLK_N * !D * SCD * SCE * !Q)	0.01678	0.01908	0.10344
	(!CLK_N * !D * SCD * SCE * !Q)	0.00098	0.00323	0.08763
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00547	0.00549	0.00548
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00597	-0.00598	-0.00597
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00551	0.00554	0.00552
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00594	-0.00595	-0.00594
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00548	0.00550	0.00548
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00598	-0.00599	-0.00598

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.01232	0.01727	0.13845
	(CLK_N * D * SCD * SCE * !Q)	0.02785	0.03277	0.15390
	(CLK_N * D * SCD * !SCE * !Q)	0.01071	0.01545	0.13644
	(CLK_N * D * SCD * !SCE * !Q)	0.02566	0.03036	0.15132
	(CLK_N * D * !SCD * SCE * !Q)	-0.00550	-0.00568	-0.00565
	(CLK_N * D * !SCD * SCE * !Q)	0.00587	0.00587	0.00583
	(CLK_N * D * !SCD * !SCE * !Q)	0.01026	0.01523	0.13637
	(CLK_N * D * !SCD * !SCE * !Q)	0.02441	0.02940	0.15053
	(CLK_N * !D * SCD * SCE * !Q)	0.01173	0.01692	0.13881
	(CLK_N * !D * SCD * SCE * !Q)	0.02752	0.03272	0.15457
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00540	-0.00565	-0.00563
	(CLK_N * !D * SCD * !SCE * !Q)	0.00592	0.00588	0.00584
	(CLK_N * !D * !SCD * SCE * !Q)	-0.00550	-0.00568	-0.00565
	(CLK_N * !D * !SCD * SCE * !Q)	0.00587	0.00588	0.00583
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00543	-0.00566	-0.00563
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00594	0.00589	0.00585
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.00078	0.00497	0.09159
	(!CLK_N * D * SCD * SCE * !Q)	0.01628	0.02057	0.10712
	(!CLK_N * D * SCD * !SCE * !Q)	-0.00080	0.00336	0.08981
	(!CLK_N * D * SCD * !SCE * !Q)	0.01412	0.01832	0.10475
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00535	-0.00550	-0.00550
	(!CLK_N * D * !SCD * SCE * !Q)	0.00602	0.00600	0.00598
	(!CLK_N * D * !SCD * !SCE * !Q)	-0.00126	0.00297	0.08979
	(!CLK_N * D * !SCD * !SCE * !Q)	0.01290	0.01722	0.10399
	(!CLK_N * !D * SCD * SCE * !Q)	0.00018	0.00446	0.09141
	(!CLK_N * !D * SCD * SCE * !Q)	0.01598	0.02031	0.10717
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00525	-0.00548	-0.00548
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00607	0.00601	0.00599
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00535	-0.00550	-0.00550
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00603	0.00600	0.00598
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00528	-0.00548	-0.00548
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00609	0.00602	0.00599

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)**	0.01887	0.02647	0.18790
	(D * RESET_B * SCD * SCE * Q)	0.01237	0.01996	0.18141
	(D * RESET_B * SCD * SCE * !Q)	0.03030	0.03810	0.20196
	(D * RESET_B * SCD * SCE * !Q)	0.02384	0.03164	0.19549
	(D * RESET_B * SCD * !SCE * Q)	0.01887	0.02647	0.18790
	(D * RESET_B * SCD * !SCE * Q)	0.01236	0.01996	0.18141
	(D * RESET_B * SCD * !SCE * !Q)	0.03031	0.03811	0.20193
	(D * RESET_B * SCD * !SCE * !Q)	0.02385	0.03164	0.19547
	(D * RESET_B * !SCD * SCE * Q)	0.02959	0.03712	0.20248
	(D * RESET_B * !SCD * SCE * Q)	0.02306	0.03059	0.19595
	(D * RESET_B * !SCD * !SCE * Q)	0.01888	0.02648	0.18790
	(D * RESET_B * !SCD * !SCE * Q)	0.01237	0.01997	0.18142
	(D * RESET_B * !SCD * !SCE * !Q)	0.03031	0.03812	0.20192
	(D * RESET_B * !SCD * !SCE * !Q)	0.02386	0.03165	0.19549
	(D * !SCD * SCE * !Q)	0.01857	0.02619	0.18759
	(D * !SCD * SCE * !Q)	0.01207	0.01968	0.18109
	(D * !RESET_B * SCD * SCE * !Q)	0.01858	0.02622	0.18757
	(D * !RESET_B * SCD * SCE * !Q)	0.01207	0.01968	0.18107
	(D * !RESET_B * SCD * !SCE * !Q)	0.01857	0.02622	0.18754
	(D * !RESET_B * SCD * !SCE * !Q)	0.01207	0.01968	0.18103
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01857	0.02622	0.18754
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01207	0.01968	0.18103
	(!D * RESET_B * SCD * SCE * Q)	0.01887	0.02647	0.18793
	(!D * RESET_B * SCD * SCE * Q)	0.01237	0.01997	0.18142
	(!D * RESET_B * SCD * SCE * !Q)	0.03035	0.03815	0.20257
	(!D * RESET_B * SCD * SCE * !Q)	0.02388	0.03168	0.19612
	(!D * RESET_B * !SCE * Q)	0.02956	0.03708	0.20262
	(!D * RESET_B * !SCE * Q)	0.02300	0.03053	0.19606
	(!D * RESET_B * !SCD * SCE * Q)	0.02954	0.03710	0.20250
	(!D * RESET_B * !SCD * SCE * Q)	0.02300	0.03053	0.19595
	(!D * !SCE * !Q)	0.01857	0.02618	0.18758
	(!D * !SCE * !Q)	0.01206	0.01967	0.18108
	(!D * !SCD * SCE * !Q)	0.01857	0.02619	0.18762
	(!D * !SCD * SCE * !Q)	0.01207	0.01968	0.18111
	(!D * !RESET_B * SCD * SCE * !Q)	0.01858	0.02622	0.18757
	(!D * !RESET_B * SCD * SCE * !Q)	0.01207	0.01968	0.18107

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)	0.01377	0.02297	0.18427
	(D * RESET_B * SCD * SCE * Q)	0.02028	0.02948	0.19079
	(D * RESET_B * SCD * !SCE * Q)	0.01376	0.02298	0.18427
	(D * RESET_B * SCD * !SCE * Q)	0.02028	0.02947	0.19078
	(D * RESET_B * !SCD * !SCE * Q)	0.01377	0.02297	0.18428
	(D * RESET_B * !SCD * !SCE * Q)	0.02029	0.02948	0.19079
	(D * !SCD * SCE * !Q)	0.01369	0.02285	0.18415
	(D * !SCD * SCE * !Q)	0.02021	0.02935	0.19066
	(D * !RESET_B * SCD * SCE * !Q)	0.01370	0.02287	0.18413
	(D * !RESET_B * SCD * SCE * !Q)	0.02022	0.02937	0.19064
	(D * !RESET_B * SCD * !SCE * !Q)	0.01369	0.02286	0.18412
	(D * !RESET_B * SCD * !SCE * !Q)	0.02021	0.02936	0.19063
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01369	0.02286	0.18412
	(D * !RESET_B * !SCD * !SCE * !Q)	0.02021	0.02936	0.19063
	(!D * RESET_B * SCD * SCE * Q)	0.01377	0.02297	0.18428
	(!D * RESET_B * SCD * SCE * Q)	0.02029	0.02948	0.19079
	(!D * !SCE * !Q)	0.01368	0.02285	0.18414
	(!D * !SCE * !Q)	0.02020	0.02935	0.19065
	(!D * !SCD * SCE * !Q)	0.01369	0.02285	0.18415
	(!D * !SCD * SCE * !Q)	0.02021	0.02935	0.19066
	(!D * !RESET_B * SCD * SCE * !Q)	0.01370	0.02287	0.18413
	(!D * !RESET_B * SCD * SCE * !Q)	0.02022	0.02937	0.19064

SKY130_FD_SC_HS__SDFRTPx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00194	0.00201	0.00426	0.00580	0.00316	1.43965
sky130_fd_sc_hs__sdfrtp_2	0.00188	0.00202	0.00434	0.00590	0.00316	2.84305
sky130_fd_sc_hs__sdfrtp_4	0.00188	0.00200	0.00437	0.00581	0.00315	5.32754

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfrtp_1	0.00000	1.97907	3.48634
sky130_fd_sc_hs__sdfrtp_2	0.00000	1.88974	3.14440
sky130_fd_sc_hs__sdfrtp_4	0.00000	2.75612	4.66648

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)	0.14867	0.54242	5.43969
sky130_fd_sc_hs__sdfrtp_2	CLK->Q (RR)	0.15733	0.46047	5.42241
sky130_fd_sc_hs__sdfrtp_4	CLK->Q (RR)	0.18242	0.42458	5.51586

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrtp_1	CLK->Q (RF)	0.15216	0.34346	1.97014
	RESET_B->Q (FF)	0.21567	0.63195	5.25894
sky130_fd_sc_hs__sdfrtp_2	CLK->Q (RF)	0.15680	0.31187	1.96163
	RESET_B->Q (FF)	0.22157	0.60276	5.25557
sky130_fd_sc_hs__sdfrtp_4	CLK->Q (RF)	0.16445	0.28834	1.87459
	RESET_B->Q (FF)	0.22732	0.57789	5.16733

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)	-0.07897	-0.16824	-1.05889
	setup	CLK (R)	0.13045	0.19927	1.07380
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.07927	-0.16413	-1.05349
	setup	CLK (R)	0.12775	0.19136	1.06846
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.08045	-0.16413	-1.05473
	setup	CLK (R)	0.12279	0.18936	1.06759

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)	-0.09118	-0.21311	-3.27300
	setup	CLK (R)	0.15329	0.27844	3.30177
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.08818	-0.20855	-3.24096
	setup	CLK (R)	0.14663	0.27064	3.26969
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.09162	-0.21183	-3.23347
	setup	CLK (R)	0.14649	0.26868	3.26515

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)	-0.08053	-0.16824	-1.05889
	hold	CLK (R)	-0.07897	-0.16824	-1.05903
	setup	CLK (R)	0.12946	0.19927	1.07380
	setup	CLK (R)	0.13045	0.19747	1.07074
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.07980	-0.16413	-1.05349
	hold	CLK (R)	-0.07927	-0.16413	-1.05363
	setup	CLK (R)	0.12767	0.19136	1.06830
	setup	CLK (R)	0.12775	0.19136	1.06846
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.08045	-0.16413	-1.05473
	hold	CLK (R)	-0.08083	-0.16413	-1.05487
	setup	CLK (R)	0.12279	0.18936	1.06748
	setup	CLK (R)	0.12279	0.18936	1.06759

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)	-0.09118	-0.21311	-3.27364
	hold	CLK (R)	-0.09406	-0.21329	-3.27300
	setup	CLK (R)	0.15323	0.27844	3.30177
	setup	CLK (R)	0.15329	0.27844	3.30064
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.08818	-0.20855	-3.24098
	hold	CLK (R)	-0.08927	-0.20861	-3.24096
	setup	CLK (R)	0.14663	0.27050	3.26968
	setup	CLK (R)	0.14659	0.27064	3.26969
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.09162	-0.21183	-3.23526
	hold	CLK (R)	-0.09171	-0.21183	-3.23347
	setup	CLK (R)	0.14286	0.26868	3.26211
	setup	CLK (R)	0.14649	0.26868	3.26515

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)	-0.09541	-0.17454	-1.03838
	setup	CLK (R)	0.14657	0.20993	1.05082
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.09614	-0.17101	-1.02678
	setup	CLK (R)	0.14858	0.20352	1.04076
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.09544	-0.17101	-1.01520
	setup	CLK (R)	0.14048	0.20000	1.02875

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)	-0.11903	-0.22485	-3.32349
	setup	CLK (R)	0.19602	0.30183	3.34993
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.11908	-0.22611	-3.30425
	setup	CLK (R)	0.19343	0.29574	3.33915
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.12169	-0.22838	-3.30628
	setup	CLK (R)	0.19151	0.29522	3.34075

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)	-0.09541	-0.17454	-1.03838
	hold	CLK (R)	-0.10173	-0.18204	-1.03919
	setup	CLK (R)	0.14398	0.20089	1.05082
	setup	CLK (R)	0.14657	0.20993	1.05074
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.09614	-0.17101	-1.02807
	hold	CLK (R)	-0.09984	-0.17796	-1.02678
	setup	CLK (R)	0.14256	0.19840	1.03634
	setup	CLK (R)	0.14858	0.20352	1.04076
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.09544	-0.17101	-1.02092
	hold	CLK (R)	-0.09746	-0.17702	-1.01520
	setup	CLK (R)	0.13706	0.19452	1.02875
	setup	CLK (R)	0.14048	0.20000	1.02583

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)	-0.12518	-0.23171	-3.32349
	hold	CLK (R)	-0.11903	-0.22485	-3.32535
	setup	CLK (R)	0.19602	0.30183	3.34772
	setup	CLK (R)	0.19156	0.29617	3.34993
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.12989	-0.23045	-3.30425
	hold	CLK (R)	-0.11908	-0.22611	-3.31292
	setup	CLK (R)	0.19343	0.29574	3.33412
	setup	CLK (R)	0.18640	0.29217	3.33915
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.13263	-0.23701	-3.30628
	hold	CLK (R)	-0.12169	-0.22838	-3.31197
	setup	CLK (R)	0.19151	0.29522	3.33950
	setup	CLK (R)	0.18357	0.28871	3.34075

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)	-0.08082	-0.15135	-0.39959
	setup	CLK (R)	0.20021	0.21648	1.15301
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.08231	-0.14808	-0.39903
	setup	CLK (R)	0.19040	0.20979	1.17374
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.08342	-0.15169	-0.39777
	setup	CLK (R)	0.18851	0.20804	1.16237

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)	-0.10192	-0.19784	-3.13280
	setup	CLK (R)	0.17550	0.28228	3.20859
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.09869	-0.19321	-3.07730
	setup	CLK (R)	0.17437	0.27458	3.18077
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.10091	-0.19472	-3.07733
	setup	CLK (R)	0.16662	0.27150	3.17934

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)	-0.12924	-0.15135	-0.39959
	hold	CLK (R)	-0.08082	-0.17292	-1.14372
	setup	CLK (R)	0.20021	0.21648	0.41803
	setup	CLK (R)	0.13019	0.20040	1.15301
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.12907	-0.14808	-0.39903
	hold	CLK (R)	-0.08231	-0.16892	-1.15941
	setup	CLK (R)	0.19040	0.20979	0.41775
	setup	CLK (R)	0.13097	0.19840	1.17374
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.13124	-0.15169	-0.39777
	hold	CLK (R)	-0.08342	-0.16962	-1.15186
	setup	CLK (R)	0.18851	0.20804	0.41316
	setup	CLK (R)	0.12121	0.19262	1.16237

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)	-0.13013	-0.25539	-3.19787
	hold	CLK (R)	-0.10192	-0.19784	-3.13280
	setup	CLK (R)	0.17550	0.28228	3.20859
	setup	CLK (R)	0.16495	0.26621	3.16082
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.12313	-0.24769	-3.17144
	hold	CLK (R)	-0.09869	-0.19321	-3.07730
	setup	CLK (R)	0.17437	0.27458	3.18077
	setup	CLK (R)	0.15390	0.25740	3.10619
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.12287	-0.24999	-3.17077
	hold	CLK (R)	-0.10091	-0.19472	-3.07733
	setup	CLK (R)	0.16662	0.27150	3.17934
	setup	CLK (R)	0.15291	0.25339	3.10695

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)	0.16275	0.20240	1.44231
	removal	CLK (R)	-0.12392	-0.16683	-1.40779
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.16264	0.19840	1.43890
	removal	CLK (R)	-0.12060	-0.16264	-1.40584
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.15616	0.19662	1.43717
	removal	CLK (R)	-0.12267	-0.16264	-1.40104

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)	0.15892	0.19936	1.44231
	recovery	CLK (R)	0.15306	0.18824	1.42808
	recovery	CLK (R)	0.15157	0.18189	1.41351
	recovery	CLK (R)	0.16275	0.20240	1.43948
	removal	CLK (R)	-0.12973	-0.18295	-1.43739
	removal	CLK (R)	-0.12755	-0.17244	-1.42475
	removal	CLK (R)	-0.12392	-0.16683	-1.40779
	removal	CLK (R)	-0.13682	-0.18775	-1.43641
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.15728	0.19365	1.43890
	recovery	CLK (R)	0.15259	0.18289	1.42568
	recovery	CLK (R)	0.14954	0.17952	1.40942
	recovery	CLK (R)	0.16264	0.19840	1.43850
	removal	CLK (R)	-0.12960	-0.17938	-1.43571
	removal	CLK (R)	-0.12354	-0.17034	-1.42072
	removal	CLK (R)	-0.12060	-0.16264	-1.40584
	removal	CLK (R)	-0.13491	-0.18566	-1.43130
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.15291	0.19249	1.43717
	recovery	CLK (R)	0.14698	0.18129	1.41911
	recovery	CLK (R)	0.14408	0.17574	1.40666
	recovery	CLK (R)	0.15616	0.19662	1.43165
	removal	CLK (R)	-0.12812	-0.17938	-1.43090
	removal	CLK (R)	-0.12392	-0.16892	-1.41529
	removal	CLK (R)	-0.12267	-0.16264	-1.40104
	removal	CLK (R)	-0.13508	-0.18412	-1.42704

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 ()	0.11436	0.60669	16.50020
	min_pulse_width	RESET_B ()	0.09157	0.60669	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	RESET_B ()	0.11664	0.60669	16.50020
	min_pulse_width	RESET_B ()	0.09157	0.60669	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	RESET_B ()	0.11436	0.60669	16.50020
	min_pulse_width	RESET_B ()	0.09385	0.60669	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 ()	0.07334	0.60669	16.50020
	min_pulse_width	CLK ()	0.05738	0.60669	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.08245	0.60669	16.50020
	min_pulse_width	CLK ()	0.05966	0.60669	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.09613	0.60669	16.50020
	min_pulse_width	CLK ()	0.06194	0.60669	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 ()	0.13032	0.60669	16.50020
	min_pulse_width	CLK ()	0.13944	0.60669	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.13716	0.60669	16.50020
	min_pulse_width	CLK ()	0.14400	0.60669	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.13032	0.60669	16.50020
	min_pulse_width	CLK ()	0.14172	0.60669	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	0.03871	0.04633	0.21411
	CLK	0.03186	0.03949	0.20761
sky130_fd_sc_hs__sdfrtp_2	CLK	0.04418	0.05198	0.21993
	CLK	0.03712	0.04498	0.21363
sky130_fd_sc_hs__sdfrtp_4	CLK	0.05455	0.06158	0.22918
	CLK	0.04764	0.05487	0.22415

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtp_1	CLK	0.03993	0.04755	0.20994
	CLK	0.03321	0.04081	0.20320
	RESET_B	0.03373	0.04388	0.22340
	RESET_B	0.04936	0.05930	0.23921
sky130_fd_sc_hs__sdfrtp_2	CLK	0.04464	0.05236	0.21582
	CLK	0.03803	0.04576	0.20836
	RESET_B	0.03849	0.04868	0.23117
	RESET_B	0.05484	0.06491	0.24551
sky130_fd_sc_hs__sdfrtp_4	CLK	0.05672	0.06435	0.22846
	CLK	0.04998	0.05747	0.22001
	RESET_B	0.05047	0.06065	0.24517
	RESET_B	0.06664	0.07671	0.25720

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)**	0.00185	0.00188	0.00186
	(CLK * RESET_B * SCD * SCE)	-0.00084	-0.00086	-0.00084
	(CLK * RESET_B * SCD * !SCE)	0.00883	0.01148	0.07767
	(CLK * RESET_B * SCD * !SCE)	0.00360	0.00622	0.07243
	(CLK * RESET_B * !SCD * !SCE)	0.00884	0.01148	0.07767
	(CLK * RESET_B * !SCD * !SCE)	0.00360	0.00622	0.07243
	(CLK * !SCD * SCE)	0.00092	0.00093	0.00091
	(CLK * !SCD * SCE)	-0.00203	-0.00205	-0.00208
	(CLK * !RESET_B * SCD * SCE)	0.00090	0.00091	0.00089
	(CLK * !RESET_B * SCD * SCE)	-0.00204	-0.00207	-0.00208
	(CLK * !RESET_B * SCD * !SCE)	0.00061	0.00061	0.00055
	(CLK * !RESET_B * SCD * !SCE)	-0.00231	-0.00233	-0.00242
	(CLK * !RESET_B * !SCD * !SCE)	0.00061	0.00061	0.00056
	(CLK * !RESET_B * !SCD * !SCE)	-0.00237	-0.00238	-0.00244
	(!CLK * RESET_B * SCD * SCE)	0.00185	0.00189	0.00186
	(!CLK * RESET_B * SCD * SCE)	-0.00083	-0.00086	-0.00084
	(!CLK * RESET_B * SCD * !SCE)	0.01922	0.02236	0.10080
	(!CLK * RESET_B * SCD * !SCE)	0.01371	0.01685	0.09528
	(!CLK * RESET_B * !SCD * !SCE)	0.01923	0.02253	0.10080
	(!CLK * RESET_B * !SCD * !SCE)	0.01372	0.01700	0.09528
	(!CLK * !SCD * SCE)	0.00094	0.00094	0.00092
	(!CLK * !SCD * SCE)	-0.00202	-0.00205	-0.00206
	(!CLK * !RESET_B * SCD * SCE)	0.00090	0.00091	0.00089
	(!CLK * !RESET_B * SCD * SCE)	-0.00204	-0.00207	-0.00208
	(!CLK * !RESET_B * SCD * !SCE)	0.00061	0.00061	0.00055
	(!CLK * !RESET_B * SCD * !SCE)	-0.00231	-0.00233	-0.00242
	(!CLK * !RESET_B * !SCD * !SCE)	0.00061	0.00061	0.00056
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00237	-0.00238	-0.00244

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	0.00177	0.00178	0.00177
	(CLK * RESET_B * SCD * SCE)	-0.00079	-0.00080	-0.00079
	(CLK * RESET_B * SCD * !SCE)	0.00755	0.01042	0.07735
	(CLK * RESET_B * SCD * !SCE)	0.00253	0.00538	0.07232
	(CLK * RESET_B * !SCD * !SCE)	0.00756	0.01042	0.07735
	(CLK * RESET_B * !SCD * !SCE)	0.00254	0.00539	0.07232
	(CLK * !SCD * SCE)	0.00090	0.00090	0.00088
	(CLK * !SCD * SCE)	-0.00191	-0.00194	-0.00196
	(CLK * !RESET_B * SCD * SCE)	0.00087	0.00088	0.00086
	(CLK * !RESET_B * SCD * SCE)	-0.00192	-0.00196	-0.00197
	(CLK * !RESET_B * SCD * !SCE)	0.00059	0.00059	0.00053
	(CLK * !RESET_B * SCD * !SCE)	-0.00219	-0.00221	-0.00230
	(CLK * !RESET_B * !SCD * !SCE)	0.00059	0.00059	0.00054
	(CLK * !RESET_B * !SCD * !SCE)	-0.00224	-0.00226	-0.00232
	(!CLK * RESET_B * SCD * SCE)	0.00176	0.00177	0.00176
	(!CLK * RESET_B * SCD * SCE)	-0.00079	-0.00080	-0.00079
	(!CLK * RESET_B * SCD * !SCE)	0.01827	0.02148	0.10011
	(!CLK * RESET_B * SCD * !SCE)	0.01300	0.01618	0.09483
	(!CLK * RESET_B * !SCD * !SCE)	0.01827	0.02148	0.10010
	(!CLK * RESET_B * !SCD * !SCE)	0.01300	0.01619	0.09483
	(!CLK * !SCD * SCE)	0.00090	0.00091	0.00089
	(!CLK * !SCD * SCE)	-0.00191	-0.00194	-0.00196
	(!CLK * !RESET_B * SCD * SCE)	0.00088	0.00088	0.00086
	(!CLK * !RESET_B * SCD * SCE)	-0.00193	-0.00196	-0.00197
	(!CLK * !RESET_B * SCD * !SCE)	0.00059	0.00059	0.00053
	(!CLK * !RESET_B * SCD * !SCE)	-0.00219	-0.00221	-0.00230
	(!CLK * !RESET_B * !SCD * !SCE)	0.00059	0.00059	0.00054
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00225	-0.00226	-0.00232

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	0.00177	0.00180	0.00178
	(CLK * RESET_B * SCD * SCE)	-0.00078	-0.00080	-0.00079
	(CLK * RESET_B * SCD * !SCE)	0.00766	0.01051	0.07735
	(CLK * RESET_B * SCD * !SCE)	0.00258	0.00542	0.07227
	(CLK * RESET_B * !SCD * !SCE)	0.00766	0.01051	0.07735
	(CLK * RESET_B * !SCD * !SCE)	0.00259	0.00542	0.07227
	(CLK * !SCD * SCE)	0.00089	0.00090	0.00087
	(CLK * !SCD * SCE)	-0.00193	-0.00196	-0.00198
	(CLK * !RESET_B * SCD * SCE)	0.00087	0.00087	0.00085
	(CLK * !RESET_B * SCD * SCE)	-0.00193	-0.00196	-0.00198
	(CLK * !RESET_B * SCD * !SCE)	0.00060	0.00060	0.00054
	(CLK * !RESET_B * SCD * !SCE)	-0.00218	-0.00220	-0.00228
	(CLK * !RESET_B * !SCD * !SCE)	0.00060	0.00060	0.00055
	(CLK * !RESET_B * !SCD * !SCE)	-0.00223	-0.00224	-0.00231
	(!CLK * RESET_B * SCD * SCE)	0.00178	0.00179	0.00178
	(!CLK * RESET_B * SCD * SCE)	-0.00078	-0.00078	-0.00078
	(!CLK * RESET_B * SCD * !SCE)	0.01848	0.02176	0.10113
	(!CLK * RESET_B * SCD * !SCE)	0.01314	0.01639	0.09578
	(!CLK * RESET_B * !SCD * !SCE)	0.01848	0.02176	0.10112
	(!CLK * RESET_B * !SCD * !SCE)	0.01314	0.01640	0.09578
	(!CLK * !SCD * SCE)	0.00091	0.00092	0.00089
	(!CLK * !SCD * SCE)	-0.00191	-0.00194	-0.00196
	(!CLK * !RESET_B * SCD * SCE)	0.00087	0.00087	0.00085
	(!CLK * !RESET_B * SCD * SCE)	-0.00194	-0.00197	-0.00198
	(!CLK * !RESET_B * SCD * !SCE)	0.00060	0.00060	0.00054
	(!CLK * !RESET_B * SCD * !SCE)	-0.00218	-0.00220	-0.00228
	(!CLK * !RESET_B * !SCD * !SCE)	0.00060	0.00060	0.00055
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00223	-0.00225	-0.00231

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)**	-0.00175	-0.00178	-0.00181
	(CLK * RESET_B * SCD * SCE)	0.00092	0.00093	0.00090
	(CLK * RESET_B * SCD * !SCE)	0.00098	0.00436	0.07102
	(CLK * RESET_B * SCD * !SCE)	0.00622	0.00961	0.07627
	(CLK * RESET_B * !SCD * !SCE)	0.00099	0.00436	0.07103
	(CLK * RESET_B * !SCD * !SCE)	0.00622	0.00961	0.07628
	(CLK * !SCD * SCE)	-0.00087	-0.00089	-0.00087
	(CLK * !SCD * SCE)	0.00208	0.00212	0.00209
	(CLK * !RESET_B * SCD * SCE)	-0.00085	-0.00086	-0.00085
	(CLK * !RESET_B * SCD * SCE)	0.00209	0.00210	0.00210
	(CLK * !RESET_B * SCD * !SCE)	-0.00051	-0.00052	-0.00051
	(CLK * !RESET_B * SCD * !SCE)	0.00244	0.00248	0.00246
	(CLK * !RESET_B * !SCD * !SCE)	-0.00051	-0.00052	-0.00051
	(CLK * !RESET_B * !SCD * !SCE)	0.00245	0.00248	0.00246
	(!CLK * RESET_B * SCD * SCE)	-0.00175	-0.00178	-0.00180
	(!CLK * RESET_B * SCD * SCE)	0.00093	0.00093	0.00091
	(!CLK * RESET_B * SCD * !SCE)	0.01243	0.01681	0.09695
	(!CLK * RESET_B * SCD * !SCE)	0.01796	0.02233	0.10247
	(!CLK * RESET_B * !SCD * !SCE)	0.01243	0.01682	0.09696
	(!CLK * RESET_B * !SCD * !SCE)	0.01796	0.02234	0.10247
	(!CLK * !SCD * SCE)	-0.00085	-0.00086	-0.00086
	(!CLK * !SCD * SCE)	0.00210	0.00210	0.00211
	(!CLK * !RESET_B * SCD * SCE)	-0.00085	-0.00086	-0.00085
	(!CLK * !RESET_B * SCD * SCE)	0.00209	0.00210	0.00210
	(!CLK * !RESET_B * SCD * !SCE)	-0.00051	-0.00052	-0.00051
	(!CLK * !RESET_B * SCD * !SCE)	0.00245	0.00248	0.00246
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00052	-0.00052	-0.00051
	(!CLK * !RESET_B * !SCD * !SCE)	0.00245	0.00248	0.00246

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	-0.00166	-0.00169	-0.00172
	(CLK * RESET_B * SCD * SCE)	0.00087	0.00088	0.00085
	(CLK * RESET_B * SCD * !SCE)	0.00105	0.00458	0.07189
	(CLK * RESET_B * SCD * !SCE)	0.00607	0.00961	0.07692
	(CLK * RESET_B * !SCD * !SCE)	0.00106	0.00458	0.07189
	(CLK * RESET_B * !SCD * !SCE)	0.00607	0.00961	0.07692
	(CLK * !SCD * SCE)	-0.00084	-0.00085	-0.00084
	(CLK * !SCD * SCE)	0.00197	0.00200	0.00198
	(CLK * !RESET_B * SCD * SCE)	-0.00082	-0.00084	-0.00082
	(CLK * !RESET_B * SCD * SCE)	0.00198	0.00202	0.00199
	(CLK * !RESET_B * SCD * !SCE)	-0.00049	-0.00050	-0.00049
	(CLK * !RESET_B * SCD * !SCE)	0.00233	0.00236	0.00234
	(CLK * !RESET_B * !SCD * !SCE)	-0.00049	-0.00050	-0.00049
	(CLK * !RESET_B * !SCD * !SCE)	0.00233	0.00236	0.00234
	(!CLK * RESET_B * SCD * SCE)	-0.00167	-0.00169	-0.00172
	(!CLK * RESET_B * SCD * SCE)	0.00087	0.00087	0.00085
	(!CLK * RESET_B * SCD * !SCE)	0.01326	0.01767	0.09800
	(!CLK * RESET_B * SCD * !SCE)	0.01856	0.02296	0.10329
	(!CLK * RESET_B * !SCD * !SCE)	0.01327	0.01767	0.09801
	(!CLK * RESET_B * !SCD * !SCE)	0.01856	0.02296	0.10329
	(!CLK * !SCD * SCE)	-0.00083	-0.00083	-0.00084
	(!CLK * !SCD * SCE)	0.00198	0.00198	0.00199
	(!CLK * !RESET_B * SCD * SCE)	-0.00082	-0.00083	-0.00082
	(!CLK * !RESET_B * SCD * SCE)	0.00198	0.00200	0.00199
	(!CLK * !RESET_B * SCD * !SCE)	-0.00049	-0.00050	-0.00049
	(!CLK * !RESET_B * SCD * !SCE)	0.00233	0.00236	0.00234
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00049	-0.00050	-0.00049
	(!CLK * !RESET_B * !SCD * !SCE)	0.00233	0.00236	0.00234

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	-0.00165	-0.00169	-0.00172
	(CLK * RESET_B * SCD * SCE)	0.00087	0.00088	0.00085
	(CLK * RESET_B * SCD * !SCE)	0.00098	0.00450	0.07173
	(CLK * RESET_B * SCD * !SCE)	0.00605	0.00958	0.07681
	(CLK * RESET_B * !SCD * !SCE)	0.00098	0.00450	0.07173
	(CLK * RESET_B * !SCD * !SCE)	0.00605	0.00958	0.07682
	(CLK * !SCD * SCE)	-0.00082	-0.00083	-0.00082
	(CLK * !SCD * SCE)	0.00200	0.00201	0.00200
	(CLK * !RESET_B * SCD * SCE)	-0.00080	-0.00081	-0.00080
	(CLK * !RESET_B * SCD * SCE)	0.00200	0.00202	0.00201
	(CLK * !RESET_B * SCD * !SCE)	-0.00051	-0.00051	-0.00050
	(CLK * !RESET_B * SCD * !SCE)	0.00232	0.00234	0.00233
	(CLK * !RESET_B * !SCD * !SCE)	-0.00051	-0.00052	-0.00051
	(CLK * !RESET_B * !SCD * !SCE)	0.00232	0.00235	0.00233
	(!CLK * RESET_B * SCD * SCE)	-0.00165	-0.00168	-0.00171
	(!CLK * RESET_B * SCD * SCE)	0.00089	0.00089	0.00086
	(!CLK * RESET_B * SCD * !SCE)	0.01283	0.01733	0.09841
	(!CLK * RESET_B * SCD * !SCE)	0.01819	0.02270	0.10376
	(!CLK * RESET_B * !SCD * !SCE)	0.01284	0.01734	0.09834
	(!CLK * RESET_B * !SCD * !SCE)	0.01820	0.02270	0.10369
	(!CLK * !SCD * SCE)	-0.00080	-0.00080	-0.00081
	(!CLK * !SCD * SCE)	0.00202	0.00202	0.00202
	(!CLK * !RESET_B * SCD * SCE)	-0.00080	-0.00081	-0.00080
	(!CLK * !RESET_B * SCD * SCE)	0.00200	0.00202	0.00201
	(!CLK * !RESET_B * SCD * !SCE)	-0.00051	-0.00051	-0.00050
	(!CLK * !RESET_B * SCD * !SCE)	0.00232	0.00234	0.00233
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00051	-0.00052	-0.00051
	(!CLK * !RESET_B * !SCD * !SCE)	0.00232	0.00235	0.00233

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)**	0.01105	0.01314	0.07299
	(CLK * D * RESET_B * SCE)	0.00428	0.00636	0.06623
	(CLK * D * RESET_B * !SCE)	0.00188	0.00161	0.00157
	(CLK * D * RESET_B * !SCE)	-0.00161	-0.00190	-0.00193
	(CLK * D * !RESET_B * SCE)	0.00084	0.00085	0.00082
	(CLK * D * !RESET_B * SCE)	-0.00208	-0.00208	-0.00207
	(CLK * D * !RESET_B * !SCE)	0.00059	0.00060	0.00059
	(CLK * D * !RESET_B * !SCE)	-0.00228	-0.00230	-0.00229
	(CLK * !D * RESET_B * SCE)	0.01230	0.01417	0.07340
	(CLK * !D * RESET_B * SCE)	0.00524	0.00710	0.06636
	(CLK * !D * !RESET_B * SCE)	0.00084	0.00085	0.00082
	(CLK * !D * !RESET_B * SCE)	-0.00208	-0.00208	-0.00207
	(!D * RESET_B * !SCE)	0.00126	0.00126	0.00126
	(!D * RESET_B * !SCE)	-0.00223	-0.00224	-0.00224
	(!D * !RESET_B * !SCE)	0.00071	0.00071	0.00071
	(!D * !RESET_B * !SCE)	-0.00241	-0.00242	-0.00242
	(!CLK * D * RESET_B * SCE)	0.02143	0.02411	0.09404
	(!CLK * D * RESET_B * SCE)	0.01438	0.01705	0.08700
	(!CLK * D * RESET_B * !SCE)	0.00189	0.00162	0.00158
	(!CLK * D * RESET_B * !SCE)	-0.00161	-0.00189	-0.00192
	(!CLK * D * !RESET_B * SCE)	0.00084	0.00085	0.00082
	(!CLK * D * !RESET_B * SCE)	-0.00208	-0.00209	-0.00207
	(!CLK * D * !RESET_B * !SCE)	0.00059	0.00060	0.00059
	(!CLK * D * !RESET_B * !SCE)	-0.00228	-0.00230	-0.00229
	(!CLK * !D * RESET_B * SCE)	0.02272	0.02535	0.09469
	(!CLK * !D * RESET_B * SCE)	0.01538	0.01800	0.08735
	(!CLK * !D * !RESET_B * SCE)	0.00084	0.00085	0.00082
	(!CLK * !D * !RESET_B * SCE)	-0.00208	-0.00208	-0.00207

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.01006	0.01221	0.07232
	(CLK * D * RESET_B * SCE)	0.00338	0.00553	0.06565
	(CLK * D * RESET_B * !SCE)	0.00191	0.00163	0.00159
	(CLK * D * RESET_B * !SCE)	-0.00157	-0.00187	-0.00190
	(CLK * D * !RESET_B * SCE)	0.00079	0.00079	0.00077
	(CLK * D * !RESET_B * SCE)	-0.00212	-0.00213	-0.00212
	(CLK * D * !RESET_B * !SCE)	0.00057	0.00058	0.00058
	(CLK * D * !RESET_B * !SCE)	-0.00228	-0.00231	-0.00230
	(CLK * !D * RESET_B * SCE)	0.01131	0.01324	0.07272
	(CLK * !D * RESET_B * SCE)	0.00434	0.00625	0.06576
	(CLK * !D * !RESET_B * SCE)	0.00079	0.00079	0.00077
	(CLK * !D * !RESET_B * SCE)	-0.00212	-0.00212	-0.00212
	(!D * RESET_B * !SCE)	0.00124	0.00125	0.00124
	(!D * RESET_B * !SCE)	-0.00223	-0.00225	-0.00225
	(!D * !RESET_B * !SCE)	0.00069	0.00069	0.00069
	(!D * !RESET_B * !SCE)	-0.00241	-0.00243	-0.00242
	(!CLK * D * RESET_B * SCE)	0.02078	0.02346	0.09316
	(!CLK * D * RESET_B * SCE)	0.01384	0.01652	0.08624
	(!CLK * D * RESET_B * !SCE)	0.00190	0.00163	0.00159
	(!CLK * D * RESET_B * !SCE)	-0.00158	-0.00187	-0.00190
	(!CLK * D * !RESET_B * SCE)	0.00079	0.00079	0.00077
	(!CLK * D * !RESET_B * SCE)	-0.00212	-0.00213	-0.00212
	(!CLK * D * !RESET_B * !SCE)	0.00058	0.00058	0.00058
	(!CLK * D * !RESET_B * !SCE)	-0.00228	-0.00231	-0.00230
	(!CLK * !D * RESET_B * SCE)	0.02205	0.02456	0.09381
	(!CLK * !D * RESET_B * SCE)	0.01482	0.01733	0.08659
	(!CLK * !D * !RESET_B * SCE)	0.00079	0.00079	0.00077
	(!CLK * !D * !RESET_B * SCE)	-0.00212	-0.00213	-0.00212

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.01010	0.01227	0.07245
	(CLK * D * RESET_B * SCE)	0.00340	0.00557	0.06577
	(CLK * D * RESET_B * !SCE)	0.00187	0.00159	0.00156
	(CLK * D * RESET_B * !SCE)	-0.00157	-0.00187	-0.00189
	(CLK * D * !RESET_B * SCE)	0.00079	0.00079	0.00077
	(CLK * D * !RESET_B * SCE)	-0.00208	-0.00208	-0.00207
	(CLK * D * !RESET_B * !SCE)	0.00058	0.00058	0.00058
	(CLK * D * !RESET_B * !SCE)	-0.00224	-0.00227	-0.00226
	(CLK * !D * RESET_B * SCE)	0.01135	0.01330	0.07286
	(CLK * !D * RESET_B * SCE)	0.00436	0.00630	0.06588
	(CLK * !D * !RESET_B * SCE)	0.00079	0.00079	0.00077
	(CLK * !D * !RESET_B * SCE)	-0.00207	-0.00208	-0.00207
	(!D * RESET_B * !SCE)	0.00124	0.00125	0.00124
	(!D * RESET_B * !SCE)	-0.00219	-0.00221	-0.00220
	(!D * !RESET_B * !SCE)	0.00070	0.00070	0.00069
	(!D * !RESET_B * !SCE)	-0.00237	-0.00238	-0.00238
	(!CLK * D * RESET_B * SCE)	0.02090	0.02368	0.09415
	(!CLK * D * RESET_B * SCE)	0.01394	0.01670	0.08719
	(!CLK * D * RESET_B * !SCE)	0.00188	0.00160	0.00157
	(!CLK * D * RESET_B * !SCE)	-0.00156	-0.00186	-0.00188
	(!CLK * D * !RESET_B * SCE)	0.00079	0.00079	0.00077
	(!CLK * D * !RESET_B * SCE)	-0.00208	-0.00208	-0.00207
	(!CLK * D * !RESET_B * !SCE)	0.00058	0.00058	0.00058
	(!CLK * D * !RESET_B * !SCE)	-0.00224	-0.00227	-0.00226
	(!CLK * !D * RESET_B * SCE)	0.02218	0.02487	0.09476
	(!CLK * !D * RESET_B * SCE)	0.01492	0.01760	0.08751
	(!CLK * !D * !RESET_B * SCE)	0.00079	0.00079	0.00077
	(!CLK * !D * !RESET_B * SCE)	-0.00207	-0.00208	-0.00207

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)	0.00312	0.00524	0.06524
	(CLK * D * RESET_B * SCE)	0.00990	0.01204	0.07200
	(CLK * D * RESET_B * !SCE)	-0.00149	-0.00152	-0.00152
	(CLK * D * RESET_B * !SCE)	0.00198	0.00200	0.00199
	(CLK * D * !RESET_B * SCE)	-0.00075	-0.00077	-0.00077
	(CLK * D * !RESET_B * SCE)	0.00212	0.00215	0.00211
	(CLK * D * !RESET_B * !SCE)	-0.00057	-0.00057	-0.00057
	(CLK * D * !RESET_B * !SCE)	0.00232	0.00233	0.00232
	(CLK * !D * RESET_B * SCE)	0.00248	0.00476	0.06503
	(CLK * !D * RESET_B * SCE)	0.00954	0.01183	0.07206
	(CLK * !D * !RESET_B * SCE)	-0.00075	-0.00077	-0.00077
	(CLK * !D * !RESET_B * SCE)	0.00212	0.00215	0.00211
	(!D * RESET_B * !SCE)	-0.00115	-0.00125	-0.00125
	(!D * RESET_B * !SCE)	0.00233	0.00228	0.00226
	(!D * !RESET_B * !SCE)	-0.00071	-0.00071	-0.00071
	(!D * !RESET_B * !SCE)	0.00243	0.00245	0.00246
	(!CLK * D * RESET_B * SCE)	0.01499	0.01758	0.08770
	(!CLK * D * RESET_B * SCE)	0.02203	0.02465	0.09473
	(!CLK * D * RESET_B * !SCE)	-0.00148	-0.00152	-0.00152
	(!CLK * D * RESET_B * !SCE)	0.00199	0.00201	0.00200
	(!CLK * D * !RESET_B * SCE)	-0.00075	-0.00077	-0.00077
	(!CLK * D * !RESET_B * SCE)	0.00212	0.00215	0.00211
	(!CLK * D * !RESET_B * !SCE)	-0.00057	-0.00057	-0.00057
	(!CLK * D * !RESET_B * !SCE)	0.00232	0.00233	0.00232
	(!CLK * !D * RESET_B * SCE)	0.01455	0.01729	0.08850
	(!CLK * !D * RESET_B * SCE)	0.02188	0.02463	0.09583
	(!CLK * !D * !RESET_B * SCE)	-0.00075	-0.00077	-0.00077
	(!CLK * !D * !RESET_B * SCE)	0.00212	0.00215	0.00211

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.00309	0.00526	0.06546
	(CLK * D * RESET_B * SCE)	0.00976	0.01196	0.07212
	(CLK * D * RESET_B * !SCE)	-0.00150	-0.00154	-0.00154
	(CLK * D * RESET_B * !SCE)	0.00195	0.00197	0.00196
	(CLK * D * !RESET_B * SCE)	-0.00070	-0.00071	-0.00071
	(CLK * D * !RESET_B * SCE)	0.00216	0.00220	0.00216
	(CLK * D * !RESET_B * !SCE)	-0.00054	-0.00054	-0.00055
	(CLK * D * !RESET_B * !SCE)	0.00232	0.00234	0.00233
	(CLK * !D * RESET_B * SCE)	0.00245	0.00477	0.06525
	(CLK * !D * RESET_B * SCE)	0.00940	0.01176	0.07219
	(CLK * !D * !RESET_B * SCE)	-0.00070	-0.00071	-0.00071
	(CLK * !D * !RESET_B * SCE)	0.00216	0.00220	0.00216
	(!D * RESET_B * !SCE)	-0.00112	-0.00122	-0.00123
	(!D * RESET_B * !SCE)	0.00233	0.00228	0.00227
	(!D * !RESET_B * !SCE)	-0.00069	-0.00069	-0.00069
	(!D * !RESET_B * !SCE)	0.00244	0.00248	0.00247
	(!CLK * D * RESET_B * SCE)	0.01575	0.01830	0.08823
	(!CLK * D * RESET_B * SCE)	0.02269	0.02526	0.09515
	(!CLK * D * RESET_B * !SCE)	-0.00151	-0.00154	-0.00154
	(!CLK * D * RESET_B * !SCE)	0.00195	0.00198	0.00196
	(!CLK * D * !RESET_B * SCE)	-0.00070	-0.00071	-0.00071
	(!CLK * D * !RESET_B * SCE)	0.00216	0.00220	0.00216
	(!CLK * D * !RESET_B * !SCE)	-0.00054	-0.00055	-0.00055
	(!CLK * D * !RESET_B * !SCE)	0.00233	0.00234	0.00233
	(!CLK * !D * RESET_B * SCE)	0.01533	0.01803	0.08904
	(!CLK * !D * RESET_B * SCE)	0.02256	0.02527	0.09624
	(!CLK * !D * !RESET_B * SCE)	-0.00070	-0.00071	-0.00071
	(!CLK * !D * !RESET_B * SCE)	0.00216	0.00220	0.00216

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.00313	0.00531	0.06556
	(CLK * D * RESET_B * SCE)	0.00984	0.01203	0.07224
	(CLK * D * RESET_B * !SCE)	-0.00146	-0.00149	-0.00150
	(CLK * D * RESET_B * !SCE)	0.00196	0.00197	0.00197
	(CLK * D * !RESET_B * SCE)	-0.00069	-0.00071	-0.00071
	(CLK * D * !RESET_B * SCE)	0.00213	0.00216	0.00212
	(CLK * D * !RESET_B * !SCE)	-0.00054	-0.00054	-0.00054
	(CLK * D * !RESET_B * !SCE)	0.00229	0.00230	0.00229
	(CLK * !D * RESET_B * SCE)	0.00239	0.00474	0.06530
	(CLK * !D * RESET_B * SCE)	0.00938	0.01174	0.07226
	(CLK * !D * !RESET_B * SCE)	-0.00069	-0.00071	-0.00071
	(CLK * !D * !RESET_B * SCE)	0.00213	0.00216	0.00212
	(!D * RESET_B * !SCE)	-0.00112	-0.00122	-0.00122
	(!D * RESET_B * !SCE)	0.00230	0.00224	0.00223
	(!D * !RESET_B * !SCE)	-0.00070	-0.00070	-0.00069
	(!D * !RESET_B * !SCE)	0.00241	0.00244	0.00243
	(!CLK * D * RESET_B * SCE)	0.01547	0.01810	0.08865
	(!CLK * D * RESET_B * SCE)	0.02244	0.02509	0.09560
	(!CLK * D * RESET_B * !SCE)	-0.00145	-0.00149	-0.00149
	(!CLK * D * RESET_B * !SCE)	0.00197	0.00199	0.00198
	(!CLK * D * !RESET_B * SCE)	-0.00069	-0.00071	-0.00071
	(!CLK * D * !RESET_B * SCE)	0.00213	0.00216	0.00212
	(!CLK * D * !RESET_B * !SCE)	-0.00054	-0.00054	-0.00054
	(!CLK * D * !RESET_B * !SCE)	0.00229	0.00231	0.00229
	(!CLK * !D * RESET_B * SCE)	0.01492	0.01774	0.08940
	(!CLK * !D * RESET_B * SCE)	0.02217	0.02501	0.09663
	(!CLK * !D * !RESET_B * SCE)	-0.00069	-0.00071	-0.00071
	(!CLK * !D * !RESET_B * SCE)	0.00213	0.00216	0.00212

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)	0.00811	0.01286	0.11024
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00079	0.00390	0.10131
	(CLK * D * RESET_B * !SCD)	0.01201	0.01686	0.11795
	(CLK * D * RESET_B * !SCD)	0.00612	0.01090	0.11199
	(CLK * !D * RESET_B * SCD)	0.01649	0.02415	0.18039
	(CLK * !D * RESET_B * SCD)	0.00492	0.01253	0.16882
	(!CLK * D * RESET_B * SCD)	0.00812	0.01286	0.11024
	(!CLK * D * RESET_B * SCD)	-0.00079	0.00391	0.10132
	(!CLK * D * RESET_B * !SCD)	0.02366	0.02851	0.13067
	(!CLK * D * RESET_B * !SCD)	0.01804	0.02286	0.12499
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00810	0.01320	0.11062
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00029	0.00480	0.10219
	(!CLK * !D * RESET_B * SCD)	0.02685	0.03534	0.20331
	(!CLK * !D * RESET_B * SCD)	0.01499	0.02345	0.19147

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00812	0.01299	0.11140
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00088	0.00394	0.10241
	(CLK * D * RESET_B * !SCD)	0.01189	0.01683	0.11909
	(CLK * D * RESET_B * !SCD)	0.00580	0.01070	0.11294
	(CLK * !D * RESET_B * SCD)	0.01543	0.02341	0.18264
	(CLK * !D * RESET_B * SCD)	0.00383	0.01176	0.17104
	(!CLK * D * RESET_B * SCD)	0.00812	0.01299	0.11139
	(!CLK * D * RESET_B * SCD)	-0.00088	0.00394	0.10240
	(!CLK * D * RESET_B * !SCD)	0.02432	0.02928	0.13246
	(!CLK * D * RESET_B * !SCD)	0.01850	0.02342	0.12657
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00801	0.01328	0.11170
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00048	0.00474	0.10316
	(!CLK * !D * RESET_B * SCD)	0.02611	0.03485	0.20520
	(!CLK * !D * RESET_B * SCD)	0.01425	0.02296	0.19335

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00814	0.01302	0.11143
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00088	0.00395	0.10242
	(CLK * D * RESET_B * !SCD)	0.01192	0.01687	0.11913
	(CLK * D * RESET_B * !SCD)	0.00588	0.01076	0.11302
	(CLK * !D * RESET_B * SCD)	0.01552	0.02349	0.18281
	(CLK * !D * RESET_B * SCD)	0.00385	0.01177	0.17115
	(!CLK * D * RESET_B * SCD)	0.00816	0.01303	0.11144
	(!CLK * D * RESET_B * SCD)	-0.00087	0.00396	0.10243
	(!CLK * D * RESET_B * !SCD)	0.02403	0.02902	0.13252
	(!CLK * D * RESET_B * !SCD)	0.01826	0.02320	0.12668
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00801	0.01328	0.11171
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00050	0.00472	0.10315
	(!CLK * !D * RESET_B * SCD)	0.02629	0.03512	0.20623
	(!CLK * !D * RESET_B * SCD)	0.01435	0.02314	0.19429

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)**	-0.00050	0.00547	0.10298
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00841	0.01440	0.11187
	(CLK * D * RESET_B * !SCD)	0.00835	0.01395	0.11463
	(CLK * D * RESET_B * !SCD)	0.01428	0.01989	0.12033
	(CLK * !D * RESET_B * SCD)	0.00158	0.00954	0.16604
	(CLK * !D * RESET_B * SCD)	0.01314	0.02112	0.17763
	(!CLK * D * RESET_B * SCD)	-0.00049	0.00549	0.10299
	(!CLK * D * RESET_B * SCD)	0.00842	0.01442	0.11187
	(!CLK * D * RESET_B * !SCD)	0.01873	0.02444	0.12539
	(!CLK * D * RESET_B * !SCD)	0.02438	0.03013	0.13084
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00059	0.00520	0.10262
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00781	0.01365	0.11103
	(!CLK * !D * RESET_B * SCD)	0.01300	0.02136	0.18739
	(!CLK * !D * RESET_B * SCD)	0.02484	0.03325	0.19926

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00066	0.00541	0.10398
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00834	0.01445	0.11300
	(CLK * D * RESET_B * !SCD)	0.00699	0.01270	0.11459
	(CLK * D * RESET_B * !SCD)	0.01309	0.01882	0.12050
	(CLK * !D * RESET_B * SCD)	0.00156	0.00981	0.16942
	(CLK * !D * RESET_B * SCD)	0.01315	0.02143	0.18103
	(!CLK * D * RESET_B * SCD)	-0.00065	0.00542	0.10397
	(!CLK * D * RESET_B * SCD)	0.00834	0.01446	0.11299
	(!CLK * D * RESET_B * !SCD)	0.01769	0.02352	0.12556
	(!CLK * D * RESET_B * !SCD)	0.02354	0.02938	0.13121
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00065	0.00524	0.10369
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00785	0.01379	0.11221
	(!CLK * !D * RESET_B * SCD)	0.01374	0.02229	0.19118
	(!CLK * !D * RESET_B * SCD)	0.02562	0.03420	0.20307

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00070	0.00537	0.10394
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00831	0.01443	0.11298
	(CLK * D * RESET_B * !SCD)	0.00703	0.01273	0.11462
	(CLK * D * RESET_B * !SCD)	0.01310	0.01886	0.12049
	(CLK * !D * RESET_B * SCD)	0.00148	0.00973	0.16940
	(CLK * !D * RESET_B * SCD)	0.01314	0.02141	0.18109
	(!CLK * D * RESET_B * SCD)	-0.00069	0.00540	0.10395
	(!CLK * D * RESET_B * SCD)	0.00832	0.01445	0.11299
	(!CLK * D * RESET_B * !SCD)	0.01783	0.02367	0.12580
	(!CLK * D * RESET_B * !SCD)	0.02363	0.02950	0.13139
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00066	0.00524	0.10369
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00786	0.01381	0.11223
	(!CLK * !D * RESET_B * SCD)	0.01330	0.02194	0.19144
	(!CLK * !D * RESET_B * SCD)	0.02526	0.03390	0.20342

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)**	0.01554	0.01804	0.10334
	(CLK * D * SCD * SCE * !Q)	0.00021	0.00262	0.08796
	(CLK * D * SCD * !SCE * !Q)	0.01517	0.01779	0.10366
	(CLK * D * SCD * !SCE * !Q)	0.00042	0.00295	0.08886
	(CLK * D * !SCD * SCE * !Q)	0.00487	0.00490	0.00489
	(CLK * D * !SCD * SCE * !Q)	-0.00638	-0.00641	-0.00640
	(CLK * D * !SCD * !SCE * !Q)	0.01442	0.01728	0.10343
	(CLK * D * !SCD * !SCE * !Q)	0.00042	0.00320	0.08939
	(CLK * !D * SCD * SCE * !Q)	0.01681	0.01908	0.10379
	(CLK * !D * SCD * SCE * !Q)	0.00118	0.00337	0.08812
	(CLK * !D * SCD * !SCE * !Q)	0.00481	0.00487	0.00485
	(CLK * !D * SCD * !SCE * !Q)	-0.00638	-0.00643	-0.00642
	(CLK * !D * !SCD * SCE * !Q)	0.00487	0.00491	0.00489
	(CLK * !D * !SCD * SCE * !Q)	-0.00638	-0.00641	-0.00640
	(CLK * !D * !SCD * !SCE * !Q)	0.00483	0.00487	0.00486
	(CLK * !D * !SCD * !SCE * !Q)	-0.00640	-0.00644	-0.00643
	(!CLK * D * SCD * SCE * !Q)	0.02694	0.02974	0.14462
	(!CLK * D * SCD * SCE * !Q)	0.01133	0.01407	0.12897
	(!CLK * D * SCD * !SCE * !Q)	0.02657	0.02942	0.14539
	(!CLK * D * SCD * !SCE * !Q)	0.01155	0.01434	0.13033
	(!CLK * D * !SCD * SCE * !Q)	0.00487	0.00492	0.00491
	(!CLK * D * !SCD * SCE * !Q)	-0.00634	-0.00638	-0.00637
	(!CLK * D * !SCD * !SCE * !Q)	0.02584	0.02890	0.14497
	(!CLK * D * !SCD * !SCE * !Q)	0.01155	0.01455	0.13066
	(!CLK * !D * SCD * SCE * !Q)	0.02823	0.03080	0.14532
	(!CLK * !D * SCD * SCE * !Q)	0.01233	0.01482	0.12941
	(!CLK * !D * SCD * !SCE * !Q)	0.00485	0.00488	0.00486
	(!CLK * !D * SCD * !SCE * !Q)	-0.00639	-0.00641	-0.00640
	(!CLK * !D * !SCD * SCE * !Q)	0.00488	0.00495	0.00491
	(!CLK * !D * !SCD * SCE * !Q)	-0.00635	-0.00640	-0.00637
	(!CLK * !D * !SCD * !SCE * !Q)	0.00485	0.00491	0.00487
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00638	-0.00643	-0.00640

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.01453	0.01719	0.10285
	(CLK * D * SCD * SCE * !Q)	-0.00079	0.00180	0.08750
	(CLK * D * SCD * !SCE * !Q)	0.01391	0.01675	0.10302
	(CLK * D * SCD * !SCE * !Q)	-0.00078	0.00195	0.08826
	(CLK * D * !SCD * SCE * !Q)	0.00488	0.00491	0.00490
	(CLK * D * !SCD * SCE * !Q)	-0.00642	-0.00645	-0.00643
	(CLK * D * !SCD * !SCE * !Q)	0.01319	0.01625	0.10280
	(CLK * D * !SCD * !SCE * !Q)	-0.00080	0.00222	0.08880
	(CLK * !D * SCD * SCE * !Q)	0.01580	0.01825	0.10328
	(CLK * !D * SCD * SCE * !Q)	0.00018	0.00252	0.08764
	(CLK * !D * SCD * !SCE * !Q)	0.00483	0.00485	0.00486
	(CLK * !D * SCD * !SCE * !Q)	-0.00644	-0.00645	-0.00646
	(CLK * !D * !SCD * SCE * !Q)	0.00484	0.00490	0.00488
	(CLK * !D * !SCD * SCE * !Q)	-0.00639	-0.00645	-0.00643
	(CLK * !D * !SCD * !SCE * !Q)	0.00484	0.00489	0.00487
	(CLK * !D * !SCD * !SCE * !Q)	-0.00644	-0.00648	-0.00646
	(!CLK * D * SCD * SCE * !Q)	0.02634	0.02922	0.14398
	(!CLK * D * SCD * SCE * !Q)	0.01080	0.01359	0.12840
	(!CLK * D * SCD * !SCE * !Q)	0.02574	0.02870	0.14461
	(!CLK * D * SCD * !SCE * !Q)	0.01077	0.01368	0.12960
	(!CLK * D * !SCD * SCE * !Q)	0.00486	0.00491	0.00488
	(!CLK * D * !SCD * SCE * !Q)	-0.00643	-0.00646	-0.00644
	(!CLK * D * !SCD * !SCE * !Q)	0.02501	0.02827	0.14460
	(!CLK * D * !SCD * !SCE * !Q)	0.01079	0.01400	0.13038
	(!CLK * !D * SCD * SCE * !Q)	0.02762	0.03023	0.14464
	(!CLK * !D * SCD * SCE * !Q)	0.01178	0.01439	0.12877
	(!CLK * !D * SCD * !SCE * !Q)	0.00481	0.00486	0.00484
	(!CLK * !D * SCD * !SCE * !Q)	-0.00644	-0.00648	-0.00647
	(!CLK * !D * !SCD * SCE * !Q)	0.00485	0.00490	0.00488
	(!CLK * !D * !SCD * SCE * !Q)	-0.00641	-0.00646	-0.00644
	(!CLK * !D * !SCD * !SCE * !Q)	0.00482	0.00489	0.00485
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00645	-0.00651	-0.00647

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.01457	0.01723	0.10289
	(CLK * D * SCD * SCE * !Q)	-0.00067	0.00191	0.08760
	(CLK * D * SCD * !SCE * !Q)	0.01398	0.01679	0.10304
	(CLK * D * SCD * !SCE * !Q)	-0.00068	0.00203	0.08832
	(CLK * D * !SCD * SCE * !Q)	0.00481	0.00487	0.00483
	(CLK * D * !SCD * SCE * !Q)	-0.00638	-0.00643	-0.00639
	(CLK * D * !SCD * !SCE * !Q)	0.01324	0.01629	0.10281
	(CLK * D * !SCD * !SCE * !Q)	-0.00070	0.00230	0.08886
	(CLK * !D * SCD * SCE * !Q)	0.01584	0.01827	0.10332
	(CLK * !D * SCD * SCE * !Q)	0.00031	0.00265	0.08778
	(CLK * !D * SCD * !SCE * !Q)	0.00477	0.00481	0.00479
	(CLK * !D * SCD * !SCE * !Q)	-0.00640	-0.00643	-0.00642
	(CLK * !D * !SCD * SCE * !Q)	0.00481	0.00487	0.00483
	(CLK * !D * !SCD * SCE * !Q)	-0.00638	-0.00642	-0.00639
	(CLK * !D * !SCD * !SCE * !Q)	0.00478	0.00480	0.00478
	(CLK * !D * !SCD * !SCE * !Q)	-0.00643	-0.00644	-0.00643
	(!CLK * D * SCD * SCE * !Q)	0.02634	0.02930	0.14469
	(!CLK * D * SCD * SCE * !Q)	0.01082	0.01373	0.12915
	(!CLK * D * SCD * !SCE * !Q)	0.02575	0.02879	0.14549
	(!CLK * D * SCD * !SCE * !Q)	0.01081	0.01377	0.13051
	(!CLK * D * !SCD * SCE * !Q)	0.00478	0.00482	0.00481
	(!CLK * D * !SCD * SCE * !Q)	-0.00639	-0.00643	-0.00641
	(!CLK * D * !SCD * !SCE * !Q)	0.02501	0.02826	0.14493
	(!CLK * D * !SCD * !SCE * !Q)	0.01081	0.01401	0.13073
	(!CLK * !D * SCD * SCE * !Q)	0.02763	0.03034	0.14479
	(!CLK * !D * SCD * SCE * !Q)	0.01182	0.01450	0.12895
	(!CLK * !D * SCD * !SCE * !Q)	0.00474	0.00480	0.00477
	(!CLK * !D * SCD * !SCE * !Q)	-0.00642	-0.00646	-0.00644
	(!CLK * !D * !SCD * SCE * !Q)	0.00478	0.00484	0.00481
	(!CLK * !D * !SCD * SCE * !Q)	-0.00639	-0.00644	-0.00641
	(!CLK * !D * !SCD * !SCE * !Q)	0.00475	0.00481	0.00478
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00642	-0.00647	-0.00644

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)**	0.00117	0.00554	0.09238
	(CLK * D * SCD * SCE * !Q)	0.01654	0.02094	0.10774
	(CLK * D * SCD * !SCE * !Q)	-0.00044	0.00388	0.09052
	(CLK * D * SCD * !SCE * !Q)	0.01435	0.01870	0.10532
	(CLK * D * !SCD * SCE * !Q)	-0.00471	-0.00487	-0.00485
	(CLK * D * !SCD * SCE * !Q)	0.00649	0.00645	0.00644
	(CLK * D * !SCD * !SCE * !Q)	-0.00090	0.00335	0.09050
	(CLK * D * !SCD * !SCE * !Q)	0.01313	0.01744	0.10455
	(CLK * !D * SCD * SCE * !Q)	0.00054	0.00483	0.09217
	(CLK * !D * SCD * SCE * !Q)	0.01619	0.02054	0.10778
	(CLK * !D * SCD * !SCE * !Q)	-0.00461	-0.00485	-0.00483
	(CLK * !D * SCD * !SCE * !Q)	0.00654	0.00646	0.00644
	(CLK * !D * !SCD * SCE * !Q)	-0.00470	-0.00487	-0.00485
	(CLK * !D * !SCD * SCE * !Q)	0.00649	0.00645	0.00644
	(CLK * !D * !SCD * !SCE * !Q)	-0.00464	-0.00486	-0.00484
	(CLK * !D * !SCD * !SCE * !Q)	0.00655	0.00646	0.00645
	(!CLK * D * SCD * SCE * !Q)	0.01188	0.01697	0.13911
	(!CLK * D * SCD * SCE * !Q)	0.02753	0.03269	0.15474
	(!CLK * D * SCD * !SCE * !Q)	0.01024	0.01530	0.13704
	(!CLK * D * SCD * !SCE * !Q)	0.02531	0.03042	0.15212
	(!CLK * D * !SCD * SCE * !Q)	-0.00474	-0.00491	-0.00488
	(!CLK * D * !SCD * SCE * !Q)	0.00645	0.00644	0.00641
	(!CLK * D * !SCD * !SCE * !Q)	0.00977	0.01481	0.13696
	(!CLK * D * !SCD * !SCE * !Q)	0.02407	0.02919	0.15129
	(!CLK * !D * SCD * SCE * !Q)	0.01124	0.01638	0.13950
	(!CLK * !D * SCD * SCE * !Q)	0.02717	0.03233	0.15538
	(!CLK * !D * SCD * !SCE * !Q)	-0.00465	-0.00488	-0.00486
	(!CLK * !D * SCD * !SCE * !Q)	0.00650	0.00644	0.00642
	(!CLK * !D * !SCD * SCE * !Q)	-0.00474	-0.00490	-0.00488
	(!CLK * !D * !SCD * SCE * !Q)	0.00645	0.00643	0.00641
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00468	-0.00489	-0.00486
	(!CLK * !D * !SCD * !SCE * !Q)	0.00652	0.00644	0.00643

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.00100	0.00548	0.09250
	(CLK * D * SCD * SCE * !Q)	0.01633	0.02086	0.10783
	(CLK * D * SCD * !SCE * !Q)	-0.00047	0.00395	0.09078
	(CLK * D * SCD * !SCE * !Q)	0.01428	0.01877	0.10554
	(CLK * D * !SCD * SCE * !Q)	-0.00471	-0.00488	-0.00486
	(CLK * D * !SCD * SCE * !Q)	0.00653	0.00654	0.00648
	(CLK * D * !SCD * !SCE * !Q)	-0.00093	0.00343	0.09078
	(CLK * D * !SCD * !SCE * !Q)	0.01305	0.01747	0.10474
	(CLK * !D * SCD * SCE * !Q)	0.00037	0.00481	0.09228
	(CLK * !D * SCD * SCE * !Q)	0.01598	0.02045	0.10789
	(CLK * !D * SCD * !SCE * !Q)	-0.00462	-0.00485	-0.00484
	(CLK * !D * SCD * !SCE * !Q)	0.00658	0.00651	0.00648
	(CLK * !D * !SCD * SCE * !Q)	-0.00471	-0.00488	-0.00486
	(CLK * !D * !SCD * SCE * !Q)	0.00653	0.00654	0.00648
	(CLK * !D * !SCD * !SCE * !Q)	-0.00465	-0.00487	-0.00485
	(CLK * !D * !SCD * !SCE * !Q)	0.00659	0.00656	0.00649
	(!CLK * D * SCD * SCE * !Q)	0.01258	0.01751	0.13946
	(!CLK * D * SCD * SCE * !Q)	0.02816	0.03314	0.15502
	(!CLK * D * SCD * !SCE * !Q)	0.01107	0.01597	0.13703
	(!CLK * D * SCD * !SCE * !Q)	0.02607	0.03105	0.15204
	(!CLK * D * !SCD * SCE * !Q)	-0.00471	-0.00482	-0.00485
	(!CLK * D * !SCD * SCE * !Q)	0.00653	0.00646	0.00649
	(!CLK * D * !SCD * !SCE * !Q)	0.01060	0.01551	0.13690
	(!CLK * D * !SCD * !SCE * !Q)	0.02483	0.02982	0.15112
	(!CLK * !D * SCD * SCE * !Q)	0.01195	0.01712	0.13983
	(!CLK * !D * SCD * SCE * !Q)	0.02782	0.03302	0.15571
	(!CLK * !D * SCD * !SCE * !Q)	-0.00462	-0.00486	-0.00483
	(!CLK * !D * SCD * !SCE * !Q)	0.00657	0.00652	0.00649
	(!CLK * !D * !SCD * SCE * !Q)	-0.00471	-0.00487	-0.00485
	(!CLK * !D * !SCD * SCE * !Q)	0.00653	0.00651	0.00649
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00465	-0.00486	-0.00484
	(!CLK * !D * !SCD * !SCE * !Q)	0.00659	0.00652	0.00650

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.00103	0.00549	0.09251
	(CLK * D * SCD * SCE * !Q)	0.01631	0.02084	0.10779
	(CLK * D * SCD * !SCE * !Q)	-0.00044	0.00397	0.09076
	(CLK * D * SCD * !SCE * !Q)	0.01426	0.01874	0.10547
	(CLK * D * !SCD * SCE * !Q)	-0.00464	-0.00481	-0.00479
	(CLK * D * !SCD * SCE * !Q)	0.00650	0.00646	0.00644
	(CLK * D * !SCD * !SCE * !Q)	-0.00091	0.00344	0.09076
	(CLK * D * !SCD * !SCE * !Q)	0.01303	0.01745	0.10467
	(CLK * !D * SCD * SCE * !Q)	0.00031	0.00472	0.09223
	(CLK * !D * SCD * SCE * !Q)	0.01587	0.02035	0.10779
	(CLK * !D * SCD * !SCE * !Q)	-0.00455	-0.00480	-0.00477
	(CLK * !D * SCD * !SCE * !Q)	0.00655	0.00648	0.00645
	(CLK * !D * !SCD * SCE * !Q)	-0.00464	-0.00482	-0.00479
	(CLK * !D * !SCD * SCE * !Q)	0.00650	0.00647	0.00644
	(CLK * !D * !SCD * !SCE * !Q)	-0.00458	-0.00480	-0.00477
	(CLK * !D * !SCD * !SCE * !Q)	0.00656	0.00648	0.00646
	(!CLK * D * SCD * SCE * !Q)	0.01219	0.01740	0.13993
	(!CLK * D * SCD * SCE * !Q)	0.02775	0.03302	0.15549
	(!CLK * D * SCD * !SCE * !Q)	0.01068	0.01574	0.13745
	(!CLK * D * SCD * !SCE * !Q)	0.02565	0.03078	0.15243
	(!CLK * D * !SCD * SCE * !Q)	-0.00463	-0.00479	-0.00477
	(!CLK * D * !SCD * SCE * !Q)	0.00651	0.00648	0.00646
	(!CLK * D * !SCD * !SCE * !Q)	0.01021	0.01538	0.13732
	(!CLK * D * !SCD * !SCE * !Q)	0.02440	0.02960	0.15151
	(!CLK * !D * SCD * SCE * !Q)	0.01146	0.01691	0.14027
	(!CLK * !D * SCD * SCE * !Q)	0.02730	0.03273	0.15612
	(!CLK * !D * SCD * !SCE * !Q)	-0.00454	-0.00477	-0.00475
	(!CLK * !D * SCD * !SCE * !Q)	0.00655	0.00650	0.00647
	(!CLK * !D * !SCD * SCE * !Q)	-0.00463	-0.00479	-0.00477
	(!CLK * !D * !SCD * SCE * !Q)	0.00651	0.00649	0.00646
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00457	-0.00478	-0.00475
	(!CLK * !D * !SCD * !SCE * !Q)	0.00657	0.00650	0.00648

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)	0.02068	0.02746	0.18573
	(D * RESET_B * SCD * SCE * Q)	0.01389	0.02065	0.17894
	(D * RESET_B * SCD * !SCE * Q)	0.02068	0.02746	0.18573
	(D * RESET_B * SCD * !SCE * Q)	0.01388	0.02065	0.17894
	(D * RESET_B * !SCD * !SCE * Q)	0.02068	0.02747	0.18574
	(D * RESET_B * !SCD * !SCE * Q)	0.01389	0.02065	0.17895
	(D * !SCD * SCE * !Q)	0.02113	0.02791	0.18608
	(D * !SCD * SCE * !Q)	0.01434	0.02110	0.17928
	(D * !RESET_B * SCD * SCE * !Q)	0.02113	0.02792	0.18607
	(D * !RESET_B * SCD * SCE * !Q)	0.01434	0.02111	0.17928
	(D * !RESET_B * SCD * !SCE * !Q)	0.02112	0.02791	0.18607
	(D * !RESET_B * SCD * !SCE * !Q)	0.01433	0.02110	0.17927
	(D * !RESET_B * !SCD * !SCE * !Q)	0.02112	0.02791	0.18607
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01433	0.02110	0.17927
	(!D * RESET_B * SCD * SCE * Q)	0.02068	0.02747	0.18573
	(!D * RESET_B * SCD * SCE * Q)	0.01389	0.02065	0.17894
	(!D * !SCE * !Q)	0.02112	0.02790	0.18607
	(!D * !SCE * !Q)	0.01433	0.02109	0.17927
	(!D * !SCD * SCE * !Q)	0.02113	0.02791	0.18608
	(!D * !SCD * SCE * !Q)	0.01434	0.02110	0.17928
	(!D * !RESET_B * SCD * SCE * !Q)	0.02113	0.02792	0.18607
	(!D * !RESET_B * SCD * SCE * !Q)	0.01434	0.02111	0.17927

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.02064	0.02743	0.18586
	(D * RESET_B * SCD * SCE * Q)	0.01380	0.02056	0.17902
	(D * RESET_B * SCD * !SCE * Q)	0.02063	0.02742	0.18586
	(D * RESET_B * SCD * !SCE * Q)	0.01379	0.02056	0.17902
	(D * RESET_B * !SCD * !SCE * Q)	0.02064	0.02743	0.18586
	(D * RESET_B * !SCD * !SCE * Q)	0.01380	0.02056	0.17902
	(D * !SCD * SCE * !Q)	0.02121	0.02798	0.18632
	(D * !SCD * SCE * !Q)	0.01437	0.02113	0.17947
	(D * !RESET_B * SCD * SCE * !Q)	0.02122	0.02800	0.18630
	(D * !RESET_B * SCD * SCE * !Q)	0.01438	0.02114	0.17946
	(D * !RESET_B * SCD * !SCE * !Q)	0.02121	0.02799	0.18629
	(D * !RESET_B * SCD * !SCE * !Q)	0.01437	0.02113	0.17945
	(D * !RESET_B * !SCD * !SCE * !Q)	0.02121	0.02799	0.18629
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01437	0.02113	0.17945
	(!D * RESET_B * SCD * SCE * Q)	0.02064	0.02743	0.18586
	(!D * RESET_B * SCD * SCE * Q)	0.01380	0.02056	0.17902
	(!D * !SCE * !Q)	0.02121	0.02798	0.18631
	(!D * !SCE * !Q)	0.01437	0.02112	0.17947
	(!D * !SCD * SCE * !Q)	0.02122	0.02799	0.18632
	(!D * !SCD * SCE * !Q)	0.01437	0.02113	0.17947
	(!D * !RESET_B * SCD * SCE * !Q)	0.02122	0.02800	0.18630
	(!D * !RESET_B * SCD * SCE * !Q)	0.01438	0.02114	0.17946

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.02037	0.02718	0.18551
	(D * RESET_B * SCD * SCE * Q)	0.01354	0.02033	0.17867
	(D * RESET_B * SCD * !SCE * Q)	0.02037	0.02718	0.18551
	(D * RESET_B * SCD * !SCE * Q)	0.01353	0.02032	0.17867
	(D * RESET_B * !SCD * !SCE * Q)	0.02037	0.02719	0.18551
	(D * RESET_B * !SCD * !SCE * Q)	0.01354	0.02033	0.17868
	(D * !SCD * SCE * !Q)	0.02087	0.02768	0.18591
	(D * !SCD * SCE * !Q)	0.01403	0.02081	0.17907
	(D * !RESET_B * SCD * SCE * !Q)	0.02087	0.02769	0.18585
	(D * !RESET_B * SCD * SCE * !Q)	0.01404	0.02082	0.17904
	(D * !RESET_B * SCD * !SCE * !Q)	0.02086	0.02764	0.18585
	(D * !RESET_B * SCD * !SCE * !Q)	0.01403	0.02082	0.17904
	(D * !RESET_B * !SCD * !SCE * !Q)	0.02086	0.02764	0.18585
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01403	0.02082	0.17904
	(!D * RESET_B * SCD * SCE * Q)	0.02037	0.02719	0.18551
	(!D * RESET_B * SCD * SCE * Q)	0.01354	0.02033	0.17867
	(!D * !SCE * !Q)	0.02086	0.02767	0.18590
	(!D * !SCE * !Q)	0.01403	0.02080	0.17907
	(!D * !SCD * SCE * !Q)	0.02087	0.02768	0.18589
	(!D * !SCD * SCE * !Q)	0.01403	0.02081	0.17905
	(!D * !RESET_B * SCD * SCE * !Q)	0.02087	0.02769	0.18585
	(!D * !RESET_B * SCD * SCE * !Q)	0.01404	0.02082	0.17903

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)**	0.01063	0.01971	0.17820
	(D * RESET_B * SCD * SCE * Q)	0.01744	0.02654	0.18500
	(D * RESET_B * SCD * SCE * !Q)	0.02009	0.02928	0.19257
	(D * RESET_B * SCD * SCE * !Q)	0.02661	0.03579	0.19909
	(D * RESET_B * SCD * !SCE * Q)	0.01063	0.01971	0.17820
	(D * RESET_B * SCD * !SCE * Q)	0.01744	0.02654	0.18500
	(D * RESET_B * SCD * !SCE * !Q)	0.02008	0.02925	0.19251
	(D * RESET_B * SCD * !SCE * !Q)	0.02661	0.03580	0.19903
	(D * RESET_B * !SCD * SCE * Q)	0.02275	0.03225	0.19316
	(D * RESET_B * !SCD * SCE * Q)	0.02986	0.03936	0.20026
	(D * RESET_B * !SCD * !SCE * Q)	0.01064	0.01971	0.17820
	(D * RESET_B * !SCD * !SCE * Q)	0.01744	0.02654	0.18501
	(D * RESET_B * !SCD * !SCE * !Q)	0.02008	0.02926	0.19251
	(D * RESET_B * !SCD * !SCE * !Q)	0.02662	0.03580	0.19903
	(D * !SCD * SCE * !Q)	0.00988	0.01885	0.17758
	(D * !SCD * SCE * !Q)	0.01669	0.02566	0.18439
	(D * !RESET_B * SCD * SCE * !Q)	0.00989	0.01884	0.17752
	(D * !RESET_B * SCD * SCE * !Q)	0.01669	0.02566	0.18431
	(D * !RESET_B * SCD * !SCE * !Q)	0.00988	0.01883	0.17751
	(D * !RESET_B * SCD * !SCE * !Q)	0.01669	0.02565	0.18430
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00988	0.01883	0.17751
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01669	0.02565	0.18430
	(!D * RESET_B * SCD * SCE * Q)	0.01063	0.01971	0.17820
	(!D * RESET_B * SCD * SCE * Q)	0.01744	0.02654	0.18501
	(!D * RESET_B * SCD * SCE * !Q)	0.02013	0.02932	0.19260
	(!D * RESET_B * SCD * SCE * !Q)	0.02665	0.03582	0.19911
	(!D * RESET_B * !SCE * Q)	0.02269	0.03218	0.19310
	(!D * RESET_B * !SCE * Q)	0.02977	0.03927	0.20017
	(!D * RESET_B * !SCD * SCE * Q)	0.02267	0.03219	0.19313
	(!D * RESET_B * !SCD * SCE * Q)	0.02977	0.03929	0.20022
	(!D * !SCE * !Q)	0.00987	0.01884	0.17758
	(!D * !SCE * !Q)	0.01668	0.02565	0.18438
	(!D * !SCD * SCE * !Q)	0.00988	0.01885	0.17758
	(!D * !SCD * SCE * !Q)	0.01669	0.02566	0.18439
	(!D * !RESET_B * SCD * SCE * !Q)	0.00989	0.01884	0.17752
	(!D * !RESET_B * SCD * SCE * !Q)	0.01669	0.02566	0.18431

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.01065	0.01977	0.17830
	(D * RESET_B * SCD * SCE * Q)	0.01750	0.02661	0.18514
	(D * RESET_B * SCD * SCE * !Q)	0.02057	0.02975	0.19318
	(D * RESET_B * SCD * SCE * !Q)	0.02717	0.03635	0.19977
	(D * RESET_B * SCD * !SCE * Q)	0.01065	0.01977	0.17830
	(D * RESET_B * SCD * !SCE * Q)	0.01750	0.02662	0.18514
	(D * RESET_B * SCD * !SCE * !Q)	0.02057	0.02973	0.19313
	(D * RESET_B * SCD * !SCE * !Q)	0.02716	0.03634	0.19971
	(D * RESET_B * !SCD * SCE * Q)	0.02375	0.03322	0.19443
	(D * RESET_B * !SCD * SCE * Q)	0.03088	0.04037	0.20154
	(D * RESET_B * !SCD * !SCE * Q)	0.01065	0.01977	0.17831
	(D * RESET_B * !SCD * !SCE * Q)	0.01751	0.02662	0.18515
	(D * RESET_B * !SCD * !SCE * !Q)	0.02057	0.02974	0.19313
	(D * RESET_B * !SCD * !SCE * !Q)	0.02717	0.03635	0.19972
	(D * !SCD * SCE * !Q)	0.00992	0.01888	0.17785
	(D * !SCD * SCE * !Q)	0.01677	0.02575	0.18469
	(D * !RESET_B * SCD * SCE * !Q)	0.00992	0.01888	0.17780
	(D * !RESET_B * SCD * SCE * !Q)	0.01678	0.02575	0.18465
	(D * !RESET_B * SCD * !SCE * !Q)	0.00991	0.01890	0.17780
	(D * !RESET_B * SCD * !SCE * !Q)	0.01677	0.02574	0.18465
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00991	0.01890	0.17780
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01677	0.02574	0.18465
	(!D * RESET_B * SCD * SCE * Q)	0.01065	0.01978	0.17831
	(!D * RESET_B * SCD * SCE * Q)	0.01751	0.02662	0.18514
	(!D * RESET_B * SCD * SCE * !Q)	0.02062	0.02979	0.19322
	(!D * RESET_B * SCD * SCE * !Q)	0.02720	0.03638	0.19979
	(!D * RESET_B * !SCE * Q)	0.02366	0.03313	0.19435
	(!D * RESET_B * !SCE * Q)	0.03077	0.04025	0.20146
	(!D * RESET_B * !SCD * SCE * Q)	0.02370	0.03319	0.19441
	(!D * RESET_B * !SCD * SCE * Q)	0.03082	0.04032	0.20154
	(!D * !SCE * !Q)	0.00991	0.01888	0.17784
	(!D * !SCE * !Q)	0.01677	0.02574	0.18468
	(!D * !SCD * SCE * !Q)	0.00992	0.01888	0.17785
	(!D * !SCD * SCE * !Q)	0.01677	0.02575	0.18469
	(!D * !RESET_B * SCD * SCE * !Q)	0.00992	0.01888	0.17780
	(!D * !RESET_B * SCD * SCE * !Q)	0.01678	0.02575	0.18465

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.01061	0.01979	0.17803
	(D * RESET_B * SCD * SCE * Q)	0.01746	0.02664	0.18486
	(D * RESET_B * SCD * SCE * !Q)	0.02041	0.02962	0.19297
	(D * RESET_B * SCD * SCE * !Q)	0.02698	0.03620	0.19953
	(D * RESET_B * SCD * !SCE * Q)	0.01061	0.01979	0.17803
	(D * RESET_B * SCD * !SCE * Q)	0.01745	0.02662	0.18485
	(D * RESET_B * SCD * !SCE * !Q)	0.02041	0.02960	0.19291
	(D * RESET_B * SCD * !SCE * !Q)	0.02699	0.03618	0.19947
	(D * RESET_B * !SCD * SCE * Q)	0.02328	0.03288	0.19385
	(D * RESET_B * !SCD * SCE * Q)	0.03043	0.04003	0.20100
	(D * RESET_B * !SCD * !SCE * Q)	0.01061	0.01979	0.17803
	(D * RESET_B * !SCD * !SCE * Q)	0.01746	0.02663	0.18486
	(D * RESET_B * !SCD * !SCE * !Q)	0.02042	0.02960	0.19291
	(D * RESET_B * !SCD * !SCE * !Q)	0.02700	0.03619	0.19948
	(D * !SCD * SCE * !Q)	0.00980	0.01892	0.17734
	(D * !SCD * SCE * !Q)	0.01665	0.02577	0.18417
	(D * !RESET_B * SCD * SCE * !Q)	0.00981	0.01893	0.17730
	(D * !RESET_B * SCD * SCE * !Q)	0.01665	0.02578	0.18413
	(D * !RESET_B * SCD * !SCE * !Q)	0.00980	0.01893	0.17729
	(D * !RESET_B * SCD * !SCE * !Q)	0.01665	0.02577	0.18413
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00980	0.01893	0.17729
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01665	0.02577	0.18413
	(!D * RESET_B * SCD * SCE * Q)	0.01061	0.01979	0.17803
	(!D * RESET_B * SCD * SCE * Q)	0.01746	0.02663	0.18486
	(!D * RESET_B * SCD * SCE * !Q)	0.02046	0.02966	0.19301
	(!D * RESET_B * SCD * SCE * !Q)	0.02702	0.03623	0.19956
	(!D * RESET_B * !SCE * Q)	0.02319	0.03278	0.19375
	(!D * RESET_B * !SCE * Q)	0.03030	0.03990	0.20086
	(!D * RESET_B * !SCD * SCE * Q)	0.02322	0.03284	0.19381
	(!D * RESET_B * !SCD * SCE * Q)	0.03035	0.03994	0.20095
	(!D * !SCE * !Q)	0.00980	0.01891	0.17733
	(!D * !SCE * !Q)	0.01664	0.02576	0.18416
	(!D * !SCD * SCE * !Q)	0.00980	0.01891	0.17734
	(!D * !SCD * SCE * !Q)	0.01665	0.02576	0.18417
	(!D * !RESET_B * SCD * SCE * !Q)	0.00981	0.01892	0.17730
	(!D * !RESET_B * SCD * SCE * !Q)	0.01665	0.02577	0.18414

SKY130_FD_SC_HS__SDFSBPx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00195	0.00214	0.00411	0.00350	0.00306	1.40342	1.32167
sky130_fd_sc_hs__sdfsbp_2	0.00201	0.00208	0.00431	0.00352	0.00309	2.81278	2.84873

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfsbp_1	0.00000	2.01911	2.96201
sky130_fd_sc_hs__sdfsbp_2	0.00000	2.02405	4.30736

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)	0.20588	0.60049	5.54776
	SET_B->Q (FR)	0.19222	0.83618	8.88483
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RR)	0.23280	0.53534	5.51558
	SET_B->Q (FR)	0.26206	0.81641	8.89907

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfsbp_1	CLK->Q (RF)	0.17934	0.36718	1.91631
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RF)	0.19645	0.36121	2.06453

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)	0.15405	0.57894	5.55455
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RR)	0.14959	0.47857	5.54334

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)	0.16251	0.40395	1.82962
	SET_B->Q_N (FF)	0.14712	0.64178	5.17026
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RF)	0.16775	0.38359	2.21267
	SET_B->Q_N (FF)	0.18249	0.67688	5.61770

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)	-0.06523	-0.13989	-0.77635
	setup	CLK (R)	0.09152	0.15583	0.77142
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.08347	-0.15973	-0.80856
	setup	CLK (R)	0.11489	0.17817	0.79580

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)	-0.08647	-0.20711	-3.49016
	setup	CLK (R)	0.16127	0.28679	3.49209
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.11397	-0.22867	-3.42079
	setup	CLK (R)	0.19162	0.31271	3.46769

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)	-0.06523	-0.13989	-0.77635
	setup	CLK (R)	0.09152	0.15583	0.77142
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.08347	-0.15973	-0.80856
	setup	CLK (R)	0.11489	0.17817	0.79580

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)	-0.08647	-0.20711	-3.49016
	setup	CLK (R)	0.16127	0.28679	3.49209
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.11397	-0.22867	-3.42079
	setup	CLK (R)	0.19162	0.31271	3.46769

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)	-0.08053	-0.14574	-0.78550
	setup	CLK (R)	0.11236	0.16907	0.77934
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.09918	-0.16327	-0.78496
	setup	CLK (R)	0.13225	0.18495	0.77512

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)	-0.10886	-0.21922	-3.48926
	setup	CLK (R)	0.19981	0.30554	3.49929
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.13853	-0.24470	-3.42773
	setup	CLK (R)	0.23571	0.33523	3.48208

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)	-0.08053	-0.14574	-0.78550
	hold	CLK (R)	-0.08420	-0.15183	-0.78758
	setup	CLK (R)	0.10758	0.16193	0.77739
	setup	CLK (R)	0.11236	0.16907	0.77934
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.09918	-0.16327	-0.78577
	hold	CLK (R)	-0.10424	-0.16800	-0.78496
	setup	CLK (R)	0.12984	0.18017	0.77512
	setup	CLK (R)	0.13225	0.18495	0.77507

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)	-0.11724	-0.22632	-3.48926
	hold	CLK (R)	-0.10886	-0.21922	-3.49558
	setup	CLK (R)	0.19981	0.30554	3.49391
	setup	CLK (R)	0.19559	0.30029	3.49929
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.14763	-0.24834	-3.42773
	hold	CLK (R)	-0.13853	-0.24470	-3.43561
	setup	CLK (R)	0.23571	0.33523	3.47559
	setup	CLK (R)	0.22972	0.33166	3.48208

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)	-0.07211	-0.13518	-0.40450
	setup	CLK (R)	0.19745	0.21403	0.88536
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.09236	-0.15723	-0.32594
	setup	CLK (R)	0.23377	0.24466	0.93248

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)	-0.10042	-0.19815	-3.18065
	setup	CLK (R)	0.17217	0.27668	3.35712
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.12556	-0.21512	-3.09920
	setup	CLK (R)	0.20285	0.30040	3.29215

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)	-0.11652	-0.13518	-0.40450
	hold	CLK (R)	-0.07211	-0.15235	-0.89092
	setup	CLK (R)	0.19745	0.21403	0.41181
	setup	CLK (R)	0.10012	0.16841	0.88536
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.14551	-0.15723	-0.32594
	hold	CLK (R)	-0.09236	-0.17122	-0.94075
	setup	CLK (R)	0.23377	0.24466	0.38043
	setup	CLK (R)	0.12273	0.19062	0.93248

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)	-0.11034	-0.23477	-3.18065
	hold	CLK (R)	-0.10042	-0.19815	-3.35440
	setup	CLK (R)	0.13695	0.24921	3.17465
	setup	CLK (R)	0.17217	0.27668	3.35712
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.12762	-0.24687	-3.09920
	hold	CLK (R)	-0.12556	-0.21512	-3.24205
	setup	CLK (R)	0.15719	0.26415	3.09138
	setup	CLK (R)	0.20285	0.30040	3.29215

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)	-0.06959	-0.10116	-0.34588
	removal	CLK (R)	0.08871	0.11942	0.42814
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.09737	-0.15181	-0.51272
	removal	CLK (R)	0.11124	0.16800	1.19283

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)	-0.06960	-0.10116	-0.34588
	recovery	CLK (R)	-0.06959	-0.10116	-0.34588
	recovery	CLK (R)	-0.06987	-0.10116	-0.34588
	removal	CLK (R)	0.08871	0.11942	0.42814
	removal	CLK (R)	0.08871	0.11942	0.42814
	removal	CLK (R)	0.08871	0.11942	0.42414
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.09737	-0.15181	-0.51272
	recovery	CLK (R)	-0.09737	-0.15181	-0.51272
	recovery	CLK (R)	-0.09737	-0.15181	-0.51272
	removal	CLK (R)	0.11124	0.16800	1.18724
	removal	CLK (R)	0.11124	0.16800	1.17412
	removal	CLK (R)	0.11124	0.16800	1.19283

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 ()	0.15539	0.60669	16.50020
	min_pulse_width	SET_B ()	0.15083	0.60669	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	SET_B ()	0.17819	0.60669	16.50020
	min_pulse_width	SET_B ()	0.20326	0.60669	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 ()	0.12348	0.60669	16.50020
	min_pulse_width	CLK ()	0.07562	0.60669	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.13260	0.60669	16.50020
	min_pulse_width	CLK ()	0.08018	0.60669	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 ()	0.12120	0.60669	16.50020
	min_pulse_width	CLK ()	0.17135	0.60669	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.15311	0.60669	16.50020
	min_pulse_width	CLK ()	0.21237	0.60669	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	0.02386	0.02662	0.11047
	CLK	0.02063	0.02336	0.10727
	SET_B	0.01453	0.01697	0.07221
	SET_B	0.01843	0.02088	0.07502
sky130_fd_sc_hs__sdfsbp_2	CLK	0.03363	0.03581	0.12565
	CLK	0.03028	0.03243	0.12226
	SET_B	0.02285	0.02252	0.07997
	SET_B	0.02676	0.02655	0.08085

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.02327	0.02699	0.10742
	CLK	0.01985	0.02352	0.10400
sky130_fd_sc_hs__sdfsbp_2	CLK	0.03156	0.03553	0.11962
	CLK	0.02819	0.03211	0.11627

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.02332	0.02703	0.10818
	CLK	0.01990	0.02355	0.10485
sky130_fd_sc_hs__sdfsbp_2	CLK	0.03161	0.03566	0.12058
	CLK	0.02824	0.03219	0.11720

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.02381	0.02655	0.10956
	CLK	0.02058	0.02332	0.10642
	SET_B	0.01450	0.01696	0.07114
	SET_B	0.01840	0.02083	0.07440
sky130_fd_sc_hs__sdfsbp_2	CLK	0.03358	0.03578	0.12423
	CLK	0.03023	0.03239	0.12084
	SET_B	0.02283	0.02260	0.07745
	SET_B	0.02674	0.02649	0.07996

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	0.00182	0.00182	0.00183
	(CLK * SCD * SCE)	-0.00083	-0.00082	-0.00083
	(CLK * !SCE)	0.00607	0.00970	0.08054
	(CLK * !SCE)	0.00139	0.00500	0.07585
	(CLK * !SCD * SCE)	0.00093	0.00094	0.00092
	(CLK * !SCD * SCE)	-0.00197	-0.00200	-0.00202
	(!CLK * SCD * SCE)	0.00181	0.00185	0.00182
	(!CLK * SCD * SCE)	-0.00083	-0.00085	-0.00083
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01647	0.01917	0.09079
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01128	0.01396	0.08559
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.01319	0.01564	0.08329
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00785	0.01027	0.07794
	(!CLK * !SCD * SCE)	0.00093	0.00094	0.00092
	(!CLK * !SCD * SCE)	-0.00197	-0.00201	-0.00202

sky130_fd_sc_hs__sdfsbp_2	**(CLK * SCD * SCE)**	0.00193	0.00195	0.00193
	(CLK * SCD * SCE)	-0.00079	-0.00080	-0.00079
	(CLK * !SCE)	0.00636	0.00990	0.08160
	(CLK * !SCE)	0.00159	0.00513	0.07683
	(CLK * !SCD * SCE)	0.00098	0.00099	0.00097
	(CLK * !SCD * SCE)	-0.00200	-0.00203	-0.00205
	(!CLK * SCD * SCE)	0.00192	0.00194	0.00193
	(!CLK * SCD * SCE)	-0.00080	-0.00081	-0.00080
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01864	0.02134	0.09273
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01359	0.01626	0.08767
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.01539	0.01779	0.08503
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.01016	0.01253	0.07979
	(!CLK * !SCD * SCE)	0.00098	0.00099	0.00096
	(!CLK * !SCD * SCE)	-0.00200	-0.00204	-0.00205

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	-0.00172	-0.00175	-0.00178
	(CLK * SCD * SCE)	0.00091	0.00091	0.00088
	(CLK * !SCE)	0.00106	0.00507	0.07613
	(CLK * !SCE)	0.00575	0.00978	0.08083
	(CLK * !SCD * SCE)	-0.00086	-0.00087	-0.00087
	(CLK * !SCD * SCE)	0.00204	0.00206	0.00205
	(!CLK * SCD * SCE)	-0.00171	-0.00175	-0.00178
	(!CLK * SCD * SCE)	0.00090	0.00091	0.00088
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01136	0.01509	0.08774
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01657	0.02029	0.09295
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00633	0.00954	0.07757
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.01169	0.01491	0.08294
	(!CLK * !SCD * SCE)	-0.00086	-0.00087	-0.00087
	(!CLK * !SCD * SCE)	0.00205	0.00205	0.00205

sky130_fd_sc_hs__sdfsbp_2	**(CLK * SCD * SCE)**	-0.00183	-0.00186	-0.00189
	(CLK * SCD * SCE)	0.00087	0.00088	0.00085
	(CLK * !SCE)	0.00129	0.00545	0.07709
	(CLK * !SCE)	0.00605	0.01024	0.08187
	(CLK * !SCD * SCE)	-0.00092	-0.00093	-0.00092
	(CLK * !SCD * SCE)	0.00207	0.00209	0.00207
	(!CLK * SCD * SCE)	-0.00184	-0.00187	-0.00189
	(!CLK * SCD * SCE)	0.00087	0.00087	0.00085
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01461	0.01817	0.09091
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01967	0.02323	0.09598
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00917	0.01229	0.08008
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.01444	0.01755	0.08534
	(!CLK * !SCD * SCE)	-0.00092	-0.00092	-0.00092
	(!CLK * !SCD * SCE)	0.00207	0.00207	0.00207

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00881	0.01143	0.07596
	(CLK * D * SCE)	0.00215	0.00477	0.06932
	(CLK * !D * SCE)	0.01007	0.01244	0.07639
	(CLK * !D * SCE)	0.00312	0.00548	0.06945
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01898	0.02127	0.08645
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01183	0.01411	0.07929
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01569	0.01780	0.07982
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00840	0.01048	0.07253
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.02025	0.02237	0.08707
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01279	0.01490	0.07962
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01695	0.01889	0.08037
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00936	0.01126	0.07276
	!SCE	0.00230	0.00203	0.00199
	!SCE	-0.00158	-0.00187	-0.00190

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.00885	0.01149	0.07598
	(CLK * D * SCE)	0.00232	0.00494	0.06943
	(CLK * !D * SCE)	0.01011	0.01252	0.07640
	(CLK * !D * SCE)	0.00328	0.00566	0.06957
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.02097	0.02327	0.08779
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01414	0.01643	0.08097
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01771	0.01981	0.08098
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01070	0.01277	0.07398
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.02223	0.02433	0.08829
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01510	0.01719	0.08118
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01897	0.02089	0.08157
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01166	0.01356	0.07426
	!SCE	0.00218	0.00191	0.00187
	!SCE	-0.00160	-0.00189	-0.00192

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00281	0.00542	0.06978
	(CLK * D * SCE)	0.00945	0.01209	0.07641
	(CLK * !D * SCE)	0.00218	0.00496	0.06962
	(CLK * !D * SCE)	0.00910	0.01191	0.07653
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01333	0.01558	0.08127
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.02049	0.02276	0.08841
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00822	0.01021	0.07230
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01554	0.01755	0.07959
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01278	0.01513	0.08133
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.02022	0.02260	0.08876
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00760	0.00968	0.07206
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01520	0.01729	0.07966
	!SCE	-0.00190	-0.00193	-0.00194
	!SCE	0.00196	0.00195	0.00196

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.00311	0.00571	0.07001
	(CLK * D * SCE)	0.00966	0.01229	0.07655
	(CLK * !D * SCE)	0.00248	0.00524	0.06982
	(CLK * !D * SCE)	0.00931	0.01209	0.07665
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01674	0.01880	0.08383
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.02357	0.02565	0.09064
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01111	0.01300	0.07428
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01814	0.02003	0.08128
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01618	0.01848	0.08388
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.02329	0.02562	0.09100
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01049	0.01245	0.07401
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01780	0.01978	0.08131
	!SCE	-0.00178	-0.00181	-0.00182
	!SCE	0.00197	0.00197	0.00198

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)**	0.00770	0.01247	0.10828
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00082	0.00390	0.09978
	(CLK * D * !SCD)	0.01163	0.01636	0.11652
	(CLK * D * !SCD)	0.00563	0.01029	0.11042
	(CLK * !D * SCD)	0.01350	0.02135	0.17736
	(CLK * !D * SCD)	0.00279	0.01063	0.16668
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00770	0.01247	0.10828
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00081	0.00390	0.09978
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.02163	0.02657	0.12653
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01612	0.02102	0.12094
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01651	0.02151	0.12088
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01117	0.01611	0.11546
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.02389	0.03166	0.18864
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01267	0.02041	0.17747
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.02061	0.02812	0.18143
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00923	0.01673	0.17010
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00756	0.01259	0.10820
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	-0.00037	0.00464	0.10026

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00801	0.01287	0.11020
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00079	0.00401	0.10140
	(CLK * D * !SCD)	0.01213	0.01701	0.11861
	(CLK * D * !SCD)	0.00584	0.01066	0.11223
	(CLK * !D * SCD)	0.01397	0.02206	0.18252
	(CLK * !D * SCD)	0.00295	0.01104	0.17153
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00801	0.01287	0.11020
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00079	0.00401	0.10140
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.02523	0.03024	0.13161
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01921	0.02417	0.12552
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01961	0.02474	0.12540
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01378	0.01885	0.11949
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.02624	0.03424	0.19508
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01493	0.02293	0.18381
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.02299	0.03070	0.18760
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01151	0.01921	0.17616
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00777	0.01292	0.10996
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	-0.00045	0.00467	0.10174

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)**	-0.00055	0.00540	0.10132
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00797	0.01394	0.10984
	(CLK * D * !SCD)	0.00574	0.01129	0.11050
	(CLK * D * !SCD)	0.01178	0.01737	0.11635
	(CLK * !D * SCD)	0.00155	0.00985	0.16597
	(CLK * !D * SCD)	0.01222	0.02056	0.17666
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00054	0.00540	0.10132
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00798	0.01396	0.10984
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01609	0.02171	0.11948
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.02163	0.02729	0.12477
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01281	0.01842	0.11607
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01819	0.02385	0.12125
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01179	0.01961	0.17606
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.02298	0.03084	0.18728
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00681	0.01436	0.16729
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01816	0.02577	0.17864
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00008	0.00591	0.10161
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00804	0.01384	0.10953

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00082	0.00523	0.10269
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00800	0.01407	0.11149
	(CLK * D * !SCD)	0.00560	0.01123	0.11194
	(CLK * D * !SCD)	0.01193	0.01758	0.11807
	(CLK * !D * SCD)	0.00175	0.01022	0.17082
	(CLK * !D * SCD)	0.01273	0.02124	0.18181
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00082	0.00524	0.10268
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00800	0.01407	0.11148
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01783	0.02355	0.12256
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.02387	0.02962	0.12840
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01458	0.02029	0.11918
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.02044	0.02619	0.12484
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01509	0.02293	0.18310
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.02632	0.03424	0.19440
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00965	0.01726	0.17368
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.02110	0.02875	0.18516
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	-0.00008	0.00584	0.10304
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00818	0.01411	0.11128

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)	0.00388	0.00392	0.00388
	(CLK * Q * !Q_N)	-0.00337	-0.00339	-0.00337
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00411	0.00414	0.00412
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00312	-0.00314	-0.00313
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00770	0.01015	0.06405
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00019	0.00259	0.05651
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	0.00395	0.00399	0.00396
	(CLK * Q * !Q_N)	-0.00349	-0.00351	-0.00350
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00411	0.00414	0.00412
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00333	-0.00334	-0.00333
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00811	0.01051	0.06395
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00037	0.00272	0.05620

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)	-0.00378	-0.00387	-0.00384
	(CLK * Q * !Q_N)	0.00349	0.00347	0.00343
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00402	-0.00410	-0.00408
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00325	0.00321	0.00319
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	-0.00011	0.00285	0.05689
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00739	0.01042	0.06441
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	-0.00383	-0.00393	-0.00392
	(CLK * Q * !Q_N)	0.00358	0.00357	0.00354
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00398	-0.00409	-0.00408
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00343	0.00339	0.00338
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	-0.00042	0.00251	0.05608
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00730	0.01024	0.06384

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)	0.02091	0.02760	0.18714
	(D * SCD * SCE * Q * !Q_N)	0.01426	0.02094	0.18051
	(D * !SCE * Q * !Q_N)	0.02091	0.02760	0.18714
	(D * !SCE * Q * !Q_N)	0.01426	0.02093	0.18051
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.02065	0.02732	0.18683
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01400	0.02065	0.18018
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03964	0.04673	0.20789
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03234	0.03941	0.20058
	(!D * SCD * SCE * Q * !Q_N)	0.02091	0.02761	0.18715
	(!D * SCD * SCE * Q * !Q_N)	0.01426	0.02094	0.18052
	(!D * !SCE * SET_B * !Q * Q_N)	0.02065	0.02731	0.18682
	(!D * !SCE * SET_B * !Q * Q_N)	0.01399	0.02065	0.18017
	(!D * !SCE * !SET_B * Q * !Q_N)	0.03962	0.04671	0.20787
	(!D * !SCE * !SET_B * Q * !Q_N)	0.03230	0.03937	0.20054
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.02066	0.02732	0.18682
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01400	0.02065	0.18017
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03969	0.04673	0.20777
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03238	0.03940	0.20047

sky130_fd_sc_hs__sdfsbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.02725	0.03420	0.19976
	(D * SCD * SCE * Q * !Q_N)	0.02053	0.02748	0.19305
	(D * !SCE * Q * !Q_N)	0.02725	0.03419	0.19976
	(D * !SCE * Q * !Q_N)	0.02052	0.02748	0.19305
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.02672	0.03366	0.19907
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01999	0.02692	0.19235
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.07132	0.07917	0.25028
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.06415	0.07198	0.24312
	(!D * SCD * SCE * Q * !Q_N)	0.02725	0.03420	0.19976
	(!D * SCD * SCE * Q * !Q_N)	0.02053	0.02748	0.19305
	(!D * !SCE * SET_B * !Q * Q_N)	0.02671	0.03366	0.19906
	(!D * !SCE * SET_B * !Q * Q_N)	0.01999	0.02691	0.19234
	(!D * !SCE * !SET_B * Q * !Q_N)	0.07130	0.07918	0.25027
	(!D * !SCE * !SET_B * Q * !Q_N)	0.06412	0.07196	0.24309
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.02672	0.03367	0.19907
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.02000	0.02692	0.19234
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.07147	0.07919	0.25017
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.06429	0.07199	0.24300

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfsbp_1	**(D * SCD * SCE * SET_B * !Q * Q_N)**	0.02146	0.03077	0.19541
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.02762	0.03694	0.20157
	(D * SCD * SCE * Q * !Q_N)	0.01149	0.02112	0.18144
	(D * SCD * SCE * Q * !Q_N)	0.01815	0.02777	0.18808
	(D * !SCE * SET_B * !Q * Q_N)	0.02142	0.03074	0.19537
	(D * !SCE * SET_B * !Q * Q_N)	0.02758	0.03691	0.20153
	(D * !SCE * Q * !Q_N)	0.01149	0.02111	0.18144
	(D * !SCE * Q * !Q_N)	0.01815	0.02777	0.18808
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.02412	0.03409	0.19649
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.03132	0.04128	0.20368
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01164	0.02087	0.18172
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01830	0.02751	0.18836
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01916	0.02909	0.19137
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02649	0.03642	0.19871
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.02149	0.03081	0.19545
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.02764	0.03697	0.20159
	(!D * SCD * SCE * Q * !Q_N)	0.01150	0.02112	0.18144
	(!D * SCD * SCE * Q * !Q_N)	0.01816	0.02777	0.18809
	(!D * !SCE * SET_B * Q * !Q_N)	0.02410	0.03407	0.19649
	(!D * !SCE * SET_B * Q * !Q_N)	0.03127	0.04123	0.20366
	(!D * !SCE * SET_B * !Q * Q_N)	0.01164	0.02086	0.18171
	(!D * !SCE * SET_B * !Q * Q_N)	0.01830	0.02751	0.18835
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01915	0.02908	0.19135
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02648	0.03643	0.19869
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.02410	0.03409	0.19650
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.03129	0.04127	0.20368
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01164	0.02086	0.18172
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01830	0.02751	0.18836
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01916	0.02910	0.19137
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02649	0.03642	0.19870

sky130_fd_sc_hs__sdfsbp_2	**(D * SCD * SCE * SET_B * !Q * Q_N)**	0.02613	0.03534	0.20590
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.03254	0.04180	0.21233
	(D * SCD * SCE * Q * !Q_N)	0.01403	0.02351	0.18885
	(D * SCD * SCE * Q * !Q_N)	0.02072	0.03024	0.19557
	(D * !SCE * SET_B * !Q * Q_N)	0.02610	0.03530	0.20580
	(D * !SCE * SET_B * !Q * Q_N)	0.03251	0.04176	0.21224
	(D * !SCE * Q * !Q_N)	0.01403	0.02351	0.18885
	(D * !SCE * Q * !Q_N)	0.02071	0.03024	0.19557
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.03075	0.04052	0.20839
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.03774	0.04753	0.21542
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01438	0.02350	0.18942
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.02107	0.03021	0.19615
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02514	0.03496	0.20213
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03230	0.04216	0.20933
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.02617	0.03537	0.20592
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.03257	0.04182	0.21235
	(!D * SCD * SCE * Q * !Q_N)	0.01403	0.02351	0.18885
	(!D * SCD * SCE * Q * !Q_N)	0.02072	0.03025	0.19558
	(!D * !SCE * SET_B * Q * !Q_N)	0.03069	0.04051	0.20833
	(!D * !SCE * SET_B * Q * !Q_N)	0.03766	0.04751	0.21534
	(!D * !SCE * SET_B * !Q * Q_N)	0.01438	0.02349	0.18941
	(!D * !SCE * SET_B * !Q * Q_N)	0.02106	0.03020	0.19614
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02513	0.03493	0.20213
	(!D * !SCE * !SET_B * Q * !Q_N)	0.03228	0.04214	0.20932
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.03074	0.04052	0.20798
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.03772	0.04753	0.21501
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01438	0.02350	0.18942
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.02107	0.03021	0.19615
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02516	0.03494	0.20213
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03231	0.04214	0.20933

SKY130_FD_SC_HS__SDFSTPx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00193	0.00215	0.00410	0.00342	0.00304	1.39991
sky130_fd_sc_hs__sdfstp_2	0.00193	0.00210	0.00409	0.00351	0.00305	2.83604
sky130_fd_sc_hs__sdfstp_4	0.00193	0.00215	0.00415	0.00352	0.00304	5.32268

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfstp_1	0.00000	1.88852	2.77185
sky130_fd_sc_hs__sdfstp_2	0.00000	1.76287	4.28446
sky130_fd_sc_hs__sdfstp_4	0.00000	3.11835	4.66018

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)	0.17058	0.56647	5.46578
	SET_B->Q (FR)	0.16495	0.79900	8.75151
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RR)	0.16214	0.46624	5.43333
	SET_B->Q (FR)	0.18794	0.73779	8.82476
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RR)	0.18849	0.42839	5.44348
	SET_B->Q (FR)	0.22273	0.71320	8.85148

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfstp_1	CLK->Q (RF)	0.16941	0.35721	1.91049
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RF)	0.17721	0.33606	2.00430
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RF)	0.18261	0.31647	2.03693

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)	-0.06884	-0.14039	-0.77029
	setup	CLK (R)	0.09366	0.15583	0.76034
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.08445	-0.15967	-0.82529
	setup	CLK (R)	0.11090	0.17625	0.81767
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.08491	-0.16167	-0.83097
	setup	CLK (R)	0.11183	0.17625	0.82180

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)	-0.07801	-0.20006	-3.47590
	setup	CLK (R)	0.15648	0.28210	3.47721
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.09192	-0.21227	-3.50002
	setup	CLK (R)	0.18204	0.30396	3.53317
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.10041	-0.21900	-3.51741
	setup	CLK (R)	0.18104	0.30796	3.53739

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)	-0.06884	-0.14039	-0.77029
	setup	CLK (R)	0.09366	0.15583	0.76034
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.08445	-0.15967	-0.82529
	setup	CLK (R)	0.11090	0.17625	0.81767
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.08491	-0.16167	-0.83097
	setup	CLK (R)	0.11183	0.17625	0.82180

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)	-0.07801	-0.20006	-3.47590
	setup	CLK (R)	0.15648	0.28210	3.47721
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.09192	-0.21227	-3.50002
	setup	CLK (R)	0.18204	0.30396	3.53317
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.10041	-0.21900	-3.51741
	setup	CLK (R)	0.18104	0.30796	3.53739

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)	-0.08149	-0.14774	-0.77729
	setup	CLK (R)	0.11073	0.16909	0.77287
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.10089	-0.16329	-0.81882
	setup	CLK (R)	0.13129	0.18740	0.81133
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.10070	-0.16529	-0.82332
	setup	CLK (R)	0.12974	0.18369	0.81803

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)	-0.10098	-0.20918	-3.47739
	setup	CLK (R)	0.19392	0.30154	3.48521
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.11570	-0.22332	-3.49522
	setup	CLK (R)	0.21881	0.32546	3.53066
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.12004	-0.23046	-3.50507
	setup	CLK (R)	0.22172	0.32277	3.53451

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)	-0.08149	-0.14774	-0.77729
	hold	CLK (R)	-0.08536	-0.15383	-0.77983
	setup	CLK (R)	0.10789	0.16193	0.77287
	setup	CLK (R)	0.11073	0.16909	0.77191
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.10089	-0.16329	-0.81882
	hold	CLK (R)	-0.10459	-0.16962	-0.82038
	setup	CLK (R)	0.12684	0.17996	0.81131
	setup	CLK (R)	0.13129	0.18740	0.81133
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.10070	-0.16529	-0.82332
	hold	CLK (R)	-0.10134	-0.17036	-0.82462
	setup	CLK (R)	0.12629	0.17996	0.81803
	setup	CLK (R)	0.12974	0.18369	0.81552

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)	-0.10879	-0.21630	-3.47739
	hold	CLK (R)	-0.10098	-0.20918	-3.48359
	setup	CLK (R)	0.19392	0.30154	3.48252
	setup	CLK (R)	0.18917	0.29582	3.48521
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.12641	-0.23002	-3.49522
	hold	CLK (R)	-0.11570	-0.22332	-3.50239
	setup	CLK (R)	0.21881	0.32546	3.52420
	setup	CLK (R)	0.21364	0.32179	3.53066
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.12874	-0.23430	-3.50507
	hold	CLK (R)	-0.12004	-0.23046	-3.51270
	setup	CLK (R)	0.22172	0.32277	3.53035
	setup	CLK (R)	0.21415	0.32083	3.53451

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)	-0.07640	-0.12958	-0.39298
	setup	CLK (R)	0.19460	0.21040	0.87806
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.08955	-0.14097	-0.38336
	setup	CLK (R)	0.21996	0.23381	0.92804
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.09233	-0.14833	-0.38751
	setup	CLK (R)	0.21734	0.23356	0.93038

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)	-0.09008	-0.18927	-3.17772
	setup	CLK (R)	0.16722	0.27185	3.34188
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.10475	-0.20194	-3.18467
	setup	CLK (R)	0.19156	0.29511	3.39119
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.10950	-0.20955	-3.18820
	setup	CLK (R)	0.19393	0.29562	3.40099

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)	-0.10642	-0.12958	-0.39298
	hold	CLK (R)	-0.07640	-0.15383	-0.88609
	setup	CLK (R)	0.19460	0.21040	0.40325
	setup	CLK (R)	0.10183	0.16813	0.87806
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.12337	-0.14097	-0.38336
	hold	CLK (R)	-0.08955	-0.17162	-0.93437
	setup	CLK (R)	0.21996	0.23381	0.42129
	setup	CLK (R)	0.12100	0.18766	0.92804
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.12943	-0.14833	-0.38751
	hold	CLK (R)	-0.09233	-0.17292	-0.93622
	setup	CLK (R)	0.21734	0.23356	0.41947
	setup	CLK (R)	0.11928	0.18766	0.93038

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)	-0.11149	-0.23489	-3.17772
	hold	CLK (R)	-0.09008	-0.18927	-3.34030
	setup	CLK (R)	0.13898	0.25106	3.17614
	setup	CLK (R)	0.16722	0.27185	3.34188
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.12933	-0.24710	-3.18467
	hold	CLK (R)	-0.10475	-0.20194	-3.35907
	setup	CLK (R)	0.15790	0.26283	3.17952
	setup	CLK (R)	0.19156	0.29511	3.39119
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.13096	-0.25110	-3.18820
	hold	CLK (R)	-0.10950	-0.20955	-3.37514
	setup	CLK (R)	0.15392	0.26198	3.17931
	setup	CLK (R)	0.19393	0.29562	3.40099

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)	-0.06979	-0.10935	-0.37928
	removal	CLK (R)	0.08871	0.12549	0.51712
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.10692	-0.14169	-0.37349
	removal	CLK (R)	0.15320	0.35624	5.69157
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.10051	-0.14371	-0.41247
	removal	CLK (R)	0.13523	0.28540	4.07487

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)	-0.06979	-0.10935	-0.37928
	recovery	CLK (R)	-0.06979	-0.10935	-0.37928
	recovery	CLK (R)	-0.07379	-0.10935	-0.37928
	removal	CLK (R)	0.08871	0.12549	0.51312
	removal	CLK (R)	0.08871	0.12549	0.51712
	removal	CLK (R)	0.08774	0.12549	0.51312
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.10692	-0.14169	-0.37349
	recovery	CLK (R)	-0.10692	-0.14169	-0.37349
	recovery	CLK (R)	-0.10692	-0.14169	-0.37349
	removal	CLK (R)	0.15320	0.35624	5.69157
	removal	CLK (R)	0.15320	0.35624	5.69157
	removal	CLK (R)	0.15320	0.35624	5.65856
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.10051	-0.14371	-0.41247
	recovery	CLK (R)	-0.10051	-0.14371	-0.41247
	recovery	CLK (R)	-0.10451	-0.14371	-0.41247
	removal	CLK (R)	0.13523	0.28540	4.07487
	removal	CLK (R)	0.13523	0.28540	4.07487
	removal	CLK (R)	0.13523	0.28540	4.02622

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 ()	0.13944	0.60669	16.50020
	min_pulse_width	SET_B ()	0.12120	0.60669	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	SET_B ()	0.14855	0.60669	16.50020
	min_pulse_width	SET_B ()	0.13944	0.60669	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	SET_B ()	0.15311	0.60669	16.50020
	min_pulse_width	SET_B ()	0.15539	0.60669	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 ()	0.08929	0.60669	16.50020
	min_pulse_width	CLK ()	0.06650	0.60669	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.07790	0.60669	16.50020
	min_pulse_width	CLK ()	0.07106	0.60669	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.09157	0.60669	16.50020
	min_pulse_width	CLK ()	0.07106	0.60669	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 ()	0.12120	0.60669	16.50020
	min_pulse_width	CLK ()	0.16907	0.60669	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.15083	0.60669	16.50020
	min_pulse_width	CLK ()	0.20098	0.60669	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.14855	0.60669	16.50020
	min_pulse_width	CLK ()	0.19870	0.60669	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	0.03996	0.04686	0.21455
	CLK	0.03367	0.04059	0.20876
	SET_B	0.02118	0.02767	0.13421
	SET_B	0.02876	0.03523	0.14198
sky130_fd_sc_hs__sdfstp_2	CLK	0.04910	0.05626	0.22561
	CLK	0.04286	0.05009	0.22008
	SET_B	0.02717	0.03340	0.14153
	SET_B	0.03498	0.04117	0.14998
sky130_fd_sc_hs__sdfstp_4	CLK	0.05960	0.06662	0.23606
	CLK	0.05347	0.06067	0.23187
	SET_B	0.03864	0.04424	0.15235
	SET_B	0.04649	0.05207	0.16142

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfstp_1	CLK	0.04208	0.04897	0.20980
	CLK	0.03525	0.04215	0.20277
sky130_fd_sc_hs__sdfstp_2	CLK	0.05197	0.05871	0.21925
	CLK	0.04526	0.05191	0.21210
sky130_fd_sc_hs__sdfstp_4	CLK	0.06348	0.07012	0.23238
	CLK	0.05663	0.06330	0.22399

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	0.00181	0.00182	0.00181
	(CLK * SCD * SCE)	-0.00083	-0.00082	-0.00082
	(CLK * !SCE)	0.00614	0.00962	0.08067
	(CLK * !SCE)	0.00149	0.00494	0.07600
	(CLK * !SCD * SCE)	0.00092	0.00093	0.00091
	(CLK * !SCD * SCE)	-0.00196	-0.00199	-0.00201
	(!CLK * SCD * SCE)	0.00180	0.00182	0.00181
	(!CLK * SCD * SCE)	-0.00082	-0.00083	-0.00082
	(!CLK * !SCE * SET_B)	0.01601	0.01873	0.09044
	(!CLK * !SCE * SET_B)	0.01094	0.01366	0.08536
	(!CLK * !SCE * !SET_B * Q)	0.01292	0.01537	0.08309
	(!CLK * !SCE * !SET_B * Q)	0.00772	0.01015	0.07788
	(!CLK * !SCD * SCE)	0.00092	0.00093	0.00091
	(!CLK * !SCD * SCE)	-0.00196	-0.00199	-0.00201
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	0.00179	0.00182	0.00180
	(CLK * SCD * SCE)	-0.00083	-0.00085	-0.00083
	(CLK * !SCE)	0.00607	0.00970	0.08058
	(CLK * !SCE)	0.00142	0.00503	0.07592
	(CLK * !SCD * SCE)	0.00091	0.00092	0.00090
	(CLK * !SCD * SCE)	-0.00197	-0.00200	-0.00202
	(!CLK * SCD * SCE)	0.00180	0.00181	0.00181
	(!CLK * SCD * SCE)	-0.00083	-0.00084	-0.00083
	(!CLK * !SCE * SET_B)	0.01841	0.02103	0.09192
	(!CLK * !SCE * SET_B)	0.01315	0.01576	0.08665
	(!CLK * !SCE * !SET_B * Q)	0.01508	0.01739	0.08414
	(!CLK * !SCE * !SET_B * Q)	0.00969	0.01201	0.07875
	(!CLK * !SCD * SCE)	0.00091	0.00092	0.00090
	(!CLK * !SCD * SCE)	-0.00197	-0.00200	-0.00202

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	0.00180	0.00182	0.00181
	(CLK * SCD * SCE)	-0.00082	-0.00083	-0.00082
	(CLK * !SCE)	0.00629	0.00972	0.08065
	(CLK * !SCE)	0.00164	0.00505	0.07599
	(CLK * !SCD * SCE)	0.00093	0.00094	0.00091
	(CLK * !SCD * SCE)	-0.00195	-0.00198	-0.00200
	(!CLK * SCD * SCE)	0.00181	0.00182	0.00182
	(!CLK * SCD * SCE)	-0.00081	-0.00082	-0.00081
	(!CLK * !SCE * SET_B)	0.01827	0.02088	0.09176
	(!CLK * !SCE * SET_B)	0.01314	0.01572	0.08663
	(!CLK * !SCE * !SET_B * Q)	0.01499	0.01731	0.08403
	(!CLK * !SCE * !SET_B * Q)	0.00973	0.01202	0.07876
	(!CLK * !SCD * SCE)	0.00093	0.00094	0.00092
	(!CLK * !SCD * SCE)	-0.00194	-0.00198	-0.00199

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	-0.00171	-0.00173	-0.00176
	(CLK * SCD * SCE)	0.00090	0.00090	0.00088
	(CLK * !SCE)	0.00090	0.00494	0.07605
	(CLK * !SCE)	0.00556	0.00961	0.08072
	(CLK * !SCD * SCE)	-0.00086	-0.00087	-0.00086
	(CLK * !SCD * SCE)	0.00203	0.00204	0.00203
	(!CLK * SCD * SCE)	-0.00170	-0.00174	-0.00177
	(!CLK * SCD * SCE)	0.00089	0.00090	0.00088
	(!CLK * !SCE * SET_B)	0.01125	0.01502	0.08772
	(!CLK * !SCE * SET_B)	0.01634	0.02011	0.09280
	(!CLK * !SCE * !SET_B * Q)	0.00649	0.00970	0.07778
	(!CLK * !SCE * !SET_B * Q)	0.01169	0.01493	0.08299
	(!CLK * !SCD * SCE)	-0.00086	-0.00086	-0.00086
	(!CLK * !SCD * SCE)	0.00203	0.00203	0.00204
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	-0.00171	-0.00174	-0.00177
	(CLK * SCD * SCE)	0.00090	0.00090	0.00087
	(CLK * !SCE)	0.00098	0.00501	0.07610
	(CLK * !SCE)	0.00563	0.00968	0.08077
	(CLK * !SCD * SCE)	-0.00086	-0.00087	-0.00087
	(CLK * !SCD * SCE)	0.00203	0.00204	0.00203
	(!CLK * SCD * SCE)	-0.00171	-0.00174	-0.00177
	(!CLK * SCD * SCE)	0.00089	0.00090	0.00087
	(!CLK * !SCE * SET_B)	0.01329	0.01686	0.08889
	(!CLK * !SCE * SET_B)	0.01854	0.02212	0.09414
	(!CLK * !SCE * !SET_B * Q)	0.00815	0.01121	0.07852
	(!CLK * !SCE * !SET_B * Q)	0.01354	0.01661	0.08393
	(!CLK * !SCD * SCE)	-0.00086	-0.00087	-0.00087
	(!CLK * !SCD * SCE)	0.00203	0.00203	0.00203

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	-0.00170	-0.00173	-0.00175
	(CLK * SCD * SCE)	0.00091	0.00091	0.00088
	(CLK * !SCE)	0.00116	0.00513	0.07612
	(CLK * !SCE)	0.00582	0.00980	0.08078
	(CLK * !SCD * SCE)	-0.00086	-0.00087	-0.00086
	(CLK * !SCD * SCE)	0.00203	0.00204	0.00203
	(!CLK * SCD * SCE)	-0.00168	-0.00172	-0.00175
	(!CLK * SCD * SCE)	0.00091	0.00092	0.00089
	(!CLK * !SCE * SET_B)	0.01342	0.01703	0.08903
	(!CLK * !SCE * SET_B)	0.01854	0.02217	0.09416
	(!CLK * !SCE * !SET_B * Q)	0.00836	0.01141	0.07869
	(!CLK * !SCE * !SET_B * Q)	0.01362	0.01667	0.08397
	(!CLK * !SCD * SCE)	-0.00085	-0.00085	-0.00085
	(!CLK * !SCD * SCE)	0.00204	0.00204	0.00204

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00886	0.01148	0.07598
	(CLK * D * SCE)	0.00221	0.00482	0.06934
	(CLK * !D * SCE)	0.01012	0.01250	0.07641
	(CLK * !D * SCE)	0.00317	0.00553	0.06946
	(!CLK * D * SCE * SET_B)	0.01852	0.02081	0.08599
	(!CLK * D * SCE * SET_B)	0.01146	0.01374	0.07894
	(!CLK * D * SCE * !SET_B * Q)	0.01542	0.01753	0.07952
	(!CLK * D * SCE * !SET_B * Q)	0.00822	0.01032	0.07235
	(!CLK * !D * SCE * SET_B)	0.01978	0.02193	0.08661
	(!CLK * !D * SCE * SET_B)	0.01242	0.01457	0.07926
	(!CLK * !D * SCE * !SET_B * Q)	0.01668	0.01861	0.08007
	(!CLK * !D * SCE * !SET_B * Q)	0.00919	0.01111	0.07259
	!SCE	0.00229	0.00201	0.00197
	!SCE	-0.00160	-0.00189	-0.00192
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00873	0.01136	0.07588
	(CLK * D * SCE)	0.00214	0.00476	0.06930
	(CLK * !D * SCE)	0.00999	0.01236	0.07631
	(CLK * !D * SCE)	0.00311	0.00548	0.06943
	(!CLK * D * SCE * SET_B)	0.02087	0.02312	0.08781
	(!CLK * D * SCE * SET_B)	0.01369	0.01592	0.08062
	(!CLK * D * SCE * !SET_B * Q)	0.01753	0.01959	0.08091
	(!CLK * D * SCE * !SET_B * Q)	0.01021	0.01225	0.07359
	(!CLK * !D * SCE * SET_B)	0.02213	0.02422	0.08840
	(!CLK * !D * SCE * SET_B)	0.01465	0.01671	0.08091
	(!CLK * !D * SCE * !SET_B * Q)	0.01879	0.02068	0.08147
	(!CLK * !D * SCE * !SET_B * Q)	0.01118	0.01303	0.07386
	!SCE	0.00223	0.00197	0.00192
	!SCE	-0.00159	-0.00189	-0.00192

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.00901	0.01160	0.07605
	(CLK * D * SCE)	0.00236	0.00494	0.06941
	(CLK * !D * SCE)	0.01027	0.01262	0.07648
	(CLK * !D * SCE)	0.00332	0.00566	0.06954
	(!CLK * D * SCE * SET_B)	0.02077	0.02301	0.08768
	(!CLK * D * SCE * SET_B)	0.01364	0.01588	0.08055
	(!CLK * D * SCE * !SET_B * Q)	0.01749	0.01953	0.08084
	(!CLK * D * SCE * !SET_B * Q)	0.01023	0.01226	0.07359
	(!CLK * !D * SCE * SET_B)	0.02203	0.02414	0.08821
	(!CLK * !D * SCE * SET_B)	0.01461	0.01671	0.08079
	(!CLK * !D * SCE * !SET_B * Q)	0.01875	0.02061	0.08140
	(!CLK * !D * SCE * !SET_B * Q)	0.01119	0.01305	0.07385
	!SCE	0.00229	0.00201	0.00198
	!SCE	-0.00160	-0.00189	-0.00192

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00267	0.00529	0.06963
	(CLK * D * SCE)	0.00932	0.01197	0.07626
	(CLK * !D * SCE)	0.00204	0.00483	0.06946
	(CLK * !D * SCE)	0.00897	0.01179	0.07638
	(!CLK * D * SCE * SET_B)	0.01326	0.01551	0.08117
	(!CLK * D * SCE * SET_B)	0.02032	0.02256	0.08822
	(!CLK * D * SCE * !SET_B * Q)	0.00838	0.01037	0.07243
	(!CLK * D * SCE * !SET_B * Q)	0.01558	0.01760	0.07960
	(!CLK * !D * SCE * SET_B)	0.01269	0.01506	0.08123
	(!CLK * !D * SCE * SET_B)	0.02004	0.02242	0.08857
	(!CLK * !D * SCE * !SET_B * Q)	0.00776	0.00985	0.07219
	(!CLK * !D * SCE * !SET_B * Q)	0.01524	0.01733	0.07966
	!SCE	-0.00189	-0.00191	-0.00192
	!SCE	0.00198	0.00197	0.00198
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00285	0.00547	0.06983
	(CLK * D * SCE)	0.00942	0.01208	0.07641
	(CLK * !D * SCE)	0.00221	0.00500	0.06965
	(CLK * !D * SCE)	0.00908	0.01190	0.07651
	(!CLK * D * SCE * SET_B)	0.01538	0.01764	0.08286
	(!CLK * D * SCE * SET_B)	0.02259	0.02484	0.09004
	(!CLK * D * SCE * !SET_B * Q)	0.01013	0.01201	0.07349
	(!CLK * D * SCE * !SET_B * Q)	0.01745	0.01936	0.08081
	(!CLK * !D * SCE * SET_B)	0.01480	0.01705	0.08277
	(!CLK * !D * SCE * SET_B)	0.02228	0.02455	0.09024
	(!CLK * !D * SCE * !SET_B * Q)	0.00951	0.01148	0.07324
	(!CLK * !D * SCE * !SET_B * Q)	0.01712	0.01912	0.08084
	!SCE	-0.00185	-0.00189	-0.00188
	!SCE	0.00197	0.00199	0.00197

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.00292	0.00550	0.06976
	(CLK * D * SCE)	0.00956	0.01217	0.07639
	(CLK * !D * SCE)	0.00229	0.00503	0.06961
	(CLK * !D * SCE)	0.00921	0.01199	0.07653
	(!CLK * D * SCE * SET_B)	0.01547	0.01758	0.08292
	(!CLK * D * SCE * SET_B)	0.02261	0.02472	0.09003
	(!CLK * D * SCE * !SET_B * Q)	0.01025	0.01212	0.07358
	(!CLK * D * SCE * !SET_B * Q)	0.01751	0.01940	0.08084
	(!CLK * !D * SCE * SET_B)	0.01488	0.01713	0.08283
	(!CLK * !D * SCE * SET_B)	0.02230	0.02455	0.09023
	(!CLK * !D * SCE * !SET_B * Q)	0.00963	0.01159	0.07333
	(!CLK * !D * SCE * !SET_B * Q)	0.01718	0.01916	0.08087
	!SCE	-0.00188	-0.00191	-0.00192
	!SCE	0.00198	0.00198	0.00199

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)**	0.00771	0.01248	0.10829
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00078	0.00394	0.09981
	(CLK * D * !SCD)	0.01151	0.01630	0.11640
	(CLK * D * !SCD)	0.00553	0.01026	0.11032
	(CLK * !D * SCD)	0.01359	0.02146	0.17745
	(CLK * !D * SCD)	0.00290	0.01076	0.16681
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00772	0.01248	0.10829
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00077	0.00394	0.09981
	(!CLK * D * !SCD * SET_B)	0.02158	0.02650	0.12646
	(!CLK * D * !SCD * SET_B)	0.01600	0.02089	0.12081
	(!CLK * D * !SCD * !SET_B * Q)	0.01670	0.02171	0.12107
	(!CLK * D * !SCD * !SET_B * Q)	0.01126	0.01620	0.11554
	(!CLK * !D * SCD * SET_B)	0.02344	0.03123	0.18823
	(!CLK * !D * SCD * SET_B)	0.01234	0.02012	0.17717
	(!CLK * !D * SCD * !SET_B * Q)	0.02035	0.02787	0.18119
	(!CLK * !D * SCD * !SET_B * Q)	0.00911	0.01663	0.17001
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00759	0.01262	0.10822
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00031	0.00471	0.10031

sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00773	0.01247	0.10821
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00078	0.00391	0.09969
	(CLK * D * !SCD)	0.01167	0.01642	0.11645
	(CLK * D * !SCD)	0.00563	0.01034	0.11035
	(CLK * !D * SCD)	0.01352	0.02136	0.17724
	(CLK * !D * SCD)	0.00284	0.01065	0.16659
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00773	0.01246	0.10821
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00078	0.00391	0.09968
	(!CLK * D * !SCD * SET_B)	0.02361	0.02858	0.12827
	(!CLK * D * !SCD * SET_B)	0.01818	0.02313	0.12276
	(!CLK * D * !SCD * !SET_B * Q)	0.01840	0.02343	0.12252
	(!CLK * D * !SCD * !SET_B * Q)	0.01311	0.01809	0.11718
	(!CLK * !D * SCD * SET_B)	0.02584	0.03359	0.18999
	(!CLK * !D * SCD * SET_B)	0.01456	0.02230	0.17873
	(!CLK * !D * SCD * !SET_B * Q)	0.02250	0.02999	0.18245
	(!CLK * !D * SCD * !SET_B * Q)	0.01110	0.01853	0.17106
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00761	0.01265	0.10814
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00031	0.00469	0.10021

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00780	0.01254	0.10835
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00079	0.00391	0.09978
	(CLK * D * !SCD)	0.01181	0.01660	0.11665
	(CLK * D * !SCD)	0.00573	0.01047	0.11049
	(CLK * !D * SCD)	0.01381	0.02162	0.17756
	(CLK * !D * SCD)	0.00305	0.01083	0.16683
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00781	0.01254	0.10836
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00078	0.00391	0.09979
	(!CLK * D * !SCD * SET_B)	0.02377	0.02874	0.12860
	(!CLK * D * !SCD * SET_B)	0.01816	0.02307	0.12292
	(!CLK * D * !SCD * !SET_B * Q)	0.01861	0.02360	0.12277
	(!CLK * D * !SCD * !SET_B * Q)	0.01314	0.01810	0.11724
	(!CLK * !D * SCD * SET_B)	0.02577	0.03353	0.19004
	(!CLK * !D * SCD * SET_B)	0.01454	0.02226	0.17882
	(!CLK * !D * SCD * !SET_B * Q)	0.02249	0.02993	0.18258
	(!CLK * !D * SCD * !SET_B * Q)	0.01113	0.01856	0.17122
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00767	0.01271	0.10829
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00031	0.00468	0.10029

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00050	0.00541	0.10132
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00797	0.01393	0.10981
	(CLK * D * !SCD)	0.00586	0.01137	0.11060
	(CLK * D * !SCD)	0.01187	0.01744	0.11643
	(CLK * !D * SCD)	0.00141	0.00972	0.16584
	(CLK * !D * SCD)	0.01205	0.02042	0.17650
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00050	0.00552	0.10132
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00798	0.01404	0.10981
	(!CLK * D * !SCD * SET_B)	0.01568	0.02129	0.11904
	(!CLK * D * !SCD * SET_B)	0.02128	0.02690	0.12445
	(!CLK * D * !SCD * !SET_B * Q)	0.01258	0.01818	0.11582
	(!CLK * D * !SCD * !SET_B * Q)	0.01805	0.02371	0.12110
	(!CLK * !D * SCD * SET_B)	0.01172	0.01955	0.17605
	(!CLK * !D * SCD * SET_B)	0.02280	0.03067	0.18713
	(!CLK * !D * SCD * !SET_B * Q)	0.00699	0.01453	0.16745
	(!CLK * !D * SCD * !SET_B * Q)	0.01818	0.02579	0.17865
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00010	0.00591	0.10158
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00803	0.01381	0.10952

sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00053	0.00540	0.10123
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00799	0.01393	0.10973
	(CLK * D * !SCD)	0.00576	0.01128	0.11044
	(CLK * D * !SCD)	0.01181	0.01737	0.11629
	(CLK * !D * SCD)	0.00147	0.00976	0.16579
	(CLK * !D * SCD)	0.01212	0.02046	0.17646
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00052	0.00541	0.10123
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00799	0.01394	0.10973
	(!CLK * D * !SCD * SET_B)	0.01805	0.02366	0.12109
	(!CLK * D * !SCD * SET_B)	0.02349	0.02915	0.12632
	(!CLK * D * !SCD * !SET_B * Q)	0.01472	0.02032	0.11760
	(!CLK * D * !SCD * !SET_B * Q)	0.02003	0.02568	0.12271
	(!CLK * !D * SCD * SET_B)	0.01371	0.02141	0.17713
	(!CLK * !D * SCD * SET_B)	0.02499	0.03268	0.18841
	(!CLK * !D * SCD * !SET_B * Q)	0.00863	0.01607	0.16807
	(!CLK * !D * SCD * !SET_B * Q)	0.02003	0.02751	0.17949
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00007	0.00587	0.10147
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00803	0.01384	0.10941

	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00059	0.00535	0.10126
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00801	0.01396	0.10984
	(CLK * D * !SCD)	0.00592	0.01145	0.11061
	(CLK * D * !SCD)	0.01204	0.01760	0.11653
	(CLK * !D * SCD)	0.00159	0.00984	0.16589
	(CLK * !D * SCD)	0.01233	0.02061	0.17665
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00057	0.00536	0.10127
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00802	0.01397	0.10985
sky130_fd_sc_hs__sdfstp_4	**(!CLK * D * !SCD * SET_B)**	0.01784	0.02346	0.12096
	(!CLK * D * !SCD * SET_B)	0.02348	0.02914	0.12640
	(!CLK * D * !SCD * !SET_B * Q)	0.01457	0.02018	0.11753
	(!CLK * D * !SCD * !SET_B * Q)	0.02008	0.02573	0.12283
	(!CLK * !D * SCD * SET_B)	0.01384	0.02153	0.17732
	(!CLK * !D * SCD * SET_B)	0.02502	0.03278	0.18857
	(!CLK * !D * SCD * !SET_B * Q)	0.00878	0.01621	0.16831
	(!CLK * !D * SCD * !SET_B * Q)	0.02014	0.02758	0.17969
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00004	0.00585	0.10153
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00806	0.01383	0.10954

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	0.00358	0.00360	0.00360
	(CLK * Q)	-0.00340	-0.00340	-0.00340
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00390	0.00393	0.00391
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00310	-0.00311	-0.00310
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00739	0.00990	0.06382
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00015	0.00259	0.05656
sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	0.00397	0.00400	0.00398
	(CLK * Q)	-0.00332	-0.00334	-0.00333
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00433	0.00436	0.00434
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00297	-0.00298	-0.00297
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00775	0.01022	0.06444
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00020	0.00263	0.05688

sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	0.00369	0.00373	0.00371
	(CLK * Q)	-0.00345	-0.00347	-0.00346
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00405	0.00408	0.00407
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00311	-0.00312	-0.00311
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00756	0.01001	0.06357
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00015	0.00254	0.05614

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	-0.00350	-0.00357	-0.00356
	(CLK * Q)	0.00352	0.00348	0.00346
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00380	-0.00388	-0.00386
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00322	0.00318	0.00315
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00016	0.00287	0.05686
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00704	0.01015	0.06411

sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	-0.00385	-0.00396	-0.00395
	(CLK * Q)	0.00339	0.00340	0.00337
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00420	-0.00432	-0.00430
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00305	0.00304	0.00301
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00026	0.00273	0.05711
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00727	0.01031	0.06466
sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	-0.00356	-0.00366	-0.00365
	(CLK * Q)	0.00357	0.00357	0.00354
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00390	-0.00402	-0.00400
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00323	0.00321	0.00319
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00012	0.00283	0.05652
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00728	0.01031	0.06394

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)**	0.02104	0.02773	0.18713
	(D * SCD * SCE * Q)	0.01450	0.02117	0.18058
	(D * !SCE * Q)	0.02104	0.02773	0.18712
	(D * !SCE * Q)	0.01449	0.02117	0.18058
	(D * !SCD * SCE * SET_B * !Q)	0.02061	0.02728	0.18662
	(D * !SCD * SCE * SET_B * !Q)	0.01406	0.02071	0.18007
	(D * !SCD * SCE * !SET_B * Q)	0.03981	0.04690	0.20779
	(D * !SCD * SCE * !SET_B * Q)	0.03273	0.03980	0.20073
	(!D * SCD * SCE * Q)	0.02104	0.02773	0.18713
	(!D * SCD * SCE * Q)	0.01449	0.02117	0.18058
	(!D * !SCE * SET_B * !Q)	0.02061	0.02728	0.18661
	(!D * !SCE * SET_B * !Q)	0.01406	0.02070	0.18007
	(!D * !SCE * !SET_B * Q)	0.03978	0.04687	0.20780
	(!D * !SCE * !SET_B * Q)	0.03269	0.03976	0.20071
	(!D * !SCD * SCE * SET_B * !Q)	0.02062	0.02728	0.18661
	(!D * !SCD * SCE * SET_B * !Q)	0.01407	0.02071	0.18006
	(!D * !SCD * SCE * !SET_B * Q)	0.03987	0.04689	0.20772
	(!D * !SCD * SCE * !SET_B * Q)	0.03278	0.03978	0.20065

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * Q)**	0.02428	0.03056	0.18915
	(D * SCD * SCE * Q)	0.01779	0.02405	0.18267
	(D * !SCE * Q)	0.02427	0.03055	0.18915
	(D * !SCE * Q)	0.01779	0.02405	0.18266
	(D * !SCD * SCE * SET_B * !Q)	0.02445	0.03068	0.18916
	(D * !SCD * SCE * SET_B * !Q)	0.01794	0.02414	0.18264
	(D * !SCD * SCE * !SET_B * Q)	0.06234	0.06940	0.23245
	(D * !SCD * SCE * !SET_B * Q)	0.05520	0.06225	0.22532
	(!D * SCD * SCE * Q)	0.02428	0.03056	0.18916
	(!D * SCD * SCE * Q)	0.01779	0.02405	0.18267
	(!D * !SCE * SET_B * !Q)	0.02445	0.03067	0.18915
	(!D * !SCE * SET_B * !Q)	0.01793	0.02413	0.18264
	(!D * !SCE * !SET_B * Q)	0.06231	0.06938	0.23243
	(!D * !SCE * !SET_B * Q)	0.05516	0.06221	0.22528
	(!D * !SCD * SCE * SET_B * !Q)	0.02446	0.03068	0.18915
	(!D * !SCD * SCE * SET_B * !Q)	0.01794	0.02414	0.18264
	(!D * !SCD * SCE * !SET_B * Q)	0.06245	0.06942	0.23235
	(!D * !SCD * SCE * !SET_B * Q)	0.05530	0.06226	0.22521

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * Q)**	0.02399	0.03032	0.18901
	(D * SCD * SCE * Q)	0.01749	0.02380	0.18251
	(D * !SCE * Q)	0.02398	0.03032	0.18901
	(D * !SCE * Q)	0.01748	0.02380	0.18251
	(D * !SCD * SCE * SET_B * !Q)	0.02424	0.03052	0.18909
	(D * !SCD * SCE * SET_B * !Q)	0.01772	0.02398	0.18258
	(D * !SCD * SCE * !SET_B * Q)	0.06287	0.07014	0.23365
	(D * !SCD * SCE * !SET_B * Q)	0.05582	0.06307	0.22660
	(!D * SCD * SCE * Q)	0.02399	0.03032	0.18902
	(!D * SCD * SCE * Q)	0.01749	0.02380	0.18252
	(!D * !SCE * SET_B * !Q)	0.02424	0.03052	0.18909
	(!D * !SCE * SET_B * !Q)	0.01772	0.02397	0.18257
	(!D * !SCE * !SET_B * Q)	0.06285	0.07012	0.23370
	(!D * !SCE * !SET_B * Q)	0.05578	0.06303	0.22662
	(!D * !SCD * SCE * SET_B * !Q)	0.02425	0.03053	0.18909
	(!D * !SCD * SCE * SET_B * !Q)	0.01773	0.02398	0.18257
	(!D * !SCD * SCE * !SET_B * Q)	0.06300	0.07016	0.23376
	(!D * !SCD * SCE * !SET_B * Q)	0.05594	0.06309	0.22670

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)**	0.02101	0.03049	0.19477
	(D * SCD * SCE * SET_B * !Q)	0.02719	0.03663	0.20094
	(D * SCD * SCE * Q)	0.01142	0.02103	0.18113
	(D * SCD * SCE * Q)	0.01798	0.02757	0.18767
	(D * !SCE * SET_B * !Q)	0.02098	0.03045	0.19473
	(D * !SCE * SET_B * !Q)	0.02715	0.03662	0.20090
	(D * !SCE * Q)	0.01142	0.02102	0.18112
	(D * !SCE * Q)	0.01798	0.02757	0.18766
	(D * !SCD * SCE * SET_B * Q)	0.02425	0.03418	0.19640
	(D * !SCD * SCE * SET_B * Q)	0.03124	0.04119	0.20340
	(D * !SCD * SCE * SET_B * !Q)	0.01174	0.02107	0.18158
	(D * !SCD * SCE * SET_B * !Q)	0.01830	0.02762	0.18812
	(D * !SCD * SCE * !SET_B * Q)	0.01950	0.02892	0.19141
	(D * !SCD * SCE * !SET_B * Q)	0.02661	0.03605	0.19853
	(!D * SCD * SCE * SET_B * !Q)	0.02105	0.03052	0.19480
	(!D * SCD * SCE * SET_B * !Q)	0.02721	0.03669	0.20095
	(!D * SCD * SCE * Q)	0.01142	0.02103	0.18113
	(!D * SCD * SCE * Q)	0.01798	0.02757	0.18767
	(!D * !SCE * SET_B * Q)	0.02423	0.03416	0.19628
	(!D * !SCE * SET_B * Q)	0.03120	0.04114	0.20325
	(!D * !SCE * SET_B * !Q)	0.01174	0.02106	0.18158
	(!D * !SCE * SET_B * !Q)	0.01830	0.02761	0.18812
	(!D * !SCE * !SET_B * Q)	0.01949	0.02893	0.19138
	(!D * !SCE * !SET_B * Q)	0.02660	0.03603	0.19849
	(!D * !SCD * SCE * SET_B * Q)	0.02423	0.03418	0.19640
	(!D * !SCD * SCE * SET_B * Q)	0.03121	0.04117	0.20338
	(!D * !SCD * SCE * SET_B * !Q)	0.01175	0.02095	0.18158
	(!D * !SCD * SCE * SET_B * !Q)	0.01830	0.02752	0.18812
	(!D * !SCD * SCE * !SET_B * Q)	0.01951	0.02896	0.19141
	(!D * !SCD * SCE * !SET_B * Q)	0.02662	0.03606	0.19852

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * SET_B * !Q)**	0.02495	0.03403	0.19814
	(D * SCD * SCE * SET_B * !Q)	0.03087	0.03995	0.20406
	(D * SCD * SCE * Q)	0.01329	0.02262	0.18193
	(D * SCD * SCE * Q)	0.01978	0.02910	0.18840
	(D * !SCE * SET_B * !Q)	0.02491	0.03399	0.19811
	(D * !SCE * SET_B * !Q)	0.03083	0.03992	0.20403
	(D * !SCE * Q)	0.01328	0.02261	0.18192
	(D * !SCE * Q)	0.01978	0.02910	0.18840
	(D * !SCD * SCE * SET_B * Q)	0.02873	0.03841	0.20007
	(D * !SCD * SCE * SET_B * Q)	0.03578	0.04546	0.20712
	(D * !SCD * SCE * SET_B * !Q)	0.01297	0.02196	0.18181
	(D * !SCD * SCE * SET_B * !Q)	0.01950	0.02849	0.18834
	(D * !SCD * SCE * !SET_B * Q)	0.02351	0.03319	0.19461
	(D * !SCD * SCE * !SET_B * Q)	0.03069	0.04037	0.20178
	(!D * SCD * SCE * SET_B * !Q)	0.02499	0.03407	0.19818
	(!D * SCD * SCE * SET_B * !Q)	0.03089	0.03998	0.20408
	(!D * SCD * SCE * Q)	0.01329	0.02262	0.18193
	(!D * SCD * SCE * Q)	0.01979	0.02910	0.18841
	(!D * !SCE * SET_B * Q)	0.02870	0.03839	0.20005
	(!D * !SCE * SET_B * Q)	0.03572	0.04540	0.20707
	(!D * !SCE * SET_B * !Q)	0.01296	0.02195	0.18180
	(!D * !SCE * SET_B * !Q)	0.01949	0.02848	0.18833
	(!D * !SCE * !SET_B * Q)	0.02350	0.03319	0.19459
	(!D * !SCE * !SET_B * Q)	0.03067	0.04037	0.20174
	(!D * !SCD * SCE * SET_B * Q)	0.02872	0.03840	0.20009
	(!D * !SCD * SCE * SET_B * Q)	0.03576	0.04545	0.20710
	(!D * !SCD * SCE * SET_B * !Q)	0.01297	0.02196	0.18181
	(!D * !SCD * SCE * SET_B * !Q)	0.01950	0.02849	0.18834
	(!D * !SCD * SCE * !SET_B * Q)	0.02352	0.03320	0.19461
	(!D * !SCD * SCE * !SET_B * Q)	0.03070	0.04037	0.20177

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * SET_B * !Q)**	0.02430	0.03340	0.19763
	(D * SCD * SCE * SET_B * !Q)	0.03035	0.03946	0.20366
	(D * SCD * SCE * Q)	0.01302	0.02238	0.18176
	(D * SCD * SCE * Q)	0.01953	0.02888	0.18825
	(D * !SCE * SET_B * !Q)	0.02426	0.03336	0.19758
	(D * !SCE * SET_B * !Q)	0.03032	0.03942	0.20363
	(D * !SCE * Q)	0.01302	0.02238	0.18176
	(D * !SCE * Q)	0.01953	0.02887	0.18825
	(D * !SCD * SCE * SET_B * Q)	0.02819	0.03790	0.19966
	(D * !SCD * SCE * SET_B * Q)	0.03515	0.04483	0.20663
	(D * !SCD * SCE * SET_B * !Q)	0.01261	0.02162	0.18153
	(D * !SCD * SCE * SET_B * !Q)	0.01913	0.02815	0.18806
	(D * !SCD * SCE * !SET_B * Q)	0.02301	0.03272	0.19424
	(D * !SCD * SCE * !SET_B * Q)	0.03010	0.03980	0.20134
	(!D * SCD * SCE * SET_B * !Q)	0.02434	0.03344	0.19764
	(!D * SCD * SCE * SET_B * !Q)	0.03037	0.03948	0.20368
	(!D * SCD * SCE * Q)	0.01302	0.02238	0.18177
	(!D * SCD * SCE * Q)	0.01953	0.02888	0.18826
	(!D * !SCE * SET_B * Q)	0.02817	0.03788	0.19964
	(!D * !SCE * SET_B * Q)	0.03510	0.04481	0.20658
	(!D * !SCE * SET_B * !Q)	0.01260	0.02162	0.18152
	(!D * !SCE * SET_B * !Q)	0.01913	0.02815	0.18805
	(!D * !SCE * !SET_B * Q)	0.02300	0.03271	0.19423
	(!D * !SCE * !SET_B * Q)	0.03009	0.03980	0.20131
	(!D * !SCD * SCE * SET_B * Q)	0.02818	0.03788	0.19966
	(!D * !SCD * SCE * SET_B * Q)	0.03513	0.04484	0.20663
	(!D * !SCD * SCE * SET_B * !Q)	0.01261	0.02162	0.18153
	(!D * !SCD * SCE * SET_B * !Q)	0.01914	0.02815	0.18806
	(!D * !SCD * SCE * !SET_B * Q)	0.02303	0.03272	0.19426
	(!D * !SCD * SCE * !SET_B * Q)	0.03011	0.03980	0.20134

SKY130_FD_SC_HS__SDFXBPx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00194	0.00196	0.00416	0.00304	1.46982	1.39988
sky130_fd_sc_hs__sdfxbp_2	0.00192	0.00193	0.00421	0.00304	2.83779	2.84133

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfxbp_1	0.00000	2.81831	4.08466
sky130_fd_sc_hs__sdfxbp_2	0.00000	2.68639	4.07679

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)	0.15952	0.55773	5.56737
sky130_fd_sc_hs__sdfxbp_2	CLK->Q (RR)	0.15454	0.46015	5.44673

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxbp_1	CLK->Q (RF)	0.16776	0.37351	2.09915
sky130_fd_sc_hs__sdfxbp_2	CLK->Q (RF)	0.17886	0.34997	1.99780

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)	0.19919	0.59875	5.55361
sky130_fd_sc_hs__sdfxbp_2	CLK->Q_N (RR)	0.23191	0.53133	5.56288

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)	0.18570	0.37413	1.97206
sky130_fd_sc_hs__sdfxbp_2	CLK->Q_N (RF)	0.19756	0.35303	2.11555

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)	-0.04687	-0.11041	-0.64238
	setup	CLK (R)	0.09339	0.14080	0.65307
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.04769	-0.11074	-0.66607
	setup	CLK (R)	0.09526	0.14208	0.68062

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)	-0.07520	-0.19327	-3.37323
	setup	CLK (R)	0.13196	0.25487	3.40230
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.07735	-0.19349	-3.40285
	setup	CLK (R)	0.13120	0.25745	3.43290

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)	-0.04687	-0.11041	-0.64238
	setup	CLK (R)	0.09339	0.14080	0.65307
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.04769	-0.11074	-0.66607
	setup	CLK (R)	0.09526	0.14208	0.68062

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)	-0.07520	-0.19327	-3.37323
	setup	CLK (R)	0.13196	0.25487	3.40230
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.07735	-0.19349	-3.40285
	setup	CLK (R)	0.13120	0.25745	3.43290

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)	-0.06405	-0.11735	-0.64423
	setup	CLK (R)	0.11575	0.15627	0.65536
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.06086	-0.11940	-0.64623
	setup	CLK (R)	0.11182	0.15425	0.65720

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)	-0.10333	-0.21448	-3.45934
	setup	CLK (R)	0.17614	0.28130	3.48950
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.10138	-0.21614	-3.52142
	setup	CLK (R)	0.17550	0.28421	3.55367

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)	-0.06405	-0.11735	-0.64470
	hold	CLK (R)	-0.06717	-0.12347	-0.64423
	setup	CLK (R)	0.11290	0.15095	0.65449
	setup	CLK (R)	0.11575	0.15627	0.65536
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.06086	-0.11940	-0.64789
	hold	CLK (R)	-0.06601	-0.12347	-0.64623
	setup	CLK (R)	0.10868	0.14855	0.65720
	setup	CLK (R)	0.11182	0.15425	0.65538

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)	-0.11127	-0.22233	-3.45934
	hold	CLK (R)	-0.10333	-0.21448	-3.46423
	setup	CLK (R)	0.17614	0.28130	3.48060
	setup	CLK (R)	0.16670	0.27651	3.48950
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.10882	-0.22208	-3.52142
	hold	CLK (R)	-0.10138	-0.21614	-3.52840
	setup	CLK (R)	0.17550	0.28421	3.54634
	setup	CLK (R)	0.16940	0.27844	3.55367

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)	-0.05455	-0.12347	-0.40838
	setup	CLK (R)	0.16996	0.19055	0.83216
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.05403	-0.12347	-0.43912
	setup	CLK (R)	0.17299	0.19637	0.83499

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)	-0.08808	-0.18341	-3.06195
	setup	CLK (R)	0.14521	0.24451	3.14648
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.08773	-0.18566	-3.08921
	setup	CLK (R)	0.14769	0.24748	3.21403

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)	-0.10788	-0.13483	-0.40838
	hold	CLK (R)	-0.05455	-0.12347	-0.82186
	setup	CLK (R)	0.16996	0.19055	0.42548
	setup	CLK (R)	0.10575	0.15754	0.83216
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.10948	-0.13899	-0.43912
	hold	CLK (R)	-0.05403	-0.12347	-0.82488
	setup	CLK (R)	0.17299	0.19637	0.45567
	setup	CLK (R)	0.10038	0.15605	0.83499

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)	-0.09320	-0.21051	-3.06195
	hold	CLK (R)	-0.08808	-0.18341	-3.12276
	setup	CLK (R)	0.13987	0.23534	3.06800
	setup	CLK (R)	0.14521	0.24451	3.14648
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.09452	-0.21253	-3.08921
	hold	CLK (R)	-0.08773	-0.18566	-3.18730
	setup	CLK (R)	0.14090	0.23881	3.09802
	setup	CLK (R)	0.14769	0.24748	3.21403

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 ()	0.07562	0.60669	16.50020
	min_pulse_width	CLK ()	0.05738	0.60669	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.07562	0.60669	16.50020
	min_pulse_width	CLK ()	0.05966	0.60669	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 ()	0.12120	0.60669	16.50020
	min_pulse_width	CLK ()	0.14400	0.60669	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.12120	0.60669	16.50020
	min_pulse_width	CLK ()	0.14627	0.60669	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	0.02172	0.02616	0.11213
	CLK	0.01843	0.02274	0.10882
sky130_fd_sc_hs__sdfxbp_2	CLK	0.02660	0.03117	0.11802
	CLK	0.02332	0.02784	0.11464

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.02244	0.02688	0.11021
	CLK	0.01915	0.02353	0.10689
sky130_fd_sc_hs__sdfxbp_2	CLK	0.02761	0.03173	0.11577
	CLK	0.02433	0.02842	0.11252

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.02248	0.02685	0.11091
	CLK	0.01919	0.02355	0.10766
sky130_fd_sc_hs__sdfxbp_2	CLK	0.02764	0.03175	0.11664
	CLK	0.02436	0.02844	0.11336

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.02169	0.02601	0.11134
	CLK	0.01840	0.02269	0.10809
sky130_fd_sc_hs__sdfxbp_2	CLK	0.02658	0.03107	0.11709
	CLK	0.02329	0.02779	0.11372

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	0.00194	0.00196	0.00195
	(CLK * SCD * SCE)	-0.00080	-0.00082	-0.00081
	(CLK * !SCE)	0.00627	0.00992	0.08160
	(CLK * !SCE)	0.00141	0.00503	0.07673
	(CLK * !SCD * SCE)	0.00108	0.00109	0.00107
	(CLK * !SCD * SCE)	-0.00193	-0.00196	-0.00198
	(!CLK * SCD * SCE)	0.00192	0.00194	0.00193
	(!CLK * SCD * SCE)	-0.00082	-0.00083	-0.00082
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01477	0.01839	0.09934
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00990	0.01351	0.09447
	(!CLK * !SCD * SCE)	0.00108	0.00109	0.00107
	(!CLK * !SCD * SCE)	-0.00192	-0.00194	-0.00197
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	0.00195	0.00198	0.00196
	(CLK * SCD * SCE)	-0.00079	-0.00080	-0.00079
	(CLK * !SCE)	0.00614	0.00962	0.08144
	(CLK * !SCE)	0.00132	0.00479	0.07661
	(CLK * !SCD * SCE)	0.00111	0.00113	0.00110
	(CLK * !SCD * SCE)	-0.00189	-0.00192	-0.00194
	(!CLK * SCD * SCE)	0.00194	0.00198	0.00195
	(!CLK * SCD * SCE)	-0.00080	-0.00082	-0.00080
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01485	0.01846	0.09930
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01003	0.01362	0.09448
	(!CLK * !SCD * SCE)	0.00112	0.00113	0.00111
	(!CLK * !SCD * SCE)	-0.00188	-0.00190	-0.00193

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	-0.00182	-0.00186	-0.00188
	(CLK * SCD * SCE)	0.00091	0.00091	0.00088
	(CLK * !SCE)	0.00125	0.00547	0.07717
	(CLK * !SCE)	0.00611	0.01035	0.08205
	(CLK * !SCD * SCE)	-0.00100	-0.00101	-0.00100
	(CLK * !SCD * SCE)	0.00202	0.00203	0.00202
	(!CLK * SCD * SCE)	-0.00185	-0.00187	-0.00190
	(!CLK * SCD * SCE)	0.00090	0.00090	0.00087
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01171	0.01621	0.09698
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01660	0.02109	0.10186
	(!CLK * !SCD * SCE)	-0.00099	-0.00101	-0.00099
	(!CLK * !SCD * SCE)	0.00201	0.00204	0.00203
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	-0.00185	-0.00188	-0.00191
	(CLK * SCD * SCE)	0.00088	0.00089	0.00086
	(CLK * !SCE)	0.00142	0.00563	0.07731
	(CLK * !SCE)	0.00623	0.01047	0.08214
	(CLK * !SCD * SCE)	-0.00104	-0.00105	-0.00104
	(CLK * !SCD * SCE)	0.00198	0.00199	0.00198
	(!CLK * SCD * SCE)	-0.00186	-0.00189	-0.00192
	(!CLK * SCD * SCE)	0.00088	0.00088	0.00085
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01176	0.01625	0.09692
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01660	0.02109	0.10175
	(!CLK * !SCD * SCE)	-0.00102	-0.00104	-0.00103
	(!CLK * !SCD * SCE)	0.00198	0.00200	0.00199

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.00885	0.01145	0.07580
	(CLK * D * SCE)	0.00251	0.00508	0.06944
	(CLK * !D * SCE)	0.01011	0.01246	0.07626
	(CLK * !D * SCE)	0.00347	0.00582	0.06961
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01736	0.02031	0.09216
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01102	0.01394	0.08580
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01863	0.02135	0.09261
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01199	0.01468	0.08596
	!SCE	0.00193	0.00165	0.00161
	!SCE	-0.00159	-0.00189	-0.00191
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.00868	0.01131	0.07584
	(CLK * D * SCE)	0.00241	0.00502	0.06957
	(CLK * !D * SCE)	0.00994	0.01233	0.07630
	(CLK * !D * SCE)	0.00337	0.00574	0.06973
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01741	0.02034	0.09232
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01113	0.01407	0.08606
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01868	0.02152	0.09277
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01211	0.01493	0.08621
	!SCE	0.00187	0.00159	0.00155
	!SCE	-0.00161	-0.00191	-0.00193

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.00316	0.00574	0.06992
	(CLK * D * SCE)	0.00952	0.01212	0.07627
	(CLK * !D * SCE)	0.00252	0.00526	0.06973
	(CLK * !D * SCE)	0.00917	0.01193	0.07636
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01397	0.01672	0.08785
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.02034	0.02310	0.09419
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01354	0.01646	0.08850
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.02020	0.02312	0.09513
	!SCE	-0.00151	-0.00154	-0.00154
	!SCE	0.00199	0.00200	0.00200
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.00330	0.00592	0.07028
	(CLK * D * SCE)	0.00957	0.01221	0.07655
	(CLK * !D * SCE)	0.00266	0.00545	0.07010
	(CLK * !D * SCE)	0.00922	0.01202	0.07665
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01396	0.01675	0.08798
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.02025	0.02304	0.09424
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01355	0.01649	0.08863
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.02011	0.02306	0.09517
	!SCE	-0.00146	-0.00148	-0.00149
	!SCE	0.00201	0.00200	0.00201

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)**	0.00812	0.01296	0.11038
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00076	0.00411	0.10154
	(CLK * D * !SCD)	0.01196	0.01693	0.11857
	(CLK * D * !SCD)	0.00568	0.01060	0.11221
	(CLK * !D * SCD)	0.01421	0.02225	0.18287
	(CLK * !D * SCD)	0.00307	0.01112	0.17177
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00810	0.01295	0.11036
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00077	0.00410	0.10152
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.02249	0.02754	0.12986
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01620	0.02121	0.12351
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.02270	0.03116	0.20058
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01156	0.02005	0.18948
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00782	0.01286	0.11009
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00046	0.00456	0.10183

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00843	0.01325	0.11063
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00064	0.00416	0.10160
	(CLK * D * !SCD)	0.01239	0.01729	0.11897
	(CLK * D * !SCD)	0.00589	0.01073	0.11238
	(CLK * !D * SCD)	0.01442	0.02240	0.18312
	(CLK * !D * SCD)	0.00315	0.01113	0.17188
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00842	0.01324	0.11062
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00065	0.00415	0.10159
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.02279	0.02779	0.13012
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01627	0.02123	0.12353
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.02312	0.03154	0.20096
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01185	0.02026	0.18972
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00811	0.01309	0.11034
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00036	0.00460	0.10186

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)**	-0.00081	0.00517	0.10266
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00805	0.01405	0.11150
	(CLK * D * !SCD)	0.00570	0.01127	0.11195
	(CLK * D * !SCD)	0.01198	0.01761	0.11806
	(CLK * !D * SCD)	0.00165	0.01003	0.17066
	(CLK * !D * SCD)	0.01274	0.02115	0.18178
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00082	0.00516	0.10264
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00803	0.01404	0.11148
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01415	0.01982	0.11993
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.02045	0.02616	0.12603
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01210	0.02058	0.18767
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.02319	0.03173	0.19880
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00001	0.00604	0.10306
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00827	0.01435	0.11135

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00087	0.00505	0.10254
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00817	0.01412	0.11156
	(CLK * D * !SCD)	0.00553	0.01108	0.11176
	(CLK * D * !SCD)	0.01207	0.01762	0.11810
	(CLK * !D * SCD)	0.00178	0.01010	0.17081
	(CLK * !D * SCD)	0.01300	0.02132	0.18206
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00088	0.00504	0.10253
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00816	0.01411	0.11155
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01420	0.01983	0.12000
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.02074	0.02641	0.12630
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01211	0.02053	0.18755
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.02333	0.03179	0.19881
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00002	0.00593	0.10298
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00843	0.01444	0.11145

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)	0.01978	0.02751	0.18977
	(D * SCD * SCE * Q * !Q_N)	0.01321	0.02092	0.18320
	(D * !SCE * Q * !Q_N)	0.01974	0.02748	0.18967
	(D * !SCE * Q * !Q_N)	0.01317	0.02089	0.18310
	(D * !SCD * SCE * !Q * Q_N)	0.01946	0.02715	0.18953
	(D * !SCD * SCE * !Q * Q_N)	0.01288	0.02056	0.18295
	(!D * SCD * SCE * Q * !Q_N)	0.01978	0.02751	0.18978
	(!D * SCD * SCE * Q * !Q_N)	0.01321	0.02092	0.18321
	(!D * !SCE * !Q * Q_N)	0.01945	0.02715	0.18933
	(!D * !SCE * !Q * Q_N)	0.01288	0.02057	0.18276
	(!D * !SCD * SCE * !Q * Q_N)	0.01946	0.02718	0.18949
	(!D * !SCD * SCE * !Q * Q_N)	0.01289	0.02059	0.18291
sky130_fd_sc_hs__sdfxbp_2	(D * SCD * SCE * Q * !Q_N)	0.02018	0.02791	0.19146
	(D * SCD * SCE * Q * !Q_N)	0.01362	0.02131	0.18490
	(D * !SCE * Q * !Q_N)	0.02016	0.02789	0.19139
	(D * !SCE * Q * !Q_N)	0.01359	0.02130	0.18483
	(D * !SCD * SCE * !Q * Q_N)	0.01989	0.02757	0.19093
	(D * !SCD * SCE * !Q * Q_N)	0.01332	0.02099	0.18435
	(!D * SCD * SCE * Q * !Q_N)	0.02018	0.02791	0.19146
	(!D * SCD * SCE * Q * !Q_N)	0.01362	0.02131	0.18490
	(!D * !SCE * !Q * Q_N)	0.01988	0.02783	0.19076
	(!D * !SCE * !Q * Q_N)	0.01332	0.02123	0.18418
	(!D * !SCD * SCE * !Q * Q_N)	0.01989	0.02760	0.19124
	(!D * !SCD * SCE * !Q * Q_N)	0.01333	0.02102	0.18467

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)**	0.01117	0.02033	0.18192
	(D * SCD * SCE * Q * !Q_N)	0.01776	0.02692	0.18850
	(D * SCD * SCE * !Q * Q_N)	0.01920	0.02865	0.19307
	(D * SCD * SCE * !Q * Q_N)	0.02579	0.03524	0.19965
	(D * !SCE * Q * !Q_N)	0.01117	0.02049	0.18182
	(D * !SCE * Q * !Q_N)	0.01776	0.02706	0.18840
	(D * !SCE * !Q * Q_N)	0.01916	0.02868	0.19466
	(D * !SCE * !Q * Q_N)	0.02574	0.03528	0.20121
	(D * !SCD * SCE * Q * !Q_N)	0.02340	0.03297	0.19889
	(D * !SCD * SCE * Q * !Q_N)	0.03001	0.03959	0.20549
	(D * !SCD * SCE * !Q * Q_N)	0.01126	0.02056	0.18228
	(D * !SCD * SCE * !Q * Q_N)	0.01785	0.02711	0.18886
	(!D * SCD * SCE * Q * !Q_N)	0.01117	0.02049	0.18192
	(!D * SCD * SCE * Q * !Q_N)	0.01776	0.02706	0.18850
	(!D * SCD * SCE * !Q * Q_N)	0.01924	0.02868	0.19309
	(!D * SCD * SCE * !Q * Q_N)	0.02581	0.03526	0.19966
	(!D * !SCE * Q * !Q_N)	0.02325	0.03278	0.19738
	(!D * !SCE * Q * !Q_N)	0.02984	0.03936	0.20393
	(!D * !SCE * !Q * Q_N)	0.01126	0.02056	0.18206
	(!D * !SCE * !Q * Q_N)	0.01784	0.02714	0.18865
	(!D * !SCD * SCE * Q * !Q_N)	0.02339	0.03296	0.19888
	(!D * !SCD * SCE * Q * !Q_N)	0.03000	0.03955	0.20547
	(!D * !SCD * SCE * !Q * Q_N)	0.01126	0.02055	0.18227
	(!D * !SCD * SCE * !Q * Q_N)	0.01785	0.02712	0.18886

sky130_fd_sc_hs__sdfxbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.01135	0.02067	0.18278
	(D * SCD * SCE * Q * !Q_N)	0.01789	0.02727	0.18936
	(D * SCD * SCE * !Q * Q_N)	0.01956	0.02904	0.19463
	(D * SCD * SCE * !Q * Q_N)	0.02610	0.03559	0.20118
	(D * !SCE * Q * !Q_N)	0.01135	0.02068	0.18274
	(D * !SCE * Q * !Q_N)	0.01788	0.02727	0.18929
	(D * !SCE * !Q * Q_N)	0.01952	0.02905	0.19562
	(D * !SCE * !Q * Q_N)	0.02605	0.03561	0.20219
	(D * !SCD * SCE * Q * !Q_N)	0.02344	0.03303	0.19941
	(D * !SCD * SCE * Q * !Q_N)	0.03000	0.03962	0.20602
	(D * !SCD * SCE * !Q * Q_N)	0.01140	0.02069	0.18312
	(D * !SCD * SCE * !Q * Q_N)	0.01794	0.02726	0.18970
	(!D * SCD * SCE * Q * !Q_N)	0.01135	0.02067	0.18279
	(!D * SCD * SCE * Q * !Q_N)	0.01789	0.02727	0.18937
	(!D * SCD * SCE * !Q * Q_N)	0.01960	0.02906	0.19467
	(!D * SCD * SCE * !Q * Q_N)	0.02612	0.03564	0.20120
	(!D * !SCE * Q * !Q_N)	0.02324	0.03284	0.19807
	(!D * !SCE * Q * !Q_N)	0.02978	0.03943	0.20465
	(!D * !SCE * !Q * Q_N)	0.01139	0.02069	0.18291
	(!D * !SCE * !Q * Q_N)	0.01793	0.02729	0.18949
	(!D * !SCD * SCE * Q * !Q_N)	0.02345	0.03297	0.19939
	(!D * !SCD * SCE * Q * !Q_N)	0.03001	0.03956	0.20596
	(!D * !SCD * SCE * !Q * Q_N)	0.01140	0.02068	0.18312
	(!D * !SCD * SCE * !Q * Q_N)	0.01794	0.02726	0.18969

SKY130_FD_SC_HS__SDFXTPx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00196	0.00206	0.00431	0.00301	1.44089
sky130_fd_sc_hs__sdfxtp_2	0.00199	0.00202	0.00417	0.00304	2.73409
sky130_fd_sc_hs__sdfxtp_4	0.00197	0.00200	0.00430	0.00302	5.28472

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfxtp_1	0.00000	2.47034	4.34115
sky130_fd_sc_hs__sdfxtp_2	0.00000	2.23761	3.68044
sky130_fd_sc_hs__sdfxtp_4	0.00000	3.35048	5.52605

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)**	0.14631	0.54437	5.50793
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RR)**	0.14914	0.45432	5.32541
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RR)**	0.17751	0.42175	5.55093

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxtp_1	**CLK->Q (RF)**	0.16005	0.35732	2.01591
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RF)**	0.16549	0.32678	1.91853
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RF)**	0.16715	0.29882	2.01167

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)	-0.04813	-0.11335	-0.64706
	setup	CLK (R)	0.09638	0.14048	0.65948
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.04970	-0.11537	-0.65341
	setup	CLK (R)	0.09703	0.14381	0.66470
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.04714	-0.11125	-0.64180
	setup	CLK (R)	0.08528	0.13628	0.65162

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)	-0.07529	-0.19748	-3.37730
	setup	CLK (R)	0.13618	0.25991	3.40469
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.08327	-0.20094	-3.39766
	setup	CLK (R)	0.14032	0.26611	3.42551
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.08057	-0.19835	-3.37490
	setup	CLK (R)	0.13451	0.25745	3.40377

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)	-0.04813	-0.11335	-0.64706
	setup	CLK (R)	0.09638	0.14048	0.65948
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.04970	-0.11537	-0.65341
	setup	CLK (R)	0.09703	0.14381	0.66470
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.04714	-0.11125	-0.64180
	setup	CLK (R)	0.08528	0.13628	0.65162

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)	-0.07529	-0.19748	-3.37730
	setup	CLK (R)	0.13618	0.25991	3.40469
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.08327	-0.20094	-3.39766
	setup	CLK (R)	0.14032	0.26611	3.42551
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.08057	-0.19835	-3.37490
	setup	CLK (R)	0.13451	0.25745	3.40377

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)	-0.06404	-0.11945	-0.65165
	setup	CLK (R)	0.11583	0.15793	0.66106
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.06469	-0.12145	-0.65736
	setup	CLK (R)	0.12060	0.16193	0.66898
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.06200	-0.11735	-0.64218
	setup	CLK (R)	0.10802	0.15287	0.65400

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)	-0.10325	-0.21927	-3.45632
	setup	CLK (R)	0.17704	0.28525	3.48512
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.10969	-0.22279	-3.47241
	setup	CLK (R)	0.18599	0.29000	3.50126
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.10966	-0.22187	-3.45328
	setup	CLK (R)	0.17725	0.28421	3.48666

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)	-0.06404	-0.11945	-0.65243
	hold	CLK (R)	-0.06699	-0.12549	-0.65165
	setup	CLK (R)	0.11550	0.15416	0.66106
	setup	CLK (R)	0.11583	0.15793	0.66010
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.06469	-0.12145	-0.66028
	hold	CLK (R)	-0.07099	-0.12682	-0.65736
	setup	CLK (R)	0.11608	0.15657	0.66898
	setup	CLK (R)	0.12060	0.16193	0.66851
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.06200	-0.11735	-0.64374
	hold	CLK (R)	-0.06914	-0.12347	-0.64218
	setup	CLK (R)	0.10474	0.14694	0.65388
	setup	CLK (R)	0.10802	0.15287	0.65400

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)	-0.11382	-0.22349	-3.45632
	hold	CLK (R)	-0.10325	-0.21927	-3.46025
	setup	CLK (R)	0.17704	0.28525	3.47779
	setup	CLK (R)	0.17441	0.28069	3.48512
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.11798	-0.22948	-3.47241
	hold	CLK (R)	-0.10969	-0.22279	-3.47736
	setup	CLK (R)	0.18599	0.29000	3.49547
	setup	CLK (R)	0.17792	0.28470	3.50126
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.11774	-0.22765	-3.45328
	hold	CLK (R)	-0.10966	-0.22187	-3.45784
	setup	CLK (R)	0.17725	0.28421	3.47774
	setup	CLK (R)	0.17387	0.27844	3.48666

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)	-0.05599	-0.12549	-0.41392
	setup	CLK (R)	0.17849	0.19785	0.83963
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.05619	-0.12561	-0.41476
	setup	CLK (R)	0.18395	0.20211	0.84158
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.05790	-0.12347	-0.41413
	setup	CLK (R)	0.17674	0.19637	0.82759

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)	-0.08915	-0.18528	-3.07254
	setup	CLK (R)	0.14852	0.24748	3.14294
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.09446	-0.18833	-3.06962
	setup	CLK (R)	0.15351	0.25500	3.16453
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.09360	-0.18683	-3.06578
	setup	CLK (R)	0.14889	0.24893	3.14863

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)	-0.10988	-0.13910	-0.41392
	hold	CLK (R)	-0.05599	-0.12549	-0.82853
	setup	CLK (R)	0.17849	0.19785	0.42843
	setup	CLK (R)	0.10629	0.15993	0.83963
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.11509	-0.14465	-0.41476
	hold	CLK (R)	-0.05619	-0.12561	-0.83365
	setup	CLK (R)	0.18395	0.20211	0.43088
	setup	CLK (R)	0.11003	0.16193	0.84158
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.11437	-0.14172	-0.41413
	hold	CLK (R)	-0.05790	-0.12347	-0.81785
	setup	CLK (R)	0.17674	0.19637	0.43045
	setup	CLK (R)	0.09525	0.15194	0.82759

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)	-0.09642	-0.21456	-3.07254
	hold	CLK (R)	-0.08915	-0.18528	-3.11541
	setup	CLK (R)	0.14424	0.24057	3.08122
	setup	CLK (R)	0.14852	0.24748	3.14294
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.09446	-0.21456	-3.06962
	hold	CLK (R)	-0.09620	-0.18833	-3.13841
	setup	CLK (R)	0.14539	0.23991	3.07808
	setup	CLK (R)	0.15351	0.25500	3.16453
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.09360	-0.21253	-3.06578
	hold	CLK (R)	-0.09580	-0.18683	-3.11965
	setup	CLK (R)	0.13331	0.23359	3.07476
	setup	CLK (R)	0.14889	0.24893	3.14863

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 ()	0.06878	0.60669	16.50020
	min_pulse_width	CLK ()	0.05738	0.60669	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.07334	0.60669	16.50020
	min_pulse_width	CLK ()	0.05966	0.60669	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.09613	0.60669	16.50020
	min_pulse_width	CLK ()	0.06194	0.60669	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 ()	0.12348	0.60669	16.50020
	min_pulse_width	CLK ()	0.14400	0.60669	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.12804	0.60669	16.50020
	min_pulse_width	CLK ()	0.15083	0.60669	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.11436	0.60669	16.50020
	min_pulse_width	CLK ()	0.14627	0.60669	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	0.03345	0.04217	0.21355
	CLK	0.02694	0.03568	0.20753
sky130_fd_sc_hs__sdfxtp_2	CLK	0.03876	0.04758	0.21971
	CLK	0.03219	0.04106	0.21387
sky130_fd_sc_hs__sdfxtp_4	CLK	0.04971	0.05781	0.22941
	CLK	0.04318	0.05150	0.22475

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	CLK	0.03528	0.04387	0.21023
	CLK	0.02877	0.03728	0.20358
sky130_fd_sc_hs__sdfxtp_2	CLK	0.04068	0.04904	0.21567
	CLK	0.03412	0.04240	0.20845
sky130_fd_sc_hs__sdfxtp_4	CLK	0.05197	0.06018	0.22764
	CLK	0.04544	0.05357	0.22015

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	0.00198	0.00201	0.00199
	(CLK * SCD * SCE)	-0.00080	-0.00082	-0.00081
	(CLK * !SCE)	0.00629	0.00991	0.08149
	(CLK * !SCE)	0.00130	0.00489	0.07648
	(CLK * !SCD * SCE)	0.00112	0.00113	0.00111
	(CLK * !SCD * SCE)	-0.00193	-0.00197	-0.00198
	(!CLK * SCD * SCE)	0.00198	0.00201	0.00199
	(!CLK * SCD * SCE)	-0.00081	-0.00083	-0.00081
	(!CLK * !SCE)	0.01510	0.01870	0.09961
	(!CLK * !SCE)	0.01011	0.01369	0.09462
	(!CLK * !SCD * SCE)	0.00114	0.00114	0.00112
	(!CLK * !SCD * SCE)	-0.00192	-0.00194	-0.00197
sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	0.00204	0.00206	0.00205
	(CLK * SCD * SCE)	-0.00080	-0.00082	-0.00081
	(CLK * !SCE)	0.00678	0.01015	0.08179
	(CLK * !SCE)	0.00170	0.00504	0.07671
	(CLK * !SCD * SCE)	0.00117	0.00117	0.00115
	(CLK * !SCD * SCE)	-0.00196	-0.00198	-0.00200
	(!CLK * SCD * SCE)	0.00203	0.00207	0.00204
	(!CLK * SCD * SCE)	-0.00082	-0.00084	-0.00082
	(!CLK * !SCE)	0.01626	0.01977	0.10038
	(!CLK * !SCE)	0.01119	0.01466	0.09529
	(!CLK * !SCD * SCE)	0.00118	0.00117	0.00116
	(!CLK * !SCD * SCE)	-0.00195	-0.00196	-0.00199

sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	0.00203	0.00203	0.00204
	(CLK * SCD * SCE)	-0.00080	-0.00080	-0.00080
	(CLK * !SCE)	0.00630	0.00993	0.08158
	(CLK * !SCE)	0.00133	0.00494	0.07660
	(CLK * !SCD * SCE)	0.00116	0.00117	0.00115
	(CLK * !SCD * SCE)	-0.00192	-0.00195	-0.00197
	(!CLK * SCD * SCE)	0.00202	0.00206	0.00203
	(!CLK * SCD * SCE)	-0.00079	-0.00081	-0.00079
	(!CLK * !SCE)	0.01513	0.01871	0.09953
	(!CLK * !SCE)	0.01016	0.01372	0.09454
	(!CLK * !SCD * SCE)	0.00118	0.00118	0.00117
	(!CLK * !SCD * SCE)	-0.00189	-0.00191	-0.00194

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	-0.00189	-0.00191	-0.00195
	(CLK * SCD * SCE)	0.00089	0.00089	0.00086
	(CLK * !SCE)	0.00137	0.00556	0.07716
	(CLK * !SCE)	0.00636	0.01057	0.08217
	(CLK * !SCD * SCE)	-0.00105	-0.00106	-0.00106
	(CLK * !SCD * SCE)	0.00201	0.00202	0.00201
	(!CLK * SCD * SCE)	-0.00189	-0.00192	-0.00195
	(!CLK * SCD * SCE)	0.00089	0.00089	0.00086
	(!CLK * !SCE)	0.01150	0.01601	0.09673
	(!CLK * !SCE)	0.01652	0.02102	0.10173
	(!CLK * !SCD * SCE)	-0.00103	-0.00105	-0.00104
	(!CLK * !SCD * SCE)	0.00202	0.00204	0.00203

sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	-0.00194	-0.00198	-0.00200
	(CLK * SCD * SCE)	0.00089	0.00090	0.00087
	(CLK * !SCE)	0.00146	0.00559	0.07711
	(CLK * !SCE)	0.00657	0.01068	0.08220
	(CLK * !SCD * SCE)	-0.00110	-0.00111	-0.00110
	(CLK * !SCD * SCE)	0.00203	0.00204	0.00203
	(!CLK * SCD * SCE)	-0.00196	-0.00199	-0.00201
	(!CLK * SCD * SCE)	0.00088	0.00089	0.00086
	(!CLK * !SCE)	0.01175	0.01618	0.09664
	(!CLK * !SCE)	0.01684	0.02127	0.10173
	(!CLK * !SCD * SCE)	-0.00108	-0.00110	-0.00109
	(!CLK * !SCD * SCE)	0.00203	0.00205	0.00204
sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	-0.00191	-0.00195	-0.00197
	(CLK * SCD * SCE)	0.00089	0.00089	0.00086
	(CLK * !SCE)	0.00132	0.00552	0.07719
	(CLK * !SCE)	0.00629	0.01052	0.08217
	(CLK * !SCD * SCE)	-0.00109	-0.00110	-0.00109
	(CLK * !SCD * SCE)	0.00200	0.00201	0.00200
	(!CLK * SCD * SCE)	-0.00192	-0.00194	-0.00197
	(!CLK * SCD * SCE)	0.00090	0.00090	0.00087
	(!CLK * !SCE)	0.01196	0.01643	0.09707
	(!CLK * !SCE)	0.01696	0.02143	0.10206
	(!CLK * !SCD * SCE)	-0.00106	-0.00108	-0.00107
	(!CLK * !SCD * SCE)	0.00201	0.00204	0.00203

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

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

sky130_fd_sc_hs__sdfxtp_1	**(CLK * D * SCE)**	0.00902	0.01157	0.07571
	(CLK * D * SCE)	0.00245	0.00499	0.06915
	(CLK * !D * SCE)	0.01028	0.01259	0.07617
	(CLK * !D * SCE)	0.00341	0.00571	0.06931
	(!CLK * D * SCE)	0.01784	0.02076	0.09246
	(!CLK * D * SCE)	0.01127	0.01418	0.08589
	(!CLK * !D * SCE)	0.01912	0.02181	0.09293
	(!CLK * !D * SCE)	0.01225	0.01493	0.08606
	!SCE	0.00195	0.00168	0.00163
	!SCE	-0.00170	-0.00200	-0.00202
sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCE)**	0.00924	0.01177	0.07587
	(CLK * D * SCE)	0.00272	0.00523	0.06935
	(CLK * !D * SCE)	0.01050	0.01280	0.07630
	(CLK * !D * SCE)	0.00369	0.00597	0.06949
	(!CLK * D * SCE)	0.01875	0.02160	0.09312
	(!CLK * D * SCE)	0.01223	0.01506	0.08661
	(!CLK * !D * SCE)	0.02002	0.02278	0.09361
	(!CLK * !D * SCE)	0.01320	0.01596	0.08680
	!SCE	0.00197	0.00170	0.00165
	!SCE	-0.00161	-0.00190	-0.00192
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCE)**	0.00895	0.01153	0.07586
	(CLK * D * SCE)	0.00252	0.00508	0.06943
	(CLK * !D * SCE)	0.01021	0.01256	0.07630
	(CLK * !D * SCE)	0.00348	0.00581	0.06957
	(!CLK * D * SCE)	0.01780	0.02072	0.09245
	(!CLK * D * SCE)	0.01137	0.01427	0.08601
	(!CLK * !D * SCE)	0.01907	0.02188	0.09291
	(!CLK * !D * SCE)	0.01234	0.01512	0.08618
	!SCE	0.00192	0.00164	0.00160
	!SCE	-0.00165	-0.00194	-0.00197

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	(CLK * D * SCE)	0.00318	0.00571	0.06967
	(CLK * D * SCE)	0.00974	0.01230	0.07622
	(CLK * !D * SCE)	0.00254	0.00523	0.06949
	(CLK * !D * SCE)	0.00939	0.01210	0.07633
	(!CLK * D * SCE)	0.01368	0.01639	0.08736
	(!CLK * D * SCE)	0.02026	0.02299	0.09392
	(!CLK * !D * SCE)	0.01326	0.01613	0.08805
	(!CLK * !D * SCE)	0.02013	0.02301	0.09489
	!SCE	-0.00155	-0.00158	-0.00158
	!SCE	0.00207	0.00209	0.00208
sky130_fd_sc_hs__sdfxtp_2	(CLK * D * SCE)	0.00340	0.00594	0.06985
	(CLK * D * SCE)	0.00991	0.01247	0.07636
	(CLK * !D * SCE)	0.00277	0.00545	0.06966
	(CLK * !D * SCE)	0.00956	0.01226	0.07645
	(!CLK * D * SCE)	0.01405	0.01675	0.08752
	(!CLK * D * SCE)	0.02058	0.02327	0.09402
	(!CLK * !D * SCE)	0.01360	0.01646	0.08811
	(!CLK * !D * SCE)	0.02042	0.02328	0.09491
	!SCE	-0.00156	-0.00160	-0.00160
	!SCE	0.00198	0.00201	0.00199

sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCE)**	0.00315	0.00572	0.06988
	(CLK * D * SCE)	0.00961	0.01218	0.07631
	(CLK * !D * SCE)	0.00252	0.00525	0.06969
	(CLK * !D * SCE)	0.00925	0.01199	0.07641
	(!CLK * D * SCE)	0.01415	0.01687	0.08790
	(!CLK * D * SCE)	0.02060	0.02332	0.09432
	(!CLK * !D * SCE)	0.01372	0.01660	0.08853
	(!CLK * !D * SCE)	0.02046	0.02334	0.09524
	!SCE	-0.00151	-0.00154	-0.00154
	!SCE	0.00204	0.00205	0.00205

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)**	0.00856	0.01334	0.11074
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00078	0.00399	0.10143
	(CLK * D * !SCD)	0.01252	0.01742	0.11904
	(CLK * D * !SCD)	0.00587	0.01070	0.11230
	(CLK * !D * SCD)	0.01468	0.02259	0.18307
	(CLK * !D * SCD)	0.00299	0.01093	0.17142
	(!CLK * D * SCD)	0.00856	0.01334	0.11073
	(!CLK * D * SCD)	-0.00078	0.00399	0.10143
	(!CLK * D * !SCD)	0.02271	0.02769	0.13003
	(!CLK * D * !SCD)	0.01605	0.02098	0.12329
	(!CLK * !D * SCD)	0.02348	0.03187	0.20119
	(!CLK * !D * SCD)	0.01180	0.02018	0.18954
	(!CLK * !D * !SCD)	0.00826	0.01322	0.11048
	(!CLK * !D * !SCD)	-0.00049	0.00445	0.10172

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00824	0.01305	0.11045
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00077	0.00408	0.10148
	(CLK * D * !SCD)	0.01236	0.01733	0.11889
	(CLK * D * !SCD)	0.00607	0.01098	0.11253
	(CLK * !D * SCD)	0.01474	0.02265	0.18304
	(CLK * !D * SCD)	0.00337	0.01132	0.17171
	(!CLK * D * SCD)	0.00823	0.01308	0.11044
	(!CLK * D * SCD)	-0.00078	0.00404	0.10147
	(!CLK * D * !SCD)	0.02272	0.02774	0.13000
	(!CLK * D * !SCD)	0.01642	0.02142	0.12363
	(!CLK * !D * SCD)	0.02423	0.03265	0.20168
	(!CLK * !D * SCD)	0.01286	0.02126	0.19035
	(!CLK * !D * !SCD)	0.00800	0.01301	0.11023
	(!CLK * !D * !SCD)	-0.00042	0.00458	0.10182
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00855	0.01332	0.11059
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00077	0.00397	0.10130
	(CLK * D * !SCD)	0.01245	0.01729	0.11884
	(CLK * D * !SCD)	0.00577	0.01055	0.11207
	(CLK * !D * SCD)	0.01470	0.02262	0.18305
	(CLK * !D * SCD)	0.00308	0.01100	0.17147
	(!CLK * D * SCD)	0.00856	0.01330	0.11059
	(!CLK * D * SCD)	-0.00076	0.00398	0.10131
	(!CLK * D * !SCD)	0.02313	0.02804	0.13026
	(!CLK * D * !SCD)	0.01644	0.02131	0.12350
	(!CLK * !D * SCD)	0.02352	0.03185	0.20098
	(!CLK * !D * SCD)	0.01190	0.02022	0.18940
	(!CLK * !D * !SCD)	0.00825	0.01318	0.11033
	(!CLK * !D * !SCD)	-0.00048	0.00443	0.10160

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)	-0.00084	0.00504	0.10253
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00847	0.01439	0.11183
	(CLK * D * !SCD)	0.00570	0.01120	0.11188
	(CLK * D * !SCD)	0.01241	0.01792	0.11838
	(CLK * !D * SCD)	0.00173	0.00999	0.17043
	(CLK * !D * SCD)	0.01336	0.02165	0.18209
	(!CLK * D * SCD)	-0.00084	0.00504	0.10253
	(!CLK * D * SCD)	0.00848	0.01438	0.11183
	(!CLK * D * !SCD)	0.01446	0.02007	0.12026
	(!CLK * D * !SCD)	0.02117	0.02679	0.12675
	(!CLK * !D * SCD)	0.01186	0.02022	0.18716
	(!CLK * !D * SCD)	0.02348	0.03191	0.19883
	(!CLK * !D * !SCD)	-0.00001	0.00590	0.10296
	(!CLK * !D * !SCD)	0.00872	0.01468	0.11172

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00082	0.00512	0.10258
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00816	0.01413	0.11156
	(CLK * D * !SCD)	0.00615	0.01169	0.11227
	(CLK * D * !SCD)	0.01247	0.01805	0.11837
	(CLK * !D * SCD)	0.00183	0.01010	0.17044
	(CLK * !D * SCD)	0.01317	0.02147	0.18180
	(!CLK * D * SCD)	-0.00083	0.00512	0.10257
	(!CLK * D * SCD)	0.00816	0.01413	0.11155
	(!CLK * D * !SCD)	0.01559	0.02123	0.12132
	(!CLK * D * !SCD)	0.02191	0.02759	0.12742
	(!CLK * !D * SCD)	0.01212	0.02051	0.18712
	(!CLK * !D * SCD)	0.02344	0.03188	0.19848
	(!CLK * !D * !SCD)	-0.00004	0.00598	0.10295
	(!CLK * !D * !SCD)	0.00835	0.01442	0.11137
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00081	0.00508	0.10246
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00849	0.01440	0.11174
	(CLK * D * !SCD)	0.00577	0.01127	0.11185
	(CLK * D * !SCD)	0.01247	0.01799	0.11837
	(CLK * !D * SCD)	0.00172	0.00999	0.17043
	(CLK * !D * SCD)	0.01329	0.02161	0.18203
	(!CLK * D * SCD)	-0.00081	0.00508	0.10246
	(!CLK * D * SCD)	0.00849	0.01440	0.11174
	(!CLK * D * !SCD)	0.01455	0.02015	0.12025
	(!CLK * D * !SCD)	0.02126	0.02687	0.12673
	(!CLK * !D * SCD)	0.01236	0.02071	0.18752
	(!CLK * !D * SCD)	0.02392	0.03234	0.19909
	(!CLK * !D * !SCD)	0.00005	0.00598	0.10291
	(!CLK * !D * !SCD)	0.00876	0.01472	0.11163

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)	0.01957	0.02729	0.18930
	(D * SCD * SCE * Q)	0.01307	0.02077	0.18279
	(D * !SCE * Q)	0.01954	0.02726	0.18919
	(D * !SCE * Q)	0.01303	0.02074	0.18268
	(D * !SCD * SCE * !Q)	0.01943	0.02711	0.18901
	(D * !SCD * SCE * !Q)	0.01292	0.02059	0.18251
	(!D * SCD * SCE * Q)	0.01958	0.02729	0.18930
	(!D * SCD * SCE * Q)	0.01307	0.02077	0.18279
	(!D * !SCE * !Q)	0.01943	0.02712	0.18904
	(!D * !SCE * !Q)	0.01292	0.02060	0.18252
	(!D * !SCD * SCE * !Q)	0.01944	0.02714	0.18918
	(!D * !SCD * SCE * !Q)	0.01293	0.02061	0.18267
sky130_fd_sc_hs__sdfxtp_2	(D * SCD * SCE * Q)	0.01993	0.02754	0.18940
	(D * SCD * SCE * Q)	0.01336	0.02096	0.18283
	(D * !SCE * Q)	0.01989	0.02752	0.18930
	(D * !SCE * Q)	0.01332	0.02094	0.18273
	(D * !SCD * SCE * !Q)	0.01999	0.02769	0.18933
	(D * !SCD * SCE * !Q)	0.01342	0.02109	0.18275
	(!D * SCD * SCE * Q)	0.01993	0.02755	0.18940
	(!D * SCD * SCE * Q)	0.01336	0.02096	0.18283
	(!D * !SCE * !Q)	0.01998	0.02781	0.18916
	(!D * !SCE * !Q)	0.01341	0.02121	0.18258
	(!D * !SCD * SCE * !Q)	0.01999	0.02757	0.18930
	(!D * !SCD * SCE * !Q)	0.01343	0.02099	0.18274

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.01981	0.02750	0.18952
	(D * SCD * SCE * Q)	0.01328	0.02096	0.18299
	(D * !SCE * Q)	0.01977	0.02749	0.18942
	(D * !SCE * Q)	0.01324	0.02093	0.18288
	(D * !SCD * SCE * !Q)	0.01958	0.02725	0.18915
	(D * !SCD * SCE * !Q)	0.01305	0.02070	0.18263
	(!D * SCD * SCE * Q)	0.01981	0.02751	0.18952
	(!D * SCD * SCE * Q)	0.01328	0.02096	0.18299
	(!D * !SCE * !Q)	0.01958	0.02725	0.18918
	(!D * !SCE * !Q)	0.01304	0.02070	0.18264
	(!D * !SCD * SCE * !Q)	0.01959	0.02727	0.18933
	(!D * !SCD * SCE * !Q)	0.01306	0.02072	0.18280

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)**	0.01139	0.02052	0.18186
	(D * SCD * SCE * Q)	0.01792	0.02704	0.18838
	(D * SCD * SCE * !Q)	0.01952	0.02879	0.19314
	(D * SCD * SCE * !Q)	0.02604	0.03529	0.19964
	(D * !SCE * Q)	0.01139	0.02053	0.18176
	(D * !SCE * Q)	0.01791	0.02703	0.18828
	(D * !SCE * !Q)	0.01947	0.02881	0.19494
	(D * !SCE * !Q)	0.02600	0.03533	0.20145
	(D * !SCD * SCE * Q)	0.02318	0.03252	0.19833
	(D * !SCD * SCE * Q)	0.02973	0.03908	0.20487
	(D * !SCD * SCE * !Q)	0.01126	0.02054	0.18200
	(D * !SCD * SCE * !Q)	0.01778	0.02705	0.18852
	(!D * SCD * SCE * Q)	0.01140	0.02052	0.18186
	(!D * SCD * SCE * Q)	0.01792	0.02705	0.18838
	(!D * SCD * SCE * !Q)	0.01955	0.02902	0.19318
	(!D * SCD * SCE * !Q)	0.02606	0.03554	0.19966
	(!D * !SCE * Q)	0.02303	0.03240	0.19680
	(!D * !SCE * Q)	0.02956	0.03890	0.20331
	(!D * !SCE * !Q)	0.01124	0.02040	0.18179
	(!D * !SCE * !Q)	0.01776	0.02690	0.18831
	(!D * !SCD * SCE * Q)	0.02318	0.03275	0.19831
	(!D * !SCD * SCE * Q)	0.02971	0.03930	0.20484
	(!D * !SCD * SCE * !Q)	0.01126	0.02053	0.18200
	(!D * !SCD * SCE * !Q)	0.01778	0.02705	0.18852

sky130_fd_sc_hs__sdfxtp_2	**(D * SCD * SCE * Q)**	0.01187	0.02087	0.18213
	(D * SCD * SCE * Q)	0.01841	0.02743	0.18870
	(D * SCD * SCE * !Q)	0.02062	0.02971	0.19405
	(D * SCD * SCE * !Q)	0.02716	0.03631	0.20063
	(D * !SCE * Q)	0.01187	0.02088	0.18204
	(D * !SCE * Q)	0.01841	0.02743	0.18861
	(D * !SCE * !Q)	0.02057	0.02974	0.19577
	(D * !SCE * !Q)	0.02711	0.03634	0.20234
	(D * !SCD * SCE * Q)	0.02377	0.03302	0.19869
	(D * !SCD * SCE * Q)	0.03033	0.03962	0.20529
	(D * !SCD * SCE * !Q)	0.01155	0.02067	0.18210
	(D * !SCD * SCE * !Q)	0.01809	0.02724	0.18868
	(!D * SCD * SCE * Q)	0.01187	0.02087	0.18213
	(!D * SCD * SCE * Q)	0.01841	0.02743	0.18871
	(!D * SCD * SCE * !Q)	0.02065	0.02974	0.19408
	(!D * SCD * SCE * !Q)	0.02718	0.03632	0.20065
	(!D * !SCE * Q)	0.02358	0.03283	0.19719
	(!D * !SCE * Q)	0.03012	0.03939	0.20377
	(!D * !SCE * !Q)	0.01153	0.02054	0.18189
	(!D * !SCE * !Q)	0.01807	0.02711	0.18847
	(!D * !SCD * SCE * Q)	0.02377	0.03299	0.19868
	(!D * !SCD * SCE * Q)	0.03033	0.03960	0.20526
	(!D * !SCD * SCE * !Q)	0.01155	0.02066	0.18210
	(!D * !SCD * SCE * !Q)	0.01810	0.02722	0.18868

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.01133	0.02046	0.18184
	(D * SCD * SCE * Q)	0.01787	0.02700	0.18838
	(D * SCD * SCE * !Q)	0.01956	0.02898	0.19310
	(D * SCD * SCE * !Q)	0.02610	0.03551	0.19960
	(D * !SCE * Q)	0.01133	0.02046	0.18174
	(D * !SCE * Q)	0.01787	0.02700	0.18827
	(D * !SCE * !Q)	0.01951	0.02900	0.19476
	(D * !SCE * !Q)	0.02605	0.03552	0.20130
	(D * !SCD * SCE * Q)	0.02372	0.03327	0.19895
	(D * !SCD * SCE * Q)	0.03028	0.03984	0.20552
	(D * !SCD * SCE * !Q)	0.01128	0.02052	0.18205
	(D * !SCD * SCE * !Q)	0.01782	0.02705	0.18859
	(!D * SCD * SCE * Q)	0.01133	0.02062	0.18184
	(!D * SCD * SCE * Q)	0.01787	0.02714	0.18838
	(!D * SCD * SCE * !Q)	0.01959	0.02900	0.19314
	(!D * SCD * SCE * !Q)	0.02611	0.03553	0.19966
	(!D * !SCE * Q)	0.02355	0.03309	0.19746
	(!D * !SCE * Q)	0.03009	0.03964	0.20397
	(!D * !SCE * !Q)	0.01126	0.02052	0.18184
	(!D * !SCE * !Q)	0.01780	0.02706	0.18838
	(!D * !SCD * SCE * Q)	0.02373	0.03326	0.19895
	(!D * !SCD * SCE * Q)	0.03028	0.03980	0.20548
	(!D * !SCD * SCE * !Q)	0.01128	0.02051	0.18204
	(!D * !SCD * SCE * !Q)	0.01782	0.02704	0.18858

SKY130_FD_SC_HS__SDLCLKPx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00242	0.00223	0.00481	1.39896
sky130_fd_sc_hs__sdlclkp_2	0.00242	0.00222	0.00510	2.71184
sky130_fd_sc_hs__sdlclkp_4	0.00230	0.00211	0.00521	5.24056

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdlclkp_1	0.00000	2.93299	4.66621
sky130_fd_sc_hs__sdlclkp_2	0.00000	2.61315	4.05330
sky130_fd_sc_hs__sdlclkp_4	0.00000	2.68222	4.43361

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)	0.05424	0.44250	5.63603
sky130_fd_sc_hs__sdlclkp_2	CLK->GCLK (RR)	0.05661	0.36192	5.47731
sky130_fd_sc_hs__sdlclkp_4	CLK->GCLK (RR)	0.07465	0.34368	5.65652

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdlclkp_1	CLK->GCLK (FF)	0.06557	0.44853	5.05054
sky130_fd_sc_hs__sdlclkp_2	CLK->GCLK (FF)	0.07290	0.43821	5.07352
sky130_fd_sc_hs__sdlclkp_4	CLK->GCLK (FF)	0.09392	0.45956	5.19154

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)	-0.03236	-0.08501	-0.54930
	setup	CLK (R)	0.11270	0.19606	0.59147
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.03316	-0.08501	-0.54033
	setup	CLK (R)	0.10611	0.17791	0.58858
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.03434	-0.08704	-0.54473
	setup	CLK (R)	0.10708	0.16158	0.59322

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)	-0.08400	-0.20916	-3.57726
	setup	CLK (R)	0.11268	0.24749	3.65290
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.08535	-0.20647	-3.56415
	setup	CLK (R)	0.10971	0.24652	3.64300
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.08873	-0.20916	-3.57020
	setup	CLK (R)	0.11214	0.24988	3.64574

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)	-0.03236	-0.08501	-0.54930
	setup	CLK (R)	0.11270	0.19606	0.59147
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.03316	-0.08501	-0.54033
	setup	CLK (R)	0.10611	0.17791	0.58858
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.03434	-0.08704	-0.54473
	setup	CLK (R)	0.10708	0.16158	0.59322

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)	-0.08400	-0.20916	-3.57726
	setup	CLK (R)	0.11268	0.24749	3.65290
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.08535	-0.20647	-3.56415
	setup	CLK (R)	0.10971	0.24652	3.64300
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.08873	-0.20916	-3.57020
	setup	CLK (R)	0.11214	0.24988	3.64574

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)	-0.03755	-0.09513	-0.67827
	setup	CLK (R)	0.11439	0.20392	0.72173
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.03671	-0.09513	-0.67163
	setup	CLK (R)	0.10880	0.18754	0.71658
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.03755	-0.09513	-0.67749
	setup	CLK (R)	0.11068	0.17079	0.72281

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)	-0.09552	-0.19663	-3.42529
	setup	CLK (R)	0.11858	0.23748	3.49357
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.09522	-0.19663	-3.41939
	setup	CLK (R)	0.11754	0.23702	3.48448
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.09664	-0.19900	-3.42385
	setup	CLK (R)	0.12214	0.24177	3.48640

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)	-0.03755	-0.09513	-0.67827
	setup	CLK (R)	0.11439	0.20392	0.72173
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.03671	-0.09513	-0.67163
	setup	CLK (R)	0.10880	0.18754	0.71658
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.03755	-0.09513	-0.67749
	setup	CLK (R)	0.11068	0.17079	0.72281

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)	-0.09552	-0.19663	-3.42529
	setup	CLK (R)	0.11858	0.23748	3.49357
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.09522	-0.19663	-3.41939
	setup	CLK (R)	0.11754	0.23702	3.48448
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.09664	-0.19900	-3.42385
	setup	CLK (R)	0.12214	0.24177	3.48640

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 ()	0.03687	0.60669	16.50020
sky130_fd_sc_hs__sdlclkp_2	min_pulse_width	CLK ()	0.04371	0.60669	16.50020
sky130_fd_sc_hs__sdlclkp_4	min_pulse_width	CLK ()	0.06194	0.60669	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 ()	0.15311	0.60669	16.50020
	min_pulse_width	CLK ()	0.12120	0.60669	16.50020
sky130_fd_sc_hs__sdlclkp_2	min_pulse_width	CLK ()	0.14855	0.60669	16.50020
	min_pulse_width	CLK ()	0.12120	0.60669	16.50020
sky130_fd_sc_hs__sdlclkp_4	min_pulse_width	CLK ()	0.14855	0.60669	16.50020
	min_pulse_width	CLK ()	0.12576	0.60669	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	0.02480	0.03978	0.32988
	CLK	0.01442	0.02941	0.31987
sky130_fd_sc_hs__sdlclkp_2	CLK	0.02995	0.04457	0.33705
	CLK	0.01897	0.03364	0.32700
sky130_fd_sc_hs__sdlclkp_4	CLK	0.04008	0.05355	0.34172
	CLK	0.02880	0.04238	0.33204

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	CLK	0.01441	0.03283	0.32156
	CLK	0.02479	0.04303	0.33093
sky130_fd_sc_hs__sdlclkp_2	CLK	0.01861	0.03594	0.32840
	CLK	0.02962	0.04687	0.33839
sky130_fd_sc_hs__sdlclkp_4	CLK	0.03177	0.04605	0.34744
	CLK	0.04306	0.05725	0.34482

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	0.00218	0.00220	0.00218
	(CLK * SCE)	-0.00103	-0.00103	-0.00102
	(CLK * !SCE)	0.00682	0.01280	0.12187
	(CLK * !SCE)	0.00145	0.00742	0.11650
	(!CLK * SCE * !GCLK)	0.00212	0.00213	0.00212
	(!CLK * SCE * !GCLK)	-0.00109	-0.00110	-0.00109
	(!CLK * !SCE * !GCLK)	0.01736	0.02271	0.14021
	(!CLK * !SCE * !GCLK)	0.01257	0.01789	0.13541
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	0.00218	0.00220	0.00218
	(CLK * SCE)	-0.00103	-0.00103	-0.00102
	(CLK * !SCE)	0.00676	0.01273	0.12182
	(CLK * !SCE)	0.00141	0.00737	0.11648
	(!CLK * SCE * !GCLK)	0.00211	0.00213	0.00211
	(!CLK * SCE * !GCLK)	-0.00109	-0.00110	-0.00109
	(!CLK * !SCE * !GCLK)	0.01712	0.02252	0.14047
	(!CLK * !SCE * !GCLK)	0.01240	0.01777	0.13573
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	0.00209	0.00211	0.00210
	(CLK * SCE)	-0.00098	-0.00099	-0.00098
	(CLK * !SCE)	0.00657	0.01253	0.12132
	(CLK * !SCE)	0.00146	0.00740	0.11621
	(!CLK * SCE * !GCLK)	0.00205	0.00207	0.00205
	(!CLK * SCE * !GCLK)	-0.00102	-0.00103	-0.00102
	(!CLK * !SCE * !GCLK)	0.01721	0.02250	0.14016
	(!CLK * !SCE * !GCLK)	0.01268	0.01795	0.13562

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	-0.00208	-0.00210	-0.00213
	(CLK * SCE)	0.00111	0.00112	0.00109
	(CLK * !SCE)	0.00097	0.00775	0.11670
	(CLK * !SCE)	0.00636	0.01314	0.12208
	(!CLK * SCE * !GCLK)	-0.00203	-0.00205	-0.00209
	(!CLK * SCE * !GCLK)	0.00114	0.00116	0.00113
	(!CLK * !SCE * !GCLK)	0.01604	0.02307	0.14111
	(!CLK * !SCE * !GCLK)	0.02085	0.02788	0.14591
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	-0.00207	-0.00209	-0.00212
	(CLK * SCE)	0.00111	0.00112	0.00109
	(CLK * !SCE)	0.00102	0.00780	0.11676
	(CLK * !SCE)	0.00638	0.01316	0.12211
	(!CLK * SCE * !GCLK)	-0.00204	-0.00204	-0.00208
	(!CLK * SCE * !GCLK)	0.00116	0.00116	0.00113
	(!CLK * !SCE * !GCLK)	0.01612	0.02318	0.14156
	(!CLK * !SCE * !GCLK)	0.02086	0.02792	0.14631
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	-0.00199	-0.00200	-0.00203
	(CLK * SCE)	0.00108	0.00108	0.00105
	(CLK * !SCE)	0.00142	0.00814	0.11682
	(CLK * !SCE)	0.00654	0.01326	0.12195
	(!CLK * SCE * !GCLK)	-0.00197	-0.00198	-0.00201
	(!CLK * SCE * !GCLK)	0.00111	0.00111	0.00107
	(!CLK * !SCE * !GCLK)	0.01659	0.02362	0.14171
	(!CLK * !SCE * !GCLK)	0.02113	0.02819	0.14626

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	0.00228	0.00193	0.00186
	(CLK * GATE)	-0.00189	-0.00228	-0.00231
	(CLK * !GATE)	0.00886	0.01376	0.10984
	(CLK * !GATE)	0.00237	0.00724	0.10336
	(!CLK * GATE * !GCLK)	0.00227	0.00191	0.00185
	(!CLK * GATE * !GCLK)	-0.00190	-0.00229	-0.00232
	(!CLK * !GATE * !GCLK)	0.01940	0.02421	0.12856
	(!CLK * !GATE * !GCLK)	0.01348	0.01828	0.12266
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	0.00227	0.00191	0.00184
	(CLK * GATE)	-0.00188	-0.00228	-0.00231
	(CLK * !GATE)	0.00879	0.01369	0.10978
	(CLK * !GATE)	0.00233	0.00722	0.10334
	(!CLK * GATE * !GCLK)	0.00226	0.00190	0.00183
	(!CLK * GATE * !GCLK)	-0.00189	-0.00229	-0.00232
	(!CLK * !GATE * !GCLK)	0.01915	0.02399	0.12871
	(!CLK * !GATE * !GCLK)	0.01332	0.01813	0.12290
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	0.00219	0.00183	0.00177
	(CLK * GATE)	-0.00184	-0.00223	-0.00226
	(CLK * !GATE)	0.00863	0.01346	0.10948
	(CLK * !GATE)	0.00240	0.00721	0.10326
	(!CLK * GATE * !GCLK)	0.00218	0.00182	0.00175
	(!CLK * GATE * !GCLK)	-0.00185	-0.00224	-0.00227
	(!CLK * !GATE * !GCLK)	0.01924	0.02404	0.12863
	(!CLK * !GATE * !GCLK)	0.01359	0.01837	0.12299

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	-0.00178	-0.00178	-0.00177
	(CLK * GATE)	0.00239	0.00239	0.00240
	(CLK * !GATE)	0.00110	0.00583	0.10175
	(CLK * !GATE)	0.00758	0.01233	0.10825
	(!CLK * GATE * !GCLK)	-0.00179	-0.00179	-0.00178
	(!CLK * GATE * !GCLK)	0.00237	0.00238	0.00238
	(!CLK * !GATE * !GCLK)	0.01608	0.02066	0.12298
	(!CLK * !GATE * !GCLK)	0.02199	0.02660	0.12891
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	-0.00176	-0.00176	-0.00175
	(CLK * GATE)	0.00239	0.00239	0.00239
	(CLK * !GATE)	0.00115	0.00588	0.10182
	(CLK * !GATE)	0.00760	0.01235	0.10827
	(!CLK * GATE * !GCLK)	-0.00177	-0.00177	-0.00177
	(!CLK * GATE * !GCLK)	0.00237	0.00238	0.00238
	(!CLK * !GATE * !GCLK)	0.01616	0.02077	0.12340
	(!CLK * !GATE * !GCLK)	0.02200	0.02664	0.12926
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	-0.00168	-0.00167	-0.00167
	(CLK * GATE)	0.00235	0.00234	0.00236
	(CLK * !GATE)	0.00155	0.00624	0.10203
	(CLK * !GATE)	0.00777	0.01249	0.10826
	(!CLK * GATE * !GCLK)	-0.00169	-0.00168	-0.00168
	(!CLK * GATE * !GCLK)	0.00234	0.00233	0.00235
	(!CLK * !GATE * !GCLK)	0.01667	0.02124	0.12364
	(!CLK * !GATE * !GCLK)	0.02233	0.02692	0.12930

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(!GATE * !SCE * !GCLK)	0.01535	0.02409	0.18917
	(!GATE * !SCE * !GCLK)	0.00546	0.01414	0.17927
sky130_fd_sc_hs__sdlclkp_2	(!GATE * !SCE * !GCLK)	0.01556	0.02445	0.18983
	(!GATE * !SCE * !GCLK)	0.00509	0.01392	0.17935
sky130_fd_sc_hs__sdlclkp_4	(!GATE * !SCE * !GCLK)	0.01579	0.02454	0.19006
	(!GATE * !SCE * !GCLK)	0.00507	0.01377	0.17933

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(GATE * SCE * !GCLK)	0.01720	0.02773	0.21592
	(GATE * SCE * !GCLK)	0.02784	0.03843	0.22658
	(GATE * !SCE * !GCLK)	0.01719	0.02768	0.21538
	(GATE * !SCE * !GCLK)	0.02783	0.03836	0.22604
	(!GATE * SCE * !GCLK)	0.01725	0.02778	0.21577
	(!GATE * SCE * !GCLK)	0.02788	0.03846	0.22642
	(!GATE * !SCE * !GCLK)	0.00694	0.01705	0.18078
	(!GATE * !SCE * !GCLK)	0.01682	0.02700	0.19070
sky130_fd_sc_hs__sdlclkp_2	(GATE * SCE * !GCLK)	0.01667	0.02723	0.21741
	(GATE * SCE * !GCLK)	0.02796	0.03859	0.22872
	(GATE * !SCE * !GCLK)	0.01666	0.02718	0.21679
	(GATE * !SCE * !GCLK)	0.02795	0.03852	0.22809
	(!GATE * SCE * !GCLK)	0.01672	0.02728	0.21721
	(!GATE * SCE * !GCLK)	0.02799	0.03861	0.22850
	(!GATE * !SCE * !GCLK)	0.00658	0.01670	0.18085
	(!GATE * !SCE * !GCLK)	0.01703	0.02722	0.19134
sky130_fd_sc_hs__sdlclkp_4	(GATE * SCE * !GCLK)	0.01726	0.02778	0.21786
	(GATE * SCE * !GCLK)	0.02876	0.03935	0.22939
	(GATE * !SCE * !GCLK)	0.01725	0.02773	0.21726
	(GATE * !SCE * !GCLK)	0.02875	0.03928	0.22879
	(!GATE * SCE * !GCLK)	0.01732	0.02784	0.21764
	(!GATE * SCE * !GCLK)	0.02880	0.03938	0.22914
	(!GATE * !SCE * !GCLK)	0.00689	0.01698	0.18119
	(!GATE * !SCE * !GCLK)	0.01759	0.02776	0.19193

SKY130_FD_SC_HS__SEDFXBPx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage 2.10, 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	0.00204	0.00392	0.00182	0.00394	0.00289	1.44651	1.44074
sky130_fd_sc_hs__sedfxbp_2	0.00213	0.00396	0.00184	0.00401	0.00289	2.37782	2.47379

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sedfxbp_1	0.00000	2.75874	4.98655
sky130_fd_sc_hs__sedfxbp_2	0.00000	2.81397	4.93631

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)	0.14813	0.55335	5.53070
sky130_fd_sc_hs__sedfxbp_2	CLK->Q (RR)	0.15267	0.47599	5.22064

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxbp_1	CLK->Q (RF)	0.13134	0.37360	2.18936
sky130_fd_sc_hs__sedfxbp_2	CLK->Q (RF)	0.14656	0.34151	1.59797

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)	0.19877	0.59317	5.58105
sky130_fd_sc_hs__sedfxbp_2	CLK->Q_N (RR)	0.23479	0.53670	5.34002

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)	0.20467	0.41638	2.11813
sky130_fd_sc_hs__sedfxbp_2	CLK->Q_N (RF)	0.22399	0.38436	1.73480

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)	-0.12381	-0.20458	-0.94127
	setup	CLK (R)	0.14280	0.22043	0.95401
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.12411	-0.20777	-0.97944
	setup	CLK (R)	0.14328	0.22260	0.99011

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)	-0.19966	-0.33888	-3.66453
	setup	CLK (R)	0.24514	0.37848	3.67440
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.20092	-0.34430	-3.70050
	setup	CLK (R)	0.24391	0.37848	3.71478

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)	-0.12381	-0.20458	-0.94127
	setup	CLK (R)	0.14280	0.22043	0.95401
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.12411	-0.20777	-0.97944
	setup	CLK (R)	0.14328	0.22260	0.99011

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)	-0.19966	-0.33888	-3.66453
	setup	CLK (R)	0.24514	0.37848	3.67440
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.20092	-0.34430	-3.70050
	setup	CLK (R)	0.24391	0.37848	3.71478

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)	-0.03043	-0.04134	0.13018
	setup	CLK (R)	0.27293	0.29791	0.82127
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.03137	-0.04349	0.09388
	setup	CLK (R)	0.27244	0.29753	0.85348

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)	-0.16988	-0.28732	-3.18975
	setup	CLK (R)	0.23058	0.34526	3.62044
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.17036	-0.28862	-3.22556
	setup	CLK (R)	0.22755	0.34729	3.65855

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)	-0.03043	-0.04134	0.13018
	hold	CLK (R)	-0.11357	-0.13076	-0.31183
	setup	CLK (R)	0.14351	0.19837	0.82127
	setup	CLK (R)	0.27293	0.29791	0.46320
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.03137	-0.04349	0.09388
	hold	CLK (R)	-0.11481	-0.13230	-0.34502
	setup	CLK (R)	0.14374	0.20052	0.85348
	setup	CLK (R)	0.27244	0.29753	0.50193

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)	-0.21784	-0.33582	-3.61615
	hold	CLK (R)	-0.16988	-0.28732	-3.18975
	setup	CLK (R)	0.23058	0.34526	3.62044
	setup	CLK (R)	0.18168	0.29192	3.19456
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.21368	-0.33410	-3.65640
	hold	CLK (R)	-0.17036	-0.28862	-3.22556
	setup	CLK (R)	0.22755	0.34729	3.65855
	setup	CLK (R)	0.18011	0.29353	3.23007

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)	-0.07527	-0.13057	-0.67051
	setup	CLK (R)	0.08796	0.13969	0.67608
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.07510	-0.13267	-0.70667
	setup	CLK (R)	0.08969	0.14169	0.71545

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)	-0.15056	-0.25341	-3.38668
	setup	CLK (R)	0.18322	0.29020	3.40148
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.15009	-0.25677	-3.42641
	setup	CLK (R)	0.18307	0.29211	3.44097

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)	-0.07527	-0.13057	-0.67051
	setup	CLK (R)	0.08796	0.13969	0.67608
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.07510	-0.13267	-0.70667
	setup	CLK (R)	0.08969	0.14169	0.71545

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)	-0.15056	-0.25341	-3.38668
	setup	CLK (R)	0.18322	0.29020	3.40148
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.15009	-0.25677	-3.42641
	setup	CLK (R)	0.18307	0.29211	3.44097

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)	0.00480	0.01214	0.43058
	setup	CLK (R)	0.19636	0.21538	0.53555
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	0.00282	0.01012	0.39446
	setup	CLK (R)	0.19767	0.21833	0.57160

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)	-0.10108	-0.22914	-3.21099
	setup	CLK (R)	0.14923	0.26693	3.54726
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.10440	-0.23202	-3.25935
	setup	CLK (R)	0.14759	0.27127	3.58732

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)	-0.16194	-0.17815	-0.29975
	hold	CLK (R)	0.00480	0.01214	0.43058
	hold	CLK (R)	-0.06459	-0.12831	-0.49795
	hold	CLK (R)	-0.07797	-0.09905	-0.20852
	setup	CLK (R)	0.19627	0.21529	0.33263
	setup	CLK (R)	0.07465	0.13764	0.53162
	setup	CLK (R)	0.07480	0.13764	0.53555
	setup	CLK (R)	0.19636	0.21538	0.33205
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.16286	-0.18129	-0.34697
	hold	CLK (R)	0.00282	0.01012	0.39446
	hold	CLK (R)	-0.06413	-0.13038	-0.53252
	hold	CLK (R)	-0.07994	-0.10233	-0.25237
	setup	CLK (R)	0.19754	0.21829	0.37896
	setup	CLK (R)	0.07641	0.13964	0.56760
	setup	CLK (R)	0.07643	0.13964	0.57160
	setup	CLK (R)	0.19767	0.21833	0.37900

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)	-0.12269	-0.24958	-3.23360
	hold	CLK (R)	-0.10870	-0.22914	-3.52299
	hold	CLK (R)	-0.10108	-0.22958	-3.53658
	hold	CLK (R)	-0.11705	-0.24336	-3.21099
	setup	CLK (R)	0.13771	0.26119	3.24160
	setup	CLK (R)	0.12004	0.24230	3.52381
	setup	CLK (R)	0.14923	0.26693	3.54726
	setup	CLK (R)	0.12535	0.24786	3.21515
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.12579	-0.25555	-3.27955
	hold	CLK (R)	-0.10613	-0.23320	-3.56067
	hold	CLK (R)	-0.10440	-0.23202	-3.58049
	hold	CLK (R)	-0.11680	-0.24727	-3.25935
	setup	CLK (R)	0.14117	0.26459	3.28933
	setup	CLK (R)	0.12096	0.24334	3.56350
	setup	CLK (R)	0.14759	0.27127	3.58732
	setup	CLK (R)	0.12868	0.25208	3.26286

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 ()	0.07106	0.60669	16.50020
	min_pulse_width	CLK ()	0.07106	0.60669	16.50020
	min_pulse_width	CLK ()	0.10753	0.60669	16.50020
	min_pulse_width	CLK ()	0.07106	0.60669	16.50020
	min_pulse_width	CLK ()	0.10753	0.60669	16.50020
	min_pulse_width	CLK ()	0.07106	0.60669	16.50020
	min_pulse_width	CLK ()	0.10753	0.60669	16.50020
	min_pulse_width	CLK ()	0.10753	0.60669	16.50020
	min_pulse_width	CLK ()	0.07106	0.60669	16.50020
	min_pulse_width	CLK ()	0.10753	0.60669	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.08245	0.60669	16.50020
	min_pulse_width	CLK ()	0.08245	0.60669	16.50020
	min_pulse_width	CLK ()	0.14172	0.60669	16.50020
	min_pulse_width	CLK ()	0.08245	0.60669	16.50020
	min_pulse_width	CLK ()	0.14172	0.60669	16.50020
	min_pulse_width	CLK ()	0.08245	0.60669	16.50020
	min_pulse_width	CLK ()	0.13944	0.60669	16.50020
	min_pulse_width	CLK ()	0.13944	0.60669	16.50020
	min_pulse_width	CLK ()	0.08245	0.60669	16.50020
	min_pulse_width	CLK ()	0.14172	0.60669	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 ()	0.10753	0.60669	16.50020
	min_pulse_width	CLK ()	0.11664	0.60669	16.50020
	min_pulse_width	CLK ()	0.15539	0.60669	16.50020
	min_pulse_width	CLK ()	0.10753	0.60669	16.50020
	min_pulse_width	CLK ()	0.15539	0.60669	16.50020
	min_pulse_width	CLK ()	0.10753	0.60669	16.50020
	min_pulse_width	CLK ()	0.16223	0.60669	16.50020
	min_pulse_width	CLK ()	0.15539	0.60669	16.50020
	min_pulse_width	CLK ()	0.10753	0.60669	16.50020
	min_pulse_width	CLK ()	0.15539	0.60669	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.10753	0.60669	16.50020
	min_pulse_width	CLK ()	0.11664	0.60669	16.50020
	min_pulse_width	CLK ()	0.15311	0.60669	16.50020
	min_pulse_width	CLK ()	0.10753	0.60669	16.50020
	min_pulse_width	CLK ()	0.15311	0.60669	16.50020
	min_pulse_width	CLK ()	0.10753	0.60669	16.50020
	min_pulse_width	CLK ()	0.15767	0.60669	16.50020
	min_pulse_width	CLK ()	0.15311	0.60669	16.50020
	min_pulse_width	CLK ()	0.10753	0.60669	16.50020
	min_pulse_width	CLK ()	0.15311	0.60669	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	0.02688	0.03079	0.11273
	CLK	0.02292	0.02676	0.10875
sky130_fd_sc_hs__sedfxbp_2	CLK	0.03171	0.03501	0.11752
	CLK	0.02778	0.03097	0.11360

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.02492	0.02830	0.11303
	CLK	0.02254	0.02591	0.11061
sky130_fd_sc_hs__sedfxbp_2	CLK	0.03093	0.03298	0.11803
	CLK	0.02851	0.03056	0.11569

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.02496	0.02834	0.11386
	CLK	0.02258	0.02596	0.11140
sky130_fd_sc_hs__sedfxbp_2	CLK	0.03098	0.03307	0.11895
	CLK	0.02856	0.03063	0.11672

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.02682	0.03076	0.11184
	CLK	0.02287	0.02672	0.10787
sky130_fd_sc_hs__sedfxbp_2	CLK	0.03166	0.03486	0.11683
	CLK	0.02773	0.03089	0.11304

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.00732	0.01067	0.08140
	(DE * SCE)	0.00269	0.00602	0.07676
	(CLK * DE * !SCE)	0.01505	0.01740	0.08551
	(CLK * DE * !SCE)	0.00888	0.01124	0.07935
	(CLK * !DE * !SCE)	0.00173	0.00176	0.00174
	(CLK * !DE * !SCE)	-0.00115	-0.00118	-0.00115
	(!DE * SCE)	0.00175	0.00177	0.00175
	(!DE * SCE)	-0.00115	-0.00116	-0.00114
	(!CLK * DE * !SCE * Q * !Q_N)	0.02655	0.02947	0.10777
	(!CLK * DE * !SCE * Q * !Q_N)	0.02039	0.02330	0.10161
	(!CLK * DE * !SCE * !Q * Q_N)	0.02584	0.02859	0.10679
	(!CLK * DE * !SCE * !Q * Q_N)	0.01961	0.02236	0.10057
	(!CLK * !DE * !SCE)	0.00173	0.00175	0.00174
	(!CLK * !DE * !SCE)	-0.00115	-0.00117	-0.00116
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.00743	0.01077	0.08154
	(DE * SCE)	0.00262	0.00594	0.07672
	(CLK * DE * !SCE)	0.01531	0.01765	0.08570
	(CLK * DE * !SCE)	0.00893	0.01126	0.07931
	(CLK * !DE * !SCE)	0.00180	0.00181	0.00180
	(CLK * !DE * !SCE)	-0.00121	-0.00122	-0.00121
	(!DE * SCE)	0.00182	0.00183	0.00183
	(!DE * SCE)	-0.00120	-0.00121	-0.00120
	(!CLK * DE * !SCE * Q * !Q_N)	0.02670	0.02961	0.10786
	(!CLK * DE * !SCE * Q * !Q_N)	0.02032	0.02322	0.10147
	(!CLK * DE * !SCE * !Q * Q_N)	0.02594	0.02868	0.10685
	(!CLK * DE * !SCE * !Q * Q_N)	0.01948	0.02222	0.10040
	(!CLK * !DE * !SCE)	0.00180	0.00182	0.00181
	(!CLK * !DE * !SCE)	-0.00121	-0.00122	-0.00121

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.00268	0.00657	0.07734
	(DE * SCE)	0.00741	0.01129	0.08206
	(CLK * DE * !SCE)	0.00481	0.00811	0.07667
	(CLK * DE * !SCE)	0.01103	0.01434	0.08290
	(CLK * !DE * !SCE)	-0.00048	-0.00049	-0.00048
	(CLK * !DE * !SCE)	0.00263	0.00264	0.00264
	(!DE * SCE)	-0.00047	-0.00048	-0.00047
	(!DE * SCE)	0.00264	0.00268	0.00265
	(!CLK * DE * !SCE * Q * !Q_N)	0.01818	0.02219	0.10275
	(!CLK * DE * !SCE * Q * !Q_N)	0.02434	0.02835	0.10890
	(!CLK * DE * !SCE * !Q * Q_N)	0.01964	0.02379	0.10530
	(!CLK * DE * !SCE * !Q * Q_N)	0.02586	0.03001	0.11153
	(!CLK * !DE * !SCE)	-0.00048	-0.00049	-0.00048
	(!CLK * !DE * !SCE)	0.00263	0.00264	0.00264
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.00233	0.00624	0.07705
	(DE * SCE)	0.00724	0.01114	0.08193
	(CLK * DE * !SCE)	0.00459	0.00798	0.07640
	(CLK * DE * !SCE)	0.01105	0.01444	0.08285
	(CLK * !DE * !SCE)	-0.00050	-0.00050	-0.00050
	(CLK * !DE * !SCE)	0.00275	0.00276	0.00275
	(!DE * SCE)	-0.00048	-0.00050	-0.00048
	(!DE * SCE)	0.00275	0.00280	0.00276
	(!CLK * DE * !SCE * Q * !Q_N)	0.01790	0.02189	0.10240
	(!CLK * DE * !SCE * Q * !Q_N)	0.02428	0.02827	0.10876
	(!CLK * DE * !SCE * !Q * Q_N)	0.01937	0.02351	0.10495
	(!CLK * DE * !SCE * !Q * Q_N)	0.02582	0.02995	0.11140
	(!CLK * !DE * !SCE)	-0.00050	-0.00051	-0.00050
	(!CLK * !DE * !SCE)	0.00274	0.00276	0.00275

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.01379	0.02114	0.17587
	SCE	0.00354	0.01082	0.16564
	(CLK * !SCE)	0.02122	0.02799	0.18063
	(CLK * !SCE)	0.00947	0.01619	0.16886
	(!CLK * D * !SCE * Q * !Q_N)	0.00861	0.01315	0.10816
	(!CLK * D * !SCE * Q * !Q_N)	0.00014	0.00465	0.09968
	(!CLK * D * !SCE * !Q * Q_N)	0.03259	0.03981	0.20071
	(!CLK * D * !SCE * !Q * Q_N)	0.02084	0.02802	0.18894
	(!CLK * !D * !SCE * Q * !Q_N)	0.02816	0.03283	0.13146
	(!CLK * !D * !SCE * Q * !Q_N)	0.02305	0.02769	0.12637
	(!CLK * !D * !SCE * !Q * Q_N)	0.00839	0.01324	0.10825
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00001	0.00480	0.09985
sky130_fd_sc_hs__sedfxbp_2	SCE	0.01382	0.02116	0.17597
	SCE	0.00340	0.01074	0.16556
	(CLK * !SCE)	0.02143	0.02820	0.18083
	(CLK * !SCE)	0.00946	0.01622	0.16883
	(!CLK * D * !SCE * Q * !Q_N)	0.00857	0.01314	0.10815
	(!CLK * D * !SCE * Q * !Q_N)	-0.00003	0.00452	0.09955
	(!CLK * D * !SCE * !Q * Q_N)	0.03258	0.03984	0.20070
	(!CLK * D * !SCE * !Q * Q_N)	0.02061	0.02783	0.18871
	(!CLK * !D * !SCE * Q * !Q_N)	0.02787	0.03256	0.13129
	(!CLK * !D * !SCE * Q * !Q_N)	0.02273	0.02740	0.12613
	(!CLK * !D * !SCE * !Q * Q_N)	0.00840	0.01327	0.10828
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00014	0.00470	0.09976

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.00379	0.01181	0.16673
	SCE	0.01403	0.02208	0.17697
	(CLK * !SCE)	0.00585	0.01333	0.16650
	(CLK * !SCE)	0.01760	0.02512	0.17824
	(!CLK * D * !SCE * Q * !Q_N)	-0.00015	0.00548	0.10026
	(!CLK * D * !SCE * Q * !Q_N)	0.00830	0.01397	0.10874
	(!CLK * D * !SCE * !Q * Q_N)	0.02030	0.02816	0.18971
	(!CLK * D * !SCE * !Q * Q_N)	0.03206	0.03993	0.20145
	(!CLK * !D * !SCE * Q * !Q_N)	0.02651	0.03194	0.12849
	(!CLK * !D * !SCE * Q * !Q_N)	0.03158	0.03705	0.13364
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00039	0.00522	0.10021
	(!CLK * !D * !SCE * !Q * Q_N)	0.00800	0.01364	0.10863
sky130_fd_sc_hs__sedfxbp_2	SCE	0.00345	0.01149	0.16641
	SCE	0.01385	0.02193	0.17683
	(CLK * !SCE)	0.00564	0.01311	0.16622
	(CLK * !SCE)	0.01759	0.02513	0.17818
	(!CLK * D * !SCE * Q * !Q_N)	-0.00020	0.00535	0.10022
	(!CLK * D * !SCE * Q * !Q_N)	0.00837	0.01397	0.10882
	(!CLK * D * !SCE * !Q * Q_N)	0.02001	0.02787	0.18935
	(!CLK * D * !SCE * !Q * Q_N)	0.03198	0.03985	0.20132
	(!CLK * !D * !SCE * Q * !Q_N)	0.02651	0.03194	0.12848
	(!CLK * !D * !SCE * Q * !Q_N)	0.03162	0.03709	0.13366
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00049	0.00513	0.10011
	(!CLK * !D * !SCE * !Q * Q_N)	0.00802	0.01367	0.10867

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.00832	0.01087	0.07494
	(CLK * SCE)	0.00334	0.00587	0.06995
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01944	0.02240	0.09411
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01446	0.01740	0.08913
	!SCE	0.00173	0.00147	0.00142
	!SCE	-0.00162	-0.00191	-0.00193
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.00850	0.01104	0.07506
	(CLK * SCE)	0.00342	0.00593	0.06997
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01940	0.02232	0.09405
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01432	0.01723	0.08897
	!SCE	0.00172	0.00146	0.00141
	!SCE	-0.00169	-0.00198	-0.00200

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.00424	0.00692	0.07110
	(CLK * SCE)	0.00922	0.01191	0.07606
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01722	0.02012	0.09270
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.02220	0.02512	0.09767
	!SCE	-0.00131	-0.00135	-0.00135
	!SCE	0.00201	0.00204	0.00203
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.00419	0.00687	0.07099
	(CLK * SCE)	0.00928	0.01196	0.07608
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01711	0.02000	0.09170
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.02219	0.02511	0.09678
	!SCE	-0.00130	-0.00133	-0.00134
	!SCE	0.00208	0.00209	0.00209

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxbp_1	**(CLK * D)**	0.01228	0.02013	0.17419
	(CLK * D)	0.00341	0.01122	0.16531
	(CLK * !D)	0.01282	0.02059	0.17322
	(CLK * !D)	0.00394	0.01168	0.16434
	(!CLK * D * SCD * Q * !Q_N)	0.00726	0.01229	0.10748
	(!CLK * D * SCD * Q * !Q_N)	-0.00008	0.00489	0.10010
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00700	0.01202	0.10722
	(!CLK * D * DE * SCD * !Q * Q_N)	-0.00034	0.00462	0.09983
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.02583	0.03004	0.15568
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01981	0.02398	0.14961
	(!CLK * D * !SCD * Q * !Q_N)	0.02583	0.03004	0.15571
	(!CLK * D * !SCD * Q * !Q_N)	0.01981	0.02398	0.14967
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.02338	0.03158	0.19483
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01451	0.02268	0.18594
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00803	0.01300	0.10826
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00051	0.00546	0.10070
	(!CLK * !D * SCD * !Q * Q_N)	0.02337	0.03156	0.19331
	(!CLK * !D * SCD * !Q * Q_N)	0.01450	0.02267	0.18442
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.02407	0.03218	0.19393
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01520	0.02327	0.18504
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00831	0.01328	0.10853
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00078	0.00574	0.10097
	(!CLK * !D * !SCD * !Q * Q_N)	0.00804	0.01301	0.10826
	(!CLK * !D * !SCD * !Q * Q_N)	0.00051	0.00547	0.10070
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00726	0.01228	0.10748
	(!CLK * !D * !DE * SCD * Q * !Q_N)	-0.00008	0.00488	0.10009
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.02585	0.03002	0.15584
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01983	0.02396	0.14977

	(CLK * D)	0.01247	0.02030	0.17426
	(CLK * D)	0.00335	0.01114	0.16512
	(CLK * !D)	0.01296	0.02071	0.17321
	(CLK * !D)	0.00384	0.01155	0.16408
	(!CLK * D * SCD * Q * !Q_N)	0.00740	0.01236	0.10743
	(!CLK * D * SCD * Q * !Q_N)	-0.00015	0.00474	0.09983
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00716	0.01212	0.10719
	(!CLK * D * DE * SCD * !Q * Q_N)	-0.00039	0.00450	0.09959
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.02606	0.03019	0.15561
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01988	0.02396	0.14939
	(!CLK * D * !SCD * Q * !Q_N)	0.02592	0.03008	0.15554
	(!CLK * D * !SCD * Q * !Q_N)	0.01975	0.02386	0.14932
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.02335	0.03153	0.19469
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01423	0.02237	0.18555
sky130_fd_sc_hs__sedfxbp_2	**(!CLK * D * !DE * !SCD * !Q * Q_N)**	0.00827	0.01318	0.10831
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00054	0.00545	0.10054
	(!CLK * !D * SCD * !Q * Q_N)	0.02335	0.03150	0.19316
	(!CLK * !D * SCD * !Q * Q_N)	0.01422	0.02235	0.18401
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.02410	0.03219	0.19378
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01498	0.02302	0.18463
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00852	0.01343	0.10856
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00079	0.00570	0.10079
	(!CLK * !D * !SCD * !Q * Q_N)	0.00828	0.01322	0.10831
	(!CLK * !D * !SCD * !Q * Q_N)	0.00055	0.00542	0.10054
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00740	0.01236	0.10742
	(!CLK * !D * !DE * SCD * Q * !Q_N)	-0.00015	0.00474	0.09983
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.02594	0.03006	0.15563
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01977	0.02384	0.14941

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxbp_1	**(CLK * D)**	0.00152	0.01111	0.16528
	(CLK * D)	0.01038	0.01997	0.17416
	(CLK * !D)	0.00153	0.01111	0.16399
	(CLK * !D)	0.01038	0.01999	0.17288
	(!CLK * D * SCD * Q * !Q_N)	-0.00005	0.00596	0.10108
	(!CLK * D * SCD * Q * !Q_N)	0.00732	0.01335	0.10845
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00023	0.00624	0.10136
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00760	0.01362	0.10873
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01903	0.02756	0.16170
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.02506	0.03360	0.16751
	(!CLK * D * !SCD * Q * !Q_N)	0.01917	0.02767	0.16168
	(!CLK * D * !SCD * Q * !Q_N)	0.02518	0.03370	0.16750
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01535	0.02466	0.19082
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.02420	0.03354	0.19971
	(!CLK * D * !DE * !SCD * !Q * Q_N)	-0.00052	0.00529	0.10039
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00701	0.01287	0.10795
	(!CLK * !D * SCD * !Q * Q_N)	0.01546	0.02476	0.19013
	(!CLK * !D * SCD * !Q * Q_N)	0.02435	0.03365	0.19901
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01488	0.02414	0.18946
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.02378	0.03304	0.19834
	(!CLK * !D * DE * !SCD * Q * !Q_N)	-0.00079	0.00503	0.10013
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00674	0.01260	0.10769
	(!CLK * !D * !SCD * !Q * Q_N)	-0.00052	0.00530	0.10040
	(!CLK * !D * !SCD * !Q * Q_N)	0.00702	0.01287	0.10796
	(!CLK * !D * !DE * SCD * Q * !Q_N)	-0.00005	0.00596	0.10108
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00732	0.01334	0.10845
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01908	0.02761	0.16176
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.02511	0.03367	0.16757

	(CLK * D)	0.00159	0.01108	0.16512
	(CLK * D)	0.01070	0.02025	0.17426
	(CLK * !D)	0.00160	0.01109	0.16380
	(CLK * !D)	0.01071	0.02025	0.17294
	(!CLK * D * SCD * Q * !Q_N)	0.00010	0.00603	0.10102
	(!CLK * D * SCD * Q * !Q_N)	0.00768	0.01363	0.10859
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00035	0.00629	0.10127
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00792	0.01388	0.10884
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01916	0.02803	0.16169
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.02534	0.03423	0.16768
	(!CLK * D * !SCD * Q * !Q_N)	0.01939	0.02825	0.16182
	(!CLK * D * !SCD * Q * !Q_N)	0.02557	0.03445	0.16780
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01534	0.02460	0.19052
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.02445	0.03376	0.19967
sky130_fd_sc_hs__sedfxbp_2	**(!CLK * D * !DE * !SCD * !Q * Q_N)**	-0.00049	0.00526	0.10022
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00725	0.01304	0.10799
	(!CLK * !D * SCD * !Q * Q_N)	0.01546	0.02470	0.18979
	(!CLK * !D * SCD * !Q * Q_N)	0.02460	0.03386	0.19892
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01483	0.02401	0.18906
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.02398	0.03317	0.19819
	(!CLK * !D * DE * !SCD * Q * !Q_N)	-0.00073	0.00503	0.09998
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00701	0.01281	0.10775
	(!CLK * !D * !SCD * !Q * Q_N)	-0.00048	0.00526	0.10022
	(!CLK * !D * !SCD * !Q * Q_N)	0.00726	0.01305	0.10799
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00010	0.00603	0.10102
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00767	0.01363	0.10859
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01931	0.02819	0.16191
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.02550	0.03440	0.16790

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)	0.02117	0.02886	0.19009
	(SCD * SCE * Q * !Q_N)	0.01484	0.02250	0.18378
	(D * !SCE * Q * !Q_N)	0.02115	0.02884	0.19009
	(D * !SCE * Q * !Q_N)	0.01482	0.02248	0.18378
	(D * !DE * !SCE * !Q * Q_N)	0.02136	0.02897	0.19094
	(D * !DE * !SCE * !Q * Q_N)	0.01503	0.02261	0.18461
	(!SCD * SCE * !Q * Q_N)	0.02140	0.02901	0.19099
	(!SCD * SCE * !Q * Q_N)	0.01507	0.02265	0.18465
	(!D * !SCE * !Q * Q_N)	0.02137	0.02900	0.19092
	(!D * !SCE * !Q * Q_N)	0.01504	0.02264	0.18461
	(!D * !DE * !SCE * Q * !Q_N)	0.02114	0.02883	0.19009
	(!D * !DE * !SCE * Q * !Q_N)	0.01481	0.02247	0.18377
sky130_fd_sc_hs__sedfxbp_2	(SCD * SCE * Q * !Q_N)	0.02104	0.02872	0.19238
	(SCD * SCE * Q * !Q_N)	0.01472	0.02239	0.18606
	(D * !SCE * Q * !Q_N)	0.02101	0.02868	0.19237
	(D * !SCE * Q * !Q_N)	0.01469	0.02235	0.18605
	(D * !DE * !SCE * !Q * Q_N)	0.02142	0.02914	0.19316
	(D * !DE * !SCE * !Q * Q_N)	0.01509	0.02279	0.18683
	(!SCD * SCE * !Q * Q_N)	0.02146	0.02919	0.19320
	(!SCD * SCE * !Q * Q_N)	0.01514	0.02284	0.18687
	(!D * !SCE * !Q * Q_N)	0.02142	0.02919	0.19315
	(!D * !SCE * !Q * Q_N)	0.01510	0.02283	0.18683
	(!D * !DE * !SCE * Q * !Q_N)	0.02100	0.02868	0.19236
	(!D * !DE * !SCE * Q * !Q_N)	0.01468	0.02235	0.18604

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)	0.01159	0.02068	0.18215
	(SCD * SCE * Q * !Q_N)	0.01793	0.02701	0.18847
	(SCD * SCE * !Q * Q_N)	0.02261	0.03222	0.19705
	(SCD * SCE * !Q * Q_N)	0.02895	0.03857	0.20338
	(D * DE * !SCE * !Q * Q_N)	0.02260	0.03218	0.19698
	(D * DE * !SCE * !Q * Q_N)	0.02894	0.03851	0.20331
	(D * !SCE * Q * !Q_N)	0.01159	0.02068	0.18216
	(D * !SCE * Q * !Q_N)	0.01793	0.02701	0.18847
	(D * !DE * !SCE * !Q * Q_N)	0.01171	0.02109	0.18190
	(D * !DE * !SCE * !Q * Q_N)	0.01805	0.02745	0.18824
	(!SCD * SCE * Q * !Q_N)	0.02589	0.03524	0.19922
	(!SCD * SCE * Q * !Q_N)	0.03224	0.04161	0.20557
	(!SCD * SCE * !Q * Q_N)	0.01172	0.02111	0.18190
	(!SCD * SCE * !Q * Q_N)	0.01807	0.02747	0.18824
	(!D * DE * !SCE * Q * !Q_N)	0.02638	0.03576	0.19970
	(!D * DE * !SCE * Q * !Q_N)	0.03272	0.04211	0.20604
	(!D * !SCE * !Q * Q_N)	0.01171	0.02110	0.18191
	(!D * !SCE * !Q * Q_N)	0.01805	0.02745	0.18825
	(!D * !DE * !SCE * Q * !Q_N)	0.01158	0.02068	0.18215
	(!D * !DE * !SCE * Q * !Q_N)	0.01793	0.02700	0.18847

sky130_fd_sc_hs__sedfxbp_2	**(SCD * SCE * Q * !Q_N)**	0.01176	0.02134	0.18372
	(SCD * SCE * Q * !Q_N)	0.01810	0.02768	0.19005
	(SCD * SCE * !Q * Q_N)	0.02243	0.03212	0.19813
	(SCD * SCE * !Q * Q_N)	0.02876	0.03844	0.20445
	(D * DE * !SCE * !Q * Q_N)	0.02243	0.03210	0.19812
	(D * DE * !SCE * !Q * Q_N)	0.02876	0.03843	0.20443
	(D * !SCE * Q * !Q_N)	0.01178	0.02135	0.18374
	(D * !SCE * Q * !Q_N)	0.01811	0.02769	0.19008
	(D * !DE * !SCE * !Q * Q_N)	0.01172	0.02120	0.18338
	(D * !DE * !SCE * !Q * Q_N)	0.01806	0.02751	0.18970
	(!SCD * SCE * Q * !Q_N)	0.02592	0.03583	0.20042
	(!SCD * SCE * Q * !Q_N)	0.03227	0.04219	0.20676
	(!SCD * SCE * !Q * Q_N)	0.01173	0.02121	0.18337
	(!SCD * SCE * !Q * Q_N)	0.01806	0.02751	0.18969
	(!D * DE * !SCE * Q * !Q_N)	0.02640	0.03633	0.20107
	(!D * DE * !SCE * Q * !Q_N)	0.03273	0.04268	0.20738
	(!D * !SCE * !Q * Q_N)	0.01173	0.02120	0.18339
	(!D * !SCE * !Q * Q_N)	0.01806	0.02752	0.18971
	(!D * !DE * !SCE * Q * !Q_N)	0.01177	0.02135	0.18374
	(!D * !DE * !SCE * Q * !Q_N)	0.01811	0.02770	0.19007

SKY130_FD_SC_HS__SEDFXTPx

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00205	0.00398	0.00186	0.00389	0.00287	1.43860
sky130_fd_sc_hs__sedfxtp_2	0.00215	0.00401	0.00188	0.00394	0.00289	2.82701
sky130_fd_sc_hs__sedfxtp_4	0.00215	0.00399	0.00188	0.00392	0.00299	5.39785

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sedfxtp_1	0.00000	2.74348	5.15919
sky130_fd_sc_hs__sedfxtp_2	0.00000	2.84428	5.34934
sky130_fd_sc_hs__sedfxtp_4	0.00000	3.04588	5.72966

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)**	0.14425	0.54587	5.48622
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RR)**	0.14878	0.46630	5.48603
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RR)**	0.16990	0.42810	5.56953

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxtp_1	**CLK->Q (RF)**	0.12326	0.35048	2.05931
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RF)**	0.13995	0.34616	2.10160
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RF)**	0.18613	0.38211	2.26609

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)	-0.12030	-0.20550	-0.94854
	setup	CLK (R)	0.14312	0.22043	0.95953
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.12479	-0.20673	-0.95134
	setup	CLK (R)	0.14307	0.22043	0.95953
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.12459	-0.20533	-0.95304
	setup	CLK (R)	0.14316	0.22043	0.96353

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)	-0.20155	-0.34288	-3.67399
	setup	CLK (R)	0.24516	0.37848	3.68274
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.19906	-0.33888	-3.66948
	setup	CLK (R)	0.24501	0.37848	3.68070
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.20330	-0.34288	-3.67563
	setup	CLK (R)	0.24289	0.37448	3.68801

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)	-0.03043	-0.04134	0.12428
	setup	CLK (R)	0.27229	0.29696	0.82437
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.02930	-0.04134	0.12407
	setup	CLK (R)	0.27245	0.29653	0.82687
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.03043	-0.04134	0.12125
	setup	CLK (R)	0.26983	0.29377	0.83092

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)	-0.17128	-0.28887	-3.19952
	setup	CLK (R)	0.23043	0.34526	3.63257
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.16884	-0.28846	-3.20479
	setup	CLK (R)	0.22889	0.34725	3.62814
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.17218	-0.29007	-3.20229
	setup	CLK (R)	0.23108	0.34526	3.63257

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)	-0.03043	-0.04134	0.12428
	hold	CLK (R)	-0.11164	-0.13339	-0.31498
	setup	CLK (R)	0.14351	0.19837	0.82437
	setup	CLK (R)	0.27229	0.29696	0.46588
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.02930	-0.04134	0.12407
	hold	CLK (R)	-0.11439	-0.13026	-0.30918
	setup	CLK (R)	0.14307	0.20052	0.82687
	setup	CLK (R)	0.27245	0.29653	0.46667
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.03043	-0.04134	0.12125
	hold	CLK (R)	-0.11325	-0.13076	-0.31011
	setup	CLK (R)	0.14136	0.20052	0.83092
	setup	CLK (R)	0.26983	0.29377	0.47534

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)	-0.21765	-0.33582	-3.62662
	hold	CLK (R)	-0.17128	-0.28887	-3.19952
	setup	CLK (R)	0.23043	0.34526	3.63257
	setup	CLK (R)	0.17984	0.29509	3.20650
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.21519	-0.33356	-3.62530
	hold	CLK (R)	-0.16884	-0.28846	-3.20479
	setup	CLK (R)	0.22889	0.34725	3.62814
	setup	CLK (R)	0.18341	0.29486	3.20854
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.21814	-0.33582	-3.63008
	hold	CLK (R)	-0.17218	-0.29007	-3.20229
	setup	CLK (R)	0.23108	0.34526	3.63257
	setup	CLK (R)	0.18307	0.29569	3.20552

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)	-0.07516	-0.13254	-0.67662
	setup	CLK (R)	0.08622	0.14169	0.68820
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.07528	-0.13181	-0.67606
	setup	CLK (R)	0.08756	0.14169	0.68598
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.07469	-0.13341	-0.68072
	setup	CLK (R)	0.08592	0.14169	0.69108

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)	-0.15164	-0.25341	-3.39942
	setup	CLK (R)	0.18485	0.29202	3.41313
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.14770	-0.25522	-3.39188
	setup	CLK (R)	0.18485	0.29092	3.40948
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.15217	-0.25811	-3.40070
	setup	CLK (R)	0.18283	0.28842	3.42254

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)	0.00277	0.01417	0.42265
	setup	CLK (R)	0.20093	0.22116	0.54040
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	0.00348	0.01417	0.42836
	setup	CLK (R)	0.19884	0.21914	0.53856
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	0.00277	0.01417	0.42265
	setup	CLK (R)	0.19424	0.21629	0.54321

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)	-0.10494	-0.23214	-3.23356
	setup	CLK (R)	0.14926	0.26853	3.55782
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.10260	-0.23116	-3.23369
	setup	CLK (R)	0.14718	0.26893	3.55107
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.10400	-0.23033	-3.23606
	setup	CLK (R)	0.14234	0.26474	3.56029

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)	-0.16366	-0.18106	-0.31432
	hold	CLK (R)	0.00277	0.01417	0.42265
	hold	CLK (R)	-0.06272	-0.12829	-0.50322
	hold	CLK (R)	-0.08102	-0.10160	-0.22080
	setup	CLK (R)	0.20093	0.22109	0.34687
	setup	CLK (R)	0.07441	0.13764	0.53977
	setup	CLK (R)	0.07446	0.13764	0.54040
	setup	CLK (R)	0.20088	0.22116	0.34309
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.16205	-0.17859	-0.31468
	hold	CLK (R)	0.00348	0.01417	0.42836
	hold	CLK (R)	-0.06230	-0.12685	-0.49921
	hold	CLK (R)	-0.08111	-0.09979	-0.21606
	setup	CLK (R)	0.19884	0.21914	0.34687
	setup	CLK (R)	0.07571	0.13764	0.53773
	setup	CLK (R)	0.07571	0.13764	0.53856
	setup	CLK (R)	0.19861	0.21909	0.34734
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.16463	-0.18167	-0.31686
	hold	CLK (R)	0.00277	0.01417	0.42265
	hold	CLK (R)	-0.06436	-0.12837	-0.50613
	hold	CLK (R)	-0.08159	-0.09979	-0.22205
	setup	CLK (R)	0.19387	0.21629	0.35867
	setup	CLK (R)	0.07441	0.13764	0.54230
	setup	CLK (R)	0.07441	0.13764	0.54321
	setup	CLK (R)	0.19424	0.21549	0.35628

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)	-0.12350	-0.25294	-3.25512
	hold	CLK (R)	-0.10739	-0.23214	-3.53119
	hold	CLK (R)	-0.10494	-0.23293	-3.55029
	hold	CLK (R)	-0.11622	-0.24525	-3.23356
	setup	CLK (R)	0.14059	0.26379	3.26161
	setup	CLK (R)	0.12102	0.24422	3.53753
	setup	CLK (R)	0.14926	0.26853	3.55782
	setup	CLK (R)	0.12744	0.24963	3.23724
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.12210	-0.25349	-3.25429
	hold	CLK (R)	-0.10726	-0.23214	-3.52782
	hold	CLK (R)	-0.10260	-0.23116	-3.54411
	hold	CLK (R)	-0.11842	-0.24437	-3.23369
	setup	CLK (R)	0.14055	0.26273	3.26135
	setup	CLK (R)	0.11996	0.24120	3.53151
	setup	CLK (R)	0.14718	0.26893	3.55107
	setup	CLK (R)	0.12878	0.25074	3.23615
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.12348	-0.25428	-3.25419
	hold	CLK (R)	-0.10847	-0.23140	-3.53482
	hold	CLK (R)	-0.10400	-0.23033	-3.54917
	hold	CLK (R)	-0.11732	-0.24598	-3.23606
	setup	CLK (R)	0.13949	0.26379	3.26561
	setup	CLK (R)	0.11855	0.24139	3.53687
	setup	CLK (R)	0.14234	0.26474	3.56029
	setup	CLK (R)	0.12969	0.25105	3.24051

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 ()**	0.06878	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.06878	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.10069	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.06878	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.10069	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.06878	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.09841	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.09841	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.06878	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.10069	0.60669	16.50020
sky130_fd_sc_hs__sedfxtp_2	**min_pulse_width**	**CLK ()**	0.07790	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.07790	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.13260	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.07790	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.13260	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.07790	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.13032	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.13032	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.07790	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.13260	0.60669	16.50020
sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK ()**	0.09841	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.09841	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.18958	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.10069	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.18958	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.09841	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.18730	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.18730	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.09841	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.18958	0.60669	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 ()	0.10753	0.60669	16.50020
	min_pulse_width	CLK ()	0.11664	0.60669	16.50020
	min_pulse_width	CLK ()	0.15539	0.60669	16.50020
	min_pulse_width	CLK ()	0.10753	0.60669	16.50020
	min_pulse_width	CLK ()	0.15539	0.60669	16.50020
	min_pulse_width	CLK ()	0.10753	0.60669	16.50020
	min_pulse_width	CLK ()	0.15995	0.60669	16.50020
	min_pulse_width	CLK ()	0.15539	0.60669	16.50020
	min_pulse_width	CLK ()	0.10753	0.60669	16.50020
	min_pulse_width	CLK ()	0.15539	0.60669	16.50020
sky130_fd_sc_hs__sedfxtp_2	min_pulse_width	CLK ()	0.10753	0.60669	16.50020
	min_pulse_width	CLK ()	0.11436	0.60669	16.50020
	min_pulse_width	CLK ()	0.15311	0.60669	16.50020
	min_pulse_width	CLK ()	0.10753	0.60669	16.50020
	min_pulse_width	CLK ()	0.15311	0.60669	16.50020
	min_pulse_width	CLK ()	0.10753	0.60669	16.50020
	min_pulse_width	CLK ()	0.15767	0.60669	16.50020
	min_pulse_width	CLK ()	0.15311	0.60669	16.50020
	min_pulse_width	CLK ()	0.10753	0.60669	16.50020
	min_pulse_width	CLK ()	0.15311	0.60669	16.50020

sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK ()**	0.10525	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.11209	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.14627	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.10525	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.14627	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.10525	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.15083	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.14627	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.10525	0.60669	16.50020
	min_pulse_width	**CLK ()**	0.14627	0.60669	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	0.04630	0.05451	0.21860
	CLK	0.03860	0.04683	0.21140
sky130_fd_sc_hs__sedfxtp_2	CLK	0.05150	0.05969	0.22385
	CLK	0.04370	0.05199	0.21714
sky130_fd_sc_hs__sedfxtp_4	CLK	0.06223	0.06932	0.23404
	CLK	0.05428	0.06155	0.22814

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	CLK	0.04252	0.05036	0.22039
	CLK	0.03765	0.04527	0.21504
sky130_fd_sc_hs__sedfxtp_2	CLK	0.05016	0.05575	0.22485
	CLK	0.04528	0.05072	0.21995
sky130_fd_sc_hs__sedfxtp_4	CLK	0.06873	0.06541	0.23437
	CLK	0.06365	0.06016	0.22845

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.00723	0.01060	0.08138
	(DE * SCE)	0.00258	0.00593	0.07672
	(CLK * DE * !SCE)	0.01503	0.01741	0.08553
	(CLK * DE * !SCE)	0.00882	0.01119	0.07931
	(CLK * !DE * !SCE)	0.00173	0.00177	0.00175
	(CLK * !DE * !SCE)	-0.00116	-0.00119	-0.00117
	(!DE * SCE)	0.00176	0.00177	0.00176
	(!DE * SCE)	-0.00116	-0.00117	-0.00116
	(!CLK * DE * !SCE * Q)	0.02659	0.02952	0.10782
	(!CLK * DE * !SCE * Q)	0.02038	0.02330	0.10161
	(!CLK * DE * !SCE * !Q)	0.02584	0.02860	0.10681
	(!CLK * DE * !SCE * !Q)	0.01956	0.02232	0.10053
	(!CLK * !DE * !SCE)	0.00174	0.00176	0.00174
	(!CLK * !DE * !SCE)	-0.00117	-0.00120	-0.00117
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.00746	0.01079	0.08153
	(DE * SCE)	0.00260	0.00590	0.07665
	(CLK * DE * !SCE)	0.01526	0.01760	0.08566
	(CLK * DE * !SCE)	0.00882	0.01115	0.07921
	(CLK * !DE * !SCE)	0.00180	0.00181	0.00181
	(CLK * !DE * !SCE)	-0.00123	-0.00124	-0.00123
	(!DE * SCE)	0.00183	0.00184	0.00183
	(!DE * SCE)	-0.00122	-0.00123	-0.00122
	(!CLK * DE * !SCE * Q)	0.02677	0.02966	0.10793
	(!CLK * DE * !SCE * Q)	0.02033	0.02322	0.10150
	(!CLK * DE * !SCE * !Q)	0.02610	0.02883	0.10703
	(!CLK * DE * !SCE * !Q)	0.01959	0.02232	0.10053
	(!CLK * !DE * !SCE)	0.00181	0.00184	0.00181
	(!CLK * !DE * !SCE)	-0.00123	-0.00126	-0.00123

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.00749	0.01082	0.08157
	(DE * SCE)	0.00261	0.00592	0.07670
	(CLK * DE * !SCE)	0.01536	0.01769	0.08567
	(CLK * DE * !SCE)	0.00892	0.01125	0.07922
	(CLK * !DE * !SCE)	0.00181	0.00182	0.00181
	(CLK * !DE * !SCE)	-0.00123	-0.00125	-0.00123
	(!DE * SCE)	0.00183	0.00184	0.00184
	(!DE * SCE)	-0.00122	-0.00123	-0.00122
	(!CLK * DE * !SCE * Q)	0.02662	0.02955	0.10778
	(!CLK * DE * !SCE * Q)	0.02017	0.02310	0.10134
	(!CLK * DE * !SCE * !Q)	0.02587	0.02861	0.10681
	(!CLK * DE * !SCE * !Q)	0.01936	0.02209	0.10030
	(!CLK * !DE * !SCE)	0.00182	0.00184	0.00182
	(!CLK * !DE * !SCE)	-0.00124	-0.00126	-0.00124

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

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

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.00253	0.00644	0.07726
	(DE * SCE)	0.00727	0.01118	0.08199
	(CLK * DE * !SCE)	0.00468	0.00800	0.07658
	(CLK * DE * !SCE)	0.01096	0.01426	0.08284
	(CLK * !DE * !SCE)	-0.00049	-0.00049	-0.00049
	(CLK * !DE * !SCE)	0.00264	0.00266	0.00265
	(!DE * SCE)	-0.00047	-0.00049	-0.00047
	(!DE * SCE)	0.00265	0.00269	0.00266
	(!CLK * DE * !SCE * Q)	0.01791	0.02192	0.10248
	(!CLK * DE * !SCE * Q)	0.02411	0.02812	0.10868
	(!CLK * DE * !SCE * !Q)	0.01937	0.02354	0.10504
	(!CLK * DE * !SCE * !Q)	0.02563	0.02980	0.11131
	(!CLK * !DE * !SCE)	-0.00049	-0.00050	-0.00049
	(!CLK * !DE * !SCE)	0.00264	0.00266	0.00265
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.00244	0.00633	0.07711
	(DE * SCE)	0.00740	0.01129	0.08204
	(CLK * DE * !SCE)	0.00457	0.00796	0.07638
	(CLK * DE * !SCE)	0.01108	0.01444	0.08288
	(CLK * !DE * !SCE)	-0.00049	-0.00050	-0.00049
	(CLK * !DE * !SCE)	0.00278	0.00280	0.00279
	(!DE * SCE)	-0.00047	-0.00049	-0.00047
	(!DE * SCE)	0.00279	0.00284	0.00280
	(!CLK * DE * !SCE * Q)	0.01782	0.02181	0.10232
	(!CLK * DE * !SCE * Q)	0.02425	0.02824	0.10874
	(!CLK * DE * !SCE * !Q)	0.01920	0.02334	0.10480
	(!CLK * DE * !SCE * !Q)	0.02570	0.02984	0.11130
	(!CLK * !DE * !SCE)	-0.00049	-0.00050	-0.00049
	(!CLK * !DE * !SCE)	0.00278	0.00280	0.00279

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.00235	0.00625	0.07706
	(DE * SCE)	0.00732	0.01122	0.08200
	(CLK * DE * !SCE)	0.00484	0.00820	0.07656
	(CLK * DE * !SCE)	0.01136	0.01470	0.08306
	(CLK * !DE * !SCE)	-0.00049	-0.00050	-0.00049
	(CLK * !DE * !SCE)	0.00279	0.00281	0.00280
	(!DE * SCE)	-0.00047	-0.00049	-0.00047
	(!DE * SCE)	0.00280	0.00285	0.00281
	(!CLK * DE * !SCE * Q)	0.01804	0.02195	0.10243
	(!CLK * DE * !SCE * Q)	0.02448	0.02838	0.10884
	(!CLK * DE * !SCE * !Q)	0.01942	0.02356	0.10497
	(!CLK * DE * !SCE * !Q)	0.02592	0.03006	0.11148
	(!CLK * !DE * !SCE)	-0.00049	-0.00050	-0.00049
	(!CLK * !DE * !SCE)	0.00279	0.00281	0.00280

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.01379	0.02114	0.17601
	SCE	0.00341	0.01074	0.16563
	(CLK * !SCE)	0.02129	0.02808	0.18080
	(CLK * !SCE)	0.00938	0.01613	0.16888
	(!CLK * D * !SCE * Q)	0.00867	0.01324	0.10834
	(!CLK * D * !SCE * Q)	0.00006	0.00460	0.09972
	(!CLK * D * !SCE * !Q)	0.03266	0.03990	0.20086
	(!CLK * D * !SCE * !Q)	0.02074	0.02798	0.18892
	(!CLK * !D * !SCE * Q)	0.02790	0.03263	0.13143
	(!CLK * !D * !SCE * Q)	0.02267	0.02737	0.12619
	(!CLK * !D * !SCE * !Q)	0.00846	0.01327	0.10843
	(!CLK * !D * !SCE * !Q)	-0.00009	0.00470	0.09989

sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.01398	0.02132	0.17616
	SCE	0.00341	0.01071	0.16560
	(CLK * !SCE)	0.02157	0.02834	0.18105
	(CLK * !SCE)	0.00944	0.01618	0.16890
	(!CLK * D * !SCE * Q)	0.00872	0.01328	0.10838
	(!CLK * D * !SCE * Q)	-0.00001	0.00453	0.09966
	(!CLK * D * !SCE * !Q)	0.03287	0.04012	0.20106
	(!CLK * D * !SCE * !Q)	0.02074	0.02795	0.18892
	(!CLK * !D * !SCE * Q)	0.02790	0.03263	0.13144
	(!CLK * !D * !SCE * Q)	0.02264	0.02734	0.12617
	(!CLK * !D * !SCE * !Q)	0.00852	0.01336	0.10849
	(!CLK * !D * !SCE * !Q)	-0.00016	0.00467	0.09983
sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.01396	0.02131	0.17618
	SCE	0.00342	0.01074	0.16564
	(CLK * !SCE)	0.02161	0.02838	0.18103
	(CLK * !SCE)	0.00953	0.01627	0.16894
	(!CLK * D * !SCE * Q)	0.00870	0.01326	0.10837
	(!CLK * D * !SCE * Q)	0.00000	0.00455	0.09969
	(!CLK * D * !SCE * !Q)	0.03260	0.03985	0.20082
	(!CLK * D * !SCE * !Q)	0.02052	0.02776	0.18873
	(!CLK * !D * !SCE * Q)	0.02802	0.03276	0.13158
	(!CLK * !D * !SCE * Q)	0.02280	0.02751	0.12634
	(!CLK * !D * !SCE * !Q)	0.00850	0.01335	0.10848
	(!CLK * !D * !SCE * !Q)	-0.00014	0.00471	0.09986

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

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

sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.00365	0.01165	0.16661
	SCE	0.01402	0.02204	0.17697
	(CLK * !SCE)	0.00574	0.01318	0.16637
	(CLK * !SCE)	0.01765	0.02513	0.17828
	(!CLK * D * !SCE * Q)	-0.00020	0.00533	0.10028
	(!CLK * D * !SCE * Q)	0.00840	0.01396	0.10890
	(!CLK * D * !SCE * !Q)	0.02006	0.02788	0.18943
	(!CLK * D * !SCE * !Q)	0.03196	0.03981	0.20134
	(!CLK * !D * !SCE * Q)	0.02647	0.03189	0.12855
	(!CLK * !D * !SCE * Q)	0.03168	0.03712	0.13381
	(!CLK * !D * !SCE * !Q)	-0.00042	0.00517	0.10023
	(!CLK * !D * !SCE * !Q)	0.00810	0.01372	0.10879
sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.00365	0.01161	0.16657
	SCE	0.01421	0.02221	0.17713
	(CLK * !SCE)	0.00570	0.01312	0.16629
	(CLK * !SCE)	0.01782	0.02529	0.17841
	(!CLK * D * !SCE * Q)	-0.00023	0.00529	0.10025
	(!CLK * D * !SCE * Q)	0.00849	0.01404	0.10898
	(!CLK * D * !SCE * !Q)	0.01994	0.02775	0.18930
	(!CLK * D * !SCE * !Q)	0.03206	0.03989	0.20142
	(!CLK * !D * !SCE * Q)	0.02648	0.03190	0.12854
	(!CLK * !D * !SCE * Q)	0.03172	0.03716	0.13383
	(!CLK * !D * !SCE * !Q)	-0.00045	0.00514	0.10020
	(!CLK * !D * !SCE * !Q)	0.00818	0.01380	0.10888

sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.00357	0.01155	0.16653
	SCE	0.01409	0.02210	0.17705
	(CLK * !SCE)	0.00598	0.01339	0.16649
	(CLK * !SCE)	0.01805	0.02551	0.17856
	(!CLK * D * !SCE * Q)	-0.00022	0.00530	0.10026
	(!CLK * D * !SCE * Q)	0.00846	0.01401	0.10895
	(!CLK * D * !SCE * !Q)	0.02018	0.02798	0.18951
	(!CLK * D * !SCE * !Q)	0.03225	0.04007	0.20159
	(!CLK * !D * !SCE * Q)	0.02633	0.03174	0.12839
	(!CLK * !D * !SCE * Q)	0.03153	0.03697	0.13365
	(!CLK * !D * !SCE * !Q)	-0.00045	0.00514	0.10021
	(!CLK * !D * !SCE * !Q)	0.00815	0.01376	0.10886

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.00833	0.01089	0.07492
	(CLK * SCE)	0.00323	0.00576	0.06981
	(!CLK * SCE)	0.01944	0.02245	0.09410
	(!CLK * SCE)	0.01434	0.01732	0.08899
	!SCE	0.00170	0.00145	0.00140
	!SCE	-0.00173	-0.00202	-0.00205
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.00851	0.01106	0.07512
	(CLK * SCE)	0.00335	0.00588	0.06995
	(!CLK * SCE)	0.01956	0.02255	0.09424
	(!CLK * SCE)	0.01440	0.01738	0.08908
	!SCE	0.00174	0.00148	0.00144
	!SCE	-0.00174	-0.00203	-0.00206
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.00853	0.01105	0.07503
	(CLK * SCE)	0.00339	0.00588	0.06988
	(!CLK * SCE)	0.01926	0.02228	0.09397
	(!CLK * SCE)	0.01412	0.01714	0.08883
	!SCE	0.00173	0.00148	0.00143
	!SCE	-0.00173	-0.00203	-0.00205

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.00427	0.00696	0.07110
	(CLK * SCE)	0.00938	0.01209	0.07620
	(!CLK * SCE)	0.01713	0.02004	0.09174
	(!CLK * SCE)	0.02224	0.02517	0.09684
	!SCE	-0.00129	-0.00132	-0.00132
	!SCE	0.00213	0.00215	0.00214
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.00414	0.00683	0.07100
	(CLK * SCE)	0.00931	0.01201	0.07616
	(!CLK * SCE)	0.01694	0.01982	0.09157
	(!CLK * SCE)	0.02210	0.02501	0.09673
	!SCE	-0.00132	-0.00135	-0.00135
	!SCE	0.00214	0.00216	0.00216
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.00458	0.00723	0.07130
	(CLK * SCE)	0.00972	0.01239	0.07644
	(!CLK * SCE)	0.01732	0.02021	0.09191
	(!CLK * SCE)	0.02246	0.02538	0.09704
	!SCE	-0.00131	-0.00134	-0.00134
	!SCE	0.00214	0.00217	0.00216

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(CLK * D)**	0.01210	0.01998	0.17396
	(CLK * D)	0.00324	0.01109	0.16509
	(CLK * !D)	0.01258	0.02038	0.17292
	(CLK * !D)	0.00373	0.01149	0.16405
	(!CLK * D * SCD * Q)	0.00707	0.01209	0.10720
	(!CLK * D * SCD * Q)	-0.00022	0.00475	0.09987
	(!CLK * D * DE * SCD * !Q)	0.00686	0.01189	0.10700
	(!CLK * D * DE * SCD * !Q)	-0.00043	0.00454	0.09967
	(!CLK * D * DE * !SCD * !Q)	0.02584	0.03003	0.15559
	(!CLK * D * DE * !SCD * !Q)	0.01991	0.02406	0.14962
	(!CLK * D * !SCD * Q)	0.02572	0.02991	0.15545
	(!CLK * D * !SCD * Q)	0.01979	0.02395	0.14947
	(!CLK * D * !DE * SCD * !Q)	0.02319	0.03142	0.19455
	(!CLK * D * !DE * SCD * !Q)	0.01434	0.02253	0.18569
	(!CLK * D * !DE * !SCD * !Q)	0.00802	0.01298	0.10816
	(!CLK * D * !DE * !SCD * !Q)	0.00055	0.00551	0.10066
	(!CLK * !D * SCD * !Q)	0.02319	0.03140	0.19302
	(!CLK * !D * SCD * !Q)	0.01433	0.02251	0.18415
	(!CLK * !D * DE * SCD * Q)	0.02389	0.03202	0.19365
	(!CLK * !D * DE * SCD * Q)	0.01503	0.02313	0.18478
	(!CLK * !D * DE * !SCD * Q)	0.00824	0.01320	0.10838
	(!CLK * !D * DE * !SCD * Q)	0.00077	0.00573	0.10087
	(!CLK * !D * !SCD * !Q)	0.00802	0.01298	0.10817
	(!CLK * !D * !SCD * !Q)	0.00056	0.00552	0.10066
	(!CLK * !D * !DE * SCD * Q)	0.00707	0.01209	0.10720
	(!CLK * !D * !DE * SCD * Q)	-0.00023	0.00475	0.09987
	(!CLK * !D * !DE * !SCD * Q)	0.02574	0.02987	0.15551
	(!CLK * !D * !DE * !SCD * Q)	0.01981	0.02390	0.14954

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.01230	0.02016	0.17416
	(CLK * D)	0.00333	0.01115	0.16517
	(CLK * !D)	0.01268	0.02046	0.17299
	(CLK * !D)	0.00370	0.01144	0.16400
	(!CLK * D * SCD * Q)	0.00717	0.01217	0.10723
	(!CLK * D * SCD * Q)	-0.00024	0.00469	0.09978
	(!CLK * D * DE * SCD * !Q)	0.00697	0.01198	0.10704
	(!CLK * D * DE * SCD * !Q)	-0.00043	0.00451	0.09959
	(!CLK * D * DE * !SCD * !Q)	0.02576	0.02991	0.15545
	(!CLK * D * DE * !SCD * !Q)	0.01972	0.02384	0.14938
	(!CLK * D * !SCD * Q)	0.02569	0.02985	0.15537
	(!CLK * D * !SCD * Q)	0.01967	0.02380	0.14929
	(!CLK * D * !DE * SCD * !Q)	0.02333	0.03154	0.19470
	(!CLK * D * !DE * SCD * !Q)	0.01435	0.02253	0.18571
	(!CLK * D * !DE * !SCD * !Q)	0.00811	0.01305	0.10818
	(!CLK * D * !DE * !SCD * !Q)	0.00052	0.00546	0.10056
	(!CLK * !D * SCD * !Q)	0.02332	0.03151	0.19316
	(!CLK * !D * SCD * !Q)	0.01435	0.02250	0.18416
	(!CLK * !D * DE * SCD * Q)	0.02394	0.03206	0.19364
	(!CLK * !D * DE * SCD * Q)	0.01496	0.02304	0.18464
	(!CLK * !D * DE * !SCD * Q)	0.00831	0.01326	0.10838
	(!CLK * !D * DE * !SCD * Q)	0.00073	0.00566	0.10076
	(!CLK * !D * !SCD * !Q)	0.00811	0.01305	0.10819
	(!CLK * !D * !SCD * !Q)	0.00053	0.00547	0.10056
	(!CLK * !D * !DE * SCD * Q)	0.00716	0.01217	0.10722
	(!CLK * !D * !DE * SCD * Q)	-0.00025	0.00469	0.09978
	(!CLK * !D * !DE * !SCD * Q)	0.02571	0.02983	0.15546
	(!CLK * !D * !DE * !SCD * Q)	0.01969	0.02376	0.14938

sky130_fd_sc_hs__sedfxtp_4	**(CLK * D)**	0.01234	0.02015	0.17415
	(CLK * D)	0.00342	0.01120	0.16524
	(CLK * !D)	0.01233	0.02011	0.17257
	(CLK * !D)	0.00342	0.01116	0.16365
	(!CLK * D * SCD * Q)	0.00711	0.01214	0.10731
	(!CLK * D * SCD * Q)	-0.00024	0.00472	0.09993
	(!CLK * D * DE * SCD * !Q)	0.00692	0.01195	0.10713
	(!CLK * D * DE * SCD * !Q)	-0.00043	0.00454	0.09974
	(!CLK * D * DE * !SCD * !Q)	0.02608	0.03025	0.15580
	(!CLK * D * DE * !SCD * !Q)	0.02009	0.02423	0.14978
	(!CLK * D * !SCD * Q)	0.02595	0.03015	0.15577
	(!CLK * D * !SCD * Q)	0.01997	0.02413	0.14974
	(!CLK * D * !DE * SCD * !Q)	0.02305	0.03127	0.19455
	(!CLK * D * !DE * SCD * !Q)	0.01414	0.02232	0.18563
	(!CLK * D * !DE * !SCD * !Q)	0.00807	0.01303	0.10828
	(!CLK * D * !DE * !SCD * !Q)	0.00054	0.00550	0.10072
	(!CLK * !D * SCD * !Q)	0.02304	0.03122	0.19300
	(!CLK * !D * SCD * !Q)	0.01413	0.02232	0.18406
	(!CLK * !D * DE * SCD * Q)	0.02372	0.03184	0.19360
	(!CLK * !D * DE * SCD * Q)	0.01481	0.02290	0.18467
	(!CLK * !D * DE * !SCD * Q)	0.00827	0.01323	0.10848
	(!CLK * !D * DE * !SCD * Q)	0.00074	0.00570	0.10092
	(!CLK * !D * !SCD * !Q)	0.00807	0.01303	0.10829
	(!CLK * !D * !SCD * !Q)	0.00055	0.00551	0.10072
	(!CLK * !D * !DE * SCD * Q)	0.00711	0.01213	0.10731
	(!CLK * !D * !DE * SCD * Q)	-0.00024	0.00472	0.09992
	(!CLK * !D * !DE * !SCD * Q)	0.02597	0.03011	0.15585
	(!CLK * !D * !DE * !SCD * Q)	0.01999	0.02409	0.14982

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * D)	0.00168	0.01121	0.16526
	(CLK * D)	0.01053	0.02010	0.17413
	(CLK * !D)	0.00168	0.01121	0.16394
	(CLK * !D)	0.01052	0.02010	0.17281
	(!CLK * D * SCD * Q)	0.00026	0.00623	0.10126
	(!CLK * D * SCD * Q)	0.00758	0.01357	0.10858
	(!CLK * D * DE * SCD * !Q)	0.00049	0.00646	0.10149
	(!CLK * D * DE * SCD * !Q)	0.00780	0.01380	0.10881
	(!CLK * D * DE * !SCD * !Q)	0.01938	0.02829	0.16202
	(!CLK * D * DE * !SCD * !Q)	0.02532	0.03424	0.16775
	(!CLK * D * !SCD * Q)	0.01962	0.02851	0.16215
	(!CLK * D * !SCD * Q)	0.02555	0.03446	0.16788
	(!CLK * D * !DE * SCD * !Q)	0.01537	0.02466	0.19065
	(!CLK * D * !DE * SCD * !Q)	0.02419	0.03354	0.19948
	(!CLK * D * !DE * !SCD * !Q)	-0.00040	0.00559	0.10040
	(!CLK * D * !DE * !SCD * !Q)	0.00708	0.01308	0.10790
	(!CLK * !D * SCD * !Q)	0.01548	0.02475	0.18990
	(!CLK * !D * SCD * !Q)	0.02435	0.03364	0.19876
	(!CLK * !D * DE * SCD * Q)	0.01490	0.02411	0.18922
	(!CLK * !D * DE * SCD * Q)	0.02376	0.03297	0.19808
	(!CLK * !D * DE * !SCD * Q)	-0.00061	0.00537	0.10019
	(!CLK * !D * DE * !SCD * Q)	0.00686	0.01287	0.10769
	(!CLK * !D * !SCD * !Q)	-0.00039	0.00559	0.10040
	(!CLK * !D * !SCD * !Q)	0.00708	0.01309	0.10791
	(!CLK * !D * !DE * SCD * Q)	0.00026	0.00623	0.10126
	(!CLK * !D * !DE * SCD * Q)	0.00757	0.01356	0.10858
	(!CLK * !D * !DE * !SCD * Q)	0.01954	0.02843	0.16225
	(!CLK * !D * !DE * !SCD * Q)	0.02547	0.03440	0.16799

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.00159	0.01112	0.16519
	(CLK * D)	0.01057	0.02014	0.17419
	(CLK * !D)	0.00159	0.01112	0.16387
	(CLK * !D)	0.01056	0.02014	0.17287
	(!CLK * D * SCD * Q)	0.00021	0.00618	0.10115
	(!CLK * D * SCD * Q)	0.00764	0.01362	0.10859
	(!CLK * D * DE * SCD * !Q)	0.00042	0.00639	0.10137
	(!CLK * D * DE * SCD * !Q)	0.00785	0.01384	0.10880
	(!CLK * D * DE * !SCD * !Q)	0.01934	0.02823	0.16192
	(!CLK * D * DE * !SCD * !Q)	0.02538	0.03429	0.16775
	(!CLK * D * !SCD * Q)	0.01952	0.02840	0.16199
	(!CLK * D * !SCD * Q)	0.02555	0.03445	0.16781
	(!CLK * D * !DE * SCD * !Q)	0.01519	0.02448	0.19052
	(!CLK * D * !DE * SCD * !Q)	0.02415	0.03350	0.19949
	(!CLK * D * !DE * !SCD * !Q)	-0.00044	0.00533	0.10030
	(!CLK * D * !DE * !SCD * !Q)	0.00715	0.01297	0.10792
	(!CLK * !D * SCD * !Q)	0.01531	0.02458	0.18978
	(!CLK * !D * SCD * !Q)	0.02430	0.03359	0.19876
	(!CLK * !D * DE * SCD * Q)	0.01481	0.02402	0.18917
	(!CLK * !D * DE * SCD * Q)	0.02380	0.03303	0.19816
	(!CLK * !D * DE * !SCD * Q)	-0.00064	0.00533	0.10010
	(!CLK * !D * DE * !SCD * Q)	0.00695	0.01294	0.10772
	(!CLK * !D * !SCD * !Q)	-0.00043	0.00534	0.10030
	(!CLK * !D * !SCD * !Q)	0.00716	0.01298	0.10792
	(!CLK * !D * !DE * SCD * Q)	0.00021	0.00617	0.10115
	(!CLK * !D * !DE * SCD * Q)	0.00764	0.01362	0.10859
	(!CLK * !D * !DE * !SCD * Q)	0.01944	0.02832	0.16209
	(!CLK * !D * !DE * !SCD * Q)	0.02548	0.03438	0.16794

sky130_fd_sc_hs__sedfxtp_4	**(CLK * D)**	0.00203	0.01150	0.16562
	(CLK * D)	0.01095	0.02045	0.17455
	(CLK * !D)	0.00204	0.01150	0.16429
	(CLK * !D)	0.01095	0.02045	0.17322
	(!CLK * D * SCD * Q)	0.00025	0.00622	0.10132
	(!CLK * D * SCD * Q)	0.00762	0.01361	0.10870
	(!CLK * D * DE * SCD * !Q)	0.00047	0.00644	0.10154
	(!CLK * D * DE * SCD * !Q)	0.00784	0.01383	0.10891
	(!CLK * D * DE * !SCD * !Q)	0.01911	0.02802	0.16189
	(!CLK * D * DE * !SCD * !Q)	0.02510	0.03403	0.16767
	(!CLK * D * !SCD * Q)	0.01935	0.02824	0.16200
	(!CLK * D * !SCD * Q)	0.02533	0.03425	0.16778
	(!CLK * D * !DE * SCD * !Q)	0.01558	0.02480	0.19095
	(!CLK * D * !DE * SCD * !Q)	0.02447	0.03374	0.19986
	(!CLK * D * !DE * !SCD * !Q)	-0.00041	0.00539	0.10046
	(!CLK * D * !DE * !SCD * !Q)	0.00713	0.01296	0.10802
	(!CLK * !D * SCD * !Q)	0.01570	0.02492	0.19020
	(!CLK * !D * SCD * !Q)	0.02463	0.03387	0.19912
	(!CLK * !D * DE * SCD * Q)	0.01513	0.02432	0.18953
	(!CLK * !D * DE * SCD * Q)	0.02406	0.03327	0.19845
	(!CLK * !D * DE * !SCD * Q)	-0.00061	0.00537	0.10025
	(!CLK * !D * DE * !SCD * Q)	0.00692	0.01292	0.10782
	(!CLK * !D * !SCD * !Q)	-0.00040	0.00539	0.10046
	(!CLK * !D * !SCD * !Q)	0.00713	0.01297	0.10803
	(!CLK * !D * !DE * SCD * Q)	0.00025	0.00621	0.10132
	(!CLK * !D * !DE * SCD * Q)	0.00762	0.01361	0.10869
	(!CLK * !D * !DE * !SCD * Q)	0.01926	0.02816	0.16210
	(!CLK * !D * !DE * !SCD * Q)	0.02525	0.03419	0.16786

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(SCD * SCE * Q)	0.02064	0.02825	0.19007
	(SCD * SCE * Q)	0.01437	0.02197	0.18381
	(D * !SCE * Q)	0.02061	0.02821	0.19005
	(D * !SCE * Q)	0.01434	0.02194	0.18379
	(D * !DE * !SCE * !Q)	0.02120	0.02890	0.19125
	(D * !DE * !SCE * !Q)	0.01493	0.02260	0.18498
	(!SCD * SCE * !Q)	0.02125	0.02892	0.19130
	(!SCD * SCE * !Q)	0.01498	0.02262	0.18503
	(!D * !SCE * !Q)	0.02121	0.02888	0.19126
	(!D * !SCE * !Q)	0.01494	0.02258	0.18498
	(!D * !DE * !SCE * Q)	0.02061	0.02821	0.19004
	(!D * !DE * !SCE * Q)	0.01434	0.02194	0.18378
sky130_fd_sc_hs__sedfxtp_2	(SCD * SCE * Q)	0.02086	0.02862	0.19035
	(SCD * SCE * Q)	0.01456	0.02228	0.18405
	(D * !SCE * Q)	0.02084	0.02859	0.19034
	(D * !SCE * Q)	0.01454	0.02226	0.18404
	(D * !DE * !SCE * !Q)	0.02144	0.02913	0.19157
	(D * !DE * !SCE * !Q)	0.01514	0.02280	0.18526
	(!SCD * SCE * !Q)	0.02148	0.02914	0.19161
	(!SCD * SCE * !Q)	0.01518	0.02281	0.18530
	(!D * !SCE * !Q)	0.02145	0.02911	0.19157
	(!D * !SCE * !Q)	0.01514	0.02278	0.18527
	(!D * !DE * !SCE * Q)	0.02084	0.02859	0.19033
	(!D * !DE * !SCE * Q)	0.01454	0.02226	0.18404

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.02088	0.02845	0.19018
	(SCD * SCE * Q)	0.01438	0.02195	0.18367
	(D * !SCE * Q)	0.02085	0.02842	0.19015
	(D * !SCE * Q)	0.01435	0.02192	0.18366
	(D * !DE * !SCE * !Q)	0.02126	0.02893	0.19117
	(D * !DE * !SCE * !Q)	0.01476	0.02240	0.18466
	(!SCD * SCE * !Q)	0.02131	0.02895	0.19122
	(!SCD * SCE * !Q)	0.01481	0.02242	0.18472
	(!D * !SCE * !Q)	0.02127	0.02894	0.19117
	(!D * !SCE * !Q)	0.01477	0.02240	0.18466
	(!D * !DE * !SCE * Q)	0.02085	0.02841	0.19013
	(!D * !DE * !SCE * Q)	0.01435	0.02192	0.18363

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

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

sky130_fd_sc_hs__sedfxtp_1	**(SCD * SCE * Q)**	0.01170	0.02127	0.18272
	(SCD * SCE * Q)	0.01798	0.02752	0.18897
	(SCD * SCE * !Q)	0.02237	0.03205	0.19722
	(SCD * SCE * !Q)	0.02865	0.03832	0.20349
	(D * DE * !SCE * !Q)	0.02238	0.03202	0.19722
	(D * DE * !SCE * !Q)	0.02866	0.03830	0.20350
	(D * !SCE * Q)	0.01171	0.02127	0.18274
	(D * !SCE * Q)	0.01799	0.02754	0.18899
	(D * !DE * !SCE * !Q)	0.01146	0.02092	0.18211
	(D * !DE * !SCE * !Q)	0.01774	0.02719	0.18839
	(!SCD * SCE * Q)	0.02578	0.03525	0.19957
	(!SCD * SCE * Q)	0.03208	0.04153	0.20586
	(!SCD * SCE * !Q)	0.01147	0.02093	0.18180
	(!SCD * SCE * !Q)	0.01775	0.02719	0.18806
	(!D * DE * !SCE * Q)	0.02626	0.03619	0.20005
	(!D * DE * !SCE * Q)	0.03254	0.04249	0.20633
	(!D * !SCE * !Q)	0.01147	0.02092	0.18212
	(!D * !SCE * !Q)	0.01775	0.02719	0.18840
	(!D * !DE * !SCE * Q)	0.01170	0.02126	0.18273
	(!D * !DE * !SCE * Q)	0.01798	0.02753	0.18898

sky130_fd_sc_hs__sedfxtp_2	**(SCD * SCE * Q)**	0.01179	0.02134	0.18284
	(SCD * SCE * Q)	0.01811	0.02767	0.18912
	(SCD * SCE * !Q)	0.02240	0.03205	0.19696
	(SCD * SCE * !Q)	0.02871	0.03837	0.20326
	(D * DE * !SCE * !Q)	0.02240	0.03203	0.19692
	(D * DE * !SCE * !Q)	0.02871	0.03835	0.20321
	(D * !SCE * Q)	0.01180	0.02134	0.18285
	(D * !SCE * Q)	0.01811	0.02767	0.18913
	(D * !DE * !SCE * !Q)	0.01157	0.02100	0.18196
	(D * !DE * !SCE * !Q)	0.01788	0.02733	0.18827
	(!SCD * SCE * Q)	0.02586	0.03531	0.19957
	(!SCD * SCE * Q)	0.03219	0.04165	0.20590
	(!SCD * SCE * !Q)	0.01158	0.02101	0.18196
	(!SCD * SCE * !Q)	0.01790	0.02734	0.18826
	(!D * DE * !SCE * Q)	0.02632	0.03629	0.20008
	(!D * DE * !SCE * Q)	0.03264	0.04257	0.20639
	(!D * !SCE * !Q)	0.01157	0.02100	0.18196
	(!D * !SCE * !Q)	0.01789	0.02733	0.18827
	(!D * !DE * !SCE * Q)	0.01179	0.02133	0.18284
	(!D * !DE * !SCE * Q)	0.01811	0.02766	0.18913

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.01146	0.02071	0.18237
	(SCD * SCE * Q)	0.01793	0.02721	0.18886
	(SCD * SCE * !Q)	0.02202	0.03167	0.19674
	(SCD * SCE * !Q)	0.02848	0.03817	0.20324
	(D * DE * !SCE * !Q)	0.02202	0.03164	0.19670
	(D * DE * !SCE * !Q)	0.02848	0.03814	0.20321
	(D * !SCE * Q)	0.01147	0.02073	0.18239
	(D * !SCE * Q)	0.01794	0.02722	0.18887
	(D * !DE * !SCE * !Q)	0.01144	0.02087	0.18196
	(D * !DE * !SCE * !Q)	0.01790	0.02740	0.18846
	(!SCD * SCE * Q)	0.02539	0.03496	0.19910
	(!SCD * SCE * Q)	0.03187	0.04148	0.20562
	(!SCD * SCE * !Q)	0.01145	0.02088	0.18194
	(!SCD * SCE * !Q)	0.01792	0.02741	0.18845
	(!D * DE * !SCE * Q)	0.02584	0.03545	0.19954
	(!D * DE * !SCE * Q)	0.03231	0.04196	0.20604
	(!D * !SCE * !Q)	0.01144	0.02088	0.18196
	(!D * !SCE * !Q)	0.01791	0.02741	0.18847
	(!D * !DE * !SCE * Q)	0.01147	0.02073	0.18238
	(!D * !DE * !SCE * Q)	0.01794	0.02722	0.18886

SKY130_FD_SC_HS__XNOR2x

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00518	0.00538	0.75030
sky130_fd_sc_hs__xnor2_2	0.00862	0.00854	1.35531
sky130_fd_sc_hs__xnor2_4	0.01541	0.01548	2.20184

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xnor2_1	0.00000	0.75096	2.31223
sky130_fd_sc_hs__xnor2_2	0.00000	0.58120	0.97952
sky130_fd_sc_hs__xnor2_4	0.00000	1.64831	4.64728

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	0.05778	0.31985	2.63537
	A->Y (FR)	!B	0.06838	0.78728	9.62541
	B->Y (RR)	A	0.05184	0.32022	2.75800
	B->Y (FR)	!A	0.05758	0.81161	10.16070
sky130_fd_sc_hs__xnor2_2	A->Y (RR)	B	0.06218	0.27091	2.44719
	A->Y (FR)	!B	0.06692	0.66037	9.26688
	B->Y (RR)	A	0.05968	0.27912	2.50980
	B->Y (FR)	!A	0.05389	0.68378	9.77362
sky130_fd_sc_hs__xnor2_4	A->Y (RR)	B	0.07417	0.39046	5.33595
	A->Y (FR)	!B	0.06966	0.58984	9.18261
	B->Y (RR)	A	0.07061	0.39397	5.37297
	B->Y (FR)	!A	0.05426	0.62657	9.88014

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	0.07185	0.43772	4.29275
	A->Y (RF)	!B	0.03202	0.32721	3.82837
	B->Y (FF)	A	0.06907	0.43916	4.45142
	B->Y (RF)	!A	0.02458	0.31317	3.75269
sky130_fd_sc_hs__xnor2_2	A->Y (FF)	B	0.08403	0.44804	4.59283
	A->Y (RF)	!B	0.03006	0.25755	3.53891
	B->Y (FF)	A	0.07762	0.40732	4.18671
	B->Y (RF)	!A	0.02569	0.25178	3.57467
sky130_fd_sc_hs__xnor2_4	A->Y (FF)	B	0.07794	0.40736	4.57370
	A->Y (RF)	!B	0.03248	0.20559	3.23030
	B->Y (FF)	A	0.07330	0.37248	4.18537
	B->Y (RF)	!A	0.02631	0.19781	3.28009

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	0.01467	0.02232	0.16858
	A	B	0.00226	0.00989	0.15655
	A	!B	-0.00140	-0.00010	0.03375
	A	!B	0.01110	0.01244	0.04634
	B	A	0.01349	0.02146	0.16720
	B	A	0.00373	0.01174	0.15779
	B	!A	0.00006	0.00308	0.04707
	B	!A	0.01004	0.01271	0.05713
sky130_fd_sc_hs__xnor2_2	A	B	0.02333	0.02995	0.17382
	A	B	0.00526	0.01179	0.15606
	A	!B	-0.00043	0.00241	0.06671
	A	!B	0.02159	0.02452	0.08921
	B	A	0.02230	0.02839	0.14697
	B	A	0.00799	0.01414	0.13304
	B	!A	0.00063	0.00638	0.08220
	B	!A	0.01865	0.02409	0.10019
sky130_fd_sc_hs__xnor2_4	A	B	0.03734	0.04995	0.32417
	A	B	0.00476	0.01722	0.29197
	A	!B	-0.00193	0.00384	0.12199
	A	!B	0.04009	0.04586	0.16471
	B	A	0.03605	0.04733	0.28038
	B	A	0.01081	0.02218	0.25580
	B	!A	-0.00033	0.01016	0.14214
	B	!A	0.03416	0.04469	0.17677

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	0.00350	0.01267	0.15903
	A	B	0.01592	0.02504	0.17117
	A	!B	0.01403	0.01536	0.04322
	A	!B	0.00133	0.00248	0.02939
	B	A	0.00591	0.01366	0.15920
	B	A	0.01543	0.02317	0.16823
	B	!A	0.00937	0.01081	0.03583
	B	!A	-0.00042	0.00093	0.02581
sky130_fd_sc_hs__xnor2_2	A	B	0.00755	0.01594	0.16153
	A	B	0.02572	0.03409	0.17897
	A	!B	0.02677	0.02926	0.08323
	A	!B	0.00451	0.00693	0.06027
	B	A	0.01220	0.01858	0.16217
	B	A	0.02597	0.03231	0.17547
	B	!A	0.01846	0.02161	0.07095
	B	!A	0.00059	0.00362	0.05291
sky130_fd_sc_hs__xnor2_4	A	B	0.01212	0.02825	0.30341
	A	B	0.04494	0.06091	0.33546
	A	!B	0.04968	0.05557	0.16670
	A	!B	0.00727	0.01300	0.12374
	B	A	0.01791	0.03048	0.29186
	B	A	0.04213	0.05471	0.31609
	B	!A	0.03453	0.04167	0.14116
	B	!A	0.00058	0.00764	0.10638

SKY130_FD_SC_HS__XNOR3x

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00270	0.00695	0.00435	1.42165
sky130_fd_sc_hs__xnor3_2	0.00275	0.00699	0.00439	2.78724
sky130_fd_sc_hs__xnor3_4	0.00274	0.00698	0.00431	5.37912

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xnor3_1	0.00000	4.03310	4.53486
sky130_fd_sc_hs__xnor3_2	0.00000	4.13391	4.72507
sky130_fd_sc_hs__xnor3_4	0.00000	4.33559	5.10552

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)	0.19709	0.80562	8.47795
	B->X (-R)	0.13922	0.72265	8.47103
	C->X (-R)	0.10181	0.68098	8.30432
sky130_fd_sc_hs__xnor3_2	A->X (-R)	0.21050	0.73286	8.44353
	B->X (-R)	0.14891	0.64311	8.38533
	C->X (-R)	0.10912	0.60165	8.23640
sky130_fd_sc_hs__xnor3_4	A->X (-R)	0.24451	0.70598	8.35754
	B->X (-R)	0.18723	0.62283	8.36545
	C->X (-R)	0.14291	0.57730	8.17339

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xnor3_1	A->X (-F)	0.14082	0.64646	5.43807
	B->X (-F)	0.13405	0.62306	5.80659
	C->X (-F)	0.08102	0.53259	5.54956
sky130_fd_sc_hs__xnor3_2	A->X (-F)	0.15589	0.63003	5.34574
	B->X (-F)	0.14585	0.59644	5.65941
	C->X (-F)	0.09162	0.51340	5.42213
sky130_fd_sc_hs__xnor3_4	A->X (-F)	0.19194	0.64551	5.40627
	B->X (-F)	0.18224	0.61617	5.75499
	C->X (-F)	0.12981	0.53629	5.53320

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.03512	0.04174	0.20422
	A	0.02727	0.03392	0.19717
	B	0.03162	0.04507	0.35559
	B	0.03250	0.04991	0.35622
	C	0.01626	0.02459	0.18234
	C	0.00669	0.01504	0.17323
sky130_fd_sc_hs__xnor3_2	A	0.03978	0.04553	0.20153
	A	0.03181	0.03759	0.19530
	B	0.03621	0.04903	0.35505
	B	0.01960	0.03243	0.33891
	C	0.02104	0.02942	0.18698
	C	0.01139	0.01980	0.17829
sky130_fd_sc_hs__xnor3_4	A	0.05319	0.05705	0.22098
	A	0.04532	0.04932	0.21655
	B	0.04931	0.05969	0.36536
	B	0.03285	0.04326	0.34907
	C	0.03402	0.04062	0.21093
	C	0.02455	0.03130	0.20241

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.02996	0.03700	0.19859
	A	0.03778	0.04482	0.20461
	B	0.01839	0.03378	0.34109
	B	0.03501	0.05042	0.35578
	C	0.00585	0.01589	0.18462
	C	0.01542	0.02543	0.19173
sky130_fd_sc_hs__xnor3_2	A	0.03839	0.04114	0.19804
	A	0.04637	0.04918	0.20285
	B	0.02605	0.03777	0.34071
	B	0.04270	0.05441	0.35552
	C	0.01319	0.02031	0.19571
	C	0.02286	0.02984	0.19998
sky130_fd_sc_hs__xnor3_4	A	0.06146	0.05413	0.21665
	A	0.06931	0.06215	0.21984
	B	0.04778	0.04927	0.35366
	B	0.06425	0.06573	0.36624
	C	0.03742	0.03211	0.21103
	C	0.04692	0.04157	0.21399

SKY130_FD_SC_HS__XOR2x

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00527	0.00546	0.66848
sky130_fd_sc_hs__xor2_2	0.00810	0.00803	1.24194
sky130_fd_sc_hs__xor2_4	0.01643	0.01600	2.08485

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xor2_1	0.00000	0.26334	0.49910
sky130_fd_sc_hs__xor2_2	0.00000	0.35518	0.50845
sky130_fd_sc_hs__xor2_4	0.00000	0.70578	1.01690

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	0.06821	0.57586	5.21620
	A->X (FR)	B	0.08300	0.81879	9.58857
	B->X (RR)	!A	0.08178	0.60115	5.51430
	B->X (FR)	A	0.06214	0.77052	9.24400
sky130_fd_sc_hs__xor2_2	A->X (RR)	!B	0.05969	0.47421	5.31816
	A->X (FR)	B	0.07232	0.69252	9.55629
	B->X (RR)	!A	0.06889	0.45488	5.11457
	B->X (FR)	A	0.05719	0.67817	9.53834
sky130_fd_sc_hs__xor2_4	A->X (RR)	!B	0.05636	0.37023	4.99770
	A->X (FR)	B	0.07270	0.58149	8.91917
	B->X (RR)	!A	0.06037	0.33759	4.55999
	B->X (FR)	A	0.05916	0.57569	9.09031

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	0.08749	0.38914	3.44243
	A->X (RF)	B	0.02997	0.29943	3.30945
	B->X (FF)	!A	0.07858	0.40175	3.58338
	B->X (RF)	A	0.02311	0.33082	3.79807
sky130_fd_sc_hs__xor2_2	A->X (FF)	!B	0.11576	0.49091	4.97070
	A->X (RF)	B	0.02746	0.24887	3.34277
	B->X (FF)	!A	0.10127	0.50563	5.13109
	B->X (RF)	A	0.02451	0.32911	4.55494
sky130_fd_sc_hs__xor2_4	A->X (FF)	!B	0.11850	0.45445	4.91422
	A->X (RF)	B	0.02916	0.19839	3.05672
	B->X (FF)	!A	0.09992	0.46615	4.95910
	B->X (RF)	A	0.02622	0.25337	3.97077

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	0.00048	0.00174	0.03898
	A	B	0.01327	0.01455	0.05185
	A	!B	0.01730	0.02245	0.12492
	A	!B	0.00433	0.00947	0.11197
	B	A	0.00052	0.00176	0.03846
	B	A	0.01023	0.01151	0.04836
	B	!A	0.01534	0.01983	0.13287
	B	!A	0.00545	0.01025	0.12313
sky130_fd_sc_hs__xor2_2	A	B	0.00209	0.00465	0.06850
	A	B	0.02303	0.02536	0.08958
	A	!B	0.02325	0.02873	0.13969
	A	!B	0.00530	0.01076	0.12175
	B	A	0.00047	0.00303	0.06351
	B	A	0.01705	0.01959	0.08020
	B	!A	0.02285	0.02659	0.14818
	B	!A	0.00931	0.01304	0.13463
sky130_fd_sc_hs__xor2_4	A	B	0.00290	0.00812	0.12757
	A	B	0.04700	0.05233	0.17187
	A	!B	0.04678	0.05707	0.27375
	A	!B	0.01143	0.02176	0.23852
	B	A	0.00129	0.00713	0.12196
	B	A	0.03592	0.04191	0.15738
	B	!A	0.04090	0.04917	0.28030
	B	!A	0.01504	0.02333	0.25569

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	0.01281	0.01363	0.04192
	A	B	0.00006	0.00084	0.02901
	A	!B	0.00314	0.00788	0.10892
	A	!B	0.01602	0.02075	0.12187
	B	A	0.01081	0.01236	0.04183
	B	A	0.00097	0.00248	0.03197
	B	!A	0.00491	0.01128	0.12361
	B	!A	0.01516	0.02153	0.13387
sky130_fd_sc_hs__xor2_2	A	B	0.02205	0.02420	0.07831
	A	B	0.00112	0.00313	0.05689
	A	!B	0.00324	0.00781	0.11747
	A	!B	0.02093	0.02549	0.13420
	B	A	0.01849	0.02153	0.06952
	B	A	0.00190	0.00491	0.05203
	B	!A	0.00575	0.01191	0.13186
	B	!A	0.02021	0.02639	0.14625
sky130_fd_sc_hs__xor2_4	A	B	0.04529	0.05006	0.16139
	A	B	0.00121	0.00582	0.11617
	A	!B	0.00675	0.01554	0.23021
	A	!B	0.04151	0.05038	0.26357
	B	A	0.03764	0.04355	0.14435
	B	A	0.00260	0.00852	0.10833
	B	!A	0.01257	0.02581	0.24210
	B	!A	0.04013	0.05309	0.26933

SKY130_FD_SC_HS__XOR3x

sky130_fd_sc_hs_tt_2.10v_25C.ccs
Cell Library: Process , Voltage
2.10, 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	0.00269	0.00715	0.00434	1.43972
sky130_fd_sc_hs__xor3_2	0.00271	0.00728	0.00434	2.75107
sky130_fd_sc_hs__xor3_4	0.00269	0.00738	0.00430	5.37448

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xor3_1	0.00000	4.03310	4.53513
sky130_fd_sc_hs__xor3_2	0.00000	4.13392	4.72533
sky130_fd_sc_hs__xor3_4	0.00000	4.33558	5.10573

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)	0.19331	0.79615	8.40041
	B->X (-R)	0.13354	0.70723	8.33379
	C->X (-R)	0.10030	0.67807	8.24138
sky130_fd_sc_hs__xor3_2	A->X (-R)	0.20261	0.71794	8.27235
	B->X (-R)	0.14520	0.63245	8.20209
	C->X (-R)	0.10902	0.60318	8.11255
sky130_fd_sc_hs__xor3_4	A->X (-R)	0.24153	0.70431	8.39616
	B->X (-R)	0.17936	0.61095	8.32348
	C->X (-R)	0.13554	0.57771	8.23340

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xor3_1	A->X (-F)	0.13872	0.63538	5.30756
	B->X (-F)	0.13117	0.60637	5.65114
	C->X (-F)	0.07913	0.52454	5.46450
sky130_fd_sc_hs__xor3_2	A->X (-F)	0.15284	0.62134	5.27000
	B->X (-F)	0.14551	0.59119	5.60364
	C->X (-F)	0.09259	0.52056	5.43933
sky130_fd_sc_hs__xor3_4	A->X (-F)	0.19151	0.64799	5.43218
	B->X (-F)	0.18501	0.61668	5.75980
	C->X (-F)	0.12670	0.54758	5.59652

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.03693	0.04338	0.20459
	A	0.02917	0.03567	0.19744
	B	0.03486	0.04836	0.36405
	B	0.03105	0.04862	0.36059
	C	0.01649	0.02507	0.19061
	C	0.00693	0.01552	0.18132
sky130_fd_sc_hs__xor3_2	A	0.04194	0.04824	0.20908
	A	0.03427	0.04061	0.20152
	B	0.03982	0.05291	0.36709
	B	0.02256	0.03569	0.35033
	C	0.02168	0.02989	0.20000
	C	0.01213	0.02037	0.19125
sky130_fd_sc_hs__xor3_4	A	0.05443	0.05916	0.22146
	A	0.04666	0.05155	0.21702
	B	0.05251	0.06336	0.37703
	B	0.03522	0.04614	0.36305
	C	0.03515	0.04027	0.21144
	C	0.02569	0.03085	0.20280

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.03006	0.03685	0.19580
	A	0.03792	0.04472	0.20341
	B	0.01655	0.03214	0.34575
	B	0.03371	0.04930	0.36077
	C	0.00557	0.01580	0.18583
	C	0.01515	0.02534	0.19536
sky130_fd_sc_hs__xor3_2	A	0.03892	0.04163	0.19989
	A	0.04657	0.04937	0.20716
	B	0.02373	0.03587	0.34895
	B	0.04101	0.05318	0.36307
	C	0.01331	0.02027	0.19629
	C	0.02284	0.02980	0.19961
sky130_fd_sc_hs__xor3_4	A	0.06326	0.05519	0.21792
	A	0.07101	0.06307	0.21908
	B	0.04611	0.04811	0.36703
	B	0.06341	0.06546	0.37478
	C	0.03701	0.03223	0.20633
	C	0.04645	0.04169	0.21191